Master Space Programmes to Inform the Development of Campus Plans at the Newnham, Markham and King Campuses of Seneca College

Final Report

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Educational Consulting Services Corp.

Section 1 – Introduction

Master Space Programmes (MSPs) to Inform the Development of Campus Master Plans

Educational Consulting Services Corp. (ECS) has been engaged to develop master space programmes (MSPs) for the Newnham, Markham, King, Seneca@York and Jane campuses of Seneca College. MSPs estimate long-range space requirements by function and by space type and are intended to inform the development of campus master plans (CMPs) at the Newnham, Markham and King campuses. This planning and design work is being carried out concurrently by the design firm DIALOG.

Why Develop Master Space Programmes for Seneca@York and Jane Even Though No Campus Master Plans Are Being Prepared for these Locations?

ECS recommended, at the onset of this assignment, that the activities and functions located at the Seneca@York and Jane campuses be captured in the planning models and data sets to be used to develop MSPs at the other campuses. This is to allow the exploration of "what if" questions around the possible re-distribution of programmes and student enrolments across Seneca's five main campuses. It behooves the College to explore such scenarios in view of the major strategic and capital decisions called for when developing long term physical master plans for its Markham, King and Newnham campuses.

One specific "what if" question, in particular, is covered in this document. It concerns the relocation of all Faculty of Applied Sciences and Technology programmes to the Newnham campus, with the exception of the School of Aviation. Other "what if" scenarios can be explored at the request of the College.

Inputs into the Master Space Programmes

The MSPs developed by ECS considers the following inputs:

- Long-range (to 2021) enrollment targets set by the College, by programme and campuses.
- The recent (April 2011) reorganization of the College's academic structure into different faculty and school groupings.
- Current building inventory data, broken down by functional space type, buildings and campus locations.
- Findings of a first round of consultation with key College administrators held in February 2011.
- Space allocation benchmarks achieved at each campus. Space allocation standards and utilization targets observed by ECS (as achieved at other institutions) or proposed by the Council on Ontario Universities.
- Pre-existing decisions or intentions by the College to expand / invest in the construction of new facilities at each campus, including a new Student Centre at Newnham, a Public Safety / Police Training facility at King, and significant growth at both Markham and King premised on capital support by Government for the expansion of these campuses.

Purposes of this Report

This report is a compilation of tables that outline the data sets, calculations, assumptions and methodologies used by ECS to develop the MSPs. ECS has prepared this submission to:

- Present key observations by ECS following a round of consultation in February 2011 with College stakeholders that informed the development of the MSPs.
- Present Fall 2010 utilization of instructional spaces, as compiled by ECS when developing a weekly contact hour activity model to forecast needs for instructional spaces.
- Present enrolment projections provided by Seneca, as interpreted and manipulated by ECS to produce the MSPs.
- Present the weekly contact hour model and the utilization and seat area standards used by ECS to estimate instructional space requirements.
- Present the College staffing data and classification used to develop office space requirements, the office allocation template / standards, and the support and internal circulation multipliers proposed by ECS.
- Present other benchmarks, standards and assumptions used by ECS for the estimation of other types of spaces at each campus.
- Presents the multipliers used by ECS to convert net assignable areas to gross building areas (i.e. net-to-gross ratios).

The report also presents in Section 8 ECS's space requirement estimates, or MSPs, as per the following:

- **Baseline** requirements, whereby the need for additional facilities is estimated to overcome existing space shortages.
- **Scenario A** requirements, whereby the campuses grow as per the current location of existing programmes and the College's 2020/21 enrolment projections.
- **Scenario B**, whereby the entire Faculty of Applied Sciences and Technology is consolidated onto the Newnham Campus (with the exception of the School of Aviation programmes) and the College's individual schools grow as per the College's 2020/21 enrolment projections.

Section 2 – Context - Key Findings that Inform the MSPs

Four High-Level Consultation Findings that Inform Possible Programme Deployment Scenarios the College May Wish to Explore

- Seneca is reorganizing its faculties and school groupings. This is the first of possibly many steps that bring together schools, programmes and resources that should be together both administratively (as announced) and physically (as per the campus planning work currently under way). The College recognizes that this type of consolidation is worthwhile and should be explored, and accepts the fact that certain relocations might be costly.

  (This finding is what prompted ECS to explore Scenario B – consolidation of the Faculty of Applied Sciences and Technology at Newnham Campus. Other scenarios can be explored.)

- Seneca has confidence in its potential to attract students and to grow over the next 10 years, and this confidence is irrespective of programme and campus locations. Relative few programmes offered by the College are truly location-sensitive in terms of attracting GTA students. However, some programmes are very dependent on access to specialized instructional facilities at a given campus.

- Seneca has not branded its four principal campuses in terms of programme offerings or differences in campus experience. Programme deployment decisions appear to be primarily opportunistic (space is available) rather than strategic (this is where demand exists, where we can pre-empt competition with other colleges, where we can build a unique brand and identity).

- Seneca is at a turning point in terms of changes in the delivery of key student, college and campus services. Thus, the size and configuration of the campuses should not be driven only by enrolment and programme deployment factors. Additions, or physical changes to existing campuses, have the potential to be a catalyst for organizational change as well as increased student capacity and the consolidation of programmes.

Section 3 – Context - Utilization of Instructional Space

Utilization of the Classroom Inventories at Each Campus

Overview

The table presented on page 3-2 provides a summary of classroom utilization at the Newnham, Seneca@York, King and Markham campuses. The summary describes the extent to which the campus' existing classrooms were used during the Fall 2010 semester. For each campus, the available classrooms have been organized based on the number of students each classroom can accommodate, the smallest spaces containing between 9 and 16 student workstations, and the largest containing upward of 161 stations. The table includes the following data, organized by classroom size, for each of the four campuses:

- **Column A** lists the number of each size of classroom at the campus;
- **Column B** lists the number of seats available for each size of classroom, and overall at each campus;
- **Column C** lists the number of weekly student contact hours (SCH) delivered in the campus' classrooms, where 1 SCH corresponds to one hour of classroom instruction delivered to one student;
- **Column D** lists the average section size of a group receiving instruction in one of the campus' classrooms;
- **Column E** lists the average percentage utilization of the seats in the campus' classrooms;
- **Column F** lists the number of 55-minute instructional slots delivered in the campus' classrooms per week;
- **Column G** lists the average percentage utilization of the available 55-minute instructional slots, where each classroom can deliver up to 60 slots per week;
- **Column H** lists the number of weekly teaching contact hours (TCH) delivered in the campus' classrooms, where 1 TCH corresponds to one hour of instruction delivered to one student section;
- **Column I** lists the average percentage utilization of the available TCH, where each classroom can accommodate up to 50 TCH per week.

Comparing Seneca Utilization Rates to the Rates Observed at Other Institutions

Most Ontario colleges schedule daytime classes within a 50-hour window on Monday to Friday from 8:00 AM to 6:00 PM. This 50-hour window is a common denominator by which institutions compare themselves in terms of room utilization. However, daytime classes at Seneca span 55 hours a week, and each class is 55 minutes long. There are therefore 60 "slots" daytime slots available for scheduling. In view of this ECS has calculated utilization rates in two ways:

- Based on the ratio of "slots" scheduled, over the 60 that are available in daytime each week.
- Based on converting each 55-minute slots into hours (1 slot = 0.92 hours) and assuming that the activity was scheduled within a 50-hour weekly window. This allows for an equitable comparison with other Ontario institutions.

Utilization Targets and Rates

ECS recommends that classrooms be scheduled at a utilization of 80% rate, corresponding to 40 hours per week out of a 50-hour weekly scheduling window referenced above. The 80% ratio balances the need for efficiency with the flexibility required to create quality and flexible timetables. Based on this target, ECS draws the following conclusions from the classroom utilization summary table presented on page 3-2:

- The **Newnham** campus classrooms are achieving utilization rates **significantly above** the recommended rate of utilization, at 87% utilization of the 60 weekly instructional slots available, and **96% utilization** if the College was to schedule its classes within a 50-hour window as is the usual practice in other Ontario colleges.
- The **Seneca@York** campus classrooms are achieving utilization rates **somewhat below** the recommended rate of utilization, at 63% utilization of the 60 weekly instructional slots available, and **70% utilization** if the College was to schedule its classes within a 50-hour window as is the usual practice in other Ontario colleges.
- The **King** campus classrooms are achieving utilization rates **somewhat below** the recommended rate of utilization, at 63% utilization of the 60 weekly instructional slots available, and **69% utilization** if the College was to schedule its classes within a 50-hour window as is the usual practice in other Ontario colleges .
- The **Markham** campus classrooms are achieving utilization rates **slightly below** the recommended rate of utilization, at 69% 63% utilization of the 60 weekly instructional slots available, and **76% utilization** if the College was to schedule its classes within a 50-hour window as is the usual practice in other Ontario colleges.

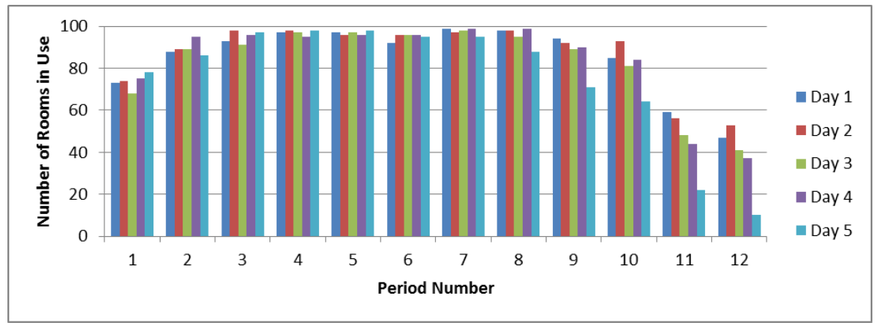
Classroom Utilization Summary – Fall 2010

		A	B	C	D	E	F	G	H	I
		Number of Rooms	Number of Seats	Number of Weekly Student Contact Hours (SCH)	Average Section Size	Average Seat Utilization	Number of 55-Minute Slots Used	Average Utilization @ 60 55-Minute Slots per Week	Number of Section Hours / Teaching Contact Hours (TCH)	Average Utilization @ 50 Hours per Week
⊟Newnham	9 to 16 Stations	1	12	180	10	83%	18	30%	17	33%
	25 to 32 Stations	16	474	14,860	21	70%	700	73%	642	80%
	33 to 40 Stations	45	1,743	71,420	29	74%	2,489	92%	2,282	101%
	49 to 60 Stations	29	1,314	46,749	31	71%	1,531	88%	1,403	97%
	61 to 80 Stations	1	65	2,252	40	66%	57	95%	52	105%
	81 to 100 Stations	2	200	4,947	45	44%	111	93%	102	102%
	161 Stations and More	1	250	3,812	71	16%	54	90%	50	99%
Newnham Total		**95**	**4,058**	**144,220**	**29**	**71%**	**4,960**	**87%**	**4,547**	**96%**
⊟Seneca@York	25 to 32 Stations	1	32	647	16	54%	40	67%	37	73%
	33 to 40 Stations	11	428	11,147	25	67%	439	67%	402	73%
	49 to 60 Stations	22	1,029	21,267	26	59%	815	62%	747	68%
	61 to 80 Stations	5	386	7,185	39	54%	182	61%	167	67%
	121 to 140 Stations	1	130	1,665	43	35%	39	65%	36	72%
	141 to 160 Stations	2	320	5,209	62	30%	84	70%	77	77%
Seneca@York Total		**42**	**2,325**	**47,120**	**29**	**58%**	**1,599**	**63%**	**1,466**	**70%**
⊟King	9 to 16 Stations	1	16	252	21	138%	12	20%	11	22%
	17 to 24 Stations	1	24	936	19	18%	50	83%	46	92%
	25 to 32 Stations	2	52	901	18	70%	51	43%	47	47%
	33 to 40 Stations	14	540	15,058	31	86%	488	58%	447	64%
	41 to 48 Stations	5	205	5,924	30	78%	199	66%	182	73%
	49 to 60 Stations	12	545	16,134	31	76%	515	72%	472	79%
	61 to 80 Stations	1	70	1,063	37	56%	29	48%	27	53%
	81 to 100 Stations	1	97	1,973	41	42%	48	80%	44	88%
King Total		**37**	**1,549**	**42,241**	**30**	**76%**	**1,392**	**63%**	**1,276**	**69%**
⊟Markham	17 to 24 Stations	1	18	378	14	0%	27	45%	25	50%
	33 to 40 Stations	15	595	17,866	28	73%	636	71%	583	78%
	121 to 140 Stations	1	129	1,863	49	26%	38	63%	35	70%
Markham Total		**17**	**742**	**20,107**	**29**	**67%**	**701**	**69%**	**643**	**76%**
Grand Total		**191**	**8,674**	**253,688**	**29**	**69%**	**8,652**	**75%**	**7,931**	**83%**

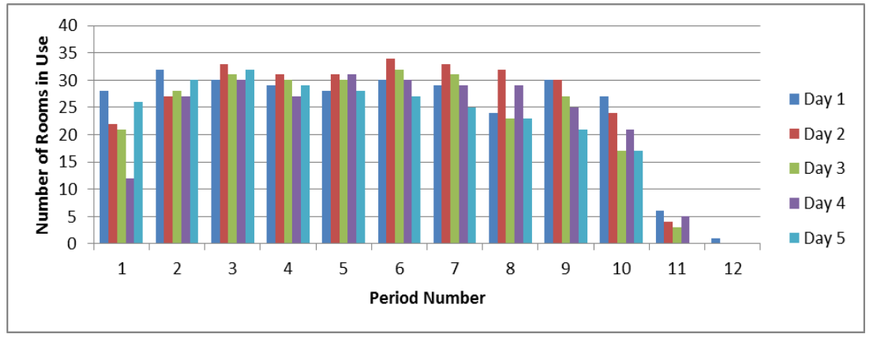
Classroom Time-of-Day Analysis - Fall 2010

The Newnham, Seneca@York, King and Markham campuses of Seneca College deliver classroom instruction using a 12-slot per day window. The four graphs below show the number of classrooms in use during each of the twelve periods at the campuses. The five bars plotted for each period represent the days of the week, so that the graphs visually display the complete distribution of classroom use across the hours of the hours of the day and the days of the week.

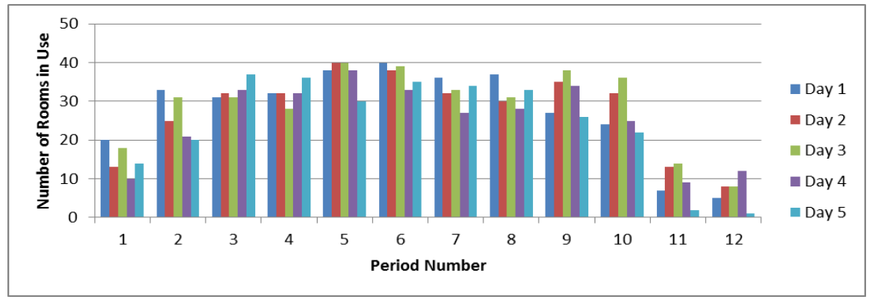
Newnham Campus – Out of 95 Classrooms



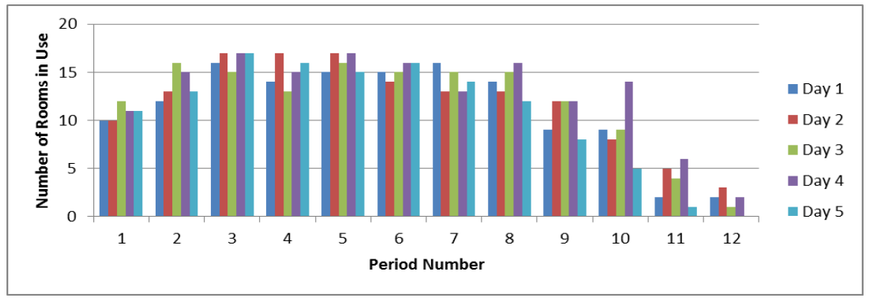
King Campus – Out of 37 Classrooms



Seneca@York Campus – Out of 42 Classrooms



Markham Campus – Out of 17 Rooms



Classroom Seat Utilization Analysis

The tables on pages 3-5 and 3-6 provide an analysis of seat utilization during the Fall 2010 semester at the Newnham, Seneca@York, King and Markham campuses. The coloured upper portions of the tables compare the capacity of the rooms in which classes were scheduled (Y axis of the table) and the size of the student groups enrolled in those classes (X axis of the table). The body of each table totals the number of 55-minute periods per week in which classes of a certain group size were scheduled in rooms of a certain capacity. The background colors indicate the following:

- WHITE background denotes instructional periods when the capacity of the room matched the size of the student group.
- BLUE background denotes instructional periods when the capacity of the room exceeded the size of the student group.
- GREEN background denotes instructional periods when the size of the student group exceeded the capacity of the room. In principle this should not occur, and the calculated percentages are negligible. It is assumed that these are data anomalies whereby the number of students exceeds the capacity of the room by one or two students only, a situation that corrects itself a few weeks into the semester through normal course attrition.

This analysis suggests that classroom scheduling at Seneca College has the potential for improvement, as a high percentage of classroom activity takes place in room that larger than needed (66% of periods at Newnham, 89% at Seneca@York, 66% at King, and 77% at Markham).

The lower portions of tables calculate what an optimal classroom pool should be in terms of both the number of rooms and their capacities.

- **Line A** totals the number of 55-minute periods occurring each week by student group size.
- **Line B** provides the total number of classrooms available to the Scheduling Office by room capacity.
- **Lines C, D, and E** illustrate how the utilization target per room, expressed in hours per week, is calculated. The target is set at 80% of a 60-period week, or 48 periods per room.
- **Line F** calculates how many rooms would optimally be required to absorb the number of hours of activity taking place by student group size.
- **Line G** calculates the difference in the number of existing classrooms and the optimal number of classrooms calculated as per Line F, at each capacity range.

Classroom Seat Utilization Analysis – Fall 2010

Newnham Campus

ECS Room Capacity Range	1 to 8 Students	9 to 16 Students	17 to 24 Students	25 to 32 Students	33 to 40 Students	41 to 48 Students	49 to 60 Students	61 to 80 Students	81 to 100 Students	121 to 140 Students	101 to 120 Students	161 Students and More	Grand Total
9 to 16 Stations		18											18
25 to 32 Stations	2	30	500	145	23					700			
33 to 40 Stations	9	105	298	827	1,143	31	65	11					2,489
49 to 60 Stations	6	57	201	374	637	36	215	5					1,531
61 to 80 Stations			3	7	19	2	18	8					57
81 to 100 Stations		4	3	18	18	2	39	20	7				111
161 Stations and More			2	8	16		12		2	2	2	10	54
Grand Total	**17**	**214**	**1,007**	**1,379**	**1,856**	**71**	**349**	**44**	**9**	**2**	**2**	**10**	**4,960**

77%	Percentage of periods whereby the capacity of the room **exceeded** the size of the student group
38%	Percentage of periods whereby the capacity of the room **was aligned with** the size of the student group
7%	Percentage of periods whereby the capacity of the room **was smaller than** the size of the student group

Number of Classrooms	**0**	**1**	**0**	**16**	**45**	**0**	**29**	**1**	**2**	**0**	**0**	**1**	**95**
Number of Daytime Schedulable Periods per Week	60	60	60	60	60	60	60	60	60	60	60	60	
Weekly Utilization Target (%)	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	
Weekly Utilization Target (Periods)	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	
Optimal Classroom Pool	**0.4**	**4.5**	**21.0**	**28.7**	**38.7**	**1.5**	**7.3**	**0.9**	**0.2**	**0.0**	**0.0**	**0.2**	**103.3**
Surplus or Shortage of Classrooms	**-0.4**	**-3.5**	**-21.0**	**-12.7**	**6.3**	**-1.5**	**21.7**	**0.1**	**1.8**	**-0.0**	**-0.0**	**0.8**	**-8.3**

Seneca@York Campus

	ECS Room Capacity Range	1 to 8 Students	9 to 16 Students	17 to 24 Students	25 to 32 Students	33 to 40 Students	41 to 48 Students	49 to 60 Students	61 to 80 Students	81 to 100 Students	121 to 140 Students	141 to 160 Students	Grand Total
	25 to 32 Stations		21	19									40
	33 to 40 Stations	2	42	113	148	123	1	10					439
	49 to 60 Stations	2	62	214	262	253	8	14					815
	61 to 80 Stations		6	17	36	28	3	64	28				182
	121 to 140 Stations	2		4	2	6		19	6				39
	141 to 160 Stations			6	2	12		22	26	3		13	84
A	**Grand Total**	**6**	**131**	**373**	**450**	**422**	**12**	**129**	**60**	**3**		**13**	**1,599**

89%	Percentage of periods whereby the capacity of the room **exceeded** the size of the student group
11%	Percentage of periods whereby the capacity of the room **was aligned with** the size of the student group
0%	Percentage of periods whereby the capacity of the room **was smaller than** the size of the student group

B	**Number of Classrooms**	**0**	**0**	**0**	**1**	**11**	**0**	**22**	**5**	**0**	**1**	**2**	**42**
C	Number of Daytime Schedulable Periods per Week	60	60	60	60	60	60	60	60	60	60	60	
D	Weekly Utilization Target (%)	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	
E = C x D	Weekly Utilization Target (Periods)	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	
F = A / E	Optimal Classroom Pool	**0.1**	**2.7**	**7.8**	**9.4**	**8.8**	**0.3**	**2.7**	**1.3**	**0.1**	**0.0**	**0.3**	**33.3**
G = B -F	Surplus or Shortage of Classrooms	**-0.1**	**-2.7**	**-7.8**	**-8.4**	**2.2**	**-0.3**	**19.3**	**3.8**	**-0.1**	**1.0**	**1.7**	**8.7**

Classroom Seat Utilization Analysis – Fall 2010 (continued)

King Campus

ECS Room Capacity Range	1 to 8 Students	9 to 16 Students	17 to 24 Students	25 to 32 Students	33 to 40 Students	41 to 48 Students	49 to 60 Students	61 to 80 Students	81 to 100 Students	Grand Total
9 to 16 Stations			12							12
17 to 24 Stations			50							50
25 to 32 Stations	4	16	16	15						51
33 to 40 Stations		9	46	134	256	5	38			488
41 to 48 Stations	3	3	31	45	95	22				199
49 to 60 Stations		3	66	145	207	34	60			515
61 to 80 Stations				5	15		9			29
81 to 100 Stations				9	25	1	5	8		48
A **Grand Total**	**7**	**31**	**221**	**353**	**598**	**62**	**112**		**8**	**1,392**

66%	Percentage of periods whereby the capacity of the room **exceeded** the size of the student group
30%	Percentage of periods whereby the capacity of the room **was aligned with** the size of the student group
4%	Percentage of periods whereby the capacity of the room **was smaller than** the size of the student group

B	**Number of Classrooms**	**0**	**1**	**1**	**2**	**14**	**5**	**12**	**1**	**1**	**37**
C	Number of Daytime Schedulable Periods per Week	60	60	60	60	60	60	60	60	60	
D	Weekly Utilization Target (%)	80%	80%	80%	80%	80%	80%	80%	80%	80%	
E = C x D	Weekly Utilization Target (Periods)	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	
F = A / E	Optimal Classroom Pool	**0.1**	**0.6**	**4.6**	**7.4**	**12.5**	**1.3**	**2.3**	**0.0**	**0.2**	**29.0**
G = B -F	Surplus or Shortage of Classrooms	**-0.1**	**0.4**	**-3.6**	**-5.4**	**1.5**	**3.7**	**9.7**	**1.0**	**0.8**	**8.0**

Markham Campus

ECS Room Capacity Range	1 to 8 Students	9 to 16 Students	17 to 24 Students	25 to 32 Students	33 to 40 Students	41 to 48 Students	49 to 60 Students	61 to 80 Students	121 to 140 Students	Grand Total
17 to 24 Stations			27							27
33 to 40 Stations	7	44	111	184	242	3	39	6		636
121 to 140 Stations		1	5	5	3		12	5	7	38
A **Grand Total**	**7**	**45**	**143**	**189**	**245**	**3**	**51**	**11**	**7**	**701**

77%	Percentage of periods whereby the capacity of the room **exceeded** the size of the student group
38%	Percentage of periods whereby the capacity of the room **was aligned with** the size of the student group
7%	Percentage of periods whereby the capacity of the room **was smaller than** the size of the student group

B	**Number of Classrooms**	**0**	**0**	**1**	**0**	**15**	**0**	**0**	**0**	**1**	**17**
C	Number of Daytime Schedulable Periods per Week	60	60	60	60	60	60	60	60	60	
D	Weekly Utilization Target (%)	80%	80%	80%	80%	80%	80%	80%	80%	80%	
E = C x D	Weekly Utilization Target (Periods)	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	**48**	
F = A / E	Optimal Classroom Pool	**0.1**	**0.9**	**3.0**	**3.9**	**5.1**	**0.1**	**1.1**	**0.2**	**0.1**	**14.6**
G = B -F	Surplus or Shortage of Classrooms	**-0.1**	**-0.9**	**-2.0**	**-3.9**	**9.9**	**-0.1**	**-1.1**	**-0.2**	**0.9**	**2.4**

Laboratory Utilization Analysis

The facing table presents a summary of laboratory utilization at the Newnham, Seneca@York, King, and Markham campuses. The summary describes the extent to which the campus' existing laboratories were used during the Fall 2010 semester. For each campus, the available laboratories have been categorized by the type of spaces and functions the rooms support. The table includes the following data:

- **Column A** indicates the functional category of a room, which considers both the activities taking place and the type of space needed to support these activities. Classifying rooms this way (as opposed to classifying them by the department that controls them) is more useful from a space planning perspective.
- **Column B** indicates the number of rooms considered in the analysis.
- **Column C** lists the number of 55-minute instructional slots scheduled per week;
- **Column D** lists the average percentage utilization of the available 55-minute instructional slots, where each laboratory can accommodate up to 60 slots per week;
- **Column E** lists the number of weekly teaching contact hours (TCH) delivered in the campus' laboratories, where 1 TCH corresponds to one of instruction delivered to one section;
- **Column F** lists the average percentage utilization of the available TCH, where each classroom can accommodate up to 50 TCH per week.

ECS recommends a 60% utilization rate for laboratory spaces. The remaining 40% of the time available time allows for access to technicians and students for preparation or independent work, for maintenance, etc. If a group of rooms under in a given category is nearing the 60% target stated above, the institution should consider adding rooms of this type to its inventory. If, on the other hand, the utilization is well below the 60% the College can consider amalgamating activities into fewer rooms and converting the vacated space to other uses. Based on this, ECS observes the following:

- The laboratories of the four campuses combined are achieving utilization rates almost equivalent to the recommended maximum rate of utilization, at 57% utilization of instructional slots and 63% utilization of TCH. It is relatively rare in Ontario for a college to post such a high overall average. Most institutions post rates ranging between 30% and 45%.
- **Newnham** laboratories are **achieving rates above the recommended rate of utilization**, at 63% utilization of instructional periods and **69% utilization** if the College was to schedule its classes within a 50-hour window as is the usual practice in other Ontario colleges.
- **King** laboratories are **achieving utilization significantly below the recommended** rate of utilization, at 33% utilization of instructional periods and **36% utilization** if the College was to schedule its classes within a 50-hour window as is the usual practice in other Ontario colleges.
- **Markham** laboratories are **achieving utilization at the recommended rate of utilization**, at 52% utilization of instructional periods and 58% utilization if the College was to schedule its classes within a 50-hour window as is the usual practice in other Ontario colleges.
- **Seneca@York** laboratories are **achieving utilization at the recommended rate of utilization**, at 55% utilization of instructional periods and **61% utilization** if the College was to schedule its classes within a 50-hour window as is the usual practice in other Ontario colleges.

	A	B	C	D	E	F
Campus	Room Category	Number of Rooms	Number of 55-Minute Slots Used	Average Utilization @ 60 Slots per Week	Section Hours / teaching Contact Hours (TCH)	Average Utilization @ 50 Hours per Week
Newnham	General Computer	23	898	65%	823	72%
	Specialized Computer	5	280	93%	257	103%
	Marketing	3	92	51%	84	56%
	Fashion	7	277	66%	254	73%
	Personal Care	2	74	62%	68	68%
	ECE Laboratory	2	89	74%	82	82%
	Building Science / Civil	7	241	57%	221	63%
	Electronics / Comp. Hardware	11	344	52%	315	57%
	Wet Life Sciences	1	36	60%	33	66%
	Wet Physical Sciences	1	19	32%	17	35%
Newnham Total		**62**	**2,350**	**63%**	**2,154**	**69%**
King	Animal Science	3	30	17%	28	18%
	ECE Laboratory	1	44	73%	40	81%
	Electronics / Comp. Hardware	1	34	57%	31	62%
	Greenhouse	1	7	12%	6	13%
	Metal Trades	2	18	15%	17	17%
	Patient Care	1	43	72%	39	79%
	Wet Life Sciences	1	23	38%	21	42%
King Total		**10**	**199**	**33%**	**182**	**36%**
Markham	General Computer	5	183	61%	168	67%
	Specialized Computer	2	47	39%	43	43%
	Hospitality / Travel	3	101	56%	93	62%
	Media / Performance	2	72	60%	66	66%
	Patient Care	1	6	10%	6	11%
Markham Total		**13**	**409**	**52%**	**375**	**58%**
Seneca@York	Animation / Gaming	9	117	22%	107	24%
	General Computer	17	696	68%	638	75%
	Specialized Computer	6	246	68%	225	75%
	Electronics / Comp. Hardware	4	158	66%	145	72%
	Graphic Arts	4	152	63%	139	70%
	Media / Performance	7	171	41%	157	45%
	Wet Life Sciences	6	209	58%	192	64%
	Wet Physical Sciences	4	146	61%	134	67%
Seneca@York Total		**57**	**1,895**	**55%**	**1,737**	**61%**
Grand Total		**142**	**4,853**	**57%**	**4,449**	**63%**

Section 4 – Enrolment Projections

Baseline Enrolments

The table on page 4-2 summarizes the enrolments at the Newnham, King, Markham, Seneca@York, and Jane campuses of Seneca College in Fall 2010 semester. The table has been compiled based on data from the College's Day 10 Report, but reflects the April 2011 reorganization of academic divisions. The table provides a comprehensive view of how the students enrolled at Seneca College during the Fall 2010 semester were distributed across the College's various campuses (columns) and faculties (rows).

For every school at one the five campuses, the table states both the number of students enrolled at that location and the percentage of total Seneca College enrolment that the program represents. The Grand Total row at the end of the table shows the overall distribution of Seneca College students across the Newnham, King, Markham, Seneca@York, and Jane campuses. Similarly, the two columns to the far right of the table show the overall distribution of Seneca College students across the various schools offered by the College at its five campuses. These enrolment figures have been used to establish baseline space standards and benchmarks.

Scenario A Enrolment Projections

Scenario A represents a potential growth path for Seneca College, modeled after the Senior Vice President Academic 10-year enrolment plan.

It is planned that the College will grow by 37% between 2010 and 2020. Newnham Campus will grow by 8%, Markham Campus by 218%, King Campus by 47% and Seneca@York by 21%.

In the table on page 4-3 all programme relocations embedded in the enrolment plan are accounted for, with the exception of Jane campus, which remains in place. The table on page 4-3 summarizes the projected enrolments for the 2020/21 academic year based on Scenario A. The table indicate the projected distribution of Seneca College students across campuses (columns) and faculties (rows). ***The table also provides percentages showing how the Scenario A projected enrolments vary from the baseline enrolments (as shown on the page 4-2 table).*** Positive percentages represent growth, while negative percentages indicate downsizing.

The Grand Total row at the bottom of the table shows both the projected 2020/21 enrolments at each of Seneca College's five campuses, as well as projected growth from the baseline scenario. Similarly, the two columns to the right of the table show the projected distribution of Seneca College students across the schools offered by the College, along with percentages indicating projected growth over the baseline scenario.

Scenario B Enrolment Projections

Scenario B enrolment projections are shown on page 4-3. These are also modeled after the Senior Vice President Academic 10-year enrolment plan, with the difference that most Faculty of Applied Sciences and Technology programs are relocated to the Newnham campus. Only the School of Aviation and Flight Technology would remain at the Markham campus.

Scenario B explores the relocation of Applied Sciences and Technology programmes to the Newnham campus based on the need to improve the quality and size of the laboratories and workshop facilities in place at that location under the aegis of a major, sizable capital project that would be transformative in the way Seneca offers these programmes. The relocation of the programmes currently located at the Seneca@York campus is prompted by two factors:

- Consolidate all Applied Sciences and Technology in a single location to foster synergies often associated with a "polytechnic" learning environment.

- Free-up a sizable amount of space at the Seneca@York campus the College can convert to more intensive uses that leverage that campus unique location and accessibility via transit.

The table on page 4-4 summarizes the projected enrolments for the 2020/21 academic year based on Scenario B, and is formatted identically to the Scenario A Enrolment Projections on page 4-3.

Fall 2010 Day 10 Enrolments

Faculty as per 2011 Reorganization	School	Newnham Day 10 Enrolment Fall 2010	%	King Day 10 Enrolment Fall 2010	%	Markham Day 10 Enrolment Fall 2010	%	Seneca @ York Day 10 Enrolment Fall 2010	%	Jane Day 10 Enrolment Fall 2010	%	Total Day 10 Enrolment Fall 2010	Total %
Faculty of Business	School of Accounting & Financial Services	2,217	11.0%		0.0%	44	0.2%		0.0%		0.0%	2,261	11.2%
	School of Business Management & Centre for Human Resources	1,447	7.2%		0.0%	221	1.1%		0.0%		0.0%	1,668	8.3%
	School of Legal and Public Administration & School of Office Administration	844	4.2%		0.0%		0.0%		0.0%		0.0%	844	4.2%
	School of English & Liberal Studies	308	1.5%		0.0%		0.0%		0.0%		0.0%	308	1.5%
Faculty of Business Total	**4,816**	**23.9%**	**0.0%**	**265**	**1.3%**	**0.0%**		**0.0%**	**5,081**	**25.3%**			
Faculty of Applied Arts and Health Sciences	School of Health Sciences	121	0.6%	1,180	5.9%		0.0%		0.0%		0.0%	1,301	6.5%
	School of Early Childhood Education	1,125	5.6%	374	1.9%		0.0%		0.0%		0.0%	1,499	7.4%
	School of Public Safety & King Campus Programmes		0.0%	829	4.1%		0.0%		0.0%		0.0%	829	4.1%
	School of Community Studies & School of English & Liberal Studies	252	1.3%	619	3.1%		0.0%	389	1.9%		0.0%	1,260	6.3%
	School of Recreation		0.0%	194	1.0%		0.0%		0.0%		0.0%	194	1.0%
Faculty of Applied Arts and Health Sciences Total	**1,498**	**7.4%**	**3,196**	**15.9%**	**0.0%**	**389**	**1.9%**	**0.0%**	**5,083**	**25.3%**			
Faculty of Applied Sciences and Technology	School of Information & Communication Technology	544	2.7%		0.0%		0.0%	1,550	7.7%		0.0%	2,094	10.4%
	Centre For The Built Environment	670	3.3%		0.0%		0.0%		0.0%		0.0%	670	3.3%
	School of Fire Protection Engineering Technology	427	2.1%	84	0.4%		0.0%		0.0%		0.0%	511	2.5%
	School of Aviation & Flight Technology		0.0%		0.0%	270	1.3%		0.0%		0.0%	270	1.3%
	School of Biological Sciences & Applied Chemistry		0.0%		0.0%		0.0%	839	4.2%		0.0%	839	4.2%
	Centre For Advanced Technologies		0.0%		0.0%		0.0%		0.0%	98	0.5%	98	0.5%
Faculty of Applied Sciences and Technology Total	**1,641**	**8.2%**	**84**	**0.4%**	**270**	**1.3%**	**2,389**	**11.9%**	**98**	**0.5%**	**4,482**	**22.3%**	
Faculty of International Studies	School of International Business & School of Tourism	994	4.9%		0.0%	586	2.9%		0.0%		0.0%	1,580	7.9%
	English Language Institute	394	2.0%		0.0%		0.0%		0.0%		0.0%	394	2.0%
	School of English & Liberal Studies		0.0%		0.0%	39	0.2%		0.0%		0.0%	39	0.2%
Faculty of International Studies Total	**1,388**	**6.9%**	**0.0%**	**625**	**3.1%**	**0.0%**		**0.0%**	**2,013**	**10.0%**			
Faculty of Communication, Arts and Design	School of Media & Marketing		0.0%		0.0%	530	2.6%	473	2.4%		0.0%	1,003	5.0%
	School of Fashion	606	3.0%		0.0%		0.0%		0.0%		0.0%	606	3.0%
	School of Creative Arts & Animation		0.0%		0.0%	147	0.7%	991	4.9%		0.0%	1,138	5.7%
	School of English & Liberal Studies		0.0%		0.0%		0.0%	633	3.1%		0.0%	633	3.1%
Faculty of Communication, Arts and Design Total	**606**	**3.0%**	**0.0%**	**677**	**3.4%**	**2,097**	**10.4%**	**0.0%**	**3,380**	**16.8%**			
Faculty of Workforce Skills Development	Faculty of Workforce Skills Development	22	0.1%		0.0%		0.0%		0.0%		0.0%	22	0.1%
Faculty of Workforce Skills Development Total	**22**	**0.1%**	**0.0%**		**0.0%**		**0.0%**		**0.0%**	**22**	**0.1%**		
Counselling, Disability & Health Services	Counselling, Disability & Health Services	61	0.3%		0.0%		0.0%		0.0%		0.0%	61	0.3%
Counselling, Disability & Health Services Total	**61**	**0.3%**	**0.0%**		**0.0%**		**0.0%**		**0.0%**	**61**	**0.3%**		
Grand Total	**10,032**	**49.9%**	**3,280**	**16.3%**	**1,837**	**9.1%**	**4,875**	**24.2%**	**98**	**0.5%**	**20,122**	**100.0%**		

2020/21 Enrolment Projections - Scenario A

Faculty as per 2011 Reorganization	School	Newnham		King		Markham		Seneca@York		Jane		Total Projection Enrolment 2021 with Relocations	Total % Change from Projection Base
		Projection Enrolment 2021 with Relocations	% Change from Projection Base	Projection Enrolment 2021 with Relocations	% Change from Projection Base	Projection Enrolment 2021 with Relocations	% Change from Projection Base	Projection Enrolment 2021 with Relocations	% Change from Projection Base	Projection Enrolment 2021 with Relocations	% Change from Projection Base		
Faculty of Business	School of Accounting & Financial Services	2,130	-4%			140	218%				2,270	0%	
	School of Business Management & Centre for Human Resources	1,708	18%			703	218%				2,411	45%	
	School of Legal and Public Administration & School of Office Administration	996	18%				996	18%					
	School of English & Liberal Studies	361	17%				361	17%					
Faculty of Business Total	**5,195**	**8%**	**843**	**218%**				**6,038**	**19%**				
Faculty of Applied Arts and Health Sciences	School of Health Sciences	143	18%	2,477	110%				2,620	101%			
	School of Early Childhood Education	1,706	52%	225	-40%				1,931	29%			
	School of Public Safety & King Campus Programmes			1,044	26%				1,044	26%			
	School of Community Studies & School of English & Liberal Studies	70	-72%	727	17%			470	21%			1,267	1%
	School of Recreation	245	26%				245	26%					
Faculty of Applied Arts and Health Sciences Total	**1,919**	**28%**	**4,718**	**48%**			**470**	**21%**			**7,107**	**40%**	
Faculty of Applied Sciences and Technology	Centre For The Built Environment	790	18%				790	18%					
	School of Fire Protection Engineering Technology	504	18%	99	18%				603	18%			
	School of Aviation & Flight Technology		859	218%				859	218%				
	School of Biological Sciences & Applied Chemistry			1,010	20%			1,010	20%				
	School of Information & Communication Technology	641	18%				1,876	21%			2,517	20%	
	Centre For Advanced Technologies		150	53%	150	53%							
Faculty of Applied Sciences and Technology Total	**1,935**	**18%**	**99**	**18%**	**859**	**218%**	**2,886**	**21%**	**150**	**53%**	**5,929**	**32%**	
Faculty of Communication, Arts and Design	School of Media & Marketing	1,686		218%	570	21%			2,256	125%			
	School of Fashion	714	18%				714	18%					
	School of Creative Arts & Animation		467	218%	1,197	21%			1,664	46%			
	School of English & Liberal Studies		764	21%			764	21%					
Faculty of Communication, Arts and Design Total	**714**	**18%**	**2,153**	**218%**	**2,531**	**21%**			**5,398**	**60%**			
Faculty of International Studies	School of International Business & School of Tourism	508	-49%			1,864	218%				2,372	50%	
	English Language Institute	465	18%				465	18%					
	School of English & Liberal Studies		124	218%				124	218%				
Faculty of International Studies Total	**973**	**-30%**	**1,988**	**218%**				**2,961**	**47%**				
Counselling, Disability & Health Services	Counselling, Disability & Health Services	72	18%				72	18%					
Counselling, Disability & Health Services Total	**72**	**18%**			**72**	**18%**							
Faculty of Workforce Skills Development	Faculty of Workforce Skills Development	26	18%				26	18%					
Faculty of Workforce Skills Development Total	**26**	**18%**			**26**	**18%**							
Grand Total	**10,834**	**8%**	**4,817**	**47%**	**5,843**	**218%**	**5,887**	**21%**	**150**	**53%**	**27,531**	**37%**	

- Source – Senior VP Academic 10-year enrolment plan from 2011/12 to 2020/21 academic years (received May 10th, 2011).
- Breakdown reflects April 2011 reorganization of academic divisions.
- Table indicates projected enrolment in 2020/21 and % variation from baseline (as per table on page 4-1).
- **Scenario A** - All programme relocation embedded in the enrolment plan accounted for, expect for the Jane Campus, which remains in place

2020/21 Enrolment Projections - Scenario B

Faculty as per 2011 Reorganization	School	Newnham		Markham		King		Seneca@York		Total Projection Enrolment 2021 with Relocations	Total % Change from Projection Base
		Projection Enrolment 2021 with Relocations	% Change from Projection Base	Projection Enrolment 2021 with Relocations	% Change from Projection Base	Projection Enrolment 2021 with Relocations	% Change from Projection Base	Projection Enrolment 2021 with Relocations	% Change from Projection Base		
Faculty of Business	School of Accounting & Financial Services	2,130	-4%	140	218%				2,270	0%	
	School of Business Management & Centre for Human Resources	1,708	18%	703	218%	0				2,411	45%
	School of Legal and Public Administration & School of Office Administration	996	18%				996	18%			
	School of English & Liberal Studies	361	17%				361	17%			
Faculty of Business Total	**5,195**	**8%**	**843**	**218%**	**0**		**6,038**	**19%**			
Faculty of Applied Arts and Health Sciences	School of Health Sciences	143	18%			2,477	110%			2,620	101%
	School of Early Childhood Education	1,706	52%			225	-40%			1,931	29%
	School of Public Safety & King Campus Programmes			1,044	26%			1,044	26%		
	School of Community Studies & School of English & Liberal Studies	70	-72%			727	17%	470	21%	1,267	1%
	School of Recreation	245	26%			245	26%				
Faculty of Applied Arts and Health Sciences Total	**1,919**	**28%**	**4,718**	**48%**	**470**	**21%**	**7,107**	**40%**			
Faculty of Applied Sciences and Technology	Centre For The Built Environment	790	18%				790	18%			
	School of Fire Protection Engineering Technology	603	18%				603	18%			
	School of Aviation & Flight Technology		859	218%				859	218%		
	School of Biological Sciences & Applied Chemistry	1,010	20%				1,010	20%			
	School of Information & Communication Technology	2,517	20%				2,517	20%			
	Centre For Advanced Technologies	150	53%				150	53%			
Faculty of Applied Sciences and Technology Total	**5,070**	**20%**	**859**	**218%**			**5,929**	**32%**			
Faculty of Communication, Arts and Design	School of Media & Marketing		1,686	218%			570	21%	2,256	125%	
	School of Fashion	714	18%				714	18%			
	School of Creative Arts & Animation		467	218%			1,197	21%	1,664	46%	
	School of English & Liberal Studies		764	21%	764	21%					
Faculty of Communication, Arts and Design Total	**714**	**18%**	**2,153**	**218%**			**2,531**	**21%**	**5,398**	**60%**	
Faculty of International Studies	School of International Business & School of Tourism	508	-49%	1,864	218%				2,372	50%	
	English Language Institute	465	18%				465	18%			
	School of English & Liberal Studies		124	218%				124	218%		
Faculty of International Studies Total	**973**	**-30%**	**1,988**	**218%**			**2,961**	**47%**			
Counselling, Disability & Health Services	Counselling, Disability & Health Services	72	18%				72	18%			
Counselling, Disability & Health Services Total	**72**	**18%**					**72**	**18%**			
Faculty of Workforce Skills Development	Faculty of Workforce Skills Development			26	18%			26	18%		
Faculty of Workforce Skills Development Total	**26**	**18%**					**26**	**18%**			
Grand Total	**13,969**	**11%**	**5,843**	**218%**	**4,718**	**48%**	**3,001**	**21%**	**27,531**	**37%**	

- Source – Senior VP Academic 10-year enrolment plan from 2011/12 to 2020/21 academic years (received May 10th, 2011).
- Breakdown reflects April 2011 reorganization of academic divisions.
- Table indicates projected enrolment in 2020/21 and % variation from baseline (as per table on page 4-1).
- **Scenario B** – All Faculty of Applied Sciences and Technology programmes relocated to Newnham, except for the School of Aviation and Flight Technology which remains at Markham.

Section 5 – Campus Inventory

Campus Inventory

The purpose of the Master Space Plan is to shape a campus to meet future enrolment demands, trends in educations and promote the quality of the educational experience. However, before the future can be forecasted, it is essential that a comprehensive understanding of the current inventory is in place. Seneca College supplied ECS with a 2008 SCUP Space Audit to serve as campus inventory used to compare existing space allocations against benchmark standards.

College Building Inventory Overview – Square Feet

Campus	Building Name	Classroom	Laboratory & Support Space	Learner Support	Lounge and Service Sapce	Office & Support Space	Athletic Activity Areas	Bookstore / Merchandising	Food and Service Facilities	College Central Services	Facilities Maintenance	Non-Assignable Space - ESTIMATED	Grand Total	Assignable Space %	Building Services %
Newnham	A Building	19,599	30,742		3,672	17,631				2,463	660	21,884	96,650	77%	23%
	B Building	34,151	5,864	26,795	2,426	31,991		8,656	930	5,031	486	66,107	182,437	64%	36%
	C Building	1,224	12,365			18,603				340	70	24,296	56,898	57%	43%
	D Building	18,872	21,023			38,642		286	15,983	1,739	1,270	65,006	162,820	60%	40%
	E & F Building	15,871		883	10,173	8,502	7,826		1,251	877	123	17,664	63,171	72%	28%
	G Building	5,510			990	2,333	54,012		406	128	31	9,772	73,181	87%	13%
	H Building	709		251		745			269	4,114		1,713	7,801	78%	22%
	L Building	1,455	6,389								28	2,238	10,110	78%	22%
	KIP	31,525	17,162	10,042		7,184			570	8,720		75,671	150,874	50%	50%
	Facilities Management Building										13,525	500	14,025	96%	4%
Newnham Total		128,916	93,545	37,970	17,261	125,632	61,839	8,942	19,409	23,413	16,192	284,850	817,968	65%	35%
Seneca @ York	Quinlan	34,416	43,791	17,533	5,988	34,062	14,880	1,581	6,423	22,858	272	109,055	290,860	63%	37%
	TEL	9,622	19,617	2,736	3,086	25,067	207	0	5,992	8,661	628	66,502	142,116	53%	47%
Seneca @ York Total		44,038	63,408	20,269	9,074	59,129	15,087	1,581	12,414	31,519	901	175,557	432,976	59%	41%
King	Garriock	26,467	12,190	11,404	6,498	19,193	6,924	1,557	6,935	3,076	375	46,695	141,313	67%	33%
	Vet Tech	3,394	4,385		529	1,122				4,778	89	7,518	21,815	66%	34%
King Total		29,861	16,575	11,404	7,027	20,315	6,924	1,557	6,935	7,854	464	54,213	163,128	67%	33%
Markham	Markham	21,314	21,398	12,019	7,705	35,274	2,398	1,455	13,457	5,521	589	131,960	253,090	48%	52%
Markham Total		21,314	21,398	12,019	7,705	35,274	2,398	1,455	13,457	5,521	589	131,960	253,090	48%	52%
Jane	Jane	1,717	11,293			2,729					156	5,587	21,482	74%	26%
Jane Total		1,717	11,293			2,729					156	5,587	21,482	74%	26%
Grand Total		**225,846**	**206,219**	**81,662**	**41,067**	**243,078**	**86,248**	**13,535**	**52,215**	**68,306**	**18,301**	**652,167**	**1,688,644**	**61%**	**39%**

- Source

  - 2008 SCUP Space Audit
  - 2011 Building Inventory Overview (gross square feet totals by building)

- Net-to-gross ratios in institutional buildings will typically vary between:

  - 70% assignable / 30% building services – a very efficient institutional building or campus
  - 60% assignable / 40% building services – the usual ratio measured in existing Canadian institutions
  - 50% assignable / 50% building services – a generously appointed building or campus

- Validation of inventory data by ECS focused on classrooms, laboratories, learner support, office facilities and College central services ( ).

Section 6 – Instructional Space Requirements

Weekly Contact Hour Activity Model

This section outlines the methodology, calculations and assumptions used to model the delivery of current and projected instructional weekly contact hours (WCHs). The manipulation of WCHs, in turn, allows the estimation of classroom, laboratory and office requirements at each of the Seneca campuses.

WCH data was extrapolated from Fall 2010 room timetables at the Newnham, Seneca@York, King, Markham and Jane campuses. It is calculated according to the following formula:

Weekly Contact Hours = Class Enrolment x Duration of Class per Week (in Hours)

Since Seneca delivers it classes and labs in 55 min intervals, the delivery period is 55min / 60 min = 0.916667 hour. For example, if we look at the School of Civil Engineering Technology at the Newnham Campus, course number BGV343 has an enrolment of 40. If the above formula is used:

40 Students x 0.916667 Hour = 36.6 Weekly Contact Hours

Therefore, BGV343 generates 36.6 WCHs. However, this calculation only represents 1 of the 6 classes offered in Fall semester. Thus, the sum of all 6 course offerings produce a value of 220 WCHs.

Having determined the student contact hours for each course, a space allocation for each WCH generated can be attributed. Assuming the course BGV343 is scheduled in a classroom setting, and based on the allocation of 0.89 square feet per WCH generated, the following calculation is made:

220 WCH x 0.89 Square Feet per WCH = 196 square feet of classroom space generated

Performing this calculation allows the estimation of the quantity of classrooms and labs required for each school to deliver their respective programs. Revisiting the example of course BGV343, it was determined that the course generated 220 WCHs during the Fall semester and a requirement for 196 square feet of classroom space. On its own, this figure is not relatively useful. However, when all the courses being offered at Seneca are processed through the same calculations as outlined above, it is possible to create green field space requirement *estimates* for all instructional spaces at each of the Seneca campuses.

Instructional Space Allocation per Weekly Contact Hours

The WCH activity model, as previously outlined, requires the calculation of an area allocation per contact hour. The following table indicates what areas were applied to estimate instructional space requirements that support the MSPs.

		A	B	C	D	E = A / (B x C x D)
		NASF per Station	Weekly Scheduling Window (Hours)	Weekly Room Utlization Rate	Seat Utlization Rate	NASF Generated per Weekly Contact Hour
Classroom	Classroom	25	50	80%	70%	0.89
	Lecture Hall	25	50	80%	50%	1.25
Laboratory	Animal Science	200	50	60%	70%	9.52
	Animation / Gaming	60	50	60%	70%	2.86
	Building Science / Civil	100	50	60%	70%	4.76
	ECE Laboratory	80	50	60%	70%	3.81
	Electronics / Comp. Hardware	80	50	60%	70%	3.81
	Fashion	80	50	60%	70%	3.81
	General Computer	40	50	60%	70%	1.90
	Graphic Arts	60	50	60%	70%	2.86
	Greenhouse	100	50	60%	70%	4.76
	Hospitality / Travel	60	50	60%	70%	2.86
	Marketing	60	50	60%	70%	2.86
	Media / Performance	80	50	60%	70%	3.81
	Metal Trades	200	50	60%	70%	9.52
	Patient Care	100	50	60%	70%	4.76
	Personal Care	80	50	60%	70%	3.81
	Specialized Computer	50	50	60%	70%	2.38
	Wet Life Sciences	80	50	60%	70%	3.81
	Wet Physical Sciences	80	50	60%	70%	3.81

Column A – ECS NASF per Station

Figures under column A correspond to the area designated to a single seat in a classroom or a single workstation in a laboratory. The size per station in each room category will depend on the activities taking place with the room and includes internal room circulation space and laboratory support areas. The proposed areas are based on standards applied in other jurisdictions, as well as precedents observed by ECS.

Column B – ECS Weekly Scheduling Window

Figures under column B correspond to the period of time that is available to schedule classroom and laboratory activities. For example, classes and labs can be scheduled between 8AM and 6PM Monday to Friday. Therefore, 10 hours a day multiplied by 5 days equals a 50 hour weekly scheduling window.

Column C – ECS Weekly Room Utilization

The percentages under column C represents the optimal percentage of the available weekly scheduling window that a particular room should be utilized. For example, a classroom should be utilized at 80% of 50 hours, or 40 hours per week.

Column D – ECS Seat Utilization Rate

The percentages under column D is a factor used to adjust the total Available Contact Hours to reflect the fact that it is not possible to always match the teaching section size to the size of the room being used. As a result there are often a number

of seats that are not occupied in some classes and labs. For example, a course with a total enrolment of 110 may be divided into 5 sections of 22 students each; if the typical class size is 24 seats, there would be 2 unused seats in each class. A seat utilization rate of 80% is used as a factor to take into account this inevitable mismatch between class size and section size.

Column E – ECS NASF Generated per Contact Hour

The figures in column E corresponds to the NASF generated by following calculation: E = A / (B x C x D)

Fall 2010 Weekly Contact Hours Generated

Fall 2010 Contact Hours Generated			Classroom	Laboratory	Grand Total
Newnham	Faculty of Business		61,304	17,310	78,614
	Faculty of Applied Arts & Health Sciences		13,181	10,271	23,452
	Faculty of Applied Science and Engineering Technology		24,629	13,806	38,435
	Faculty of Communication, Art & Design		1,422	8,788	10,210
	Faculty of International Studies		14,504	3,918	18,422
	General Education		28,209	1,982	30,191
	School of English and Liberal Studies		96	40	136
	Workforce Skills Development		733	198	931
Newnham Total			**141,078**	**56,313**	**200,391**
Seneca@York	Faculty of Business		4,714	1,600	6,314
	Faculty of Applied Arts & Health Sciences		10,005	1,498	11,503
	Faculty of Applied Science and Engineering Technology		16,393	19,412	35,805
	Faculty of Communication, Art & Design		5,552	16,039	21,591
	General Education		11,207	573	11,780
Seneca@York Total			**47,871**	**39,122**	**86,993**
King	Faculty of Applied Arts & Health Sciences		35,440	6,807	42,247
	General Education		6,801		6,801
King Total		**42,241**	**6,807**	**49,048**	
Markham	Faculty of Business		6,933	3,551	10,484
	Faculty of Applied Arts & Health Sciences		1,332	1,104	2,436
	Faculty of Applied Science and Engineering Technology		1,186	380	1,566
	Faculty of Communication, Art & Design		2,222	1,319	3,541
	Faculty of International Studies		4,730	3,795	8,525
	General Education		3,704	647	4,351
Markham Total		**20,107**	**10,796**	**30,903**	
Grand Total		**254,297**	**113,038**	**367,335**	

Greenfield Space Requirements of Instructional Spaces as per Weekly Contact Hours Activity Model – Fall 2010

Greenfield space requirements do not take into account constraints such as existing facilities. In its simplest terms, a greenfield space programme considers what a new building would look like if it were planned to be built today, without external limitations.

Greenfield Instructional Space Generated – Fall 2010

		Classroom		Classroom Total	Laboratory																		Laboratory Total	Grand Total
		Classroom	Lecture Hall		General Computer	Specialized Computer	Animation / Gaming	Media / Performance	Graphic Arts	Fashion	Marketing	Hospitality / Travel	Greenhouse	ECE Laboratory	Electronics / Comp. Hardware	Building Science / Civil	Metal Trades	Wet Life Sciences	Wet Physical Sciences	Animal Science	Patient Care	Personal Care		
Newnham	Faculty of Business	52,581	2,506	**55,087**	30,701	2,219				168	343				149	271							**33,850**	88,937
	Faculty of Applied Arts & Health Sciences	9,538	2,096	**11,634**	2,232	824				3,779	1,254			10,678	4,282	12,848		1,897	507			251	**38,552**	50,186
	Faculty of Applied Science and Engineering Technology	18,947	3,966	**22,913**	2,516	11,295									16,004	15,357			1,200				**46,372**	69,285
	Faculty of Communication, Art & Design	1,270		**1,270**						21,090	4,629											6,217	**31,935**	33,205
	Faculty of International Studies	12,779	212	**12,991**	7,463																		**7,463**	20,453
	General Education	24,965	264	**25,229**	1,103	2,988								564									**4,655**	29,884
	School of English and Liberal Studies	86		**86**	76																		**76**	162
	Workforce Skills Development	654		**654**	377																		**377**	1,032
Newnham Total		**120,821**	**9,043**	**129,863**	**44,469**	**17,326**				**25,036**	**6,226**			**11,242**	**20,434**	**28,476**		**1,897**	**1,707**			**6,469**	**163,281**	**293,145**
Seneca@York	Faculty of Business	3,908	421	**4,329**	2,819	286																	**3,105**	7,434
	Faculty of Applied Arts & Health Sciences	6,846	2,921	**9,768**	1,850	671		57	371										84				**3,033**	12,801
	Faculty of Applied Science and Engineering Technology	11,080	4,979	**16,059**	18,762	2,319	534								9,440			10,636	7,566				**49,257**	65,316
	Faculty of Communication, Art & Design	4,822	189	**5,011**	5,878	10,714	4,277	10,853	9,694														**41,417**	46,428
	General Education	10,006		**10,006**	183	771									437								**1,391**	11,398
Seneca@York Total		**36,663**	**8,510**	**45,173**	**29,491**	**14,762**	**4,811**	**10,910**	**10,066**						**9,877**			**10,636**	**7,650**				**98,204**	**143,377**
King	Faculty of Applied Arts & Health Sciences	30,141	2,148	**32,289**									629	5,429	2,897		2,029	1,112		3,324	6,857		**22,276**	54,565
	General Education	5,845	319	**6,163**																				6,163
King Total		**35,986**	**2,466**	**38,452**									**629**	**5,429**	**2,897**		**2,029**	**1,112**		**3,324**	**6,857**		**22,276**	**60,728**
Markham	Faculty of Business	5,988	283	**6,271**	4,503	71		1,935				869											**7,378**	13,649
	Faculty of Applied Arts & Health Sciences	1,085	146	**1,231**	2,103																		**2,103**	3,334
	Faculty of Applied Science and Engineering Technology	539	728	**1,267**	223			777				169											**1,169**	2,435
	Faculty of Communication, Art & Design	1,845	195	**2,040**	827	707		1,920				240											**3,694**	5,733
	Faculty of International Studies	3,560	929	**4,489**	834	1,921		2,686				4,706									943		**11,090**	15,579
	General Education	3,272	49	**3,321**	57			110				1,680											**1,848**	5,169
Markham Total		**16,289**	**2,329**	**18,618**	**8,547**	**2,700**		**7,429**				**7,663**									**943**		**27,281**	**45,899**
Grand Total		**209,759**	**22,348**	**232,107**	**82,507**	**34,788**	**4,811**	**18,339**	**10,066**	**25,036**	**6,226**	**7,663**	**629**	**16,670**	**33,209**	**28,476**	**2,029**	**13,646**	**9,356**	**3,324**	**7,800**	**6,469**	**311,042**	**543,149**

- Current College-wide classroom inventory 227,772 NASF vs. greenfield requirement of 232,107 NASF (including KIP addition)
- Current College-wide laboratory inventory 215,250 NASF vs. greenfield requirement of 311,042 NASF

Greenfield Space Requirements of Instructional Spaces as per Weekly Contact Hours Activity Model – Scenario A

Scenario A documents greenfield instructional space requirements across all campuses to 2021, as per the enrolment projections outlined in Section 4 of this workbook.

		Classroom		Classroom Total	Laboratory																			Laboratory Total	Grand Total
Scenario A - Proposed Locatio	ECS Apr 2011 Reorg Faculty	Classroom	Lecture Hall		General Computer	Specialized Computer	Animation / Gaming	Media / Performance	Graphic Arts	Fashion	Marketing	Hospitality / Travel	Greenhouse	ECE Laboratory	Electronics / Comp. Hardware	Building Science / Civil	Metal Trades	Wet Life Sciences	Wet Physical Sciences	Animal Science	Patient Care	Personal Care		
Newnham	Faculty of Business	54,328	2,552	**56,880**	32,636	2,389				161	329				143	261							**35,918**	92,798
	Faculty of Applied Arts & Health Sciences	7,241	587	**7,828**	841	231				1,058	351			16,231	1,199	3,597		2,239	142			70	**25,959**	33,787
	Faculty of Applied Science and Engineering Technology	20,713	4,675	**25,388**	2,668	12,688							18,165	18,121			1,416						**53,058**	78,446
	Faculty of Communication, Art & Design	1,498		**1,498**						24,886	5,462							7,336					**37,684**	39,182
	Faculty of International Studies	6,517	108	**6,625**	3,806																		**3,806**	10,431
	Workforce Skills Development	707		**707**	407																		**407**	1,114
	General Education	26,962	285	**27,248**	1,191	3,227							609										**5,027**	32,275
	School of English and Liberal Studies	93		**93**	82																		**82**	175
Newnham Total		**118,059**	**8,207**	**126,266**	**41,531**	**18,535**				**26,105**	**6,142**			**16,340**	**19,507**	**21,779**		**2,239**	**1,558**			**7,407**	**161,942**	**288,208**
Seneca@York	Faculty of Business	4,729	510	**5,238**	3,411	346																	**3,757**	8,995
	Faculty of Applied Arts & Health Sciences	8,284	3,535	**11,819**	2,238	812		69	449							101							**3,670**	15,489
	Faculty of Applied Science and Engineering Technology	13,681	6,024	**19,705**	22,845	2,806	646							11,422			12,870	9,155					**59,744**	79,449
	Faculty of Communication, Art & Design	5,835	228	**6,063**	7,112	12,964	5,175	13,133	11,730														**50,115**	56,178
	General Education	12,108		**12,108**	221	933							529										**1,684**	13,791
Seneca@York Total		**44,636**	**10,297**	**54,933**	**35,828**	**17,862**	**5,822**	**13,202**	**12,180**						**11,951**			**12,870**	**9,256**				**118,970**	**173,903**
King	Faculty of Applied Arts & Health Sciences	42,434	3,367	**45,801**									792	3,257	4,259		2,556	2,336		6,980	14,400		**34,580**	80,381
	General Education	8,592	469	**9,060**																				9,060
King Total		**51,025**	**3,836**	**54,861**						**791**	**3,257**	**4,259**		**2,556**	**2,336**		**6,980**	**14,400**			**34,580**	**89,441**		
Markham	Faculty of Business	19,043	898	**19,941**	14,319	227		6,154				2,762											**23,462**	43,404
	Faculty of Applied Arts & Health Sciences	3,450	465	**3,915**	6,687																		**6,687**	10,602
	Faculty of Applied Science and Engineering Technology	5,429	2,313	**7,742**	1,145	1,726		2,471				536			1,938								**7,817**	15,559
	Faculty of Communication, Art & Design	5,866	620	**6,486**	2,629	2,249		6,106				763											**11,746**	18,232
	Faculty of International Studies	11,320	2,953	**14,274**	2,653	6,110		8,541				14,964							2,998				**35,266**	49,540
	General Education	10,406	155	**10,561**	182			351				5,342											**5,875**	16,436
Markham Total		**55,514**	**7,405**	**62,919**	**27,615**	**10,312**		**23,623**			**24,368**			**1,938**						**2,998**		**90,854**	**153,773**
Grand Total		**269,234**	**29,745**	**298,979**	**105,073**	**46,709**	**5,822**	**36,825**	**12,180**	**26,105**	**6,142**	**24,368**	**792**	**20,097**	**37,655**	**21,979**	**2,556**	**17,444**	**10,814**	**6,980**	**17,398**	**7,407**	**406,345**	**705,325**

Greenfield Space Requirements of Instructional Spaces as per Weekly Contact Hours Activity Model – Scenario B

Scenario B documents green field instructional space requirements across all campuses to 2021, as per the enrolment projections outlined in Section 4 of this workbook.

		Classroom		Classroom Total	Laboratory																			Laboratory Total	Grand Total
Scenario B - Proposed Locatio	ECS Apr 2011 Reorg Faculty	Classroom	Lecture Hall		General Computer	Specialized Computer	Animation / Gaming	Media / Performance	Graphic Arts	Fashion	Marketing	Hospitality / Travel	Greenhouse	ECE Laboratory	Electronics / Comp. Hardware	Building Science / Civil	Metal Trades	Wet Life Sciences	Wet Physical Sciences	Animal Science	Patient Care	Personal Care		
Newnham	Faculty of Business	54,328	2,552	**56,880**	32,636	2,389				161	329				143	261							**35,918**	92,798
	Faculty of Applied Arts & Health Sciences	7,241	587	**7,828**	841	231				1,058	351			16,231	1,199	3,597		2,239	142			70	**25,959**	33,787
	Faculty of Applied Science and Engineering Technology	38,454	11,450	**49,905**	25,949	17,220	646					273			31,526	18,121		12,607	10,571				**116,913**	166,818
	Faculty of Communication, Art & Design	1,498		**1,498**	254					24,886	5,462							7,336					**37,938**	39,436
	Faculty of International Studies	6,517	108	**6,625**	3,806																		**3,806**	10,431
	Workforce Skills Development	707		**707**	407																		**407**	1,114
	General Education	27,747	285	**28,032**	1,191	3,469							609	529									**5,798**	33,830
	School of English and Liberal Studies	93		**93**	82																		**82**	175
Newnham Total		**136,584**	**14,382**	**150,967**	**65,167**	**23,309**	**646**			**26,105**	**6,142**	**273**		**16,340**	**33,396**	**21,979**		**14,346**	**10,712**			**7,407**	**216,822**	**378,389**
Seneca@York	Faculty of Business	4,729	510	**5,238**	3,411	346																	**3,757**	8,995
	Faculty of Applied Arts & Health Sciences	8,284	3,535	**11,819**	2,238	812		69	449							101							**3,670**	15,489
	Faculty of Applied Science and Engineering Technology	73		**73**														263					**263**	336
	Faculty of Communication, Art & Design	11,068	848	**11,916**	7,112	15,213	5,175	13,133	11,730			763											**53,127**	65,043
	General Education	12,608		**12,608**	221	691																	**913**	13,521
Seneca@York Total		**36,762**	**4,893**	**41,655**	**12,983**	**17,063**	**5,175**	**13,202**	**12,180**			**763**						**263**	**101**				**61,729**	**103,384**
King	Faculty of Applied Arts & Health Sciences	42,434	3,367	**45,801**									792	3,257	4,259		2,556	2,336		6,980	14,400		**34,580**	80,381
	General Education	7,958	469	**8,426**																				8,426
King Total		**50,392**	**3,836**	**54,228**									**792**	**3,257**	**4,259**		**2,556**	**2,336**		**6,980**	**14,400**		**34,580**	**88,807**
Markham	Faculty of Business	19,043	898	**19,941**	14,319	227		6,154				2,762											**23,462**	43,404
	Faculty of Applied Arts & Health Sciences	3,450	465	**3,915**	6,687																		**6,687**	10,602
	Faculty of Applied Science and Engineering Technology	1,295	1,562	**2,857**	709			2,471				263											**3,443**	6,300
	Faculty of Communication, Art & Design	633		**633**	2,374			6,106															**8,480**	9,113
	Faculty of International Studies	11,320	2,953	**14,274**	2,653	6,110		8,541				14,964									2,998		**35,266**	49,540
	General Education	9,755	155	**9,910**	182			351				5,342											**5,875**	15,785
Markham Total		**45,496**	**6,034**	**51,530**	**26,924**	**6,337**		**23,623**				**23,332**									**2,998**		**83,215**	**134,744**
Grand Total		**269,234**	**29,745**	**298,979**	**105,073**	**46,709**	**5,822**	**36,825**	**12,180**	**26,105**	**6,142**	**24,368**	**792**	**20,097**	**37,655**	**21,979**	**2,556**	**17,444**	**10,814**	**6,980**	**17,398**	**7,407**	**406,345**	**705,325**

Section 7 – Staffing Complement and Office Space

Introduction

This section estimates office space requirements based on a generic allocation of office spaces for the academic divisions and administrative units of the College.

The facing table is an example of the how Seneca College staffing data was compiled to allow for the development of office space requirement ***estimates***. The number of staff was tabulated for each division or unit of the College, and then assigned a particular type of office accommodation. The types of office accommodation range from Type A, the largest but only allocated to the President, to Type G, a workstation in an open office environment.

The diagram on page 7-2 illustrates typical room office layouts associated with each type of offices. The diagram on page 7-3 illustrates how certain multipliers were then set to account for office support and internal office circulation requirement. It should be noted that this approach replicates the standards and the methodology used at Humber College to plan for estimate office space requirements.

The table of page 7-4 presents the calculation of office space allocations to accommodate current shortfalls and future growth. Unfortunately the table is complex. Highlights are as follows:

- There is an estimated current shortfall of academic and administrative office space at Seneca totalling 62,899 square feet, including:

  - Newnham Campus 26,505 square feet shortage
  - King Campus 13,822 square feet shortage
  - Markham 22,572 square feet shortage

- Under Scenario A (as per Section 4 of this document), the future estimated shortfall of office space will be as follows:

  - Newnham Campus 24,829 square feet shortage
  - King Campus 21,786 square feet shortage
  - Markham 71,811 square feet shortage

- Under Scenario B (as per Section 4 of this document), the future estimated shortfall of office space will be as follows:

  - Newnham Campus 44,949 square feet shortage
  - King Campus 21786 square feet shortage
  - Markham 64,686 square feet shortage

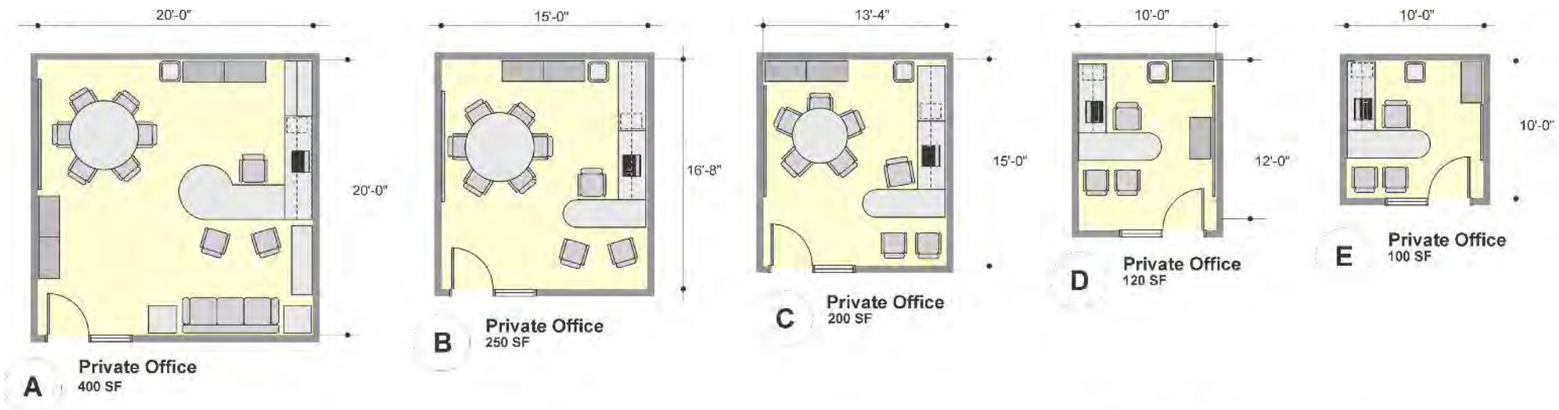
The estimates account for academic programme growth and relocations and the additional instructional staff required to support these changes in activity levels. The estimate also incorporate a 15% increase in administrative offices for the College as whole, but located at the Markham Campus.

Academic Divisions Staff Complements – Sample

Newnham Campus

A	B	C	D	E	F	G	H	I
Division/Faculty	Group	Type C	Type D	Type E	Type F	Type G	Workroom	Grand Total
Faculty of Business	Academic - FT					159		159
	Academic - PT Sessional					5		5
	Academic - PT PLD					131		131
	Academic - PT					70		70
	Academic - FT Admin	3		8	1			12
	Academic - FT Support				16			16
	Academic - PT Support					17	2	19
Faculty of Business Total		**3**		**8**	**17**	**382**	**2**	**412**
Faculty of Applied Arts & Health Sciences	Academic - FT					12		12
	Academic - PT Sessional					1		1
	Academic - PT PLD					20		20
	Academic - PT					14		14
	Academic - FT Admin			1	1			2
	Academic - FT Support				3		6	9
	Academic - PT Support					13		13
Faculty of Applied Arts & Health Sciences Total				**1**	**4**	**60**	**6**	**71**
Faculty of Applied Science & Engineering Technology	Academic - FT					72		72
	Academic - PT PLD					49		49
	Academic - PT					70		70
	Academic - FT Admin			2				2
	Academic - FT Support				11			11
	Academic - PT Support					24	3	27
Faculty of Applied Science & Engineering Technology Total				**2**	**11**	**215**	**3**	**231**
Faculty of Communication, Art & Design	Academic - FT					33		33
	Academic - PT Sessional					5		5
	Academic - PT PLD					17		17
	Academic - PT					3		3
	Academic - FT Admin			1				1
	Academic - FT Support				4			4
	Academic - PT Support					3	22	25
Faculty of Communication, Art & Design Total				**1**	**4**	**61**	**22**	**88**
Faculty of International Studies	Academic - FT			1		44		45
	Academic - PT Sessional					11		11
	Academic - PT PLD					27		27
	Academic - PT					13		13
	Academic - FT Admin		6	2	1			9
	Academic - FT Support				19			19
	Academic - PT Support					10	21	31
Faculty of International Studies Total			**6**	**3**	**20**	**105**	**21**	**155**
Faculty Workforce Skills Development	Academic - FT			3		5		8
	Academic - PT PLD					10		10
	Academic - PT					7		7
	Academic - FT Admin		1					1
	Academic - FT Support				9			9
	Academic - PT Support					22		22
Faculty Workforce Skills Development Total			**1**	**3**	**9**	**44**		**57**
Faculty Continuing Education & Training	Academic - FT					1		1
	Academic - PT PLD					4		4
	Academic - FT Admin	1		8				9
	Academic - FT Support				31			31
	Academic - PT Support					85		85
Faculty Continuing Education & Training Total		**1**		**8**	**31**	**90**		**130**
Grand Total		**4**	**7**	**26**	**96**	**957**	**54**	**1,144**

Office Allocation Types



Note:
- Provide 1 Station for every 5 Part-time Faculty
- Provide 1 Station for every 2.5 Partial Load Faculty
- Con. Ed. Faculty to share stations of above functions

Proposed Space Categories

(A) President

(B) Vice-President

(C) Dean / Director / Registrar / Etc.

(D) Manager (senior) / Deputy Registrar / Associate Registrar / Study Abroad Officer / Associate Dean / Etc.

(E) Manager (junior) / Career Advisor / Counsellor / Consultant / Academic Program Co-ordinator / Etc.

(F) Administrative / Technical Support Staff

(G) Faculty (Full-time) / Sessional / Support Staff (Part-time) / Etc.

(G) Faculty (Part-time) / Partial Load / Con. Ed. Faculty in Hotelling Stations (see Note)

Support and Circulation Allowances

Academic Offices Support Multiplier	1.25	Administrative Offices Support Space Multiplier	2.0
Academic Offices Internal Circulation Multiplier	1.5	Administrative Offices Internal Circulation Multiplier	1.5

Typical Academic Offices Layout in Former Classroom Space

1

	Total Net Assignable Area (NASF)	Number of Faculty	Proposed Allocation per Faculty	Total Net Area for Faculty Stations	Office Support Areas	Internal Circulation Space	Internal Circulation Factor	Total Area NASF Per Faculty
G	2,030	20	56 SF	1,120 SF	242 SF Interview, Resources, etc.	668 SF	1.49	**101.5 SF**

2

	Total Net Assignable Area (NASF)	Number of Staff	Proposed Allocation per Staff	Total Net Area for Staff	Office Support Areas	Internal Circulation Space	Internal Circulation Factor	Total Area NASF Per Staff
C		1	200 SF	200 SF				
D		1	120 SF	120 SF	64 SF Interview			
E	3,045	2	100 SF	200 SF	100 SF Copier/Supply	1,059 SF	1.51	**121.8 SF**
F		1	72 SF	72 SF	50 SF Waiting			
G		20	56 SF	1,120 SF	60 SF Resources, etc.			

Office Space Requirements – Calculation of Allocations to Accommodate Current Shortfalls and Future Growth

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	V	W	X	
		Type A		Type B		Type C		Type D		Type E		Type F		Type G		Workroom		Total Number of Positions	Total Office Space Requirement NASF		Existing Campus Inventory	Difference	
Campus	Academic / Admin	Number of Positions	Office Space Requirement NASF	Number of Positions	Office Space Requirement NASF	Number of Positions	Office Space Requirement NASF	Number of Positions	Office Space Requirement NASF	Number of Positions	Office Space Requirement NASF	Number of Positions	Office Space Requirement NASF	Number of Positions	Office Space Requirement NASF	Number of Positions	Office Space Requirement NASF						
Newnham	Existing Academic					4	1,500	7	1,575	26	4,875	96	12,960	957	54,852	54	1,134	1,144	76,896	*A1*			
	Existing Administration			2	1,500	8	4,800	12	4,320	49	13,500	168	35,899	170	7,358	349	3,909	758	71,286	*B1*			
Newnham Total				**2**	**1,500**	**12**	**6,300**	**19**	**5,895**	**75**	**18,375**	**264**	**48,859**	**1,127**	**62,210**	**403**	**5,043**	**1,902**	**148,182**		**121,677**	**-26,505**	*C1*
Seneca@York	Existing Academic					1	375			3	563	27	3,645	395	23,982	91	1,911	517	30,476	*A2*			
	Existing Administration							3	1,080	2	600	50	10,800	38	1,546	102	1,142	195	15,168	*B2*			
Seneca@York Total						**1**	**375**	**3**	**1,080**	**5**	**1,163**	**77**	**14,445**	**433**	**25,528**	**193**	**3,053**	**712**	**45,644**		**59,129**	**13,485**	*C2*
King	Existing Academic					1	375	2	450	3	563	14	1,890	336	19,824	6	126	362	23,228	*A3*			
	Existing Administration							2	720	3	900	33	7,128	34	1,411	67	750	139	10,910	*B3*			
King Total						**1**	**375**	**4**	**1,170**	**6**	**1,463**	**47**	**9,018**	**370**	**21,235**	**73**	**876**	**501**	**34,137**		**20,315**	**-13,822**	*C3*
Markham	Existing Academic					1	375			1	188	8	1,080	170	7,224	4	84	184	8,951	*A4*			
	Existing Administration	1	1,200	1	750	9	5,400	8	2,880	18	5,400	103	22,248	50	2,352	56	627	246	40,857	*B4*			
Markham Total		**1**	**1,200**	**1**	**750**	**10**	**5,775**	**8**	**2,880**	**19**	**5,588**	**111**	**23,328**	**220**	**9,576**	**60**	**711**	**430**	**49,808**		**27,236**	**-22,572**	*C4*
Jane	Existing Academic											1	135	14	714	8	168	23	1,017	*A5*			
	Existing Administration															2	22	2	22	*B5*			
Jane Total												**1**	**135**	**14**	**714**	**10**	**190**	**25**	**1,039**		**2,729**	**1,690**	*C5*
Grand Total		**1**	**1,200**	**3**	**2,250**	**24**	**12,825**	**34**	**11,025**	**105**	**26,588**	**500**	**95,785**	**2,164**	**119,263**	**739**	**9,874**	**3,570**	**278,810**		**231,086**	**-47,724**	

Academic Office Space Requirements

Generated Academic Offices Total NASF	**140,567**	*D = A1 + A2 + A3 + A4 + A5*	
Total Weekly Contact Hours (WCH) Generated Fall 2010	**368,931**	*E*	
NASF / WCH Ratio	**0.381**	*F = D / E*	
Total Weekly Contact Hours (WCH) Generated 2021 as per Enrolment Projection	**478,945**	*G*	
Additional Academic Offices NASF Generated to Accommodate Enrolment Growth	**41,916**	*H = (G - E) X F*	

Distribution of Adddtional Contact Hours as per Scenario A	Newnham	-4%	*J1*	**Additional NASF Required at Each Campus as per Scenario A**	Newnham	**-1,677**	*K1 = (H x J1)*	**1,677**	*K1*
	Seneca@York	16%	*J2*		Seneca@York	**6,707**			
	King	19%	*J3*		King	**7,964**	*K3 = (H x J3)*	**-7,964**	*K3*
	Markham	68%	*J4*		Markham	**28,503**	*K4 = (H x J4)*	**-28,503**	*K4*
	Jane	1%	*J5*		Jane	**na**			
Distribution of Adddtional Contact Hours as per Scenario B	Newnham	44%	*J1*	**Additional NASF Required at Each Campus as per Scenario B**	Newnham	**18,443**	*K1 = (H x J1)*	**-18,443**	*K1*
	Seneca@York	-14%	*J2*		Seneca@York	**-5,868**			
	King	19%	*J3*		King	**7,964**	*K3 = (H x J3)*	**-7,964**	*K3*
	Markham	51%	*J4*		Markham	**21,377**	*K4 = (H x J4)*	**-21,377**	*K4*

Administrative Office Space Requirements			
Generated Administrative Offices Total NASF	**138,244**	*L = B1 + B2 + B3 + B4 + B5*	
Estimated Growth of Administrative Services from 2010 to 2020	**15%**	*M*	
Additional Administrative Office Space NASF to Accommodate Enrolment Growth - All Markham	**20,737**	*N = L x M*	**20,737** *N*

Summary of Additional Space Required	**Scenario A**	Newnham	**24,829**	*O1 = C1 + K1*	**Scenario B**	Newnham	**44,949** *O1 = C1 + K1*
		King	**21,786**	*O2 = C3 + K3*		King	**21,786** *O2 = C3 + K3*
		Markham	**71,811**	*O3 = C4 + K4 + N*		Markham	**64,686** *O3 = C4 + K4 + N*

Section 8 – MSP Analysis

Master Space Programmes

This section presents master space programmes (MSPs) for the Newnham, Markham, King, and Seneca@York campuses A distinct MSP has been prepared for each campus based on the Baseline, Scenario A and Scenario B enrolment data detailed in Section 4. For the Markham and King campuses, the MSPs for Scenarios A and B are been presented in the same table, as the projected enrolments at these campuses do not vary across the two scenarios. Each MSP contains the following information, organized by space category:

- **Column A** lists the Net Assignable Square Feet (NASF) currently available at the campus, where NASF is defined as the available Gross Square Feet (GSF) minus space allotted for building services and circulation;
- **Column B** lists the input value used to calculate the NASF requirement for the space category, which includes number of Weekly Contact Hours (WCH), Staff, and Full Time Equivalent (FTE) Students; etc.
- **Column C** lists the existing space benchmarks at Seneca College, calculated by taking the ratio of the value in Column A to the value in Column B;
- **Column D** lists the external space standards and benchmarks applied by ECS as deemed appropriate;
- **Column E** lists the determined NASF requirement for the space category, calculated by taking the product of the value in Column B and the value in Column D;
- **Column F** lists the difference between the NASF of required space and the NASF of existing space.

Each MSP also provides the difference between the required space and the existing space at the campus as a whole. This value is given both in NASF and GSF, calculated assuming a 65% / 35% Net-to-Gross Ratio.

Newnham Campus – Baseline

	A	B		C = A / B		D			E		F = E - A
Space Category	Existing Inventory (NASF)	Input Value and Description		Seneca Calculated Benchmark		External Standard / Benchmark as Applicable		Standard / Benchmark Source	Green Field Space Requirement (NASF)	Source / Reference	Difference (NASF)
Classroom / Lecture Halls											
Classroom / Seminar	121,104	135,319	WCH	0.89		0.89	NASF / WCH	ECS	120,821		283
Lecture Halls	5,966	8,759	"	1.47		1.25	"	"	9,043		-3,077
Classroom / Lecture Halls	**127,070**	**144,078**	**"**	**0.88**	**NASF / WCH**				**129,864**	**Section 6**	**-2,794**
Laboratories											
Computer Laboratories	40,020	23,346	WCH	1.71	NASF / WCH	1.90	NASF / WCH	ECS	44,469		-4,449
Animal Science						9.52	"	"			
Animation / Gaming						2.86	"	"			
Building Science / Civil	9,150	5,980	"	1.53	"	4.76	"	"	28,476		-19,326
ECE Laboratory	1,500	2,951	"	0.51	"	3.81	"	"	11,242		-9,742
Electronics / Comp. Hardware	11,580	5,364	"	2.16	"	3.81	"	"	20,434		-8,854
Fashion	5,810	6,572	"	0.88	"	3.81	"	"	25,036		-19,226
Graphic Arts						2.86	"	"			
Greenhouse						4.76	"	"			
Hospitality / Travel	570					2.86	"	"			
Media / Performance						3.81	"	"			
Martketing	2,540	2,179	"	1.17	"	2.86	"	"	6,226		-3,686
Metal Trades						9.52	"	"			
Patient Care						4.76	"	"			
Personal Care	670	1,698	"	0.39	"	3.81	"	"	6,469		-5,799
Specialized Computer Laboratories	4,970	7,277	"	0.68	"	2.38	"	"	17,326		-12,356
Wet Life Science Lab	1,290	498	"	2.59	"	3.81	"	"	1,897		-607
Wet Physical Science Lab	900	448	"	2.01	"	3.81	"	"	1,707		-807
Laboratories	**79,000**	**56,313**	**WCH**	**1.40**	**"**		**"**	**"**	**163,282**	**Section 6**	**-84,852**
Administrative & Faculty Offices											
Academic Offices		1,144	Staff	63.97	NASF / Staff				77,290		
Administrative Offices		758	Staff						72,366		
Administrative & Faculty Offices	**121,677**	**1,902**	**Staff**			**Section 7-Type A to G x Multipliers**		**ECS**	**149,656**	**Section 7**	**-27,979**
Learner Support											
Library / Information Commons											
Open Access Study Space											
Learning Centres											
Learner Support	**37,887**	**10,032**	**FTE Students**	**3.78**	**NASF / FTE**	**6.00**	**NASF / FTE**	**COU & ECS**	**60,192**	**E = B x D**	**-22,305**
Campus Services											
Food	18,839	10,032	FTE Students	1.88	NASF / FTE	6.5		COU (Mid-Range)	65,208	E = B x D	-46,369
Retail / Bookstore	8,842	10,032	FTE Students	0.88	NASF / FTE	1.6		COU (Mid-Range)	16,051	E = B x D	-7,209
Campus Services	**27,681**										**-53,578**
Student Life											
Athletic Activity Areas	59,957	10,032	FTE Students	5.98	NASF / FTE	6.0	NASF / FTE	ECS	60,192	E = B x D	-235
Student Centre / Lounges and Social	17,261	10,032	FTE Students	1.72	NASF / FTE	6.4	NASF / FTE	COU	64,205	COU	-46,944
Student Life	**77,218**										**-47,179**

Total NASF **-235,893**

Total GSF assuming 65% / 35% Net-to-Gross Ratio **-360,916**

Newnham Campus – Scenario A

	A	B		C = A / B		D			E		F = E - A
Space Category	Existing Inventory (NASF)	Input Value and Description		Seneca Calculated Benchmark		External Standard / Benchmark as Applicable		Standard / Benchmark Source	Green Field Space Requirement (NASF)	Source / Reference	Difference (NASF)
Classroom / Lecture Halls											
Classroom / Seminar	121,104	132,226	WCH	0.92		0.89	NASF / WCH	ECS	118,059		3,045
Lecture Halls	5,966	7,544	"	1.26		1.25	"	"	8,207		-2,241
Classroom / Lecture Halls	**127,070**	**139,770**	**"**	**0.91**	**NASF / WCH**				**126,266**	**Section 6**	**804**
Laboratories											
Computer Laboratories	40,020	21,856	WCH	1.83	NASF / WCH	1.90	NASF / WCH	ECS	41,631		-1,611
Animal Science						9.52	"	"			
Animation / Gaming						2.86	"	"			
Building Science / Civil	9,150	4,616	"	1.98	"	4.76	"	"	21,979		-12,829
ECE Laboratory	1,500	4,420	"	0.34	"	3.81	"	"	16,840		-15,340
Electronics / Comp. Hardware	11,580	5,121	"	2.26	"	3.81	"	"	19,507		-7,927
Fashion	5,810	6,852	"	0.85	"	3.81	"	"	26,105		-20,295
Graphic Arts						2.86	"	"			
Greenhouse						4.76	"	"			
Hospitality / Travel	570					2.86	"	"			
Media / Performance						3.81	"	"			
Martketing	2,540	2,150	"	1.18	"	2.86	"	"	6,142		-3,602
Metal Trades						9.52	"	"			
Patient Care						4.76	"	"			
Personal Care	670	1,944	"	0.34	"	3.81	"	"	7,407		-6,737
Specialized Computer Laboratories	4,970	7,785	"	0.64	"	2.38	"	"	18,535		-13,565
Wet Life Science Lab	1,290	588	"	2.19	"	3.81	"	"	2,239		-949
Wet Physical Science Lab	900	409	"	2.20	"	3.81	"	"	1,558		-658
Laboratories	**79,000**	**55,741**	**WCH**	**1.42**	**"**		**"**	**"**	**161,943**	**Section 6**	**-83,513**
Administrative & Faculty Offices											
Academic Offices		1,098	Staff	61.80	NASF / Staff				74,198		
Administrative Offices		871	Staff						73,775		
Administrative & Faculty Offices	**121,677**	**1,969**	**Staff**			**Section 7-Type A to G x Multipliers**		**ECS**	**147,973**	**Section 7**	**-26,296**
Learner Support											
Library / Information Commons											
Open Access Study Space											
Learning Centres											
Learner Support	**37,887**	**10,834**	**FTE Students**	**3.50**	**NASF / FTE**	**6.00**	**NASF / FTE**	**COU & ECS**	**65,004**	**E = B x D**	**-27,117**
Campus Services											
Food	18,839	10,834	FTE Students	1.74	NASF / FTE	6.5		COU (Mid-Range)	70,421	E = B x D	-51,582
Retail / Bookstore	8,842	10,834	FTE Students	0.82	NASF / FTE	1.6		COU (Mid-Range)	17,334	E = B x D	-8,492
Campus Services	**27,681**										**-60,074**
Student Life											
Athletic Activity Areas	59,957	10,834	FTE Students	5.53	NASF / FTE	6.0	NASF / FTE	ECS	65,004	E = B x D	-5,047
Student Centre / Lounges and Social	17,261	10,834	FTE Students	1.59	NASF / FTE	6.4	NASF / FTE	COU	69,338	COU	-52,077
Student Life	**77,218**										**-57,124**

Total NASF **-254,124**

Total GSF assuming 65% / 35% Net-to-Gross Ratio **-388,810**

Newnham Campus – Scenario B

	A	B		C = A / B		D			E		F = E - A
Space Category	Existing Inventory (NASF)	Input Value and Description		Seneca Calculated Benchmark		External Standard / Benchmark as Applicable		Standard / Benchmark Source	Green Field Space Requirement (NASF)	Source / Reference	Difference (NASF)
Classroom / Lecture Halls											
Classroom / Seminar	121,104	152,975	WCH	0.79		0.89	NASF / WCH	ECS	136,584		-15,480
Lecture Halls	5,966	12,965	"	2.17		1.25	"	"	14,982		-9,016
Classroom / Lecture Halls	**127,070**	**165,940**	"	**0.77**	**NASF / WCH**				**151,566**	**Section 6**	**-24,496**
Laboratories											
Computer Laboratories	40,020	34,213	WCH	1.17	NASF / WCH	1.90	NASF / WCH	ECS	65,167		-25,147
Animal Science						9.52	"	"			
Animation / Gaming		226				2.86	"	"	646		-646
Building Science / Civil	9,150	4,616	"	1.98	"	4.76	"	"	21,979		-12,829
ECE Laboratory	1,500	4,420	"	0.34	"	3.81	"	"	16,840		-15,340
Electronics / Comp. Hardware	11,580	9,812	"	1.18	"	3.81	"	"	33,396		-21,816
Fashion	5,810	6,852	"	0.85	"	3.81	"	"	26,105		-20,295
Graphic Arts						2.86	"	"			
Greenhouse						4.76	"	"			
Hospitality / Travel	570	95				2.86	"	"	273		297
Media / Performance						3.81	"	"			
Martketing	2,540	2,150	"	1.18	"	2.86	"	"	6,142		-3,602
Metal Trades						9.52	"	"			
Patient Care						4.76	"	"			
Personal Care	670	1,944	"	0.34	"	3.81	"	"	7,407		-6,737
Specialized Computer Laboratories	4,970	9,790	"	0.51	"	2.38	"	"	23,309		-18,339
Wet Life Science Lab	1,290	3,897	"	0.33	"	3.81	"	"	14,846		-13,556
Wet Physical Science Lab	900	2,812	"	0.32	"	3.81	"	"	10,712		-9,812
Laboratories	**79,000**	**80,827**	**WCH**	**0.98**	"		"	"	**226,822**	**Section 6**	**-147,822**
Administrative & Faculty Offices											
Academic Offices		1,647	Staff	48.32	NASF / Staff				74,198		
Administrative Offices		871	Staff						93,968		
Administrative & Faculty Offices	**121,677**	**2,518**	**Staff**			**Section 7-Type A to G x Multipliers**		**ECS**	**168,166**	**Section 7**	**-46,489**
Learner Support											
Library / Information Commons											
Open Access Study Space											
Learning Centres											
Learner Support	**37,887**	**13,969**	**FTE Students**	**2.71**	**NASF / FTE**	**6.00**	**NASF / FTE**	**COU & ECS**	**83,814**	**E = B x D**	**-45,927**
Campus Services											
Food	18,839	13,969	FTE Students	1.35	NASF / FTE	6.5		COU (Mid-Range)	90,799	E = B x D	-71,960
Retail / Bookstore	8,842	13,969	FTE Students	0.63	NASF / FTE	1.6		COU (Mid-Range)	22,350	E = B x D	-13,508
Campus Services	**27,681**										**-85,468**
Student Life											
Athletic Activity Areas	59,957	13,969	FTE Students	4.29	NASF / FTE	6.0	NASF / FTE	ECS	83,814	E = B x D	-23,857
Student Centre / Lounges and Social	17,261	13,969	FTE Students	1.24	NASF / FTE	6.4	NASF / FTE	COU	89,402	COU	-72,141
Student Life	**77,218**										**-95,998**

Total NASF **-446,200**

Total GSF assuming 65% / 35% Net-to-Gross Ratio **-682,685**

Markham Campus – Baseline

	A	B		C = A / B		D			E		F = E - A
Space Category	Existing Inventory (NASF)	Input Value and Description		Seneca Calculated Benchmark		External Standard / Benchmark as Applicable		Standard / Benchmark Source	Green Field Space Requirement (NASF)	Source / Reference	Difference (NASF)
Classroom / Lecture Halls											
Classroom / Seminar	18,915	18,618	WCH	1.02		0.89	NASF / WCH	ECS	16,289		2,626
Lecture Halls	2,400	1,863	WCH	0.78		1.25	"	"	2,329		71
Classroom / Lecture Halls	**21,315**	**20,481**	**WCH**	**1.04**	**NASF / WCH**				**18,618**	**Section 6**	**2,697**
Laboratories											
Computer Laboratories	12,200	4,487	WCH	2.72	NASF / WCH	1.90	NASF / WCH	ECS	8,547		3,653
Animal Science					"	9.52	"	"			
Animation / Gaming					"	2.86	"	"			
Building Science / Civil					"	4.76	"	"			
ECE Laboratory					"	3.81	"	"			
Electronics / Comp. Hardware					"	3.81	"	"			
Fashion					"	3.81	"	"			
Graphic Arts					"	2.86	"	"			
Greenhouse					"	4.76	"	"			
Hospitality / Travel	3,110	2,682	WCH	1.16	"	2.86	"	"	7,663		-4,553
Media / Performance	2,200	1,950	WCH	1.13	"	3.81	"	"	7,429		-5,229
Metal Trades					"	9.52	"	"			
Patient Care	1,095	198	WCH	5.53	"	4.76	"	"	943		152
Personal Care					"	3.81	"	"			
Specialized Computer Laboratories	2,645	1,134	WCH	2.33	"	2.38	"	"	2,700		-55
Wet Life Science Lab					"	3.81	"	"			
Wet Physical Science Lab					"	3.81	"	"			
Laboratories	**21,250**	**10,451**	**WCH**	**2.03**	**"**				**27,282**	**Section 6**	**-6,032**
Administrative & Faculty Offices											
Academic Offices		184	Staff	63.34	NASF / Staff				8,951		
Administrative Offices		246	Staff						41,577		
Administrative & Faculty Offices	**27,235**	**430**	**Staff**			**Section 7-Type A to G x Multipliers**		**ECS**	**50,528**	**Section 7**	**-23,293**
Learner Support											
Library / Information Commons	2,300										
Open Access Study Space	8,925										
Learning Centres	430										
Learner Support	**11,655**	**1,837**	**FTE Students**	**6.34**	**NASF / FTE**	**6.00**	**NASF / FTE**	**COU & ECS**	**11,022**	**E = B x D**	**633**
Campus Services											
Food	11,340	1,837	FTE Students	6.17	NASF / FTE	6.5		COU (Mid-Range)	11,941	E = B x D	-601
Retail / Bookstore	1,130	1,837	FTE Students	0.62	NASF / FTE	1.6		COU (Mid-Range)	2,939	E = B x D	-1,809
Campus Services	**12,470**										**-2,410**
Student Life											
Athletic Activity Areas	2,400	1,837	FTE Students	1.31	NASF / FTE	Double Gym and Fitness Centre		ECS	22,000	ECS	-19,600
Student Centre / Lounges and Social	2,210	1,837	FTE Students	1.20	NASF / FTE	6.4	NASF / FTE	COU	11,757	COU	-9,547
Student Life	**4,610**										**-29,147**

Total NASF **-57,552**

Total GSF assuming 65% / 35% Net-to-Gross Ratio **-88,054**

Markham Campus – Scenario A & B

	A	B		C = A / B		D			E		F = E - A
Space Category	**Existing Inventory (NASF)**	**Input Value and Description**		**Seneca Calculated Benchmark**		**External Standard / Benchmark as Applicable**		**Standard / Benchmark Source**	**Green Field Space Requirement (NASF)**	**Source / Reference**	**Difference (NASF)**
Classroom / Lecture Halls											
Classroom / Seminar	18,915	20,107	WCH	0.94		0.89	NASF / WCH	ECS	55,514		-36,599
Lecture Halls	2,400	10,796	"	4.50		1.25	"	"	7,405		-5,005
Classroom / Lecture Halls	**21,315**	**30,903**	"	**0.69**	**NASF / WCH**				**62,919**	**Section 6**	**-41,604**
Laboratories											
Computer Laboratories	12,200	14,498	WCH	0.84	NASF / WCH	1.90	NASF / WCH	ECS	27,615		-15,415
Animal Science						9.52	"	"			
Animation / Gaming						2.86	"	"			
Building Science / Civil						4.76	"	"			
ECE Laboratory						3.81	"	"			
Electronics / Comp. Hardware	0	509		0.00	"	3.81	"	"	1,938		-1,938
Fashion						3.81	"	"			
Graphic Arts						2.86	"	"			
Greenhouse						4.76	"	"			
Hospitality / Travel	3,110	8,529		0.36	"	2.86	"	"	24,368		-21,258
Media / Performance	2,200	6,201		0.35	"	3.81	"	"	23,623		-21,423
Metal Trades						9.52	"	"			
Patient Care	1,095	630		1.74	"	4.76	"	"	2,998		-1,903
Personal Care						3.81	"	"			
Specialized Computer Laboratories	2,645	4,331		0.61	"	2.38	"	"	10,312		-7,667
Wet Life Science Lab						3.81	"	"			
Wet Physical Science Lab						3.81	"	"			
Laboratories	**21,250**	**34,698**	**WCH**	**0.61**	"		"	"	**90,854**	**Section 6**	**-69,604**
Administrative & Faculty Offices											
Academic Offices		309	Staff	46.08	NASF / Staff				37,557		
Administrative Offices		282	Staff						35,415		
Administrative & Faculty Offices	**27,235**	**591**	**Staff**			**Section 7-Type A to G x Multipliers**		**ECS**	**72,972**	**Section 7**	**-45,737**
Learner Support											
Library / Information Commons	2,300										
Open Access Study Space	8,925										
Learning Centres	430										
Learner Support	**11,655**	**5,843**	**FTE Students**	**1.99**	**NASF / FTE**	**6.00**	**NASF / FTE**	**COU & ECS**	**35,058**	**E = B x D**	**-23,403**
Campus Services											
Food	11,340	5,843	FTE Students	1.94	NASF / FTE	6.5		COU (Mid-Range)	37,980	E = B x D	-26,640
Retail / Bookstore	1,130	5,843	FTE Students	0.19	NASF / FTE	1.6		COU (Mid-Range)	9,349	E = B x D	-8,219
Campus Services	**12,470**										**-34,858**
Student Life											
Athletic Activity Areas	2,400	5,843	FTE Students	0.41	NASF / FTE	Double Gym and Fitness Centre		ECS	30,000	ECS	-27,600
Student Centre / Lounges and Social	2,210	5,843	FTE Students	0.38	NASF / FTE	6.4	NASF / FTE	COU	37,395	COU	-35,185
Student Life	**4,610**										**-62,785**

Total NASF **-277,992**

Total GSF assuming 65% / 35% Net-to-Gross Ratio **-425,327**

King Campus – Baseline

	A	B		C = A / B		D			E		F = E - A
Space Category	Existing Inventory (NASF)	Input Value and Description		Seneca Calculated Benchmark		External Standard / Benchmark as Applicable		Standard / Benchmark Source	Green Field Space Requirement (NASF)	Source / Reference	Difference (NASF)
Classroom / Lecture Halls											
Classroom / Seminar	22,260	40,268	WCH	0.55		0.89	NASF / WCH	ECS	35,986		-13,726
Lecture Halls	7,600	1,973	"	0.26		1.25	"	"	2,466		5,134
Classroom / Lecture Halls	**29,860**	**42,241**	"	**0.71**	**NASF / WCH**				**38,452**	**Section 6**	**-8,592**
Laboratories											
Computer Laboratories	3,650	1,942				1.90	NASF / WCH	ECS	3,689		-39
Animal Science		349	WCH			9.52	"	"	3,324		-3,324
Animation / Gaming						2.86	"	"			
Building Science / Civil						4.76	"	"			
ECE Laboratory		1,425				3.81	"	"	5,429		-5,429
Electronics / Comp. Hardware		1,014				3.81	"	"	2,897		-2,897
Fashion						3.81	"	"			
Graphic Arts						2.86	"	"			
Greenhouse		132				4.76	"	"	629		-629
Hospitality / Travel						2.86	"	"			
Media / Performance		213				3.81	"	"			
Metal Trades						9.52	"	"	2,029		-2,029
Patient Care	3,390	1,440				4.76	"	"	6,857		-3,467
Personal Care						3.81	"	"			
Specialized Computer Laboratories						2.38	"	"			
Wet Life Science Lab	3,030	292				3.81	"	"	1,112		1,918
Wet Physical Science Lab						3.81	"	"			
Laboratories	**10,070**	**6,807**	**WCH**	**1.48**	**"**		**"**	**"**	**25,966**	**Section 6**	**-15,896**
Administrative & Faculty Offices											
Academic Offices		362	Staff	40.55	NASF / Staff				23,340		
Administrative Offices		139	Staff						11,090		
Administrative & Faculty Offices	**20,315**	**501**	**Staff**			**Section 7-Type A to G x Multipliers**		**ECS**	**34,430**	**Section 7**	**-14,115**
Learner Support											
Library / Information Commons											
Open Access Study Space											
Learning Centres											
Learner Support	**11,404**	**3,280**	**FTE Students**	**3.48**	**NASF / FTE**	**6.00**	**NASF / FTE**	**COU & ECS**	**19,680**	**E = B x D**	**-8,276**
Campus Services											
Food	6,935	3,280	FTE Students	2.11	NASF / FTE	6.5		COU (Mid-Range)	21,320	E = B x D	-14,385
Retail / Bookstore	1,557	3,280	FTE Students	0.47	NASF / FTE	1.6		COU (Mid-Range)	5,248	E = B x D	-3,691
Campus Services	**8,492**										**-18,076**
Student Life											
Athletic Activity Areas	6,924	3,280	FTE Students	2.11	NASF / FTE	Double Gym and Fitness Centre		ECS	30,000	ECS	-23,076
Student Centre / Lounges and Social	7,027	3,280	FTE Students	2.14	NASF / FTE	6.4	NASF / FTE	COU	20,992	COU	-13,965
Student Life	**13,951**										**-37,041**

Total NASF **-101,996**
Total GSF assuming 65% / 35% Net-to-Gross Ratio **-156,054**

King Campus – Scenario A & B

	A	B		C = A / B		D			E		F = E - A
Space Category	**Existing Inventory (NASF)**	**Input Value and Description**		**Seneca Calculated Benchmark**		**External Standard / Benchmark as Applicable**		**Standard / Benchmark Source**	**Green Field Space Requirement (NASF)**	**Source / Reference**	**Difference (NASF)**
Classroom / Lecture Halls											
Classroom / Seminar	22,260	47,481	WCH	0.47		0.89	NASF / WCH	ECS	51,025		-28,765
Lecture Halls	7,600	9,623	"	1.27		1.25	"	"	3,836		3,764
Classroom / Lecture Halls	**29,860**	**57,104**	**"**	**0.52**	**NASF / WCH**				**54,861**	**Section 6**	**-25,001**
Laboratories											
Computer Laboratories	3,650	4,078	WCH			1.90	NASF / WCH	ECS	7,748		-4,098
Animal Science		733	"			9.52	"	"	6,980		-6,980
Animation / Gaming						2.86	"	"			
Building Science / Civil						4.76	"	"			
ECE Laboratory		855	"			3.81	"	"	3,257		-3,257
Electronics / Comp. Hardware		1,491	"			3.81	"	"	4,259		-4,259
Fashion						3.81	"	"			
Graphic Arts						2.86	"	"			
Greenhouse		116				4.76	"	"	792		-792
Hospitality / Travel						2.86	"	"			
Media / Performance		268	"			3.81	"	"	2,556		-2,556
Metal Trades						9.52	"	"			
Patient Care	3,390	3,024	"			4.76	"	"	14,400		-11,010
Personal Care						3.81	"	"			
Specialized Computer Laboratories						2.38	"	"			
Wet Life Science Lab	3,030	613	"			3.81	"	"	2,336		694
Wet Physical Science Lab						3.81	"	"			
Laboratories	**10,070**	**11,178**	**WCH**	**0.90**	**"**		**"**	**"**	**42,328**	**Section 6**	**-32,258**
Administrative & Faculty Offices											
Academic Offices		430	Staff	34.43	NASF / Staff				43,784		
Administrative Offices		160	Staff						12,753		
Administrative & Faculty Offices	**20,315**	**590**	**Staff**			**Section 7-Type A to G x Multipliers**		**ECS**	**56,537**	**Section 7**	**-36,222**
Learner Support											
Library / Information Commons											
Open Access Study Space											
Learning Centres											
Learner Support	**11,404**	**4,718**	**FTE Students**	**2.42**	**NASF / FTE**	**6.00**	**NASF / FTE**	**COU & ECS**	**28,308**	**E = B x D**	**-16,904**
Campus Services											
Food	6,935	4,718	FTE Students	1.47	NASF / FTE	6.5		COU (Mid-Range)	30,667	E = B x D	-23,732
Retail / Bookstore	1,557	4,718	FTE Students	0.33	NASF / FTE	1.6		COU (Mid-Range)	7,549	E = B x D	-5,992
Campus Services	**8,492**										**-29,724**
Student Life											
Athletic Activity Areas	6,924	4,718	FTE Students	1.47	NASF / FTE	Double Gym and Fitness Centre		ECS	30,000	ECS	-23,076
Student Centre / Lounges and Social	7,027	4,718	FTE Students	1.49	NASF / FTE	6.4	NASF / FTE	COU	30,195	COU	-23,168
Student Life	**13,951**										**-46,244**

Total NASF **-186,353**

Total GSF assuming 65% / 35% Net-to-Gross Ratio **-285,120**

Seneca@York Campus – Baseline

	A	B		C = A / B		D			E		F = E - A
Space Category	Existing Inventory (NASF)	Input Value and Description		Seneca Calculated Benchmark		External Standard / Benchmark as Applicable		Standard / Benchmark Source	Green Field Space Requirement (NASF)	Source / Reference	Difference (NASF)
Classroom / Lecture Halls											
Classroom / Seminar	37,145	41,063	WCH	0.90		0.89	NASF / WCH	ECS	36,646		499
Lecture Halls	9,460	6,808	"	0.72		1.25	"	"	8,775		685
Classroom / Lecture Halls	**46,605**	**47,871**	"	**0.97**	**NASF / WCH**				**45,421**	**Section 6**	**1,184**
Laboratories											
Computer Laboratories	15,330	15,483	WCH			1.90	NASF / WCH	ECS	29,491		-14,161
Animal Science						9.52	"	"			
Animation / Gaming		1,684	"			2.86	"	"	4,811		-4,811
Building Science / Civil						4.76	"	"			
ECE Laboratory						3.81	"	"			
Electronics / Comp. Hardware	4,750	3,457	"			3.81	"	"	9,877		-5,127
Fashion						3.81	"	"			
Graphic Arts	2,590	3,523	"			2.86	"	"	10,066		-7,476
Greenhouse						4.76	"	"			
Hospitality / Travel						2.86	"	"			
Media / Performance	5,390	2,864	"			3.81	"	"	10,910		-5,520
Metal Trades						9.52	"	"			
Patient Care						4.76	"	"			
Personal Care						3.81	"	"			
Specialized Computer Laboratories	12,075	6,200	"			2.38	"	"	14,762		-2,687
Wet Life Science Lab	6,770	2,792	"			3.81	"	"	10,636		-3,866
Wet Physical Science Lab	4,125	2,008	"			3.81	"	"	7,650		-3,525
Laboratories	**51,030**	**38,011**	**WCH**	**1.34**	"		"	"	**98,203**	**Section 6**	**-47,173**
Administrative & Faculty Offices											
Academic Offices		517	Staff	83.05	NASF / Staff				30,476		
Administrative Offices		195	Staff						15,438		
Administrative & Faculty Offices	**59,129**	**712**	**Staff**			**Section 7-Type A to G x Multipliers**		**ECS**	**45,914**	**Section 7**	**13,215**
Learner Support											
Library / Information Commons	5,850										
Open Access Study Space	15,270										
Learning Centres											
Learner Support	**21,120**	**4,875**	**FTE Students**	**4.33**	**NASF / FTE**	**6.00**	**NASF / FTE**	**COU & ECS**	**29,250**	**E = B x D**	**-8,130**
Campus Services											
Food	12,415	4,875	FTE Students	2.55	NASF / FTE	6.5		COU (Mid-Range)	31,688	E = B x D	-19,273
Retail / Bookstore	1,580	4,875	FTE Students	0.32	NASF / FTE	1.6		COU (Mid-Range)	7,800	E = B x D	-6,220
Campus Services	**13,995**										**-25,493**
Student Life											
Athletic Activity Areas	15,090	4,875	FTE Students	3.10	NASF / FTE	6.0	NASF / FTE	COU	29,250	E = B x D	-14,160
Student Centre / Lounges and Social	9,075	4,875	FTE Students	1.86	NASF / FTE	6.4	NASF / FTE	COU	31,200	COU	-22,125
Student Life	**24,165**										**-36,285**

Total NASF **-102,682**

Total GSF assuming 65% / 35% Net-to-Gross Ratio **-157,103**

Seneca@York Campus – Scenario A

	A	B		C = A / B		D			E		F = E - A
Space Category	Existing Inventory (NASF)	Input Value and Description		Seneca Calculated Benchmark		External Standard / Benchmark as Applicable		Standard / Benchmark Source	Green Field Space Requirement (NASF)	Source / Reference	Difference (NASF)
Classroom / Lecture Halls											
Classroom / Seminar	37,145	49,992	WCH	0.74		0.89	NASF / WCH	ECS	44,636		-7,491
Lecture Halls	9,460	8,238	"	0.87		1.25	"	"	10,287		-827
Classroom / Lecture Halls	**46,605**	**58,230**	"	**0.80**	**NASF / WCH**				**54,923**	**Section 6**	**-8,318**
Laboratories											
Computer Laboratories	15,330	18,809	WCH			1.90	NASF / WCH	ECS	35,828		-20,498
Animal Science						9.52	"	"			
Animation / Gaming		2,038	"			2.86	"	"	5,822		-5,822
Building Science / Civil						4.76	"	"			
ECE Laboratory						3.81	"	"			
Electronics / Comp. Hardware	4,750	4,183	"			3.81	"	"	11,951		-7,201
Fashion						3.81	"	"			
Graphic Arts	2,590	4,263	"			2.86	"	"	12,180		-9,590
Greenhouse						4.76	"	"			
Hospitality / Travel						2.86	"	"			
Media / Performance	5,390	3,465	"			3.81	"	"	13,202		-7,812
Metal Trades						9.52	"	"			
Patient Care						4.76	"	"			
Personal Care						3.81	"	"			
Specialized Computer Laboratories	12,075	7,502	"			2.38	"	"	17,862		-5,787
Wet Life Science Lab	6,770	3,378	"			3.81	"	"	12,870		-6,100
Wet Physical Science Lab	4,125	2,430	"			3.81	"	"	9,256		-5,131
Laboratories	**51,030**	**46,068**	**WCH**	**1.11**	**"**		**"**	**"**	**118,971**	**Section 6**	**-67,941**
Administrative & Faculty Offices											
Academic Offices		600	Staff	71.76	NASF / Staff				35,352		
Administrative Offices		224	Staff						17,753		
Administrative & Faculty Offices	**59,129**	**824**	**Staff**			**Section 7-Type A to G x Multipliers**		**ECS**	**53,105**	**Section 7**	**6,024**
Learner Support											
Library / Information Commons	5,850										
Open Access Study Space	15,270										
Learning Centres											
Learner Support	**21,120**	**5,887**	**FTE Students**	**3.59**	**NASF / FTE**	**6.00**	**NASF / FTE**	**COU & ECS**	**35,322**	**E = B x D**	**-14,202**
Campus Services											
Food	12,415	5,887	FTE Students	2.11	NASF / FTE	6.5		COU (Mid-Range)	38,266	E = B x D	-25,851
Retail / Bookstore	1,580	5,887	FTE Students	0.27	NASF / FTE	1.6		COU (Mid-Range)	9,419	E = B x D	-7,839
Campus Services	**13,995**										**-33,690**
Student Life											
Athletic Activity Areas	15,090	5,887	FTE Students	2.56	NASF / FTE	6.0	NASF / FTE	COU	35,322	E = B x D	-20,232
Student Centre / Lounges and Social	9,075	5,887	FTE Students	1.54	NASF / FTE	6.4	NASF / FTE	COU	37,677	COU	-28,602
Student Life	**24,165**										**-48,834**

Total NASF **-166,961**

Total GSF assuming 65% / 35% Net-to-Gross Ratio **-255,450**

Seneca@York Campus – Scenario B

	A	B		C = A / B		D			E		F = E - A
Space Category	Existing Inventory (NASF)	Input Value and Description		Seneca Calculated Benchmark		External Standard / Benchmark as Applicable		Standard / Benchmark Source	Green Field Space Requirement (NASF)	Source / Reference	Difference (NASF)
Classroom / Lecture Halls											
Classroom / Seminar	37,145	41,174	WCH	0.90		0.89	NASF / WCH	ECS	36,762		383
Lecture Halls	9,460	3,914	"	0.41		1.25	"	"	4,893		4,567
Classroom / Lecture Halls	**46,605**	**45,088**	"	**1.03**	**NASF / WCH**				**41,655**	**Section 6**	**4,950**
Laboratories											
Computer Laboratories	15,330	6,816	WCH			1.90	NASF / WCH	ECS	12,983		2,347
Animal Science						9.52	"	"			
Animation / Gaming		1,811	"			2.86	"	"	5,175		-5,175
Building Science / Civil						4.76	"	"			
ECE Laboratory						3.81	"	"			
Electronics / Comp. Hardware	4,750					3.81	"	"			4,750
Fashion						3.81	"	"			
Graphic Arts	2,590	4,236	"			2.86	"	"	12,180		-9,590
Greenhouse						4.76	"	"			
Hospitality / Travel		267	"			2.86	"	"	763		-763
Media / Performance	5,390	3,465	"			3.81	"	"	13,202		-7,812
Metal Trades						9.52	"	"			
Patient Care						4.76	"	"			
Personal Care						3.81	"	"			
Specialized Computer Laboratories	12,075	7,166	"			2.38	"	"	17,063		-4,988
Wet Life Science Lab	6,770	69	"			3.81	"	"	263		6,507
Wet Physical Science Lab	4,125	27	"			3.81	"	"	101		4,024
Laboratories	**51,030**	**23,857**	**WCH**	**2.14**	"		"	"	**61,730**	**Section 6**	**-10,700**
Administrative & Faculty Offices											
Academic Offices		517	Staff	83.05	NASF / Staff				30,476		
Administrative Offices		195	Staff						15,438		
Administrative & Faculty Offices	**59,129**	**712**	**Staff**			**Section 7-Type A to G x Multipliers**		**ECS**	**45,914**	**Section 7**	**13,215**
Learner Support											
Library / Information Commons	5,850										
Open Access Study Space	15,270										
Learning Centres											
Learner Support	**21,120**	**3,001**	**FTE Students**	**7.04**	**NASF / FTE**	**6.00**	**NASF / FTE**	**COU & ECS**	**18,006**	**E = B x D**	**3,114**
Campus Services											
Food	12,415	3,001	FTE Students	4.14	NASF / FTE	6.5		COU (Mid-Range)	19,507	E = B x D	-7,092
Retail / Bookstore	1,580	3,001	FTE Students	0.53	NASF / FTE	1.6		COU (Mid-Range)	4,802	E = B x D	-3,222
Campus Services	**13,995**										**-10,313**
Student Life											
Athletic Activity Areas	15,090	3,001	FTE Students	5.03	NASF / FTE	6.0	NASF / FTE	COU	18,006	E = B x D	-2,916
Student Centre / Lounges and Social	9,075	3,001	FTE Students	3.02	NASF / FTE	6.4	NASF / FTE	COU	19,206	COU	-10,131
Student Life	**24,165**										**-13,047**

Total NASF **-12,782**

Total GSF assuming 65% / 35% Net-to-Gross Ratio **-19,556**

Summary of Master Space Programmes

The following table on page 8-13 provides a summary of the 10 preceding MSPs. The summary provides the following information, organized by campus:

Current Box

- **Column A** lists the existing GSF;
- **Column B** lists the number of FTE students enrolled during the Fall 2010 semester;
- **Column C** lists the number of GSF per FTE student currently available, calculated by taking the ratio of the value in Column A to the value in Column B.

Baseline Greenfield Box

- **Column D** lists the GSF deficit for the Baseline scenario, determined using the MSPs;
- **Column E** lists the optimal GSF for the Baseline scenario, calculating by taking the sum of the value in column A and the value in column D;
- **Column F** lists the optimal number of GSF per FTE for the Baseline scenario, calculated by taking the ratio of the value in Column E to the value in Column B.

Scenario A Box

- **Column G** lists the GSF deficit for Scenario A, determined using the MSPs;
- **Column H** lists the optimal GSF for Scenario A, calculated by taking the sum of the value in column A and the valued in Column G;
- **Column I** lists the number of FTE students projected to be enrolled during the 2020/21 academic year, based on Scenario A enrolment projections;
- **Column J** lists the optimal number of GSF per FTE for Scenario A, calculated by taking the ratio of the value in Column H to the value in Column I.

Scenario B Box

- **Column K** lists the GSF deficit for Scenario B, determined using the MSPs;
- **Column L** lists the optimal GSF for Scenario B, calculated by taking the sum of the value in column A and the valued in Column G;
- **Column M** lists the number of FTE students projected to be enrolled during the 2020/21 academic year, based on Scenario B enrolment projections;
- **Column N** lists the optimal number of GSF per FTE for Scenario B, calculated by taking the ratio of the value in Column H to the value in Column I.

The summary table also contains a row that totals the information provided in the four boxes. This row lists the combined additional GSF that must be acquired by Seneca College across the four campuses in order to achieve the optimal GSF to FTE ratio for each scenario. Throughout this report, 100 GSF / FTE has been used as this optimal ratio, which is accepted across Ontario colleges to represent the ideal balance between efficiency and effective service delivery.

It should additionally be noted, as indicated in the lower right corner on page 3-13, that under Scenario B up to 1,400 additional FTE students can be accommodated at the Seneca@York campus. By relocating all Faculty of Applied Sciences and Technology programmes to the Newnham campus, enough space is vacated to accommodate these new students, while still maintaining a desirable GSF / FTE ratio.

MSP Summary to Inform the Development of Campus Master Plans at Newnham, Markham and King

	Current			Baseline Greenfield			Scenario A				Scenario B			
	A	B	C = A / B	D	E = A + D	F = E / B	G	H = A + G	I	J = H / I	K	L = A + K	M	N = K / M
Campus	Existing Inventory (GSF)	Day 10 Fall 2010 FTE Enrolment	Existing GSF / FTE	Additional Baseline Space (GSF)	Optimal Baseline Allocation Day 10 Fall 2010	Optimal GSF / FTE	Scenario A Additional Space Requirement Estimate (GSF)	Scenario A Total Proposed Inventory	Scenario A 2020/21 Enrolment	Scenario A GSF / FTE	Scenario B Additional Space Requirement Estimate (GSF)	Scenario B Total Proposed Inventory	Scenario B 2020/21 Enrolment	Scenario B GSF / FTE
Newnham	663,807	10,032	66.2	360,916	1,024,723	102.1	388,810	1,052,617	10,834	97.2	682,685	1,346,492	13,969	96.4
Markham	216,738	1,837	118.0	88,054	304,792	165.9	425,327	642,065	5,843	109.9	425,327	642,065	5,843	109.9
King	121,832	3,280	37.1	156,054	277,886	84.7	285,120	406,952	4,817	84.5	285,120	406,952	4,817	84.5
Seneca@York	434,371	4,875	89.1	157,103	591,474	121.3	255,450	689,821	5,887	117.2	**1,393,132**	**2,395,509**	**24,629**	**97.3**
Total	**1,436,748**	**20,024**	**71.8**	**762,127**	**2,198,875**	**109.8**	**1,354,707**	**2,791,455**	**27,381**	**101.9**				

Additional GSF to Address Current Shortfalls

Additional GSF to Address Current Shortfall and Grow to 27,381 FTE

Additional GSF to Address Current Shortfall and Grow to 24,530 FTE

Seneca@York Scenario B	*19,556*	*453,927*	*3,001*	*151.3*
Backfill of Technology Labs?	*1,400*			
	4,401			103.1