

BrookMcIlroy/

Memorandum

To: Rosa Bustamante, Manager of Policy Planning, Mobility Hubs, City of Burlington

From: Brook McIlroy Incorporated, N. Barry Lyon Consultants, Dillon Consulting Limited, Amec Foster Wheeler and ASI Heritage Consultants,

Project Name: Burlington Mobility Hubs

Date: November 9, 2017

Subject: Aldershot GO Mobility Hub Technical Memo

Introduction:

The Aldershot GO Mobility Hub Study Area is generally defined as being bounded by Highway 403 to the northwest, Plains Road to the southeast, Daryl Drive to the southwest, and just northeast of Gallagher Road. The size of the study area is approximately 129 hectares. The following memo provides a summary of the key findings, status and next steps for the Aldershot GO Mobility Hub related to projected densities, market analysis, environmental impact study, stormwater management, water / wastewater, archaeological resources and cultural heritage resources.

Projected Density:

Density calculations for the hub are based on full build out of the Preferred Land Use and Building Height Plans (see images following this section of the memo) as well as recommended residential and office distribution identified in NBLC's Market Analysis, input from the above-mentioned disciplines, and factors such as property depth, underground parking and required floorplates based on setbacks, stepbacks and other direction from the City's Tall Building Design Guidelines. As well, in the absence of formal City design guidelines for mid-rise buildings we have adopted principles from the City of Toronto's Avenues and Mid-Rise Buildings Study to which proposed development adheres.

The purpose of these projections is to identify that the preferred concept for Aldershot is capable of meeting and exceeding the minimum projected density target of 300 people and jobs per hectare identified for mobility hubs within Burlington and to identify the targeted ratio of population to jobs.

Please note that GFA calculations are Order of Magnitude and will be subject to refinement following completion of the Storm Water Management Assessment.

Assumptions:

The following assumptions have been used as inputs to derive the desired calculations:

1. Average Gross Residential Unit Size = 93 square metres per unit;
2. Population Per Unit = 1.8 persons per unit;

3. GFA Per Employee (Office – Commercial/Institutional) = 30.2 square metres per person
4. GFA Per Employee (Big Box Commercial/Retail) = 72.8 square metres per person
5. GFA Per Employee (Street Oriented Commercial/Retail) = 38.9 square metres per person; and
6. GFA Per Employee (Industrial) = 74.3 square metres per person.

GFA per employee assumptions are based on Watson's 2016-2031 Non-Residential Growth Forecast by Fiscal Impact Study Development Type from their April 20, 2017 City of Burlington Fiscal Impact Study.

Retail and Office Distribution Assumptions for Mixed-Use Areas:

- Properties fronting Plains Road and adjacent to the Station Area include 60 percent ground floor GFA identified for potential retail use;
- Properties fronting Waterdown Road and the property between HWY 403 and the Station Area consist of 50 percent office and 50 percent residential uses (see image three following this section of the memo);
- Properties fronting Masonry Road include 40 percent ground floor GFA identified for potential retail use;
- Remaining mixed-use areas include 20 percent ground floor GFA identified for potential retail use;
- Tallest and Tall blocks within mixed-use areas include an office to retail GFA ratio of 3 to 1;
- Mid-rise blocks (7-11 storeys) within mixed-use areas include an office to retail GFA ratio of 2 to 1; and
- Mid-rise blocks (4-6 storeys) within mixed-use areas include an office to retail GFA ratio of 1:1.

Conclusions:

Based on the above assumptions projected total new GFA for the Aldershot GO Mobility Hub at full build out is approximately 1,774,000 square metres or 19,100,000 square feet.

This includes:

- 1,400,000 square metres (15,100,000 square feet) of residential GFA;
- 89,900 square metres (970,000 square feet) of retail GFA; and
- 278,000 square metres (3,000,000 square feet) of office space.

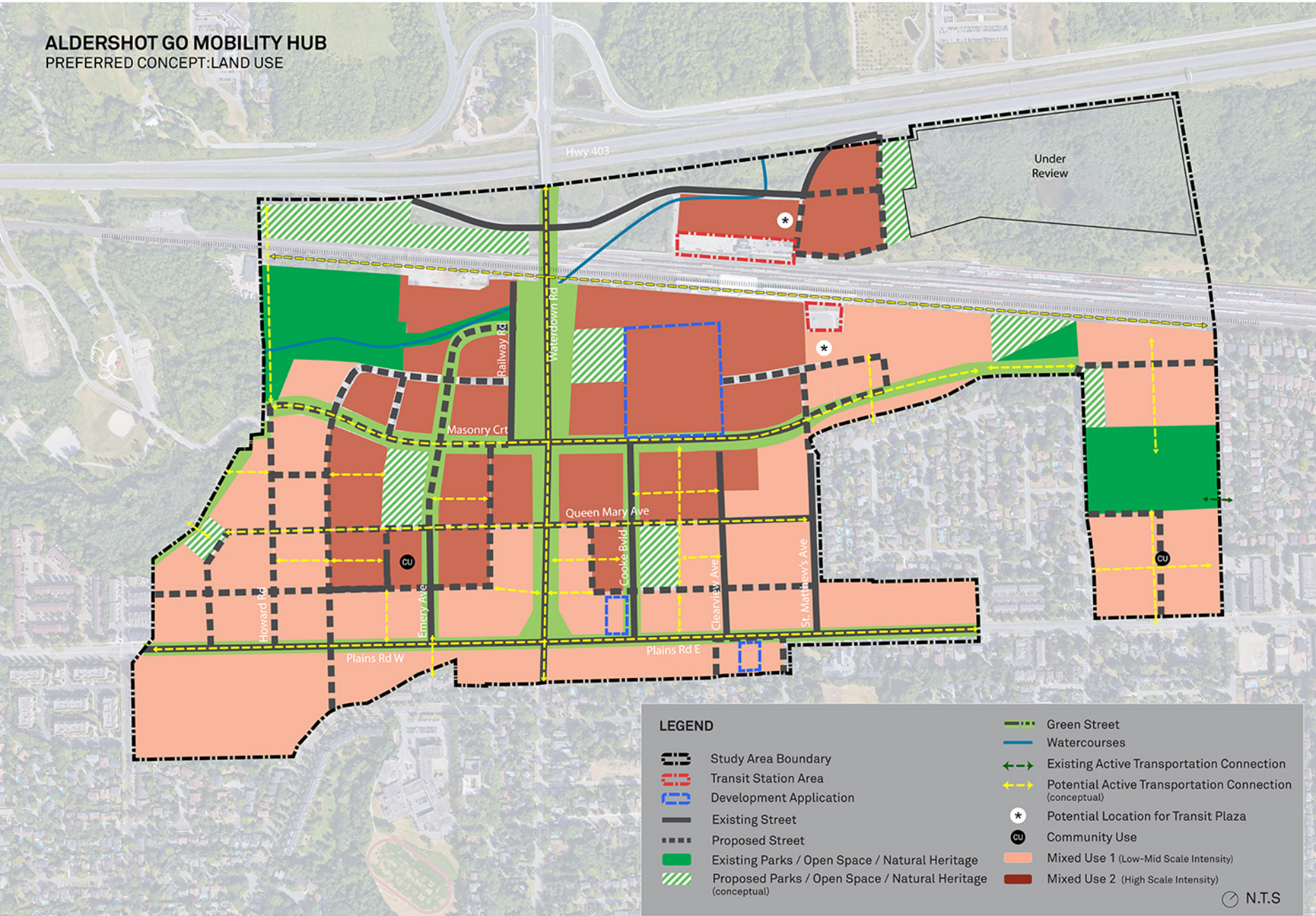
Resulting in approximately:

- 15,100 new residential units;
- 27,200 new residents;
- 2300 retail jobs; and

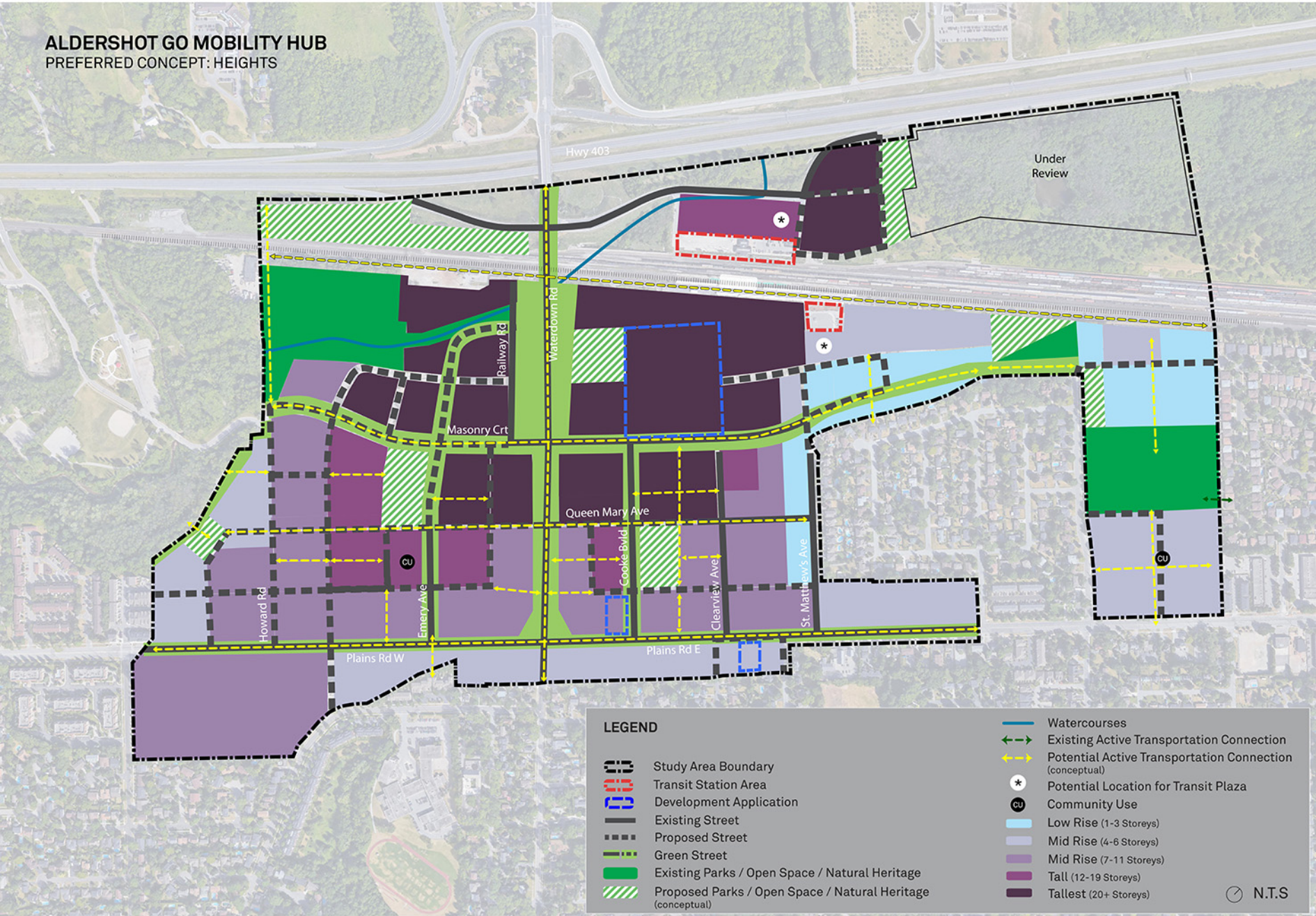
- 9300 office jobs.

Therefore, at full build out the Aldershot GO Mobility Hub is projected to have capacity for 27,200 new people and 11,600 new jobs or a total of 38,800 people and jobs and a gross density of 301 people and jobs per hectare. This results in a population to employment ratio of 2.3:1.

ALDERSHOT GO MOBILITY HUB
PREFERRED CONCEPT: LAND USE



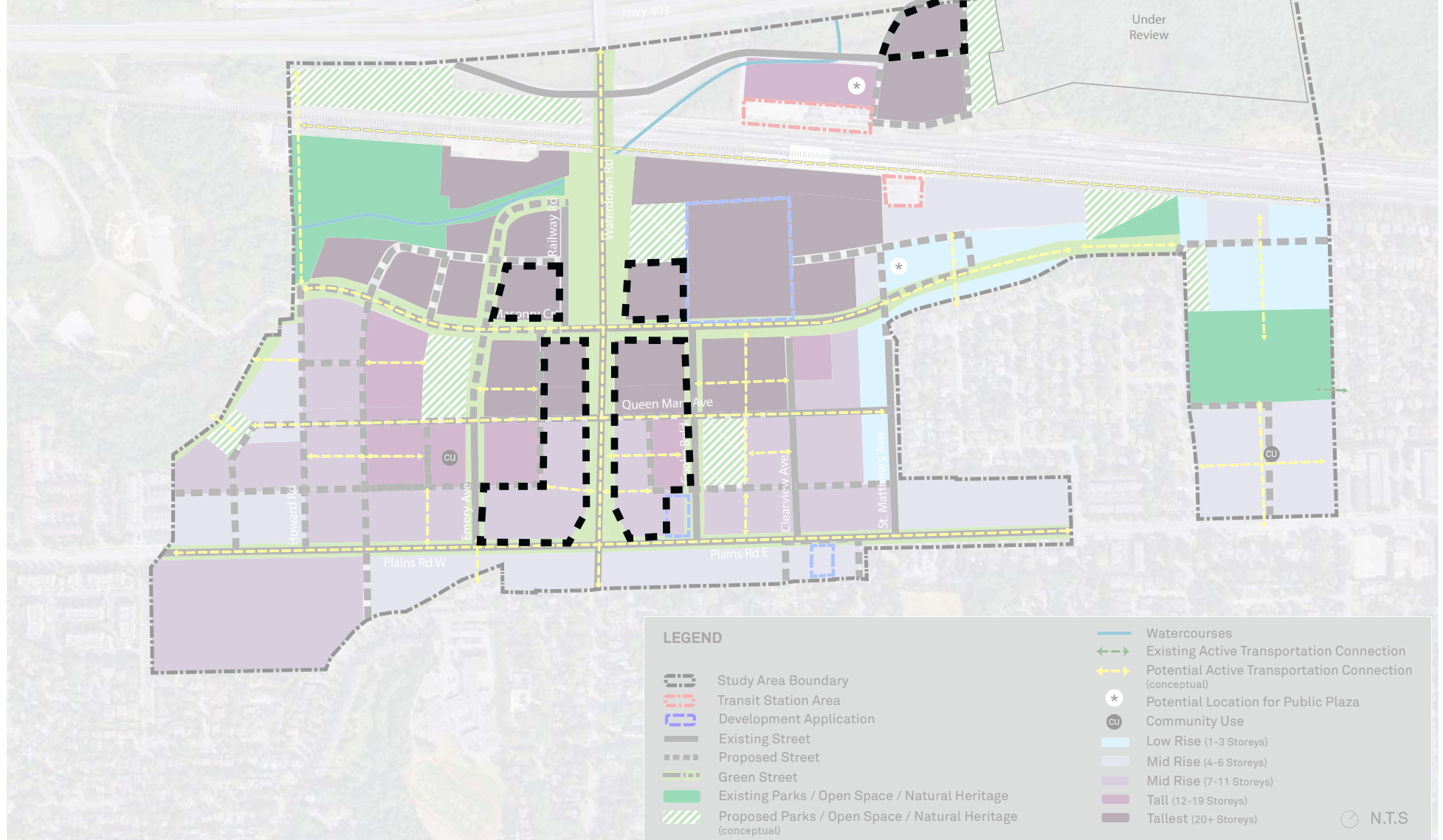
ALDERSHOT GO MOBILITY HUB
PREFERRED CONCEPT: HEIGHTS



ALDRSHOT GO MOBILITY HUB PREFERRED CONCEPT: HEIGHTS

Image 3 illustrates assumptions as noted on page 2

"Retail and Office Distribution Assumptions for Mixed-Use Areas"



Market Analysis:

- Aldershot is already an established destination for residential uses in Burlington. Further development of the Mobility Hub area will only expand the mix of uses and retail options, increasing the appeal of the area to a wide range of Burlington residents.
- There have already been several residential developments – including high and low-density product types, both condominium and rental tenure – that have been completed over the past decade.
- As the area continues to evolve in the coming years, new mixed-use developments should be built to the street edge. This has already begun with the construction of new condominium apartment buildings and live-work townhouse units along Plains Road. Future developments will need to continue to contribute to the evolving sense of place, continue the area's transition to a more urban transit supportive setting, improve the pedestrian realm, and further support the creation of a strong retail destination within the area.
- In the near term, mixed-use development should be prioritized if possible around the Plains Road and Waterdown Road intersection to create an intensified node for the Aldershot GO Mobility Hub. The intensification of this intersection has already begun with the construction of LaSalle Park Retirement Community, Seasons Condominiums, and the proposal for Breeze Condominiums.
- Additional opportunities for new high-density mixed-use development along Plains Road further east and west of Waterdown Road may also exist, particularly along the north side of the corridor where a number of low-intensity commercial uses currently exist. A diverse mix of housing types should be encouraged where possible.
- Similar to the Burlington GO Mobility Hub area, pricing for new residential units in the Aldershot GO Mobility Hub area is likely to be discounted relative to the Downtown.
- Based on existing land use designations in the Aldershot GO Mobility Hub Area, mixed-use residential development is unlikely to occur away from Plains Road in any significant capacity without an amendment to the City of Burlington's Official Plan with respect to employment lands.
- The areas away from Plains Road may provide an opportunity to develop new commercial space as demand emerges from an increasing local population. In particular, there could be an opportunity for new service and retail commercial space, specifically a new supermarket that is lacking not only in the Mobility Hub area, but in the wider Aldershot neighbourhood as well.
- As in other parts of Burlington, standalone office space is likely to be a challenge without incentives. The two non-residential development applications on the edge of the Mobility Hub area could also pose a competition issue for any new office uses in the Mobility Hub area in the near to mid-term if they are constructed. For the time being, new office space is likely best suited to be included in mixed-use developments.

- Overall, the market outlook for the Aldershot area is positive. New development should build upon the area's existing reputation and location as a destination for residential units. Additional opportunities also exist to expand the non-residential space in the area and to make the area an alternative retail destination to the Downtown.

Environmental Impact Study:

Results of background review

- Study Area is within the Grindstone Creek Watershed.
- Grindstone Creek dissects the Study Area, running approximately north-south, and a small section of Falcon Creek in the north-east corner of the Study Area.
- Natural features identified during the background review consisted of:
 - Five Woodlands.
 - Major Valley System Tributary (Grindstone Creek).
 - One Unevaluated Wetland.
 - No Provincial Significant Wetlands.
 - No ANSI.
 - The 2016 EIA undertaken by the City in association with 1200 King Road (for the area north of the tracks and south of the highway within the Aldershot Hub) has not yet been made available for review. As a result, the above information may be revised pending the results from the City EIA; particularly the Provincial Significant Wetland designation.
- A total of 36 species at risk (SAR) have the potential to occur within the overall Study Area.
- Grindstone Creek is the smallest of Conservation Halton's major watersheds.
- The watershed is approximately 99 square kilometres in size and conveys about 14% of the natural water that flows into Hamilton Harbour.
- As part of Conservation Halton's Long-term Environmental Monitoring Plan, results from 2012 fishing yielded a total of 18 different species of fish and a total of 876 individual fish caught.

Results of field investigations

- The following natural vegetation ecological communities were documented within the Study Area during the ecological land classification survey;
 - FODM4-5: Dry-Fresh Manitoba Maple Deciduous Forest Type.
 - FODM5-3: Dry – Fresh Sugar Maple – Oak Deciduous Forest Type.
 - FODM7: Fresh – Moist Lowland Deciduous Forest Ecosite.
 - MAMM1-2: Cattail Graminoid Mineral Meadow Marsh Type.
 - FODM8-1: Fresh – Moist Poplar Deciduous Forest Type.
 - MEMM4/THDM2: Fresh - Moist Mixed Meadow Ecosite/ Dry - Fresh Deciduous Shrub Thicket Ecosite.
- Grindstone Creek was characterized as permanent, coldwater defined channel providing direct fish habitat;
 - Banks were observed as unstable to eroding throughout the Study Area.
- Two woodlands located at the north-east and south-east property boundaries within the Study Area are greater than 0.50 ha and are within 50 m of a watercourse;
 - Therefore these woodlands will be Considered Significant.

- One of the woodland contains the unevaluated wetland, which would be protected under the Significance of the Woodland.
- Two smaller woodlands do not meet the minimum criteria of 0.50 ha;
 - Not considered Significant.
- One woodland, predominately outside the Study Area, is greater than 0.50 ha;
 - It does not contain interior habitat.
 - It is not located within 50 m of a sensitive groundwater discharge.
 - It does not contain native woodland species.
 - Therefore the woodland was determined to be Not Significant.
- A total of 36 bird species were observed during breeding bird surveys in 2017;
 - Species indicative of shrub/early successional habitat were documented.
- No Butternut trees were identified within the Study Area.
- No other SAR or SAR habitat was identified within the Study Area during 2017 field surveys.
- Based on the ELC communities and breeding bird results, there is potential for candidate significant wildlife habitat to exist in association with the woodlands.
- No incidental wildlife species were observed within the Study Area.
- Additional ecological information will be included in the Aldershot Hub EIS pending the results from the 2016 City EIA for the area north of the tracks and south of the highway.

Stormwater Management Assessment:

Assessment of existing conditions for the Aldershot GO Mobility Hub is ongoing and will be completed following the immediate focus on the Downtown and Burlington Mobility Hubs.

Impact analyses including flood plain mapping and stormwater management strategy development will be completed following the analyses and characterization of existing conditions and confirmation of the preferred concept plan for assessment.

Water / Wastewater Assessment:

Water and Wastewater infrastructure in Burlington is owned, planned and managed by Halton Region. Halton Region's planning framework to service the growth in Halton Region is through its Master Plan which was last updated in 2011. Infrastructure Planning in Halton has focused on a sustainable regionalized approach in which growth in the Region is serviced by the Lake Based System. In this planning framework, trunk infrastructure for water wastewater infrastructure is designed and planned in the South (near Lake Ontario) and moves up Northward into branches into the primary growth areas in North Oakville, North Burlington, Milton and Halton Hills/Georgetown. Our understanding of the infrastructure is based on information provided by Halton Region.

Wastewater: The mobility hub is situated near a 900 mm diameter trunk sanitary sewer that conveys flows for treatment in the Skyway Wastewater Treatment Plant as shown in Figure 1. This system is designed to take on flows from the west end of Burlington (west of Queen Elizabeth Way.) This sewer runs south of the mobility hub lands and will form the primary outlet to the collection system for development in the Aldershot GO Mobility Hub.

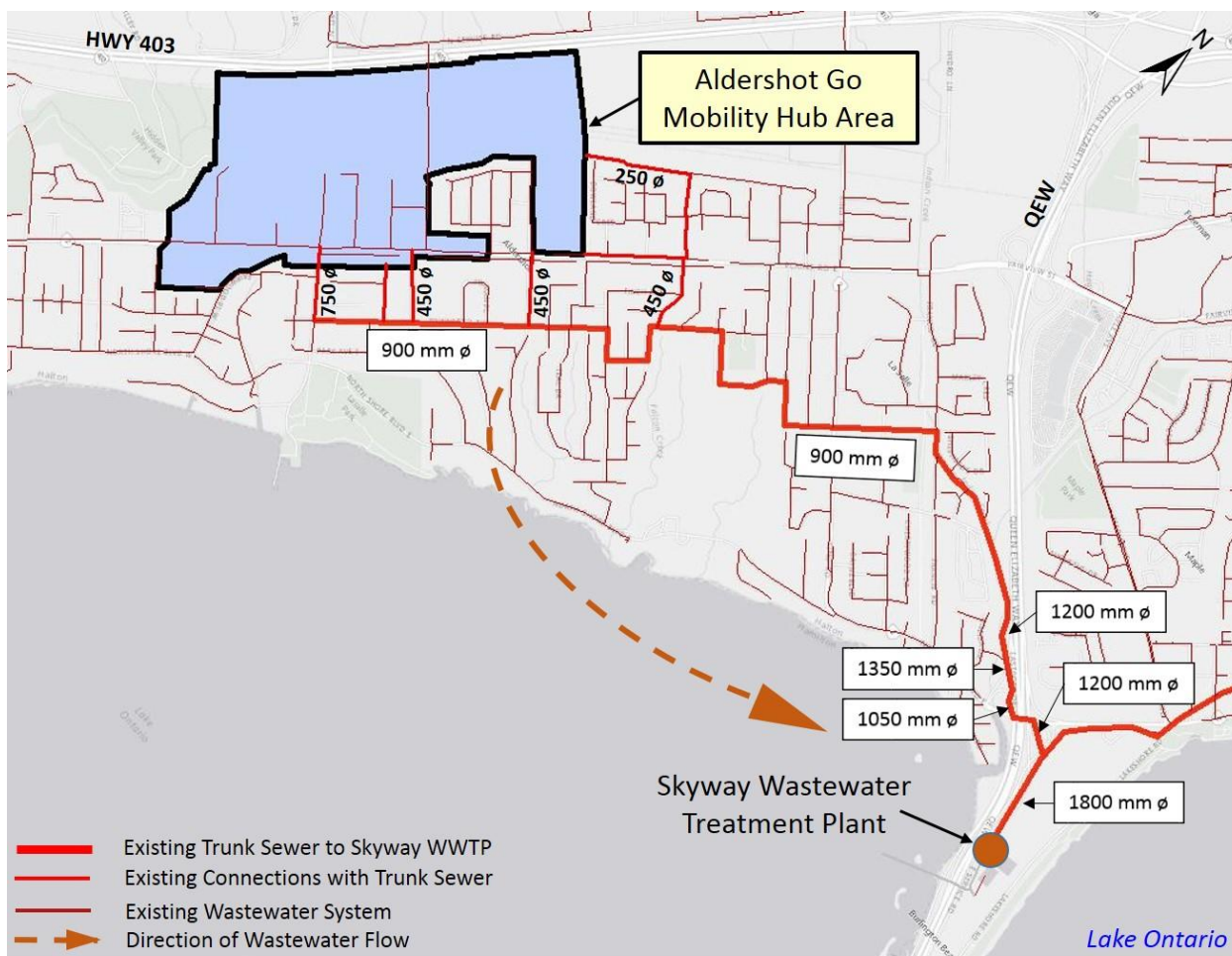


Figure 1 Existing Sanitary Services in and around the Aldershot Go Mobility Hub Planning Area

Lands within the mobility hub are to be serviced by gravity sewers connecting to 900 mm trunk sanitary sewer. Future services required for intensification in the Aldershot GO Mobility Hub would include Local Sewer Conveyance Improvements and capital contribution to the life-cycle component for the Halton wastewater collection and treatment system within the Skyway Wastewater Treatment Plant Sewershed.

Water: The Aldershot GO Mobility Hub lands are located within the Burlington Zone 1A (BZ1A) water distribution zone. BZ1A is serviced by Kingsway Drive Booster Pumping Station with storage and pressure control provided by the Waterdown Reservoir. Currently, Halton's Lake Based Supply has a capacity of 432 ML/d which can meet the needs of a population of 800,000. Capacity expansion is reviewed on a Region wide basis as part of the Master Planning Process. The water supply system in and around the Aldershot GO Mobility Hub is shown in Figure 2.

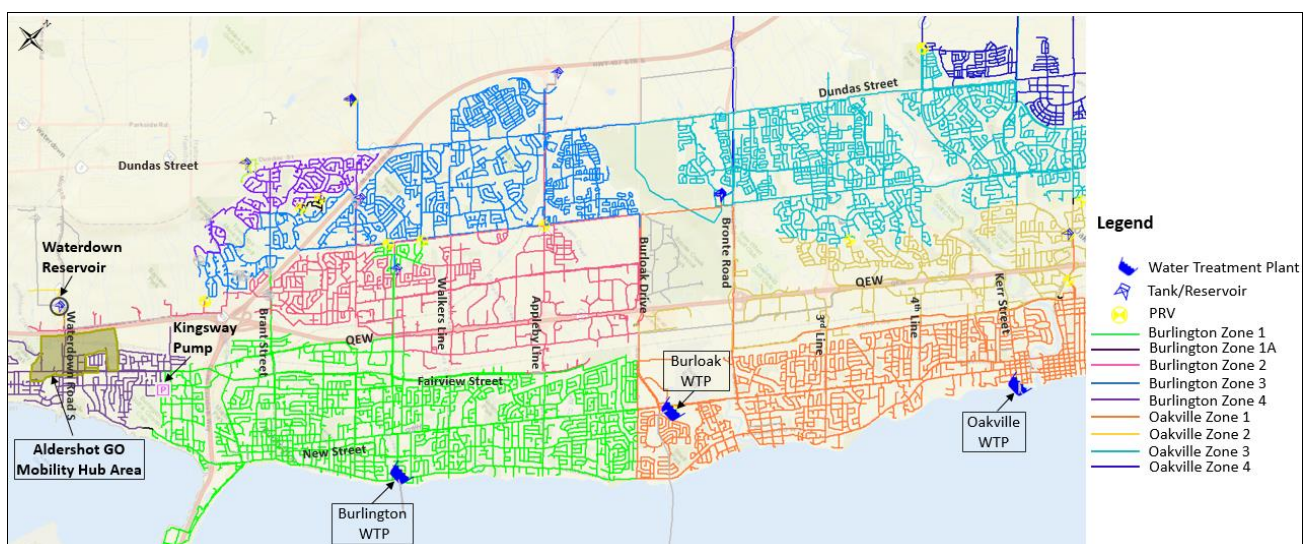


Figure 2 Existing Water System in and around the Aldershot GO Mobility Hub Planning Area

Future services required for intensification in the Aldershot GO Mobility Hub would include Local Conveyance System Improvements, as well as a capital contribution to the life-cycle component for the Halton integrated Lake Based Water Supply System (Treatment, Distribution & Storage).

Further assessment of water / wastewater servicing will be conducted through Stage 2 of the Burlington Mobility Hubs Study following confirmation of the preferred concept.

Archaeological Resources Existing Conditions:

The Stage 1 background research indicates that the Study Area has been occupied by Indigenous peoples for thousands of years. It is situated within the traditional territory of Huron-Wendat First Nation, the Seneca First Nation, and the Mississauga First Nation. The background research also acknowledges that, since the eighteenth century, the Métis have lived in southern Ontario by the nineteenth century. Since 1784, the Study Area has been occupied by Euro-Canadian peoples and is situated within the former Township of East Flamborough, County of Wentworth.

The S & G, Section 1.3.1, lists criteria that are indicative of archaeological potential. The Study Area meets the following criteria which are indicative of archaeological potential:

- Proximity to three previously registered archaeological sites;
- Proximity to Euro-Canadian settlements (farmsteads, school house, church and cemetery, saw mill; village and post office of Aldershot);
- Proximity to historic transportation routes (Great Western Railway, Waterdown Road, Plains Road, Howard Road); and
- Proximity to water sources (Lake Ontario, Grindstone Creek).

These criteria are indicative of the Study Area as having potential for the identification of Euro-Canadian and Indigenous archaeological sites, depending on the degree of disturbance and physical features of the Study Area. The Project will require a Stage 1 archaeological assessment, including a property inspection, once a preferred concept has been determined to further assess archaeological potential as per the Standards and Guidelines for Consultant Archaeologists.

Cultural Heritage Resources Assessment:

The Aldershot GO Mobility Hub's Euro-Canadian land use had its origins in late eighteenth-century survey and settlement. The Study Area has a rural land use history specializing in dairy and orchards. Topographical maps identify many early twentieth century residential structures were introduced along the historical transportation route, Plains Road, but generally the core of the landscape had been minimally altered. By the late twentieth century the study area had become urban and the landscape no longer maintained its rural character.

At present, the City of Burlington's Municipal Heritage Register lists four cultural heritage resources within and/or adjacent to the Aldershot GO Mobility Hub. However, it is still possible that the Study Area includes additional cultural heritage resources that have not yet been recognized along the historical transportation routes. In addition, historical mapping illustrates a number of nineteenth century structures which may be still extant within the study area.

Intensification within the Aldershot GO Mobility Hub may have a variety of impacts upon cultural heritage resources. Based on the results of background data collection, there is the potential for additional cultural heritage resources to be located within the Study Area. As such, proposed improvements should be planned to avoid impacts to any cultural heritage resources. Therefore, further work is recommended which includes a field visit to document existing conditions in order to confirm the location and the integrity of the previously identified heritage resources, to search for any additional built heritage resources and cultural heritage landscapes, and to obtain information to accurately map above-ground cultural heritage resources. The potential impact of growth on identified cultural heritage resources within the study area will then be evaluated and appropriate mitigation measures recommended.