



When Efficiency Becomes a Liability

Capital Funding Priorities in the Ontario College System

Volume 2: Supplementary Appendices

February 2007

Educational Consulting Services Corp.

Appendix A – Letters to Ontario Colleges	A-1
Appendix B – College Responses	B-1
Appendix C – OCFMA Response	C-1
Appendix D – Images of Infrastructure Renewal Issues	D-1

Table of
Contents

Appendix A — Letters to Ontario Colleges

The following letters were sent to Ontario's 24 colleges. In the first letter, dated July 19, 2006, Directors of Physical Resources were invited to participate in the ACAATO sponsored study of Capital Funding Priorities by providing information on their individual situations and their opinions on the college system overall. The second letter, dated September 18, 2006 was sent following a meeting of the Project Steering Committee at which the need to request additional information was recommended.

Appendix A:

Letters to
Ontario
Colleges



July 19, 2006

Director, Physical Resources
CAAT

**Reference: Association of Colleges of Applied Arts and Technology of Ontario
(ACAATO) Assessment of Capital Funding Priorities**

Dear

Educational Consulting Services Corp. (ECS) has been commissioned to prepare a position paper in support of ACAATO's 2007/2008 funding submission to the provincial government. The position paper will focus on the need to increase the annual capital allocation directed to Ontario's colleges to maintain, adapt, renew, and grow their fixed assets. This is deemed critical to keeping the colleges efficient, relevant, and competitive in a global economy.

In support of the argument for increased capital infusions in the CAAT system, the assistance of facilities administrators across the province is requested to develop a representative overview of the current state of the physical plant along with immediate and long-term recommendations. ACAATO invites you and your staff to provide ECS with a response to the following questions (we have attached templates to assist you in preparing your contribution).

1. What, in your opinion, are the most pressing capital funding priorities in the CAATS system, overall?
2. What has been the impact of the level of capital funding your institution has received over the past 10 years on fixed assets (buildings and equipment)?
3. From an academic perspective, what are the top 3 capital funding priorities at your institution?
4. From a facilities perspective, what are the top 3 capital funding priorities at your institution?
5. Are you aware of best practices in other Canadian and international jurisdictions in the area of investment in college infrastructure?

ACAATO has asked for a draft report by early October to ensure enough time for the preparation of its submission to government, scheduled for mid to late fall. ECS would appreciate response from your institution as soon as possible or by **September 8**.

For more information, please contact Ms. Francine Lecoupe at (416) 977-9905 or flecoupe@ecs.on.ca. We thank you in advance for your participation in this important project.

Sincerely,

Educational Consulting Services Corp.

Michel de Jocas
Partner

Educational
Consulting
Services
Corp.

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ACAATO Assessment of Capital Funding Priorities, 2006

College:

Contact Person:

1. What are the most pressing capital funding priorities in the CAATS system overall?

Please provide the reasons for their importance.

First Priority

Second Priority

Third Priority

Please return to flecoupe@ecs.on.ca



ACAATO Assessment of Capital Funding Priorities, 2006

College:

Contact Person:

2. **What has been the impact of the level of capital funding your institution has received over the past 10 years on fixed assets (buildings and equipment)?** Please provide examples and supporting financial or statistical information.

Buildings

Equipment

Please return to flecoupe@ecs.on.ca



ACAATO Assessment of Capital Funding Priorities, 2006

College:

Contact Person:

- 3. From an academic perspective, what are the top 3 capital funding priorities at your institution? Please provide the reasons for their importance and supporting financial or statistical information.**

First Priority

Second Priority

Third Priority

Please return to flecoupe@ecs.on.ca



ACAATO Assessment of Capital Funding Priorities, 2006

College:

Contact Person:

- 4. From a facilities perspective, what are the top 3 capital funding priorities at your institution? Please provide the reasons for their importance and supporting financial or statistical information.**

First Priority

Second Priority

Third Priority

Please return to flecoupe@ecs.on.ca



ACAATO Assessment of Capital Funding Priorities, 2006

College:

Contact Person:

- 5. Are you aware of best practices in other Canadian and international jurisdictions in the area of investment in college infrastructure?** If possible, please provide supporting information which will allow us to research your examples.

Name of institution and jurisdiction:

Brief description of best practice:

Name of institution and jurisdiction:

Brief description of best practice:

Name of institution and jurisdiction:

Brief description of best practice:

Please return to flecoupe@ecs.on.ca

Thank You!



September 18, 2006

Director, Physical Resources
CAAT

**Reference: Association of Colleges of Applied Arts and Technology of Ontario
(ACAATO) Analysis of Capital Funding Priorities**

Dear:

In July, Educational Consulting Services Corp. (ECS) requested information from the CAATs to begin preparing a position paper for ACAATO on capital funding priorities in the system. On September 15, the Project Steering Committee agreed with the direction the paper is taking and also requested additional information from the colleges:

1. Images (in digital format with a brief description) that capture deferred maintenance issues or crises at your institution. The images will be used to illustrate various problems but WILL NOT be attributed to individual colleges.
2. The names of programs your institution *could* offer because the demand exists but is unable to because current instructional spaces cannot support them. For example, there is not enough space, equipment is too expensive, or costs to adapt the space are too high.

ACAATO has asked ECS for a draft report by September 29, 2006 therefore, we request response from your institution **this week**. We recognize the tight deadline and appreciate your effort to participate in the crafting of this important position paper. For more information, please contact Ms. Francine Lecoupe at (416) 977-9905 or flecoupe@ecs.on.ca.

Sincerely,

Educational Consulting Services Corp.

Michel de Jocas
Partner

Appendix B — College Responses

Introduction

All 24 colleges in the Ontario college system responded the requests for information contained in the letters ECS sent on behalf of ACAATO on July 19 and September 18, 2006. See Appendix A for a copy of the letters. This appendix provides the individual college responses.

Appendix B:

College
Responses

Algouquin College

Appendix B:

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College
Responses

Capital Funding Priorities in CAATs System Overall

1. *A Multi-year, Comprehensive Approach to Capital Funding*

A multiyear, comprehensive approach to capital funding for the system which includes all capital assets.

- Life-cycle and total cost of ownership should be a consideration and part of the assessment criteria for allocation
- Institutions should be encouraged to submit multi-year plans and such plans should be capable of being approved if they yield more effective long-term solutions
- Should include all capital assets i.e. academic equipment, facilities, site, infrastructure, IT infrastructure, furniture, etc.

2. *An Accountable Allocation Framework*

A clear and accountable allocation framework that encourages colleges to look at optimizing existing facilities in conjunction with capital investment in new facilities

- Institutions should have the flexibility to propose innovative solutions to capital needs without too many rigid constraints that tend to promote inefficient solutions. In particular, adaptation and optimization of existing facilities should be encouraged as an alternative to new facilities. Significant annual adaptations to existing facilities are a reality in colleges that require capital funding and should be supported as major contributors to maintaining currency of academic programs and to making better use of existing facilities.
- Mechanisms need to be put into place to ensure that over-building of facilities is discouraged / avoided: e.g. space cost allocation as part of academic program assessments (for new and existing programs) has proven very effective at Algonquin College.

3. *Deferred Maintenance*

Collectively, the college system has failed to appreciate and understand the life-cycle characteristics of facilities, equipment and other capital assets. As a result, deferred maintenance of facilities and the need to renew other capital assets (especially academic equipment) are major liabilities for the Ontario College System.

- Clearer understanding and communication of the facts, the risks, potential solutions and projected results needs to be assembled and presented to decision-making parties (e.g. College administrations, ACAATO, MTCU, and Management Board). Funding is needed for OCFMA to retain the expertise to lead and advise this process.

- The system needs more flexibility and support to develop innovative and cost-effective solutions to its deferred maintenance and other asset renewal liabilities, for e.g. divesting of life-expired facilities should be encouraged with financial incentives / opportunities to replace with newer, smaller and more efficient facilities.
- Assistance and expertise is needed to develop an understanding of how to approach deferred maintenance and asset renewal in order to prevent a re-occurrence in the future, for e.g. how to analyze, plan, manage.

Appendix B:
College
Responses

Impact of Capital Funding Levels over the Past 10 years

In response to constrained capital and operating funding for Ontario colleges, Algonquin College has pursued a cautious but aggressive strategy to accommodate its growth by:

- Leveraging the value of capital invested in facilities and equipment
- Optimizing space resources by increasing the utilization of labs and classrooms
- Consolidating to one main urban campus
- Clustering academic activity by similar functionality
- Accommodating a significant portion of our capacity (approximately 7%) through online learning technologies

In the period 1995-1996 to 2005-2006, Algonquin College has:

- Added approximately 275,000 GSF of new facilities to our facilities portfolio.
- Removed approximately 275,000 GSF of obsolete facilities. This has effectively decreased our deferred maintenance liability by \$13M. (From \$46M to \$33M). It should be noted that these estimated costs for deferred maintenance are based on the current assessment model within the VFA software and we anticipate they will be significantly higher when implemented (as much as 25% to 50%)
- Increased fall audited enrolments by a total of 2,800 students or approximately 30%. (From 9,600 students to 12,400 students).
- Supplemented the FRP grant (~\$900K/yr) with College operating funds of approximately \$2M per to perform critical maintenance and to adapt academic facilities to emerge academic needs.
- Supplemented the CERF grant (~\$700K/yr) with College operating funds of approximately \$2M / yr to expand the College's IT infrastructure to meet academic needs, update academic equipment and replace outdated furniture.

Algonquin College's current situation:

- Capacity for growth is minimal due to high utilization rates.
- Ability to grow in the strategic areas of Trades and Health are contingent on the infusion of new capital to build new Trades facilities, and to refurbish existing facilities for Health Studies.
- Current VFA audits estimate a deferred maintenance liability of \$33M for Algonquin College. It should be noted that these estimated costs for deferred maintenance are based on the current assessment model within the VFA software

- and we anticipate they will be significantly higher when implemented (as much as 25% to 50%).
- All our campuses have average FCI ratings of Poor Condition
 - o Woodroffe facilities vary in age and condition from FCI = 0.01 to 0.35 with an average of 0.14
 - o Pembroke = 0.13
 - o Perth = 0.26
 - Escalating costs are eroding the College's ability to supplement its capital needs from its operating budget as it has done over the last 10 years.
 - o The College is unable to maintain the pace of cost escalation on its operating expenses, let alone fund capital needs.
 - The College has been unable to build a capital reserve to renew / replace its capital assets.

Capital Funding Priorities from an Academic Perspective (Equal Weighting)

Algonquin College has indicated in its multiyear capital plan the need for:

New and Replacement IT Equipment and Infrastructure

Including online learning infrastructure. Preliminary estimates are \$3.5M per year.

New and Replacement non-IT Instructional Equipment

Preliminary estimates are \$3.5M per year.

Investment in New Curriculum Development

And related academic development issues. Preliminary estimates are \$1.0M per year.

These are the top priorities for the College. However, the College is unable to rank these 3 items as first, second or third priority. Should insufficient funds be made available to address all 3 needs, the College would divide available funds strategically between the 3 initiatives to maximize value to the community.

Capital Funding Priorities from a Facilities Perspective

1. *New Facilities*

As noted in the response to Question 2 above, Algonquin College's strategy to optimize and consolidate its campuses and facilities has resulted in limited capacity and ability to adapt to changing academic demand. We have reached a critical barrier in terms of space to grow and change to respond to Ontario's needs in the communities we serve.

- At the Woodroffe campus, our first priority is to build new facilities to accommodate strategic growth in the Trades and Health Studies areas. This will free space in existing facilities to allow other necessary adaptations and program renewals to proceed. Preliminary estimates are \$70M over 6 years.
- Both our rural campuses have exceeded their life expectancy and require replacement. New / renewed facilities for the rural campuses would require approximately \$27M over 5 years.

2. ***Renewal / Adaptation / Improvement of Existing Facilities***

Having now successfully completed the consolidation of the Ottawa campuses to Woodroffe, the College must address the fragmented and inadequate support facilities for student success. This is especially poignant in view of our need to address the client satisfaction aspects of KPI's and the recent focus by the government for accountability for student success highlighted in the Multiyear Accountability Agreements. Preliminary estimates are \$33M over 5 years for new facilities and improvements to existing.

Adaptations and renewal of existing facilities for maintaining currency with academic needs requires approximately \$2.5M / year.

Facility Renewal Program funding needs to be increased from the current grant of approximately \$900K per year. Two issues need to be addressed:

- Algonquin College has indicated in its multiyear capital plan the need to develop a program to address the backlog of deferred maintenance estimated at \$31M. This would require approximately \$4.3M per year over 10 years to address deferred maintenance with cost escalation allowances.
- Algonquin College has indicated in its multiyear capital plan the need to implement a process to prevent a recurrence of deferred maintenance liability. Using the industry standards of 1.5% to 2.5% of a \$212M replacement value, funding for facility renewal should be increased to a minimum of \$3M per year to address ongoing facility maintenance once the deferred maintenance backlog is resolved.
- Algonquin College has indicated in its multiyear capital plan the need for on-going renewal of classroom and laboratory furniture is estimated at \$300K per year.

3. ***Energy Conservation***

Algonquin College has entered into an ESCO (Energy Savings Contract) with Direct Energy Business Services for a 10 year period. This contract for \$6M will use energy cost savings of \$600K/yr from energy conservation projects to pay for the improvements. This is Algonquin College's initial endeavour to save energy and its associated escalating costs. Algonquin College is also committed to participation in the ACAATO Energy Secretariat initiative to identify further energy conservation strategies. We anticipate the need for additional capital funds to implement these strategies.

Best Practice in other Jurisdictions

British Columbia Ministry of Advanced Education website with its Capital Asset Management Framework.

Capital Planning and Project Management Branch Main Site
<http://www.aved.gov.bc.ca/cppm/>

Capital Asset Reference Guide
<http://www.aved.gov.bc.ca/cppm/asset.pdf>

Capital Asset Management Framework
http://www.fin.gov.bc.ca/tbs/camf_guidelines.pdf

Compromised Programs

Trades: need new Trades facilities

Health Studies: need refurbishing of Health facilities

Student Services: need consolidated and refurbished facilities

Images

A series of images depicting infrastructure renewal issues at Algonquin College were submitted, some of which are included in Appendix D.

Collège Boréal

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall

N/A

Impact of Capital Funding Levels over the Past 10 years

N/A

Capital Funding Priorities from a Facilities Perspective

N/A

Capital Funding Priorities from an Academic Perspective

N/A

Best Practice in other Jurisdictions

N/A

Compromised Programs

Collège Boréal has submitted a project to MTCU for the construction of a new campus in Timmins including a 70,000 SF building.

The College is planning the construction of a 100,000 SF addition as a second phase to the trades building in Sudbury. The programs that would be offered in that second phase are:

- Hauling
- Parts person
- Carpenter
- Woodworking
- Plumbing
- Masonry
- Electrician
- Machinist
- Millwright
- Cooling/ventilation and refrigeration
- Hairdressing
- Food preparation
- Construction worker
- Trades helper

The College is also planning a 70,000 SF building at Glendon College in partnership with York University to provide joint masters programs.

Appendix B:

At the main campus in Sudbury, the College needs a larger gymnasium and a larger theatre.

College
Responses

Images

Although Boréal does not have images available per se, please note that we have submitted a request to MTCU for the addition of a second cooling tower at our Sudbury campus. We would like to add this tower next spring, in time for the summer season. The original construction plans had called for two cooling towers but because of budget cuts, the second cooling tower was cancelled. Presently, our single tower is starting to show signs of aging and has broken down a few times. Fortunately, these were minor incidents but they leave the College vulnerable to a more serious breakdown which would force us to shut down the whole campus until repairs are completed.

The parking gates need upgrading and the parking lots should be expanded.

Cambrian College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall

1. *Deferred Maintenance*

Our facilities and equipment are both aged and intensely used without having had access to adequate funding to meet maintenance and life cycle equipment replacement schedules.

Primary elements such as exterior envelopes, roofing systems door and window repairs and replacement, flooring, mechanical systems etc currently place operations as well as our physical assets at risk due to funding shortfalls. Replacement or repair often is not initiated until critical failure occurs.

Cambrian currently has a deferred maintenance requirement of \$18 million based on the VFA Asset Report on facilities valued at \$186 million.

2. *Code Compliance*

A major infusion of funding is required to meet new legislation and code standards.

A drastic example of the challenges this can impose is the requirement to address chiller replacements due to refrigerants legislation. Replacing the current system at Cambrian College to current technology standards will entail a cost of \$2 million.

Changing accessibility legislation, electrical codes, and building and fire codes require building modifications and additional funding has to be made available in order to remain compliant.

3. *Academic Infrastructure and Equipment*

In order to maintain program relevancy, existing programs and the supporting infrastructure has to be upgraded to meet current industry standards.

In addition, new initiatives require both space modification as well as new supporting equipment. This is particularly critical to the College system whose strength is derived from the extensive hands on focus of delivery.

Impact of Capital Funding Levels over the Past 10 years

Under SuperBuild funding in 2000 the college received \$14.8 million and built and equipped 118,000 square feet of new shops, classrooms and labs which was essential in order to meet our program delivery requirements. With time and the cessation of warranties however, maintenance costs are now emerging without an increase in funding to reflect the increase in space.

We continue to receive funding of approximately \$410,000 annually to meet our facilities maintenance requirements. Based on the industry rule of thumb of 1.5% of building value, \$2.8 million annually is required.

Appendix B:
College
Responses

Capital Funding Priorities from an Academic Perspective

1. ***Upgrades to Academic Space***
Capital funding to upgrade existing labs and specialty classrooms for existing academic programs especially in high demand programs such as trades and health sciences.
2. ***Upgrades to Academic Equipment***
Capital funding to upgrade academic equipment for existing academic programs especially in high demand programs such as trades and health sciences.
3. ***New Academic and Space Requirements***
Capital funding to meet the equipment and space requirements for new academic delivery initiatives in particular in programs that are required to address existing and new labour market needs.

Capital Funding Priorities from a Facilities Perspective

1. ***Deferred maintenance and Life Cycle Replacement***
Roof systems require replacement and exterior envelopes require substantial repairs or recladding. This will entail costs of approximately \$2.4 million.

Electrical and HVAC equipment requires replacement and or retrofits. This applies both to end of life cycle as well as energy conservation.

Building interiors involving lighting levels, ceiling systems and flooring are areas that must be addressed to meet occupants' needs.

Typical of northern Ontario, roads and drainage systems will require repairs and replacing to address frost damage.
2. ***Code Compliance***
One element of code compliance that must be attended to is chiller replacement. This is essential to meet current legislative requirements. Not replacing the system will place the College at an operational as well as fiscal risk should a failure to the existing system occur. Accessibility and fire code issues and requirements will require extensive building modifications [i.e. ramps, doors, openers, railings, alarms, emergency lighting, etc.].
3. ***Academic Adaptation***
Academic space modifications and equipment repair, retrofit or supply both for new and existing programs.

Best Practice in other Jurisdictions

N/A

Compromised Programs

New labs are needed to launch programs in Animation, Broadcast (New Media), and Energy Systems Management. Equipment is needed to allow the College to increase enrolment to meet industry demand for Powerline Engineering Technicians. More lab space and equipment are required to expand enrolment and eliminate wait lists for trades programs. Renovations are required to the Learning Commons and all programs need funds for renewal/evergreening of computer equipment for student use.

Images

N/A

Appendix B:

College
Responses

Canadore College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall (Equal Weighing)

Increase Total Capital Funding

There is so little capital funding in the system currently that to discuss priorities is an exercise in futility. The system simply lacks sufficient funds to even keep buildings in the poor condition they are today. Without a massive increase in capital funding for all institutions, it is inevitable that buildings will continue to fall into disrepair. This downhill slide will continue until catastrophic failures start to result in the emergency closures of colleges. Buildings will eventually get to the point that the only reasonable decision will be to destroy the buildings and start over. Thus the asset value will be lost.

The current Ontario government has committed itself to increasing accessibility and quality of post-secondary education through its public statements. Now it must deliver on those promises by supplying the required capital and operating funding to the colleges and universities. The Rae Report states the need for \$200 million in Facility Renewal Funding for the post-secondary institutions in Ontario. Considering that the colleges alone represent approximately \$5 billion in replacement value, this level of funding represents only 4% of that value, a very reasonable level of investment in such a valuable asset. Current funding at \$13.3 million represents an insufficient 0.27% of total replacement value.

The province has recognized through its recent funding announcements that Small, Northern and Rural Colleges required extra help in covering operating costs. It should also ensure that this recognition is extended to capital programs.

There exists some reluctance amongst the majority of the Facilities Directors to even raise other capital issues. The reason for this is simple; we are concerned that it could lead to the erosion of the existing Facilities Renewal Program (FRP). The risk is that the provincial government will simply take money out of FRP, rename it as a “new” fund and announce “increased” funding to the Ontario colleges.

It should be noted that the FRP documents clearly state that, “FRP is intended to supplement the institutions own Facilities Renewal funding.” This places an onus on each and every college to fund Facility Renewal from annual operating budgets. Considering the current operating budget shortfalls anticipated by nearly every college in the system, it is clear that this requirement is almost impossible to achieve.

Infrastructure Renewal

This funding is required to address the deferred maintenance of the building infrastructure. This includes HVAC, electrical, roofing, structural, water, sewer and all others systems that make up buildings. The majority of college buildings are 35-40 years old. We have been living off the original investment in quality equipment that was made when the buildings were constructed.

Facilities Adaptation

This represents funding required to adapt, modify or change existing college assets (classrooms, labs, student lounges, learning resource areas, etc.) to fulfill the needs of new or modified programs. The essence of college education is to deliver an education that is up to requirements of our local communities and employers. We therefore have to change the educational spaces as the courses change. A reasonable level of funding for this is 1-1½% of Asset Replacement value. Currently funds needed in this area are taken from FRP funds.

New Facility Funding

Funding of new buildings is required to replace buildings that no longer meet current program requirements, to allow Colleges to close campuses that are no longer viable thereby consolidating operations in fewer locations, and to permit growth opportunities.

Renewal of Academic and Apprenticeship Equipment

This year's removal of funding from the College Equipment Renewal Fund (CERF) and Apprenticeship Enhancement Fund (AEF) has caused significant hardship for the replacement of academic equipment. This equipment renewal is an essential component of college education.

Impact of Capital Funding Levels over the Past 10 years

Buildings

Overall our buildings have significantly declined in the last 10 years due to the inadequate capital funding. Canadore College buildings have a total replacement value of just over \$100 million. Our current deferred maintenance is in excess of \$14 million. Our Facilities Condition index is approximately 0.14. This places our total buildings assets in the Poor category (greater than 0.10).

Canadore College has attempted to ensure that every dollar provided through FRP has delivered improvements to the College and its environs. We have used the funds to leverage other funding from various levels of government. The funds have been spent on a balanced portfolio of Infrastructure improvements and Adaptation changes.

There has been some good news. The additional funding provided by the province at the end of the 2004-05 has allowed us to complete some critical projects including the replacement of our Main Electrical Transformer, a failing Duct Bank (underground electrical and communications ducts), and a new UPS required by our IT department. We also funded some improvements to our Commerce Court location. The Key Performance Indicators survey that is done by students clearly showed that students at Commerce Court are clearly dissatisfied with the facilities. A relatively modest investment has so far (anecdotally) indicated that students are happy to see the improvements.

However the bottom line is that we are typically applying band-aids to gaping wounds. There are no real opportunities to look at improvements. We are simply replacing failing or near-to-failure equipment. We then strip the good parts (cannibalization) from the old equipment so that we can keep the other similar units running for a few more years.

Equipment

Appendix B:

College
Responses

The experience with equipment is similar to that of the buildings. In many cases our Faculty are instructing on equipment that is 2-3 generations behind what industry is using. This challenges the Colleges as our mandate is to deliver the students to our local communities and employers with an education that is up to the standards required by industry and communities.

Ten years ago far fewer programs required computers and equipment had not been computerized to the degree that we have today. Colleges have had to invest millions in computers and computerized equipment.

It should be noted that quite often equipment may be funded by Ministries other than MTCU. For example the Ministry of Health recently invested approximately \$577,000 in new Nursing equipment at Canadore College / Nipissing University. However there was absolutely no funding provided for the installation of this equipment. Therefore FRP funds had to be used to install and power this new equipment.

Capital Funding Priorities from an Academic Perspective

1. Capital Building Fund

Canadore College has plans for 2 significant new buildings; 1) Media & Arts Centre, 2) A shared Learning Commons (shared with Nipissing University).

The lack of a Capital Building program at the MTCU will make these buildings a challenge. Both are critical. Our Media & Arts programs need significant new facilities that can only be satisfied by a new building due to changes in technology and the addition of new programs.

Canadore College and Nipissing University both need a new Learning Commons. The current Library has simply not been able to keep up with the needs of modern education. Many learning materials at the College are not found in books, they are on-line, DVD, Multi-media and the current Library struggles to deliver them effectively.

2. Reinstate and Increase CERF and AEF

These two funding envelopes must be returned and increased significantly. Without up-to-date equipment academic programs will struggle to deliver the required quality that the province has stated is one of its cornerstones for post-secondary education.

3. Adaptation Funds

Funds are needed to adapt and modify classrooms to support blended learning initiatives. Initiatives such as e-learning programs, distance learning, and interactive learning all require the modification and adaptation of learning spaces.

Regular program renewal requires the adaptation of learning spaces. Programs grow and shrink and the portfolio of classrooms needs to change with them.

Capital Funding Priorities from a Facilities Perspective

Appendix B:

College
Responses

1. **Infrastructure Renewal and Facilities Adaptation**

As noted before, this funding is required to address the deferred maintenance of the building infrastructure. Canadore College has approximately \$14 million in deferred maintenance and our annual FRP funding is approximately \$320,000.

The industry standard for investment in this area is 1½-2%. This represents \$75-\$100 million annually for the province and \$1.5-\$2 million for Canadore College.

Funding in this area also represents an opportunity to deliver on the province's needs for reduced electrical consumption. A large amount of Canadore's deferred maintenance is represented by its 35 year old HVAC units. Replacement of these units with a more efficient system would deliver electrical demand savings and reduce deferred maintenance.

Facilities adaptation funding is required to adapt, modify or change existing College assets (classrooms, labs, student lounges, Learning Resource areas, etc.) to fulfill the needs of new or modified programs.

Educational spaces change as the courses change. A reasonable level of funding for this is 1-1½% of Asset Replacement value. This represents another \$50-\$75 million annually for the province and approximately \$1-\$1.5 million for Canadore College.

Currently funds needed in this area are taken from FRP funds. We spend our FRP on a fairly balanced portfolio of infrastructure renewal and facilities adaptation. The need for these funds does not appear in the FCI survey as they do not meet the requirements of those surveys, however the need is real.

2. **Energy Conservation**

The Colleges are well positioned to provide the province an electricity savings through a fund that would support demand reduction projects. These projects deliver 3 benefits: reduced electrical demand; operating savings to the college; and replacement of old equipment thus reducing deferred maintenance

The Ontario Colleges – State of Readiness Report clearly outlined the potential that exists in the College system for electricity savings. Canadore College is looking to identify a source of funding to complete an investment-grade Energy Audit, as soon as possible, to identify our specific opportunities.

3. **Capital Building Fund**

Canadore College has plans for 2 significant new buildings; 1) Media & Arts Centre, 2) A shared Learning Commons (shared with Nipissing University).

Facilities departments at both institutions share the view that these buildings are needed and that a Provincial Capital Building fund is required.

Best Practice in other Jurisdictions

N/A

Compromised Programs

N/A

Images

N/A

Appendix B:

College
Responses

Centennial College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall (Equal Weighting)

The Directors of Facilities at the colleges, in a conference call on the subject, concluded that the system's capital funding needs are of equal priority. The funding should be allocated to address the needs as listed:

- Sizable infusion of capital for addressing deferred maintenance and infrastructure renewal for our aging facilities
- Funding for energy conservation and retrofit projects to reduce utility operating costs
- Funding to address code, regulatory legislated and safety/accessibility issues
- Funding to address academic, lab and LRC space renewal
- Funding to address academic and IT equipment Renewal
- Funding to address space consolidation and new facilities to accommodate new programs
- Replacement of AEF & CERF funding programs in appropriate formats

Impact of Capital Funding Levels over the Past 10 years

Buildings

The amount of FRP, AEF, CERF and other funding allocated over the past 10 years has not been able to address the deferred maintenance backlog, especially at institutions such as Centennial with buildings and infrastructure that are 40-50 years old. The Facility Condition Assessment Program undertaken by the Colleges a few years back identifies the poor condition of the facilities and infrastructure. The Facility Condition Index for Centennial Facilities continues to increase despite all allocated funding being targeted to address the deferred maintenance and facility renewal projects. The current estimated Deferred Maintenance backlog is approximately \$53 million representing an FCI of 0.25.

Based on the current FRP funding level (\$750k) which represents 0.3% of the Current Replacement Value (CRV) of our facilities, it is evident that the building conditions will deteriorate at an exponential rate unless a sizable annual increase in funding is made available to manage the FCI at an acceptable level of 0.05. In addition, funding is required to address the Code and other Regulatory compliance backlog to keep our facilities meeting current standards.

Equipment

Above rationale also applies to the equipment and infrastructure.

Note: The Joint Task Force of CSAO / OAPPA on behalf of Council of Universities prepares an annual report “Ontario Universities’ Facilities Condition Assessment Program” and provides it to MTCU to be used as input into their Capital Plan and Investment Report. The College system should consider a similar report to the Ministry to present our needs for such funding.

Appendix B:
College
Responses

Capital Funding Priorities from an Academic Perspective

1. Academic Equipment and IT

Maintain and increase support funding for the evolving technological needs and equipment for instructional programs. The discontinuance of the AEF and CERF funding will be a major setback in maintaining instructional equipment at industry standards. The impacts will be felt in areas of:

- Quality learning resources
- IT infrastructure to meet the needs and expectations of today’s students
- Technology for multi-media program delivery (Smart Classroom Technology)
- Facilities for sustainable occupancy and environmental comfort
- Accessibility & Assistive Technology

2. Specialized Learning Facilities

Provide adequate Funding for specialized needs for learning facilities and labs to meet quality standards and program expectations.

The Weighted Funding Units assigned by the ministry do not equitably reflect the capital investment required to meet program needs:

- For certain programs, labs and learning resources meeting expected standards require large capital funding
- Skills training is capital intensive. The retrofit of facilities to provide instruction in Transportation and Health Service programs require large investments.
- The termination of AEF and CERF funding will have detrimental impact on Centennial College’s ability to continue to offer capital intensive post secondary and apprenticeship programs, and hence have a negative impact on enrolment
- Funding for new programs should be reflective of the of the capital intensiveness of the proposals and recognize the life cycle cost of providing the same.

3. Instructional Space Consolidation and Improvement

Funding is required for instructional/lab space consolidation and environmental improvement conducive to teaching and learning. Areas requiring immediate attention are:

- Improvements to office, classrooms and lab Indoor Air Quality standards
- Quality classroom space, furniture and equipment to meet teaching standards
- IT infrastructure to meet at the least a reasonable and current industry standard

Capital Funding Priorities from a Facilities Perspective

Appendix B:

College
Responses

1. ***Deferred Maintenance Backlog and Infrastructure Renewal***

The presently allocated Facilities Renewal Fund (FRP) is grossly inadequate to address the renewal and replacement of facilities, systems and infrastructure which in Centennial's case is over 40 years old. The average Facility Condition Index (FCI) for the Centennial College facilities is over 0.25.

The discontinuance of the Apprenticeship Enhancement Fund (AEF) and the College Equipment Renewal Fund (CERF) will have a serious impact on Centennial's ability to enhance our facilities and equipment to provide quality programs and instructional facilities.

2. ***Energy Management and Conservation*** projects to reduce operating costs The Ontario Colleges "State of Readiness Report" prepared for ACAATO & the Ministry of Energy in July 2005 clearly identifies the opportunities to reduce operating energy costs if targeted funding would be available to implement these projects.

Centennial College has undertaken a detailed Energy Efficiency Opportunities Assessment with the assistance of Toronto Hydro Energy Services to develop an "Energy Retrofit Program". The capital cost to implement these initiatives is estimated at \$ 2.2 million net incentives available from NRCan and other agencies with an anticipated savings of over \$ 0.3 million annually.

3. ***Code Compliance***, Regulatory (ODA, Environmental, etc) and Fire, H&S issues The costs of renovations in older facilities such as at Centennial College are much higher since the "grand-parented" code compliance issues have to be complied with at the time when major renovations are undertaken.

The regulatory compliance issues to meet ODA , Environmental, Fire Safety and H&S requirements has been an added burden on the facility renewal/replacement costs which has not been adequately reflected by increasing the funding made available from the Ministry for such initiatives.

Best Practice in other Jurisdictions

The executive of OCFMA to provide the research information collected in response to this question. The "Capital Asset Management Framework" guidelines, developed by the Province of British Columbia is one such document.

Compromised Programs

N/A

Images

N/A

Conestoga College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall (Equal Weighing)

Note: The following response mainly addresses the needs within existing facilities. It is recommended that a province-wide review be conducted to determine if there are areas that are under-serviced (e.g. ratio of available college spaces to existing population or population growth above provincial average). There may be some areas within the province that should be considered for building or campus expansion and these should be identified in any mid to long range capital planning process.

1. **Code/Safety/Legislated Compliance/Energy Sustainability**

Codes change and safety regulations, which require upgrades to ensure facilities are adequate for clients. There are other legislated changes that also require attention. In addition to these changes funds need to be directed to energy conservation measures.

- Examples of code/safety/legislated requirements: roof anchors, confined space entry, Ontarians with Disabilities Act 2001 standards, sprinkler systems.
- Examples of energy conservation: window replacement/upgraded air conditioning chillers/water conservation measures (i.e. flush tanks to auto flush valves).

The financial pressure to address changes in these areas or to realize potential savings through conservation is great and will require a higher level of funding to meet the needs.

2. **Adaptation**

Adapting current facilities to meet the needs of changing program delivery and client expectations. This involves the conversion and equipping of classroom/lab space to allow for the best mode of delivery. There is a need for additional specific funding to accommodate program changes to meet the needs of our local communities as well as general programming. This funding is required to ensure Colleges remain current in program delivery.

3. **College Infrastructure Renewal**

College infrastructure has not received adequate capital funding to maintain facilities and services. There is deferred maintenance in all areas of the facility and grounds. To maintain the inventory of properties in an adequate manner more funding is required beyond current capital allotments.

- Examples of facilities renewal: painting/flooring/utility services (i.e. update electrical panels, ceiling and plumbing.)

- Examples of deferred maintenance: roof repair/boilers/chillers/switch gear replacement and underground services.

Appendix B:

College
Responses

Impact of Capital Funding Levels over the Past 10 years

Buildings

The college is not only in one of the demographically fastest growing regions in the country it is also one of the most comprehensive economies. The college is restricted in programming expansion due to limitation of quantity and quality of space. Some of the current buildings will require significant changes in order to implement new programming needed that will augment and reflect the economic and social structure of this diverse community.

The current facilities are old and they do not accommodate newer the learning and teaching paradigm. Teaching and learning techniques have rapidly changed due to advances in technologies and changing needs of learners. The current facilities were built with the old paradigm of chalk and talk. Now we are dealing with internationalization of education and training and the current facilities do not provide a venue for this new reality.

Current deferred maintenance has created a number of major projects that we have not received adequate funding to address. Examples:

- Roof repairs
Many square feet of roof area at all campus locations are in need of major replacement. Current funding allows for sections to be completed, however, as we repair one area, other areas become in need of major repair. Funding is required to complete more areas to catch up to needs. We currently complete about half of what a consultants report suggested.
- Utilization of Space
Services need to be upgraded to accommodate new methods of teaching and adaptation for new programs as outlined in question three.
- Mechanical/Electrical
Updated equipment is required to replace aging services to not only reduce expenditure on repair, but also conserve energy. Many services are original, having been installed thirty-five plus years ago.
- Underground Services
Water mains and sewer services need to be upgraded to ensure prolonged service. The impact of not having these services would result in closure of campus locations while repairs are completed.

Equipment

Renewal

While we have made significant progress in involving the community in procuring new equipment we are limited in this endeavour because we are unable to provide matching

government funding. Some of our labs and equipment are old and they require significant enhancement and procurement. Conestoga is in the midst of an expanding technology hub and this puts extra pressure on us for the upgrading of our equipment. We are also rapidly expanding in the apprenticeship area compared to other colleges and by its nature apprenticeship is equipment intensive. Our inability to renew our equipment has severely limited us in modernizing our programs.

Appendix B:
College
Responses

New Programming

Currently we can hardly meet the needs of our current offerings in context of the capital needs. Therefore, this puts development and offering of new programming on the back burner; the programming which is critical for the local, regional and national economies.

New Teaching Paradigm

The new teaching paradigm requires learner centered classroom equipment. Our limited resources do not allow us to modernize our learning classrooms.

Capital Funding Priorities from an Academic Perspective

1. *New Equipment*

Procuring and installing equipment for current programs to make them current. Equipment in several labs and shops is old and does not provide appropriate learning outcomes due to the rapid change in technology and needs of local community. This needs to be addressed. Program Advisory Committees strongly recommend changing our inventory and adding to the equipment base. New equipment will also requires associated reconfiguration of space and general modification to facilitates.

2. *Upgraded Classroom Technology*

Learning and teaching methodology has changed significantly over the past 10 years. Our classrooms are old and ill equipped for the modern environment. We need state-of-the-art classroom equipment (computers, A/V, lab equipment, etc.). Smart classroom technology has not kept up with the introduction of new classrooms. Such technology is critical for the delivery of high-level programs and the reputation of the college as a leader in the field.

3. *New Programs*

The Conestoga College community has a comprehensive economy requiring new program initiatives. Unfortunately due serious limitation of space and equipment funding, this cannot be achieved. We need space expansion in context of new programming and associated capital infusion in order to mount these high-end programs required by our community.

Capital Funding Priorities from a Facilities Perspective

1. *Expansion*

Facility expansion to accommodate expanding programs and new programs to meet the needs of the communities we serve. Priorities vary from community to community, thus placing pressure on current facilities.

2. *Energy/Code Compliance*

To meet the needs of various code changes to ensure we are meeting the

requirements of various provincial legislations. This ranges from building and fire related changes to the Ontarians with Disabilities Act. Changes that would result in energy savings will not only assist our college in reducing operating expenses, but also contribute to the provinces goal of energy reduction.

Appendix B:
College
Responses

3. ***Facility Renewal/Deferred Maintenance/Modification of Academic and Service Space***

Upgrading and renewing facilities will allow our college to maintain current inventory to provide the services in conditions that promote better learning. The modification of academic space will enhance our abilities to meet the changing needs of technology and needs of clients. The deferred maintenance as stated before continues to be a major concern that may affect the college's ability to deliver programs.

Best Practice in other Jurisdictions

N/A

Compromised Programs

N/A

Images

N/A

Confederation College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall (Equal Weighting)

Confederation College sees all capital funding priorities as part of an overall balanced approach to solving the issues that the college system has. To pick one and not address the other would not solve the funding issue. For example cutting the CERF and AEF funds has forced Colleges to look at the other funding sources including FRP funding for solutions. The CERF and AEF funds were eliminated but the needs these funds addressed have not gone away.

Facilities Renewal or Deferred Maintenance

This priority is due to the lack of funding to adequately maintain the facility. The accepted industry standard for funding is 1.5% of current replacement value. This standard would give Confederation \$2.4 million annually. The Facilities Renewal funding this year was \$384,120 or 16% of the required amount.

This deterioration of the facilities is accelerating due to limitations of the operating grant. The challenge within the college is how to distribute the operating grant. Between 1996 and 2005 Facilities Services had its operating budget reduced due to other College priorities. The reduction in day to day maintenance has accelerated the deterioration of the facility. For example, not cleaning carpet thoroughly causes the remaining dirt to accelerate the breakdown of the carpet resulting in a shortened life.....therefore earlier capital investment to replace it.

Adaptation (Changing the use of space and code compliance)

Adaptation is also taking funds from Facilities Renewal grants.

To keep up with the changing world, academic program changes require a change in use of space. Most lab adaptation requires a new electrical and mechanical system. These systems not only have high capital costs but increase the facilities operating costs.

New codes (building and fire) and legislation (accessibility, asbestos etc) have further spread out the funding for Facilities Renewal grants. College facilities must stay current with codes and legislation but cannot when competing with the priorities listed above.

Again an industry standard for adaptation is 1.5% of current replacement value. When you add this to priority A, Confederation College is funded at 8% of required amount.

Operating Funds

Considered not Capital, operating budgets are addressing infrastructure renewal needs everyday. For example, at Confederation College we just completed a major repair on our high voltage line feeding one of our buildings. A potentially catastrophic event was prevented when during our annual power shut down to do preventive maintenance we found the problem. The cost to make the repair (excluding lost time during the 7 day

building closure) was 30% of the budget we have for mechanical/electrical maintenance. How is the College going to fund the remaining necessary maintenance? More of these types of repairs are going to be necessary as the buildings get older.

Appendix B:
College
Responses

Impact of Capital Funding Levels over the Past 10 years

Buildings

In addition to response in question number 1 above, there is now a serious building issue in ancillary building/space. For example our residence was constructed in 1978 with an addition in 1992. The building envelope (wall and windows), doors, washroom/showers, etc are in need of major upgrading and repair. The FRP funding guidelines indicated that this fund is not intended for residences, fitness centres, cafés, daycares, etc. Ancillary operations are vital to the success of students and the College, and need capital funding.

Equipment

Equipment funding in several areas has been below minimum over the last 10 years. The College has directed funds to needy academic programs to levels that in most cases don't meet the academic requirements. The introduction of the CERF fund helped some academic programs get equipment closer to their needs. The results have diminished the equipment replacement/renewal in the administrative areas including Facilities Services. For example last year we had snow clearing equipment in for repair so many times that we were concerned for the safety of our staff/students/visitors. At present Facilities Services have a 24 year old sand truck; 12 year old obsolete maintenance software; postage machine that will not be compliant as of December, etc.

Capital Funding Priorities from an Academic Perspective

1. *Academic Equipment, Furniture, IT*

Provide funding to improve academic support. This includes but is not limited to: classroom tables and chairs; computers for all faculty; updated libraries; Smartboards in all classrooms/labs; open access computers; audio and visual conferencing equipment; and accessible/assistive technologies.

2. *Upgrade Lab Equipment*

Provide funding to upgrade academic equipment in laboratories to support academic programs.

3. *Upgrade Lab Space*

Provide capital funding for updating laboratories to support academic programs.

Capital Funding Priorities from a Facilities Perspective (Equal Weighting)

As described in question number 1, we see all capital funding as part of an overall balanced approach. Listed below are 4 areas of funding that Confederation sees as requiring funding on a balanced level.

Facilities Renewal and Adaptation

As described in question number 1, the funding is significantly short of industry standards.

New Facilities and equipment

Facilities and equipment are required to support the requirement for new training requirements in Northwestern Ontario. Two projects being considered are a Health Science Centre (Dental, Paramedic, Nursing, Radiology, etc) and an Emergency & Protective Services Facility. These two facilities require a major investment in capital for the facility and equipment plus operating dollars.

Operating Funding (Repeat of description from question #1)

Considered not Capital, operating budgets are addressing infrastructure renewal needs everyday. For example, at Confederation College we just completed a major repair on our high voltage line feeding one of our buildings. A potentially catastrophic event was prevented when during our annual power shut down to do preventive maintenance we found the problem. The cost to make the repair (excluding lost time during the 7 day building closure) was 30% of the budget we have for mechanical/electrical maintenance. How is the College going to fund the remaining necessary maintenance? More of these types of repairs are going to be necessary as the buildings get older.

Energy Conservation

Confederation College 4 years ago took a risk and borrowed over two million dollars to invest into energy conservation projects. We have significantly reduced our energy consumption. The savings in energy was to pay off the loan, but with the rapid increase in energy costs these savings are now paying for the increased energy. The college has now increased the energy budget to cover the loan payment plus increased energy rates. The College budget is approximately \$1 million lower than it would have been if we did nothing, energy continues to be a priority. The easy and low cost projects have been completed. It is now time to plan for the more complicated and longer payback projects

Best Practice in other Jurisdictions

The response from Carol Anderson, Chair, Ontario College Facilities Management Association (OCFMA) has summed up the need complete with best practices. Confederation College supports her response dated September 5, 2006. See Appendix C for the OCFMA response.

Compromised Programs

The programs that the College has not offered due to start up costs, capital funding issues and ongoing operating costs are: new health programs like Lab technician, Diagnostic Imaging and Respiratory technician; and Emergency and Protective Services programs like Pre-Fire Education, Pre-Protective Services and Dispatcher.

Images

A series of images depicting infrastructure renewal issues at Confederation College were submitted, some of which are included in Appendix D.

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College
Responses

Capital Funding Priorities in CAATs System Overall

1. ***Deferred Maintenance***

The system is in desperate need of a deferred maintenance program that will ensure the timely renewal and renovation of infrastructure and physical facilities. Additional timely resources are required for plant renewal and adaptation. The physical conditions of some of our buildings are placing the occupants at risk of harm. The backlog of the numerous existing building maintenance-related deficiencies continues to grow. We are not only unable to address the critical deferred maintenance issues, but the overall shortfall in operating funds has prevented us from performing scheduled preventative maintenance tasks. As a result, the accumulation of facility components in need of repair is compounded.

2. ***Renovations/New Construction***

Renovations and new building projects appropriately addressing accessibility and sustainability requirements, in addition to meeting the functional requirements of the users of the space, are required.

3. ***Sustainability***

Sustainability should be a major consideration for all new construction. Capital funding should include initial capital costs as well as ongoing maintenance and operating costs.

Impact of Capital Funding Levels over the Past 10 years

Buildings

Our recently constructed buildings have been built and funded to current standards of construction and sustainability. The complexity of the campus's new facilities has increased dramatically. The heating, ventilation, air-conditioning, electrical, plumbing, data and voice communications, fire alarm, security, lighting and energy conservation systems installed in even the simplest buildings are far more advanced and demanding in terms of operations and maintenance than those of the older buildings. Regulation and code requirements as well as programmatic, sustainability and energy management issues have driven these improvements.

Unfortunately, most of our campus buildings are of an average age of 30 years. These buildings are in need of significant repairs and updating to the building envelope as well as the many building operating systems. We have a significant dilemma. Our operating budgets do not allow us to perform the required preventative maintenance in the new buildings and our budgets are also insufficient to properly address the maintenance and upgrading of the older buildings on campus. We are constantly prioritizing the use of resources to only meet emergency and short-term solutions.

Our last significant amount of capital funding was part of the SuperBuild funding initiative. Since then we have made several requests for building project funding, in particular for the expansion of our Whitby Skilled Trades Centre. As a result of the lack of funding we have had to limit growth and turn away students in high demand market driven programs. We did consider debt financing for this project but we were unable to reallocate the required funds from our operating budgets. We have taken on debt to fund projects of a much smaller scale, but the end result is the further depletion of our scarce operating dollars.

Equipment

Our biggest challenge is the lack of funds to provide and maintain equipment in our labs, shops and studios. Today we have 77 post-secondary programs and no specific provincial allotment for new capital equipment and the ever greening of equipment. It will be impossible to train our students for the current marketplace using old and outdated equipment. In certain areas we have had to make the choice between taking on long term debt for the purchase of new equipment or eliminating a program because of the lack of proper equipment. We are unable to prepare our students for the workforce by training them in industry obsolete equipment.

Capital Funding Priorities from an Academic Perspective

1. ***Evergreening of Academic Equipment***

Funding is required to renew and evergreen academic equipment on an ongoing basis.

2. ***Economic Model for IT***

Our information technology on campus must keep up with current industry standards. It is necessary to adopt an economic model and establish an investment strategy, which treats information technology as perpetuity, a continuing, routine and significant part of our annual funding.

3. ***Renewal of Instructional Space and Equipment***

The marketplace is dynamic and as a market driven institution we are in the process of reengineering our academic programs. Significant funds are required to meet the resulting demands for renovation of existing space, the construction of new space and the purchase of equipment. The lack of funding in this area has limited our ability to carry out this significant ongoing task.

Capital Funding Priorities from a Facilities Perspective

1. ***Deferred Maintenance and Facilities Renewal***

We are unable to properly address deferred maintenance and facilities renewal. Where funds are available and where efficiencies can be realized, both facilities renewal and deferred maintenance are addressed. Although minimal progress has been made in this way, only a fraction our budget can be used to support these two areas and they remain severely under-funded. As these projects are delayed, the scope and the cost of the work increases while the quality of the College's physical plant declines. Resources that should have been used for maintenance and renewal have to be expended on emergency repairs and short-term solutions. We rely heavily

on the provincial allocation in this area, but are unable to provide any significant supplement to this funding.

Appendix B:

College
Responses

2. ***Academic Adaptation***

Meeting new program requirements has forced us to use our already limited operating funds. We are redirecting a small portion of our operating funds to the renovation of existing space. As a result the overall physical plant suffers because critical maintenance and operational functions are postponed.

3. ***Energy Management***

The energy management program on our campus has been in place for over twenty years. The program continues to evolve at a slow pace because of the lack of adequate funding. We have been fortunate to include energy savings features in our new construction; however, we have only been able to retrofit a small portion of our older buildings in this way. These initiatives are capital intensive and the cost is recovered over time. Ongoing specific capital funding is required for these important initiatives.

Best Practice in other Jurisdictions

N/A

Compromised Programs

New Programs:

- Rapid Manufacturing
- Landscape and Turf Management
- Interior Decorating
- Community Integration through Cooperative Education

Expansion of Existing Programs due to demand exceeding space capacities:

- HVAC and Plumbing
- Emergency Services and Firefighting

Images

A series of images depicting infrastructure renewal issues at Durham College and UOIT were submitted, some of which are included in Appendix D.

Fanshawe College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall (Equal Weighting)

In a recent teleconference, facilities directors agreed that the most pressing priority within the Ontario College system is adequate, reliable, integrated funding.

Ontario Colleges have struggled with decades of systemic (capital and operating) funding shortfalls and require substantial infusions of capital funding to achieve the improvements in programming, accessibility and quality that are the expectations of today's students and parents and that are desired deliverables of the Ontario government.

Adequate and reliable sources of capital funding are needed now, and on an ongoing basis, to address the following priorities of Ontario Colleges (each has been identified as having equal importance within the system; each College will have its own unique priorities among these capital funding priorities):

Infrastructure Renewal

Infrastructure renewal to address the significant deferred maintenance backlog (growing annually despite Facilities Renewal Grant) and rejuvenate aging, technologically-/functionally-obsolete college facilities. According to industry standards, the minimum annual facilities renewal investment, as a percentage of the current replacement value (CRV), should be in the 1½-2% range. The Honourable Bob Rae recommended in his February 2005 report, entitled "Ontario: A Leader in Learning", to the Ontario Government that an annual \$200 million capital fund for facility renewal be invested among Ontario's colleges and universities over a 10-year period to tackle the deferred maintenance backlog/ infrastructure renewal challenge. To date, only one of the ten instalments has ever been funded by the government.

- Includes energy conservation and efficiency initiatives within buildings and building operating systems to reduce demand on the provincial energy grid as well as to reduce college annual utilities operating expense
- Includes compliance issues with stricter/ evolving governmental acts, regulations, codes and practises, including building and fire codes, health and safety, accessibility, etc. to ensure a safe, functional learning and working environment
- Annual adaptation (change of use) of classrooms, shops, labs, learning resource centres and related spaces to keep current with programming demands, provide state-of-the-art technological advancements, and keep pace with trends in learning, programming and, particularly, technology to provide current-trained learners for employers and community. Industry standards indicate that the minimum annual adaptation investment, as a percentage of the current replacement value (CRV), should be in the 1-1½% range.

- New College facilities, including academic, academic support and student support services, to support new or revitalized academic programming and changing student demographics and enrolments (and/ or to replace deficient College facilities where infrastructure renewal would be fiscally impractical) to keep pace with trends in learning, programming, technologies, student demographics and changing employer and economic demands
- replacement of existing academic equipment and procurement of new academic equipment

Appendix B:
College
Responses

Impact of Capital Funding Levels over the Past 10 years

To the extent practicable, Fanshawe has been focusing capital investment in new buildings and equipment in an effort to improve the operational effectiveness of the College for student recruitment and retention purposes. Based on the Ontario Colleges KPIs, student satisfaction relating to the overall quality of facilities/ resources has increased 14% in 6 years from 65% in 1999/0 to 79% in 2005/6. Similarly, for the same period, student satisfaction with lab/ shop facilities and equipment increased 14% to 72%, while student satisfaction of open access computer labs increased 12% to 81%. Despite dramatic improvements, significant gaps (13% - 25%) remain between the level of importance and the level of satisfaction.

Unfortunately, due to chronic under-funding, such capital investment has cost the College by eroding base funding and straining the College's ability to target additional investment into new faculty and staff and new/ expanded academic support and student support services, equally critical elements of an effective post-secondary educational institution.

Buildings

Since 1998, Fanshawe has invested more than \$110 million in campus expansions, nearly doubling the size of its campuses, to accommodate student enrolment growth. In 2006, the net book value of buildings totalled \$131 million, resulting in the net book value of the pre-expansion buildings being less than \$21 million or \$22 per GSF. Despite such investment, the College's facilities condition index (FCI) for the existing pre-1998 buildings is at least 11%, more than twice the industry acceptable benchmark of 5%.

Furniture and Equipment

Over the past several years, Fanshawe has invested nearly \$5 million annually into academic and non-academic furniture and equipment.

Despite such investment, in 2006, the net book value of furniture and equipment was less than \$15.5 million for equipment valued in excess of \$80 million at the time of purchase. In order to stay ahead/ keep pace with business and industry, the College's academic equipment needs to keep pace with current technology. Academic equipment/ technology renewal frequency is vitally important since the pace of technological obsolescence frequently outstrips the pace of financial depreciation/ obsolescence.

Capital funding for renewal of base IT network infrastructure and computer workstation (hardware and software) alone exceeds \$2 million annually to keep pace with technological obsolescence.

Such equipment renewal will be detrimentally impacted by the recent abandonment of the CERF and AEF programs.

Appendix B:

College
Responses

Capital Funding Priorities from an Academic Perspective

Business and industry, and our current and prospective students expect Ontario Colleges to possess up-to-date equipment in use by business/ industry to provide learners/ workers with current, relevant, hands-on learning experience so workers can “hit the road running”. Recent anecdotes from Academic Deans included that students were appalled to learn that the College’s machine shop equipment was even older than the “old” equipment they used in high school and local hospitals expected the College’s nursing labs be equipped with the hospital’s latest electronic charting systems so that student nurses could be properly trained in advance of clinical placement.

1. Existing Academic Equipment Renewal

2. Procurement of New Academic Equipment

Significant, ongoing capital funding is required in all academic faculties/ sectors of the College for academic equipment renewal to replace technologically-obsolete equipment and to provide new technology equipment to keep pace with (and leading edge of) business/ industry trends.

Fanshawe invests nearly \$2 million annually in academic equipment renewal/ replacement on requests from academic faculties valued more than ten-fold that available. Recent assessments of these annual requests were considered both reasonable and appropriate.

Fanshawe has a broad academic delivery mandate to accommodate the surrounding community’s broad commercial, industrial and institutional businesses. Equipment replacement/ procurement requirements are likewise broad and extensive including manufacturing and other high-technology intensive faculties/ programs such as motive power, health (nursing, radiography, dental hygiene), culinary, communication arts, architectural, interior and fashion design. Often multiple equipment units are required for training of several learners simultaneously.

3. Academic Support & Student Services Support Facilities & Equipment

Capital funding is required for academic support and student services support areas including:

- Improvements to offices, multimedia classrooms, shops and labs together with investment in quality furniture and equipment to meet teaching standards
- Expansion of counselling and student resource centres with investments in accessible and assistive technologies
- IT infrastructure to meet at the least a reasonable and current industry standard

1. *Facilities Infrastructure Renewal & Adaptation*

Significant, ongoing capital funding infusion for facilities renewal and adaptation to address and stabilize the significant deferred maintenance backlog, necessary infrastructure renewal, increasingly stringent code/ regulatory compliance issues (health & safety, such as asbestos, environmental, fire safety, ODA, etc,) as well as adaptation of space for programming changes, followed by stable multi-year capital funding for sustainable facilities renewal.

Fanshawe typically invests \$1.28 million annually into facilities renewal and adaptation (\$0.78 million from MTCU FRP and \$0.5 million from College operating), representing an investment of less than 0.3% of current replacement value (CRV), significantly below the 3% industry standard.

Such infrastructure renewal investment should reasonably address existing concerns and emerging issues relating to code and regulatory compliance, as such requirements become more stringent in various fields including but not limited to building code, fire code, health and safety, including asbestos, environmental management and accessibility requirements.

As academic programming is changed, upgraded or replaced with other programming, adaptation of classrooms, shops and labs becomes critical to facilitate such change of use to maintain maximum utilization of scarce physical resources and, more importantly, achieve academic success in meeting the needs of learners, of business/ industry (to maintain their competitive advantage), and, ultimately, the community.

2. *Energy Management & Conservation*

Additional capital funding is also necessary to implement energy management and conservation programs in an effort to reduce the annual utilities expense to operate facilities and to reduce electricity demand on the provincial grid, as desired by the Ontario Government. The College will be undertaking an investment grade energy audit to determine the extent of energy consumption and cost savings that are realistically achievable with reasonable capital investment. In the Power Application Group report, entitled “Ontario Colleges: State of Readiness Report”, commissioned by the Ontario Ministry of Energy, it suggested a \$2.8 million investment at Fanshawe could yield \$0.4 million in annual savings in reduced operating expense while also reducing electrical demand on the provincial electrical grid by 1,800 kW. The investment grade audit is anticipated to identify savings in consumption and costs beyond that initial estimate in the State of Readiness Report.

3. *New Facilities & Equipment*

Sufficient land, buildings and equipment are required to efficiently and effectively operate and support the requirements, of today and tomorrow, for academic, academic support and student support services of a post-secondary institution.

According to OCFMA benchmarking, Fanshawe’s space density is about 77 GSF/ FTE, being about 23 – 33 GSF/ FTE below the Ontario College space standard/ average of 100 – 110 GSF/ FTE.

Even though the College has expanded its London campus considerably over the last several years, demand for space continues to exceed capacity. For the College to continue to grow or to shift the current enrolment mix to include programs having large space needs (e.g. growth in apprenticeship programming and in post secondary program disciplines such as composite manufacturing, aircraft mechanic), additional purchased space will be required.

On an interim basis, the College has explored a number of potential expansion sites, and concluded that a property just east of the Campus best meets the needs identified.

Sufficient capital funding is necessary to acquire property to enable the College to be well positioned for future growth and development of buildings for programming and services. The College's 2006/ 7 strategic plan, capital projects outlined on pages 30 - 38, is accessible from the following link:
<http://www.fanshawec.on.ca/pas/plan2006.pdf>

Best Practice in other Jurisdictions

The College has established a facilities infrastructure reserve for annually directing funding from operating to establish a fund for future infrastructure renewal to work in conjunction with the MTCU FRG. To date, the reserve sits at \$3,500K.

Compromised Programs

A suite of programs in the manufacturing area could be offered for which there is/will be significant demand:

- Automation Technician
- Composite Manufacturing Technician
- CNC Operator
- CNC Programmer

The first two are fairly equipment intensive, the latter not so much. The College does have some equipment in these areas but would have to increase the amount to service a larger intake.

The College is asked repeatedly about Medical Laboratory Technician programming. Significant capital is needed to begin the program. Since the London region has limited placement opportunities, costly placement alternatives would be required (simulation equipment, etc.).

Anesthesia Assistant would be a small program (10-12 students) with a need for equipment (ventilators, Mock OR) etc. but would positively impact the MOHLTC wait time strategy for surgical procedures and other procedures requiring conscious sedation (i.e., cataracts).

Fanshawe is also interested in advanced modalities in Medical Imaging including CT, Ultrasound and MRI. These programs could stand alone and be offered alternate years

depending on the needs of our Regional Health Care Community. Additionally, they might be combined to create an Imaging specialty in Sports Medicine or Oncology.

Local Radiologists would also like a Radiologist's Assistant in the same way the Anesthetists have developed their category for support. With investment in equipment, these programs would be possible for Fanshawe.

There is room for the development of several programs and the convergence, or alignment of others.

New Programs:

- Technical Production for Live Performance and Presentation. Two streams- Sets, Properties and Lighting; and Sound Design
- Acting for Contemporary Media –radio, TV, film and live venues
- Voice Over and Narrative Performance and Production
- Hosting and Production Specializations
- Dance Performance and Production
- Three-Dimensional Animation
- Gaming

If Fanshawe had an Arts Centre with a nexus of performance spaces including a live performance theatre possibly like the Glenn Gould Theatre at the CBC (wired for television, film and live performance recording) as well as a variety of studio spaces (for rehearsal, production and mixing, among other things) and a black box theatre, the College could

- a) Reactivate (and rename) our Technical Theatre program with a broader mandate which would include technical production (stage fabrication, sound and room design, etc.) for both live and recorded performance. This would promote (require) interaction with the Multi-Media, Film, TV, Radio and Music Industry Arts (MIA) programs as well as the Theatre Arts Program.
- b) Add to our theatre performance program a graduate program in acting for stage, microphone and camera. A lucrative and growing profession in the theatre/film performance professions is voice-over for TV, Radio and Film. Specialty hosting (garden, culinary, music shows) is another area that needs to be developed, and can be achieved in this context.
- c) If a dance studio(s) is included, which would be used by the theatre program we could offer dance as an option or a stream (there are Continuing Education opportunities as well).
- d) If live recording facilities are developed, the College could expand MIA and introduce a live recording post-diploma program (there are natural amenities in this development for theatre, film, radio and television)
- e) The Arts Centre would also be the home of the new post diploma costume program (allowing a natural alignment with the theatre tech program).

Appendix B:

College
Responses

f) With the synergy of bringing several programs together in an Arts Centre, Fanshawe could develop a wide range of post-diploma programs to add to the roster of offerings.

g) This facility would give physical definition to a centre of excellence in contemporary media

Appendix B:
College
Responses

In the area of multimedia, Fanshawe should be adding 3D animation (immediately) and gaming diploma programs to our roster of offerings. There is no question that a strong demand exists for these programs. They are equipment intensive requiring high end computers, gigabyte networks, etc. These programs have a relationship with theatre (motion capture, fight choreography, facial physiognomy, etc.), film, fine arts and graphic design.

There are a couple of ways to develop a full and comprehensive broadcast centre: if a production/performance nexus is developed, the natural convergence of our media in this space would be centralized in a full media broadcast centre, offering everything from the micro (podcasting) to the broad (CRTC licensed) outlets. The alternative is to develop first floor of 'M' Building to allow and encourage more interaction between the media (a little more difficult but still very attractive).

Images

A series of images depicting infrastructure renewal issues at Fanshawe College were submitted, some of which are included in Appendix D.

Fleming College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall

1. *Energy and Mechanical Retrofits*

These are risk areas in the operation of buildings and at the same time, the retrofits assist the colleges with cost avoidance in the area of utility costs.

2. *Expansion of Facilities*

3. *Infrastructure Maintenance*

It is prudent to fix what is deficient, despite the quality inherent in new facilities

Impact of Capital Funding Levels over the Past 10 years

Buildings

SuperBuild funding within the past decade allowed the College to divest of its two oldest structures – both approximately 100 years of age. New facilities were built with strong energy efficiency programming as a guiding principle. There was a dramatic improvement in the student satisfaction (KPI) ratings. This investment also reduced the deferred maintenance backlog. Fleming College was awarded \$27M of SuperBuild funding.

Other investments were made possible through the distribution of year end ministry surpluses in March 2005. An example at this institution was the upgrading and renovation of a chemistry lab which was a \$1M project.

The college was able to access additional new facilities in 2005 by partnering with the City of Peterborough to build a Sport and Wellness Centre to accommodate curriculum needs in fitness programming. The \$14M facility was financed through the municipal SuperBuild process, along with student government and general College funds.

Equipment

Equipment was purchased in conjunction with the SuperBuild program and often included private sector contribution.

Capital Funding Priorities from an Academic Perspective

1. *Academic Equipment*

Program-specific academic equipment, particularly where program viability is dependent on leading edge technologies. Colleges are rewarded through the funding formula for enrolment growth, but students, given the opportunity to compare will select colleges which have leading-edge equipment. Colleges therefore are not content to make-do with technologies that fall short, since their programs are directly threatened.

2. **Computer Technology**

Access to good equipment that delivers at a satisfactory level. Although the college has a progressive program of computer replacement, it is necessary to stagger replacements and upgrades of systems, and also to scale back the numbers of units so that replacement is more manageable.

Appendix B:

College
Responses

3. **Larger Teaching Spaces – Labs and Classrooms**

Building expansion and campus consolidations continue to be necessary to trim overall plant costs. Having more than one campus site within the city is a burden on the physical plant as economies are lost. Consolidation reduces operating costs. Academically, apprenticeship teaching space is the area of concern and no funding assistance to enable growth in these programs seems to be on the horizon.

Capital Funding Priorities from a Facilities Perspective

1. **Energy / Mechanical Retrofits**

Colleges require recognition of the significant funding and the lengthy timelines involved in addressing retrofits in the energy/mechanical area. These are the most costly initiatives involving lengthy design and approval processes. The lack of capital funds available along with the deadlines imposed to serve other fiscal needs at the ministry level, prevent progress in this area. Addressing these large scale projects in deferred maintenance can at the same time promote the type of energy conservation progress that the province would want to see.

2. **Legislated Requirements**

Legislated requirements very often are not supported by concurrent funds. Multi-year plans for accessibility improvements, occupational health and safety regulations in the areas of asbestos remediation, fall arrest, ergonomics, environmental regulations, building and fire code regulatory requirements impact plant operations because funds for compliance are drawn from funds otherwise used for infrastructure upkeep such as roofing and building envelope maintenance.

3. **Building Envelope**

Building envelope capital projects are at the heart of building integrity. The reports in recent years of crumbling post secondary institutions relates directly to the inability of the colleges to properly invest in the structures themselves. While the history of colleges just approaches the 40 year mark, many colleges acquired much older buildings.

Best Practice in other Jurisdictions

N/A

Compromised Program

N/A

Images

N/A

George Brown College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall

1. *Accessibility*

With the planned introduction of new building standards for the disabled, the financial implications are huge, especially for a large college as George Brown, with older buildings which were not originally built for educational purposes.

2. *Utility costs*

The rapid rise in prices over the past few years has been alarming, and very challenging. Increased utility costs deprive the college from much needed spending in the classrooms. Energy retrofits are seldom supported, due to competing priorities, even though they have a huge utility saving potential in the long term.

3. *Non-academic support areas*

Expansion of the service support areas to cope with increased student population. This is particularly important in the cafeterias, which act as study and socializing areas. Also for student private study areas.

Impact of Capital Funding Levels over the Past 10 years

Buildings & Equipment

Facility audits were conducted twice over the past 10 years. The most recent showed the effect of capital funding. The deferred maintenance backlog was estimated at over \$7 M ten years ago. Now the number is approximately \$4 M. In addition, our ten year energy retrofit plan cost was originally estimated at approx. \$9 M. Currently it runs at \$6 M. Generally, the cost of equipment accounts for approx. 60% of total capital cost.

Capital Funding Priorities from an Academic Perspective

1. *Smart Classroom Technology*

State-of-the-art classroom equipment (computers, A/V, lab equipment, etc.). Smart classroom technology has not kept up with the introduction of new classrooms. Such technology is critical for the delivery of high level programs and the reputation of George Brown as a leader in the field.

2. *Office Furniture*

As the staff and faculty population grows replacement and new office furniture become important. While student classroom furniture requirements have been funded internally during the past few years, office furniture has not received attention, due to lack of adequate funding.

3. ***New Student Support Space***

Additional space to support the non-academic activities, e.g. gymnasiums, libraries & learning commons, private student study areas, etc.

Appendix B:
College
Responses

Capital Funding Priorities from a Facilities Perspective

1. ***Mechanical Infrastructure*** (chiller renewal, addition of air handling units)

Some of the current chillers are over 30 years old, and have surpassed their design life. Efficiency has dropped and the operating cost is high, especially utilities. New air handling units are required to cope with the increased enrolment (30% in the past 5 years) and associated increase in faculty and computer equipment.

2. ***Building Envelope*** especially flat roofs and exterior brick walls.

Nine years ago we implemented a roof renewal program, and a new program is required now. Aging buildings (some are 130 years old) require a high level of upkeep.

3. ***Elevators***

Once again, most of our elevators are over 35 years old and running on old technology. Breakdown rate is high due to excessive use. A complete overhaul is required.

Best Practice in other Jurisdictions

At some U.S. universities in the Ivy League, such as Harvard and MIT, an endowment fund is created upon constructing new buildings, to support their maintenance requirements over the long-term, e.g. roofs, chillers, boilers, elevators, etc.

Compromised Programs

N/A

Images

Images of George Brown's major water-proofing and foundations' under-pinning project are included in Section 4 of the paper.

Georgian College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall

1. ***Deferred Maintenance***

Grant funding related to repair and deferred maintenance of facilities is extremely low. All college Plant Directors complain bitterly about the inability to maintain their facilities to a level accepted within the industry as being standard for institutions like ours. The colleges are not in a financial position to divert funding in most cases towards Physical Resources and we rely heavily upon the FRP grant monies. Unfortunately with the need to spend the money in-year the larger projects – HVAC, electrical, etc. – tend to be left until there is a catastrophic failure which must be fixed at great expense to the respective college. These monies are required not only for the maintenance of facilities but are essential in providing funding to make the necessary repairs and modifications to maintain compliance to codes and legislation as well as health and safety related issues.

Based upon industry standards of funding at 1.5% of replacement cost Georgian would receive approximately \$2.5M. We currently receive \$530,000 or 20% of the industry standard.

Along the same lines is the need for funding for renovations to facilities to accommodate changes in academic delivery needs and methods. Currently there are no funds specifically allocated for this purpose and this impacts the spending pattern of the existing grant and the ability to use what resources we do get to address facilities-related deferred maintenance.

Due to the lack of funding the College's deferred maintenance backlog continues to grow at an alarming rate climbing by millions of dollars each year. This lack of sufficient funding cannot be offset by the College's operating funds as these resources are already extremely scarce and what is available is already being directed towards making positive changes on the academic side.

2. ***Building Expansion***

Capital required for building expansion to keep up with anticipated and real growth is slow in coming. Although SuperBuild was a truly wonderful shot in the arm there are still system-wide needs that should be addressed. Competition for any money that may be coming available is fierce. Funding is required to provide the facilities to accommodate the **increased** enrolments as the post-secondary education participation rates rise to 70% as planned by the provincial government.

3. ***Energy Conservation and Retrofit Projects***

Funding is needed for colleges to be able to take advantage of technologies that will ultimately reduce energy/utility costs through energy conservation and retrofit projects.

There is also a significant need for funding to address issues related to code, regulations and health & safety. As well, there are needs related to academic space renewal required to keep academic programming current.

Appendix B:
College
Responses

Impact of Capital Funding Levels over the Past 10 years

Buildings

Georgian has grown significantly over the past 10 years from 705,000 sq. ft. to 880,000 sq. ft. = +25% including the acquisition of another 60,000 SF campus in Midland.

Based upon the current 880,000 sq. ft. and an FRP grant of \$530,000 we receive approx. 60 cents/sq. ft. or 0.3% of the current replacement value compared to the industry standard of 1.5%.

Colleges still rely heavily on the use of portable classrooms to provide academic delivery.

In order to provide access to programs over a large area already scarce operating funds need to be diverted towards the development of regional campuses.

We currently receive no additional FRP funds to help maintain additional space.

Deferred maintenance continues to climb from approximately \$5M 10 years ago to approx. \$15M today. As buildings continue to age the deterioration of facilities continues at an accelerated and exponential rate. Issues considered to be routine are unfortunately not completed which can lead to problems related to health and safety, e.g. mould.

Lower funding levels means having to borrow or find ways to finance retrofits of equipment. Although the retrofits can pay for themselves through savings the dramatic increase in costs related to utilities adds a burden to the overall College budget as savings cannot either be put directly back into new initiatives or lessen the College's utility budget.

Equipment

Outdated equipment in the classrooms, labs and shops. New student fees have had to be established to provide the resources necessary to ensure that the appropriate technology is available to both students and faculty.

Capital Funding Priorities from an Academic Perspective

1. *New Health Sciences and Engineering Technology Building*

Level the playing field with respect to the disadvantage of being a smaller college without access to the sponsors and supporters that are more readily available in larger centres. Coupled with revenues from increased student numbers larger colleges can better “afford” to continue to grow. If smaller colleges can demonstrate a real need for growth and the student numbers to support that growth there should be a mechanism in place to assist them in ways maybe not available to their richer cousins.

As one of the fastest growing colleges in the Ontario system we require additional facilities to accommodate the larger enrolments in diploma, apprenticeship training and university studies. For instance Georgian is in need of funding to construct a new gymnasium to support students in the Law and Security Administration and Police Foundations programs.

Also needed is retrofit of space vacated once we construct new building(s) to allow for better/enhanced use of existing space.

2. ***Upgrades to Instructional Space and Lab Equipment***

An increase in capital funding is required to support existing and new academic programs and allow maintenance and upgrades to classroom and lab space dealing with building infrastructure issues related to leaks, mould, carpet, paint, tile, HVAC, electrical, etc.

As we move into the 21st century demands on lab space will increase with respect to equipment requirements i.e. computers, lab equipment, etc., There are new academic programs that we could offer however there are no funds available for the purchase of the necessary equipment for start-up or for ongoing maintenance and renewal. The current changes taking place within labs are placing new demands on old existing systems which need upgrading and replacement.

Capital funding should be adequate to make ongoing improvements to all space owned by the College to maintain standard levels of quality throughout to provide buildings conducive to learning and working in a clean, secure and safe environment. As well, if funding was available the College could undertake program relocations and renovations necessary to allow enrolments to be maximized and resources to be better shared and utilized.

3. ***New Instructional Furniture, Equipment and IT***

Funding is needed for the purchase of new equipment for classroom and lab delivery i.e. computers, A/V equipment, cameras, projectors, etc. New classroom and lab furniture, and equipment are needed – safety is an aspect to consider as old furniture and equipment can pose health and safety hazards.

State-of-the-art lab equipment will ensure that students are using the tools that will be an asset to them upon graduation.

Capital investment funding must be adequate to procure the learning resources necessary to meet College standards. Some programs are more capital intensive than others. This would also help in keeping programs viable in the long term as resources are replaced regularly to ensure graduating students are current with the latest technologies required to do their jobs.

Capital Funding Priorities from a Facilities Perspective

Appendix B:

College
Responses

1. *Deferred Maintenance*

Increased funding to deal with deferred maintenance issues. FRP dollars need to be increased to a level which will start to reverse the trend towards “point of no return”.

2. *Energy Conservation*

Increased availability of funding for energy conservation projects. Although programs exist which assist colleges when undertaking large retrofit/upgrade projects they come nowhere close to the assistance required. These projects can run into the millions of dollars so, although it may help, a \$60,000 offset is somewhat less than adequate. If projects can be demonstrated as producing results that reduce costs far into the future a formula should be used to greatly assist the colleges in doing those projects.

3. *Code Compliance*

As the College is now close to 40 years old it becomes increasingly difficult to keep up with the costs related to dealing with issues related to code compliance, Regulatory (ODA, environmental, etc.), fire, and health & safety as changes to these codes, etc. are enacted. It is important to recognize the burden placed on institutions when these changes are introduced and provide the necessary funding accordingly.

Best Practice in other Jurisdictions

N/A

Compromised Programs

N/A

Images

N/A

Humber Institute of Technology and Advanced Learning

Appendix B:

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College
Responses

Capital Funding Priorities in CAATs System Overall

1. *Deferred Maintenance*

Funding for deferred maintenance projects at a level commiserate to industry standards. With operating dollars also not keeping pace with industry standards, Humber's maintenance backlog continues to grow exponentially. Annual investment at Humber should be somewhere in the order of \$3.6 million and is instead at about \$950,000. The backlog at Humber not including adaptation projects such as accessibility, fire and asbestos removal stands at about \$22 million. Adaptation projects just for code compliance and physical plant are in the same order of magnitude. Our five year plan only covers projects that could severely impact business continuity and does not even cover projects we know are causing further damage to building infrastructure.

2. *Energy Retrofits*

Energy retrofits needs to be front and centre. Last year Facilities Management needed to add over \$500K to its annual operating budget to cover the rising cost of utilities. With operating budgets so tight and government funding not keeping pace with inflation, the College is not in a position to fund energy retrofit projects as the saving which could pay down any loan that might be taken are eaten up by increased costs.

3. *Academic Adaptation*

Academic adaptation funding that includes equipment renewal and apprentice enhancement projects. Government has asked Colleges to be accountable to the public and some of the performance measures used to measure that accountability relate to Graduate placement and Employer satisfaction and yet government does not support the College's efforts to create environments that would contribute to success. It is imperative that Colleges offer current and relative training to students so they are job ready and meet employer needs. This is difficult to accomplish without funding to retrofit labs, purchase current technology or develop space for new program offerings for emerging employment fields.

Impact of Capital Funding Levels over the Past 10 years

Covered under priorities.

Capital Funding Priorities from an Academic Perspective

1. *New Facilities to Address Overcrowding*

Humber is probably one of the most overcrowded institutions in the College system. Our square foot per student number is currently at about 69 square feet. This has resulted in poor quality in a number of areas:

- Insufficient library and independent study space for students
- Classroom utilization statistics that exceed the industry standard of 85% resulting in less than optimum schedules for students
- Insufficient office space for faculty and literally no private space in which to consult with students and respect their right to privacy under the human rights code. Current standards of 60 square feet for faculty offices has forced the college to adopt open concept offices in large clusters and has all but eliminated any office space for part time instructors.

While we are in the process of constructing a new facility at the North Campus for much needed classroom space, the library and office space issues remain. In addition, the Lakeshore Campus is now at full occupancy and has no remaining flexibility in its space allocations.

The College needs capital funding to construct facilities that will improve its ability to provide students with appropriate library and independent learning space at the North Campus and needs capital funding to finish retrofitting the remaining buildings at Lakeshore to provide the additional classroom and lab space required at that campus.

2. ***Renovations to Academic Program Delivery***

Program and academic delivery renovations are probably a competing need with new infrastructure. Programs need to maintain their relevance with industry which includes training students in an environment and on equipment which simulates what they will experience in the work force. This can be a significant investment with programs that are lab intensive which probably represents 80% of programming offered at a college level. Examples of these types of projects include some recent renovations completed at Humber that have produced multi purpose labs delivering programming to several different programs in the same space. Significant investment has been made in developing an open manufacturing centre where products are designed, developed and produced using a variety of expensive industrial machinery in one centre similar to a production floor found in any modern industrial centre. The total cost for creating this centre was \$2.7 million and took three years to complete so the college could manage the cash flow. The resultant centre serves students in the Industrial Design program, Plastics, IMM and CNC all common courses which are now delivered on mass irrespective of the program of study. The other benefit from creating the manufacturing centre was the reduced foot print which enabled the College to create 11 badly needed classrooms. Another recent example is our new Digital news room opened this fall where journalism, radio broadcast, TV broadcast and web based news are taught in one facility with cross training and exposure to the various aspects of digital news production are experienced by students registered in these different programs. The news production facility emulates any current commercial facility.

3. ***Renewal of Equipment and IT***

Equipment replacement and information technology are every bit as important as program renovations and go hand in hand with the space adaptation. While new equipment investment in the Manufacturing centre was marginal, the School could have used a similar investment in equipment upgrades as was spent on the

renovations. The same is true of the Digital news room where 1.2 million was spent on renovations; an additional million has been spent on updating equipment.

Appendix B:

College
Responses

Capital Funding Priorities from a Facilities Perspective

1. *Deferred Maintenance*

Infusion of money for deferred maintenance and multi year capital planning so Colleges can develop and plan for expenditures relying on some projected consistency. Large investments in HVAC and electrical building systems are required now. Most equipment has already surpassed its useful life and risk of critical failures is high. In addition to some significant long term investments there is the ongoing need to replace of roofs, windows, exterior building components, caulking etc.

2. *Energy Conservation*

Injection of funds for energy retrofit projects which will have benefits to numerous parties: the college through reduced operating expenditures (and deferred maintenance); the government through reduced demand for both electricity and gas; and the environment through the reduction of green house gases. Humber completed an incentive grade energy audit about four years ago and has numerous projects ready to go at a cost of about \$3 million.

3. *Plant Adaptation and Common Area Refurbishing*

Most colleges are struggling to keep pace with changes to various codes, legislations and regulations; they continue to wrestle with issues such as the fire code, accessibility, elimination of PCB's etc. In addition, there are major aesthetic overhauls that are necessary to some very large and prominent spaces on most campuses. Public spaces tend to reflect on the image of the College, and if not brought up to a reasonable acceptable standard this can reflect badly on the College's reputation. An example of this type of project at Humber is our Auditorium at Lakeshore where we estimate a required investment of \$500,000 to update the space. The Auditorium is used for public performances, convocations and student instruction.

Best Practice in other Jurisdictions

Only those I have already provided.

Compromised Programs

Applied Technology/Health Sciences: need retrofit of existing 5 lab science suites to meet code (chemistry, bio-science, anatomy)

Hospitality, Recreation and Tourism: need to relocate and retrofit existing labs (cooking/baking) to meet code

Music Degree Programming & Performing Art: need new Music Production Facility

All Degree Programming – Lakeshore Campus: need 8 additional large group classrooms and faculty space to accommodate 3rd and 4th years

All Programming – North Campus: need additional space for library collections, independent learning seats, open access computer labs

Appendix B:

Any New Program – University of Guelph-Humber: need additional multi-purpose instructional space

College
Responses

Images

N/A

La Cité collégiale

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall

1. *Deferred maintenance*

Based on the VFA Analysis completed last year and the Life Cycle Management Plan in place, some major building components need either upgrades or replacement. Corrective interventions increase exponentially every year.

2. *Utilities*

The cost of energy increased drastically in the past three years forcing the College to budget more money on utilities therefore reducing spending in the classroom and much needed study space. Energy retrofits should be encouraged with incentives that will help the institutions to implement energy saving initiatives.

3. *Accessibility*

With the introduction of ODA (Ontario Disability Act) the colleges need funding to bring the institutions to acceptable levels. Without the influx of new funds, it will be practically impossible to fulfill the requirements of the Act.

Impact of Capital Funding Levels over the Past 10 years

Buildings

Over the past ten years, capital funding helped in upgrading academic space (responding to new technologies or to program requirements) as well as renewing some major building components. La Cité

Added one new building (26 000 sq ft) under the SuperBuild Program;

Renovated 32 000 sq ft to accommodate a Learning Resources Centre; and

Upgraded the College's telephone and IT network.

Even though the formula for capital funding is the same for all colleges, in our case the cost of upgrading, correcting or replacing is higher because of the building materials and equipments installed originally.

The increase in deferred maintenance cost per year is higher than the monies put in to reduce it. It cannot be stabilized since the building conditions deteriorate at an exponential rate.

Equipment

The cost of equipment is usually around 50% of the capital cost.

Capital Funding Priorities from an Academic Perspective

Appendix B:

College
Responses

1. *Retrofit the Television Broadcasting Program wing*

Upgrade the entire facilities as well as the equipment of the Television Broadcasting Program. The existing infrastructure dates from the early nineties. A proposal is already at the ministry's level. This upgrade is required to meet the contemporary broadcast requirements.

2. *New Trades Building*

The market demand for trades increases continuously. The College offers 15 Trades Programs from the 21 allocated at colleges. This is due to lack of space and equipment. The college made it a priority to create a multi-trade facility to accommodate increasing needs of students and to offer a variety of programs. The College is working on a proposal at the moment.

3. *New Sports Center/ Upgrade existing Academic space*

Provide adequate training space to respond to the needs of the Community Services Programs (Police services, Pre-Firefighting, Paramedics etc.). Present facilities do not meet the demand. The number of hours required by the academic programs and the Athletics Department is higher than the number of hours available per week. Existing spaces such as the gymnasium, the weight lifting and cardio rooms, the training laboratories, etc. were built in the early nineties. There have been no upgrades since then. The clientele for these programs has increased since; however the space and the equipment have remained the same, creating in some cases a health and safety issue.

Capital funding is needed to upgrade existing labs and classrooms, renew equipment and furniture to meet ergonomic requirements.

Equipment: the termination of the CERF funding program adds another pressure on the institution. This program helped very much in the renewal of equipment.

Capital Funding Priorities from a Facilities Perspective

1. *Deferred Maintenance*

Correct deficiencies recorded by the VFA audit, code compliance, safety, etc. VFA identified \$2.1 million in deficiencies. Need to replace building components (HVAC, electrical systems, roofs, envelope, finishes, roadways, doors, etc.) under the College's Life Cycle Management Plan. The Facilities Condition Index (FCI) increases continuously. New funding is needed and must be targeted to address deferred maintenance.

2. *Energy Efficiency*

In the last four years the cost of utilities increased drastically putting more pressure on colleges. We do support the Energy Secretariat initiative to identify energy conservation initiatives; however, there is also a need for specific funding to implement these initiatives.

3. ***Accessibility***

As per Ontario Disability Act (ODA), the College, like all other colleges, compiled a report that reflects all requirements to correct physical accessibility deficiencies. Again funding must be available to address the issues.

Appendix B:
College
Responses

Best Practice in other Jurisdictions

N/A

Compromised Programs

The College is planning to offer a new program, Pre-Service Firefighter Education and Training; however, finding adequate space for teaching, training and acquiring the appropriate equipment will be a big challenge for the institution. La Cité is also looking to develop programs related to Emergency Measures and Preparedness. All these new programs require additional space and funding to implement them which the institution does not have at the moment.

Images

A series of images depicting infrastructure renewal issues at La Cité collégiale were submitted, some of which are included in Appendix D.

Lambton College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall

Lack of appropriate funding is the most pressing issue within the College system. Additional cash infusions are necessary to address both the deferred maintenance and the updating of institutional equipment. Although money has been forthcoming from the province over the last 10 years the funding has been insufficient to adequately address both of the above needs.

1. *Deferred Maintenance*

Deferred maintenance is a very critical issue that must be addressed in the immediate future if the colleges are expected to achieve an acceptable building performance level of 0.05 on the facility condition index (FCI). Deferred maintenance issues not only exist in building systems, infrastructure, and furnishings, but also with respect to new code and legislated requirements such as the Ontario Disabilities Act, the new Asbestos Regulations, and the Energy Conservation Leadership Act. With respect to the latter, energy conservation projects not only serve to save energy and reduce operational costs but also to address some issues of deferred maintenance.

2. *Academic Equipment*

Although some funding has been forthcoming with respect to instructional capital it has not been sufficient to enable the institution to maintain currency of teaching tools for existing programs nor has it been enough to provide for instructional capital items for the introduction of new academic programs.

3. *Integration of IT*

As the College integrates new computer technology into academic programs, building systems and infrastructure need to be adapted to meet the changes and new demands placed on these systems. Funding is required to complete the adaptation process and this funding is not currently in place.

Impact of Capital Funding Levels over the Past 10 years

Given that the main campus of Lambton College has been in operation since 1970, some areas of the campus are now 36 years old. Although the capital monies received over the last 10 years has been welcomed, it is not enough to correct the building deferred maintenance of the past 36 years.

Buildings

Over the past 10 years Lambton College has completed three facility audits. The most recent being completed in 2005 was the most comprehensive, covering more buildings than the two previous audits.

Recent one-time capital grants have been used to replace envelope systems, building system controls and upgrade door and lighting systems. As indicated in the facility audits completed by Vanderweil Facility Advisors (VFA) in 2001 and 2005 the College has come a long way in reducing the FCI to a more acceptable level although we are a long way from the ideal value of 0.05, with a remaining \$10.1M in deferred maintenance (VFA 2005 Report) still outstanding.

Appendix B:
College
Responses

Building #	FCI/year	
	2001	2005
1	0.34	0.22
2	0.04	0.04
5	0.71	0.30
7	0.17	0.15

Equipment

Facility system equipment replacement over this time included fire detection systems, boilers, and electrical switchgear. The funding received to date has not been sufficient to update remaining facility related equipment or controls.

Capital Funding Priorities from an Academic Perspective

1. *Return of CERF and AEF Funding*

The discontinuance of CERF and the AEF funding are a major set back with respect to continued support of the academic programs. The colleges have relied heavily on the CERF to provide up to date training equipment for students. The removal of this fund greatly reduces the Lambton's ability to meet the high technological standards required by employers for student job placement. The removal of the CERF greatly diminishes the ability of the College to continue with the development of new programs such as our Pharmacy Technician Program, Nursing Program and the Alternative Energy Program to name a few. Recently Lambton College received a great level of support for the construction of an apprenticeship training building. The local construction association and three Union offices donated \$70K towards the development of this program and the Carpenters Union donated \$18K in tools towards their apprenticeship training program. From a community perspective, apprenticeship training is essential to replenish the number of retiring journeymen and increase the number of apprentices to meet the increased demands for trained personnel within the community and the province. The closure of the AEF will greatly reduce the Colleges ability to provide continued support for apprentices and provide ongoing training in this essential area.

2. *Upgrade Facilities and New Construction*

It is very important that funding be increased to provide building upgrades and expansion as the needs of the College adjust to meet new employer demands through the development and implementation of new programs. In this way the College will be able to:

- Update the facilities to a more learning centered environment
- Construct new facilities to provide space for new academic programs i.e. the Alternative Energy Program, using a wind generator and an energy efficient sustainability house lab
- Update IT infrastructure to meet current standard to provide for improved service
- Expand the gymnasium and fitness area to meet increased demands

3. ***Improvement to Learning Environment***

Additional funding is required to improve the learning centered environment and the support services environment that augment the above services. Improvements are essential.

- Classroom/lab improvements – furniture, equipment
- Support service – ergonomic furniture
- Adaptation of building systems and environment necessary to make the improvements

Capital Funding Priorities from a Facilities Perspective

1. ***Deferred Maintenance backlog and Infrastructure Renewal***

As previously noted even with the increase in capital for facility renewal Lambton College requires approximately \$10.1 M to achieve an acceptable level of building performance of a 0.05 FCI to bring the College up to the requirements of the current building code, including but not exclusive to, the Ontario Disability Act, fire detection equipment, asbestos code requirements, elevators, etc. Essential infrastructure replacements include original equipment, i.e. cooling towers (\$220K), chillers (\$550K), HVAC units, transformers, washrooms (\$175K) most of which have exceeded their design life. Essential envelope systems that require immediate attention include roof systems (\$800K) and window glazing (\$250K).

2. ***Energy Conservation Projects***

The “Ontario Colleges State of Readiness Report” prepared for the MoE and ACAATO identifies many of the energy conservation projects that could be undertaken given sufficient funding to conserve energy and reduce operational energy costs. Lambton College has completed an energy audit plan outlining such projects. Some of the identified projects not only address energy issues but also deferred maintenance matters.

3. ***Integration of New Equipment***

Funding must be provided to address the costs of integrating new equipment and necessary academic needs into existing building systems and infrastructure.

Best Practice in other Jurisdictions

OCFMA has identified the “Capital Asset Management Framework” guidelines developed by the province of British Columbia.

Compromised Programs

Appendix B:

College
Responses

1. Lambton College's existing single gym is inadequate to meet the needs of existing and newly added programs, as well as demand for student athletics, both varsity and intramural.

Large post-secondary programs that include a physical education component (Pre-Service Firefighter, Fire Science Technology, newly introduced Paramedic, and Police Foundations) take precedence over scheduling of Physical Education as a General Education credit. As a result, Physical Education courses are extremely limited for general registration, and students must be turned away. This is counter to the stated emphasis on physical fitness of both the Provincial and Federal Governments.

Gymnasium availability for Intramural sports is increasingly limited, curtailing participation in this constructive Student Life activity.

The addition of a second, larger gymnasium is needed to keep pace with expanding enrolment in the cluster of programs focused on emergency response, as well as demand for general physical education, and to respond to the need for sports activities for the student body.

2. Additional space is required for the development of a Centre for Public Safety which would serve such programs as Paramedic, Fire Science Technology, Law and Security, Police Foundations, Nursing as well as Hazardous Materials Response Training. Funding will be required to develop this centre which would be located in a vacant building on the Lambton College campus.
3. Funding is required to provide additional student study/common space, to be utilized by students in all programs. This is an important aspect of student life that will serve existing and any new programs.

Images

A series of images depicting infrastructure renewal issues at Lambton College were submitted, some of which are included in Appendix D.

Loyalist College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall (Equal Weighting)

Deferred Maintenance Backlog including Code Compliance

- More funding is needed to assist with the growing deferred maintenance which is currently at \$25.6M for Loyalist College.
- Many systems require upgrading or replacement to meet compliance with Codes, Acts and Regulations.
- Renewal of the infrastructure is important, to maintain a healthy and safe learning environment.

Equipment

- New/upgraded equipment is needed for instructional needs to maintain currency and support student development.
- Infrastructure to support the equipment is also required (i.e. data & voice networks, HVAC, etc.).

Energy Conservation Projects

- Increases in utility costs often reduce capital for facilities and academic needs
- In many cases it is difficult to combine energy conservation within project budgets due to the lengthy financial payback.

Other Capital Needs

- Renovations to support program adaptation or changes
- Furniture for academic and academic support areas

Impact of Capital Funding Levels over the Past 10 years

Buildings

The current allocation of \$322K is not an adequate amount to deal with the deferred maintenance that has been identified. The deferred maintenance costs 10 years ago were \$4M compared to \$25.6M as of 2005. Many building systems require renewal or replacement to meet current standards and building occupancy use. In addition, recent amendments to the Ontario Building Code approval requirements have added an additional cost burden.

Equipment

Appendix B:

College
Responses

The discontinued allocation of the Capital Equipment Renewal Fund (CERF) and the Apprenticeship Enhancement Fund (AEF) will have a severe impact on the financial planning for much needed equipment. It is extremely important for student development to have equipment that is current.

In recent financial planning exercises, Loyalist is pushed to leasing or financing for equipment capital. With an impact on future operational cash flows, student fees are increased to cover the leasing or financing payments.

Capital Funding Priorities from an Academic Perspective

The current academic capital needs at Loyalist for the next 3 years is \$4.3M. Leasing or financing of \$1.2M over 5 years is \$225K to \$250K annually.

1. *Equipment*

Capital for equipment is needed to keep up with new technology and is extremely important for student development.

2. *Academic Adaptation*

Capital to adapt space for the academic learning centred environments is also required. Often the changes to building systems (i.e. HVAC, fire alarms, lighting, etc) are not included in the renovations or alterations of space for academic space due to the limited financial resources available.

3. *New Furniture*

Capital for furniture in classrooms and offices is much needed. Technology has changed significantly over the past 10 years and with these changes, the existing furniture, which is typically over 20 years old, does not meet the ergonomic standards required for the students and staff of today.

Capital Funding Priorities from a Facilities Perspective

1. *Life Safety and Building Envelope Systems*

Upgrade, renewal or replacement of the Life Safety and Building Envelope Systems including the roofs, windows and sealants. Life Safety Systems: the majority of the current fire alarm system in the Kente building is over 35 years old and only used replacement parts are available. The estimated costs to replace the Kente building fire alarm system is \$700K. Building Envelope Systems: the need to eliminate infiltration of air and moisture into the buildings will help deal with the control of mould growth and increase energy efficiency for heating and cooling. The replacement of the Pioneer building roof is estimated at \$800K.

2. *Removal of asbestos*

Removal of asbestos containing materials. A survey of asbestos containing material (ACM) is to be undertaken and maintained as per the recent changes to the Ontario Health & Safety Act and Regulations. Removal of the ACM is required whenever alterations or renovations are undertaken. The estimated costs to remove the ACM in the Kente and Pioneer buildings is \$3M.

3. ***HVAC upgrade, renewal or replacement***

Upgrade, renewal or replacement of the HVAC systems in the Kente and Pioneer buildings. A recently completed study of the HVAC systems in the Lennox & Addington wing indicates the systems should be replaced or modified to meet the current American Society of Heating, Refrigeration and Air Conditioning Engineers Inc. standards and enhance air quality. The estimated costs to replace the Lennox & Addington HVAC systems is \$1.5M.

Appendix B:

College
Responses

Best Practice in other Jurisdictions

N/A

Compromised Program

The "names of the programs we could offer because the demand exists", but are unable to because our current instructional spaces cannot support them are:

- Entertainment Management
- Chef Apprenticeship - Level 3
- Baker
- Pastry Chef
- Pharmacy Technician

Images

A series of images depicting infrastructure renewal issues at Loyalist College were submitted, some of which are included in Appendix D.

Mohawk College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall

1. *Reinvestment*

Mohawk College facilities for the most part are now 40 years old. No substantial and sustained reinvestment or renewal has taken place in that time. Mohawk reported the replacement value of its buildings in the “2001 Capital Plan and Investment Report”, to be \$240,000,000. Today this figure would be closer to \$310,000,000. The College system’s plant directors have advocated that an ongoing reinvestment of 1.5% of the replacement value is needed to maintain buildings. Currently FRP funding at Mohawk represents only 1/6th of this amount annually.

Funding for reinvestment would actually create savings as the College would invest in energy efficient equipment. Our students would benefit from the updating of ancient labs and equipment, outdated student facilities such as Libraries, Lounges, study areas, and cafeterias.

2. *Accessibility*

The Ontarians with Disabilities Act requires the Colleges to start a program to make their facilities accessible. We have all completed the internal audits however, and at Mohawk some student classrooms, our TV studios, and B Wing require elevators in order to become accessible. Again funding is the key to solving these issues.

3. *Renovations and Code Compliance*

The general condition of areas such as corridors, landscape, classroom décor, faculty offices and furniture needs to be addressed. Large scale issues surround the funding of Asbestos Abatement and Part 4 Fire Code upgrades which cannot be undertaken without funding.

Impact of Capital Funding Levels over the Past 10 years

Buildings

When funding in the form of SuperBuild or enhanced funding through FRP has been available to upgrade the facilities great strides have been made. For example, only when large scale funding becomes available is it possible to start the process of replacing roof membranes. SuperBuild made it possible to replace large areas at the Fennell campus, which would not have otherwise happened.

Equipment

Investments have been made in four new boilers and one new chiller for the Fennell Campus. The College also started a program to replace old pneumatic controls with direct digital controls (DDC), but has never been able to afford to complete the job.

Consequently, the College now has a mixture of old pneumatic controls, first generation DDC which will not talk to any of the new 3rd generation controls installed in new construction.

Appendix B:
College
Responses

This College's deferred maintenance as reported in the 2001 "Capital Plan and Investment Report" was approximately \$18,000,000. We know this item has more than doubled since then and one item alone discovered this summer will add millions to this. The Colleges continue to struggle with funding the VFA reports which only accomplish draining valuable funds away from maintenance.

Capital Funding Priorities from an Academic Perspective

1. *Space Upgrades*

Funding is needed to upgrade the teaching environment with smart classrooms with data video projection, upgrades to computer and chemistry labs, furniture and exhaust equipment to meet Part 4 Fire Code, and refreshing of the 40 year-old furniture in other labs and faculty offices.

2. *Modern Equipment*

Purchase modern equipment for many shops and labs thus allowing our students to be trained on similar equipment to that which they will encounter in the workplace.

3. *Student Study and Socializing*

Areas are needed for students to study on campus in a quiet environment. Other areas for students to relax and socialize are also in demand.

Capital Funding Priorities from a Facilities Perspective

1. *HVAC and Energy Conservation*

Implementation of Mohawk College's \$9,000,000 Energy Conservation proposal. This project not only addresses energy savings but also addresses the replacement of aging mechanical equipment.

2. *Building Envelope*

Funding is needed to allow replacement of 35 year-old roof systems at Brantford Campus and the remaining 40 year-old roof systems at Fennell before damage to structure and interior systems occur. As these systems are replaced, energy efficiencies are realized through the upgrading of roof insulation.

Several times in the last 18 years the College has experienced severe flooding of the lower floors of "A" wing and "C" wing. Flood proofing these areas requires very costly storm water management retention ponds, mechanical diversion of roof water and check valves in major sewer outfalls.

3. *Accessibility*

There is a requirement under the Ontarians with Disabilities Act to not only make buildings accessible, but to also make the various parts of the building accessible internally. There are entire wings within our buildings which do not comply, and will require elevators in order to do so.

Best Practice in other Jurisdictions

S.A.I.T. in Alberta

A.P.P.A which is the largest association for Physical Plant administrators in institutions of higher learning in North America, benchmarks universities and colleges.

A.P.P.A.
1643 Prince St.
Alexandria, VA 22314-2818
U.S.A.
[www. appa.org](http://www.appa.org)

Compromised Programs

N/A

Images

N/A

Appendix B:

College
Responses

Niagara College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall

1. *Deferred Maintenance, Facility and Equipment Renewal*

As identified in the *Rae Review* constant under funding has created a very large deferred maintenance backlog. Annual facility renewal funding has historically been well below industry recommended standards of 1.5% of the building replacement values. We need a major infusion of capital dollars to deal with the backlog of deferred maintenance. Once those works have been implemented, we would require the above annual funding to maintain our buildings and their systems in a good state of repair. The constant erosion of our buildings and systems will continue if the above or a comparable program is not implemented.

Also, when one compares the provincial under-funding for general purpose operating grants against all other provinces, it is not hard to see what has created this very serious problem for the system. Do we spend our scant resources on deferred maintenance items such as boilers that are well beyond their normal life cycle or do we fund a new program that meets the immediate needs of our province's businesses and industries? "After all, we are in the business of education and maybe we can get another year out of those boilers." All too often is the discussion that takes place.

2. *New Buildings* (to replace old, high energy consuming, non-functional buildings)
Niagara College currently has a number of "temporary" pre-engineered buildings that are now almost forty years old. Investing annually, large amounts of renovation funds into these facilities to keep them operational has restricted the college from addressing our current and future academic and student needs. Wasted energy, under utilized ineffective program space and expensive maintenance will continue for the foreseeable future. Without sufficient capital funding to replace these facilities we will not be able address the above needs. Replacing these facilities will also have a major positive impact on our 1st priority.

3. *Academic Laboratories and Equipment*

Updated and current industry standard laboratories and equipment are critical to the continued success of the college system. Provincial under funding has made it increasingly difficult for the College to meet the minimal needs of our communities and businesses that rely on our students having been trained on current industry equipment and real world environments.

Impact of Capital Funding Levels over the Past 10 years

Buildings and Equipment

VFA audits have shown that deferred maintenance continues to escalate and while our college has invested large amounts of funding, the constant provincial under-funding to

the system and failure to recognize the impact that it has had on the buildings and equipment has only created a larger problem. When no win decisions are made due to limited funding, usually they are rightfully made in favour of the students and their immediate needs, there are often no other options available. This unfortunately results in the buildings and equipment repairs or replacement being put off another year. Eventually, equipment failure is the result.

Appendix B:
College
Responses

Capital Funding Priorities from an Academic Perspective

1. *Replacement of Pre-Engineering Buildings*

Replacing old, energy wasting, temporary 40 year-old pre-engineered buildings (I will quote our Associate VP Academic)

Replacement of the classroom space in the 40 year-old Mackenzie Building. To satisfy students' current expectations, we require new space configured in the "learning commons" model with classrooms appropriate for multi-media and enhanced on-line learning using our Blackboard system. This new space should also provide an expanded open access computer lab for student use.

2. *Replacement of Gymnasium*

Replacement of Welland Gym (currently located in above building)

Replace with double gym. Use of the (single) gym as a scheduled academic learning space for programs such as, Fitness and Health Promotion, Recreation and Leisure Studies, Police Foundations/ Law and Security and Paramedics conflicts with general student use, intramural and varsity sports.

3. *Renovations*

Renovations to the East Wing at Niagara-on-the-Lake campus

Install an additional Culinary Lab to accommodate increased enrolments in Apprentice Cook/Baker, Chef Training and Culinary Management. A Wine Appreciation Lab and space for the proposed Esthetics/Spa Management Centre.

Capital Funding Priorities from a Facilities Perspective

First, Second, and Third Priorities – as above

Best Practice in other Jurisdictions

There are many models being used by other jurisdictions but until the under funding issue is addressed, the question is moot.

Compromised Programs

Expanded/Specialty Welding Program

There is a province-wide demand for skilled welders. Welding requires expensive equipment and specialized facilities. The current program is housed in a 40 year-old pre-engineered building that was originally intended as temporary space. The needs of the program limit the space available for it and currently there is no expansion potential.

Wine Discovery Centre

The viticulture and hospitality industries have created strong local and national demands for trained and knowledgeable people. Niagara is uniquely qualified by climate and environment to provide for this training. Currently there is not enough space to expand operations or academic space but better utilization could be made of restrictive Niagara Escarpment controlled lands by creating a facility at the Niagara-on-the-Lake campus.

Fitness/Health Promotion and Police Foundations

Both of these programs do run but applications always far exceed the amount of space available. These two programs share different parts of the same 40 year old pre-engineered – temporary building which is very limited in space and not energy efficient. As well the two programs compete with the sports programs for time within the one existing gymnasium which does not meet modern size/height requirements for academic activities or competition sports.

High Definition TV

The recent development and implementation of High Definition (HD) TV has created an industry wide demand on post-secondary institutions to provide specialized training in this new standard. The introduction of a new standard always places extra demands on facilities as there is not only the need to purchase all new equipment but there is a requirement for extra “floorspace” as both new and old standards must be taught in parallel until the older standard is phased out. The cost to equip the two studios required is approximately \$1.5 million.

Broadcasting – Radio, TV and Film

The existing Broadcast, Radio, TV and Film program annually receives over 700 applications for only 90 available openings. To accommodate another 18 to 36 students would require the addition of approximately 15,000 sq ft including an additional television studio, control room, edit suites and related support space.

Advanced Television Production Graduate Studies Certificate

This program would meet the current and emerging needs of Canada’s major and local TV broadcasters. Students would develop advanced skills in broadcast management as well as gain proficiency in the application of HD technologies (cameras, control room, edit, post-production).

Images

A series of images depicting infrastructure renewal issues at Niagara College were submitted, some of which are included in Appendix D.

Northern College

Appendix B:

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College
Responses

Capital Funding Priorities in CAATs System Overall (Equal Weighting)

The colleges' Facilities Directors in a conference call concluded that the following needs are of equal priority. Funding should be allocated to address the following needs:

- Substantial increase in capital dollars for addressing deferred maintenance and infrastructure renewal for our aging facilities. At Northern College, our buildings have been appraised at \$128M. To properly maintain these buildings 1.5% of the renewal cost should be allocated annually (as per industry standard) this would amount to \$1.9M annually, we receive \$250K.
- Funding for energy conservation and retrofit projects to reduce utility operating costs. Northern College has approximately \$3.5M worth of heating and cooling equipment of which \$1.75M needs to be replaced in the next several years.
- Funding to address code, regulations, and safety/accessibility issues
- Funding to address academic, lab and learning resource centre space renewal
- Funding to address academic and information technology equipment renewal
- Funding to address space consolidation and new facilities to accommodate new programs
- Replacement of AEF & CERF funding programs in appropriate formats

Impact of Capital Funding Levels over the Past 10 years

Northern College consists of four campuses with approximately 550,000 square feet of space. Our annual allotment under the Facilities Renewal plan is about \$250,000 (45 cents/SF) which is 0.19% of the replacement value of the buildings (industry standard is 1.5%). Construction costs have more than doubled over the past 5 years, yet the annual grant has remained the same or decreased. Deferred maintenance is now in the \$5M range

A portion of the Facilities Renewal money that is received goes towards renovating classrooms and laboratories to accommodate student needs leaving little money for:

- Mechanical (heating, cooling, ventilation): These systems are old, not energy efficient, and for the most part original to the building.
- Electrical (switchgear, lighting panels, lighting): Some lighting panels are 40 years old with no replacement parts, and main switch gear equipment is 30 or more years old.
- Envelope (roofing, windows, siding, doors): Flat PVC roofs are aging with inadequate insulation levels.
- Flooring (carpets, tile, hardwood)
- Interior walls (painting, drywall) ceilings, door hardware, etc.

Buildings have become old and have a run down look and feel. Some HVAC systems (especially boilers) are at the end of their life and failure is imminent (building closure may result with repairs taking several days to weeks as parts and contractor availability cannot be predicted). Roadways and sidewalks are also deteriorating with no funds to repair.

Appendix B:
College
Responses

Do not understand the requirement to log maintenance requirements through VFA software if nothing is going to be done to increase funding.

Capital Funding Priorities from an Academic Perspective

1. *Expansion*

A building expansion to accommodate Health Sciences (nursing, personal support worker, etc) Emergency Services (police, paramedic, fire) and Trades/Technology programs (\$25M). The campus has no chemistry or biology labs; hence students are going to a local high school to use their facilities. Trades shops are 30 years old, outdated, and can only accommodate three trades programs (Motor Vehicle Mechanic, Heavy Duty Equipment Mechanic, and Millwright). No other trades programs can be offered due to lack of facilities. Over the last two SuperBuild awards, Northern College received a total of \$60K. Also required is equipment to outfit laboratories and shops.

2. *Classroom Technology*

Classrooms today are equipped with more than a blackboard and a piece of chalk. They require a combination of computer projectors (\$4,000 ea), Smartboards (\$15,000 ea), tablet PCs (\$4,000 ea), video and audio conferencing (\$10,000 ea, plus bridging equipment \$150,000) data connections, wireless technology, etc.

3. *Renovate Classrooms and New Equipment*

Provide funding specifically to renovate classrooms, shops and lab space. Provide program specific equipment funding for technology/trades programs.

Capital Funding Priorities from a Facilities Perspective

Other than the requirement of a building expansion (see above)

1. *Replacement of Heating Boilers and HVAC Multi Zone Units*

Two campuses (each with 2 boilers) rely totally on these boilers to provide heat during the winter months. The boilers are over 30 years old and at the end of their life. Estimated cost to replace all four boilers - \$900,000. The tenders for two boilers at one campus came in at \$226,000 (June 2006) but our entire Facilities Renewal Grant is \$250,000, leaving essentially nothing for anything else, hence the project has been deferred.

One campus has over 50 rooftop HVAC units, of which 5 are of the multizone variety. Three of the multizone units have been replaced leaving two units that are 30 years old. The cost to replace each multi-zone unit is in the \$150,000 range.

2. *Roofing*

With approximately 350,000 square feet of flat roofing and with a 30 year life expectancy, about 12,000 square feet of roofing should be replaced yearly. At

\$20/SF (4,000 SF replaced in 2006 at a cost of \$80,000) this would cost \$240,000 yearly. Our entire grant is only \$250,000.

Appendix B:

College
Responses

3. ***Deferred Maintenance***

Address \$5M deferred maintenance backlog along with accessibility requirements.

Two elevators are also need of upgrading (30+ years old)

Note that along with the larger requirements, it is the sum of the smaller requirements that is also taking its toll on resources, a “death of a thousand cuts”.

Best Practice in other Jurisdictions

See OCFMA response in Appendix C.

Compromised Programs

- Construction of new Heavy Duty Equipment and Motor Vehicle shop areas due to congestion and to have the space available to introduce a second year in each of these programs so as to compete with other colleges.
- Renovation and expansion of our Millwright shop area, once again due to congestion and to have the space available to introduce a second year into this program of study so as to compete with other colleges.
- Construction of a Veterinary Science building. For the past ten years, this program has been delivered at three locations (i.e. some courses are at the campus, some courses are at one rental facility, and some courses are at another rental facility). Students are required to travel to three different locations during the week within the community. The Accrediting Agency has requested that the program be consolidated at one location or they will remove their accreditation. Without accreditation, graduating students will not be able to practice as Veterinary Technicians, hence why enroll in the program? Program death will be the consequence if capital dollars are not made available to consolidate the program into one location. Training Delivery Agent’s for Construction Craftsperson and Plumbing are new apprenticeships to Northern College that require space.
- In the area of technology, new programs in Building Inspection Technician and Geographic Information System Technician require classroom and lab space, neither of which is currently available.
- In Health Sciences, program growth in Bachelor of Science-Nursing, Practical Nursing and Personal Support Worker necessitate additional classroom space; additionally, we plan to develop new programs in Medical Lab Assistant (1-year), Medical Lab Technologist (3-year); and Occupational Health and Safety Nursing (Specialty). Nursing students are taking their chemistry courses at a high school because there is no chemistry lab at the campus.

Images

A series of images depicting infrastructure renewal issues at Northern College were submitted, some of which are included in Appendix D.

St. Clair College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall

1. *Deferred Maintenance*

The College system as a whole was mandated through the VFA process to identify deferred maintenance requirements which is currently at the \$700 million level. With this information in hand there doesn't appear to be, with any certainty, a committed effort to retire this deferred maintenance to any extent. Every Facilities Department within the College system has to compete with academic needs. Needless to say, the academia usually receives first priority. Commitment of a multi-year funding program must be instituted if Colleges are going to systematically retire the current level of unacceptable deferred maintenance.

The current customary approach to addressing deferred maintenance issues is by making funding available only upon catastrophic failures that have significant impact on the learning environment. Deferred maintenance dollars need to be funded adequately and separately to prevent competition with the academics and to ensure that deferred maintenance is systematically addressed.

Most Colleges currently use the FRP funding as their major source to address deferred maintenance issues. Little to no monies come from the operating coffers as priority is given to "academic needs". The current funding mindset needs to substantially change in order to stop and reverse the *Decaying Campus* syndrome.

2. *Energy Conservation*

The largest single line budget item in any facilities budget consists of utilities, yet most institutions either do not have the ability or desire to fund retrofits or replacements to aging systems in order to substantially decrease utility expenses. The College system as a whole has a huge potential for reducing the provincial electrical requirements and the associated benefits that would result. Modernization of utility systems will concurrently retire approximately twenty to thirty percent of associated deferred maintenance items as is substantiated by current endeavours at McMaster University and the University of British Columbia.

Failure to be proactive in reducing energy consumption will continue to rob precious dollars that will need to be earmarked for larger and larger utility bills. St. Clair College currently estimates that \$3 million committed to energy conservation initiatives would provide an annual savings of approximately \$500,000. Due to our current utility agreements in place, failure to implement the proposed energy conservation projects will result in an annual cost increase of approximately \$600,000 (with escalations into the future) commencing in 2009/10 based on projection of utility costs.

To not seriously address this issue should be viewed as an unacceptable option.

3. ***Adaptability/Code Requirements***

As academic programming requires new or upgraded environments little funding is earmarked to ensure that adequate physical amenities can be provided to these renovated spaces. Most of the funding goes towards things like new furnishings, information technology equipment and aesthetics. Consequently, the physical environment of the learning space is unable to be maintained at acceptable levels due to inadequate/antiquated HVAC systems and electrical infrastructures.

More often than not Facility Management departments are required to spend precious operating dollars to correct or update new legislative codes which further exasperate the existing levels of maintenance. As legislated code requirements are usually non-negotiable, Facility Departments find themselves competing for their own operating dollars to implement these new standards.

Provincial funding bodies must fund institutions for these legislated changes as they occur to stop the “robbing Peter to pay Paul” scenario.

Impact of Capital Funding Levels over the Past 10 years

Buildings

Due to the inadequate level of capital funding to address life cycle issues of facilities, building envelopes are reaching stages of various degrees of failure, further adding to utility costs, environmental issues (mould) and impact the comfort levels of occupants. Buildings have the appearance of being “tired” and in much need of “makeovers” and are failing to provide the comfort levels and attractive surroundings which impede the ability of an institution to attract students from competing organizations.

Equipment

Inadequate funding to replace aging equipment has resulted in facilities departments having to expend more and more money in maintaining obsolete, outdated and unreliable equipment. Constant equipment failure results in inconveniences to students and faculty, additional costs due to the requirement of emergency repairs and unnecessary disruptions to the learning process.

Capital Funding Priorities from an Academic Perspective

The information noted in this section is as a result of surveys conducted in June 2006 through a sub-committee on Teaching and Learning Environments (Academic Council).

1. ***Noise***

Due to inadequate funding for physical plant issues, particularly as it pertains to renovated spaces, academic spaces are affected by poorly insulated walls (audio/visual presentations, music/singing programs) which by their very nature are noisy activities.

Inadequacies of heating, cooling and ventilating systems often result in classroom doors being propped open causing disturbances from busy hallways. Improper system sizing often occurs when supporting physical infrastructures cannot be

addressed during renovations due to lack of funding to properly size physical plant amenities to the activities of the renovated space.

Appendix B:

College
Responses

2. ***Temperatures***

As made mention above, students and faculty often complain that spaces are too hot/too cold resulting in an environment that is not conducive to their educational experience. Instances of illness and absence from class are attributed to these shortcomings.

3. ***Overcrowding***

Due to improper configuration of classroom spaces and placement of fixed student stations use of current day teaching techniques cannot be implemented or fully benefited. Small overcrowded spaces heat up quickly, become very uncomfortable and are disruptive as students and faculty complain of headaches and concentration problems.

Capital Funding Priorities from a Facilities Perspective

Please refer to comments and statements as noted in Question 1 (Capital Funding Priorities in CAATs System Overall).

Best Practice in other Jurisdictions

Association of Physical Plant Administrators (APPA). Some American educational institutions have implemented capital sustainability endowments as part of their new construction initiatives. In other words, any new building which is to be constructed must have a trust account established which will adequately maintain that new construction from interest revenue generated from that trust.

Compromised Programs

N/A

Images

N/A

St. Lawrence College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall

1. *Deferred Maintenance, Facility & Equipment Renewal*

The College is not funded at an adequate level to maintain its facilities. The industry standard for this level of funding is 1.5% of current replacement value. At St. Lawrence College that would be approximately \$3 million dollars annually. Historical funding for this has been approximately \$500,000 or 15% of the required amount. Each year that this is allowed to continue increases the backlog of projects by \$2.5 million dollars.

This is compounded by the fact that the colleges general purpose operating grant is also well below national norms. This creates an internal dilemma for College in the distribution of their scarce resources, i.e. hire new professors or fix the roof. As a result building systems are often not replaced until they have failed. Separate funding streams, both at adequate levels, is the right solution to this problem.

A similar industry rule of thumb exists for building modifications required to adapt for changes in use. It is in the same order of magnitude as deferred maintenance and requires an annual allocation of \$2.5 to \$3 million.

2. *Academic Laboratories and Equipment*

Existing academic laboratories and equipment need to be updated to stay current with industry standards. In addition new programs are being added, often with little consideration for the true cost of equipment or facility modifications to support them. The CERF and AEF funds need to be reintroduced and increased dramatically.

3. *Facility Modifications to Maintain Code Compliance*

As building codes, fire codes, accessibility legislation etc. change, existing buildings should be upgraded to stay current with the code. Funding must be provided specifically for this purpose. This requirement is in addition to either of the two requirements identified above.

The issues noted above are well documented in the “Rae Review”.

Impact of Capital Funding Levels over the Past 10 years

Buildings & Equipment

Requirements are 1.5% of current replacement value which equates to \$3,000,000 per year.

The historical level of funding has been \$500k per year. The shortfall is \$2.5 million per year. This equates to a backlog of \$25 million in projects that should have been

completed by now. In 1995, J. L. Richards & Associates Limited was commissioned by St. Lawrence College to prepare Technical Audits of the buildings on the Kingston, Brockville, and Cornwall Campuses. In 2003 with the Physical Resources staff, J. L. Richards prepared an update to the 1995 Technical Audit. The Technical Audit identified a detailed list of projects valued in 2003 at \$22 million dollars. A copy of the audit is available on request and has been provided to the ministry.

Appendix B:
College
Responses

The College was pleased to receive funding under the SuperBuild fund to add new space in support of expanded enrolments. However no corresponding increase in either facility operating costs or capital replacement costs was made. Provision for cyclical renewal should be accounted for when a building is commissioned into use. Failure to do so is both short sighted and misleading.

Capital Funding Priorities from an Academic Perspective

1. ***Upgrade Labs***
Provide specific capital funding to upgrade existing laboratories to support existing academic programs.
2. ***Upgrade lab Equipment***
Provide specific funding to upgrade academic laboratory equipment to support existing academic programs.
3. ***New Lab Equipment***
Provide specific funding to acquire new equipment as well as new or renovated laboratories to support new academic program offerings.

Capital Funding Priorities from a Facilities Perspective

In 2006 the College retained Ameresco to conduct an investment grade energy audit of its facilities. The college requires \$2.9 million dollars in capital funding to implement energy conservation measures. The simple payback on these projects is seven years. A copy of the audit is available on request.

Other Priorities

All the projects listed in the technical audit mentioned above have been assigned priorities on the following basis:

- | | |
|------------------|---|
| First Priority: | Systems whose failure would interrupt academic delivery |
| Second Priority: | Systems whose failure would result in collateral damage to other building components |
| Third Priority: | Life Safety Systems upgrades necessitated by retroactive legislation or obsolete systems which fail to provide an appropriate level of protection to the buildings' occupants |
| Fourth Priority: | Energy conservation or reduced environmental impact |

Fifth Priority: Life Cycle Replacement. These are systems which are in good working order and are expected to perform satisfactorily to the end of their typical expected service life with regular preventative maintenance.

Appendix B:
College
Responses

They all need to be completed on the basis of a five year schedule. To pick two or three projects is too simplistic an approach. Again the projects and their priorities are contained in the audit which is available on request.

Best Practice in other Jurisdictions

The root cause of the problem is a critical lack of funding. Until that is addressed the process of investment is a moot point.

Compromised Programs

N/A

Images

N/A

Sault College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall

1. *Deferred Maintenance*

Failure to reduce the backlog of deferred maintenance within a reasonable time frame will result in compounding an already extensive list of unmanageable deficiencies. Repair/replacement cost will only escalate. Not addressing deferred maintenance issues increases time staff spend on repairs, may have code compliance problems and depending on type of deficiency may lead to significant replacement costs down the road.

2. *Renovation/New construction*

Funding for new construction/renovations is important as it is necessary to meet changing programming/staffing and student needs. Failure to build/renovate limits flexibility needed in order to meet changing program mix, advanced technological changes and limits growth and enrolment potential.

3. *Academic Equipment*

Much of our existing academic equipment is outdated and in need of replacement. In order to keep up with changing technologies new equipment needs to be purchased and failure to do so may have an impact in enrolment growth, quality of education and enrolment growth.

Impact of Capital Funding Levels over the Past 10 years

Buildings

Limited capital funding has resulted in a band aid approach in addressing the growing list of deferred maintenance, e.g. original roofs/windows are repaired and patched as opposed to replaced.

Equipment

Depending on replacement cost equipment is replaced if necessary however equipment such as elevators, boilers and boiler piping are aging and carry huge replacement costs. Repairs to this type of equipment are carried out on an emergency or as needed basis. In the not too distant future there is potential for complete failures and a significant replacement costs. Capital funding over the last ten years has been grossly inadequate resulting in a deferred maintenance backlog of approx. four million dollars ten years ago to about twelve million dollars today.

Capital Funding Priorities from an Academic Perspective

Appendix B:

College
Responses

1. ***Learning resources***

New equipment in workshops and labs, particularly in the areas of mechanical, water treatment, and chemistry. Need up-to-date equipment for teaching. Education programs should be leading edge to prepare grads for workforce (we are currently using 20-year-old equipment). Approximately \$200,000 required.

Equipment for new programming – We are unable to bring on any new programs without equipment.

New aircraft and simulation equipment – Fleet requires renewal in near future. Aircraft close to end of lifespan.

2. ***Classroom renovations***

Some classrooms are very outdated with poor acoustics and unattractive appearance. We cannot compete with other colleges to recruit students if our student areas are not conducive to recruitment and to learning.

3. ***Classroom furniture***

Current seating is damaged. Many chairs are cracked/broken. Desks splintered and many not be appropriate for collaborative teaching methods.

Capital Funding Priorities from a Facilities Perspective

1. ***Roof Replacement***

There is a need to replace the roofs on four wings of the college; two of those are 40 years old. In the past we have spent considerable time and money on repairs but according to the consultants report these roofs are 10 years past their life expectancy and patching is not money well spent. Roof replacement on the four wings mentioned in the consultants report are estimated to cost 1.75 million dollars

2. ***Building Envelope***

About 50% of the College has original windows, exterior doors, etc. in some cases these components are 40 years old. In addition to creating a high maintenance factor existing components are very energy in-efficient, resulting in high energy cost and added operational expenditures.

3. ***Mechanical/Electrical Equipment***

Aging equipment, e.g. elevators, boilers, boiler piping, lighting are at the point where repairs are no longer cost effective. In some cases replacement parts are no longer available and repair costs and down time is increasing. Approx. 55% of the colleges lighting is in need of replacement or retrofit as they are not energy efficient and existing replacement lamps and ballasts will be phased out over the next few years. There is also significant increased energy costs associated with use of existing lighting. Retrofits of our existing non energy efficient lighting will cost approx. \$250,000.00

Best Practice in other Jurisdictions

N/A

Compromised Programs

Paramedic
Dental Hygiene
Diagnostic Imaging
Robotics

Images

N/A

Appendix B:

College
Responses

Seneca College

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Appendix B:

College
Responses

Capital Funding Priorities in CAATs System Overall

N/A

Impact of Capital Funding Levels over the Past 10 years

N/A

Capital Funding Priorities from an Academic Perspective

N/A

Capital Funding Priorities from a Facilities Perspective

N/A

Best Practice in other Jurisdictions

N/A

Compromised Programs

We are short of classroom space and it will continue to be a problem as the new degree in Computer Studies adds its additional 3 years. We have 90% + utilization in many of our classrooms and generic labs, and in the winter semesters our studios are fully booked as well.

In the School of Communication Arts, some of our broadcast equipment is 15 years old and we will soon need to move to HD TV equipment. We also need to ensure that we have enough storage/servers for all of the content that is being generated. This semester we will run out of storage space mid-term, which is hard on students doing longer term projects.

In Computer Studies, we need to ensure that we keep the labs current (3 year turnaround). Some of the labs are now on 4 and 5 year turnarounds. Our biggest pressure will be maintaining the equipment for the Networking programs, especially for the Informatics and Security Degree latter years.

Faculty of Applied Science and Engineering Technology (FASET)

Appendix B:

Most schools/units have a supply of old equipment, some of which is broken, some operative, due to constant maintenance from the technician and faculty.

College
Responses

Capital **equipment** is required for a number of reasons; CERF funding allocated to FASET was greatly appreciated, but satisfied only 25% of the needs of all six major units. Now that it has been discontinued the Faculty is left with capital of the order of the minimal required to keep our planes in the air and two computers. Each year we have fallen further and further behind. All programs are affected. Capital is needed.

- To maintain the status quo – in fast changing technology areas equipment becomes out of date (in some sectors) quite quickly and industry requires that graduates have some experience on equipment that is standard. This may not mean the newest and highest end, but certainly technology that is in use.
- To increase lab sections sizes with increases amount of instruments and therefore increase the possibility of decreasing the number of sections
- To increase student hands-on ability by allowing more equipment/class (therefore increase grad employability)
- To increase technical skills by increasing the technical level of the equipment (therefore increase grad employability)
- Replace old equipment that we can no longer repair or find parts for. Our staff regularly shops on E Bay for old equipment that we can use for parts to keep our equipment going.

Need for additional lab space

At the present time degree students from Aviation and Environmental Site remediation must travel to York for their Chemistry subject as no Chemistry or Environmental Analysis lab was built at Newnham Campus. The lab was planned but dropped, along with three other labs just prior to construction. Students have complained formally to the chair about this situation and assessment teams have identified this as a weakness or concern for these programs. Beginning in 2007, some 40 students in the Environmental Technology program and 20 students in the Control Systems Technology program will face the same challenge.

The School of Biological Sciences and Applied Chemistry (BSAC) and the Jane Campus have reached capacity. BSAC is now scheduling into the evening hours with day labs due to programs from Newnham needing space and the Jane Campus begins shop classes at 7:00 am, which is an access issue for some students. The School of Fire Protection Engineering Technology offers a Pre-Service Fire Fighting program. Students/program share storage facilities with the Grounds area and use a portion of the parking lot for their classes.

Enrolment in BSAC has increased steadily over the last 5 years but has reached a maximum due to limited lab space in specialty labs therefore no opportunity of continued increase in student numbers

Specific examples from BSAC:

Appendix B:

- Introduction to the Pharmaceutical Industry (Production/Manufacturing)
Requires a separate pharmaceutical production/manufacturing facility rather than the present testing/production/manufacturing, therefore can only be offered in the summer. Graduate placement is very high for the limited number of students who have completed the program.
- Advanced Techniques
May not be able to offer due to present limited amount of equipment used by all students in the school.
May not be able to offer due to high end equipment that will be required but not present

College
Responses

Images

A series of images depicting infrastructure renewal issues at Seneca College were submitted, some of which are included in Appendix D.

Sheridan Institute of Technology and Advanced Learning

Appendix B:

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College
Responses

Capital Funding Priorities in CAATs System Overall

1. *a) Deferred Maintenance of Buildings and Infrastructure*

The College is challenged with many issues such as funding for academic equipment, modifications to existing buildings to accommodate changing program requirements and escalating energy costs.

In order to meet these challenges the first priority must be to have buildings that are in good condition. The envelope must be tight, the electrical, HVAC systems, and life safety systems (i.e. fire alarms, emergency generators, etc.) must be fully functional and in good condition. Aesthetically the College must be at a level to attract and retain students, staff and faculty and provide an inviting environment.

The present funding levels for deferred maintenance allow the College to accomplish some of the issues that would cause serious impact to the College operations but are inadequate in terms of total need. The present funding for deferred maintenance is sizably less than the annual depreciation of the building systems.

The existing funding is approximately 15% of what is required based on the findings of Vanderweil Facility Advisors (VFA Ltd).

b) Additional Academic Space

The government of Ontario has announced in its “Reaching Higher” plan, the need to create additional student spaces in post secondary education. Sheridan College is constantly optimizing its space by improving space utilization, but in order to “grow” the enrolment the College requires new net additional space. This requirement has become a significant limiting factor in providing quality education and training to additional Ontario students.

2. *Funding for Energy Conservation*

The energy costs to operate the College facilities are escalating at a high rate. The College needs to reduce the energy costs by investing in energy efficient equipment and making major modifications to existing systems.

3. *Adaptation*

Modification of existing facilities to match current code requirements to the new standards in relation to accessibility, and health and safety issues. Also required is adaptation of learning environment to program requirements of the 21st century technology including capital funding for academic equipment.

Impact of Capital Funding Levels over the Past 10 years

Appendix B:

Facility Renewal Program Capital

College
Responses

Over the past 10 years the College has received approximately \$7 M in FRP (Facilities Renewal Program) funding.

The majority of these funds have been used for the following:

- *Health and Safety Issues*
Numerous Health and Safety projects such as mould removal, PCB waste removal, asbestos removal has been accomplished.
- *Building Envelope*
The College has renewed/restored many of the roofs at the College. There have been curtain wall upgrades, new windows, sealing of exterior membranes. This was done in areas where the repair/replacement was mandatory as without these repairs extensive damage would have been caused thus affecting the basic operation of the College.
- *HVAC*
There has been a chiller replacement at the main campus, upgrades to the Building Automation System, and some refurbishing of HVAC systems which have failed.
- *Interior*
The interior appearance of the College (sections) is refurbished on an annual basis. The existing funding levels the College can only repair/replace equipment and building systems that have actually failed or will be imminent failures. This causes management to be act in a reactive versus proactive manner.

The study of the Facilities as performed by Vanderweil Facility Advisors (VFA Inc.) details that a funding level of approximately \$6M per year is required by Sheridan College to maintain existing FCI (Facility Condition Index) at 0.17.

At the current funding level it is predicted that by 2025 the FCI will be above 0.75

Academic Capital - Capital and Equipment Renewal Fund. (CERF)

The CERF program has been terminated. In the past this funding was used to update classroom and lab equipment and to create a number of “Smart” classrooms for teaching purposes.

Capital Funding Priorities from an Academic Perspective

1. *Additional Space*

In order to accommodate the goals of the Government of Ontario’s plan entitled “**Reaching Higher**” Sheridan College has to build additional space.

2. ***Space Adaptation to 21st Century Technology and Capital Equipment***

The learning environment has changed. Teaching is performed with laptop computers, podiums with projection screens connected to computers. Each work station has to be equipped with both communication and electrical services. The IT and Electrical infrastructure has to increase significantly and in most cases the cooling load within the environment increases thus causing modifications/additions to the HVAC infrastructure.

The technology evolves quickly and the life of equipment is very short due to technological advances that occur. Capital Equipment needs constant replacement.

Appendix B:

College
Responses

Capital Funding Priorities from a Facilities Perspective

1. ***Deferred Maintenance of the Buildings and Infrastructure***

At the present rate of deferred maintenance funding the studies and assessments of VFA Inc calculate that within the next couple of decades the FCI (Facility Condition Index) will be well above 0.75.

2. ***Energy Conservation Funding***

In order to substantially reduce the operating costs of the College and ultimately the power generation required of the Province of Ontario and meet the Ontario Colleges “State of Readiness” report for ACCATO and the Ministry of Energy funds should be allocated.

3. ***Adaptation***

Modification of existing facilities to meet current code requirements relating to accessibility, and Health and Safety issues. Adaptation of learning environment to program requirements of the 21st century including capital funding for academic equipment.

Best Practice in other Jurisdictions

Brief description of best practice:

- 1) **Gather all data required.**
- 2) **Prepare plan.**
- 3) **Implement the Plan through Funding.**
- 4) **Monitor the Plan on an annual or semi annual basis.**
- 5) **Review Plan on a continual basis.**

Compromised Programs

N/A

Images

N/A

Appendix C — OCFMA Response

To supplement the series of individual college responses, the Executive of the Ontario College Facilities Management Association (OCFMA) submitted a system overview.

Appendix C:

OCFMA
Response

September 5, 2006

Michel de Jocas
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RE: Capital Funding Priorities

In response to your request for input from Facilities Departments across the province, the Executive on behalf of the membership has prepared a system overview.

We were unable to reach consensus on priorities in the system for a number of reasons which include:

- Overwhelming concern that if we set one priority over another government may choose to fund one and not others as recently demonstrated with the curtailment of the College Equipment Replacement Fund (CERF) and the Apprentice Enhancement Fund (AEF), which is causing redirected prioritization of the already inadequate Facilities Renewal Program (FRP) to other causes in several cases, and their failure to adopt the recommendations outlined in the Rae Review which called for multi year funding of 200 million for deferred maintenance. Facilities departments cannot afford to loose what little capital they currently receive to keep the facilities operating.
- Each College will have its own priorities that would fall into different categories depending on the particular circumstance of that College
- Inability to quantify the need in dollars given the sheer magnitude of capital requirements including the deferred maintenance backlog.

We have elected instead to provide commentary on various areas of under funding and to provide background and illustration of some of the issues.

Operating Funds

Colleges still remain far below norms in terms of operating budgets and are falling further behind each and every year. Over the period of 2004/2005 total facilities operating budgets increased by 3% but every expenditure category directly impacting the maintenance of buildings and building infrastructure decreased. An increase of 15% in utility costs which represents 34% of the average facilities department costs is the largest single contributing factor to the continued erosion of facilities maintenance. The most difficult aspect to quantify is the continued erosion to our buying power; every business we buy products and services from has been affected by such escalating utility and gasoline costs, passing such costs through to us.

Deferred Maintenance Backlog

As indicated in previous reports, the system is critically under-funded in the area of major maintenance or building equipment and systems renewal. The deferred maintenance backlog for Colleges is currently valued at approximately \$700 Million. Industry standards indicate an investment at a minimum of 1.5% of replacement value annually is required to address major maintenance issues. The College system currently operates approximately 21.5 million square feet and, at a conservative replacement value of approximately \$250 per square foot, would require an annual investment of \$80.8 million per year. Our current level of funding is only \$13.3 million, less than one-fifth the amount required according to industry standard. With buildings that on average are 35 to 40 years old, major repairs and replacements are now significant and include, as an example, major mechanical systems, including chillers, boilers, and related distribution piping and pumping systems, major electrical systems, including transformers, switchgear, generators, fire protection systems and related distribution systems, building envelope systems, including roofing, building skin, windows and doors, site works, including roadways, outdoor lighting, security systems etc.

The notion of sustainability in the College is a fallacy under the current funding model. To take sustainability to a closer reality, in addition to the desperate need to increase annual allocations, the Colleges need a major one time infusion to address the outstanding (and growing annually) \$700 Million deferred maintenance backlog.

Adaptation

This is an area of expenditures which has not been formally acknowledged by government at all. The rules around the Facilities Renewal Fund clearly indicate its first priority is for renewal of building systems, equipment and infrastructure; however it does not exclude its use for adaptation. Adaptation is defined by industry as meaning numerous things, including alterations to meet new legislative codes such as fire, health and safety, environmental, building, accessibility and, more importantly, it means changing the use of a facility into a new use from its original use and/ or updating a space to meet changes in academic curriculum and delivery, changes in technology and adapting space to better replicate current industry practices. Imagine teaching practical nursing in a lab setup 30 years ago to simulate today's hospital setting. Any student taught in such a facility would certainly be setup to fail in today's hospital environment. It is a constant struggle to hold onto the facilities renewal funds for deferred maintenance and not program renovations or adaptations.

Current industry standards indicate a required annual investment of 1.0 to 1.5% of replacement value to meet adaptation issues. Projects of this nature are numerous and significant and while not quantifiable on a system basis, there are enough examples at any single college to indicate that we have a significant backlog and pent up need to indicate investment should be at the maximum level of 1.5%. For the system this translates into an additional requirement of \$80.8 million per year.

Energy

While this area may soon be considered an adaptation project as a result of government legislation to reduce consumption or demand by 10%, energy conservation is still considered a separate issue to those previously mentioned. OCFMA in conjunction with ACAATO and the Ministry of Energy conducted a readiness study to quantify the opportunity that exists in the College system to reduce its overall demand for Energy. This study revealed an investment of \$57 million (now \$60 million) to execute energy retrofit projects would return much needed operating dollars to maintenance operations, reduce some deferred maintenance and reduce overall energy demand by 2626.7MW and 92,950MWh.

College Equipment Replacement Fund (CERF)

A large part of the College mandate is to provide career ready graduates to promote growth and sustain the economic engine of Ontario. The training colleges provide depends a great deal on practical training and hands on experience that relates directly to the industry or field the student is preparing for. It serves no purpose to train students in the use and operation of equipment that is no longer being employed in the labour market. It also has to be recognized that the academic equipment inventory in any single college can range from \$1,500 computers to \$60,000 oscilloscopes to \$100,000 simulation mannequins to \$250,000 sound boards and digital radiography equipment. With rapid and significant changes in technology in every industry, the job to keep college training current and relevant is becoming more difficult. In addition, it has to be recognized that the large volume of students the Colleges are training means that many multiple pieces of equipment are needed to deliver the appropriate depth and level of training that employers expect.

We have not been able to find an appropriate benchmark or best practice but given the size of any College's academic equipment inventory, the rapidness of changes in technology and the significant cost of some of the equipment, we strongly recommend that government reinstate this capital fund immediately and the fund be at least doubled its previous level to \$26 million.

Apprentice Enhancement Fund (AEF)

At a time when government is actively promoting the need for skilled labour and encouraging Ontarians to make skilled trades an employment choice, they curtail the enhancement fund which would have provided new spaces and expanded the fields of study in a wide variety of trades. Trades training and apprenticeship programs are an integral part of Ontario's economic engine. There is no doubt that the growth of Ontario's economy will be critically affected by the current shortage of skilled trades' workers. The shortage is already driving up the cost of construction to the point that projects are being deferred or industries are choosing to build in other jurisdictions that have less critical shortages.

OCFMA is unable to quantify the outstanding need in this area but support any funding that would promote the growth and expansion of trades training. As Facilities professionals, we experience first hand the impact of the current shortage when we are unable to hire trades workers in our own maintenance operations, the cost of our construction projects escalate beyond price indexes and projects often delayed impacting academic delivery.

As Facilities professionals, we acknowledge our responsibility to identify and balance more than just Facilities needs. However, we are often the sole voice speaking for the functional performance and overall condition of the buildings and continually identify the facilities condition and its affect or impact on the expectations of our customers. From a due diligence perspective, we have kept government informed as to the condition and state of Colleges facilities and, we, again, reiterate the strong recommendation that government provide sufficient, ongoing capital funding, particularly to address infrastructure renewal for deferred maintenance (major maintenance, renewal and replacement).

We hope that this provides some additional support and background to support the paper you are developing for ACAATO.

Carol Anderson
Chair, Ontario College Facilities Management Association

Appendix D — Images of Infrastructure Renewal Issues

As part of the research for this paper, the colleges sent ECS images that displayed infrastructure renewal issues in their respective institutions. The following images provide a sample of problems in academic space and other interior and exterior spaces.

Appendix D:
Images of
Infrastructure
Renewal Issues

Fabrics

Appendix D:

Images of
Infrastructure
Renewal Issues

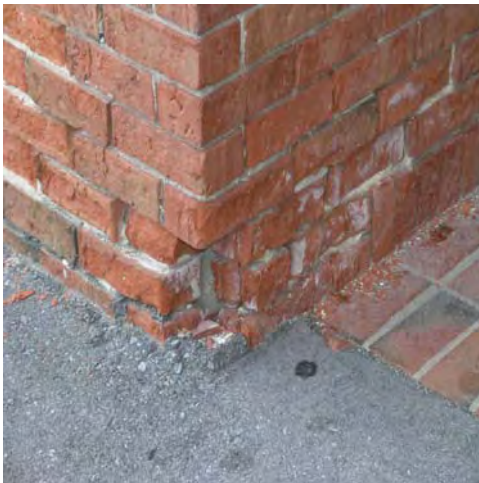
Spalling Brick



Efflorescence



Freeze/thaw Deterioration



Moisture Damage



Fabrics

Appendix D:

Images of
Infrastructure
Renewal Issues

Wall settling causing door not to fit- see
gap at top of door



Poor moisture protection on transformer
enclosure



Moisture damage



Salt damage



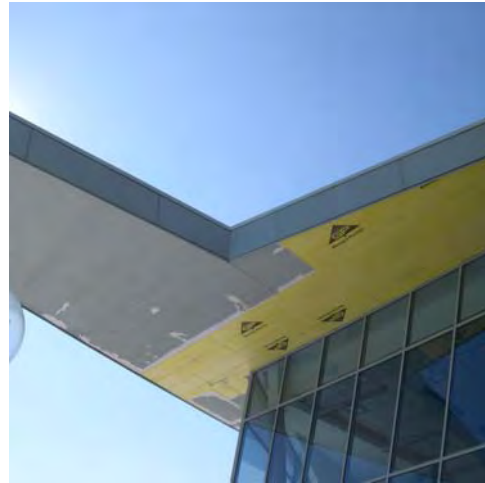
Fabrics

Appendix D: Images of Infrastructure Renewal Issues

Moisture damaged soffit



Overhang repairs required



Warped wood siding



Damaged soft joint sealant on exterior walls



Fabrics

Appendix D:

Images of
Infrastructure
Renewal Issues

Rusted steel lintels on exterior walls



Improper roof drainage



Original roof – beyond life expectancy



Broken window seals, compromised thermal efficiency, weather seal and viewing properties



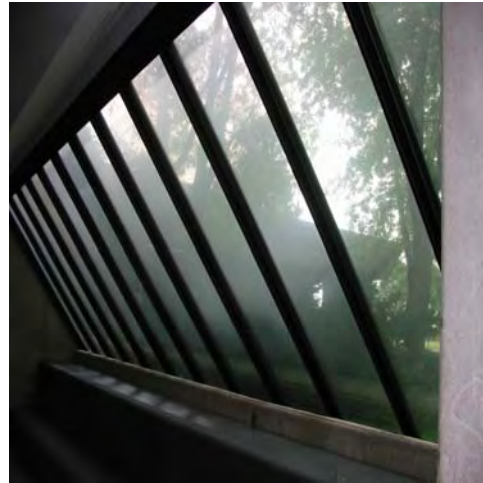
Fabrics

Appendix D: Images of Infrastructure Renewal Issues

Damaged window seals



Damaged window seals



Damaged window seals



Finishes

Appendix D: Images of Infrastructure Renewal Issues

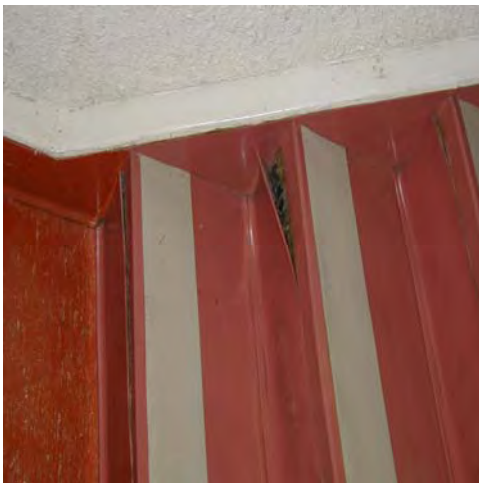
Delaminating veneer on lab bench



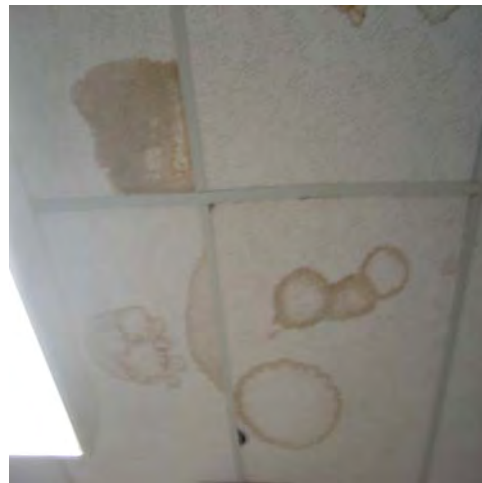
Water damage to ceiling tiles



Delaminating stair risers: tripping hazard



Water damage to ceiling tiles



Finishes

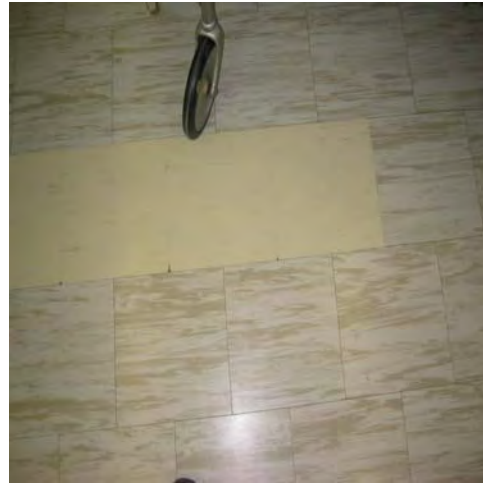
Appendix D:

Images of Infrastructure Renewal Issues

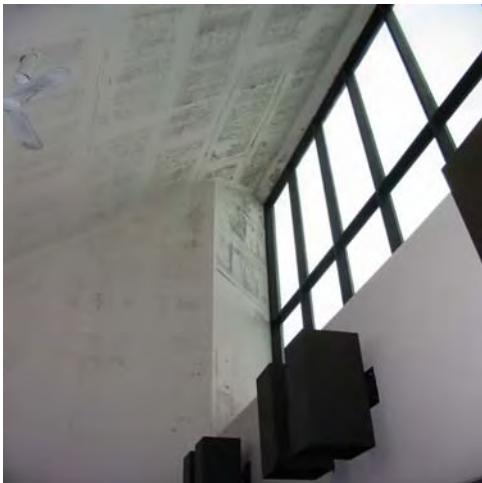
Damaged carpet seams in student study area



Patched vinyl floor tiles



Moisture damage, outdated glazing, insulation not to standards



Missing vinyl floor tiles

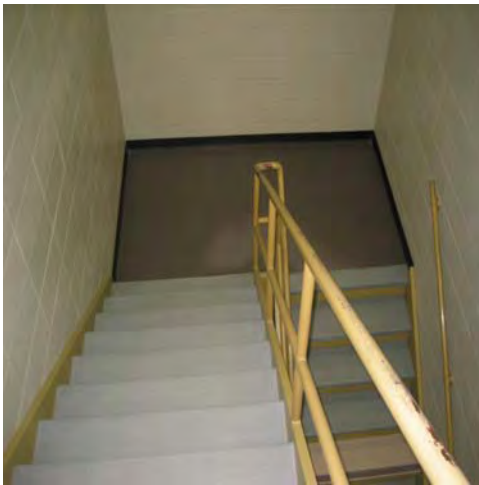


Finishes

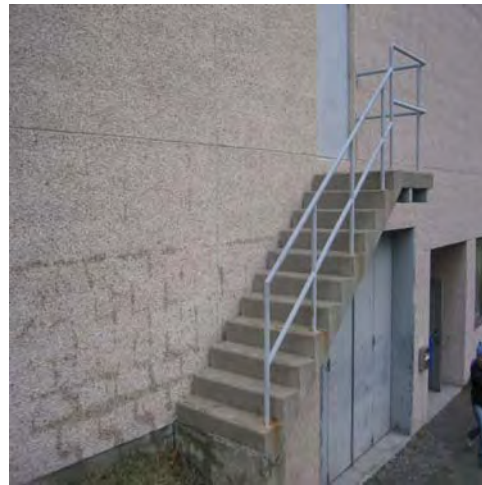
Appendix D:

Images of
Infrastructure
Renewal Issues

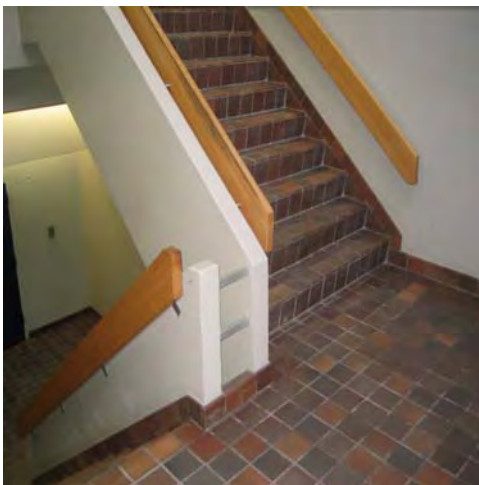
Railings not to code



Railings not to code



Railings not to code



Finishes

Appendix D:

Images of
Infrastructure
Renewal Issues

Repurposed service ramp – not to code



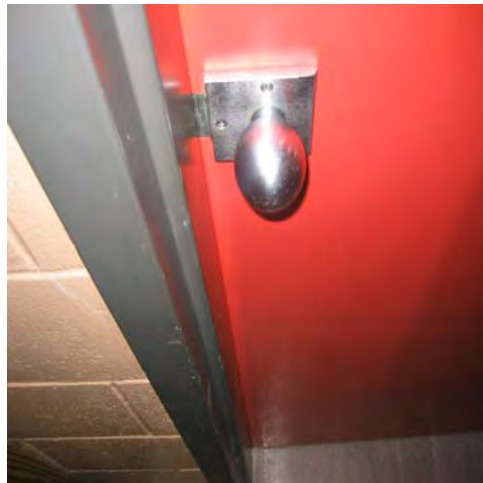
Torn corridor carpet repaired with duct tape



Stained tile



Doorknob not to code



Systems

Appendix D: Images of Infrastructure Renewal Issues

Structure damage



Structure damage



Electrical GFCI receptacle required



Science and Technology lab fume hood
not to standards



Systems

Appendix D:

Images of Infrastructure Renewal Issues

Welding shop with inadequate ventilation, students have to take turns - not to code



Ductwork and exhaust fan system part of Science and Technology lab - not to standards



34 year-old 'temporary' building with heating, cooling, ventilation, and envelope failings



Ductwork and exhaust fan system part of Science and Technology lab - not to standards



Systems

Appendix D:

Images of Infrastructure Renewal Issues

Ductwork and exhaust fan system part
of Science and Technology lab - not to
standards



Antiquated boiler



Antiquated original 1969 boiler



40 year old boiler – beyond useful life
expectancy



Systems

Appendix D:

Images of Infrastructure Renewal Issues

Antiquated boiler



Antiquated cooling tower



Original 1969 boiler – contains R11 refrigerant – beyond life expectancy



R11 Chiller – end of life



Systems

Appendix D:

Images of Infrastructure Renewal Issues

Antiquated diesel generator for
emergency lighting



40 year old electrical switch panels –
subject to catastrophic failure due to age



Original controls for building power,
replacement parts difficult if not
impossible to find



Original 1969 transformer



Systems

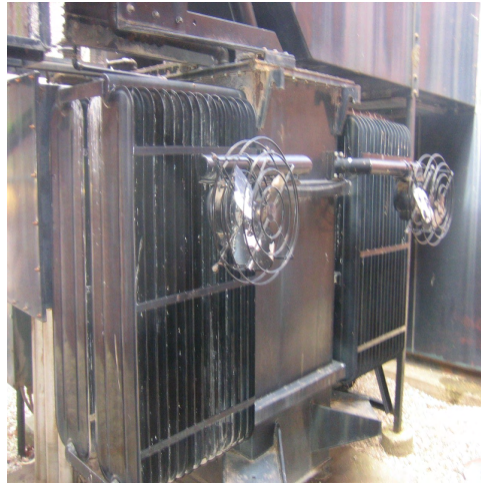
Appendix D:

Images of Infrastructure Renewal Issues

Antiquated electrical panels



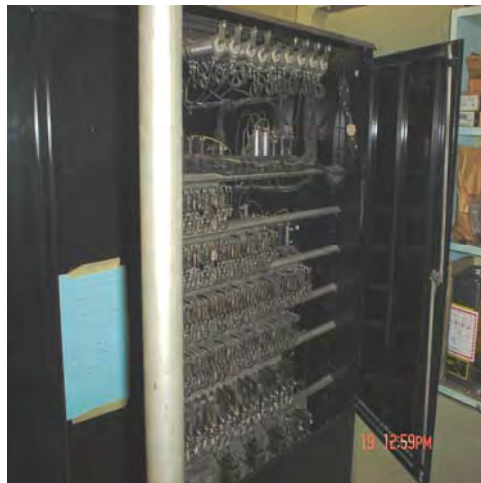
Antiquated transformer



Original 40 year old transformer –
beyond life cycle



1967 Elevator relay controls



Systems

Appendix D:

Images of Infrastructure Renewal Issues

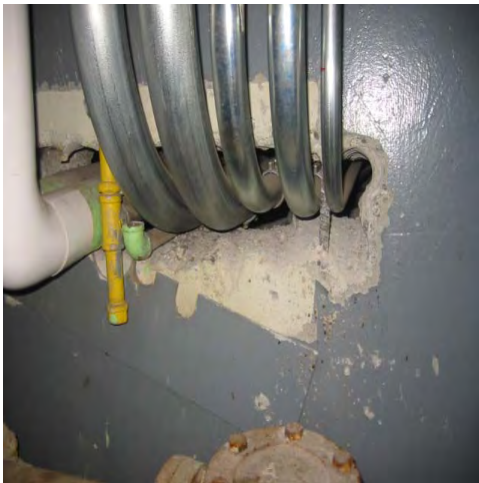
1967 elevator drive system



Original 1969 HVAC unit



Missing firestopping



Heating system pumps – end of life



Systems

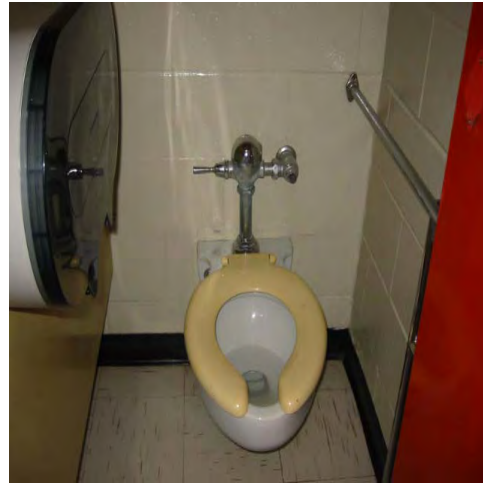
Appendix D:

Images of Infrastructure Renewal Issues

Rooftop HVAC unit – end of life



Old washrooms / poor water conservation



Original air handling units – beyond useful life expectancy, poor efficiency



Old washrooms / poor water conservation



Systems

Appendix D:

Images of Infrastructure Renewal Issues

A section of a 1971 water pipe replaced during an emergency. Remaining galvanized pipes need to be replaced.



Old domestic water pipes



Old sanitary piping



Old domestic water pipes



Systems

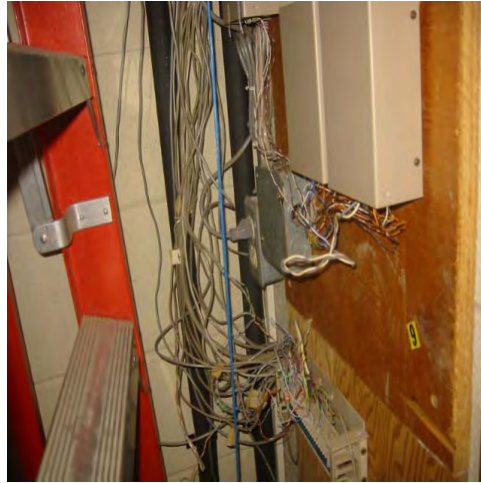
Appendix D:

Images of
Infrastructure
Renewal Issues

Asbestos insulated pipes



Antiquated telephone wiring



Asbestos insulated pipes

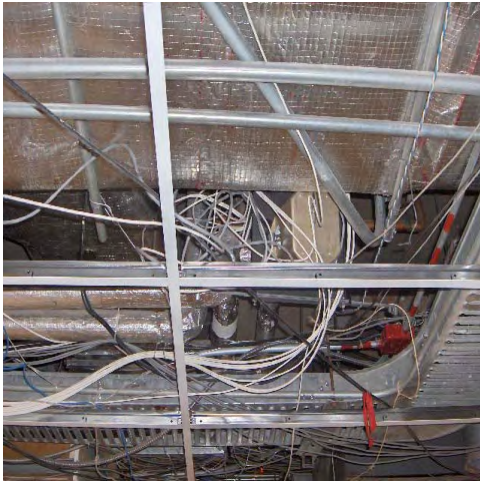


Systems

Appendix D:

Images of Infrastructure Renewal Issues

Congested ceiling spaces, difficult to remove obsolete electrical and telephone wiring – not meeting current fire code



Rusting rooftop air handling units operating beyond life cycle



Indoor air handling units rusted through, reducing operational effectiveness



Deteriorated insulation on supply, increasing energy costs



Exterior Finishes

Appendix D:

Images of
Infrastructure
Renewal Issues

Uneven stairs - tripping hazard



Corroded post



Original 30 year old roadway



Spalling on stairs



Exterior Finishes

Appendix D:

Images of
Infrastructure
Renewal Issues

Bridge railing and concrete deterioration



Settling of brick work



Bridge railing and concrete deterioration



Uneven concrete



