

Seneca College Campus Master Plan Parking Technical Appendix

Master **Campus** Seneca College Plan

Prepared For:
Seneca College and DIALOG

January, 2012



**Movement
In Urban
Environments**

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1.0 Introduction

The purpose of this document is to provide additional background technical information utilized in developing the parking policies in the Seneca Campus Master Plan document. This document should be read in combination with the Final Seneca Campus Master Plan document, dated January 2012, issued by DIALOG.

The following sections outline the basis for the various parking recommendations developed in the Campus Master Plan. They also provide additional details regarding the parking for each campus.

2.0 Newnham Campus

2.1 Background

BA Group was retained by Seneca College in 2009 as part of the development of the Knowledge Infrastructure Program (KIP) building, which is referred to as 'Building A – New' in the Campus Master Plan. As part of that scope of work BA Group collected a large amount of baseline parking supply and utilization information at the Newnham Campus. This information was utilized as the primary basis of establishing the future parking supply strategy at the Newnham Campus. Key information developed / collected by BA Group used for the purpose of establishing the parking strategy at Newnham is provided below.

TABLE 1
EXISTING PARKING CHARACTERISTICS AT NEWNHAM CAMPUS

Total Parking Supply ¹	2,600 spaces
Observed Parking Occupancy ²	80 to 85%
Estimated Parking Demand Post-KIP ²	2,300 spaces
Existing Student Population ³	Approx. 10,000 FTE
Parking Supply Ratio	0.26 spaces / student
Parking Demand Ratio	0.23 spaces / student

Notes:

1. Rounded to the nearest hundred.
2. Based upon BA Group analysis undertaken in support of KIP Project in 2009.
3. Based on information provided by ECS.

FIGURE 1 — NEWNHAM PARKING DEMAND OBSERVATIONS

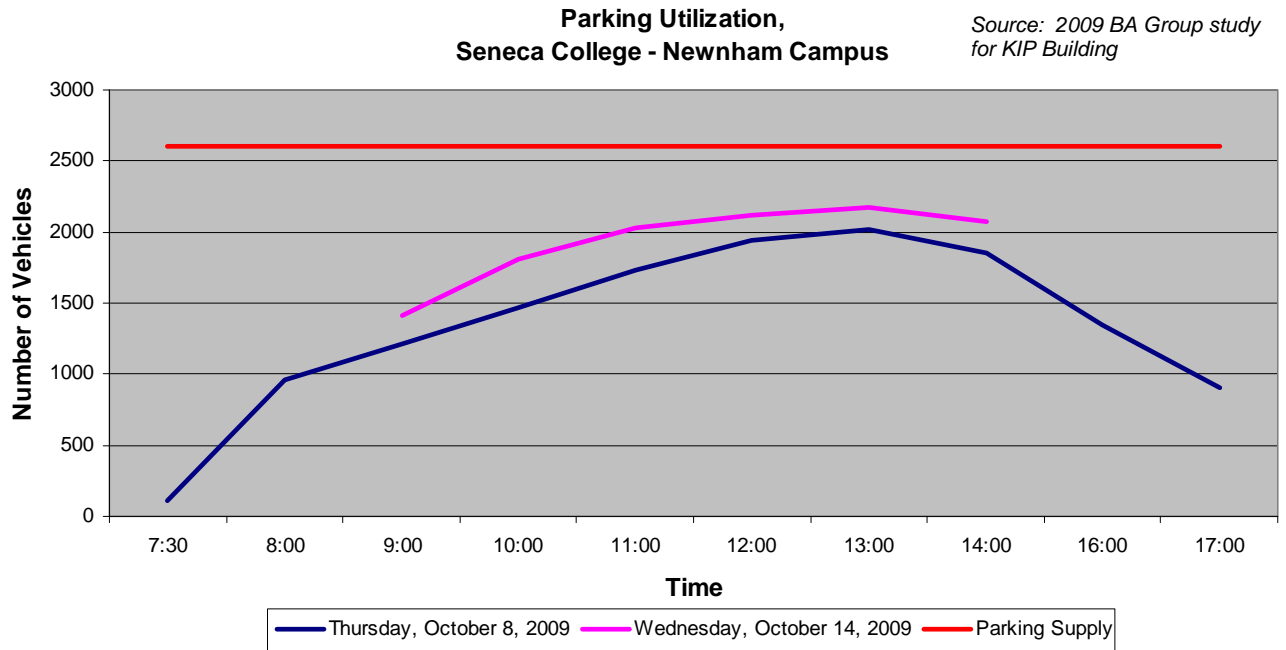
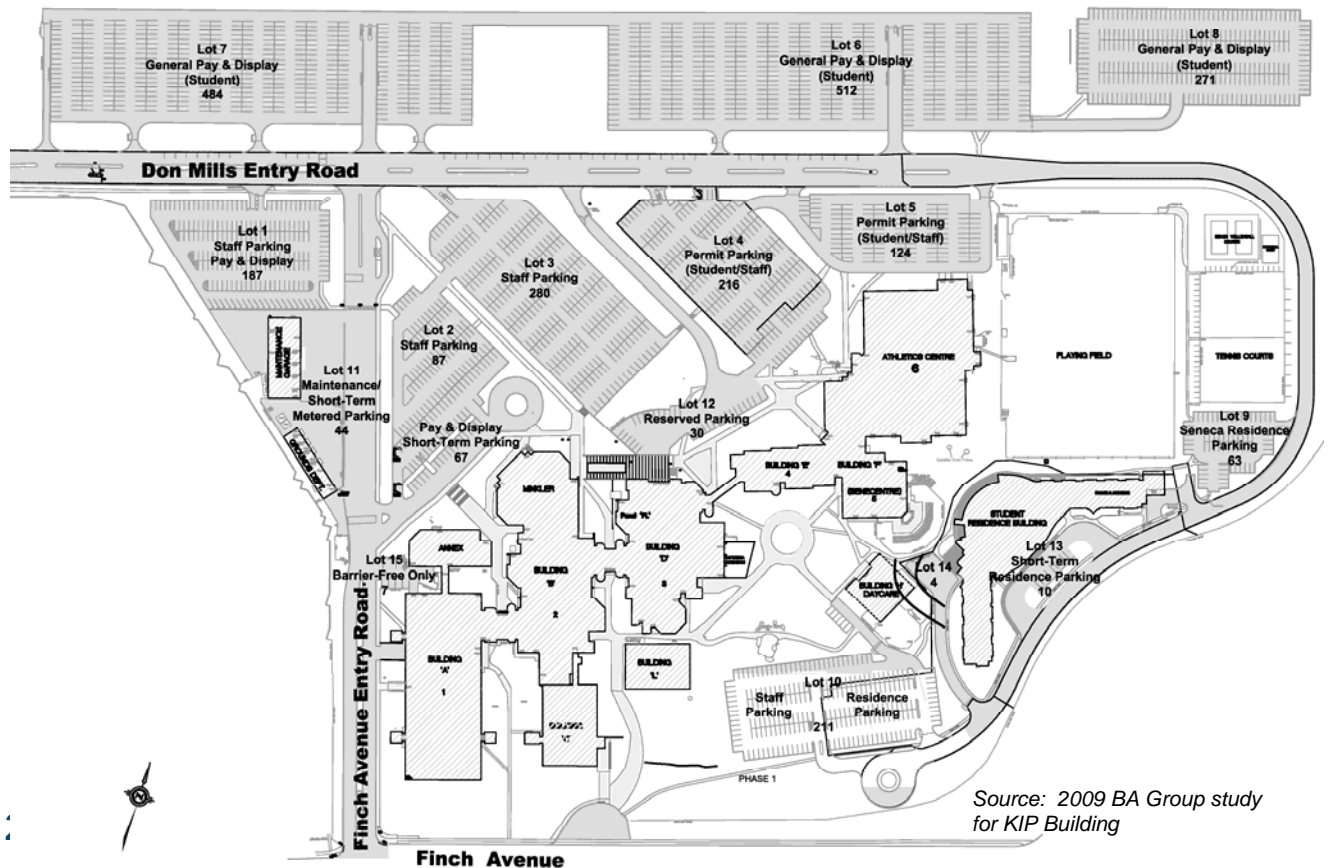


FIGURE 2 — EXISTING PARKING SUPPLY



The analysis undertaken by ECS estimates that the Newnham campus will undergo a modest growth in student enrollment of approximately 800 students within the Campus Master Plan time horizon. This compares to the existing student enrollment of approximately 10,000 and represents an increase of 8 per cent.

Notwithstanding that the estimated growth in student enrollment is approximately 8 percent; ECS recommends that the amount of educational floor space be increased by approximately 60%. The additional space is intended to bring Newnham’s space utilization (i.e. floor area per student) more in line with educational standards across the province.

2.2 Future Parking Supply

Because the Campus Master Plan vision for the Newnham Campus focuses on intensifying the campus through construction of structured parking (i.e. in above or below grade garages), it will be very important for Seneca to minimize the amount of new parking constructed on the site. In this regard the parking strategy recommended for Newnham is similar to what was employed when the KIP facility was constructed: specifically, that the College not provide any additional parking on the site. Rather, it is recommended that future increases in student population be accommodated through a Transportation Demand Management Strategy (TDM) that maximizes the use of existing facilities and focuses on increased transit use in lieu of any additional parking. Table 2 summarizes the calculation of the recommended future parking supply at the Newnham Campus based on this approach.

**TABLE 2
PARKING SUPPLY CALCULATION**

Category	Number
Existing Number of Students ¹	10,000 students
Existing No. of Parking Spaces ^{2,3}	2,500 to 2,600 spaces
Ratio of Spaces to Students	0.26
Future Long-Term Student Population ¹	10,800 students
Future Parking Requirement Assuming No Change in Travel Characteristics	2,800 spaces
Targeted Decrease in Parking Demand due to TDM / Increased Transit Use	Approx..10%
Decrease in Parking Demand due to TDM / Increased Transit Use	300 spaces
Recommended Long-Term Parking Supply	Approx. 2500 spaces

Notes:

1. Based upon estimates provided by ECS.
2. Based upon data collected by BA Group for KIP Building in 2009. Parking supply before KIP approx.. 2600 spaces, parking supply after KIP construction estimated approx. 2515 spaces.
3. Rounded to the nearest hundred.

2.3 Parking Supply Deployment

There are between 2,500 and 2,600 parking spaces currently on the Newnham Campus. Of this, approximately half (i.e. 1,250 to 1,300 spaces) are located in the hydro corridor and the other half are located in various lots south of Hydro Boulevard.

The Campus Master Plan contemplates the reconstruction of all the existing surface parking areas south of Hydro Boulevard into new buildings or open space. As a result Seneca will need to replace approximately 1,300 parking spaces into structured parking in order to achieve the Campus Master Plan build-out. There are several forms in which the parking can be replaced: a stand-alone above-grade parking garage with active uses at street level; a below-grade parking garage located under an academic building; or an above-grade parking garage with an academic building wrapped around it.

To provide the requisite number of spaces, the Campus Master Plan envisions several new parking structures being built on the south side of Hydro Boulevard. The parking garages can be built using a mix of the typologies listed above depending on the College's needs and economics at the time the academic facility / parking is required. In this regard, it is assumed that the parking structures would be constructed in a phased manner as demand requires, in conjunction with each new academic build or phase of the Campus Master Plan.

3.0 Markham Campus

3.1 Background

Key statistics for the Markham Campus are set out in Table 3.

TABLE 3
EXISTING PARKING CHARACTERISTICS AT MARKHAM CAMPUS

Category	Number
Total Parking Supply ¹	735 spaces
Observed Parking Occupancy ¹	Approx. 80%
Estimated Parking Demand ¹	600 spaces
Existing Student Population ^{2,3}	1,800 students
Parking Supply Ratio	0.40 spaces / student
Parking Demand Ratio	0.35 spaces / student

Notes:

1. Based upon BA Group surveys / observations from April 2011.
2. Based upon information provided by ECS and Seneca College.
3. Rounded to the nearest hundred.

FIGURE 3 — MARKHAM CAMPUS PARKING UTILIZATION

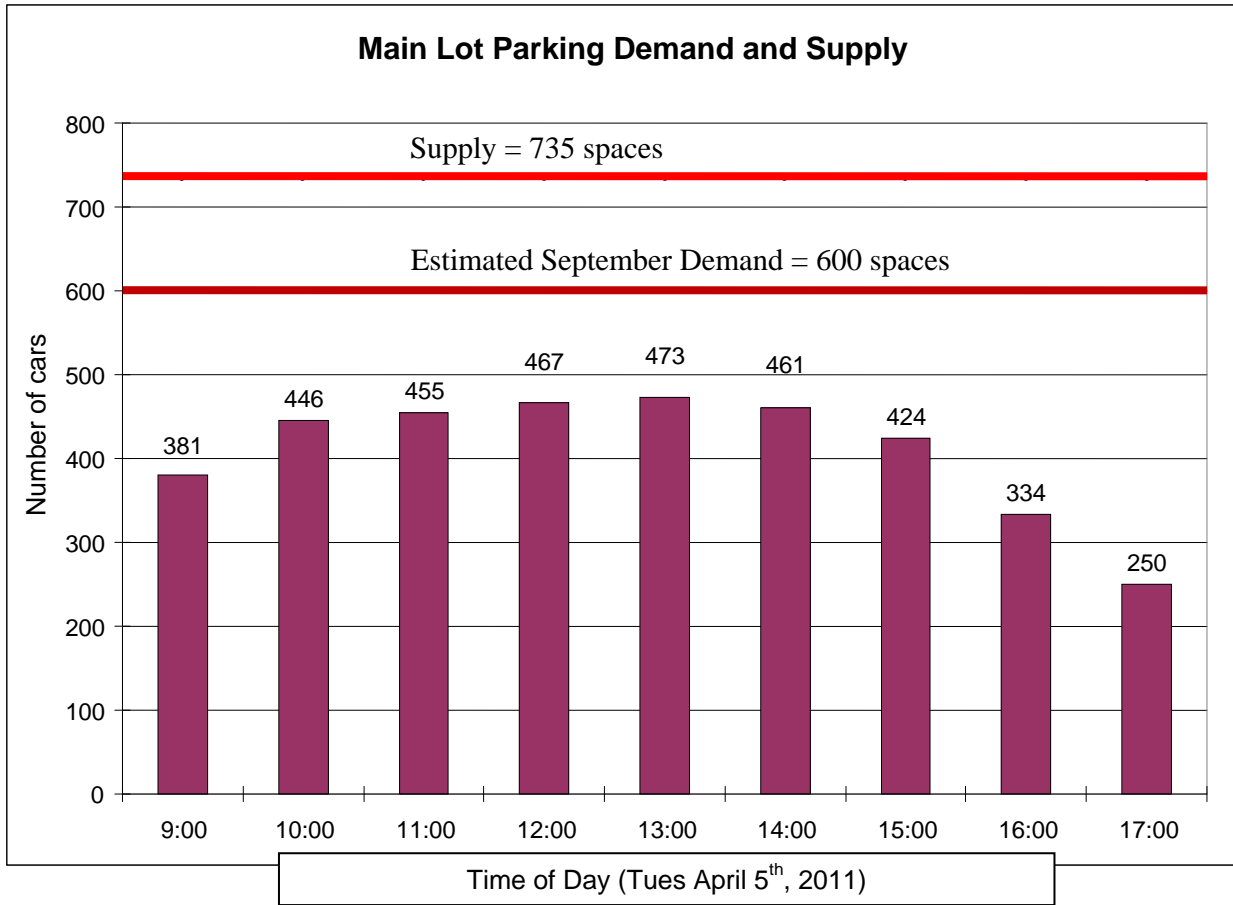
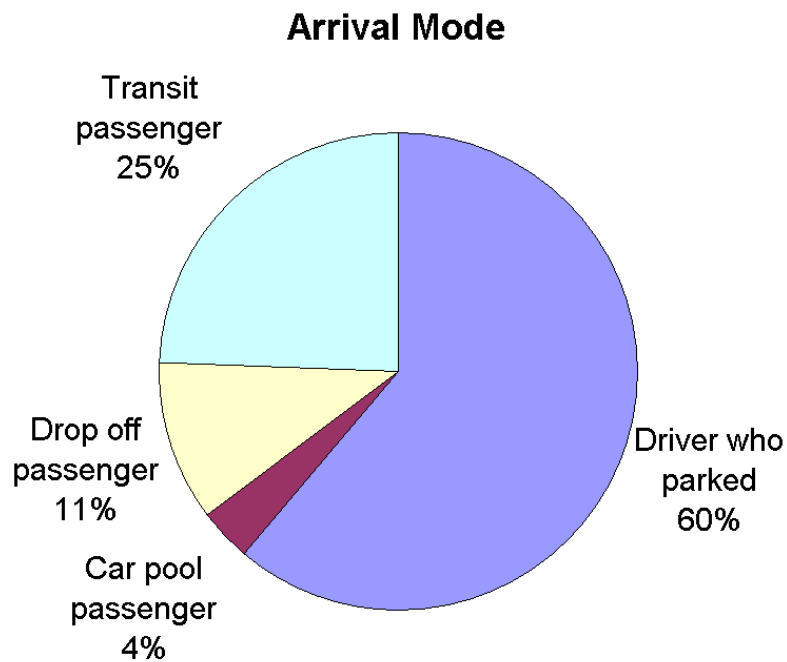


FIGURE 4 — MARKHAM CAMPUS TRAVEL CHARACTERISTICS



3.2 Projected Growth

The ECS analysis suggests that the long-term student population at the Markham campus should be in the order of 5800 students. The corresponding recommended increase in floor area by ECS is 426,000 square feet.

This represents an increase of approximately 220% in student population and 200% in floor area projected for the Markham Campus.

3.3 Future Parking Supply

Table 4 summarizes the recommended Campus Master Plan parking supply calculation for Markham Campus.

TABLE 4
MARKHAM CAMPUS PARKING SUPPLY CALCULATION

Category	Number
Existing Number of Students ¹	1,800 students
Existing No. of Parking Spaces ²	735 spaces
Supply Ratio	0.40 spaces / student
Demand Ratio	0.33 spaces / student
Future Long-Term Student Population ¹	5,800 students
Future Parking Needed Assuming No Change in Travel Characteristics ³	1,900 to 2,300 spaces
Targeted Decrease in Parking Demand due to TDM / Increased Transit Use	15% to 20%
Estimated reduction in parking due to TDM / Increased Transit ³	300 to 400 spaces
Recommended Overall Long-Term Parking Supply³	1,500 to 2000 spaces
Net-new parking spaces recommended ⁴	750 to 1,250 spaces

Notes:

1. Based upon information provided by ECS.
2. Based upon BA Group surveys / observations from April 2011.
3. Rounded to the nearest hundred.
3. Rounded to the nearest fifty.

The above parking forecasts pertain to the College's academic uses only, and do not include any third party projects complementary to the College use. In this regard, any non-academic use will be required to provide its own separate parking supply within its own building footprint.

3.4 Parking Supply Deployment

The Campus Master Plan contemplates all campus parking being provided in parking structures in the future, however it is anticipated that campus parking will continue to be provided in surface parking lots until the first significant academic building is constructed.

To meet the Campus Master Plan supply requirements, the Markham Campus will require several large parking structures. The Campus Master Plan envisions the use of combined parking structures with academic buildings. They would be designed such that the parking garages would be located within the interior of the building mass, and the academic uses would be wrapped around the building edges.

Each parking facility will need to contain approximately 500 to 800 spaces in order to provide the amount of parking required in the ultimate Campus Master Plan vision. A parking garage with this many spaces is significant in size and given cost of constructing structured parking, will be relatively expensive to provide. In this regard, it is recommended that Seneca College set out a plan of action now on how the parking garages will need to be financed. This will help give the College flexibility to construct some structured parking when it becomes necessary. (e.g. the College may be required to pre-build a parking structure so that additional academic buildings can be constructed on the current surface parking areas).

4.0 King Campus

4.1 Background

The parking strategy for the King Campus was derived based upon the existing parking supply characteristics. Additional parking demand information was not collected as part of the Campus Master Plan process. Key statistics for the King Campus used as the basis for Campus Master Plan calculations are outlined in Table 5.

TABLE 5
EXISTING PARKING CHARACTERISTICS AT KING CAMPUS

Existing Parking Supply ¹	Approx. 1,300 spaces
Existing Student Population ^{1,2}	3,300 students
Parking Supply Ratio	0.38 spaces / student

Notes:

1. Rounded to the nearest hundred.
2. Based upon estimates provided by ECS.

4.2 Projected Growth

Based on the ECS analysis, it is estimated that the long-term student enrollment at the King Campus should be in the order of 4800 students. The corresponding recommended increase in floor area by ECS is 426,000 square feet, which will be added to the existing floor area at the campus of 121,000 square feet.

This represents an increase of approximately 47% in student population and a 236% increase in floor area projected for the King Campus.

4.3 Future Parking Supply

While Seneca College should strive to reduce the demand for parking at its King Campus through a Transportation Demand Management (TDM) plan, employing TDM strategies will not be able to accommodate all the potential growth expected and some additional parking will be required. In this regard, a preliminary order of magnitude estimate of future parking supply at the King Campus was derived based on the existing parking ratios at the King Campus. Table 4 summarizes the calculation of the Campus Master Plan parking supply.

TABLE 6
KING CAMPUS PARKING SUPPLY CALCULATION

Category	Number
Existing Parking Supply Ratio	0.38 spaces / student
Projected long-term student enrollment ¹	4,800 students
Estimated long-term parking supply	1,800 spaces
Existing Parking Supply	1,300 spaces
Estimated additional parking required on campus	500 spaces

Notes:

1. Based upon estimates provided by ECS.

The above noted parking supply recommendations does not include accommodation of any parking demand associated with Eaton Hall, which given its separation from the primary campus area, has been considered separately for the purposes of the Campus Master Plan analysis.

4.4 Parking Supply Deployment

The Campus Master Plan for the King Campus does not envision any structured parking being provided. Rather, the Campus Master Plan contemplates the relocation of the current surface parking lots to new lots located around the periphery of the future campus core area. These lots should contain the majority of the campus parking so that it is in close proximity to the majority of the academic facilities.

Notwithstanding the above, an additional new surface parking lot containing 200 parking spaces is envisioned adjacent to the future community athletic precinct at the southeast corner of the campus to provide overflow parking capacity for the primary academic core area, and to provide some primary parking for the athletic uses themselves. In addition some parking is recommended to be maintained in the vicinity of the east campus village.

TABLE 7
PRELIMINARY PARKING DEPLOYMENT RECOMMENDATIONS FOR KING CAMPUS

Category	Number
Primary Academic Core Precinct Supply	1,500 spaces
Athletic Precinct Supply	200 spaces
East Village Campus Precinct Supply	100 spaces
Total Future Supply	1,800 spaces