

Making Environmental Connections



A School/College/Work Initiative — Managed by Committee of College Presidents (COP) and the Council of Ontario Directors of Education (CODE)

Phase 6 Final Report June 30, 2003

COLLABORATIVE PROJECT BY:

**Fleming College
Loyalist College
Trillium Lakelands District School Board
Kawartha Pine Ridge District School Board
Peterborough Victoria Northumberland and Clarington
Catholic District School Board**



Project Team Members

Lead College

School of Environmental And Natural Resource Sciences

Fleming College

Brenda Liston – Hanley	Project Manager Manager of Liaison
Jim Madder	Principal
MaryAnn Elliott	Academic Team Leader
Mike Fraser	Project Faculty Lead
Meredith Armstrong	Operations Project Lead

Partner College

Loyalist College

Eric Bauer	Co-ordinator Bioscience Programs
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Partner School Boards

Trillium Lakelands District School Board

Carrie Pilgrim	School Board Lead Operations Project Lead
Sonja Vandermeer	Educational Services Co-ordinator

Kawartha Pine Ridge District School Board

Fiona White	Curriculum Resource
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Peterborough Victoria Northumberland Clarington Catholic District School Board

Stephen Meinhardt	Curriculum Consultant
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Executive Summary

Making Environmental Connections, a collaborative initiative, involves Fleming College as the Lead College as well as the following partners: Loyalist College, Kawartha Pine Ridge District School Board, Peterborough Victoria Northumberland and Clarington Catholic District School Board and Trillium Lakelands District School Board. Year one of the project, November 2002 to June 2003, included many significant achievements encompassing:

- Development and delivery of a communication plan promoting the project to Ontario secondary school environmental studies teachers
- Raised awareness of sixty-one Boards across Ontario of the increased opportunities for secondary school students to make a seamless transition to college programs in the area of environmental studies
- Delivery of an introductory video conference explaining the project and the opportunities it presents to twenty-six boards across the province
- Continued contact with seventeen boards through monthly audio conferences allowing secondary school teachers of environmental studies to connect with other teachers, college faculty, project team members and community resources such as the Ministry of Natural Resources and the Stewardship Councils of Ontario
- Extensive review of Ontario Secondary School Curriculum and College Curriculum in area of environmental studies allowing the adaptation of an articulation model flexible enough to be used province-wide for schools with highly developed environmental studies programs seeking an articulation agreement with Fleming College
- Creation and delivery of on-site visits at Fleming and Loyalist College involving student workshops based on the common curriculum linkages found during the curriculum review process
- Development of a project web site providing detailed information about the project and the articulation model as well as an environmental forum containing useful resources, annotated web links and opportunity for more dialogue

Through the combined efforts and commitment of the project team, board designates, project participants and community partners **Making Environmental Connections** has provided a very worthwhile experience for educators and has benefited all those connected to the project. Inquiries from other schools and boards expressing an interest in participating have been received and a proposal for year two funding has been submitted to continue this very valuable and timely project.

Project Implementation Plan

Time Frame	Methodology	Deliverables	Outcome
January 2003	<ul style="list-style-type: none"> • Communiqué to all school boards in Ontario regarding project and potential participation • Packages faxed and emailed to Directors of Education as well as any schools or teachers that had an expressed interest in environmental studies • Detailed assessment of the linkages between secondary school curriculum and environmental studies programs at Fleming was conducted • Similar assessment was conducted for Loyalist 	<ul style="list-style-type: none"> • Introductory Meetings for project conducted via video conference and on-site • Proposed direct entry articulation model which could be used in any Ontario secondary school 	<p>26 boards participated in the introductory meetings (February 20)</p> <p>Model presented in introductory meetings (February 20)</p> <p>Assessment will be on-going due to curriculum revision at Fleming</p>
February 2003	<ul style="list-style-type: none"> • Board designates directed to recommend environmental studies teachers to participate further in the project • Participants complete a "Teacher Profile" which was returned by the end of February • Meeting packages sent to participants 	<ul style="list-style-type: none"> • Confirmation of interested environmental studies teachers wishing to participate and learn more about the project 	<p>24 confirmed participants received meeting packages for monthly audio conferences</p> <p>17 boards have representation in these audio conferences</p>
March 2003	<ul style="list-style-type: none"> • Plan and deliver agenda for audio conference #1 with emphasis on assessing participants needs • Web site development 	<ul style="list-style-type: none"> • Audio Conference #1 conducted and participants needs identified 	<p>Audio conference #1 Conducted</p> <p>Participants needs recorded (March 25)</p>

Project Implementation Plan

Time Frame	Methodology	Deliverables	Outcome
April 2003	<ul style="list-style-type: none"> • Continued web development • Develop agenda for audio conference #2 based on participants needs assessed • Design on-site workshops for both partner colleges based on curriculum linkages 	<ul style="list-style-type: none"> • Web site up and running by the end of April • Audio Conference #2 conducted • Workshops topics presented to project team for feedback 	<p>Web site address announced at Audio Conference #2 (April 22)</p> <p>Topics approved and delivery scheduled for May</p>
May 2003	<ul style="list-style-type: none"> • Develop agenda for audio conference #3 • Schedule on-site workshops at colleges • Design feedback mechanism for participants 	<ul style="list-style-type: none"> • Audio Conference #3 conducted • Workshops delivered to interested secondary school teachers and their classes • Survey included as agenda item - audio conference #3 	<p>6 speakers shared their multi-credit programs during conference #3 (May 27)</p> <p>17 workshops delivered</p> <p>Automated telephone survey discussed with participants (May 27)</p>
June 2003	<ul style="list-style-type: none"> • Develop agenda for audio conference #4 with emphasis on use of community partners • Access feedback from participants regarding year one activities • Plan year two activities 	<ul style="list-style-type: none"> • Audio Conference #4 conducted • Feedback analysed to assist in year two planning • Year two funding proposal submitted 	<p>Two guest speakers from Ministry of Natural Resources (June 10)</p> <p>Analysis completed. 65% response rate (June 4)</p> <p>Completed (June 27)</p>

Project Goals – Year One

- Secondary school students from across the province will have an opportunity to participate in a direct entry articulation opportunity that has been tested and proven to be successful. Making this opportunity available at this time is significant, as students and parents have concerns in post secondary programs
- An understanding for secondary school students and teachers of the breadth of college programs that are offered at the lead and partnering colleges in the areas of Environmental and Natural Resource Sciences, and Bio Sciences
- Increased awareness for secondary school teachers of the resources that exist in the college system that are accessible to them through electronic means and the managed web site
- Established mechanisms for contact between secondary school teachers and college faculty for ongoing dialogue and the sharing of resources and information about leading edge innovations and developments that are occurring in the areas of Environmental Studies
- An enhanced opportunity for college faculty in the lead and partnering colleges to establish collegial relationships, which can result in an improved understanding of the existing program options and ongoing dialogue

Project Outcomes

The project outcomes as stated in the original proposal (bolded) are summarized according to the process employed and the accomplishments achieved.

Direct Entry Articulation Model

Description

The Direct Entry Articulation Model will provide students from across the province with the opportunity to accelerate their studies in a college environmental program. This model will reduce the amount of curriculum duplication between secondary school and college curriculum in the area of environmental studies and guarantee students a spot in the program. Making this opportunity available at this time is significant, as students and parents have concerns about the availability of space in post secondary programs.

Process

A detailed assessment of the linkages existing between secondary school curriculum and first semester courses at the School of Environmental and Natural Resource Sciences at Fleming College was conducted by the School Board Lead. This assessment was endorsed by the Faculty Lead who examined the linkages for their depth and breath in comparison with the Fleming courses. Some additional project work was identified that students would need to complete to be eligible for direct entry articulation. Curriculum resource personnel from the partnering school boards provided feedback on the linkage assessment and on the process of making the existing Articulation Model more accessible to other Ontario school boards. Due to the current curriculum revision process underway at Fleming College, the assessment of linkages will need to be repeated and it will be determined if any changes to the direct entry articulation model are warranted.

Project Outcomes - continued

Accomplishments

The model that was developed and adopted by the project team involved students completing a package of four specific credits or four single credits. This allows schools the flexibility of packaging the credits into a multi-credit focus program or offering them as single credits in the regular stream. Students need to complete the four credits achieving a 70% average and meet all Fleming's admission requirements. Students must also complete some additional project work as specified by Fleming College to be considered for direct entry articulation. One credit from each column in the table below must be completed.

Proposed Direct Entry Articulation Model

Column A	Column B	Column C	Column D
Biology SBI 3C	Geomatics: Geotechnologies In Action CGO 4M	Designing Your Future GWL 3O	Presentation and Speaking Skills EPS 3O
OR	OR	OR	OR
The Environment & Resource Management CGR 4M	Physical Geography CGF 3M	Co-op CGR 4MC (specialized placement)	Communication in the World of Business EBT 4O
		OR	OR
		Locally Developed Course	English ENG 4C

This model was presented to project participants and board delegates with the understanding minor revision may occur after the second linkage assessment. Many schools have expressed an interest in pursuing an articulation agreement with Fleming College (see Appendix D). Three schools have submitted their program materials to be considered for articulation.

Improved Understanding of College Environmental Studies Programs

Description

The project will create opportunities for an enhanced understanding for secondary school students and teachers of the breadth of college programs that are offered at the lead and partnering colleges in the areas of Environmental and Natural Resource Sciences.

Process

Environmental studies programs at each of the partner colleges were presented and discussed with project participants during the audio conference sessions. Participants were given the opportunity to pose questions to the college representatives. College faculty also explained opportunities available to students who have completed two and three year environmental studies programs to receive advanced standing at several universities. Information regarding these types of opportunities was also made available on the project web site.

Accomplishments

Participants responded favourably to receiving this information. In the participant feedback survey (see Appendix A) respondents rated the following statement concerning this outcome. My involvement in the project enhanced my knowledge of the environmental programs offered at Fleming and Loyalist College. The average score was 4.8 with a score of 5.0 indicating strongly agree (see Appendix B).

Establishing Connections With Environmental Studies Teachers To Dialogue and Share Resources

Description

Project participation will allow secondary school teachers to become increasingly aware of the resources that exist in the college system which are accessible to them through electronic means and a managed web site. Established mechanisms for contact will promote dialogue between college faculty and secondary school teachers. This, in turn, allows environmental studies teachers across Ontario to receive information about leading edge innovations and developments that are occurring in this area.

Process

Project participants have participated in four monthly audio conference sessions allowing them to dialogue with each other and with college faculty. Participants have also been connected with their environmental colleagues through the sharing of personal email addresses for the purpose of discussing specific needs and sharing resources. The project web site's environmental forum has provided another opportunity for participants to dialogue with their peers and college faculty. Participants are able to pose and post specific questions to the group as a whole. Access to additional resources has also been provided through the project web site. Participants were able to visit the partner colleges and participate in workshops linked to the secondary school curriculum.

Accomplishments

Each monthly audio conference agenda provided various opportunities for participants to gather information that would allow them to enhance their program delivery. Participants were able to share their environmental studies program, discuss locally developed environmental studies courses and connect with community partners such as the Ministry of Natural Resources

Participants felt the opportunities provided through the project to connect with colleagues and share resources were very worthwhile (see Appendix B). The feedback received from the on-site visits was all very positive and teachers felt the experience was very educational (see Appendix C). Additional inquiries for project participation have been received during year one and have necessitated a two-tiered approach for year two to support new participants as well as a series of year two topics to support the existing participants. In addition to the resources posted on the project web site, participants were also provided with a copy of a new publication developed by the Ministry of Natural Resources entitled Ecological Sustainability For Youth.

Project Outcomes - continued

Participants' enthusiasm for the project and its ability to support their delivery of environmental topics within Ontario Secondary School Curriculum has prompted the need to promote the project and provide information to a larger number of environmental studies teachers. Project information sessions will include:

- Ontario Society for Environmental Educator's Conference
- Trent University's First Annual Conference – Partners In Practice
- The Ontario Forestry Association's Provincial Envirothon
- The Science Teacher's Association of Ontario
- Ontario Association of Geography and Environmental Educators

Opportunities For Partner Colleges

Description

Collaboration on project activities have highlighted the need for creating opportunities for college faculty in the lead and partnering colleges to establish collegial relationships, which can result in a better understanding of the existing program options and ongoing dialogue.

Process

The value of gaining a better understanding of the environmental studies program offered at each partner college was undeniable. It was decided that the most worthwhile opportunity would involve faculty at both partner colleges to participate in an on-site exchange. Through participation in workshops at their partner college and experiencing the campus first-hand, faculty would gain an enhanced understanding of program content and delivery.

Accomplishments

Due to the on-going, extensive curriculum revision occurring at Fleming College, it was felt that the most appropriate time for the on-site exchange would be during year two of the project. Promotion of the project and its activities within internal publications at the college level has been initiated to ensure faculty are knowledgeable and supportive of the project's activities (see Appendix E).

Future Developments – Year Two

Due to the level of commitment of the year one participants and the enthusiasm with which the project was received, the project team is committed to continue providing opportunities that support environmental studies teachers delivering secondary school curriculum with an environmental focus. The following list outlines the proposed activities for year two:

- Partnering colleges involved in the project will be expanded to include Georgian College
- Continuation of the monthly audio conference to support the communication of best practice models for environmental studies teachers province-wide. Increased emphasis will be placed on developing programs, which link with community resources in their regions. To date relationships have been developed with the Ontario Forestry Association, Ontario Stewardship Councils and the Ministry of Natural Resources.
- Provide regional resources for schools in the area of environmental studies. Project participants will be invited to host members of the project team in their region. The project team will provide workshops for students and/or teachers delivered by college faculty who have specialized expertise on topics related to environmental studies
- Establish resources which support the Ontario Forestry Association's Envirothon Program
- Develop a course resource which would assist teachers in delivering the course 'Designing Your Own Future' (GWL 30) with an environmental focus
- Design and deliver an environmental institute/conference for teachers and students
- Continue to promote 'Making Environmental Connections' through presentations at conferences and faculties of education

Appendices

Appendix A	Participant Feedback Survey
Appendix B	Participant Feedback Survey Results
Appendix C	On – Site Visit Feedback Form
Appendix D	Sample Center Hastings Articulation Agreement

Appendix A **Making Environmental Connections Participant Feedback**

1. Involvement in the Making Environmental Connections has allowed me to:

(Please mark each statement with a score of 1 to 5 with 1 indicating strongly disagree and 5 strongly agree)

- _____ Make direct contact with environmental teachers across the province
- _____ Access curriculum resources that I did not have previously
- _____ Consider other models-2, 3 or 4 credit packages Environmental Studies programs for my school
- _____ Enhance my curriculum delivery of environmental topics
- _____ Enhance my knowledge of the environmental programs offered at Fleming and Loyalist college
- _____ Other

2. Please indicate how useful the following aspects of Making Environmental Connections project were:

(Please mark each statement with a score of 1 – 5 with 1 indicating not helpful and 5 very helpful)

Website _____ Forum with dialogue opportunities _____

Video Conference _____ Audio Conference _____

Having the opportunity to present my program/course to others for discussion _____

Having other teachers present their locally developed courses _____

Having other teachers present their environmental programs _____

Comments:

3. Would you be interested in participating in the second year of the project?

Yes _____ No _____

If yes: what are your goals for involvement in year 2?

If no: Please indicate why not.

4. Please list any suggestions that you may have for improvement of the project for year 2.

Appendix B

Making Environmental Connections Participant Feedback

1. Involvement in the Making Environmental Connections has allowed me to:

(Please mark each statement with a score of 1 to 5 with 1 indicating strongly disagree and 5 strongly agree)

- 4.4 Make direct contact with environmental teachers across the province
- 4.2 Access curriculum resources that I did not have previously
- 4.6 Consider other models-2, 3 or 4 credit packages Environmental Studies programs for my school
- 3.6 Enhance my curriculum delivery of environmental topics
- 4.8 Enhance my knowledge of the environmental programs offered at Fleming and Loyalist college
- _____ Other

2. Please indicate how useful the following aspects of Making Environmental Connections project were:

(Please mark each statement with a score of 1 – 5 with 1 indicating not helpful and 5 very helpful)

Website 4.0 Forum with dialogue opportunities 4.2

Video Conference 3.5 Audio Conference 4.6

Having the opportunity to present my program/course to others for discussion 3.9

Having other teachers present their locally developed courses 4.8

Having other teachers present their environmental programs 4.7

Comments:

3. Would you be interested in participating in the second year of the project?

Yes All No _____

If yes: what are your goals for involvement in year 2?

Various

If no: Please indicate why not.

4. Please list any suggestions that you may have for improvement of the project for year 2.

Making Environmental Connections

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On -Site Visits Feedback Survey

Appendix C

Teacher & School: _____

Workshops Completed: _____

In order to be sure that your needs were met through the on-site visit experience, we would appreciate your feedback which will be used to make plans for year two of the Making Environmental Connections Project. Please answer the questions below. Thank you for your feedback.

Curriculum Linkage

Were the topic(s) suitable for the age and experience level of your students? Explain.

Did the workshops presented have a sound curriculum link to the course the students are currently enrolled in? Explain.

Were your students able to meet OSS curriculum expectations, by participating in the workshops? Explain.

Workshop Experience

Did you feel there was an appropriate amount of hands-on activities to stimulate the students? Explain.

Comment on the length of the workshop and if you felt it was appropriate for your students.

Did the students learn from and enjoy the experience? Explain.

Future Considerations

Are there any workshops you would like to see presented that weren't offered this year? List specific ideas.

Are there any other suggestions you feel could improve the overall on-site experience? Explain.



ARTICULATION AGREEMENT
between

**Sir Sandford Fleming College
School of Environmental and Natural Resource Sciences
and
Hastings and Prince Edward District School Board
Centre Hastings Secondary School**

Articulation involves recognition of learning achievement, facilitates student progress, minimizes curriculum duplication and eases the transition from one institution to the other.

This agreement confirms an understanding of the articulation activities endorsed and supported by the College and the School Board.

This agreement consists of the following components:

- _ Overview of the articulation activities and responsibilities
- _ Review guidelines
- _ Details of agreement

Authorized Signatures:

Hastings and Prince Edward District School Board

(Name)

(Date)

(Title)

Sir Sandford Fleming College

(Name)

(Date)

Types of Articulation Activity

Articulation activities based on the negotiated agreement between the signing representatives can include but are not restricted to the following:

1. **Direct Entry:** successful completion of secondary school course(s) which entitles the student to an elective credit in a specific program. These secondary school courses (OSS) are not eligible to be weighted in the admission process for this particular agreement.
2. **Additional activities:** projects involving secondary and college students and teachers that will enhance student learning and promote a successful transition to college.

Responsibilities:

It is the responsibility of the college and secondary school personnel to support articulation activities.

1. The secondary school will inform the students of the articulation agreement(s) with the College. The details of this communication to the students, will be defined at a later date.
2. The college will inform the Registrar's department and faculty in the centre about the articulation agreement.
3. The student will initiate the college application process and ensure that the appropriate documentation for the completed secondary school course(s) is available to the registrar. The Head of Guidance/Student Services will confirm the student's successful completion of the ELP program.

Review guidelines:

This agreement shall be subject to review and modification by the School Board and the College annually. As well, when the curriculum in either organization is revised, it will be the responsibility of the institution initiating the change to notify the other contracting institution(s). Each institution is responsible for keeping their instructional and administrative staff informed of any changes in this agreement. This agreement may be terminated by either party at any time on written notice of 30 days, as well this agreement shall be terminated if required by any policy or memorandum of the Ministry of Education or the Education Act

Project Title: Environmental Leadership Program/SENRS articulation

Date: December 1, 2001

Secondary School(s) : Centre Hastings Secondary School

Secondary School contact(s): Janice Bonter-Head of Guidance

Academic Centre: School of Environmental and Natural Resource Sciences

Program Co-ordinator:

Academic Team Leader: Jim Madder

**ARTICULATION AGREEMENT School of Environmental and Natural
Resource Sciences and Centre Hastings Secondary School:
Environmental Program**

SECONDARY SCHOOL	COLLEGE
EXEMPTION	
Environmental Leadership Program(4 credit) For May 2002: GNS 4A Geography-Environmental PED 4A Physical Education SGE 4A Science-Geology SGE 4C Co-op Or SEN 4A Environmental Science SEN 4C Co-op <hr/> For May 2002 CGR 4M Environment & Resource Management EPS 3O Presentations & Public Speaking CGR 4MC Co-op credit PLF 4C Outdoor Physical Education	1050224 Technical Writing and Research 1070382L Computer Concepts and Word Processing 1130081 Fisheries and Wildlife Biology 1160144 Ecology and the Environment 1160145 Natural Resources Skills 1200222 Earth Sciences 1300008 Mathematics 1370087 Resources Drilling
	No exemption: 1030095 Mapping and Geographic Systems
ADMISSION CONSIDERATION	
Students taking the Environmental	SENRS will reserve 2 seats in all

<p>Leadership Program at Centre Hastings Secondary School must achieve an average of 70% in these combined credits for consideration of the above exemptions at SENRS</p> <p>Verification of the student's academic standing in the Environmental Leadership Program at Centre Hastings Secondary School will be provided to the Admissions Office at SSFC by the school's Head of Guidance/Student Services</p>	<p>second semester programs starting in the May semester of each academic year for students considered in this articulation agreement. The student's application must be received by February 1 for consideration of admission under the terms of this agreement. Should the program be over subscribed students will be admitted based on marks.</p>
ADDITIONAL ACTIVITIES	
<p>Collaborate with college faculty regarding changes in the secondary school curriculum.</p>	<p>Develop opportunities for secondary students and their teachers in the program to visit the Frost campus</p>

Review Date: October, 2002 and then yearly
 (Review process will include input from both college and secondary school staff involved in the implementation of the agreement)

Revisions: Yes/No
 (if yes-make dated notations in the appropriate section of the agreement)

Appendix E

Appendix F