Introduction

With the establishment of the Faculty of Environment in April of 2009, a far more systematic and organized approach to academic planning on the Environment is now underway. While this Academic Plan for the VPA represents a continuation of previous visioning processes that have been part of the university restructuring, it is also very different for here we must grapple with real choices, the implication of those choices (given very scarce resources) and the very specific strategies for implementation. Also it must be recognized that in some cases it is too early in the development of the Faculty to make concrete decisions - decisions which are best left to a later time given our current resources, assumptions, consensus and knowledge. As much as this plan is about trying to link actions and effects, it is also about accountability to the Academy and to the broader society.

Universities are at important crossroads in their evolution as knowledge producers and learning centres. There are at least three challenges we must respond to which, implicitly at least, should be part of our thinking when we plan. Many more demands are now made upon universities - far beyond traditional knowledge generation and dissemination. This is particularly the case with more specialized Faculties such as Environment, Health, Applied Sciences and Business. To what degree are we prepared to directly serve external demands from the public, private and NGO sectors? Closely related to this is the question: should we become more applied in both research and programming? Are we for example prepared in teaching, research and outreach to confront head on and not obliquely the big questions relating to the long-term sustainability of society’s current actions? And third, to what degree do we wish to become more responsive to student demand particularly as it relates to student centred learning opportunities and experiential learning? If Universities choose to transition to address these new demands and expectations, the strategic academic planning process will become an increasingly important vehicle for change.

The final introductory comment to make before proceeding relates to reconciling the priorities and interests of the founding units of FENV and those outside. Unlike Health, Environment began as an assembly of established units with both breadth and depth in environmental research and teaching. Additional expertise exists within the University but outside the Faculty itself, so the challenge is to properly integrate this expertise within and between Faculties in order to create positive and effective synergisms. Clearly FENV has a very important leadership role to play in facilitating these synergisms. Historically, Universities have not had strong track records on collaboration
and interdisciplinarity, so we are entering relatively uncharted waters that will require new and creative approaches. This will be an important mandate of this planning exercise.

Planning Assumptions

Based upon assurances from the VPA, FENV has assumed that between 8 to 10 net new CFL positions (above and beyond existing faculty complement, some of which are vacant) will be funded over a three-year period and that our existing operating budgets will not be decreased. It is further assumed that selective positive adjustments to that operating budget will be made to offset the effects of inadequate budgeting for units in their transfer to FENV as of April 01/09. With planned growth in undergraduate programming in Environmental Science, Geography and REM and possible joint graduate programs it is further assumed that our share of university enrollment at both the undergraduate and graduate levels will increase over the next five years.

Facilities and Infrastructure

It is understood that there is a claim on the space previously occupied by MITACS, however consideration must be given to its proximity to the Faculty of Environment Dean’s Office and its obvious suitability for areas that are housed in the Faculty of Environment. The Dean’s Office in TASC II is currently providing administrative support to the Centre for Sustainable Community Development even though the Centre is located in West Mall, to the PICS Coordinator, and to the Environmental Science Program which has no facilities. This situation is driven by resource constraints but is not sustainable over the longer term. The Faculty of Environment is in a growth phase and creative efforts must be made to ensure that we are moving toward an identifiable campus presence.

The transition of units from the Faculty of Arts and Social Sciences to the Faculty of Environment is not yet complete with Geography and other areas still reliant on FASS infrastructure. Server space and network support capacity must be built over the coming year to appropriately support FENV units.

Strategic Influences and Directions

The new Faculty is well positioned to capitalize upon a number of strategic opportunities in teaching, research and outreach. Perhaps most importantly are the strong complementarities that exist in teaching and research within the Faculty among the founding units. In particular all the founding units have a number of opportunities to strengthen undergraduate teaching through various partnerships and joint programming initiatives. All of the IPs, identified in the FE&S Interdisciplinary Planning Committee
Report (Global Systems; Biodiversity/Conservation; Environment/Development; and Water), are being incorporated into new strategic directions and will require active partnering of units both internal and external to the Faculty. We foresee important opportunities to integrate natural, social and SIS sciences in these initiatives. One way to integrate these opportunities is through the development of a new stand-alone degree - a Bachelor of Environment. Beyond the IP directions, we have opportunities to offer a specialized minor in Environmental Literacy. (See Table 2 for more details and timelines.)

At the graduate level there are opportunities for greater co-operation in Masters programming between REM and Geography in the area of GIS/SIS in monitoring, assessment and analysis of environmental trends.

Given the increased interest in developing closer ties between Health and Environment and Business and Environment there are important opportunities for joint programming as there is between Environmental Science and Biological Sciences. At perhaps a more distant date we see growing interest and needs in the area of green technologies and design that would translate into yet other partnerships with Applied Sciences and FCAT. And of course no discussion of opportunities would be complete without reference to sustainable communities which would see greater co-operation in programming and research among CSCD, Geography, REM and Urban Studies in FASS.

There are four other areas which are deserving of comment in terms of strategic opportunities. The first is in the area of accreditation and certification which is becoming an increasing important issue for employers. Here we have existing programs through CIP, APEGBC, SIS certificate, the Canadian Certified Environmental Professionals, the Research Professional Biologists of BC, and the Urban Studies Certificate. Students need to be better informed regarding the advantages of these options.

The second area that we need to consider is the growing importance of environmental history, archaeological tourism, environmental archeology and paleo-archaeology as teaching and research areas that would add considerable value to our own academic identity and to differentiate ourselves from other programs.

The third area relates to our Centres and Institutes and their potential to enhance and expand our outreach capabilities through CTP, CRMI, CSCD, PICS and CS. More details on the importance of this initiative will follow later in the document.

And the fourth area deals with the importance of forging partnerships with both aboriginal and non-aboriginal communities in non-metropolitan regions to better link the University and its assets to local needs.
Faculty Goals and Objectives

“Positioning FENV at SFU to become a world class leader in evidenced based research and teaching that integrates natural, social, SIS and policy sciences, and pure and applied research, to reconcile environment and development at different spatial and temporal scales.”

An overarching objective is to continue the work begun in the first half of 2009 in defining the choices in research, teaching and outreach available to us and to act selectively on those choices to define an identity and a coherent program of enquiry which is strategic, cross-cutting, creative, integrative, student-centred and visionary yet practicable. Building upon an asset mapping exercise in the spring, the proposals from the respective 3-year individual unit plans and the outcomes from the recent visioning workshop we will pursue the following:

- Continue to define and expand programming options and themes, conscious of the need to minimize overlap, and to encourage integration and interdisciplinarity. We intend to build partnerships with Business, Health Science, FASS and Applied Science and strengthen ties with Science. (Table 2).
- Identify research commonalities among FENV faculty and possible new research foci. Define the role of research Centres and Institutes in helping to foster the integration of natural, social and GIS sciences.
- Develop a general hiring plan around basic themes without reference, in the first instance, to specific units.
- As part of executing the hiring plan, pilot a variety of cross-appointment, team teaching and secondment models.
- Strengthen our ties to First Nations programming.
- Bring to a successful conclusion the search for the Liber Ero Chair in Coastal Studies in cooperation with Faculty of Science.
- Execute a variety of outreach programs that serve the broader public in terms of environmental literacy and allow for partnerships with profit and not-for-profit organizations.
- Form an active external advisory group.
- Define our fundraising priorities and implement a development action plan.
- Develop a communication plan.
- Actively profile FENV for student recruitment and retention and to enhance profile within the University.
- Obtain common physical space for all of FENV, including student common areas.
- Establish standards, practices and governance models that ensure accountability, inclusion and transparency as FENV develops.
Faculty Core Activities

Units:
Department of Geography
School for Resource and Environmental Management
Environmental Science Program
Centre for Sustainable Community Development
Development and Sustainability Program
Centre for Coastal Studies

Programs:
Undergraduate:
B.A. Geography
B.A. Geography – Environmental Specialty
B.Sc. Physical Geography
B.Sc. in Environmental Science – current in 2009 streams are Biology, Chemistry, Environmetrics, Physical Geography, Pollutant Transport, and Quantitative Techniques for Resource Management; new majors are starting in September 2010 and beyond.

Graduate:
M.A. Geography
M.Sc. Geography
Ph.D. Geography
Master’s degree (MRM) in Resource Management
Master’s degree (MRM) in Planning
Ph.D. in Resource and Environmental Management

Certificates and Diplomas:
Certificate in Spatial Information Systems (Geography)
Graduate Diploma in Quantitative Methods in Fisheries Management
Undergraduate Certificate in Sustainable Community Development
Post Baccalaureate Diploma in Sustainable Community Development
Graduate Certificate in Development Studies
Urban Studies Certificate

Professional Development/Career Programs:
Professional Certificate in Sustainable Community Development
Certificate Program for CED Professionals

Centres and Institutes:
Centre for Tourism Policy and Research
Cooperative Resource Management Institute (CRMI)
FORREX in partnership with CRMI
Centre for Coastal Studies
Centre for Sustainable Community Development

Joint activities with Faculties/Departments outside of FENV:

Archaeology
  Cultural Resource Management (graduate specialization)

Arts and Social Sciences
  Urban Studies Certificate

Biological Sciences
  Environmental Toxicology Minor
  MET

Business (proposed to start development in 2010)
  Leadership and Sustainability Minor(s)

Earth Sciences
  Water Science Major in EVSC

Education (to be determined)
  Minor

Health Sciences (to be determined under development in 2010)
  Environment and Health Major or Minor

Centres and Institutes Outside FENV
  Centre for Wildlife Ecology
  Centre for Natural Hazards Research
  CRC in Fisheries Risk Assessment and Management
  CRC in Glaciology
  Institute of Governance Studies
  Institute for the Humanities
  Centre for Global Political Economy

Inter-institutional Partnerships
  Centre for Interactive Research on Sustainability (UBC)
  Bamfield Marine Sciences Centre
  Pacific Institute on Climate Change Solutions (PICS)
  Neptune Canada Seafloor Observatories

Unit Assessment

Geography

The Department of Geography is a dynamic, interdisciplinary department with an outstanding record of internationally recognized scholarship and the home of the largest undergraduate programs in Canada offering BA, BBA, BED and BGS and BSc degrees. With respect to the latter three broad subdisciplinary streams define both the breadth and depth of the discipline. Human Geography is defined by two broad research
clusters: cities and culture/society; and resources and development and environment themes. There are also important regional specializations including China and Latin America. Included within the human geography BA is an environmental major. Human Geography is in the process of rebranding its own program.

Physical Geography has recently rebranded itself into four streams: biophysical science, physical geography and GIS, professional geoscience (APEGBC), water and environmental science. The first and last of these are to be housed within, and integral parts of, the newly designed Environmental Science program. The SIS program combines GIS and remote sensing in a multi-disciplinary and inherently cross-cutting context with applications to environmental management, health, biogeophysical processes, urban development and forestry to name just a few. The SIS certificate is a popular option for students who are seeking employment in both the public and private sectors relating to monitoring and assessment. The joint degree in Geography/SIS with Computing Science requires review and reconsideration since student demand is very low.

A notable feature of the undergraduate program in Geography is the importance attached to fieldwork and field-based experiential learning. This dovetails well with FENV’s objectives and those of the VPA. And a number of Geography’s undergraduate courses will serve some of the requirements for the minor in environmental literacy.

The graduate program is very active with approximately 60 students in MA, MSc and PhD streams with the majority of students following an ‘apprenticeship model’ focusing upon thesis based research.

The research achievements of the faculty are many and excellent, evidenced in the number and quality of publications in top-rated scholarly journals, acclaimed book publications, invitations to speak, awards and the high level of support from the major granting councils including SSHRC, NSERC, CIHR and Michael Smith. Research within the department overlaps with all five of the VPR’s research themes. Table 1 provides a detailed breakdown of research expertise and associated faculty.

Given these strengths the department is in a key position to contribute to new programming and research initiatives either independently or in partnership with other units within such as REM and Environmental Science and beyond Environment such as Health and Business.

Geography’s three-year plan identifies a number of resource issues which will seriously constrain the delivery of programming. Among the most serious of these issues are retirements and illness of faculty which has seriously eroded faculty complement; the over reliance on sessional instruction and the lack of continuing funding to sustain this instruction; and third, inadequate lab space, facilities and technical support.

If there are weaknesses in the current complement of faculty most of these are addressed in the hiring plan such as proposals to enlarge expertise in water; GIS and
environmental monitoring; landscape ecology; industrial ecology/regional development; and innovation tied to new information technologies. A search is currently underway for a climatologist which is a vitally important position. Some additional thought needs to be given to other areas however such as food security, global change and environmental policy and assessment - former areas of strength within the department.

Resource and Environmental Management

REMs excellent international reputation derives from its highly focused course “intensive, professionally oriented, cross-disciplinary” masters program. The program is a blend of natural and social sciences with a great deal of emphasis on evidenced based and problem oriented research and teaching. A significant percentage of MA students pursue the co-op option. The addition of a PhD program, although still relatively small, has rounded out the graduate program by providing a more research intensive degree. Currently REM has between 80-90 FTEs a number that could be greatly expanded based upon the scale of the demand for the program. An important component of the graduate MA program is the accreditation by the CIP and the BCIP. Over half of the graduating students receive their CIP accreditation. A recent external review report gave the program very high marks for its quality. At the same time it urged further addition of CIP recognized faculty and increased emphasis upon settlement planning. The REM planning program is now amongst the largest in Canada.

Undergraduate courses were introduced in 1996 in the following areas: Global Change; Forest Ecosystem Management; Applied Ecology; Environmental Modelling; Environmental Risk assessment; and Institutional Arrangements for Sustainable Environmental Management. As is the case with a number of undergraduate courses in Geography, these will serve those interested in environmental literacy as well as more specialized requirements in Environmental Science. Plans are underway to introduce additional undergraduate courses that reflect existing faculty expertise at the graduate level such as ecological economics; fisheries sustainability; earth systems and global change; energy, materials and sustainability; and First Nations.

All faculty research is environmentally oriented and niche driven with between one and three faculty responsible for a particular field as illustrated in Table 1. The caliber of research is high, finding its way into the top journals and funded by SSHRC, NSERC and a variety of contract based sources. Regarding this latter point REM faculty either individually or through their research institutes such as CPR and CRMI (including FORREX) play an important role in public policy formulation and the wider dissemination of knowledge. This role will be strengthened further with closer relationships between CSCD and REM.

In its academic plan REM identifies two trends that will require careful planning and responses. The one is the growing demand for their programs and courses including research and advisory roles; the other is the adjustment to the requirements of a new Faculty - particularly in the new demands for interdisciplinarity and collaboration.
REM has identified a number of areas either for expansion or addition such as Sustainability and Human settlements; First Nations; Conservation Science/Wildlife Ecology; and Energy/materials and Sustainability as well as a number of secondary areas which can be found in their plan.

If weaknesses exist in REM they are largely recognized as resource related. The newly identified needs in the Planning Program are in the process of being corrected. The move of Mark Roseland to REM with his human settlements focus and CIP status will help to fill that gap. Moves are underway to expand undergraduate programming but not an undergraduate degree. Perhaps the biggest challenge already alluded to above is the need to plan jointly with Geography on undergraduate and graduate programming. One very positive overlap between the two is REM’s long-term need for GIS courses and Geography’ s capability to deliver a range of teaching in this area at both the undergraduate and graduate levels.

**Environmental Science**

Since 1996, the Environmental Science program at SFU has provided a high quality educational experience for students interested in the application of natural science to real world environmental problems. It provides numerous field-based learning opportunities and well over half of its students participate in the co-op program. The program has offered six streams or options to major in with the conservation biology and physical geography streams representing the lion’s share of the student enrollment. Opportunities exist for accreditation through APECBC, Canadian Certified Environmental Professionals, as well as Registered Professional Biologists of BC.

When the program was transferred from the Faculty of Science to FENV in April 2009 this provided the opportunity and impetus to reform and restructure the program. A number of planning processes and associated documents have helped to shape the ultimate outcome including, the 1996 External Review, SFU’s Restructuring Task Force, The Redevelopment Advisory Program Committee, in the spring of 2009, and most recently, specific program planning by the new Director Leah Bendell with representatives from Geography, Biological Sciences, Earth Sciences and Chemistry.

Five streams are being considered to replace the current six majors: Water Science; Applied Environmental Conservation; Ecotoxicology; Biogeophysical Science and an open major. The program will now be cohort based, interdisciplinary, experiential through field work, dedicated to the development of intellectual and practical skills and relevant to the community. Co-op education will be an option and will be encouraged. The first two years of study are primarily dedicated to fulfilling lower division science core requirements and the upper division requirements are a combination of courses for specific majors and interdisciplinary non-science courses. Cutting across the four years will be an Environmental Science cohort with a course in each year devoted to a variety of practical themes in social science, policy and ethics.
Notwithstanding the high quality of programming and student satisfaction the program continues to grapple with a number of constraints and issues. Since it currently has no dedicated teaching faculty, it must seconde faculty (e.g. the Director is from Biological Sciences) and rely heavily upon undergraduate courses from other units within FENV and other Faculties such as Science. Its operating budget is meager and the University has no space allocated for labs, student use and administration. The External Review recommended that consideration be given to creating a stand-alone department. The present academic plan from Environmental Science would like to position the program to mature or grow into a Department. Environmental Science has requested three faculty positions as the first step toward achieving departmental status. The Dean of Science in his Academic Plan has opened the door to the transfer of select faculty from Earth Sciences to Environmental Science to begin this process. The direct cost to FENV would be the loss of net new positions budgeted by the VPA.

In principle it is difficult to argue with the notion of creating a department and stand alone program. Many have argued that any FENV that aspires to be an internationally recognized research and teaching facility must have a strong environmental science core. Clearly Geography offers expertise in some but not all areas of Environmental Science. In practice a number of challenges and issues would have to be overcome beyond the overlap issues with Geography. Perhaps the most important would be demonstrated need based upon student demand. It is simply too early to answer that question. (Arguably without proper resources the student demand will never materialize.) Even with demonstrated support FENV would have to overcome a number of resource constraints relating to base budgets for operating staff, faculty positions and space. It is therefore vital in this planning process that FENV carefully examine its research and teaching options, how we can best pool our resources to meet those options and then weigh the relative merits of growth in competing areas.

Centre for Sustainable Community Development

Since its inception in 1989 as the Community Economic Development Centre and more recently as CSCD, the Centre has devoted itself to innovative and cross-cutting research, teaching and advisory services dedicated to integrating environmental, social and economic objectives at the community level. The centre has been at the forefront of sustainability education and practice nationally. Currently it offers an undergraduate certificate, a post baccalaureate diploma and two non-credit professional programs. CSCD has been asked by the McArthur Foundation for a detailed proposal for funding a Masters in Development Practice. If funded this would become an important nexus within the university for the collaboration among faculty from FENV, Business, and Health, among others, around common practitioner themes in development.

Faculty associated with CSCD have been active researchers in funded projects from a wide range of sources including SSHRC, CMHC, Infrastructure Canada, Real Estate Foundation of BC, CIDA and Western Economic Diversification Canada. Important
partnerships have evolved in the broad area of aboriginal community development and with organizations in BC and Alberta in research projects on the social economy, such as the Council for the Advancement of Native Development Officers and Human Services and Skills Development Canada.

CSCD wishes to expand its research and teaching capacities in the areas of: aboriginal and community development; food security; housing and community sustainability; and international sustainable community development.

With the transfer of CSCD to FENV and its closer integration with REM there should be significant opportunities for partnerships and collaboration particularly through strengthening undergraduate offerings. At the same time CSCD is faced with some significant resource constraints in terms of faculty complement. Currently Mark Roseland serves as Director and the associate director position remains unfilled although technically half a faculty position is owing to CSCD from the Urban Studies program. Funding for sessionals remains tenuous at best and staffing is unacceptably low after CSCD lost half of its APSA administrative position when it was transferred from FASS.

Equally problematic however is the lack of resonance between the newly proposed ‘Centres and Institutes Policy’, which does not recognize teaching, and CSCD’s strength in this area for credit and non-credit purposes.

Development Studies

The Development Group was founded in 2000, to better integrate the diverse expertise around campus on ‘development issues’. The Graduate Certificate in Development Studies has been available to MA and PhD students since 2005, as has the core seminar. The Development Group, conscious of the diverse expertise and programs available across campus, have proposed a Program in Development and Sustainability. From a concentration on development and sustainability the program would ultimately evolve into a minor degree and an undergraduate certificate. “Development and sustainability” is not of course a discipline but rather a “concentration of disciplines” which have considerable relevance to both the theory and practice of development issues from the community to the international level. The Development Group has forty members in nine units across the University.

This is a timely initiative for the simple reason that environment and development issues dominate today’s discourse on the impact of our actions and practices as humans within the biosphere. The success of the program will be tied to overcoming a number of factors including: severe resource constraints (no operating budget nor staffing complement); the ability to build upon expertise within and outside the Faculty; the ability to bring clarity and definition to the program (beyond an amalgam of faculty); and the ability to optimally integrate itself with the MDP (if funded) as discussed earlier.
Coastal Studies

The Centre for Coastal Studies is in the process of transferring to FENV. Although no request was made for a three year plan, a recent report on its activities highlights that it is a vitally important Centre focusing upon science and policy with specific outreach expertise in the area of fisheries and aquaculture research and policy with a focus on salmon, water and renewable energy policy, climate change, marine biodiversity and conservation and sustainable oceans and coastal communities. Activities bring together social and natural scientists and representatives from governments, First Nations, industry, NGO’s and communities to develop and expand partnerships in seeking solutions for sustainable use of coastal resources. This creates research opportunities for university academics and students associated with the Centre (e.g. the Centre was the home base for the Genome Canada sponsored cGRASP Ge³ls grant and the Linking Science and Local Knowledge Working Group of the SSHRC/DFO funded national Ocean Management Research Network.) It also profiles SFU at the local, regional, national and International levels.

This interdisciplinary Centre’s outreach activities could serve as a highly important ‘jewel in the crown’ for FENV if funding for its activities can be found. Consideration is being given to renaming it as the ‘Centre for Coastal Science and Environmental Management’ to more closely reflect its mandate. A search is now underway for the Liber Ero Chair in Coastal Studies. Although the actual home department for the Chair has not been identified, it is expected that at the very least, the successful candidate will be performing important outreach activities through the Centre. The current space allocations for the Centre are inadequate and need revisiting.

Three-Year Growth Scenarios

Guiding Principles

Before providing an outline of FENV growth scenarios it is useful if we briefly propose a number of cross cutting themes or guiding principles for a ‘hybrid’ Faculty that provide cohesion and a common base for ‘how’ we will proceed. These themes have come out of the individual unit plans, the visioning workshop and numerous discussions during the past six months.

• FENV will serve as the natural focal point for the co-ordination and promotion of environmental research and teaching at SFU.

• New programming needs to reflect the importance of the integration of knowledge of social, natural, policy and Special Information Sciences. GIS and SIS have the potential to be a binding glue for FENV.
• Physical Geography is a Science and is deserving of inclusion in all programs that require basic Science.

• Interdisciplinarity and collaboration will become accepted elements of FENV’s modus operandi.

• Scholarly activities in the Faculty are intellectually inspired to address environment issues, broadly defined. In its areas of expertise, future programming will emphasize core areas of basic research as well as applied and problem-solving studies.

• Secondments of faculty to support research and programming are to be supported if appropriate models for improved collaboration can be devised.

• Experiential learning including field classes, co-op, cohort programs, study abroad, practical workshops, special mentoring, and community based service learning, is to be encouraged where possible and an accepted part of the Faculty’s pedagogy.

• Promoting environmental literacy is a critically important teaching and outreach mandate.

• Community service learning and the application of scientific knowledge to the resolution of environmental problems becomes an accepted part of knowledge dissemination and outreach.

• While BC should serve as our living laboratory we must not lose sight of international focus and expertise.

• Partnerships including student exchanges with other research institutions, within and outside BC, are to be encouraged.

• Engagement with First Nations and other communities should become an accepted practice of our mandate.

**Strategic Directions**

The following research and teaching foci represent either an expansion of existing expertise or the addition of new areas or sub-areas of specialization that complement existing strengths. This list generally reflects the main themes identified in the individual unit plans. At this stage of the development of FENV’s three year plans no attempt is made to define specific allocations to units for the simple reason that further discussion needs to occur amongst the units with respect to unspecified priorities in hiring and a host of overlapping ‘due diligence’ issues such as shares of undergraduate/graduate teaching, possible strategic alliances, joint appointments and integrated course and program initiatives.
• First Nations/Cultural Resource Management
• Energy and Materials/Industrial Ecology
• GIS/Remote Sensing and Land Use Monitoring
• Conservation Science/Wildlife Ecology/Landscape Ecology
• Ecosystem Restoration/Applied Ecosystem Management
• Urban/Community Sustainability/Settlement Planning
• Water Resources Policy
• Environmental Design and the Green Economy
• Global Change/Development and Environment
• Health and the Environment
Table 1
FENV Unit Primary Strengths

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<th>CSCD</th>
<th>EVSC</th>
<th>DEV</th>
<th>GEOG</th>
<th>REM</th>
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<td>CSCD conducts rigorous applied and participatory research that is committed to developing practical, effective solutions for environmental, social and economic challenges, and possesses a unique understanding and approach to support businesses and communities in their transition to sustainability.</td>
<td>The Environment al Science Program is an undergradu ate program and research is conducted in faculty members home units so EVSC does not currently have a research program.</td>
<td>Develop ment Group members have individual research programs in their home units.</td>
<td>Research expertise is in: Cities, Culture and Society themes • Sturgeon: China, property rights in natural resources, shifting cultivation and cash cropping, governance, borders and boundaries, ethnography of globalization, ethnicity and identity; • Kingsbury: Consumption, aesthetics and nature, cultures and sustainability, multiculturalism; • Holden: Urban, sustainable development and policy, sustainable assessment and evaluation, social learning in cities; • McCann: Urban, drug policy in relation to urban and regional built environments, urban public space and governance, urban and regional ‘liveability’, ‘quality of life’ and ‘creativity’; • Blomley: Land, property and the geography of rights, legal geography, urban; • Gill: Tourism and environmental planning processes, community-based planning; • Crooks: Health, primary health care, palliative care services and family medicine, informal family care giving, health-related social programs, socio-spatial negotiations of chronic illness.</td>
<td>Research groups are: • Fisheries Science and Management Research group led by Drs. Randall Peterman, Sean Cox, and Andy Cooper • Energy and Materials Research Group (EMRG) Research group led by Dr. Mark Jaccard • Climate, Oceans, and Paleo-Environments (COPE) Research group led by Dr. Karen Kohfeld • Sustainable Planning Research group led by Drs. Tom Gunton, Murray Rutherford, and Peter Williams • Co-Management Research group led by Dr. Evelyn Pinkerton • Environment and Development Research group led by Dr. Duncan Knowler • Applied Community Ecology Research group led by Dr. Anne Salomon • Environmental Toxicology Research group led by Dr. Frank Gobas • Forest Ecology and Management Research group led by Dr. Ken Lertzman • Indigenous Heritage Stewardship Research group led by Dr. John Welch • Parks and Recreation Research group led by Dr. Wolfgang Haider</td>
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Current/Recent Research Projects:
• Market Mechanisms for SCD
• Strategic Sustainability and Community Infrastructure
• Food Security and Food-Related Micro-Enterprise
• The Social Economy in BC and Alberta
• NGOs on a Northern Frontier
• Sustainable Consumption and... | Focus in new... |... |... |... |

Resources, Development and Environment themes • Clapp: Resources, remapping the temperate rainforests for biodiversity; advisory and advocacy science in the environmental policy process; institutional and economic approaches to the conservation of forest ecosystem services; • Brohman: Development, Latin America, development and environment in the ‘south’; • Mann: Resources, natural resource labour and labour...
Production
• Forest Communities
• Civil Society

International Research Projects:
• Bolivia: Specialization in CED (2007-2012)
• Mexico: Building Capacity in CED (2001-07)
• Ukraine: CED Project (2004-07)

Other Research areas:
• sustainability leadership skills
• Aboriginal Community Economic Development
• active engagement with various community organizations
• housing and community sustainability
• understanding collaboration for sustainable development
• research and teaching are highly interconnected.

Faculty is on development and environment & sustainability from social, environmental, economic, political, cultural, scientific, technological, and historical dimensions of the quality of life, and those responsible for it.

markets, comparative natural resource policy, macroeconomic policy and commodity production, race and gender;

• Hayter: Industrial, BC’s forest industry, the location dynamics of business firms, and regional development, environmental economic geography.

Biogeophysical and water science themes
• Venditti: Fluvial, river geomorphology, fluvial sedimentology, river hydrology, stream restoration,
• Hickin: Fluvial, river geomorphology, fluvial sedimentology;
• Lesack: Limnology, ecosystem science of large rivers, carbon and nutrient cycling in lakes, hydrology of lakes and river floodplains, biogeochemical mass fluxes to the ocean from small catchments through large rivers;
• Tromp van Meerveld: Hydrology, plant water interactions, eco-hydrology, soil erosion;
• Brennand: Glacial geomorphology, glacial sedimentology, paleoglaciology, paleohydrology, environmental and climate change, planetary geomorphology;
• Schmidt: Impact of deciduous trees on nutrient cycling in conifer forests, impact of forest management practices on soil properties and site productivity, rehabilitation of degraded forest soils.

GIS/SIS’s
• Schuurman: Health and Environment, optimal location of health services, population health;
• Hedley: Visualization, 2D geovisualization, 3D geovisualization; geospatial interface research, natural hazards, ocean science, spatial cognition;
• Dragicic: Modeling of complex spatial environmental systems, modeling land use, land cover and urban growth; modeling dynamic spatial phenomena in forestry and landscape ecology;
• Balram: Collaborative GIS and environmental decision making.

• Tourism Policy and Research Group led by Peter Williams
Additional research themes in REM—most of which addressed by several research groups.
• Quantitative analysis and modeling of ecological data and systems
• Choice modeling in the environmental and social sciences
• Climate Change Impacts, Analysis, Adaptation, and Mitigation
• Ecological Economics
• Ecosystem-Based Management
• Risk Assessment and Decision Analysis
• Strategic Land-Use Planning
• Community-Based Management
• Water Planning and Management
• Applied Conservation Biology and Planning
• Environmental Conflict and Dispute Resolution
• Public Policy Analysis and Administration
• Environmental and Social Impact Assessment
• Community and Regional Planning and Sustainability
• Water Planning and Management
• Applied Conservation Biology and Planning
• Environmental Conflict and Dispute Resolution
• Public Policy Analysis and Administration
• Environmental and social Impact Assessment
• Community and Regional Planning and Sustainability
Table 2
Development Timeline for New Programming & Degree Options

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<td>Environmental Science – new majors/streams</td>
<td>X</td>
<td>startup planned</td>
<td></td>
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<tr>
<td>Environmental Literacy Minor</td>
<td>X</td>
<td>startup planned</td>
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<tr>
<td>Environmental Minor for Business students</td>
<td>X</td>
<td></td>
<td>X</td>
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<tr>
<td>Business Minor for Environment students</td>
<td>X</td>
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</tr>
<tr>
<td>BENV</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>MSc – Environmental Analysis and Monitoring</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Development and Sustainability Program</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Masters in Development Practice</td>
<td>X</td>
<td>X</td>
<td>startup planned</td>
<td></td>
</tr>
<tr>
<td>First Nations, Cultural Resource Management</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>New CIP Programming</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>MET</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>ENV Courses</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>REM Undergrad Programming or Minor</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Rebranding in Geography</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health and Environment Programming</td>
<td></td>
<td>X</td>
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</table>
Communication of FENV Strategic Plan

The Faculty commenced planning and prioritizing strategic directions in an asset mapping exercise by FENV DAC in Spring 2009. The draft plan built upon that asset mapping exercise, the proposals from the respective 3-year individual unit plans and the outcomes from a recent Faculty consultation and visioning workshop. Discussion of strategic directions for three year planning also occurred at several DAC meetings.

Units submitted drafts of their three-year plans by mid-September prior to the FENV visioning and consultation session. The consultation session on Sept. 19 was open to everyone in the Faculty and invitees external to FENV. It was well attended, there was good representation and participation by all FENV units, and useful options and directions for FENV were generated or previous considerations were reinforced.

The draft Faculty plan was distributed and discussed at FENV DAC on October 23.

The final version that is submitted to VPA will be distributed to all FENV committees, units and posted on the FENV website.
# Appendix
## FENV Summary 3 Yr Financial Plan

### 9.1 Basic Financial Plan

<table>
<thead>
<tr>
<th></th>
<th>09/10 Budget</th>
<th>09/10 YE Forecast</th>
<th>10/11 Plan Yr 1</th>
<th>11/12 Plan Yr 2</th>
<th>12/13 Plan Yr 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty 'Revenues'</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Original Budget Allocation</td>
<td>6,970,309</td>
<td>7,046,118</td>
<td>7,170,581</td>
<td>7,246,831</td>
<td>7,138,542</td>
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<tr>
<td>Plus shortfalls/growth in section 9.2 below</td>
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<td></td>
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<tr>
<td>Additional Faculty Revenues</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Premium Fees</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Non Credit Course Revenue</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Additional External Funding</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
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<tr>
<td>Other Revenue</td>
<td>40,000</td>
<td>40,300</td>
<td>39,800</td>
<td>39,800</td>
<td>39,800</td>
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<tr>
<td>Planned Use of Carry Over</td>
<td>0</td>
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<tr>
<td><strong>Total Revenues</strong></td>
<td>7,010,309</td>
<td>7,086,418</td>
<td>7,210,381</td>
<td>7,286,631</td>
<td>7,178,342</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>09/10 Budget</th>
<th>09/10 YE Forecast</th>
<th>10/11 Plan Yr 1</th>
<th>11/12 Plan Yr 2</th>
<th>12/13 Plan Yr 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty Expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non Salary Expenses</td>
<td>350,782</td>
<td>380,286</td>
<td>349,842</td>
<td>351,191</td>
<td>348,101</td>
</tr>
<tr>
<td>Salaries &amp; Benefits (ignore Inflationary increases)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Academic</td>
<td>4,100,767</td>
<td>4,017,807</td>
<td>3,931,333</td>
<td>3,981,174</td>
<td>4,031,595</td>
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<tr>
<td>Instruct + Research</td>
<td>518,549</td>
<td>418,647</td>
<td>554,430</td>
<td>554,430</td>
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<tr>
<td>Support</td>
<td>1,000,471</td>
<td>988,922</td>
<td>1,127,476</td>
<td>1,138,079</td>
<td>1,148,852</td>
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<tr>
<td>Others</td>
<td>103,000</td>
<td>103,000</td>
<td>103,000</td>
<td>103,000</td>
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<tr>
<td>Benefits</td>
<td>1,039,740</td>
<td>998,152</td>
<td>1,072,300</td>
<td>1,083,757</td>
<td>1,095,364</td>
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<tr>
<td>Less: Savings Expected from reductions</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Total Expenses</strong></td>
<td>7,010,309</td>
<td>6,803,814</td>
<td>7,210,381</td>
<td>7,283,631</td>
<td>7,178,342</td>
</tr>
</tbody>
</table>
## Growth Scenarios/new Initiatives

<table>
<thead>
<tr>
<th>Priority</th>
<th>Description</th>
<th>2009/10</th>
<th>2010/11</th>
<th>2011/12</th>
<th>2012/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority 1</td>
<td>8 net new positions (4 already included in 10/11)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Continuation of new positions from previous year(s)</td>
<td></td>
<td>400,000</td>
<td>325,000</td>
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<tr>
<td>Priority 2</td>
<td>Collaborative Exchange Centre (for secondments etc)</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
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<tr>
<td>Priority 3</td>
<td>Offset budget shortfalls Geography instructional</td>
<td>210,672</td>
<td>210,672</td>
<td>410,672</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>310,672</td>
<td>710,672</td>
<td>835,672</td>
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</tr>
</tbody>
</table>

### Notes:
1) Centre for Coastal Studies is not included.
2) MDP (Masters in Development Practice) is not included.
3) Positions for Liber Ero Chair in Coastal Studies are not included.
4) Budget shortfall included in Priority 3 growth scenario was submitted to VPA in Aug. 2009.