

# Urban Design Brief

Main St. N. and Tuscarora St.,  
Hagersville, Haldimand, ON

Zoning By-Law Amendment

July, 2023

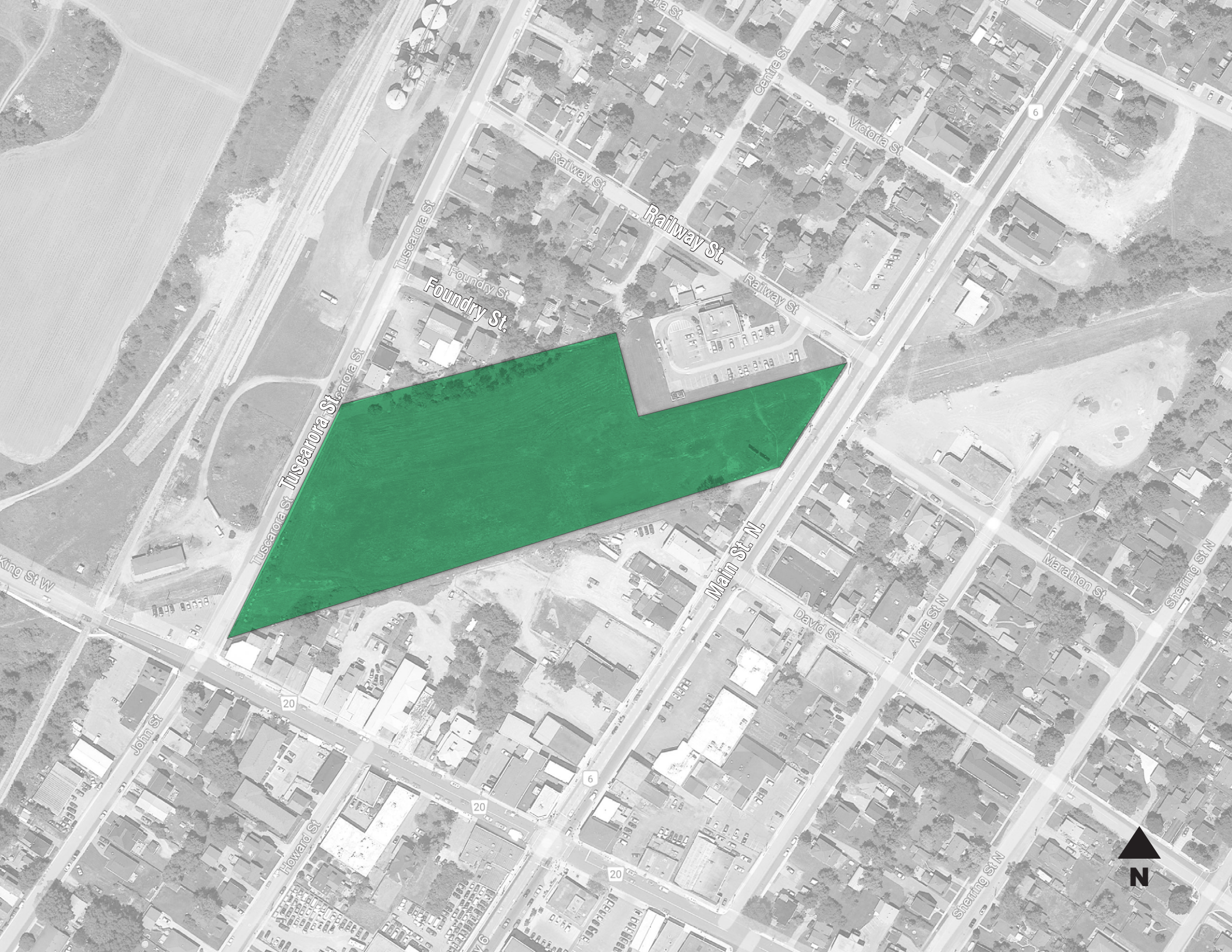
Project No.: 22116A



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Tuscarora St  
Tuscarora St  
Tuscarora St  
Foundry St  
Foundry St  
Railway St  
Railway St  
Railway St  
Main St N  
Main St N  
Main St N  
David St  
Alma St N  
Alma St N  
Marathon St  
Marathon St  
Sherring St N  
Sherring St N  
Sherring St N





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# 1. BACKGROUND

## 1.1 Proposal

GSP Group has been retained by Dabirian Homes Inc. (referred to as “the Applicant”) to prepare the following Urban Design Brief in support of the Zoning By-law Amendment (“ZBA”) to facilitate the redevelopment on two parcels of lands, one fronting on Main St. N. (Site 1) and the other fronting on Tuscarora St. (Site 2) in Hagersville (referred collectively as “the Site”).

The purpose of the proposed amendment is to facilitate the redevelopment of the Site for one 5-storey mixed-use apartment building containing 58 dwelling units, two 6-storey apartment buildings containing 203 units, and one 2-storey townhouse blocks containing 6 dwelling units.

## 1.2 Purpose and Outline

An Zoning By-law Amendment (“ZBA”) is required in order to facilitate the proposed development on the Site. An Urban Design Brief was identified as a requirement for this application as per the Formal Consultation comments. The County of Haldimand’s Urban Design Brief: Terms of Reference were referred as a guiding document in preparation of this report.

Accordingly, this Urban Design Brief consists of following sections:

- Section 2 outlines of the site’s existing conditions and attributes;
- Section 3 outlines the site’s contextual relationships with the neighbourhood and surrounding area;
- Section 4 summarizes the applicable design-related policy and guideline documents;
- Section 5 describes the proposed development and how its design responds to the policy and guideline direction;
- Section 6 provides a conclusion of the report’s findings.







## 2. EXISTING SITE CONDITIONS

### 2.1 Site Description

The Site is located in downtown Hagersville within Haldimand County. Site 1 is fronting and located on the west side of Main St. N., and the Site 2 is fronting and located on the east side of Tuscarora St. The overall Site shape is somewhat similar to a parallelogram with two pairs of parallel sides. The acute angles created by this shape, creates design challenges for the Site. Site 1 has a frontage of  $\sim 61$  m and an average depth of  $\sim 95$

Fig. 1: Site



m with an area of 0.55 ha. Site 2 has a width of  $\sim 92$  m and an average depth of  $\sim 162$  m with an area of 1.63 ha. Overall Site has an area of 2.18 ha.

### 2.2 Existing Buildings and Structures

The Site is vacant and there are no buildings or structures present on the Site.

Fig. 2: Site 1 along Main St. N.: GSP Group



Fig. 3: Site 2 along Tuscarora St.: GSP Group



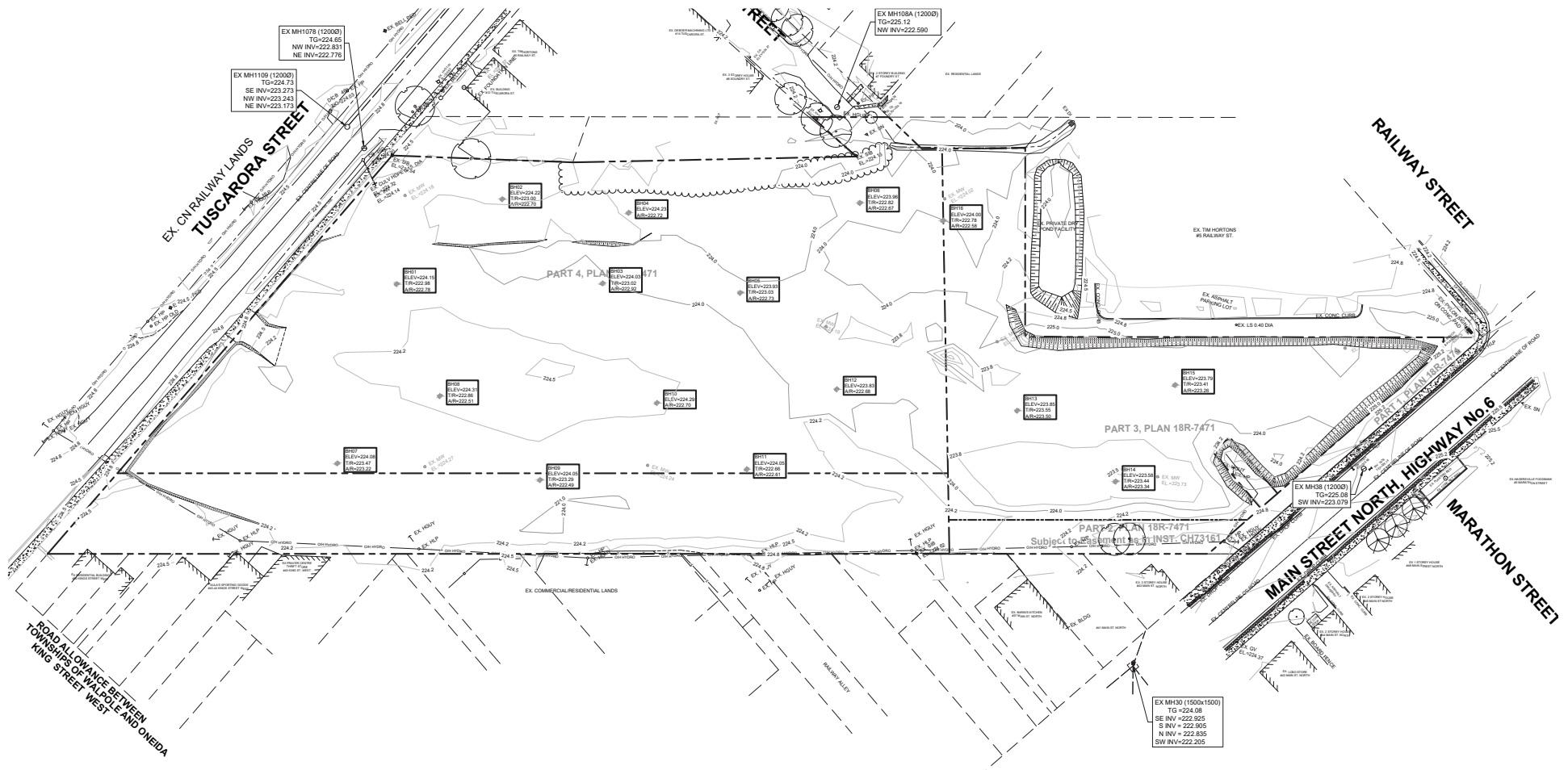


## 2.3 Topography and Existing Vegetation

The Site has undulating topography with grade differences of approximately 1.5m between the lowest and highest grades within the Site. The existing site grades generally seem to slope from east to west and from south to north towards Tuscarora St.

The Site is relatively free of any vegetation and has only two trees on Site 1 and one tree on Site 2 along the shared northern boundary. Further details to be discussed at Site Plan stage.

Fig.4: Topographic Survey. Source: Walter Fadey





# 3. SITE AND SURROUNDING CONTEXT

## 3.1 Immediate Site Context and Land Uses

Fig.5: Surrounding Context. Source: Google Earth

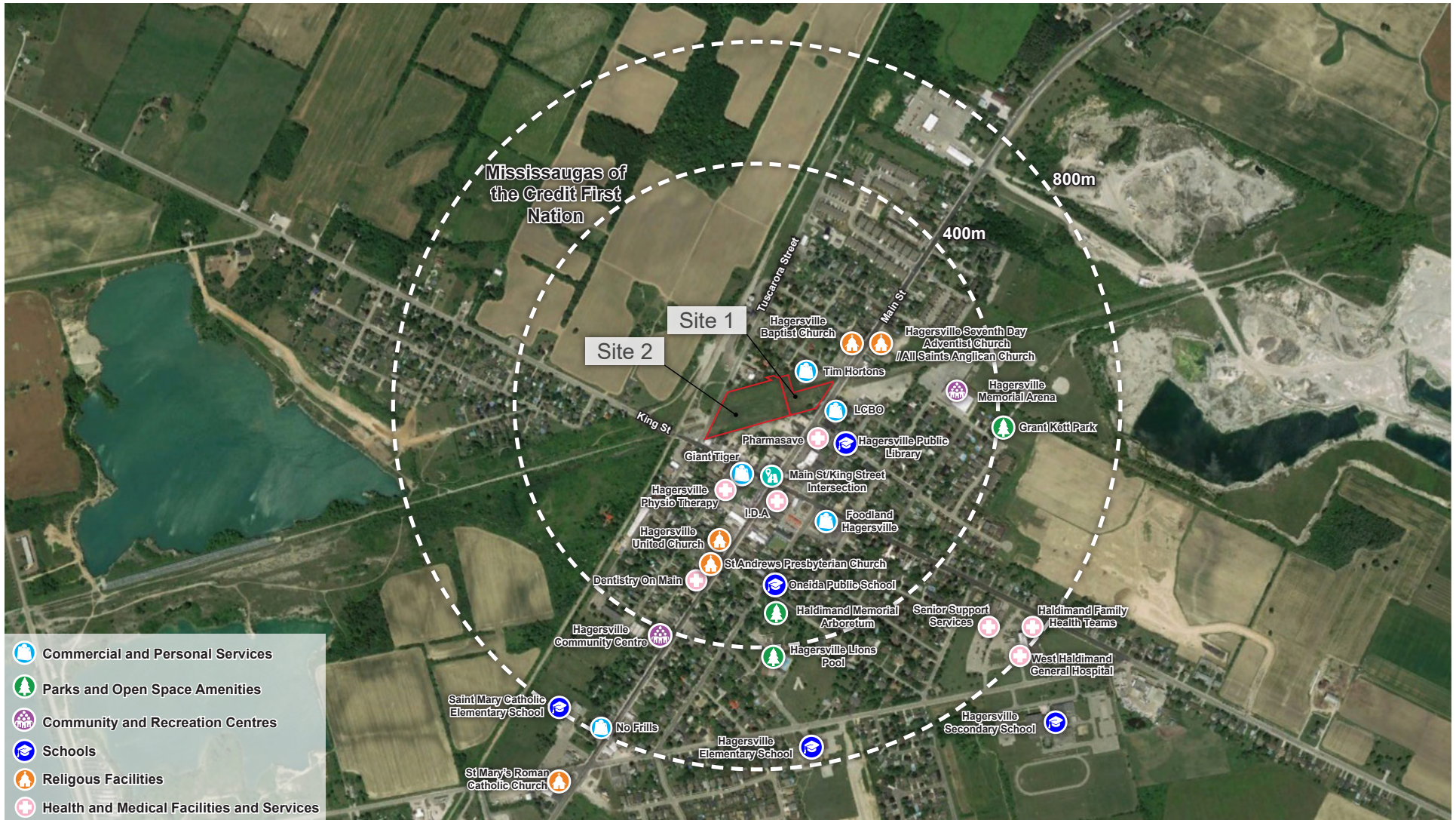




Fig.6: Surrounding Zoning. Source: Haldimand County and Site Visit, 2022







Fig.7: Source: Site Visit, 2022

**West:** West of the Site has Industrial uses along Tuscarora St., which include agricultural operations (grain elevator), and CN Rail.



Fig.8: Source: Site Visit, 2022

**South:** South of the Site, along King St. W., there is a mix of 2-story commercial and multiple dwelling residential uses. Along Main St. N., it has mostly 2-story commercial uses.





Fig.9: Source: Site Visit, 2022

**North:** Immediately abutting to North of the Site, there are commercial uses along Railway St., and light industrial uses along south side of Foundry St., Further north along Railway St. and along north side of Foundry St., there are mostly 1-2 storey detached residential dwellings.



Fig.10: Source: Site Visit, 2022

**East:** East of the Site, along Main St. N. (Highway 6), there is a mix of commercial, institutional, single and multiple dwelling residential uses.



### 3.2 Neighbourhood Context

Site 1 is located north of King St. W. and Main St. intersection and represents the northern principal entrance to downtown Hagersville along provincial Highway 6. Site 2 is located close to King St. W. and Tuscarora St. intersection, which represents western entrance to downtown Hagersville. Both Site 1 & 2 are identified as gateway locations and within the Community Improvement Plan and Business Improvement Area of the Hagersville Streetscape Plan (2011). The downtown neighbourhood is characterized by a mix of residential, commercial, institutional and industrial uses. The Sites is located between commercial uses to south and residential uses to north. The neighbouring residential built form consists of 1-2 storey single detached dwellings, and 2-5 storey apartment type multiple dwellings. The wider community features several commercial uses, amenities, religious facilities, parks, and trail network.

Fig.11: Neighbourhood Context





### 3.3 Streetscape Context

**Main St. N.** is classified as a Provincial Highway within the Haldimand County Official Plan. It has sidewalks on both sides of the street, and on-street parallel parking on both sides of the street between David St. and King St. It has two (2) lanes of vehicular traffic, and the road widens to include a dedicated turn lane at the Main St. and King St. intersection. The sidewalks are buffered from vehicular traffic with a decorative concrete strip along the edge of the road, which also contains street lights, road signage, and utilities.

The street is mostly flanked by retail and commercial uses on both sides with building heights ranging from one to two-storeys. The commercial strip plazas have deep front yard setbacks of approximately 13-15 m with surface parking typically located within the front yard and therefore between main buildings and Main St. N. The street section in front of the Site 1, have two-storey single detached houses front the street with setbacks ranging from 5m to 7m which are used for driveways, trees and landscaping.

The buildings are a mix of old and new with building materials ranging from brick, stone, metal siding, stucco, aluminum panels and glass. Generally, the commercial buildings have flat roof lines, and the residential converted commercial buildings, and residential buildings in the vicinity of the Site have pitched roof lines.

**Tuscarora St.** is classified as a local road within the Haldimand County Official Plan. It has narrow sidewalks on the east side of Tuscarora St., which fronts the Site 2. It has two (unmarked) lanes of vehicular traffic. The sidewalk is buffered from vehicular traffic with a grassed strip, which also contains trees and utility poles.

The street is flanked by industrial uses (grain elevator) along the west side, and residential uses along most of east side of the street. The residential uses have approximately 3m front setback, which are used for driveways, trees and landscaping. Residential buildings have mostly pitched roof lines along the street.



Fig.12: Looking South on Main St. N. Source: Google Street View 2023



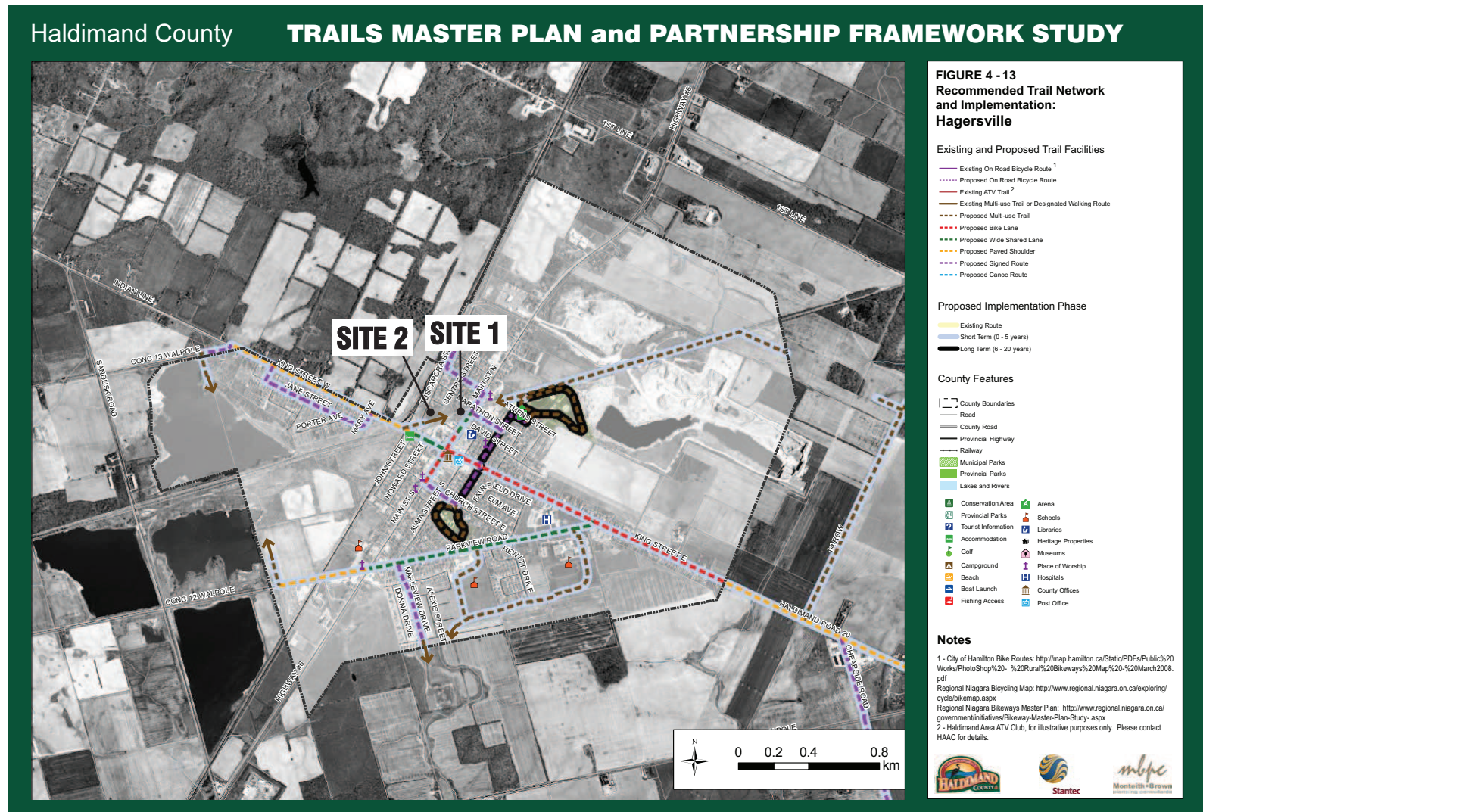
Fig.13: Looking North on Tuscarora St. Source: Google Street View 2023



### 3.4 Active Transportation Context

A Trails Master Plan and Partnership Framework Study was completed in October 2009 to guide and prioritize trails development in Haldimand County during the next 10-15 years. The site is well served by the proposed bicycle and trail infrastructure and is within walking distance of multiple bike lanes and multi-use trails along King St. W., Tuscarora St. and Main St. N.

Fig. 14: Trails Master Plan and Partnership Framework Study (2009)





## 4. DESIGN POLICY AND GUIDELINE REFERENCES

### 4.1 Haldimand County Official Plan

The Site is within the county's urban area and Hagersville downtown are encouraged for mixed-use residential intensification and quality urban design.

Section 5G - Design Principles/Urban Design Guidelines identify urban design principles that are applicable for development throughout the county. Principles listed in 5.G.1 seek::

- a) the revitalization of the commercial cores;
- b) new commercial and industrial development;
- c) subdivision design;
- d) preservation of cultural heritage resources and scenic values;
- e) tree preservation;
- f) conservation of natural environment areas;
- g) location and design of arterial and collector roads;
- h) compact and efficient urban uses;
- i) pedestrian walkways and bicycle paths;
- j) community integration; and
- k) aesthetics

Fig.15: Schedule B.4: Land Use Plan

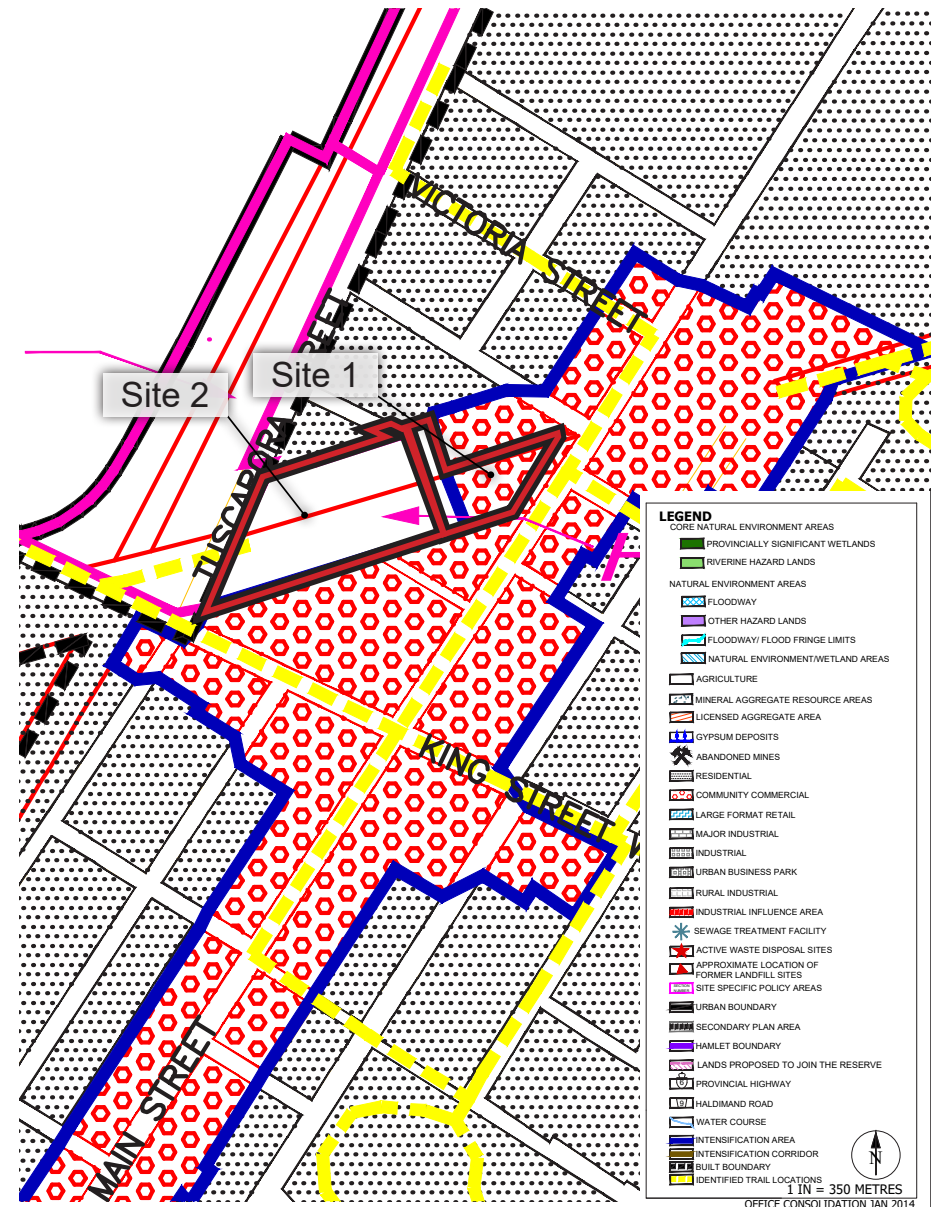




Fig.16: Big Moves - Haldimand County Streetscape Plan and Urban Design Guidelines



## 4.2 Haldimand County Streetscape Plan and Urban Design Guidelines (January 2010)

The Haldimand County Streetscape Plan (the “County Streetscape Plan”) (2010) establishes the streetscape vision for Community Improvement Plan Areas (CIPAs), including Hagersville. The goals of the County Streetscape Plan are to motivate private sector investment in the design of CIPAs, improve the physical and visual qualities of each CIPA, and to retain and increase employment, shopping, tourist and living opportunities. The four big moves identified in the County Streetscape Plan for Hagersville are:

- 1: Build upon the market square as the heart of downtown by extending infrastructure improvements (sidewalks, streets, and street furnishings) to adjacent uses.
- 2: Create enhanced crosswalks to market destinations and fill gaps between destinations.
- 3: Ensure pedestrian connections between new developments and the market.
- 4: Implement strategic green interventions to provide moments for reprieve and gathering within the CIPA.



### 4.3 Hagersville Streetscape Plan (June 2011)

The Hagersville Streetscape Plan (the “Town Streetscape Plan”) (2011) is a streetscape policy document based on the County Streetscape Plan with specified local knowledge to be applied to Hagersville. The goals and objectives of the Town Streetscape Plan are to create a community heart and focal point, establish a comfortable pedestrian environment, and enhance the core to be visually interesting and attractive. The Streetscape Concept forms the principal component of the Hagersville Streetscape Plan. It illustrates and discusses the series of recommended improvements to the public realm within the overall study area. It provides specific direction as to recommended improvements and design details, which will inform the detailed design and construction process.

The Site falls within the “North Streetscape Section” of the Streetscape Concept. The design focus for the north streetscape section is to strengthen and soften the pedestrian and visual environment along this portion of the north-south spine through the downtown. The recommended improvements to the north streetscape section include the following elements:

- a) Public street tree plantings at the northern end of the street near the Marathon Street intersection;
- b) Private street tree plantings on the east side of Main Street generally south of the Marathon Street intersection;
- c) Addition of pedestrian amenities along the streetscape, including decorative light standards, garbage receptacles, bike racks, planters, hanging baskets and banner arms on existing light fixtures;
- d) Addition of decorative fencing, shade trees (where space permits), and planting beds along the street-facing edges private parking area located in between the street and building face;
- e) Accentuation of the area around the Marathon Street and Railway Street

intersections area Main Street with:

- A northern gateway entrance feature;
- Curb extensions along Main Street at both intersecting streets;
- Way-finding signage feature on the west side of Main Street entering downtown; and
- Surface markings and materials for pedestrian crossings of side streets intersecting Main Street that is similar to the character of the Main and King intersection.

Fig. 17: View of proposed improvements along Main St. N. - Hagersville Streetscape Plan





# 5. PROPOSED DESIGN RESPONSE

## 5.1 Design Overview

The proposal is for one 5-storey apartment building (Building C) containing 58 dwelling units, along Main St. N., two 6-storey apartment buildings (Building A & B) containing 203 dwelling units, and one block of 2-storey townhouses containing 6 dwelling units. The proposed development has 1,160 sqm and 4,080 sqm. of amenity space (indoor + outdoor), for Site 1 and 2 respectively. 51 vehicle parking spaces are provided for Building C, which included 35 residential parking spaces and 16 commercial parking spaces, 12 parking spaces for townhouses, and 224 parking spaces for Building A & B. There is no vehicular connection from Site 1 to Site 2, however, there is a pedestrian connection. Bicycle parking spaces, at the rate of 0.25 space per unit, are provided. The form of the development evolved over time to feature an articulated mid-rise building design with a defined base, middle and building top.





## 5.2 Floor Plans and Elevations

Fig. 18: Site Plan

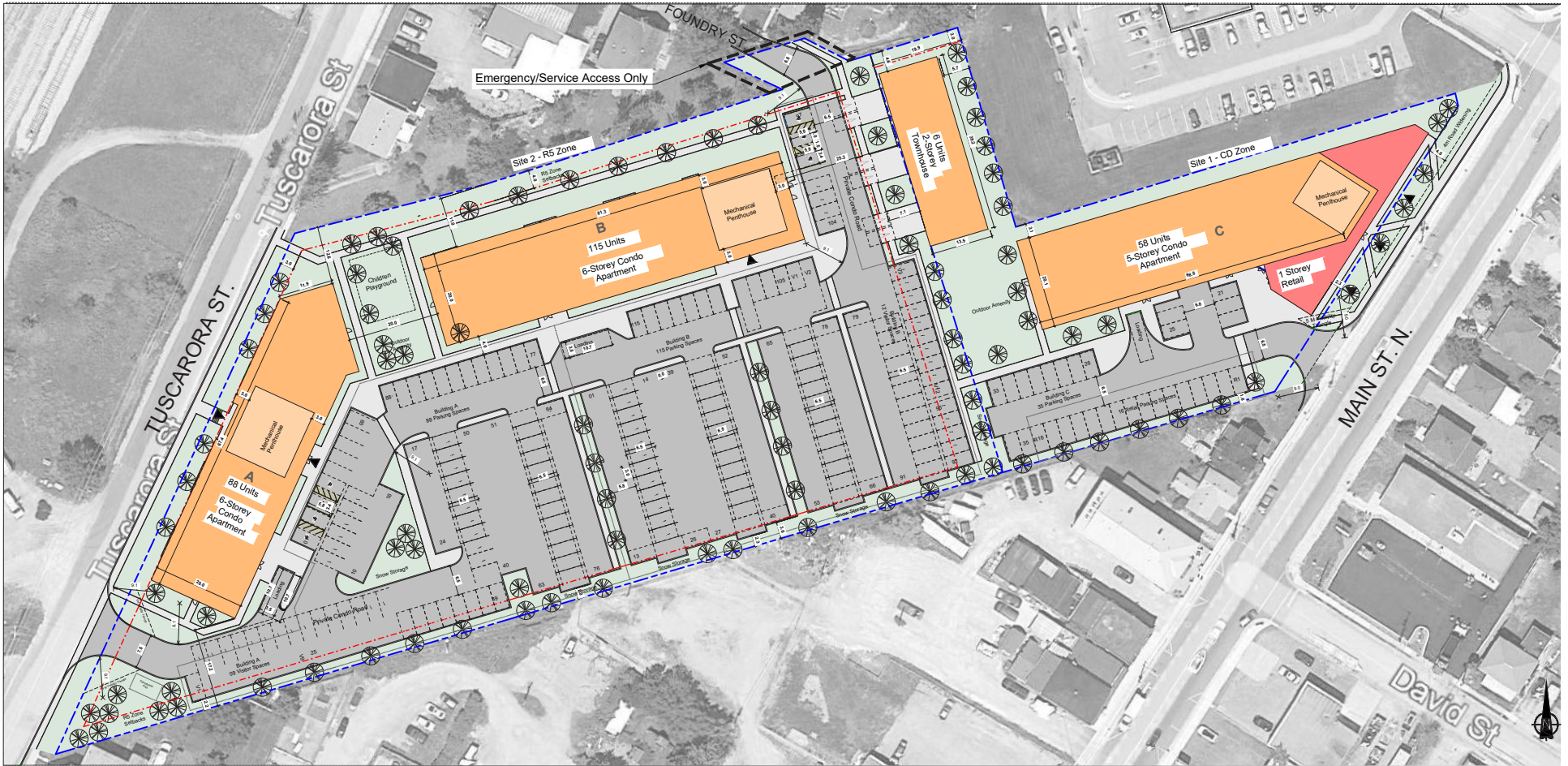




Fig. 19: Ground Floor Plan

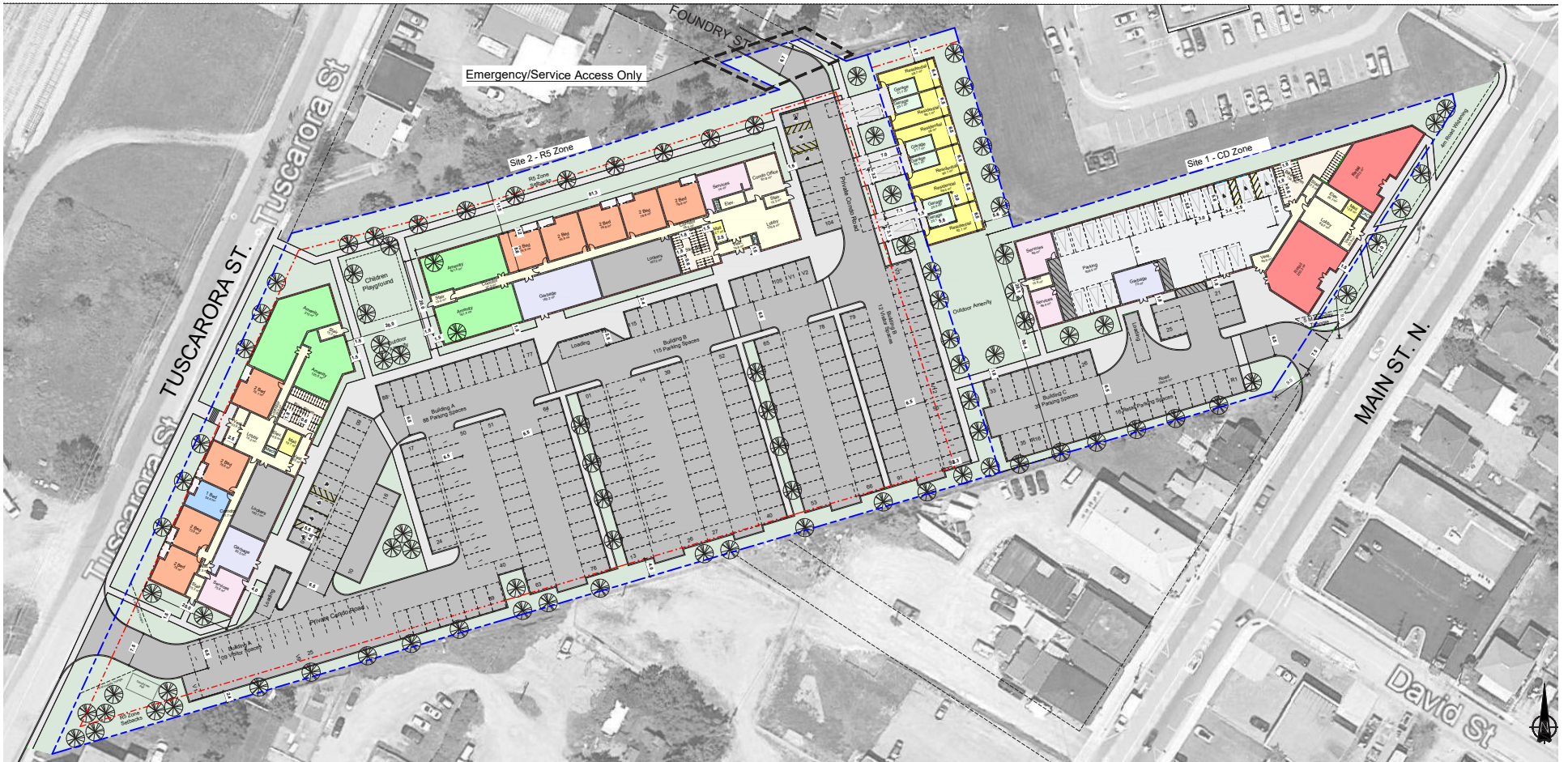
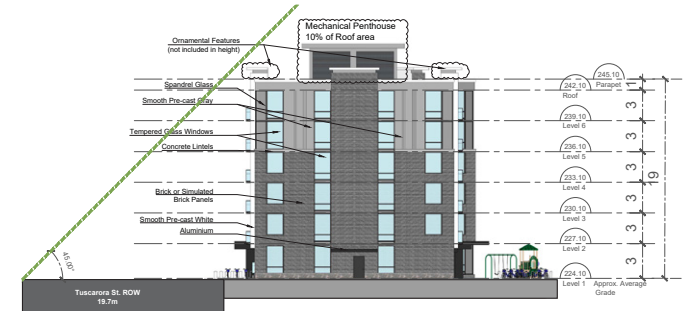




Fig.20: Building A & B Elevations



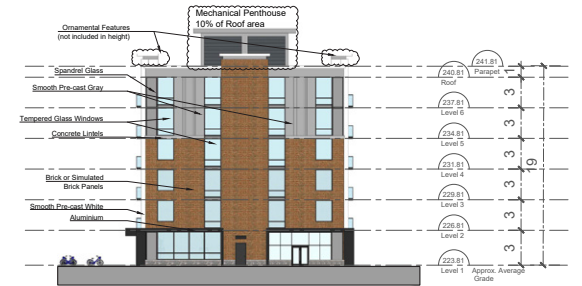
Building A - Front Elevation (along Tuscarora St.)



Building A - Side Elevation



Building B - Front Elevation (from internal parking lot)



Building B - Side Elevation



Building A



Building B



Fig.21: Building C and Townhouse Elevations



Building C - Side Elevation



Building C - Front Elevation (along Main St. N.)



Townhouse - Front Elevation (from internal private condo road)



Townhouse - Side Elevation

Building C



Townhouses





Fig.22: Aerial View Along Main St. N.





Fig.23: Aerial View Along Tuscarora St.



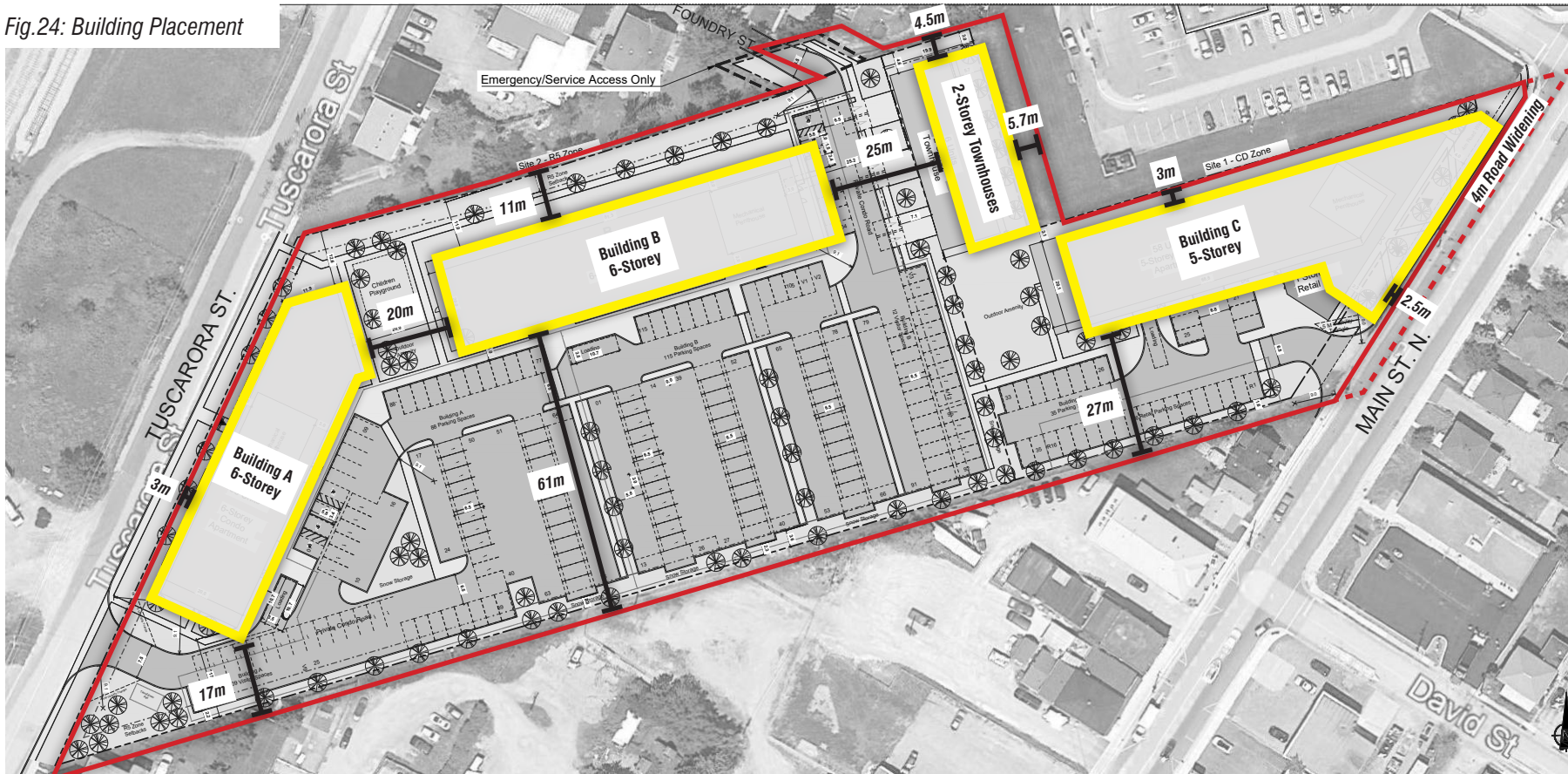


## 5.3 Site Organization

### Building Placement

The street fronting buildings, Building A and C, are placed parallel to their respective streets with a 2.5 m setback (in addition to 4m road widening) along Main St. N. and 3m setback along Tuscarora St. to provide street enclosure and space for street landscaping. A 11 m building setback is provided to Building B from the northern lot line to create a transition to the low-rise residential and create a landscaped buffer to mitigate privacy/overlook concerns. Building C and Townhouses are placed at a distance of 3m and 4.5 m, respectively, from the northern lot line to provide space for shrub and small tree plantings. A larger building setback of 17m, 61m, and 27m, is provided to Buildings A, B, and C, respectively, from the southern lot line to provide buffer from commercial areas to south along Main St. N. Building B is proposed to have a building separation distance of 25 m from the townhouse block and 20m from Building A to mitigate privacy, shadow and overlook concerns between the buildings within the Site.

Fig.24: Building Placement

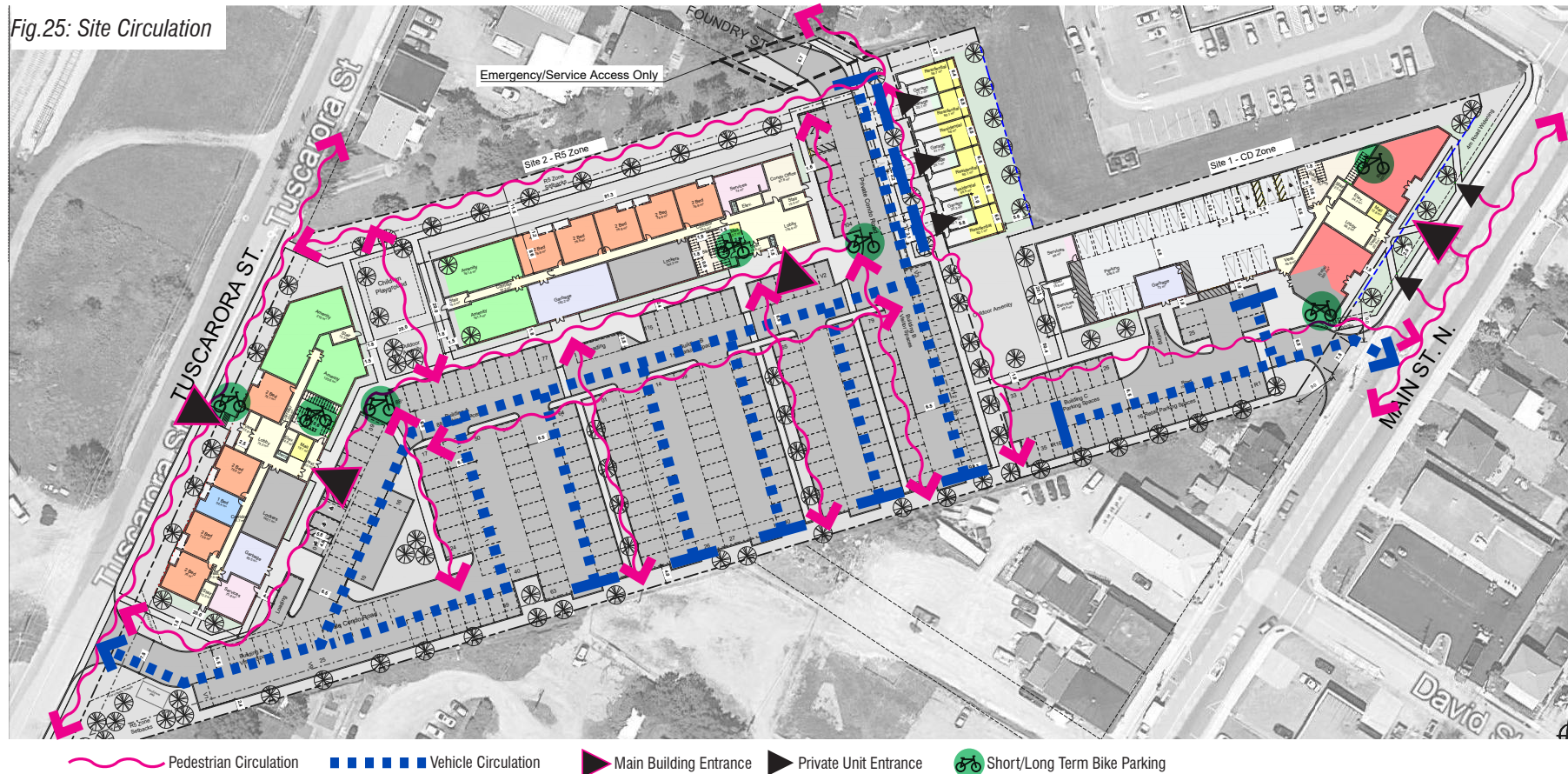




## Vehicle Access And Circulation

One vehicular access from Main St. N. is provided for Site 1 and one access from Tuscarora St. is proposed for Site 2. There are no vehicular through-connections proposed between Site 1 & 2 in order to reduce through traffic impact on Main St. N. Foundry St. access is provided for emergency and service access only.

A total of 51 surface and garage parking spaces are proposed for Site 1, 224 surface parking spaces for Site 2, and 12 driveway and garage parking spaces for the townhouse block. Access to parking is located at a distance from both public streets, creating a buffer and providing safe entrance and exit to both Sites. The parking area is screened from public view, safe, accessible and conveniently located close to the building entrances. Landscaped walkways are proposed in the parking area, providing a safe pedestrian connection to the buildings.





## Pedestrian Access And Circulation

Building A, B, and C are provided with direct pedestrian connections to the public sidewalk along Main St. N. and Tuscarora St., creating a safe and barrier-free pedestrian access. Pedestrians along Main St. N. can access Tuscarora St. and Foundry St. and vice versa, via a series of interconnected and landscaped walkways. Occupants of the townhouse block and commercial units in Building C have individual walkways leading from their main entrance to the public walkways along Main St. N. and Tuscarora St. Generous space for landscaping, planting beds, seating areas, bike parking is proposed along pedestrian walkways and building entrances to contribute to the public realm and enhance pedestrian experience especially along Main St. N.

## Cyclist Access And Circulation

Visitors can easily access the conveniently located short-term bicycle parking near the building entrances directly from the public sidewalks. 20 short term bike parking spaces are provided near each building entrance. Long term bike parking for residents is securely located inside each Building And is conveniently placed adjacent to the building's elevator for ease of access. A total of 66 long term bike parking spaces are provided.

## Building Base

The ground floor of Building C and A faces most of the street frontage along Main St. N. and Tuscarora St. (Fig. 30&31) and is proposed to have active commercial units (Building C), doors, windows, and programmed amenity area with large windows, creating an attractive street wall with eyes on street and increased permeability of public realm. The main building entrances are recessed and directly connected to the public sidewalk creating a legible and barrier-free at-grade entrance.

Fig.26: Street View along Main St. N.



Fig.27: Street View along Tuscarora St.





The ground floor of Building C, containing commercial units, has a floor to ceiling height of 4m, creating a distinctive Building Base. The townhouse block and Building B are proposed to have windows, main building entrances, and front patios facing the internal private driveway.

The convenient building entrances, along with windows and doors opening directly onto the street provide “eyes on the street”, animating and visually connecting the public and private realm.

### **Parking and Servicing/Waste Storage Areas**

Parking spaces for residents are proposed through a surface parking lot and are hidden from public street view. The parking area is proposed to be well lit, avoiding any dark or hidden areas. Barrier free parking spaces are conveniently located close to building elevators and a pedestrian walkway is provided for safe access. Service and waste storage room are fully enclosed within the building, and waste pickup/loading areas located at the interior of the lot, hidden away from public view. Snow storage locations are provided within the parking area (Fig. 18), without hindering any parking spaces.

*Fig.28: Townhouse Block View*



*Fig.29: Building B Entrance View*





## 5.4 Built Form

### Height And Massing

**Building C:** Building C's design features a 5-storey mid-rise structure that thoughtfully respects the Main St. N. right-of-way and neighboring low-rise residential buildings. This is achieved by conforming to the 45-degree angular plane from Main St. N. Adhering to the angular plane ensures that the building's height and massing complement the surrounding context, avoid visual obtrusiveness, and maintain a harmonious relationship with neighboring structures and the overall environment. (Fig. 30).

The proposed 1-storey podium defines the building base and enforces pedestrian scale along Main St. N. The base of the building is further articulated through higher ground floor height with large glazing, recessed entrances, varying facade heights, and landscape areas. A 2.5 m step-back above the building base is provided to create architectural variety, provide transition and compatibility to the low-rise character of the neighbouring area and reduce the impact of height along Main St. N. The Building middle, containing dwelling units, is narrower than the building base and its centre is aligned with the building base. The building top is proposed with a sloping roof design, reflecting the surrounding roof lines, rural character of Hagersville, and creating a distinctive building top.

This composition of building massing creates a sense of symmetry and balance along Main St. N., emphasizing the downtown gateway location.

**Building A and B:** The proposed 6-storey mid-rise building form and height is contextually appropriate among the surrounding residential, commercial and industrial uses given the downtown location and the proposed landscaped setbacks and buffers from abutting low-rise residential and commercial uses. A northern setback of 11m and southern setback of 17m is proposed to provide buffer and ensure a smooth transition in building scale.

The ground floor is proposed with large floor to ceiling glazing, building

Fig.30: Building C massing breakdown



Fig.31: Building A massing breakdown





entrances, and projecting metal canopies, delineating the building base from rest of the building. The building middle is articulated with a rhythmic pattern of windows, recessed balconies, glass railings, and wrap-around corner windows, which breaks the massing and reduces the perceived length of the building. Building top is proposed with a flat room and is articulated with ornamental projections and parapet molding, creating a distinctive building top and an interesting roof line.

**Townhouse Block:** The two-storey townhouse block is proposed with a pitched roof and has a continuous roof projection along the top floor, defining the top of the building. The massing of the building is articulated by providing recessed garage entrances, varying roof projections, balconies, and breaking the building mass by providing various jogs in the building facade (Fig. 34). The placement of the two-storey townhouse block further softens the massing transition from the proposed mid-rise buildings to the low-rise residential to the north.

The overall development has been massed and articulated in an effort to create appropriate transition and reduce any impact resulting from the scale of the building. The proposed design fits harmoniously within the existing and planned built form along Main St. N. and Tuscarora St.

### Corridor Scale

A corridor scale is defined as the closer views contained by the width of

Fig.33: Building B massing breakdown

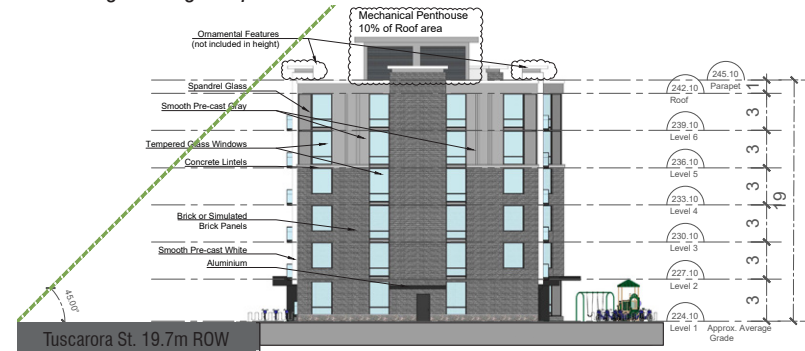


Fig.34: Townhouse Street View



Fig.35: 45 Degree Angular plane from Tuscarora St.

Fig.32: 45 Degree Angular plane from Main St. N.





a street right-of-way. The proposed building C and A meets the 45 deg. angular plane from the opposite side of the right-of-way width of Main St N. (24m ROW) and Tuscarora St. (19.7m ROW) respectively. The proposed development allows for a 1:1 street width-to-height ratio, and thus results in a compatible building height and massing along their respective corridors.

### Building Facade And Detailing

*Building C:* The overall building facade and detailing represents a neo-traditional mid-rise architecture style with a distinctive base, middle, and pitched roof top. Commercial unit entrances along main St. N. are recessed and framed with the use of stone masonry (or stone like) material. The main building entrances stands out from the commercial entrances with the use of a large metal canopy and black metal framing around the entrance. The rest of the base is articulated through the use of red brick veneer and smooth stone masonry, metal canopies, materials which are also found in the surrounding residential and commercial buildings, creating an anchored base and a facade that is compatible with the surrounding neighbourhood character.

An accent vertical stone band is proposed from second level to the building top, ending at the base of the proposed hip roof, emphasizing the building entrance and complementing the traditional architectural expression. The upper four storeys of the building are stepped back and are clad with a smooth pre-cast concrete, transparent and spandrel glass, creating a lighter top volume and a complimenting modern architectural expression. The step back, along with a change in materials, reduces the perceived impact of the height of the building. The proposed design establishes a strong street-wall presence (Fig. 30) at grade and minimizes the perceived height of the building, creating a human-scaled environment.

*Building A & B:* The overall buildings facade and detailing represents a modern mid-rise architecture style with a distinctive base, varying flat roof line, and a rhythmic pattern of windows and balconies. The building base and lower three floors are defined with brick veneers. Black brick veneer is

Fig.36: Building C Aerial View



Fig.37: Massing and detailing of Building B





proposed for building A, matching with the brick veneer of the townhouse block, and red brick veneer is proposed for building B, matching with the brick veneer of building C. The upper three floor are articulated through the use of smooth pre-cast concrete, transparent and spandrel glass, creating a lighter top volume and a complimenting modern architectural expression.

Large windows are provided throughout the building facade, leaving no blank wall and providing surveillance on public and private outdoor spaces.

*Townhouse Block:* The townhouse building is proposed to have similar facade treatment of black brick to tie in and create a consistent design language throughout the site. The upper floors are of the townhouses are clad with mix of siding, brick, and roof shingles to differentiate and create design variety.

## Materials

The choice of materials moves from heavy to light from the ground to the top floors. The proposed development incorporates high quality and durable building material which includes brick veneers, stone masonry, glass, exposed concrete, window wall and pre-cast accent brick panels. These materials are incorporated throughout the development design creating a overall cohesive design and avoiding any undesirable visual appearance.

## Amenity Areas

Common indoor amenity areas are proposed inside each of the apartment buildings, located either at-grade (building A/B) or adjacent to building elevator (building C), which provides easy and barrier free access to the residents and visitors. These areas are proposed to have access to washrooms, common seating, and large windows allowing natural light penetration and enhancing human comfort. Private patio space for ground floor units and balcony for upper floors are proposed for each unit and they are large enough to be a usable space and accommodate furniture.

Two outdoor amenity areas are proposed with programing for a tot lot and

Fig. 38: Landscaped common area between Building C and Townhouse block



Fig. 39: Landscaped common area between Building A and B





passive recreation with common seating areas, shade structures and lush landscaping. Approximately 2,978 sqm of at-grade outdoor amenity area is proposed and will be shared by the apartment and townhouse residents. An outdoor roof top amenity area is also proposed on top of the ground floor of building C. These areas are proposed to have soft and hard landscaping elements with trees and other shrub plantings. Further landscaping details will be discussed in the landscape plan. The proposal meets the required amenity space requirement as per the proposed R5 and CD zoning.

### **Rooftop Mechanical Equipment**

The area of the rooftop mechanical penthouse is proposed to be 10% of the roof area. The roof top mechanical equipment is setback from the top floor, incorporated into the building design, and will be screened from public view.

### **Lighting**

Adequate and high quality lighting is proposed to be provided at the recessed building entrances, parking and servicing areas, illuminating all areas of use. Further lighting details to be discussed at Site Plan stage.

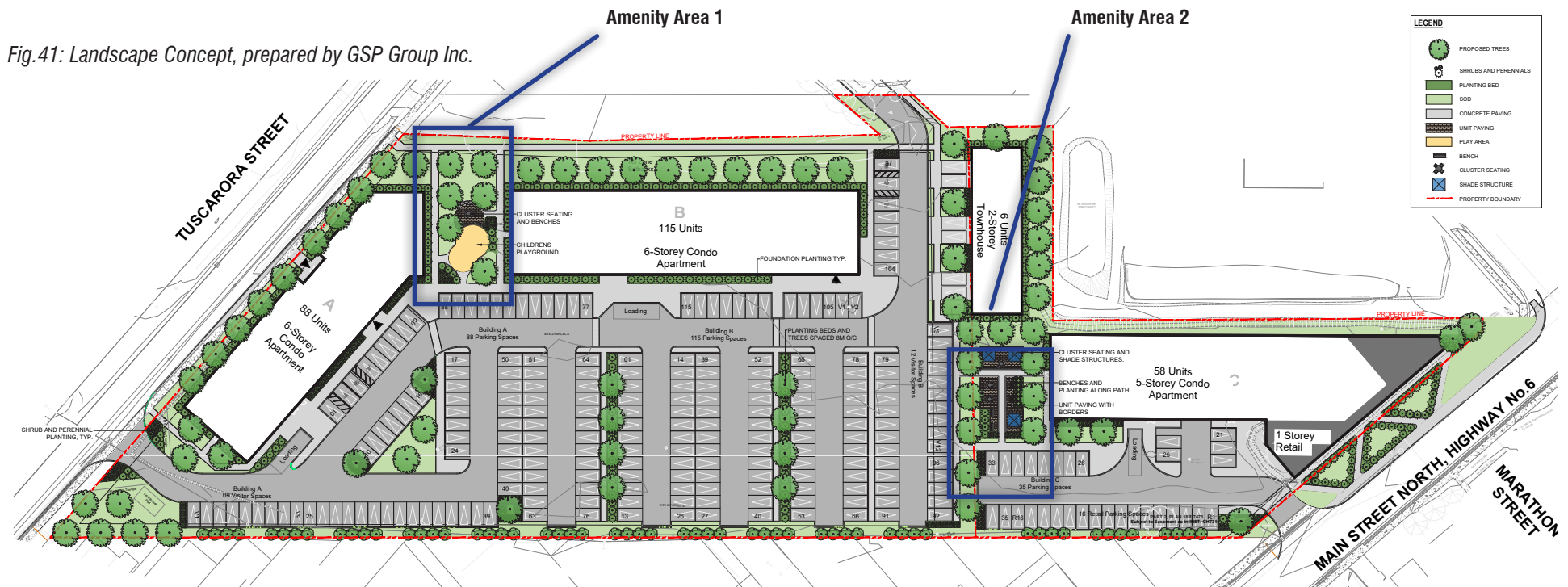
*Fig.40: Building C Rooftop amenity area*





## 5.5 Landscape Concept

The proposed landscape concept has been prepared by GSP group Inc. Tree planting is proposed along the property boundaries and in the parking area to provide a soft landscaped buffer. Two programmed outdoor amenity areas are proposed, one with a children’s playground and other with passive recreational activities. Amenity area 1 is located between building A and B and is programmed as a children’s play area. This area is proposed with cluster seating and benches for parents, deciduous trees for shading, setback from parking lot for safety, and can be accessed via public sidewalk on Tuscarora St. Amenity area 2 is located between townhouse block and building C and is programmed for passive recreation. This area is proposed to have cluster seating, opportunities for dining, shade structures, ornamental planting and deciduous trees for shade. Foundation planting is proposed along the base of buildings to enhance pedestrian experience. All the plantings are proposed to be native of nature and low maintenance. Further details of landscaping will be discussed at Site Plan stage.



### HAGERSVILLE SITE 1 & 2 LANDSCAPE CONCEPTUAL PLAN



0 5 10 15  
1:400 (m)

May 31, 2023 | Project No.: 22116





## 5.6 Potential Constraints, Impacts, and Mitigation

### Noise & Vibration

The Noise & Vibration Study prepared by dBA Acoustical Consultants Inc. notes that:

- Vibration is not a concern as the proposed development is in exceedance of 75m from the CN train tracks,
- Calculated road & rail noise levels do not exceed the MECP's 55 dBA criteria for outdoor amenity spaces and therefore mitigation to reduce outdoor noise levels for outdoor amenity area is not required.

Where the indoor noise level exceeded the MECP's 55 dBA criteria, the report recommends the following measures to mitigate noise impacts:

- Specific building components (eg. Walls, windows, doors, etc.) are required to be designed and constructed to ensure the required sound transmission class is achieved,
- It is recommended that all windows throughout all the proposed development have an STC-36 rating,
- Central Air Conditioning as recommended for all units, and
- 2.43m Noise Barrier for along the townhouse's rear yard property line

### Shadow

The Shadow Study prepared by GSP Group Inc. concludes that shadow impacts from the proposed development will have minimal shadow impact on neighbouring properties and public areas.

The Shadow Study indicates that the shadow analysis criteria as identified in the Haldimand County's Shadow Study Terms of Reference are satisfied. See appendix A for shadow impact diagrams.

## 5.7 Sustainable Design

At the broader city context scale, the Sites provides sustainability advantages owing to its location. It sits along a provincial highway, within Hagersville downtown area, and is surrounded by urban areas that contain workplaces, community and institutional uses, shops and restaurants. These destinations can be easily accessed by walking, cycling or transit, reducing reliance on automobile trips. Collectively these factors provide opportunities for car-free or car-reduced living and accompanying reductions of greenhouse gas emissions.

At site design scale, the proposed design provides several sustainability contributions. Approximately 37% landscaped area is provided and permeable paving will be considered at a later stage which can assist with storm-water management and reducing heat island impacts. Transportation Demand Management (TDM) measures like, provision of short-term and long-term bicycle parking, unbundling parking from the cost of a unit, and TDM education/promotion will be considered at the Site Plan stage which will assist in reducing reliance on driving.

At the building design scale, the proposed design has a high solid-to-glazing ratio which helps in reducing the energy requirements for heating and cooling. The east-west orientation of the buildings will allow for more natural sun light to penetrate building interiors, reducing the requirements for artificial lighting. Sustainable construction and building operation will be explored at the time of more detailed design, including considerations of energy efficient building envelopes, off-site pre-cast construction, cladding materials, window design, and roof design.



## 6. SUMMARY

The proposed development is an appropriate expression of a mid-rise building form that is compatible with the surrounding built form context and is generally in keeping with the urban design principles of the Haldimand Official Plan, Haldimand Streetscape Plan and Urban Design Guidelines and the Hagersville Streetscape Plan.

In summary, the proposed development incorporates the following:

- Active street frontage with large glazing, including windows and doors opening onto the street to provide “eyes on the street”, animating and visually connecting the public and private realm;
- Clearly visible and barrier-free at-grade entrance from public streets and pedestrian connectivity from Main St. N. to Tuscarora St. and Foundry St.;
- Appropriate building setbacks and landscaped side yards providing transition and buffer to abutting low-rise residential and commercial uses;
- A 2.3 m front setback along Main St. N. and at grade commercial uses along the front façade to frame the street and activate the street frontage;
- Conveniently located bike parking and direct access to public sidewalk;
- The building C along Main St. N. features 2.5 m upper floor step-back and ground floor articulation in an effort to tie into the Main St. commercial character and create a pedestrian friendly enclosure along the street;
- The buildings facade incorporates building materials which are compatible with the surrounding context;
- At grade programmed outdoor amenity areas, roof top amenity area, ground floor patios, and balconies are provided;
- Parking /loading areas are integrated into the side/rear of the building and are screened from public view;
- The mechanical penthouse are set back from the building facade and will

be screened from public view;

- The buildings meet the 45 degree angular plane Main St. N. and Tuscarora St.;
- The building massing above the base is articulated, reducing the perceived length and mass of the upper floors; and
- Waste management / service areas are contained in enclosed rooms and are hidden from public view.

In our opinion, the proposed development addresses the relevant urban design guidelines and represents a good design.

Respectfully submitted,



**Kshitiz Jaswal**, Urban Designer

M. Plan, M. Arch, OAA (candidate), OPPI (candidate)





# APPENDIX A

## Shadow Study





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### Shadow Study

Main St. N. and Tuscarora St.,  
Hagersville,  
Haldimand County, ON

Prepared for:  
Dabirian Homes Inc.  
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M5J 2G2

Prepared by:  
GSP Group Inc.  
162 Locke Street South,  
Suite 200  
Hamilton, ON  
L9P 4A9

July, 2023  
Project No. 22116A





## Purpose

The following Sun Shadow Study has been prepared by GSP Group Inc. in support of the Zoning By-law Amendment application to facilitate the redevelopment on the lands on Main St. N. and Tuscarora St. in Hagersville (referred to as "the Site").

The Site is located at south west corner of Main St. N. and Railway St., within the Downtown Hagersville. The Site has a frontage of  $\pm 75$  m along Main St. N., and  $\pm 125$  m along Tuscarora St., with a total Site area of  $\pm 2,1881$  sq m ( $\pm 5.4$  acre or 2.1 Hectare).

The proposed development is divided into parts, site 1, which fronts on Main St. N., and site 2, which fronts Tuscarora St. Site 1 comprises of a 5-storey mixed-use apartment along Main St. N., and a block of 2-storey townhouses containing 6 units. Site 2 contains two 6-storey apartment buildings along Tuscarora St. The maximum building height, excluding the mechanical penthouse, is approximately 19 m.

As per the County's Shadow Study Terms of Reference:

*"A shadow study may be required to accompany a Zoning By-law Amendment application or a Site Plan Application for a development proposal that may adversely impact its surroundings by casting prolonged shadows on adjacent streets, parks, residences, commercial uses, among others. A shadow study is mandatory for any structure 4 storeys and higher, where abutting a residential use."*

Although commercial uses abut the east and south property, as well as industrial uses to the north and northwest, there are residential uses north of the site and along Foundry Street, Tuscarora Street, and Railway Street. The purpose of this Shadow Study is to assess and demonstrate how the proposed development will cast shadows on the surrounding urban context and discuss the mitigation strategies, if required, for any undue shadow impact.

The as-of-right condition, based on the Haldimand County Comprehensive Zoning By-law HC 1-2020 and site specific holding provisions for site 1(CD(H)) and site 2 (CG(H)), permits a maximum height of 4-6 storey on site 1, and a retirement home with maximum height of 13m on site 2.

## Analysis Method - Technical Criteria

Following the County's Shadow Study Terms of Reference, the analysis is based on the following:

Dates and times

- Spring Equinox, March 21st: 9 am, 11 am, 1 pm, 3 pm, 5 pm, and 7 pm

- Fall Equinox, September 21st: 9 am, 11 am, 1 pm, 3 pm, 5 pm, and 7 pm

- Summer, June 21st: 9 am, 11 am, 1 pm, 3 pm, 5 pm, and 7 pm

- Winter, December 21st: 11 am, 1 pm, and 3 pm

Time Zone - Eastern

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

Geographical Coordinates

- Latitude: N 42 degrees 57'49"
- Longitude: W 80 degrees 03'74"

Astronomic True North was determined through accurately geo-locating the building model in the SketchUp application. The 3D model of the proposed building was prepared by GSP Group Inc. and the base map for surrounding context was created using Google Earth.

The shadow analysis incorporates following simulated conditions:

1. The current condition of existing shadows, shaded in the colour gray.
2. The proposed condition based on the 5-6 storey (16-19 m) buildings. The net new shadow (new shadow minus the existing shadow) is shaded in a light blue in the shadow analysis diagrams.



## Assessment Criteria and Analysis - Impact

The County's Shadow Study Terms of Reference include Impact Criteria and considerations analysis as follows:

- A:** There are 5 consecutive hours of full sunlight between the test hours in March, June and September.
- B:** Shadows are not cast on more than 50% of outdoor amenities, including school yards, parks, children's play areas and amenities associated with commercial and employment areas (throughout the seasons).
- C:** Shadows are not cast on the opposite sidewalk during the spring and fall.

### Quantification & Assessment

#### **Main St. N.:**

With the application of step-backs and building orientation, the proposed development successfully mitigates any undue shadow impact and will allow more than of 5 consecutive hours of sun coverage (pg. 5, 12, & pg. 19) between 9am and 7pm on public sidewalks, and public and private outdoor amenity spaces such as patios, sitting areas, and other similar programs.

The late evening shadows from the proposed development fall on the opposite sidewalk of Main St. N., similar to other 1-2 storey commercial buildings along Main St. N. (pg.6). However, the street still receives over 8 hours of sunlight throughout the day, so the shadows have minimal impact.

#### **Tuscarora St.:**

The proposed development allows more than of 5 consecutive hours of sun coverage along Tuscarora St. sidewalk and public and private outdoor amenity spaces such as patios, sitting areas, and other similar programs.

In the early morning, shadows from the proposed development do fall on the sidewalk across from Tuscarora St., similar to the two-storey detached residential buildings along Tuscarora St. (pg.18) However, the street still receives over 6 hours of sunlight throughout the day, so the shadows have minimal impact.

#### **Properties along north property boundary:**

Most of the shadows from the 5-storey building along Main St. are casted on the parking area of adjacent commercial property (Tim Hortons), and thus has minimal shadow impact.

Shadows from the 6-storey buildings are casted on the rear yards of commercial zoned properties abutting the Site's northern property boundary. With the application of building setback, the proposed development allows for at least 5 hours of sunlight on more than 50 % of rear yard of these properties during spring, fall and summer months. However, during winter months, given our geographical location, avoiding casting any shadows onto the north side of the Site would be difficult to achieve and moreover, an as-of-right building would have resulted in similar shadow impact.

Minimal shadow impact from the proposed development is observed on the residential zoned areas along Foundry St.

## Conclusions

This assessment of the proposed development proves to meet the intent of shadow study criteria as outlined in the County's shadow study terms of reference. With the application of sleek massing, building setbacks, and orientation, the proposed building design results in acceptable shadow impacts pursuant to the shadow study criteria.

Respectfully submitted,



**Kshitiz Jaswal**, Urban Designer

M.Plan, M.Arch, OAA (candidate), OPPI (candidate)



**SPRING EQUINOX - MARCH 21ST**

Shadow Interval (County's shadow impact criteria)

09:00 am, 11:00 am, 01:00 pm, 03:00 pm, 05:00 pm, 07:00 pm

Sunlight Hours | Between 9am to 7pm



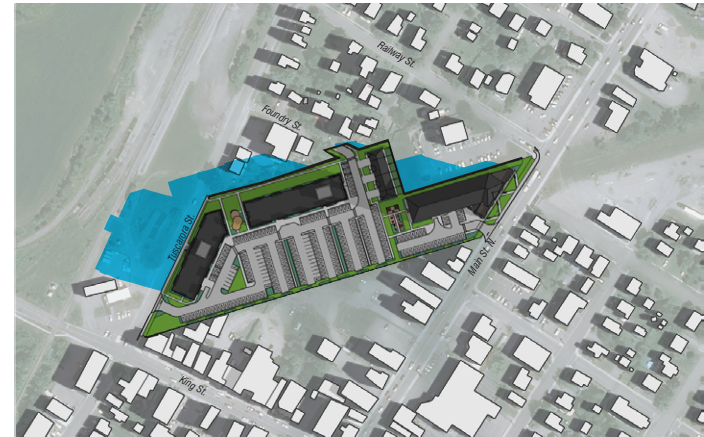
**MARCH, 21**

09:00 am

Existing Condition (Vacant Lot)



Proposed Condition





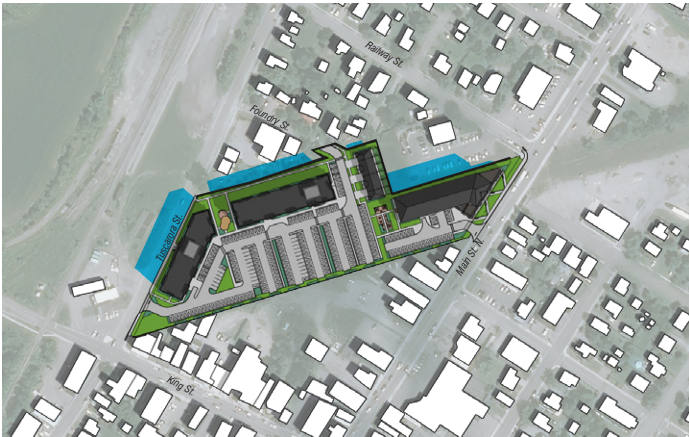
MARCH, 21

11:00 am

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow      Property Boundary  
Net New Shadow (new shadow minus the existing shadow)



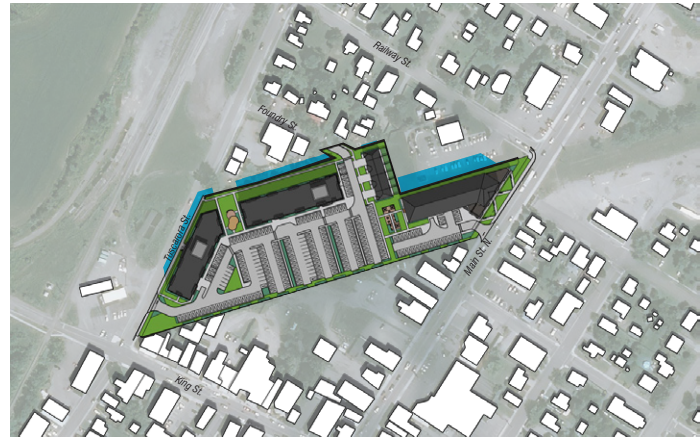
MARCH, 21

01:00 pm

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow      Property Boundary  
Net New Shadow (new shadow minus the existing shadow)

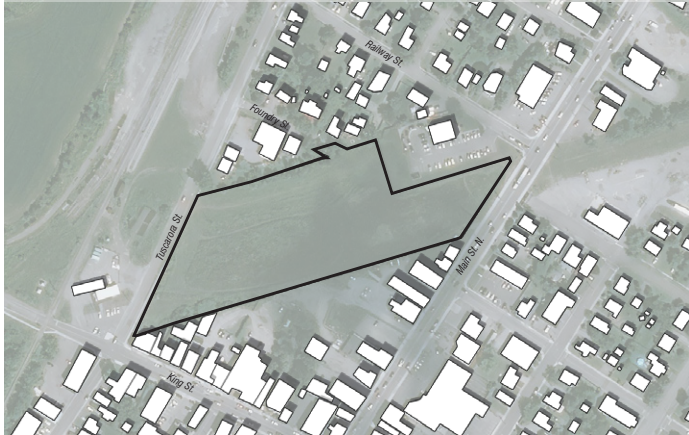




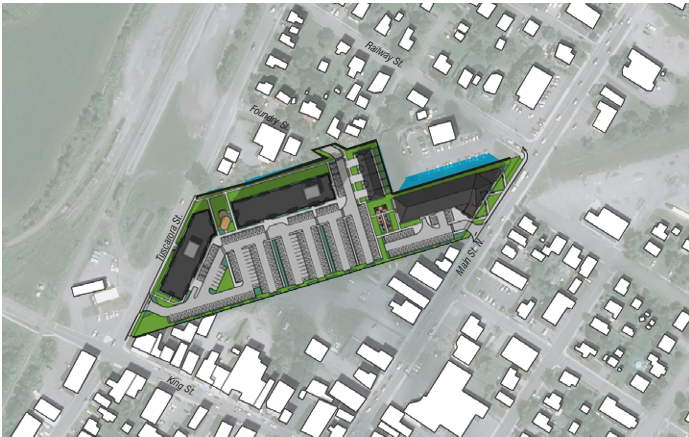
MARCH, 21

03:00 pm

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow    Property Boundary  
Net New Shadow (new shadow minus the existing shadow)



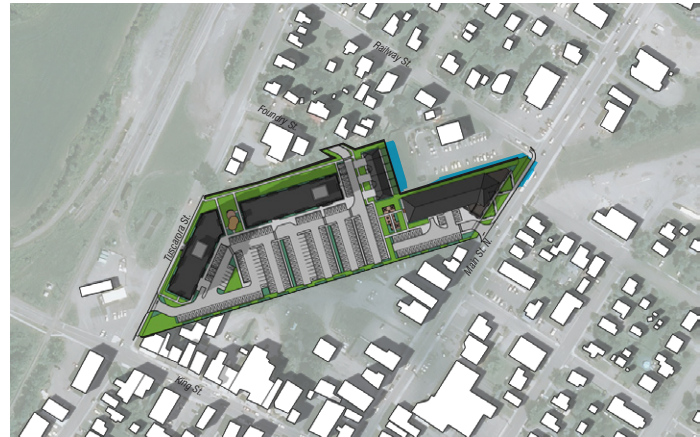
MARCH, 21

05:00 pm

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow    Property Boundary  
Net New Shadow (new shadow minus the existing shadow)





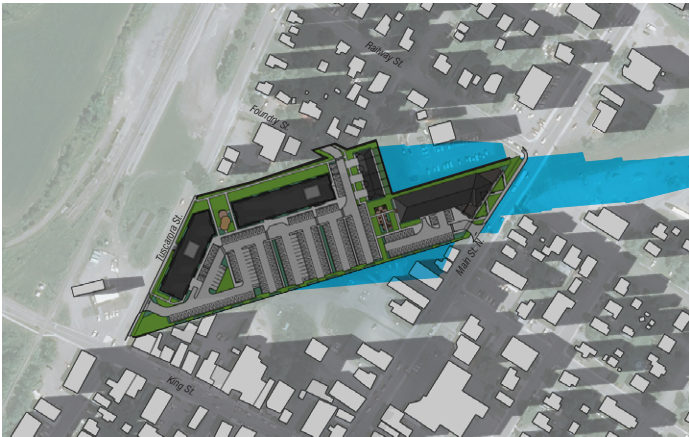
**MARCH, 21**

**07:00 pm | Sunset**

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow
  Property Boundary  
 Net New Shadow (new shadow minus the existing shadow)



**FALL EQUINOX - SEPTEMBER 21ST**

Shadow Interval (County's shadow impact criteria)

09:00 am, 11:00 am, 01:00 pm, 03:00 pm, 05:00 pm, 07:00 pm

Sunlight Hours | Between 9am to 7pm



9 - 8 Hour
  5 - 4 Hour
  2 - 1 Hour  
 7 - 6 Hour
  3 - 2 Hour
  Less than 1 Hour



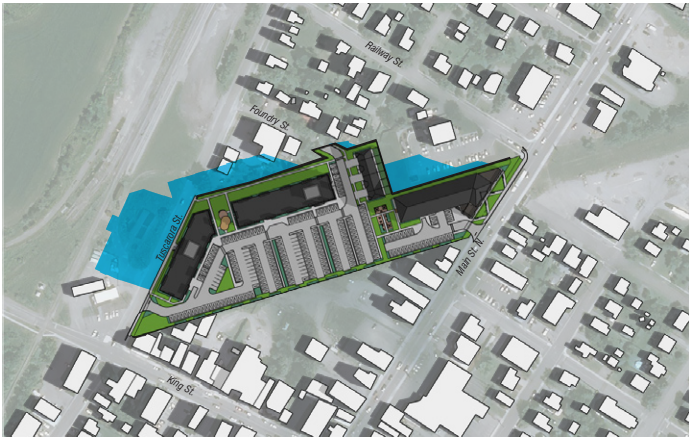
SEPTEMBER, 21

09:00 am

Existing Condition (Vacant Lot)



Proposed Condition



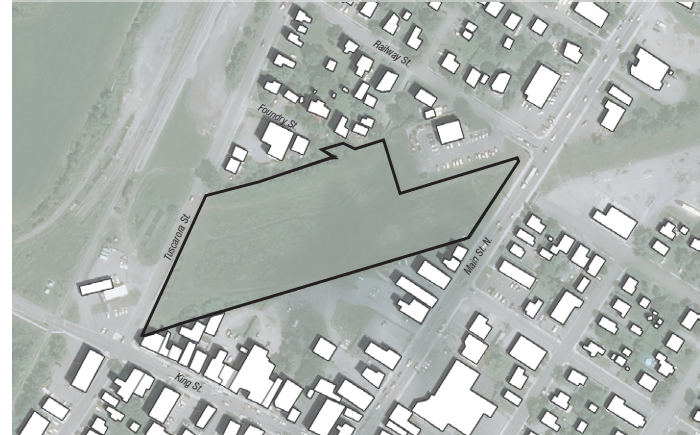
Existing Shadow      Property Boundary  
Net New Shadow (new shadow minus the existing shadow)



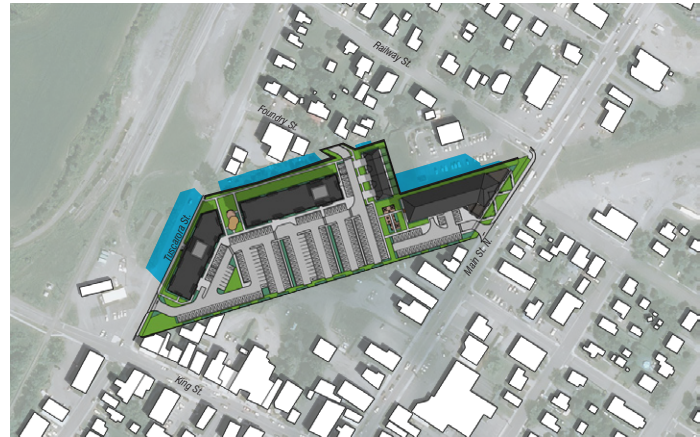
SEPTEMBER, 21

11:00 am

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow      Property Boundary  
Net New Shadow (new shadow minus the existing shadow)

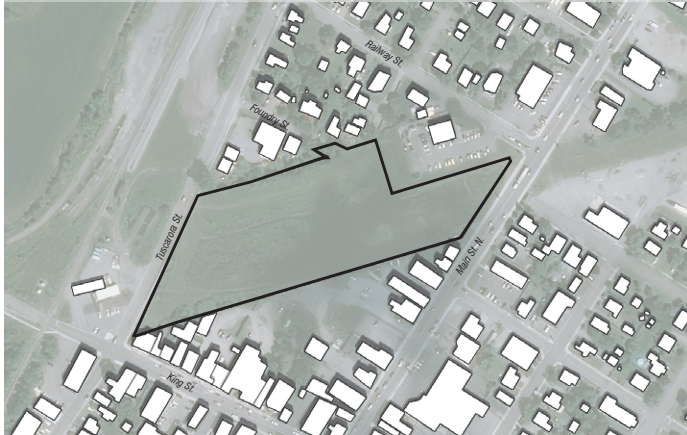




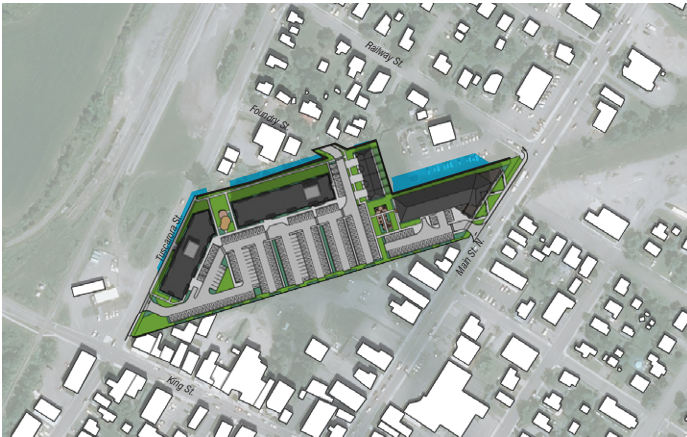
SEPTMBER, 21

01:00 pm

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow    Property Boundary  
Net New Shadow (new shadow minus the existing shadow)



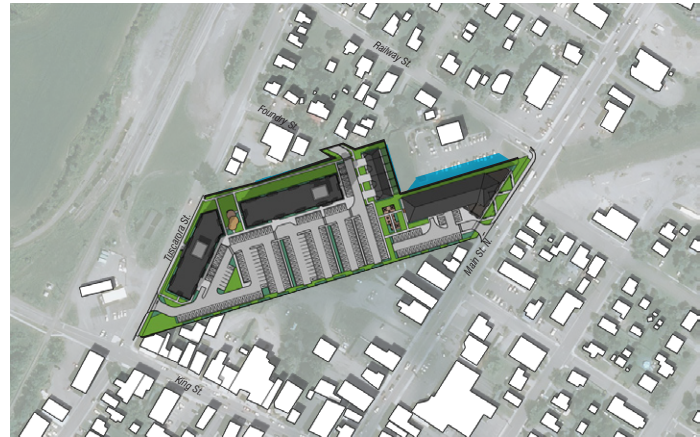
SEPTMBER, 21

03:00 pm

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow    Property Boundary  
Net New Shadow (new shadow minus the existing shadow)





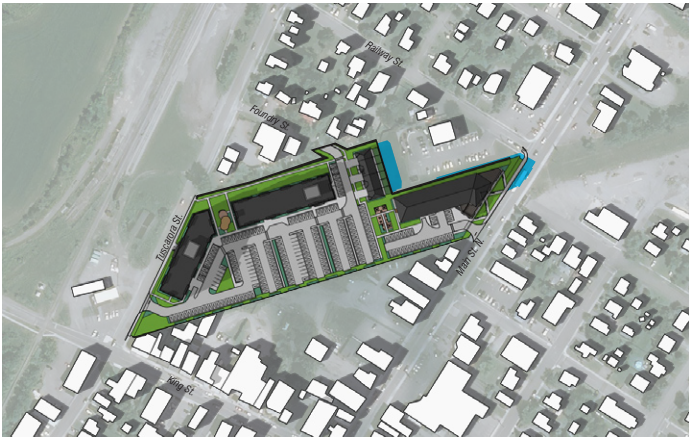
SEPTEMBER, 21

05:00 pm

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow    Property Boundary  
Net New Shadow (new shadow minus the existing shadow)



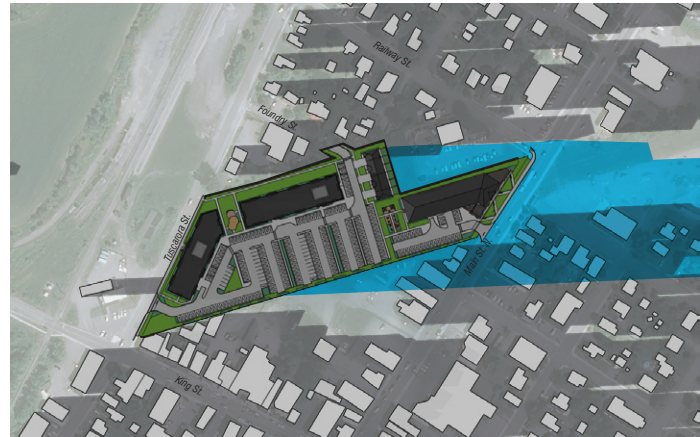
SEPTEMBER, 21

07:00 pm | Sunset

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow    Property Boundary  
Net New Shadow (new shadow minus the existing shadow)





**SUMMER - JUNE 21ST**

Shadow Interval (County's shadow impact criteria)

09:00 am, 11:00 am, 01:00 pm, 03:00 pm, 05:00 pm, 07:00 pm

Sunlight Hours | Between 9am to 7pm



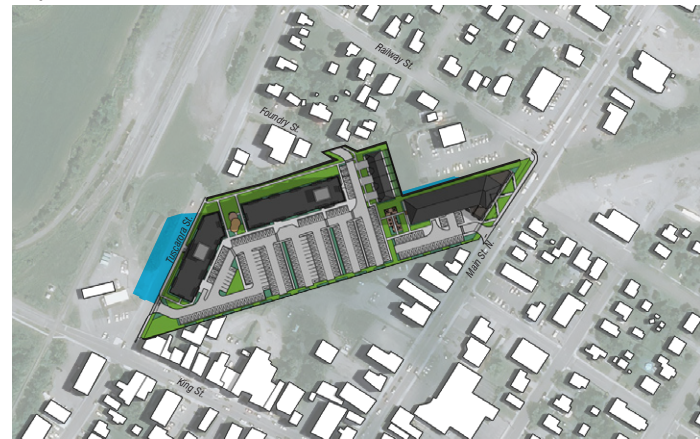
**JUNE, 21**

09:00 am

Existing Condition (Vacant Lot)



Proposed Condition





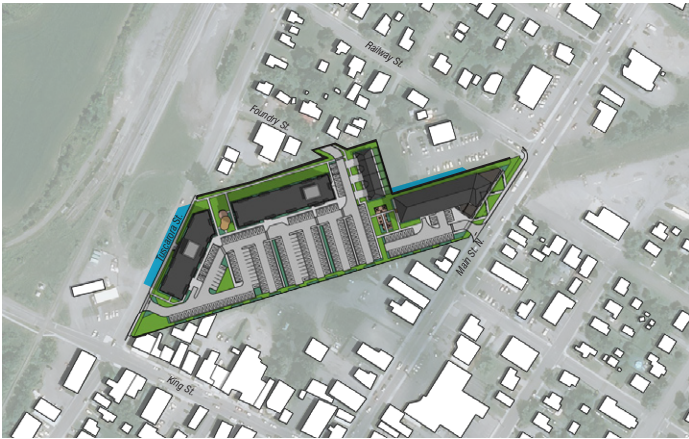
JUNE, 21

11:00 am

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow
  Property Boundary  
 Net New Shadow (new shadow minus the existing shadow)



JUNE, 21

01:00 pm

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow
  Property Boundary  
 Net New Shadow (new shadow minus the existing shadow)





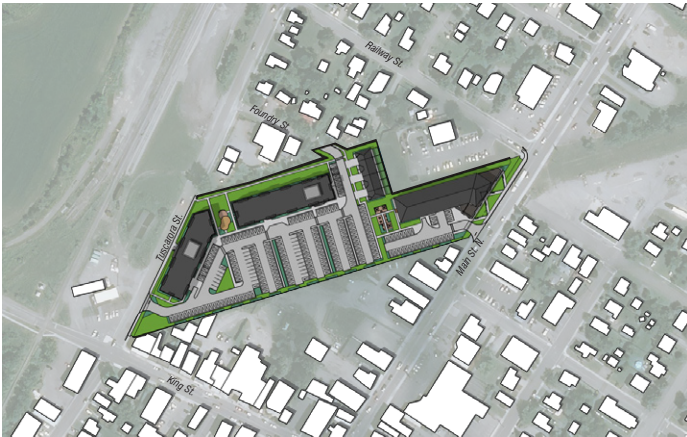
JUNE, 21

03:00 pm

Existing Condition (Vacant Lot)



Proposed Condition



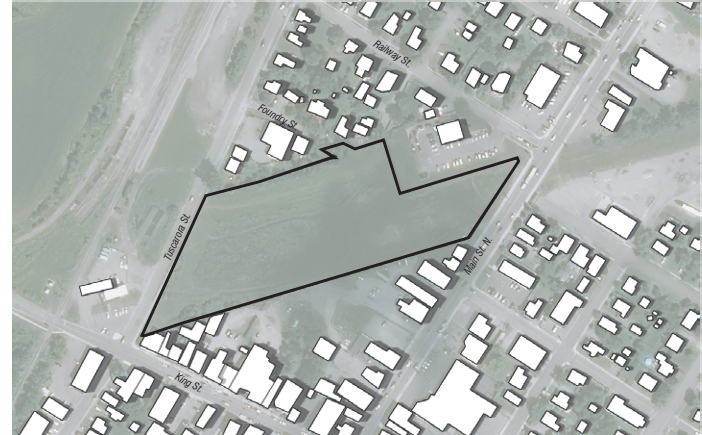
Existing Shadow
  Property Boundary  
 Net New Shadow (new shadow minus the existing shadow)



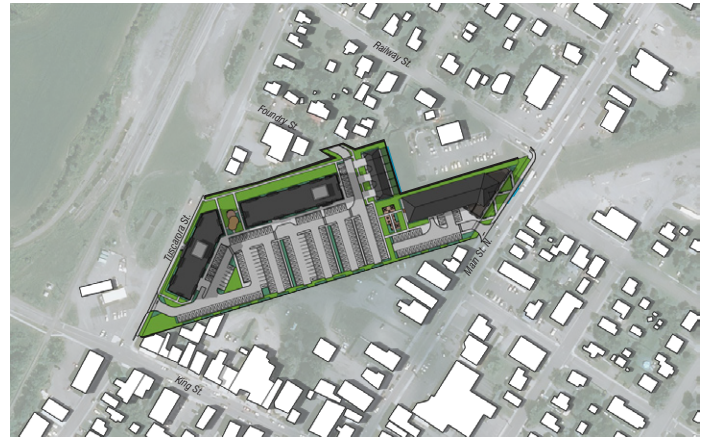
JUNE, 21

05:00 pm

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow
  Property Boundary  
 Net New Shadow (new shadow minus the existing shadow)



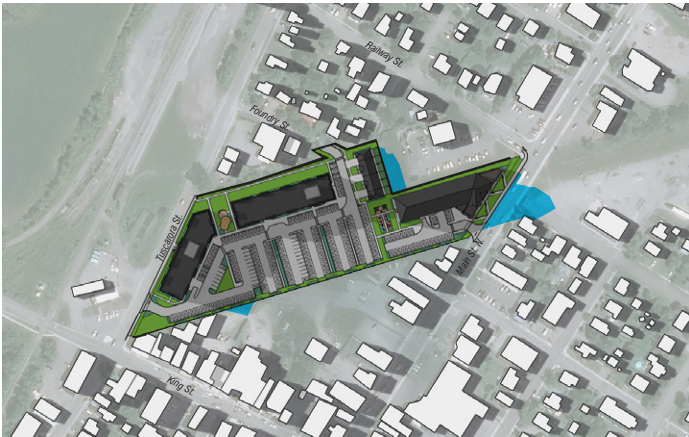
**JUNE, 21**

**07:00 pm**

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow      Property Boundary  
Net New Shadow (new shadow minus the existing shadow)



**WINTER - DECEMBER 21ST**

Shadow Interval (County's shadow impact criteria)

11:00 am, 01:00 pm, 03:00 pm

Sunlight Hours | Between 11am to 3pm





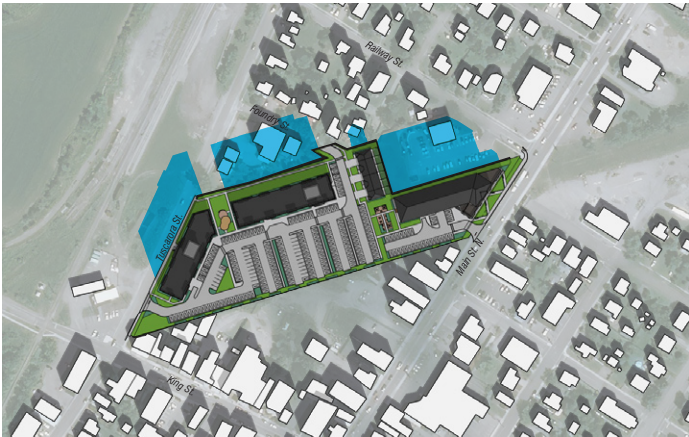
DECEMBER, 21

11:00 am

Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow      Property Boundary  
 Net New Shadow (new shadow minus the existing shadow)



DECEMBER, 21

01:00 pm

Existing Condition (Vacant Lot)



Proposed Condition



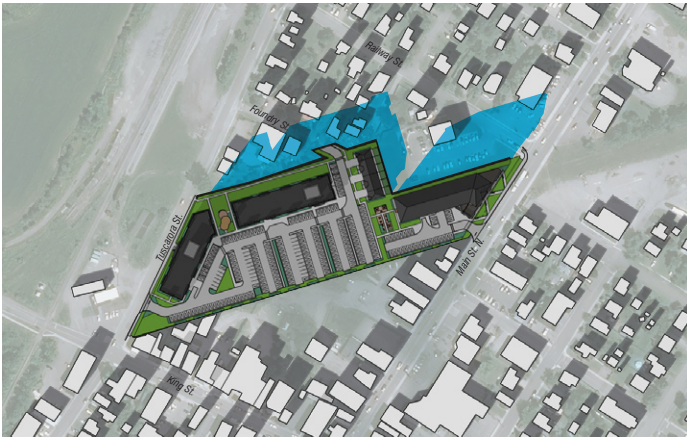
Existing Shadow      Property Boundary  
 Net New Shadow (new shadow minus the existing shadow)



Existing Condition (Vacant Lot)



Proposed Condition



Existing Shadow     — Property Boundary  
 Net New Shadow (new shadow minus the existing shadow)



REFERENCES

- 1) Haldimand County Shadow Study Terms Of Reference
- 2) Sun rise and sun set times for the Town of Hagersville, timeanddate.com (<https://www.timeanddate.com/sun/canada/haldimand?month=9&year=2023>)
- 3) Base map, building location and height: Google earth.



