**Environmental Technician Program Panel Review Summary**

**October 2010**

**Program Strengths:**

Graduates of the Environmental Technology Program have been in great demand and the prospects for employment look strong for the coming years. ECO Canada predicts an 8% growth in some target environmental areas which bodes well for graduates for the next few years.

Program numbers continue to be strong with the Program being popular with regular stream high school students, those from the university sector (for direct entry), Dual Diploma students (with many students being drawn from the Ecosystem Management Program, Fish and Wildlife Program, Earth Resource Technician Programs) and finally, fall-back students from the Ecological Restoration Program. In addition, the program attracts a large number of students from both WSIB and Second Career services. This provides for a rich and diverse collection of students representing all ages within the community including those direct from high school as well as those from the workforce returning for retraining.

The program continues to have strong student satisfaction and strong employment placement. Faculty within the Program have always been a great strength with strong expertise in core program areas and are well respected by students. This is especially evident when student numbers are in balance with full-time faculty plus additional part-time faculty where required. Faculty continue to strive for new and innovative ways to teach and engage students. Examples include the inclusion of an international field school (Costa Rica), continued field trip opportunities despite large student numbers and logistical challenges, Natural Sciences and Engineering Research Council of Canada (NSERC), Constructed Wetlands and Centre for Alternative Wastewater Treatment (CAWT) participation, Partnerships (i.e. Kawartha Region Conservation Authority (KRCA) Lake Partnership, Scugog River Tributary Project).

Finally, re-sequencing of courses implemented in the Fall and Winter 2010 have strengthened delivery and created a more balanced course load in both the 2nd and 3rd year Programs. This involved eliminating the course Natural Resources and the Law from Semester 4 and embedding relevant elements to other courses; particularly to the newly renamed course “Environmental Legislation” (formerly Case Studies in Pollution Control). The course Air Pollution and Abatement was moved from Semester 6 to Semester 4 to provide knowledge and skills from this discipline to second year graduates.

Finally, the course Principles of Hydrogeology was moved from Semester 5 to Semester 6 to allow more dedicated time Semester 5 Constructed Wetland course projects.

**Program Challenges:**

There are currently insufficient full-time faculty in the Program. It is well known that a strong complement of primarily core faculty with some part-time hires to fill temporary gaps is the best model for any Program delivery. The obvious advantages are Program ownership, curriculum ownership and tracking and currency, service to students, commitment and capability to maintain a viable program with a strong field component. In addition to this, a number of core faculty within the Program are either at the retirement date or within a few years of that. This is placing strains on energy for current delivery but also for future prospects of program growth and viability. Compounding this is the increased interest in the environmental sector and strong job prospects for the next few years. This has resulted in a significant increase in student numbers (i.e. 85 second year students in 2009 compared to 117 second year students in 2010 representing a 27% increase). Concern lies primarily in the concept of balanced growth whereby the program curriculum is not compromised by burgeoning student numbers versus core faculty and resources.

Challenges also continue with regard to both operating and capital equipment budgets. It is important to maintain an operating budget that keeps stride with student growth and this would have meant a 27% increase in the budget for 2010/2011. This, in fact, was not realized for this budget year. In addition, the Program is faced with aging equipment and growth to a new classroom area has resulting in an immediate need for equipment replacement and new acquisitions in support of the new training space.

The ability to deliver full-day field trips is also being challenged due to conflicts created by the increase number of student sections, increase in timetable restrictions, limited faculty resources and logistics. The primary conflict is with General Education courses that are only available on specific days of the week and are often placed on traditional field trip days. This severely restricts the freedom required to accommodate day-long field trip class rotations. There is a need to ensure one actual class-free day per semester with no other courses conflicting with this time.

 Fleming College still maintains a very slow and cumbersome process for acceptance of Direct Entry students. Many are lost due to months lag-time in processing primarily due to a disconnect between the Peterborough and Frost campuses. A system of centralizing assessments of direct entry students “in-house” would assist in resolving this.

**Program Recommendations:**

1. Increase core faculty complement within the program.
2. Engage administration in the establishment of a comprehensive faculty succession plan, which would include hiring timelines, content transition and faculty mentoring.
3. Review the curriculum in light of the existing program/college standards to determine the general education courses requirement as a consequence of the revised general education policy.
4. Introduce an effective method to track academic progress for students from a variety of entry points (e.g. Second Career, Dual Diploma, Direct Entry, etc.) in association with Admissions and Records.
5. Improve the admissions and acceptance processes for direct entry students (i.e. a more expeditious process).
6. Improve marketing initiatives to attract more university graduates within the Direct Entry option.
7. Investigate a co-op option for ET students (both within the Technologist program and with other post-secondary institutions).
8. Improve the process for equipment renewal/maintenance (i.e. one that addresses an increase in the purchasing limit beyond the $1,000.00 minimum).
9. Increase the budget to maintain/upgrade equipment.
10. Renovate the Room 134/Loading Dock area.
11. Evaluate the impact of increased student numbers on program functionality (e.g. laboratory facilities and field programs, particularly the off-site fall and winter field schools).
12. Explore and increase flexible PD opportunities for both full and part-time faculty.
13. Investigate and implement a system that recognizes student achievement, based on a competency-based training model.
14. Review the existing common semester curriculum within the context of the Environmental Technician program to identify potential gaps/opportunities for program students (this exercise affects other program areas and needs to be done in consultation/collaboration with other SENRS programs).
15. Evaluate the possibility of increasing the level of GIS offerings in the program (ArcMap vs. Autocad and others).