



ASSESSMENT OF SEQUENTIAL/CUMULATIVE RATES FOR HIGH DENSITY DEVELOPMENTS

purpose

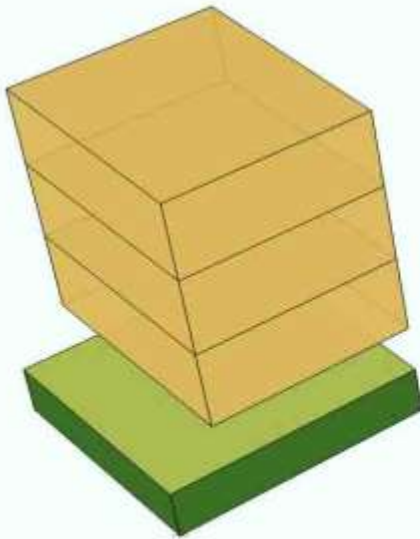
1. The relationship among lot coverage, density and height
2. Value of parkland conveyance reduction for high density scenarios
3. Comparison to “no reduction” scenario
4. Additional considerations related to reductions for high density
5. Comparative analysis from other jurisdictions
6. Overview of proposed parkland hierarchy
7. Miscellaneous issues and questions

study: density / fsi

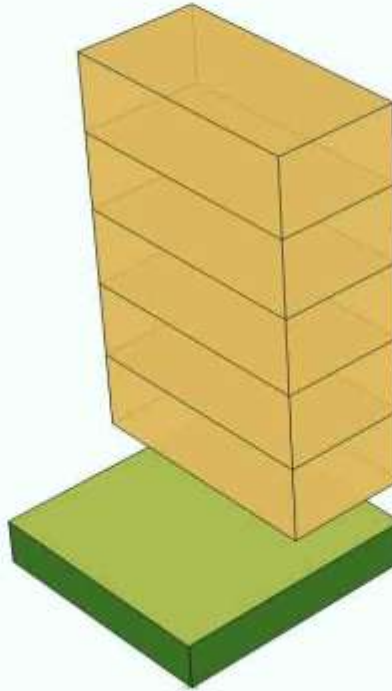
A FSI of 2.5 means that the total floor area of a building is 2.5 times the area of the site.

FSI : floor space index

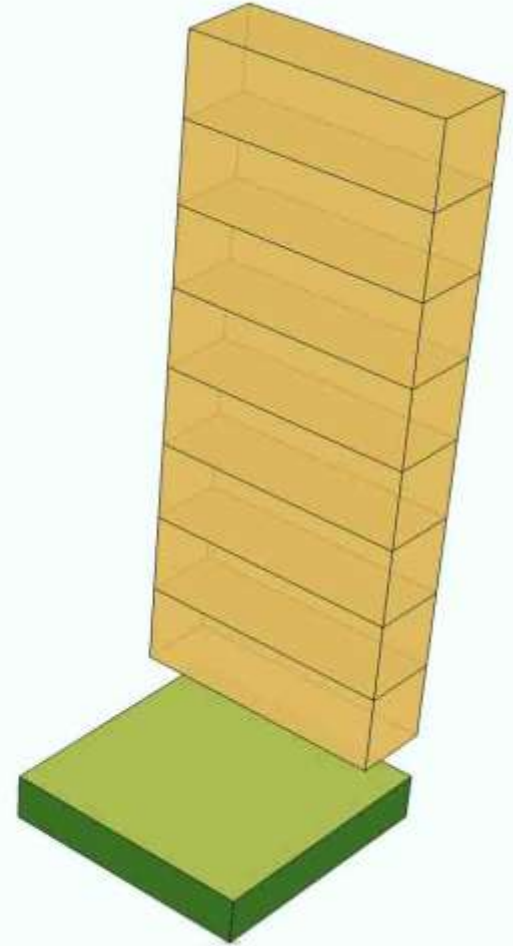
$$\text{FSI} = \frac{\text{Gross Floor Area}}{\text{Site Area}}$$



FSI 2.5
lot coverage 80%
3 storeys



FSI 2.5
lot coverage 50%
5 storeys



FSI 2.5
lot coverage 30%
8 storeys

density / fsi

There is a direct relationship among lot coverage, density (FSI) and building height:

$$\text{Building Height} = \text{FSI} \times \frac{1}{\text{Lot Coverage}}$$

$$\text{FSI} = \text{Lot Coverage} \times \text{Building Height}$$

$$\text{Lot Coverage} = \text{FSI} / \text{Building Height}$$

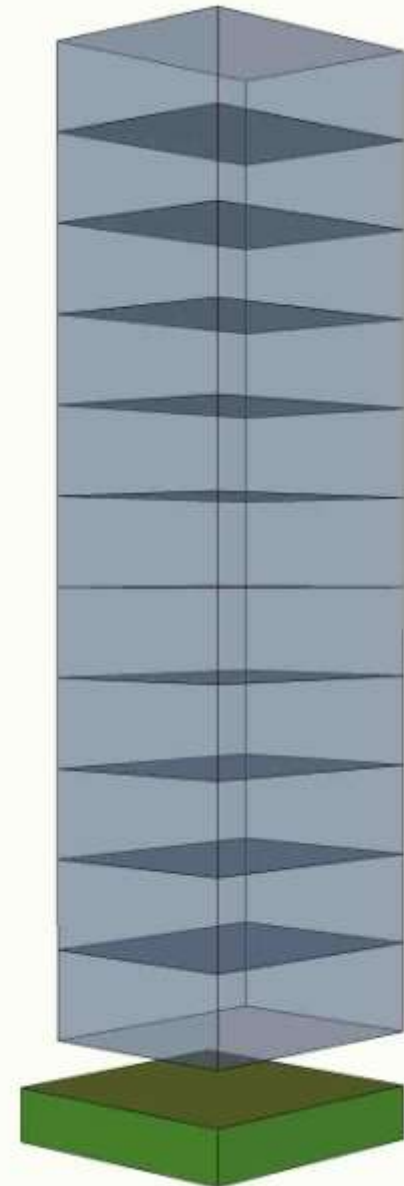
case study: **density / fsi**

DEVELOPMENT STATISTICS

Site Area (m ²)	1,000 m ² (0.25 of an acre)
Floor Space Index	9.0
Lot Coverage (%)	80%
GFA (m ²)	9,000 m ²
Building Height (storeys)	11 storeys
Floor Plate (m ²)	800 m ²
Dwelling Units (at 120 m ² /unit)	75 units
Residents (at 1.91 ppu)	144 people

PARKLAND CONVEYANCE – NO DISCOUNT

At rate of 1.2 ha/1,000 persons	1,728 m ²
Cash-in-lieu (\$4,325,000/ha.)	\$747,360
Cost/unit	\$9,965 per unit



FSI 9.0
coverage 80%
11 storeys

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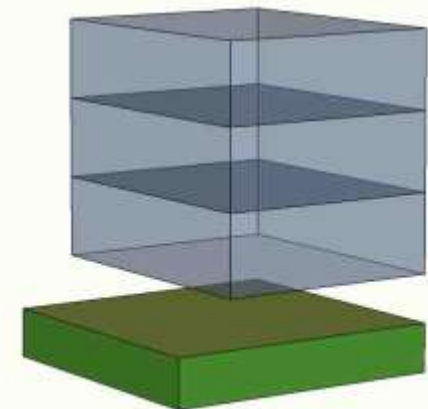
case study: density / fsi

DEVELOPMENT STATISTICS

Site Area (m ²)	1,000 m ² (0.25 of an acre)
Floor Space Index	2.5
Lot Coverage (%)	80%
GFA (m ²)	2,500 m ²
Building Height (storeys)	3 storeys
Floor Plate (m ²)	800 m ²
Dwelling Units (at 120 m ² /unit)	21 units
Residents (at 1.91 ppu)	40 people

PARKLAND CONVEYANCE

At rate of 1.2 ha/1,000 persons	480 m ²
Cash-in-lieu (\$4,325,000/ha.)	\$207,600
Cost/unit	\$9,885 per unit



FSI 2.5
coverage 80%
3 storeys

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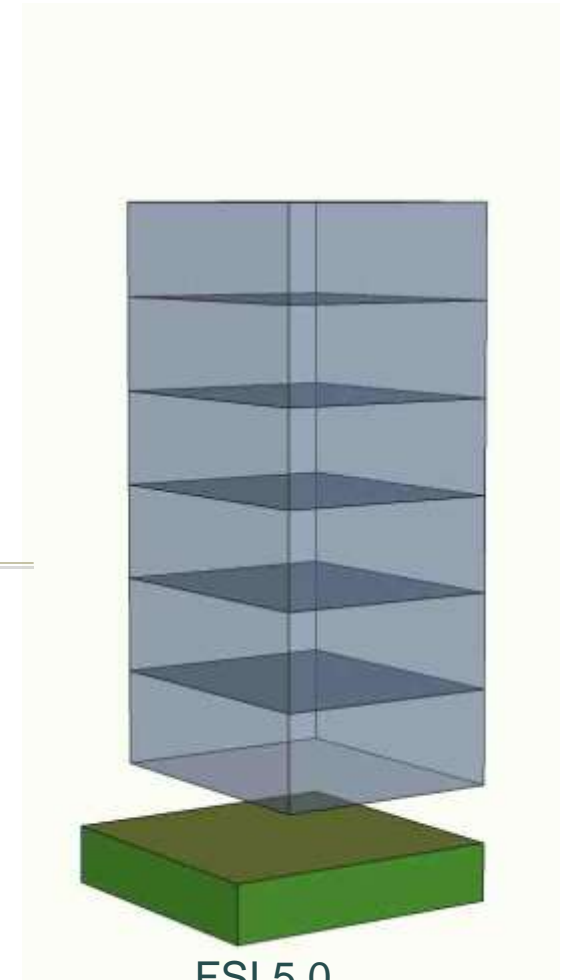
case study: **density / fsi**

DEVELOPMENT STATISTICS

Site Area (m ²)	1,000 m ² (0.25 of an acre)
Floor Space Index	5.0
Lot Coverage (%)	80%
GFA (m ²)	5,000 m ²
Building Height (storeys)	6 storeys
Floor Plate (m ²)	800 m ²
Dwelling Units (at 120 m ² /unit)	41 units
Residents (at 1.91 ppu)	78 people

PARKLAND CONVEYANCE

40 residents at 1.2 ha/1,000 persons	470 m ²
39 residents at 0.9 ha/1,000 persons	350 m ²
Total	820 m ²
Cash-in-lieu (\$4,325,000/ha.)	\$354,650
Cost/unit	\$8,650 per unit



FSI 5.0
coverage 80%
6 storeys

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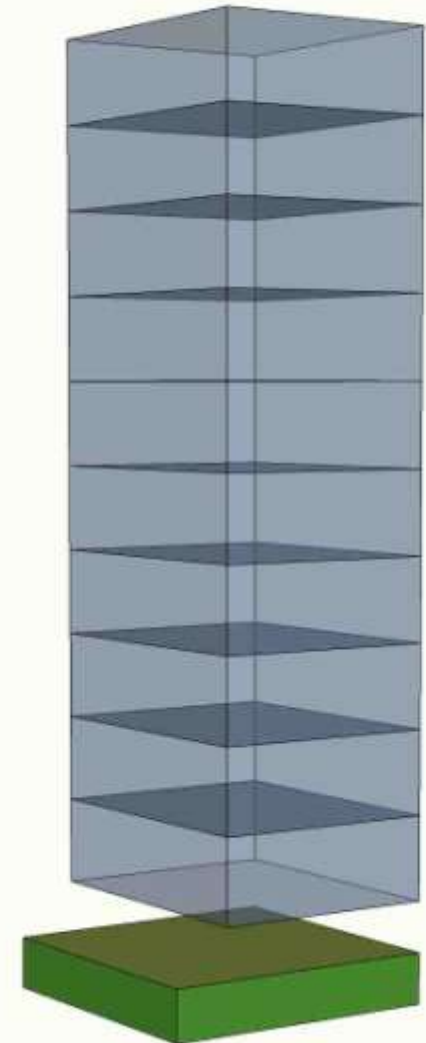
case study: density / fsi

DEVELOPMENT STATISTICS

Site Area (m ²)	1,000 m ² (0.25 of an acre)
Floor Space Index	8.0
Lot Coverage (%)	80%
GFA (m ²)	8,000 m ²
Building Height (storeys)	10 storeys
Floor Plate (m ²)	800 m ²
Dwelling Units (at 120 m ² /unit)	67 units
Residents (at 1.91 ppu)	128 people

PARKLAND CONVEYANCE

40 residents at 1.2 ha/1,000 persons	480 m ²
40 residents at 0.9 ha/1,000 persons	360 m ²
48 residents at 0.6 ha/1,000 persons	290 m ²
Total	1,130 m ²
Cash-in-lieu (\$4,325,000/ha.)	\$488,725
Cost/unit	\$7,295 per unit



FSI 8.0
coverage 80%
10 storeys

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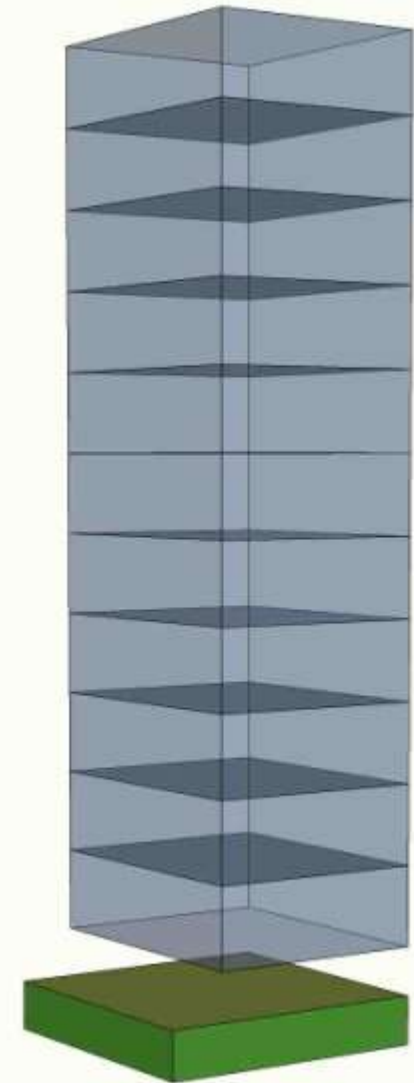
case study: **density / fsi**

DEVELOPMENT STATISTICS

Site Area (m ²)	1,000 m ² (0.25 of an acre)
Floor Space Index	9.0
Lot Coverage (%)	80%
GFA (m ²)	9,000 m ²
Building Height (storeys)	11 storeys
Floor Plate (m ²)	800 m ²
Dwelling Units (at 120 m ² /unit)	75 units
Residents (at 1.91 ppu)	144 people

PARKLAND CONVEYANCE

40 residents at 1.2 ha/1,000 persons	480 m ²
40 residents at 0.9 ha/1,000 persons	360 m ²
48 residents at 0.6 ha/1,000 persons	290 m ²
16 residents at 0.3 ha/1,000 persons	50 m ²
Total	1,180 m ²
Cash-in-lieu (\$4,325,000/ha.)	\$510,350
Cost/unit	\$6,805 per unit



FSI 9.0
coverage 80%
11 storeys

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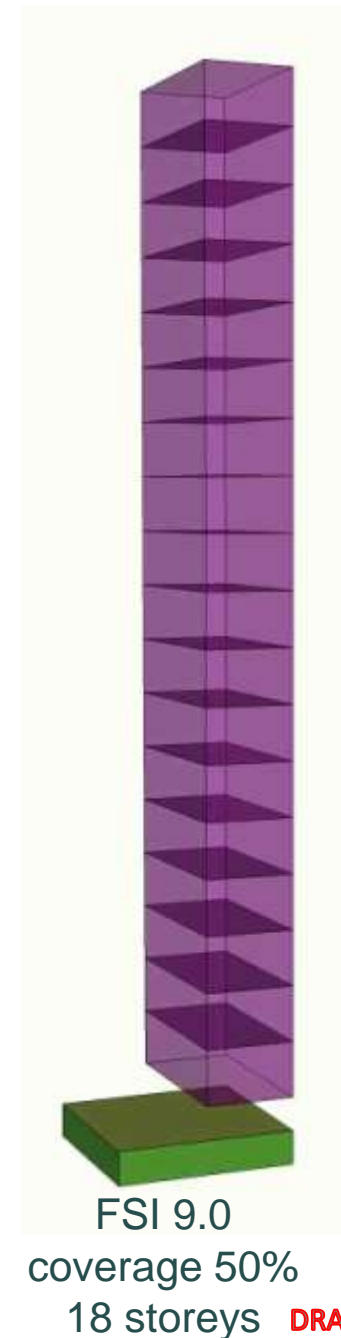
case study: density / fsi

DEVELOPMENT STATISTICS

Site Area (m ²)	1,000 m ² (0.25 of an acre)
Floor Space Index	9.0
Lot Coverage (%)	50%
GFA (m ²)	9,000 m ²
Building Height (storeys)	18 storeys
Floor Plate (m ²)	500 m ²
Dwelling Units (at 120 m ² /unit)	75 units
Residents (at 1.91 ppu)	144 people

PARKLAND CONVEYANCE

40 residents at 1.2 ha/1,000 persons	480 m ²
40 residents at 0.9 ha/1,000 persons	360 m ²
48 residents at 0.6 ha/1,000 persons	290 m ²
16 residents at 0.3 ha/1,000 persons	50 m ²
Total	1,180 m ²
Cash-in-lieu (\$4,325,000/ha.)	\$510,350
Cost/unit	\$6,805 per unit



difference between 1.2ha/1,000 persons standard vs. proposed graduated approach

1.2ha/1,000 people

0 to 2.5 FSI	480m ²	\$9885/unit	21 units	\$207,600 cash-in-lieu
2.5 to 5.0 FSI	936m ²	\$9885/unit	41 units	\$405,285 cash-in-lieu
5.0 to 8.0 FSI	1,536m ²	\$9885/unit	67 units	\$662,295 cash-in-lieu
8.0 to 9.0 FSI	1,728m ²	\$9885/unit	75 units	\$741,375 cash-in-lieu

Graduated Approach

0 to 2.5 FSI	480m ²	\$9885/unit	21 units	\$207,600 cash-in-lieu
2.5 to 5.0 FSI	820m ²	\$8650/unit	41 units	\$354,650 cash-in-lieu
5.0 to 8.0 FSI	1,130m ²	\$7295/unit	67 units	\$488,725 cash-in-lieu
8.0 to 9.0 FSI	1,180m ²	\$6805/unit	75 units	\$510,350 cash-in-lieu

difference between 1ha/300 dwelling units, 1.2ha/1,000 persons standard vs. proposed graduated approach: CASH-IN-LIEU

Total Cost (@9.0 FSI)	\$747,360.00	vs	\$510,350.00
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Cost/Unit	\$9,965.00	vs	\$6,805.00
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- Difference is approximately 31.7% reduction overall and cost/unit reduction
- Average Price of Standard Condominium Apartment in Markham is \$325,000*
 - * Royal LePage House Price Survey Q4 2012
- Parkland dedication amount represents about 3% of the cost of a Condominium in Markham

difference between 1.2ha/1,000 persons standard vs. proposed graduated approach: PARKLAND GENERATED

Total Land (@9.0 FSI)	1730 m2	vs	1180 m2
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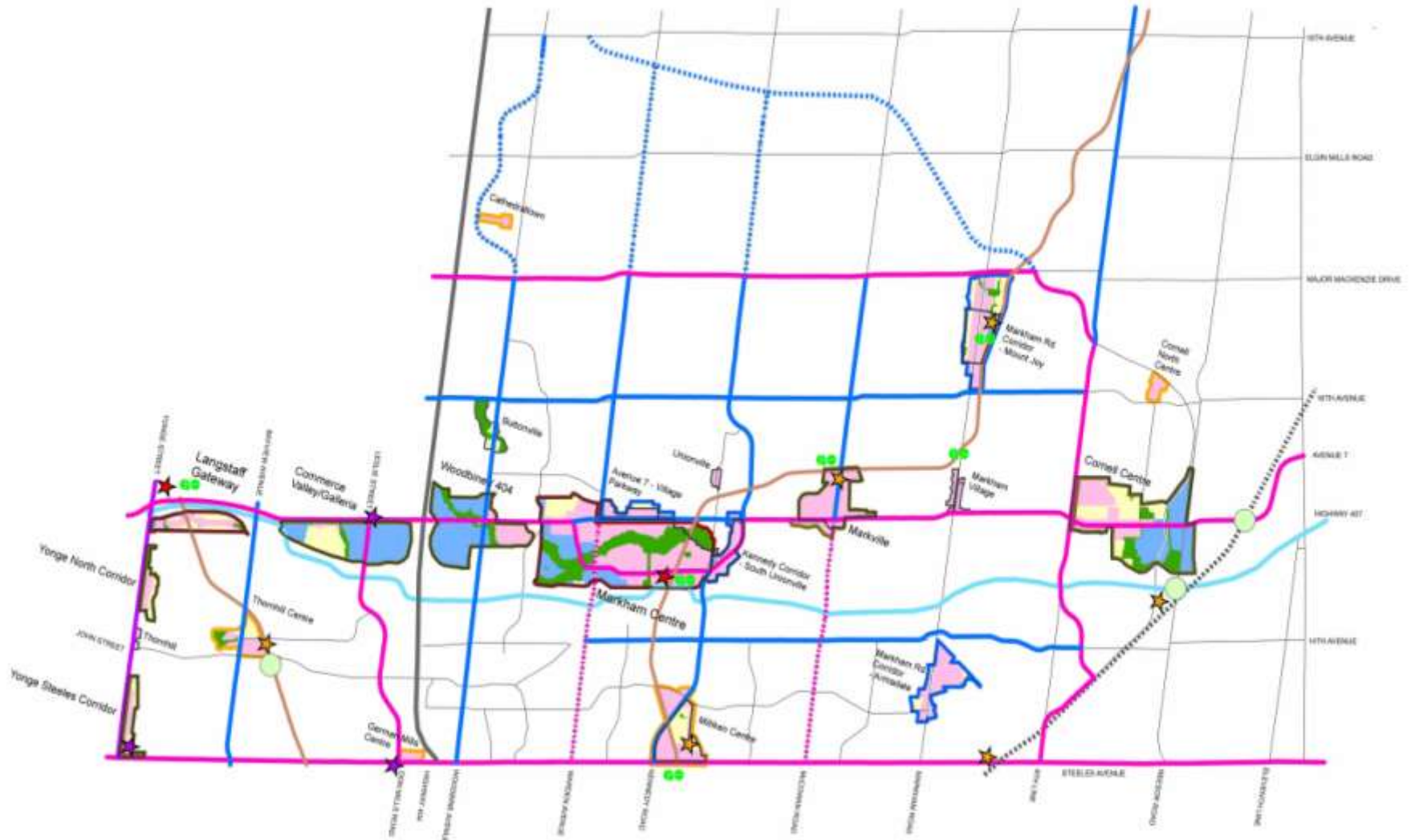
Land/Unit	23 m2	vs	15.7 m2
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- Difference is approximately 31.7% reduction overall and land/unit reduction
- Parkland dedication amount represents about 3% of the cost of a Condominium in Markham

additional considerations related to reductions for high density

- Council may consider the graduated approach for high density development only within centres and corridors
- To qualify for reductions, development shall be consistent with built form, height and massing guidelines and policies of the Official Plan and Secondary Plans
- Reductions provide an incentive for establishing higher density development and allows the City to achieve the planned urban structure

markham's centres & corridors



parkland purchase opportunities

- Variations in land values across Markham
- \$4,325,000/ha urban versus \$1,500,000/ha suburban
- Ability to purchase/acquire more suburban land for parks with “urban cash-in-lieu”
 - 1ha of “Urban Land” = 2.9ha of “Suburban Land”

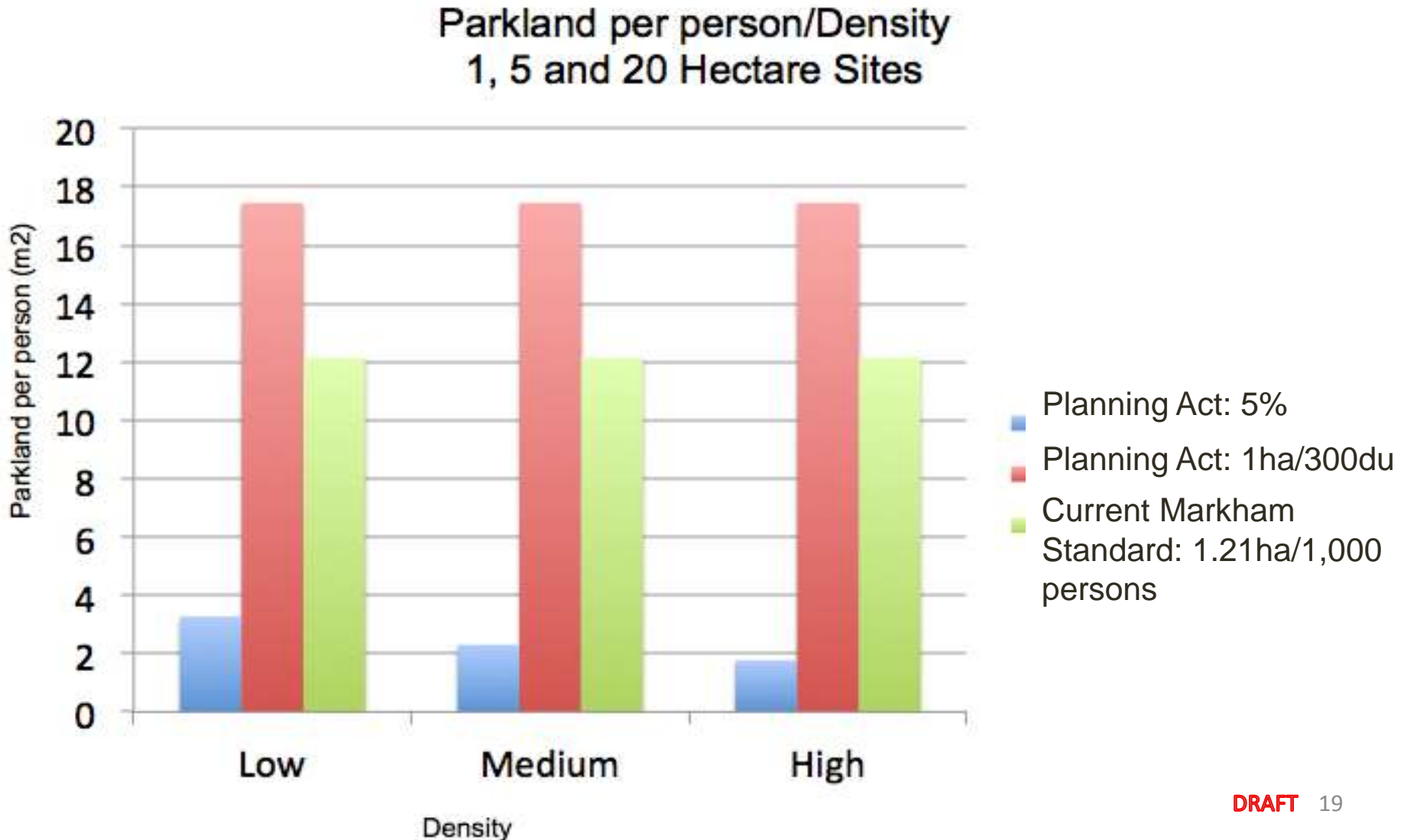
approach in other jurisdictions

- BILD surveyed 26 GTA municipalities
- Compared land dedication rates, cash-in-lieu calculations, land appraisal methodologies, potential exemptions and additional costs
- Key differences included caps on land dedication, differential treatment of varying density developments and land valuation methods
- Focused on approaches used in higher density residential development scenarios
- BILD found a wide variation in approaches and methodologies across GTA

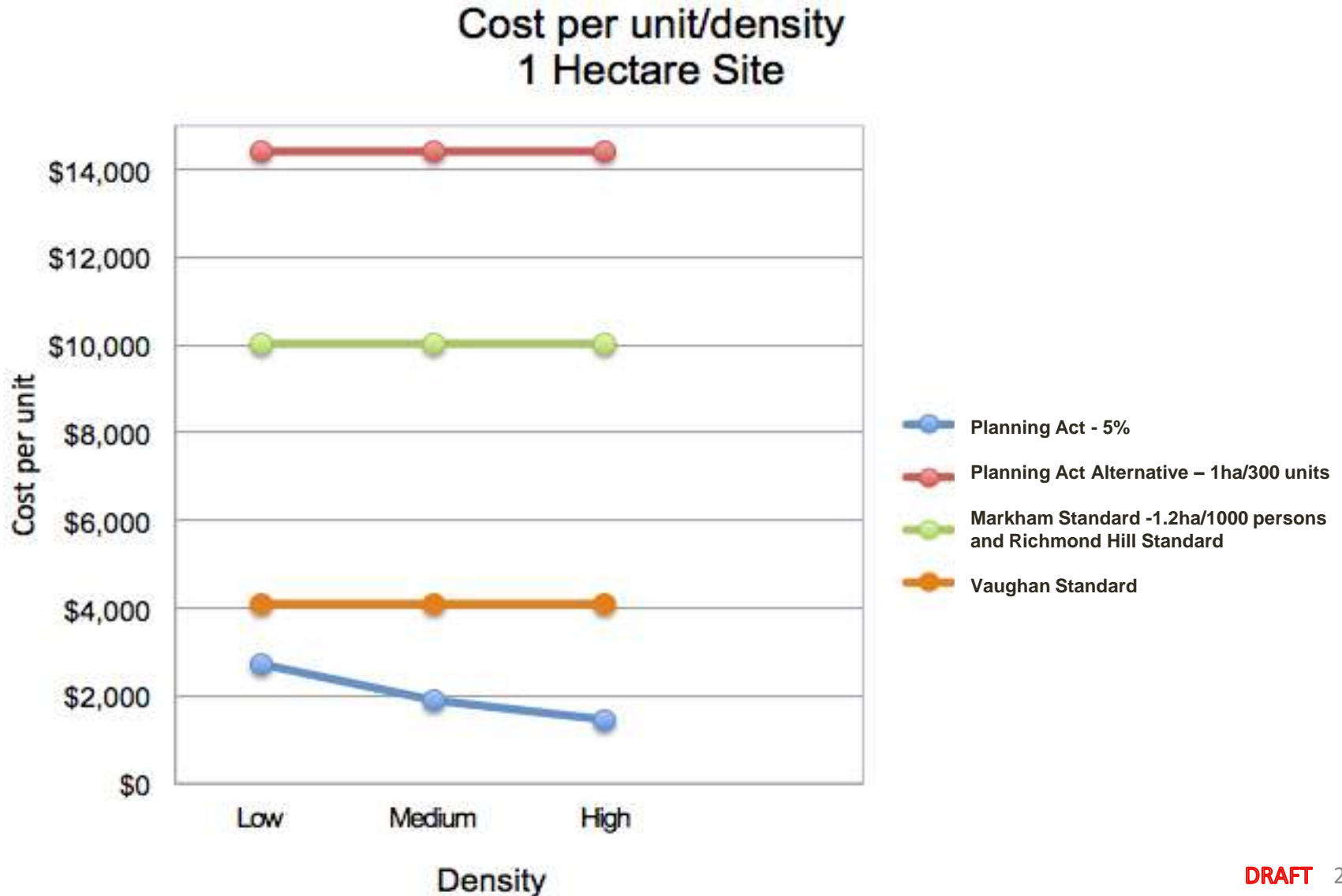
testing parkland dedication approaches & impacts

- Tested Markham's current approach against Planning Act's standards and approaches are being implemented by Richmond Hill, Vaughan and Toronto
- In each municipality, looked at how variations affected parkland dedication requirements for development area, density, household size and average land values
- Municipalities were selected due to the diversity of approaches to parkland dedication that varied from the applicable Planning Act standards

comparison of amount of parkland per person for high density sites (1, 5 and 20 hectares)



cost of parkland per unit for high density sites (land cost assumption - \$4,325,000/ha)



conclusions for comparative analysis

- Markham's current standard is 1 hectare per 300 dwelling units or 1.2141 hectares per 1,000 residents, whichever is less
- In Low and most Medium Density scenarios, the Alternative Planning Act (1 ha/300du) standard establishes the maximum permissible land conveyance
- The Markham Alternative (1.2 ha/1,000 residents) is appropriately applied to the high end of medium density and high density residential scenarios

conclusions for comparative analysis

The Markham Alternative standard:

- Directly accounts for the number of people generated by development
- Considered the most equitable and consistent approach
- Can deal with fluctuations in land cost, site size and changes in density and household size in a consistent and reasonable way

parkland hierarchy

- Markham's proposed parks hierarchy to be comprised of:
 - Destination Parks
 - City-Wide Parks
 - Community Parks
 - Neighbourhood Parks



destination parks

- Outside of City ownership and control
- Include lands within a defined Conservation Area and/or lands associated with the evolving Rouge Park and are intended to serve broader regional, provincial and national interests
- Do not contribute to the delivery of neighbourhood and community park needs, facilities and programs



city-wide parks

- Typically, large scale parks in excess of 12 hectares
- Accommodate facilities and provide programs for City residents not typically provided in Community and Neighbourhood Parks
- Serve a number of communities, neighbourhoods and areas
- May also include “Special Purpose Parks” that preserve natural/ecological features, as well as significant cultural and historical resources
- Examples may include Milliken Reservoir Park and Proposed Sports Park

community parks

- Generally in excess of 6 hectares
- Expected to accommodate facilities and provide programs for individual communities, outside of those standard facilities provided in Neighbourhood Parks
- Provide space for active and passive culture and recreation
- The majority of residents should be within a 10-minute walk (approximately 800 metres) of a Community Park
- Examples are Simonston Park and Berczy and Wismer central parks

neighbourhood parks

- Includes parks of varied sizes and scales, and provides for the recreational needs of a local residential area
- Residents generally live within approximately 400 metres of a Neighbourhood Park



neighbourhood parks

- Types of Neighbourhood Parks
 - **Active Parks** – provide space for field sports, playgrounds and recreational needs of local residential area
 - **Urban Squares** – accommodate special features such as fountains and public art to add to visual interest and place making
 - **Parkettes** – are the smallest component of the City's parkland system and provide passive recreational space
 - **Urban Parkettes** – are located within identified centres, corridor or intensification areas and provide social spaces that are animated by their adjacent uses

miscellaneous issues & questions

- Exemption for nursing homes/affordable housing/non-profit
- Other Council concerns
- Public questions and comments

