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# YONGE NORTH SUBWAY EXTENSION INTENSIFICATION ANALYSIS

## Outline

- > Purpose
- > Methodology
- > Study Area
- > Density Estimations

## Purpose

- > To identify development potential for the Steeles, Clark, Royal Orchard, Langstaff and Richmond Hill Centre Station Areas under two scenarios – as-of-right and intensification – to project whether each station area can be supportive of subway-level densities; and
- > To identify recommended changes to permitted density to achieve subway-level intensification within each station area.

A later stage of this work is to provide a high-level overview of the potential value of future development.



**METHODOLOGY**

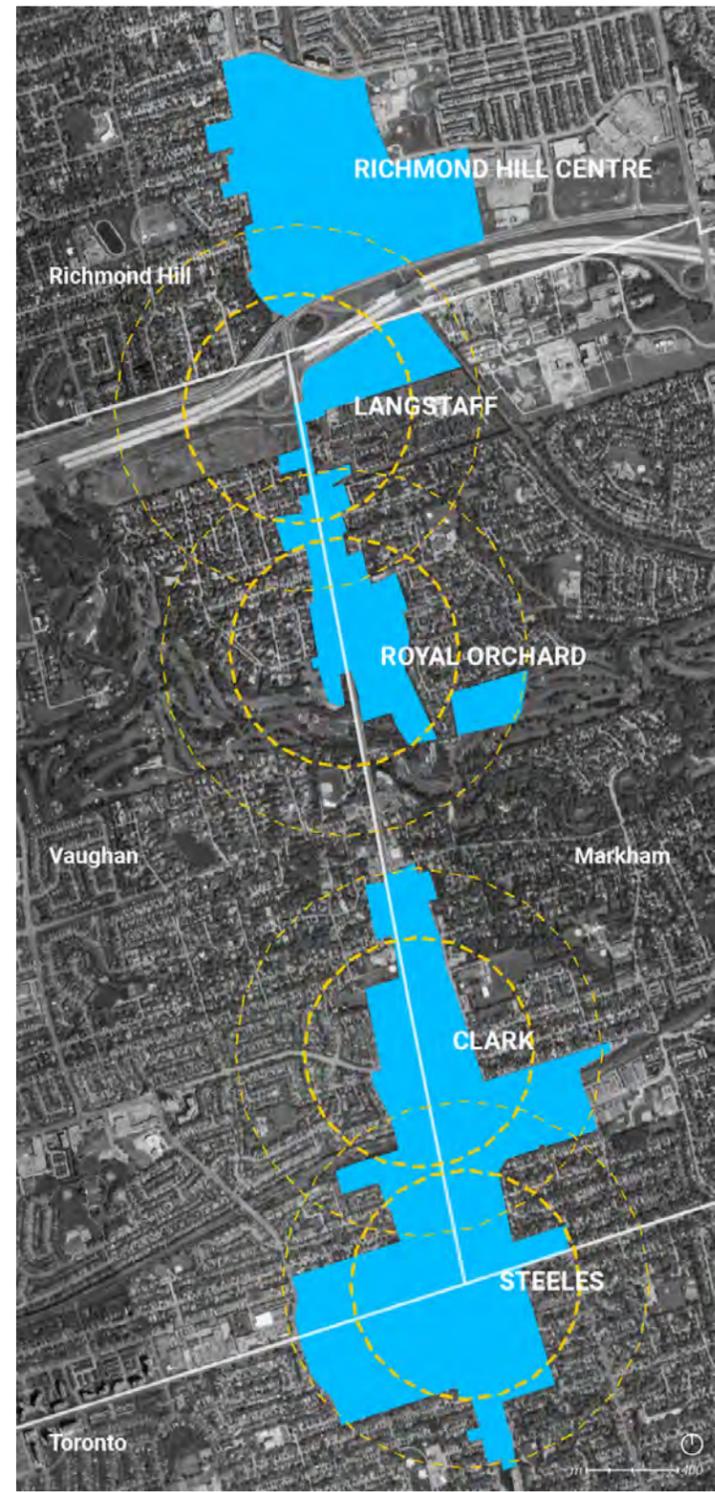
## Study Methodology

- > Existing Conditions Analysis
- > Refine Station Area and Corridor Boundaries
- > Establish Land Use and Density Parameters
- > Prepare Density Scenarios
  - > Existing Conditions
  - > As-of-Right
  - > Intensification



**STUDY AREA**

# Study Area





# DENSITY ESTIMATIONS

## Existing Density

- > Existing population density has been calculated using data from the 2016 Census of Population
- > Estimations are based on land use and percentage of coverage over total area.
- > Existing employment is estimated using the 2018 York Region Employment Survey and the Toronto Employment Survey

## Density Calculation Methodology

- > Calculate Gross Floor Area (GFA) on each block defined in the statistics key plan (block area, building height, FSI)
- > Ratio of land uses on each block (residential and non-residential)
- > Calculate Net Floor Area (NFA) by typology for accurate measure of people and jobs
- > Population yield by developable blocks (average unit size by typology, average persons per unit)
- > Employment yield by developable blocks (floor space per worker)
- > Overall population and employment density

# DENSITY ESTIMATIONS

# YONGE NORTH SUBWAY EXTENSION

## Steeles Boundary Comparison



# DENSITY ESTIMATIONS

# YONGE NORTH SUBWAY EXTENSION

## Steeles As-of-Right Scenario

Steeles		
People and Jobs/Hectare		
	500 m	800 m
Existing	70	95
As-of-Right	340	200

Markham at Steeles		
People and Jobs/Hectare		
	500 m	800 m
Existing	70	160
As-of-Right	565	260

Toronto at Steeles		
People and Jobs/Hectare		
	500 m	800 m
Existing	90	95
As-of-Right	160	115

Vaughan at Steeles		
People and Jobs/Hectare		
	500 m	800 m
Existing	10	30
As-of-Right	555	330



# DENSITY ESTIMATIONS

# YONGE NORTH SUBWAY EXTENSION

## Steeles

Intensification Scenario

Steeles		
People and Jobs/Hectare		
	500 m	800 m
Existing	70	95
As-of-Right	340	200
Intensification	670	365

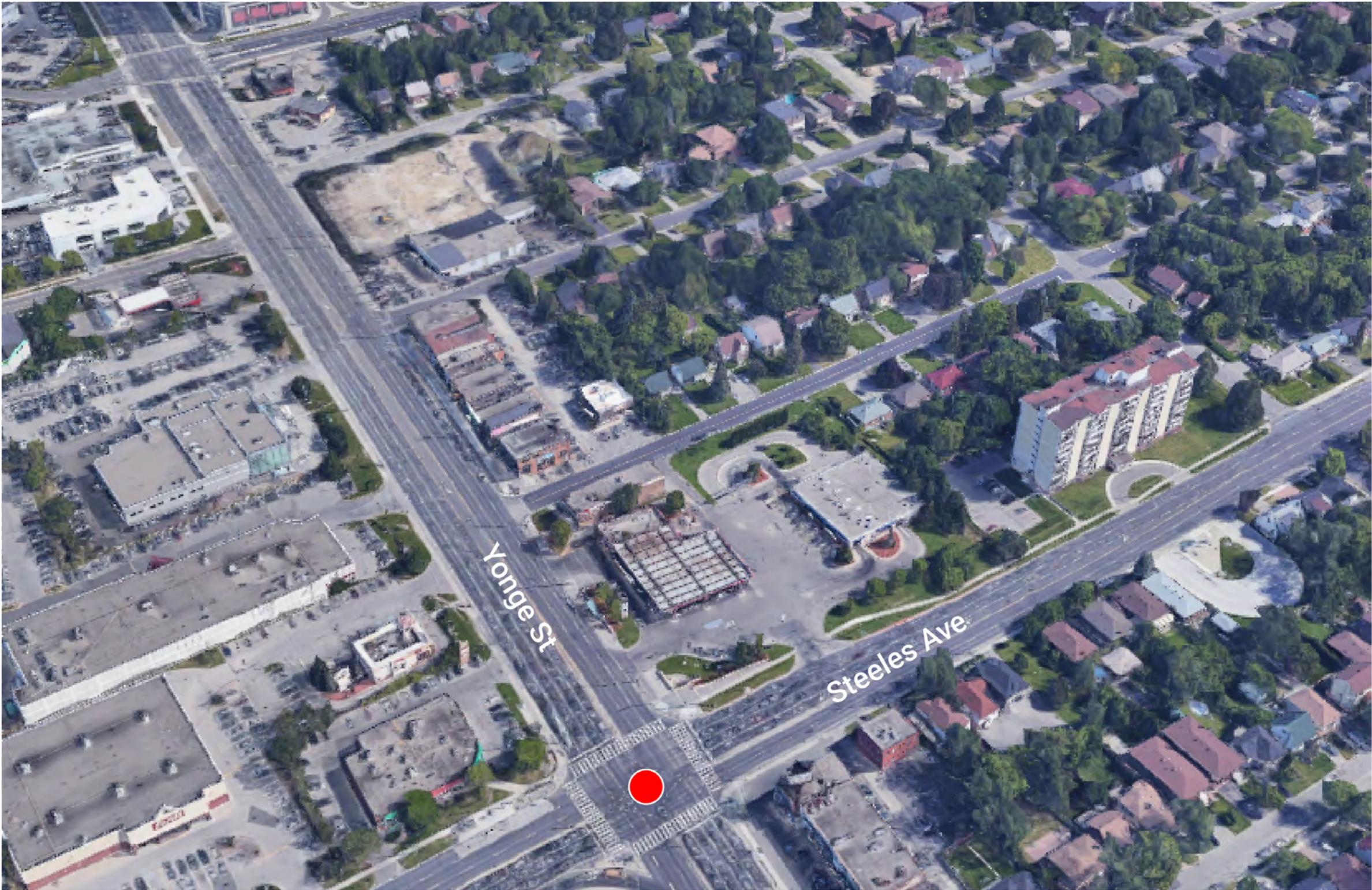
Markham at Steeles		
People and Jobs/Hectare		
	500 m	800 m
Existing	70	160
As-of-Right	565	260
Intensification	675	320

Toronto at Steeles		
People and Jobs/Hectare		
	500 m	800 m
Existing	90	95
As-of-Right	160	115
Intensification	710	390

Vaughan at Steeles		
People and Jobs/Hectare		
	500 m	800 m
Existing	10	30
As-of-Right	555	330
Intensification	575	350



Steeles



# DENSITY ESTIMATIONS

# YONGE NORTH SUBWAY EXTENSION

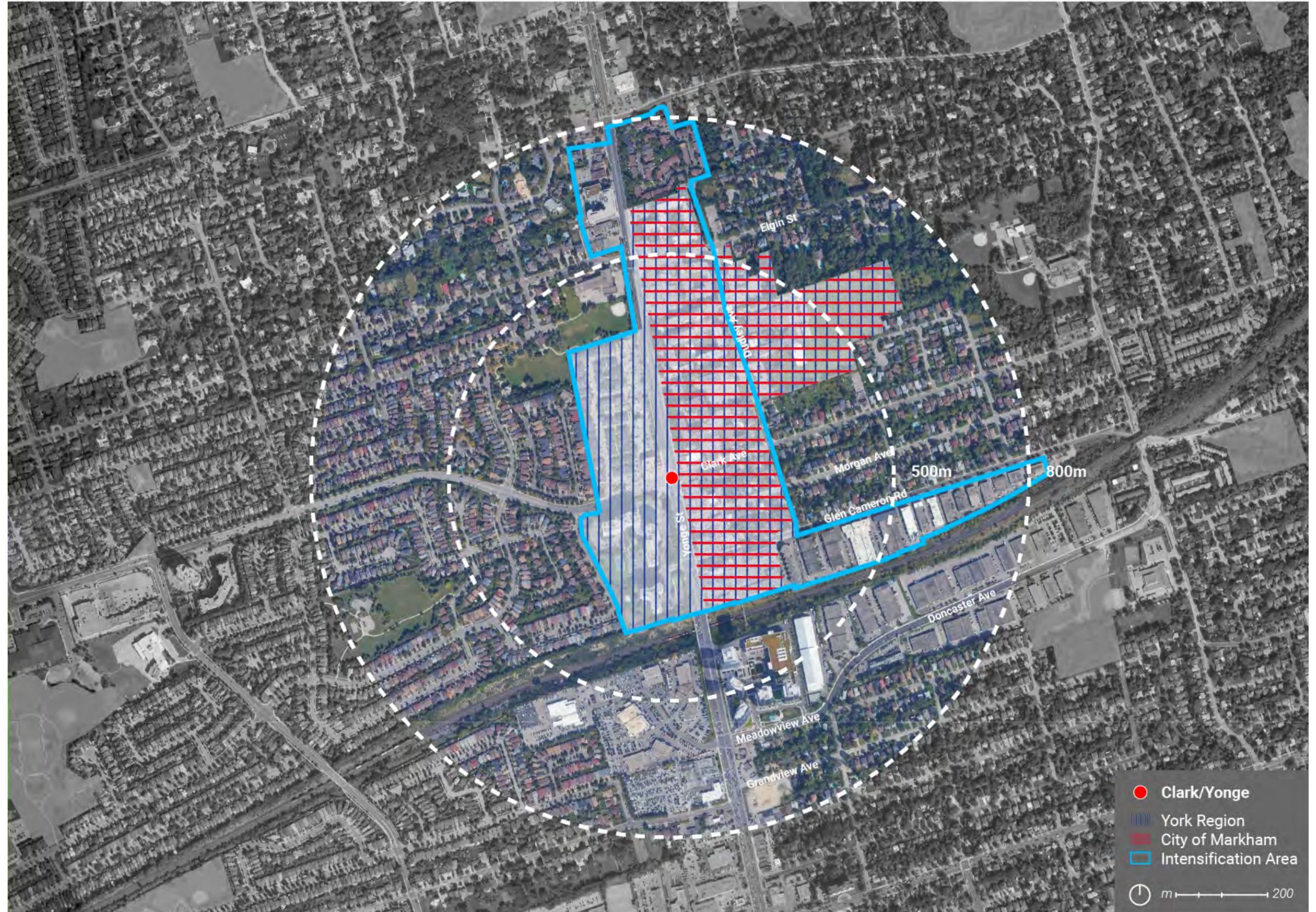
## Steeles Potential Massing



# DENSITY ESTIMATIONS

# YONGE NORTH SUBWAY EXTENSION

## Clark Boundary Comparison



# DENSITY ESTIMATIONS

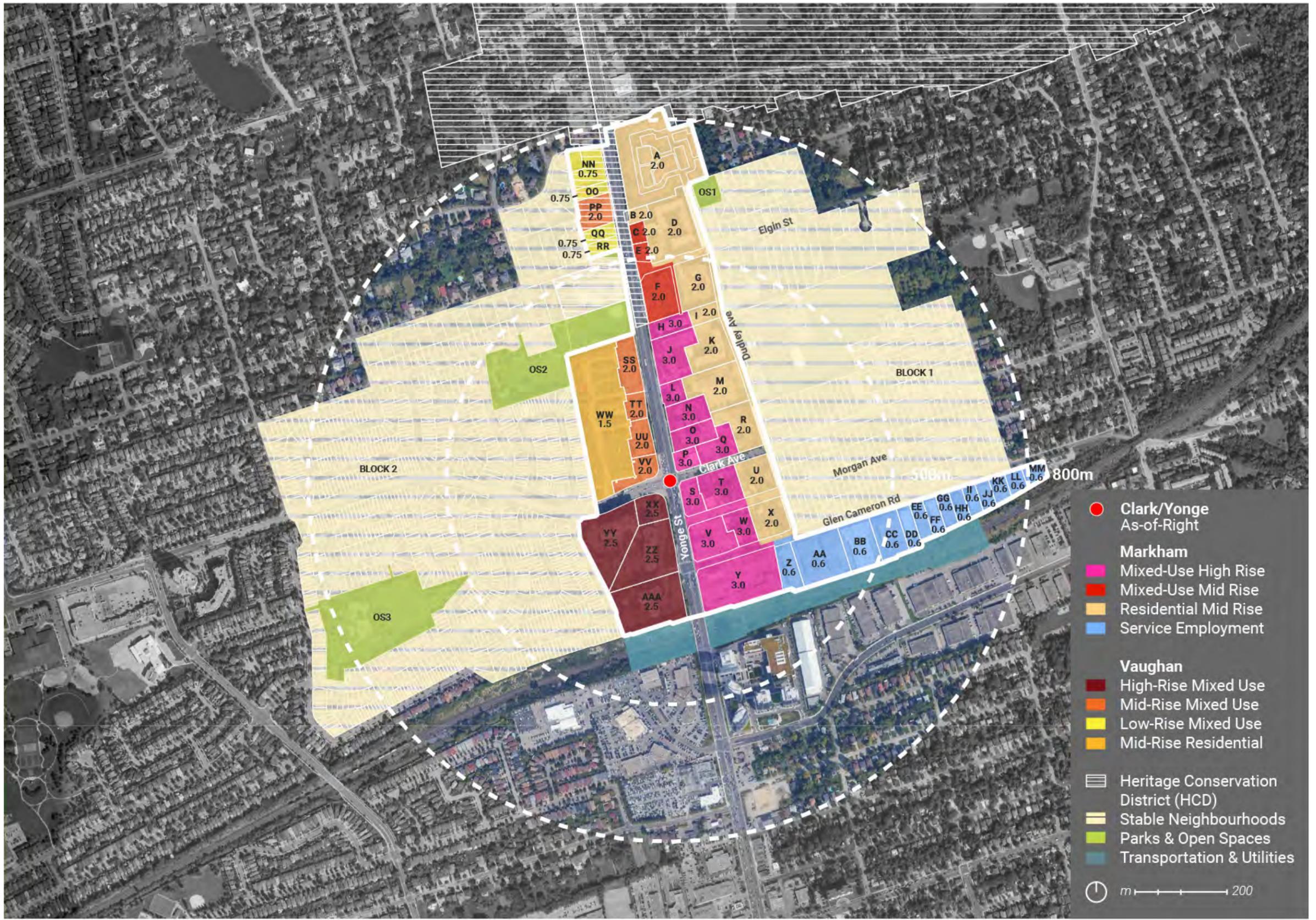
# YONGE NORTH SUBWAY EXTENSION

## Clark As-of-Right Scenario

Clark		
People and Jobs/Hectare		
	500 m	800 m
Existing	115	100
As-of-Right	240	170

Markham at Clark		
People and Jobs/Hectare		
	500 m	800 m
Existing	130	100
As-of-Right	280	195

Vaughan at Clark		
People and Jobs/Hectare		
	500 m	800 m
Existing	100	90
As-of-Right	205	140



- Clark/Yonge As-of-Right
- Markham**
- Mixed-Use High Rise
- Mixed-Use Mid Rise
- Residential Mid Rise
- Service Employment
- Vaughan**
- High-Rise Mixed Use
- Mid-Rise Mixed Use
- Low-Rise Mixed Use
- Mid-Rise Residential
- Heritage Conservation District (HCD)
- Stable Neighbourhoods
- Parks & Open Spaces
- Transportation & Utilities
- ⌚ 0 200 400 m

# DENSITY ESTIMATIONS

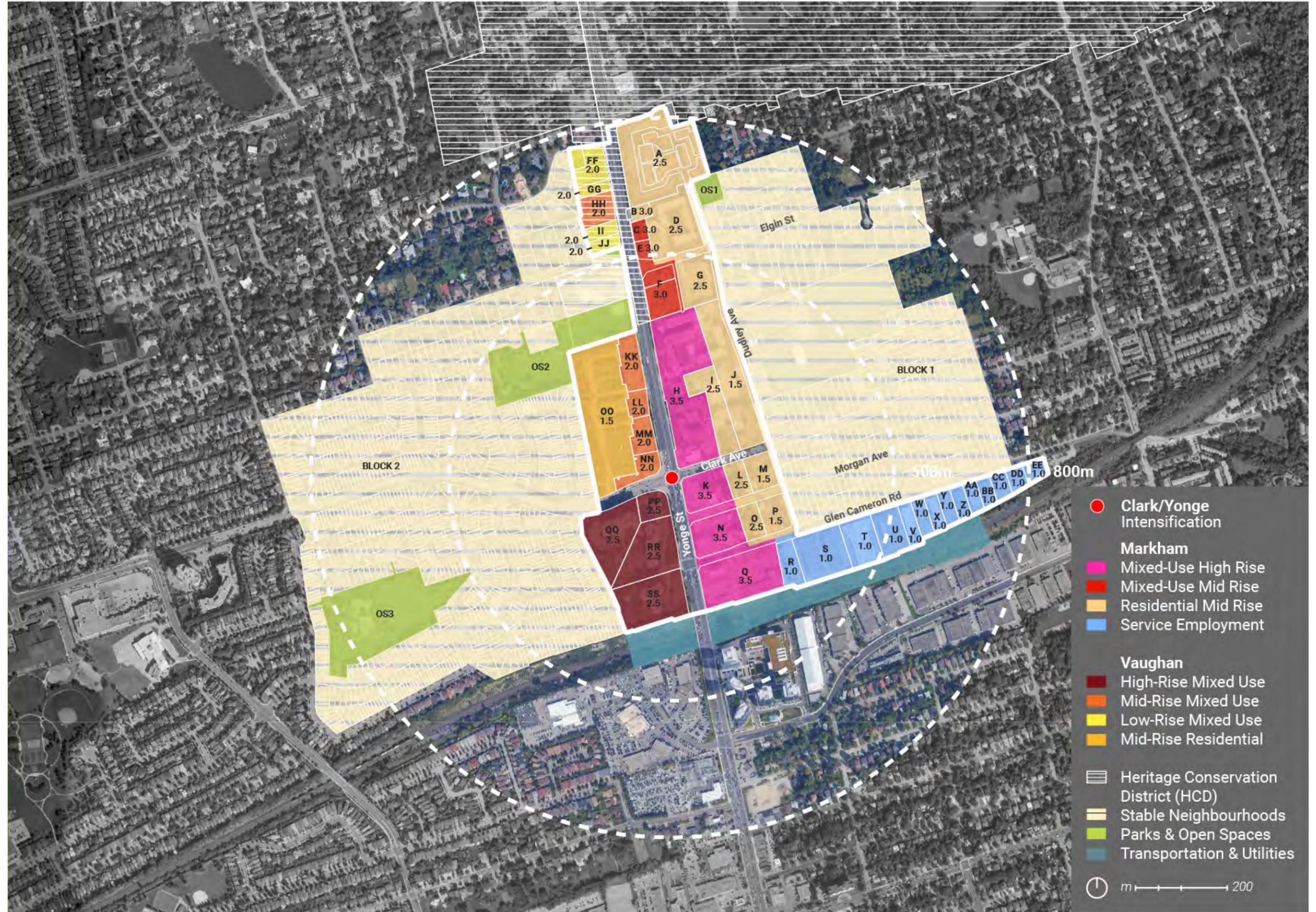
# YONGE NORTH SUBWAY EXTENSION

## Clark Intensification Scenario Option 1

Clark		
People and Jobs/Hectare		
	500 m	800 m
Existing	115	100
As-of-Right	240	170
Intensification	275	190

Markham at Clark		
People and Jobs/Hectare		
	500 m	800 m
Existing	130	100
As-of-Right	280	195
Intensification	330	225

Vaughan at Clark		
People and Jobs/Hectare		
	500 m	800 m
Existing	100	90
As-of-Right	205	140
Intensification	205	145



- Clark/Yonge Intensification
- Markham**
- Mixed-Use High Rise
- Mixed-Use Mid Rise
- Residential Mid Rise
- Service Employment
- Vaughan**
- High-Rise Mixed Use
- Mid-Rise Mixed Use
- Low-Rise Mixed Use
- Mid-Rise Residential
- Heritage Conservation District (HCD)
- Stable Neighbourhoods
- Parks & Open Spaces
- Transportation & Utilities
- m | | | | 200

# DENSITY ESTIMATIONS

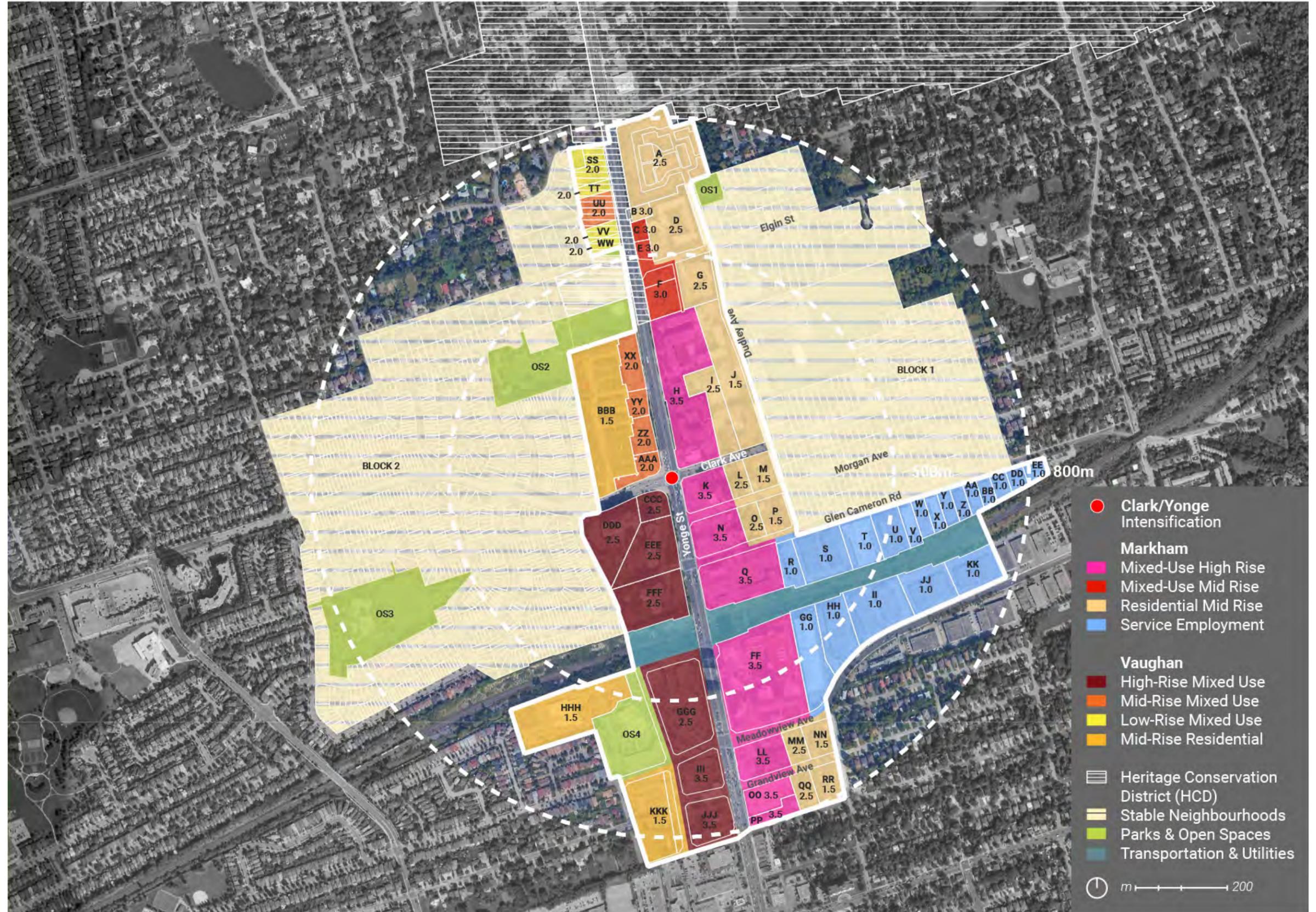
# YONGE NORTH SUBWAY EXTENSION

## Clark Intensification Scenario Option 2

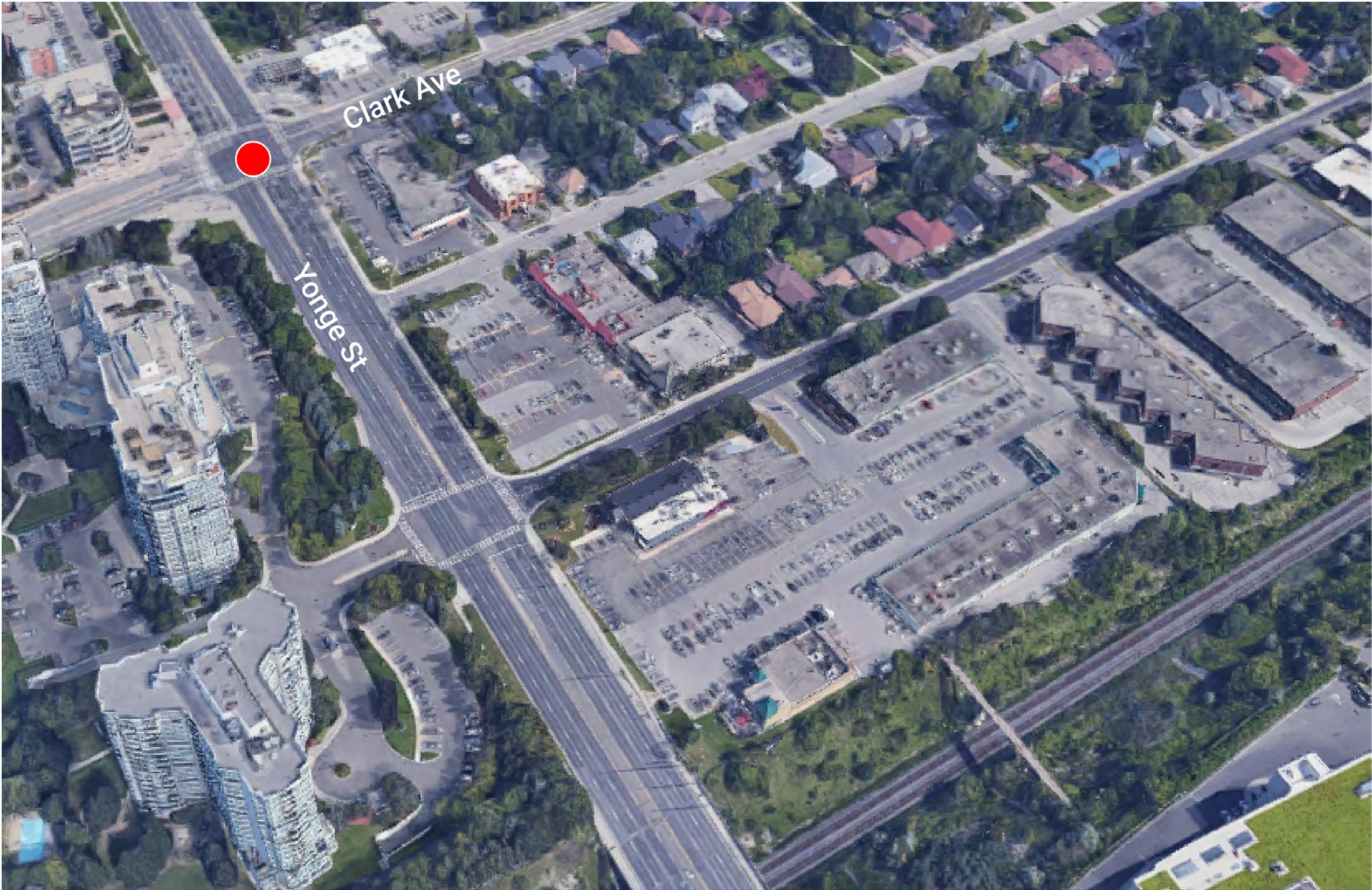
Clark		
People and Jobs/Hectare		
	500 m	800 m
Existing	115	100
As-of-Right	240	170
Intensification	280	230

Markham at Clark		
People and Jobs/Hectare		
	500 m	800 m
Existing	130	100
As-of-Right	280	195
Intensification	340	240

Vaughan at Clark		
People and Jobs/Hectare		
	500 m	800 m
Existing	100	90
As-of-Right	205	140
Intensification	215	530



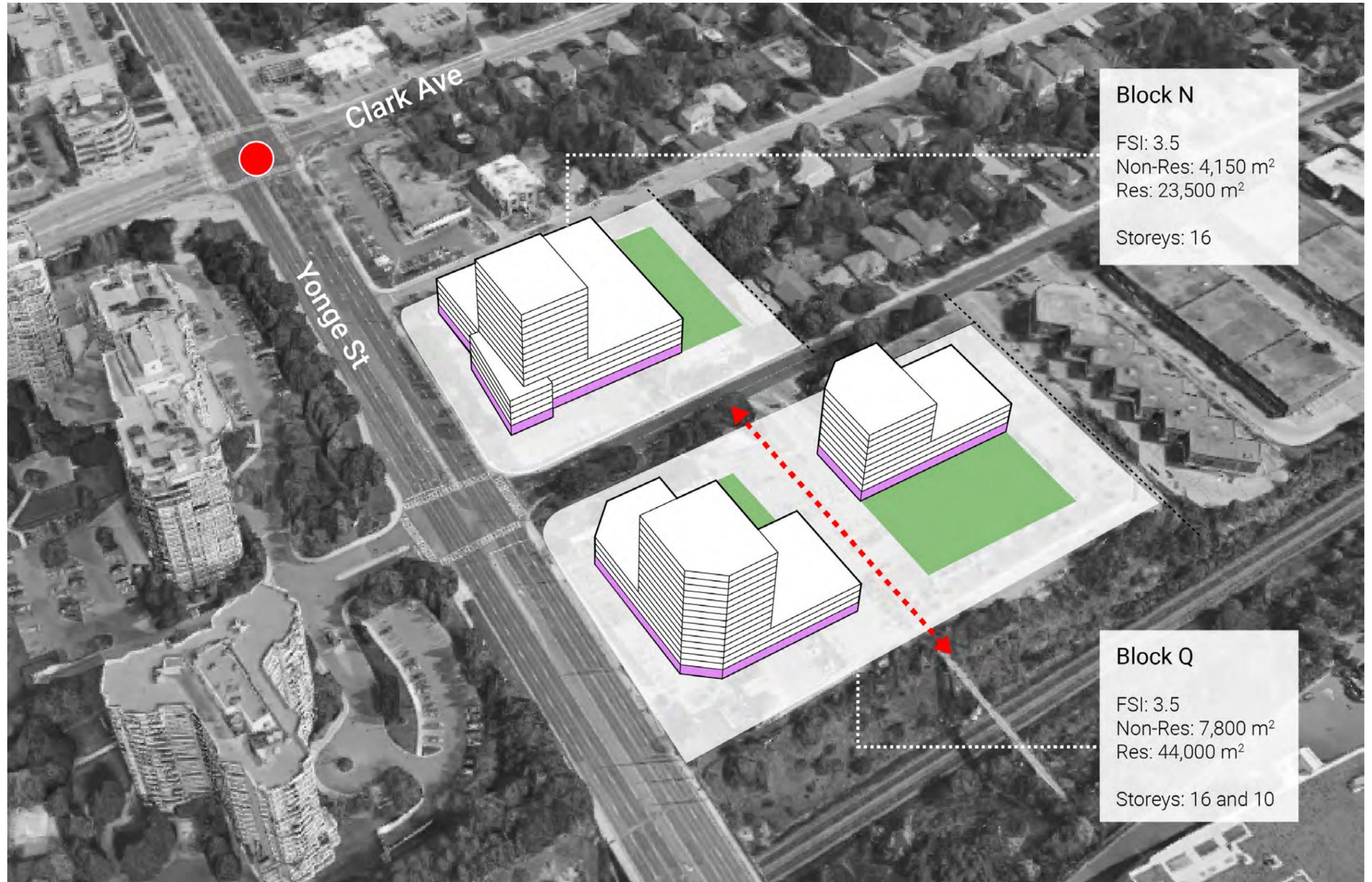
Clark



# DENSITY ESTIMATIONS

# YONGE NORTH SUBWAY EXTENSION

## Clark Potential Massing



# DENSITY ESTIMATIONS

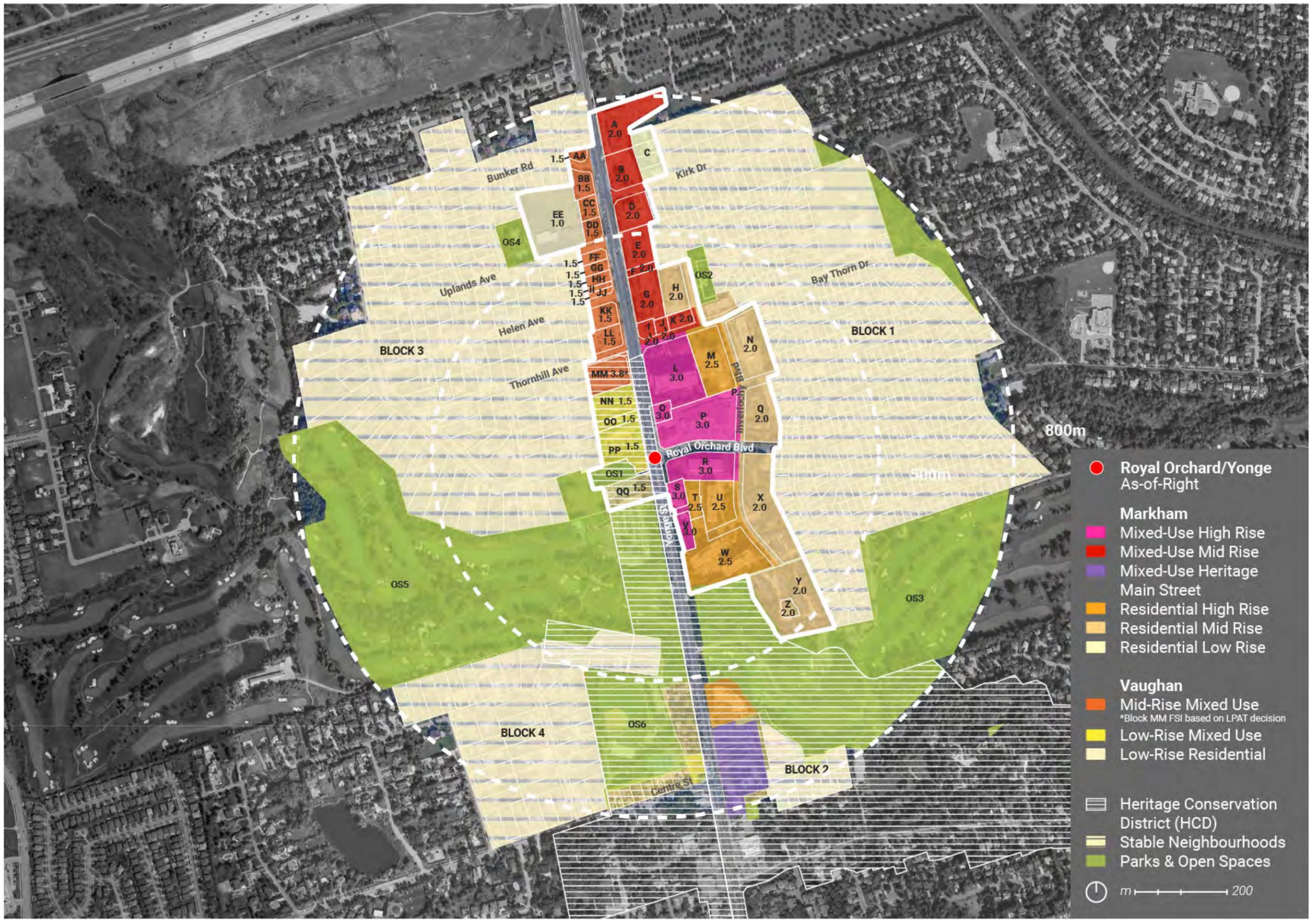
# YONGE NORTH SUBWAY EXTENSION

## Royal Orchard As-of-Right Scenario

Royal Orchard		
People and Jobs/Hectare		
	500 m	800 m
Existing	90	55
As-of-Right	230	125

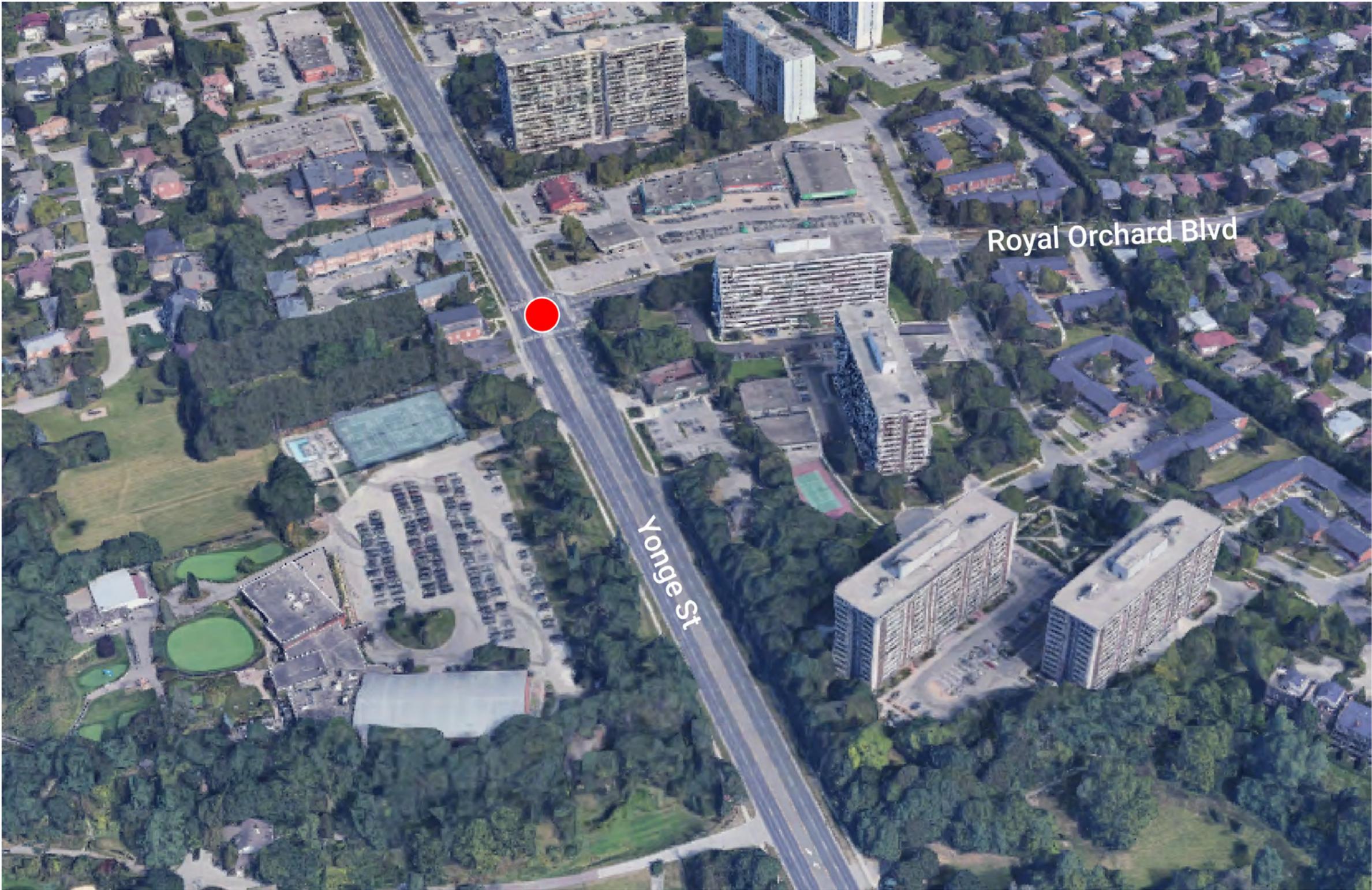
Markham at Royal Orchard		
People and Jobs/Hectare		
	500 m	800 m
Existing	140	90
As-of-Right	330	190

Vaughan at Royal Orchard		
People and Jobs/Hectare		
	500 m	800 m
Existing	15	20
As-of-Right	95	60





Royal Orchard



# DENSITY ESTIMATIONS

# YONGE NORTH SUBWAY EXTENSION

## Royal Orchard Potential Massing



# DENSITY ESTIMATIONS

# YONGE NORTH SUBWAY EXTENSION

## Langstaff Boundary Comparison



# DENSITY ESTIMATIONS

# YONGE NORTH SUBWAY EXTENSION

## Langstaff As-of-Right Scenario

Langstaff		
People and Jobs/Hectare		
	500 m	800 m
Existing	20	30
As-of-Right	545	290

Markham at Langstaff		
People and Jobs/Hectare		
	500 m	800 m
Existing	15	35
As-of-Right	910	645

Vaughan at Langstaff		
People and Jobs/Hectare		
	500 m	800 m
Existing	30	30
As-of-Right	75	75



# DENSITY ESTIMATIONS

# YONGE NORTH SUBWAY EXTENSION

## Langstaff Intensification Scenario

Langstaff		
People and Jobs/Hectare		
	500 m	800 m
Existing	20	30
As-of-Right	545	290
Intensification	580	310

Markham at Langstaff		
People and Jobs/Hectare		
	500 m	800 m
Existing	15	35
As-of-Right	910	645
Intensification	970	695

Vaughan at Langstaff		
People and Jobs/Hectare		
	500 m	800 m
Existing	30	30
As-of-Right	75	75
Intensification	75	75



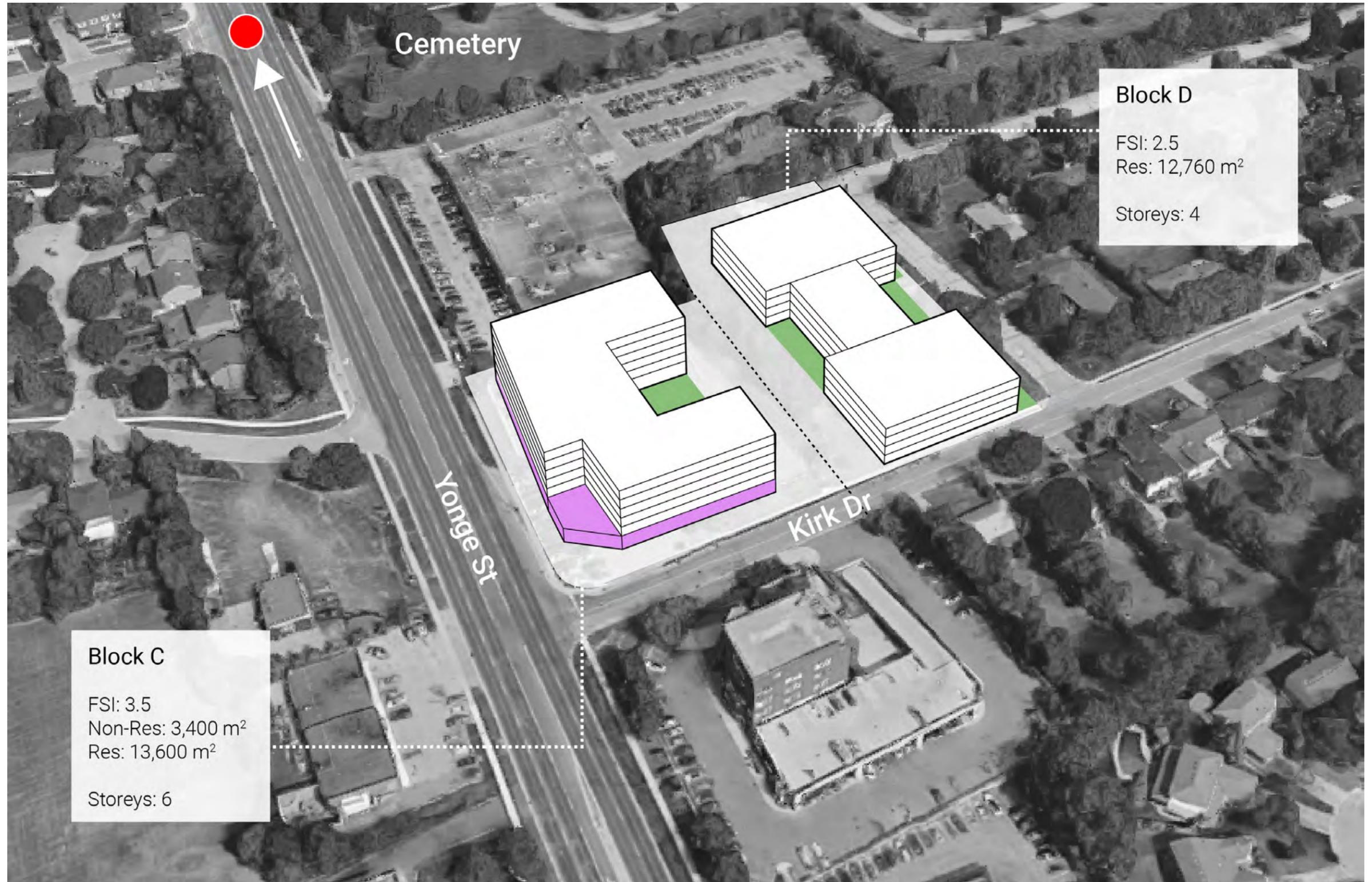
DENSITY ESTIMATIONS

YONGE NORTH SUBWAY EXTENSION

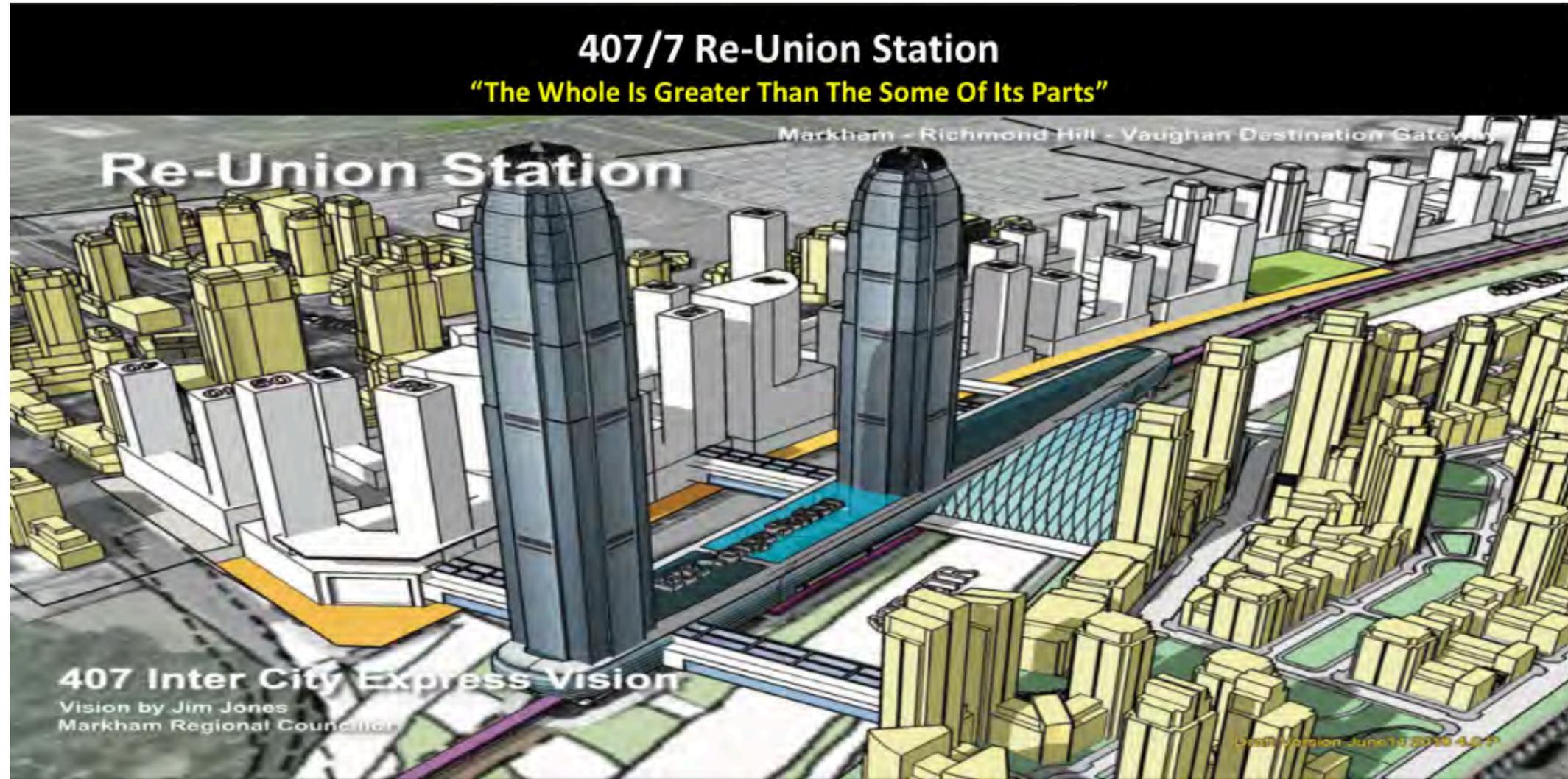
Langstaff



**Langstaff**  
Potential Massing



Langstaff

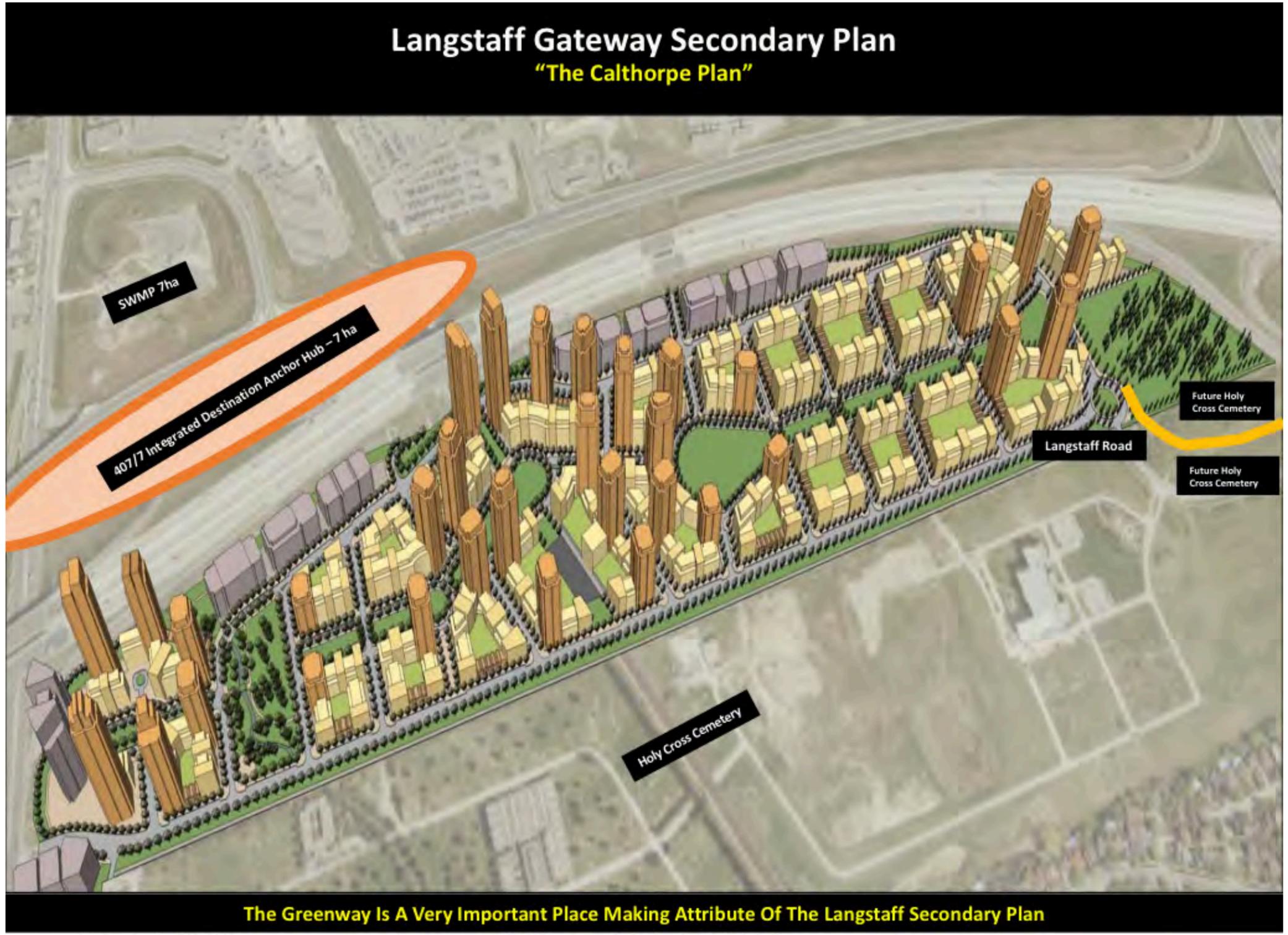


An integrated planning approach to urban development that encourages growth and jobs throughout York Region, GTA and at the same time promotes a more cohesive, competitive society and a better environment.

The 407/7 Re-Union destination anchor hub area goal is to bring together the 4 areas as one 190 hectares, seamlessly integrated planned community and ignoring municipal boundaries. The 4 areas are:

1. Langstaff Gateway	40,000 people	18,000 jobs	1140 people & jobs per ha
2. Richmond Hill Centre	17,000 people	17,000 jobs	400 people & jobs per ha
3. 407 Hydro Transmission Lands (est)	40,000 people	60,000 jobs	1140 people & jobs per ha
4. Vaughan Hydro Transmission lands (est)	20,000 people	5,000 jobs	400 people & jobs per ha
Estimated Totals	117,000 people	100,000 jobs	

Langstaff



# DENSITY ESTIMATIONS

# YONGE NORTH SUBWAY EXTENSION

## Richmond Hill Centre Draft Secondary Plan

Richmond Hill Centre	
People and Jobs/Hectare	
Projected	450



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APPENDIX

## Development Potential Criteria

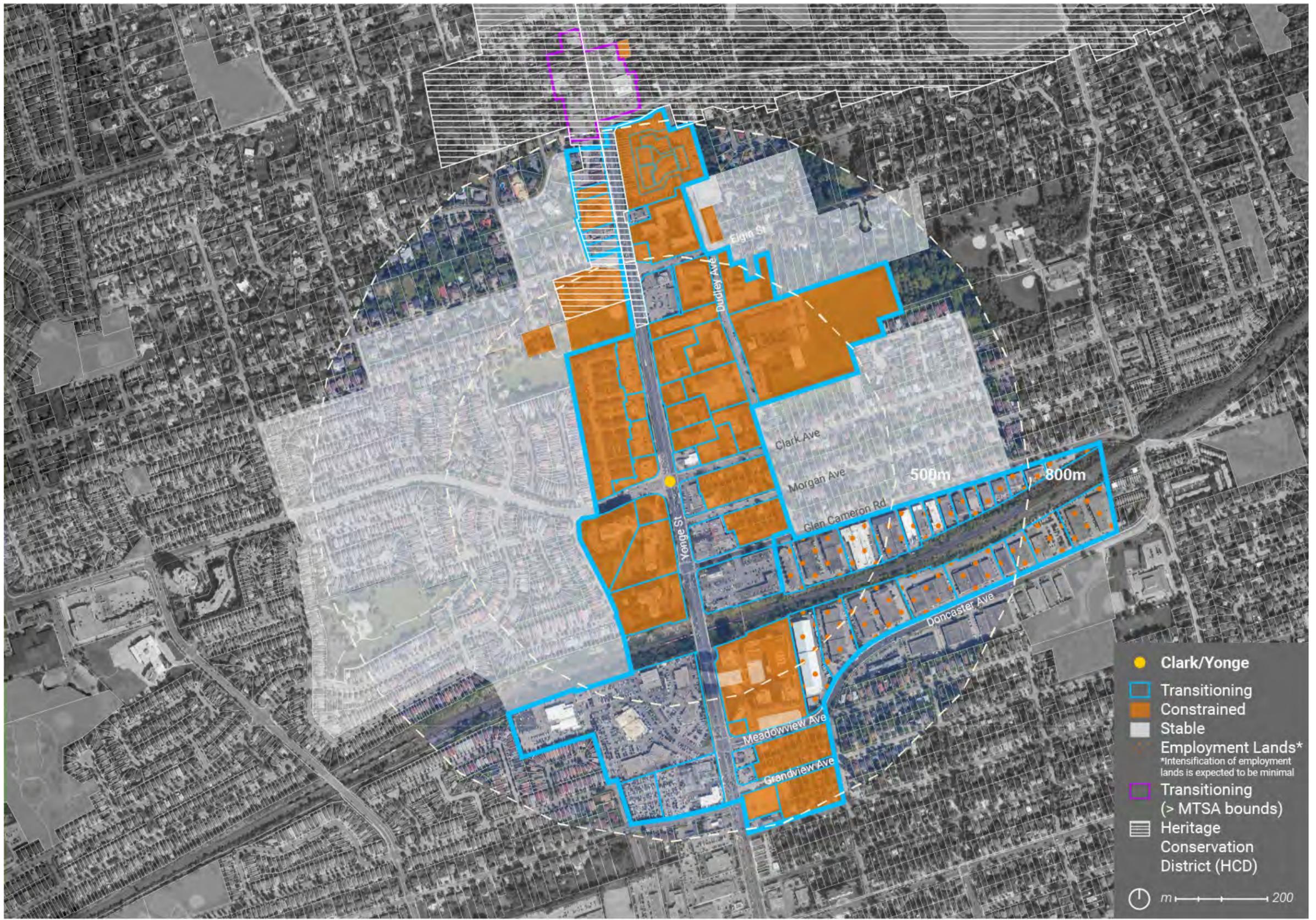
Development Potential Criteria is assessed using three categories:

- > Stable – properties with minimal or no development potential and therefore not expected to change;
- > Constrained – properties with potential for intensification in the longer term, such as newly built developments and institutional properties; and
- > Transitioning – properties expected to intensify in the shorter, medium, to longer terms including large parcels with intensification capacities as well as low-rise developments with dense zoning permissions.

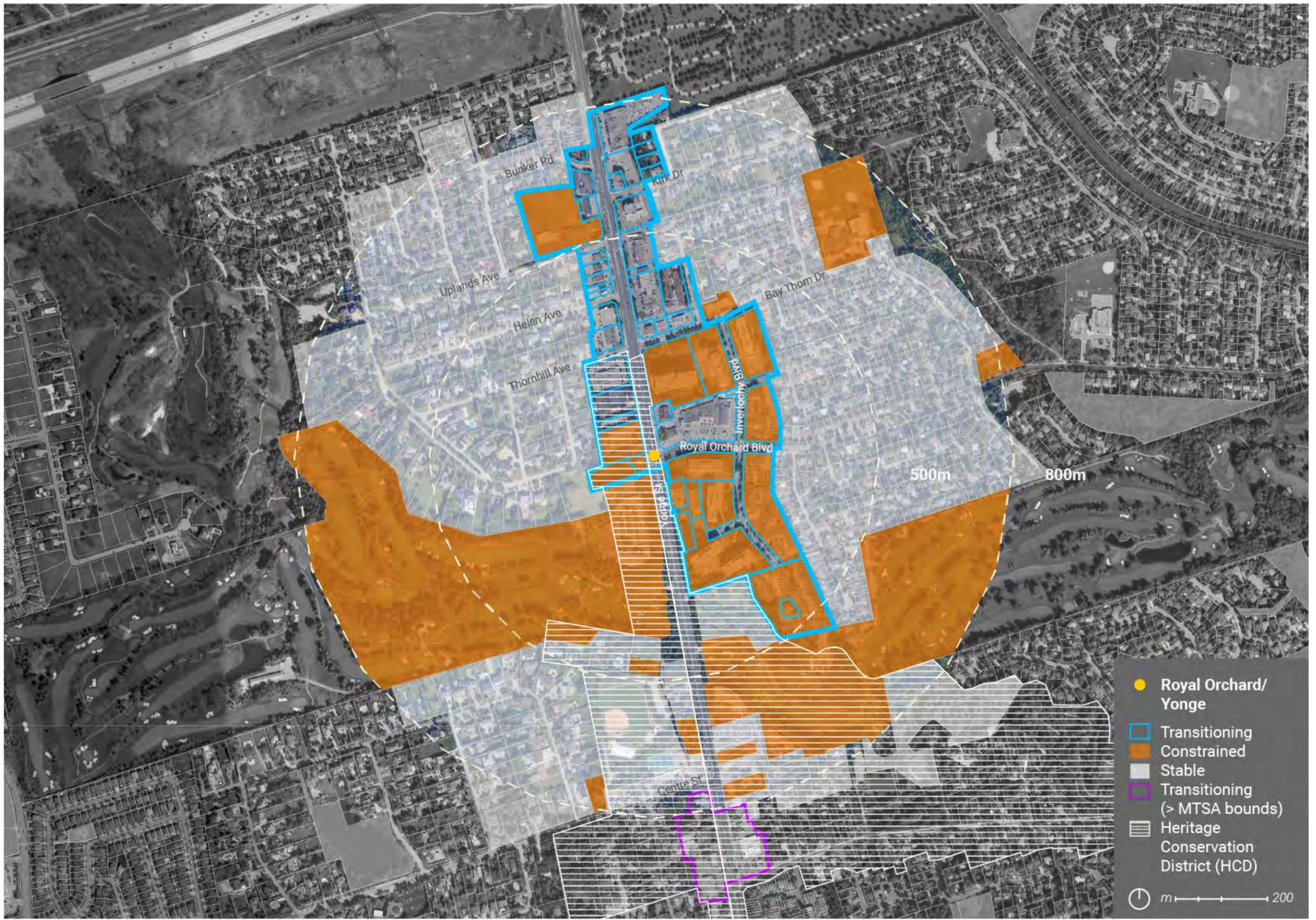
Steeles



Clark



Royal Orchard



Langstaff



## Short-term Potential

Properties with short-term development potential generally already have redevelopment plans underway. Criteria includes:

- > Properties with recent planning application (including Official Plan amendment, rezoning, site plan approval) for additional residential, commercial or employment GFA and/or new units that are not counted in Inventory
- > Location in areas where intensification is encouraged and permitted

## Medium-term Potential

A property with medium-term development potential could fit any of the following criteria:

- > Low-density (3 storeys or less) development on large lots
- > Areas where current permissions allow higher density development
- > All vacant and unoccupied sites
- > Surface parking lots

## Long-term Potential

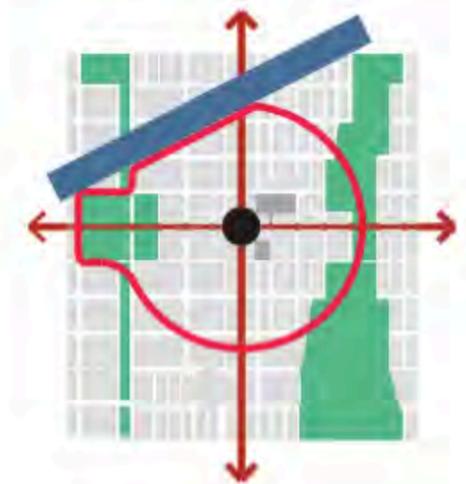
Properties with long-term potential have recently undergone development or require conditions for redevelopment that could take several years. Criteria includes:

- > Low-density developments on smaller lots
- > Properties with recent investment or development
- > Multi-unit and mixed-use buildings

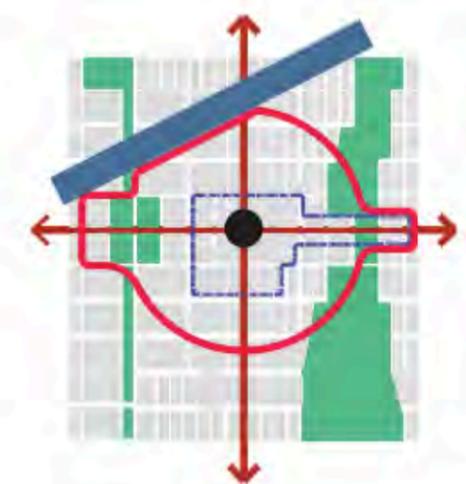
Refine Study Area



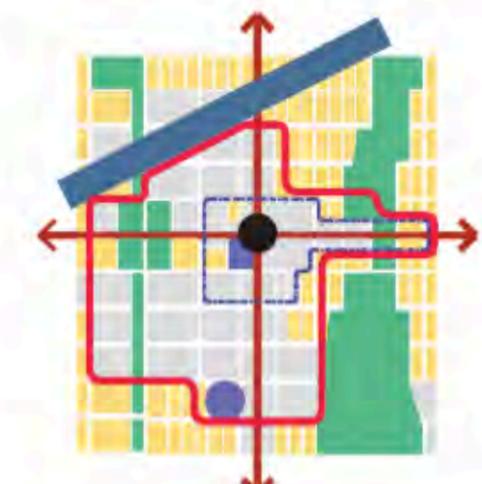
1. Draw an 800-metre radius as a base boundary around a mobility hub.



2. Remap boundary to account for environmental features and barriers.



3. Modify boundary to account for the legislative, policy and planning framework.



4. Further modify to reflect existing land use type and development potential.

## Land Use Assumptions

*Floor Space Index (FSI)*

Height (storeys)	Building Type	Assumed FSI
<b>Mid-Rise (3-8 storeys)</b>		
3-6	Mid-Rise residential, mixed use with podium at grade	1.5-2.5
6-8	Mid-Rise residential building, mixed use with podium at grade	2.5-3.0
<b>High-Rise (9+ storeys)</b>		
9-14	Tall residential building, mixed use podium at grade	3.0
15-20	Tall residential building, with podium at grade	3.5
20-25	Tall residential building, with podium at grade	4.0
25-30	Tall residential building, with podium at grade	4.5

LAND USES	DRAFT MARKHAM ZONING (2015 Report)
<b>Residential Mid Rise</b>	FSI: 2.0 Heights: 3-6 storeys
<b>Residential High Rise</b>	FSI: 2.5 Heights: 3-15 storeys
<b>Mixed Use Mid Rise</b>	FSI: 2.0 Heights: 3-8 storeys
<b>Mixed Use High Rise</b>	FSI: 3.0 Heights: 3-15 storeys

The relationship between FSI categories and building heights is based on comparable FSI rates for mid-size municipalities across the GTHA including Markham, Vaughan and Newmarket.

An FSI of 0.75 has been identified for the stable lands outside the Secondary Plan Area.

## Refine Study Area

*Net to Gross Floor Area Ratio*

## Floor Plate Efficiency (Net to Gross Floor Area Efficiency)

<b>Mid-Rise (4-8 storeys)</b>	
<b>Mid-Rise Residential (including mixed-use at grade)</b>	80-85%
<b>High-Rise (9+ storeys)</b>	
<b>High-Rise Residential (including mixed-use podium at grade) &lt;29 storeys:</b>	75-85%
<b>High-Rise Residential (including mixed-use podium at grade) &gt;30 storeys:</b>	70-80%

Sources: NBLC (2018), AECOM (2014) "The Economics of Building Tall"; GSA (2012) "Circulation: Defining and Planning"; Efficiency Lab for Architecture (2016) "Efficiency: Understanding the Typical Conditions"

We have adopted the average single-family home size rate of 2000 square feet (or 185 m<sup>2</sup>) from the Canadian Home Builders' (CHBA) Winter 2013 Pulse Survey.

## Land Use Assumptions

*Persons Per Unit*

Housing Type	10-year Average Persons per Unit	14.5-year Average Persons per Unit
Singles and Semi's	3.74	3.74
Multiples (Rows, Duplexes)	3.01	3.01
Apartments > = 700 square feet	2.19	2.19
Apartments < 700 square feet	1.60	1.60
Total Apartments	1.91	1.91
Total Units	2.96	2.90

Source: York Region

<sup>1</sup>The Total Units PPU is based on the unit type PPU's weighted by housing forecast mix

<sup>2</sup>PPU's in Table 2.3 are adjusted to include the Census undercount

<sup>3</sup>10 Year and 14.5 average PPU's are based on average PPU's observed in housing units built in York Region from 2001 to 2011

<sup>4</sup>PPU's for apartments >= 700 square feet are based on observed PPU's in 1 bedroom or less apartments

<sup>5</sup>PPU's for apartments < 700 square feet are based on observed PPU's in 2+ bedroom apartments

*Non-Residential GFA Per Employee*

Employment Type	Square Feet per Employee
Industrial	800
Office	275
Institutional	900
Retail	430
Hotel	2,000

Source: York Region 2018 Development Charge Background Study

## Stable

Stable properties have minimal or no development potential and are therefore not expected to change. Criteria include:

- > Single detached units designated Residential Low-Rise
- > Open Space and Greenways
- > Cemeteries
- > Utility Corridors/Transportation and Utilities
- > Rights-of-way, Railway Corridors, Non-buildable lands
- > Structured parking

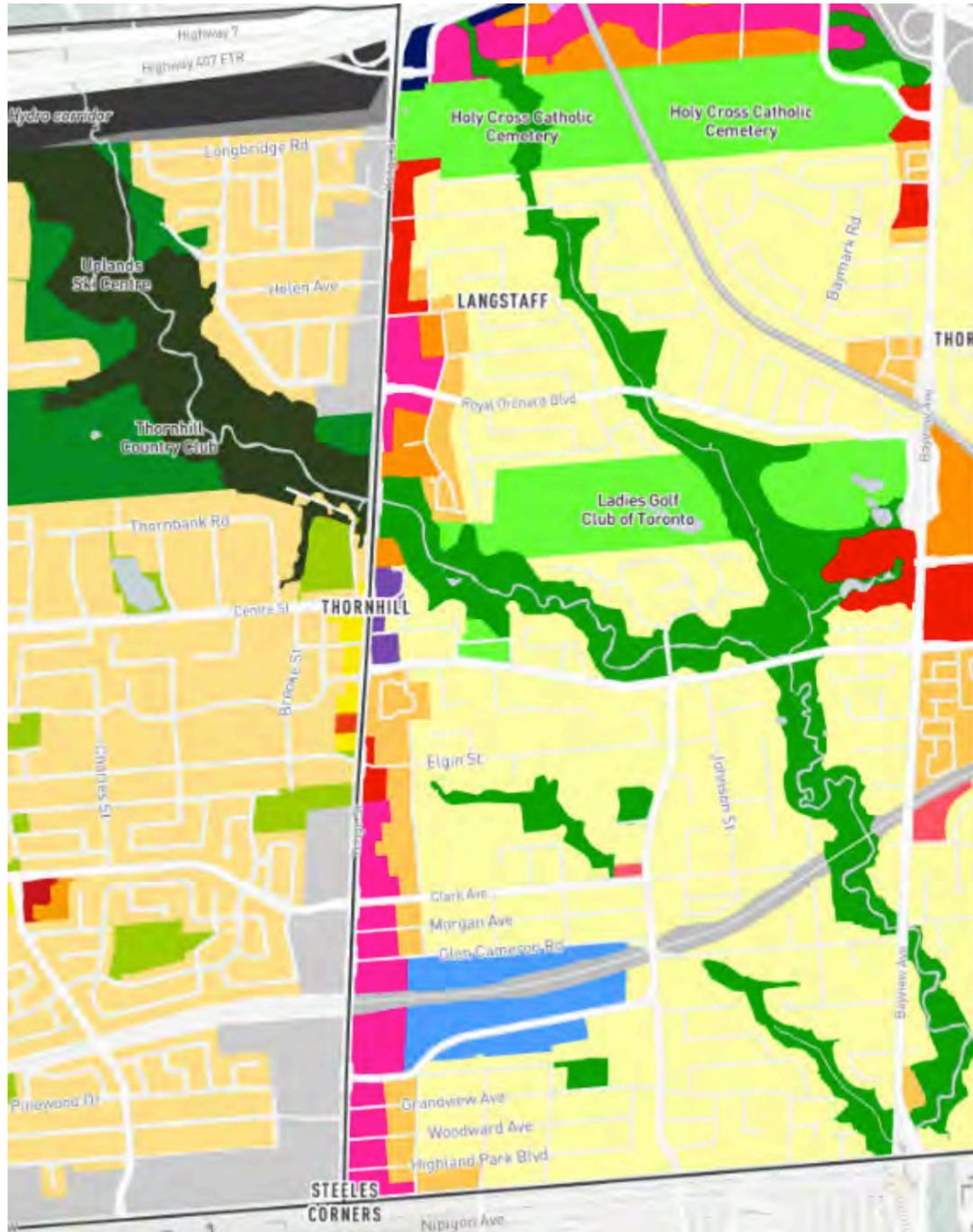
## Constrained

Constrained properties are not expected to change within long-term plans. Criteria for these properties might include:

- > Institutional properties not expected to be redeveloped or intensified such as Places of Worship, Elementary and Secondary Schools, Community and Institutional services, etc.
- > Newer developments built between 2010 to 2019
- > Developments with density or scale that make redevelopment unfeasible
- > Designated Heritage buildings
- > Golf Courses
- > Building 4 storeys and above

## Transitioning

- > Transitioning properties are all remaining properties that are neither stable nor constrained.
- > They are generally low-density developments with higher zoning permissions or large properties with intensification capacity.



# Existing Conditions and Planned Context Maps

## Official Plan Land Use Designations

### Legend (Markham)

- • Business Park Employment
- • Commercial
- • Future Employment Area
- • General Employment
- • Hamlets
- • Mixed Use Heritage Main Street
- • Mixed Use Low Rise
- • Mixed Use Office Priority
- • Residential Estate
- • Residential Low Rise
- • Service Employment
- • Business Park Office Priority Employment
- • Countryside
- • Future Neighbourhood Area
- • Greenway
- • Mixed Use Health Care Campus
- • Mixed Use High Rise
- • Mixed Use Mid Rise
- • Private Open Space
- • Residential High Rise
- • Residential Mid Rise
- • Transportation and Utilities

### Legend (Vaughan)

- • Agricultural
- • Employment Commercial Mixed-Use
- • High-Rise Mixed-Use
- • Infrastructure and Utilities
- • Low-Rise Mixed-Use
- • Major Institutional
- • Mid-Rise Residential
- • New Community Areas
- • Oak Ridges Moraine Natural Core
- • Parks
- • Prestige Employment
- • Rural
- • Community Commercial Mixed-Use
- • General Employment
- • High-Rise Residential
- • Lands Subject to Secondary Plans
- • Low-Rise Residential
- • Mid-Rise Mixed-Use
- • Natural Areas
- • Oak Ridges Moraine Countryside
- • Oak Ridges Moraine Natural Linkage
- • Parkway Belt West Lands
- • Private Open Space
- • Theme Park and Entertainment