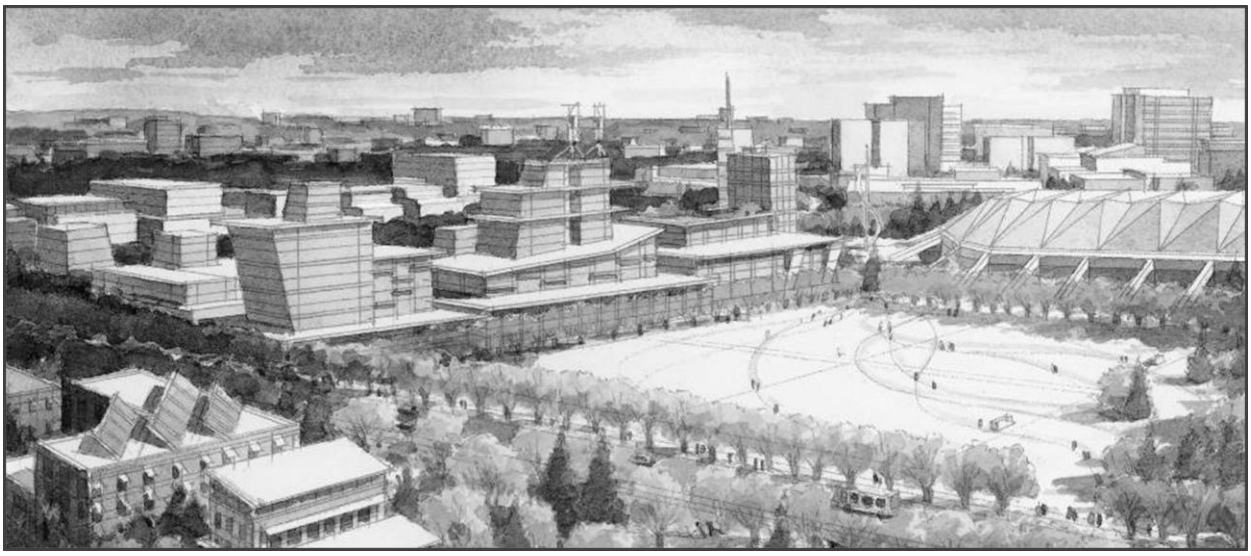
UNIVERSITY OF CALGARY

COMPREHENSIVE INSTITUTIONAL PLAN

2011-14

University of Calgary



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1. Executive Summary

Institutional Context

Over the past several years, the University of Calgary has taken its place among Canada's major research institutions as evident from its ranking on a number of national and international measures related to program quality, size and research productivity. This success is directly attributable to substantial investments made over the past 45 years to recruit, support and develop highly qualified and skilled personnel and build core programs and infrastructure. The university will continue to derive much of its strength from its role within the Campus Alberta post-secondary system, its location within the City of Calgary and Province of Alberta, and from the over 100 academic programs it offers through its 14 faculties and 53 teaching departments.

Plan Development

This plan is the result of collaborative efforts involving ongoing consultation internally and with fellow universities, colleges, technical institutes, and other educational providers on the development and delivery of joint degrees, the use of transfer and articulation agreements, the offering of degree-completion opportunities to students in rural and urban communities, and collaborative research to stimulate commercialization for the prosperity of the province.

Environmental Scan

The University of Calgary operates in an environment characterized by political, economic, social, technological, and environmental change. Increasing competition, population growth, economic uncertainty, challenges related to student recruitment, retention and engagement, affordable student housing, the growing gap between revenue and expenditure growth, and calls for greater public accountability, among other factors are reshaping the institution's operating environment. While these offer new opportunities, they also present challenges.

Goals, Priority Initiatives, Expected Outcomes and Performance Measures

The priority initiatives identified in this plan demonstrate leadership in how a public university should deliver its mission in a contemporary, sustainable manner. Central to the University of Calgary's mandate over the next three years will be: student success; excellence in research, scholarship and creative activity; interdisciplinary education and research; and return to community. Through the initiatives identified, the university will attract the highest quality students, faculty and staff, provide a supportive and safe environment, and ensure that quality educational experiences and scholarship exemplify its commitment to excellence.

Financial and Budget Information

The University of Calgary is budgeting expenditures of $1.09 billion for the 2011-12 fiscal year, which results in a balanced budget.

Resource Implications

Highlighted within this plan are the resource implications of the University of Calgary's priority access, research, and information technology initiatives. This includes a $188.8 million capital budget for 2011-12.

2. Accountability Statement

March 15, 2011

Minister

This Comprehensive Institutional Plan was prepared under the Board's direction in accordance with legislation and ministerial guidelines, and in consideration of all policy decisions and material, economic, or fiscal implications of which the Board is aware.

Original Signed By

Chair

Board of Governors

3. Institutional Context

This section provides the context for the priorities identified within this plan. It describes the University of Calgary's role in relation to members of Campus Alberta and the Alberta Innovates systems through a description of the institution's mandate, vision, principles and values.

A. MANDATE

Founded in 1966, the University of Calgary is governed by a Board of Governors, and operates as a public Comprehensive Academic and Research Institution under the authority of Alberta's *Post-secondary Learning Act*. Education and research at the University of Calgary serve the needs of local, provincial, national and international communities. Through its inquiry-based teaching and research programs and strategic and entrepreneurial partnerships, the University's faculty, staff and students pursue knowledge, contribute to the development and critique of societal goals, and engage in creativity and innovation in many fields. The University's goal is to be recognized internationally for the success of its students and for excellence in research, scholarly and creative activity.

The University offers a broad selection of programs of study including baccalaureate, graduate professional, and research-based master's and doctoral degrees. It also offers a wide assortment of credit and non-credit diplomas and certificates, as well as non-credit programs of professional development, executive development, and artistic and scholarly activities aligned with the academic expertise of the University. Building on strengths in disciplines in the areas of fine arts, humanities, sciences and social sciences as well as in the professions, including architecture, business, education, engineering, environmental design, kinesiology, law, medicine, nursing, social work and veterinary medicine, the University is committed to offering an experience that provides both disciplinary and interdisciplinary education to its students. A number of the programs it has developed are unique within Alberta.

As an autonomous institution working within Campus Alberta, the University collaborates with other post-secondary institutions in the delivery of collaborative degrees, the use of transfer and articulation agreements, the sharing of facilities and faculty members, and the offering of degree-completion opportunities to students from both rural and urban communities. Working with the private sector and all three levels of government, the University of Calgary takes a leadership role within Alberta for the further development of educational and research programs in areas designated as strategic academic priorities.

At the University of Calgary, research, teaching and scholarship are interdependent and steeped in the principle of academic freedom. The University encourages, supports and disseminates research, scholarship, innovation, and creative activity in many forms and integrates these activities into both the graduate and undergraduate curriculum. Students and faculty at the University of Calgary conduct basic and applied research at the frontiers of knowledge and transfer knowledge to society, locally, regionally, nationally and internationally. The University stimulates and supports the commercialization of research and innovation for the common good and for the prosperity of the province, the nation and the world. Students and other scholars, including post-doctoral fellows, are attracted to the University of Calgary for the opportunity to refine their research, teaching and mentoring skills.

The development of programs of study and of research partnerships across Alberta, nationally and internationally, extends the University's engagement with the broader community and enlarges the vision of its students, faculty and staff. International partnerships, alliances, and development projects, together with study abroad initiatives, allow the University to contribute to and benefit from a network of world-wide interactions that enrich the student experience.

The University of Calgary offers a comprehensive set of programs, facilities, and services to provide students with an excellent experience both inside and outside the classroom. The University supports the student experience with a range of services including academic and career advising, student life programming, health and wellness services, and academic success programs. Community service learning, cooperative and internship placements, and international exchanges all provide experiential learning opportunities to complement students' classroom experiences. The University supplements and enriches its face-to-face instruction with communication and digital technologies, library and cultural resources, and both distance education and blended learning techniques.

The University of Calgary is responsive to the expectations of the communities it serves in the delivery of its educational and research programs. The University contributes in diverse ways to the cultural, social and economic life of the province, through striving for high quality in its graduates, its research, and its service to the community. The University of Calgary is committed to the goals of environmental and financial sustainability, and to making a positive impact on individuals and communities.

** Mandate approved by the Minister of Advanced Education and Technology on August 12, 2010.*

B. VISION

The University of Calgary is a passionate community of scholars dedicated to high-level teaching and research created and shared with students to the benefit of society.

C. PRINCIPLES

1. Student Success

A fundamental role of the University is to educate students to appreciate the complexities of the natural and human worlds in which they live, and to prepare them to engage actively, thoughtfully and productively both in their careers and as citizens of their communities. Recruiting excellent students and providing them with fulfilling educational experiences are keys to the institution's mission and success. In short, the programs and experience the University offers must be appropriate to the needs, aspirations, and futures of students, and must meet society's need for qualified people in many areas.

2. Excellence in Research, Scholarship and Creative Activity

The University of Calgary is a resilient, responsive and adaptable institution built on a strong foundation of partnerships, coalitions and networks that operate in common purpose to create a fully participating learning society. The University is committed to innovative research, scholarship and creative activity in all of their forms. Discovery, integration, application and teaching are the basis of engaged scholarship and the heart of this comprehensive academic and research institution.

3. Interdisciplinary Education and Research

The University of Calgary supports and promotes interdisciplinary education and research at both the undergraduate and graduate levels. At the undergraduate level, this results in flexible programmatic offerings such as the ability to earn combined degrees. At the graduate level it results in multi-departmental and multi-faculty cooperation and collaboration, as well as the enhancement of current interdisciplinary programs. Across the undergraduate and graduate curriculum, this strengthens programs and integrates research that crosses disciplinary structures.

4. Return to Community

The University of Calgary contributes to the development of an increasingly inter-connected and interdependent society in the most innovative and effective ways possible often in partnership with other institutions and corporate entities (public, private and non-profit). As a public institution, the University of Calgary welcomes its service role as its responds to and addresses societal needs.

D. VALUES

At the heart of this plan are core values that guide activities, govern priorities, and influence the strategic allocation of resources (Figure 1).

Figure 1 – Values

Pride	Leadership	Service
A community filled with an abundant sense of pride	A leading research intensive institution with a strong educational mission	A respected service organization

4. Plan Development

This section describes the process undertaken to develop this plan. Consultation processes are designed to ensure that the university aligns its priorities seamlessly within the institution and with system partners.

A. INTERNAL CONSULTATION

Figure 2 identifies the various internal groups engaged in the development of this plan.

Figure 2 – Internal Consultation

Faculties and Non-Academic Units

Faculties and non-academic units provide the foundation upon which all planning consultation processes are built.

Research Development Policy Committee (RDPC)

RDPC supports the development of research, scholarly and creative initiatives and provides wide-ranging input on research and research-related policy.

Associate Deans Research Council (ADRC)

ADRC is an information exchange forum and advisory body on matters pertaining to research, including defining, measuring and promoting excellence.

Deans' Council (DC)

DC is an advisory body to the president, the board, and General Faculties Council and has the powers, duties and functions delegated to it.

Executive Leadership Team (ELT)

ELT is responsible for the establishment of long range, strategic planning and the alignment of activity and resources with the strategic plan.

University Planning Committee (UPC) and University Budget Committee (TUBC)

TUBC serves as the senior budget committee for the Board to ensure that the resource allocation system is linked to academic planning.

University Planning Committee (UPC) and University Budget Committee (TUBC)

UPC serves as the senior planning committee for GFC to ensure co-ordination among academic planning activities and linkage to resource allocation.

Operations Committee (OC)

The OC is responsible to the Board to review and approve matters pertaining to the preparation of annual operating and capital budgets.

Board of Governors (BOG)

The BOG is the body established by the *Post-Secondary Learning Act* responsible for approving the university's plans and budgets.

B. SYSTEM CONSULTATION

Figure 3 identifies the various external groups that influenced the development of this plan.

Figure 3 – System Consultation

Advanced Education and Technology (AET)

The University works in partnership with AET to ensure that the programs and services it offers are accessible, responsive, and affordable.

Research and Innovation Corporations (R&I)

Consultation and collaboration with the four publicly-funded Research and Innovation (R&I) Corporations ensures alignment with provincial research and innovation priorities.

Alberta Research and Innovation Authority (ARIA)

Consultation and collaboration with the ARIA helps to identify leading-edge research areas and innovation policies that support the diversification of Alberta's economy.

Campus Alberta Quality Council (CAQC)

The University of Calgary regularly consults with CAQC to ensure that the programs it offers are of sufficient breadth and rigour to meet national and international program standards.

Alberta Universities Association (AUA)

Through the Alberta Universities Association, the University consults on the role of undergraduate, graduate, and professional studies, as well as research.

Campus Alberta (CA)

Campus Alberta has brought about greater coordination among provincial post-secondary partners in terms of program growth, renewal and alignment.

Alberta Rural Development Network (ARDN)

The University of Calgary's participation in the ARDN provides it with a better understand of how to assist rural communities deliver on their post-secondary aspirations.

5. Environmental Scan

This section provides an overview of the operating environment, complete with a discussion of the trends expected to influence progress against the goals described within this plan.

A. ENVIRONMENT (LOCAL / PROVINCIAL)

Population

Growth in Alberta's total population is expected to slow from 8% during the period 2006-09 to 4% over the period 2010-13. Growth in Calgary's 18-24 year old age group is expected to decrease from 5% during the period 2006-09 to 0% over the period 2010-13. Similarly, growth in the 18 year old cohort is expected to fall from 6% over the period 2006-09 to – 1% 2010-13). Ontario and Alberta are the only provinces expected to recover to 2006 levels by 2020 and 2026.

Participation

Alberta has the second lowest post-secondary participation rates in Canada next to British Columbia. Rates in Edmonton as measured by FLE per population are 36% higher than Calgary and the gap has widened in the last 5 years.

First Year Students

Approximately two thirds of the incoming class at the U of C comes from Calgary high schools. The number of students from high schools outside of Alberta almost doubled over the last decade (330 students in 1997 and 630 in 2006). The Calgary region has a high school transition rate of 63% - 1% higher than the Alberta figure. This rate is the percentage of high school students who transition to post-secondary studies within six years of entering Grade 10.

Transfer Students

Transfer students are the second largest group admitted to the U of C each year, entering the university in various faculties and different years of program. Overall transfers to the U of C increased up to 2006, and then transfers into, and from within Alberta contributed to the decrease. Transfers to the U of C have declined from most Alberta institutions during the last 3 years, which was a period of low growth or declining enrolment for many Alberta institutions.

Turn-Aways

The Calgary region accounts for approximately 68% of Alberta's qualified applicants who were turned-away from post-secondary programs in 2007-2008. In Medicine and Law, the applicant to admissions ratio is 12 to 1; in Nursing 5 to 1; in Biomedical Sciences 4 to 1; in the Haskayne School of Business 3 to 1; and in the Schulich School of Engineering, the applicant to admissions ratio is 2 to 1. All are areas where graduates are in high demand in Alberta's economy.

Competition

The U of C faces competition in the recruitment of students from places as close as Mount Royal and Lethbridge to as far as Nova Scotia. As the undergraduate post-secondary market expands, the traditional university 18-24 year old feeder cohort is shrinking nationally. This drives institutions to recruit farther from home to shore up declining markets. With Calgary still having an expanding 18-24 cohort, peer institutions view Calgary as a recruitment opportunity.

B. ENVIRONMENT (NATIONAL / INTERNATIONAL)

Enrolment

In 2009-10 an additional 38,000 full-time students enrolled in universities across Canada compared to the 2008-09. This brought the total to about 870,000 students – 733,500 in undergraduate programs, which is up 29,000 or 4.1% over 2008-09, and 136,500 in graduate programs, which is up 9,000 or 7.2% over 2008-09. The economy continues to have a negative impact on the mobility of students internationally. The U of C saw a drop in both applications and enrolments from international students in the fall of 2010.

Tuition

A national comparison of tuition costs reveals that Canadian full-time students paid an average of $4,917 in 2009-10 compared with $4,747 in 2008-09. Undergraduate students in Dentistry continue to pay the highest fees at $13,988. Undergraduate students in Education continue to pay the lowest fees, averaging $3,783 Graduate students paid 4.7% more than in 2008-09, compared with the 3.6% increase for undergraduate students. Graduate students paid an average of $6,008. Students in Executive MBA programs pay the highest fees at $30,653.

Research

In the decade leading up to 2009, support for university research and development (R&D) in Canada increased at twice the growth rate of research and development in the business sector. Science and technology spending is now in excess of $10 billion, which results in Canada ranking first in the G-7 and second among Organization for Economic Cooperation (OECD) countries for the research and development contribution of higher education as a percent of GDP.

C. TRENDS

Access

The recession is just one of a number of factors contributing to increased student demand as more people move from the workforce to post-secondary education. Meeting this demand, particularly in areas of strategic priority, will be challenging since much of the funding for planned program expansions across the Campus Alberta system is no longer available. The U of C has adjusted its accessibility plans internally and externally with its Campus Alberta partners to ensure that it continues to meet learner needs. Competition for highly qualified undergraduate students has become more pronounced from provinces facing ongoing declines in their 18-21 year old cohort. Competition for the best graduate students has also increased as Canadian and international universities have become competitive in their recruitment activities and funding offers. Despite the economic downturn, student recruitment, retention, and completion outcomes will continue to be a priority to meet student and labour market demand.

Innovation

The Alberta research and innovation landscape changed dramatically in 2009 as the Government of Alberta introduced a new strategy for Technology Commercialization and Economic Diversification for Alberta and the passage of the *Alberta Research and Innovation Act*. A new Roles and Mandates Framework flowing from the *Act* is intended to make the system less complex, more focused on government's priorities, with less overlap and stronger links between the players. Boundaries will continue to blur between disciplines as the U of C is increasingly called upon to address societal problems. Competition will also intensify for the most qualified graduate students and faculty members. Although indications are that sponsored research income growth will be influenced by changes in the global economy, the demand for university research is expected to remain strong as governments turn to innovation as a driver of social and economic development.

Faculty and Staff

The acute staffing challenges of recent years have eased. However, longer term demographics suggest that these pressures will re-emerge and the University will need to take strategic actions now to ensure that it is prepared. As the public sector typically lags behind the private sector, the University has entered a period of wage restraint as the private sector is emerging from it. This could result in mismatches between the available resources and expectations. In an environment characterized by growth, constrained budgets, and heightened scrutiny, it will be challenging to recruit and retain dedicated and professional faculty and staff. These issues highlight the need for leadership, employee development, and succession planning.

Resources

The global financial crisis had a profound and lasting effect. Although the U of C suffered less than other universities, revenue through fundraising declined; investment returns will remain lower than normal; and government grant and tuition revenue will grow at rates less than the inflationary cost of program delivery. A number of factors suggest that the U of C is better positioned than many other universities to buffer the financial downturn, including a favourable student to faculty ratio, a broad range of desirable program, and a decentralized budget model.

Facilities

Completion of new facilities and associated renovations to existing buildings as part of the University of Calgary's capital program will address long-standing teaching, research and administrative space issues. Once construction on the Main, Downtown, Foothills and Spy Hill campuses is complete, the focus will shift from new and expanded facilities to maintenance and renewal of existing facilities. Although no major capital projects are expected to commence before 2012, construction on Phase 1 of the West Campus project is expected to be underway by 2013-14.

Sustainability

Increasing public concern about climate change will have significant influence on government policies, regulations, technological choices, and markets. Around the world, innovative responses to climate change and other environmental problems are affecting more than $100 billion in annual capital flows as pioneering entrepreneurs, organizations, and governments take steps to create the Earth's first sustainable global economy. Carbon trading is growing, reaching an estimated $50 billion. The political, economic, environmental, technological and socio-cultural aspects of complex global challenges will contribute to an increased demand for research and programming that reflects interdisciplinary inquiry, systems thinking, and sustainability.

Accountability

University governance structures, processes and practices around the world are being shaped by changes in the economy, increasing legislative influence, heightened demands for transparency, accountability, market competition, and globalization among others. Recent changes to post-secondary roles and mandates, new legislation governing university research, and the resulting desire of governments to target funds and regulate student fees provide evidence that the University must continue to work to achieve the appropriate balance between institutional autonomy and public accountability.

Conclusion

What seems clear from this scan is that the environment over the next three years will be vastly different from that of the past three years. The University of Calgary will need to leverage every opportunity and address its challenges, all while being more efficient with the resource it has available. To ensure that it arrives at its destination – demonstrating leadership in how a public university should deliver its mandate in a contemporary, relevant and useful manner – this scan suggests that it will be vitally important to:

1. Assure the success of the Innovative Support Services (iS^2) initiative;
2. Enhance transparency within the university community;
3. Balance the 2011-12 budget and achieve greater financial sustainability; and
4. Demonstrate excellence and leadership in the pursuit of sustainability initiatives.

If the University attends to these priorities while growing its resources, enhancing its reputation, and improving its service to students and society, it will find itself on a more solid foundation among Canada's major research institutions.

6. Goals, Priority Initiatives, Expected Outcomes and Performance Measures

This section describes the priority initiatives that the University of Calgary will implement to address its goals over the planning period. A goal is a broad statement of intent; priority initiatives are specific actions the Faculty plans to engage in to achieve the goal; and performance measures are indicators that show whether initiatives are leading to the satisfaction of objectives.

GOAL 1: STUDENT SUCCESS

Objectives

To recruit, retain and reward highly qualified students; to provide a high quality learning environment; and to support and encourage students to graduate in a timely manner

Priority Initiatives

1. Align enrolment planning with institutional planning, monitoring and reporting processes
2. Enhance first year experience and early intervention programs
3. Strengthen scholarship and bursary support
4. Promote co-curricular experiential learning initiatives
5. Realign and enhance student advising and learner support services
6. Align institutional activity with Institutional Learning and Teaching Plan (ILTP)
7. Implement new Graduate Education Plan
8. Implement quality assessment recommendations
9. Review and restructure international activity and processes

Expected Outcomes

University students will encounter high-quality learning experiences. They will report that they are highly satisfied with the quality of their learning experiences and the associated development of their critical thinking and research skills. Graduates will be leaders in interdisciplinary research, inquiry and service.

GOAL 2: EXCELLENCE IN RESEARCH, SCHOLARSHIP AND CREATIVE ACTIVITY

Objectives

To be an international leader in the creation of knowledge; and to assume a lead role in knowledge transfer and the facilitation of commercialization

Priority Initiatives

1. Update Strategic Research Plan
2. Enhance research compliance and reporting (Project IRISS – Phase 2)
3. Develop research mentorship programs
4. Enhance support of excellent researchers
5. Review and update policies related to commercialization and establish priorities
6. Move biomedical research findings and discovery towards commercialization
7. Update annual academic report software and enhance research reporting capability

Expected Outcomes

The University will be internationally recognized as a top Canadian research university through its achievements in strategic academic priority areas. Discovery, integration, application and teaching - the basis of engaged scholarship – require faculty to collaborate, inquire, investigate, challenge and apply knowledge, often across disciplinary lines.

GOAL 3: INTERDISCIPLINARY EDUCATION AND RESEARCH

Objectives

To work together across disciplines in the development of teaching and research programs that address complex societal issues

Priority Initiatives

1. Strengthen graduate programs that cross disciplinary structures
2. Encourage research excellence through promotion of interdisciplinary research programs
3. Develop framework for time-limited Institutional Research Development Priorities (IRDP)

Expected Outcomes

The University draws upon its disciplinary strengths as it explores and discovers knowledge and identifies societal problems that require innovative interdisciplinary approaches for their resolution.

GOAL 4: RETURN TO COMMUNITY

Objectives

To build mutually beneficial partnerships with the community; and to promote community involvement in and commitment to the University and its students

Priority Initiatives

1. Support and encourage community service learning and civic engagement
2. Align communications with student recruitment, research, and development priorities
3. Enhance partnerships with Campus Alberta partners, etc.
4. Build long-term relationships with local, national and international community

Expected Outcomes

Outstanding and sustained service involvement and advocacy by University faculty, staff, and students will increasingly benefit the community. The community is productively engaged in the University's activities, priorities and focus to ensure that graduates and knowledge generated are beneficial outcomes that address societal needs.

CROSS-GOAL OBJECTIVE 1: DEDICATED AND PROFESSIONAL FACULTY AND STAFF

Objectives

To recruit and retain highly qualified faculty and staff

Priority Initiatives

1. Implement recommendations of employee engagement survey
2. Enhance new faculty orientation program
3. Develop multi-year workforce plan

Expected Outcomes

Recruitment and retention programs will be successful in attracting and retaining the high-quality faculty and staff necessary to deliver on the University's academic, research and service mandates.

CROSS-GOAL OBJECTIVE 2: RESPONSIBLE USE OF RESOURCES

Objectives

To provide quality learning opportunities at a reasonable cost by ensuring that business structures, processes, systems and practices clearly support academic and research priorities; and to broaden and expand the sources of income available to the university

Priority Initiatives

1. Build a financially sustainable university
2. Implement delegation of authority policy
3. Fully implement the iS2 project / Integrated Service Delivery (ISD) model

Expected Outcomes

Business structure, process and practices will clearly support the University academic priorities. Through the University's efforts, and investments from government and its partners, the University will be able to undertake effective long-term planning based on sustainable funding.

CROSS-GOAL OBJECTIVE 3: FACILITIES THAT SUPPORT LEARNING AND RESEARCH

Objectives

To create a campus community that is learning centered, innovative and sustainable

Priority Initiatives

1. Produce infrastructure development and renewal model
2. Develop real estate model to coordinate shorter-term facility requirements
3. Demonstrate leadership in sustainability in all areas of operations

Expected Outcomes

The University of Calgary will create world-class learning, research and service environments built on the principles of social, economic and environmental sustainability.

CROSS-GOAL OBJECTIVE 4: ACCOUNTABILITY FOR RESULTS

Objectives

To effectively plan, monitor, measure, and report on progress

Priority Initiatives

1. Align activity and resources with new strategic plan
2. Establish clear, regular and ongoing communications with university community
3. Enhance transparency through establishment and use of inclusive administrative processes
4. Review and update structure of General Faculties Council (GFC) and its sub-committees
5. Report progress against institutional plans quarterly / annually

Expected Outcomes

The University of Calgary will be publicly accountable for results.

Performance Measures

The following "scorecard" monitors performance against the objectives outlined in this plan (Table 1). It includes a mix of measures, complete with benchmarks to allow comparisons against national measures of success and excellence.

Table 1 – Performance Measures Scorecard

Goal		Last Actual Year	Benchmark	2011-12	2012-13	2013-14
1/3	1. Average Entering Grade	82.0%	83.0%	83.0%	83.0%	83.0%
1/3	2. Undergraduate Retention Rate	86.0%	88.0%	86.0%	86.0%	87.0%
1/3	3. Undergraduate Engagement	2.72	2.91	2.72	2.80	2.80
1/3	4. Graduate Student Engagement	57.0%	61.0%	57.0%	57.0%	57.0%
1/3	5. Graduate Satisfaction	85.0%	90.0%	85.0%	85.0%	85.0%
1/3	6. Graduation Rate					
	Undergraduate	65.0%	75.0%	65.0%	66.0%	67.0%
	Master's	84.2%	80.0%	85.0%	85.0%	85.0%
	PhD	71.3%	65.0%	72.0%	72.0%	72.0%
1/3	7. Time to Completion					
	Undergraduate (years)	5.3	4.6	5.3	5.2	5.1
	Master's (terms)	8.0	8.0	8.0	8.0	8.0
	PhD (terms)	14.0	14.0	14.0	14.0	14.0
2/3	8. Sponsored Research Revenue ($M)	272.0	5%	285.0	300.0	315.0
2/3	9. Tri-Council Revenue ($M)	81.3	5%	85.0	90.0	95.0
3/4	10. Graduate Employment Rate (%)	95.0	95.0	95.0	95.0	95.0
CG2	11. Unrestricted Net Assets ($M)	-10.0	50.0	30.0	50.0	50.0
CG2	12. Administration Expenditures (%)	4.4	4.4	4.4	4.4	4.4
CG2	13. Fundraising ($M)	83.0	75.0	75.0	75.0	75.0
CG2	14. Endowment ($M)	441.0	5%	463.0	486.0	510.0
CG3	15. Facilities Condition Index (FCI)	11.0	10.0	11.0	10.0	10.0

7. Financial and Budget Information

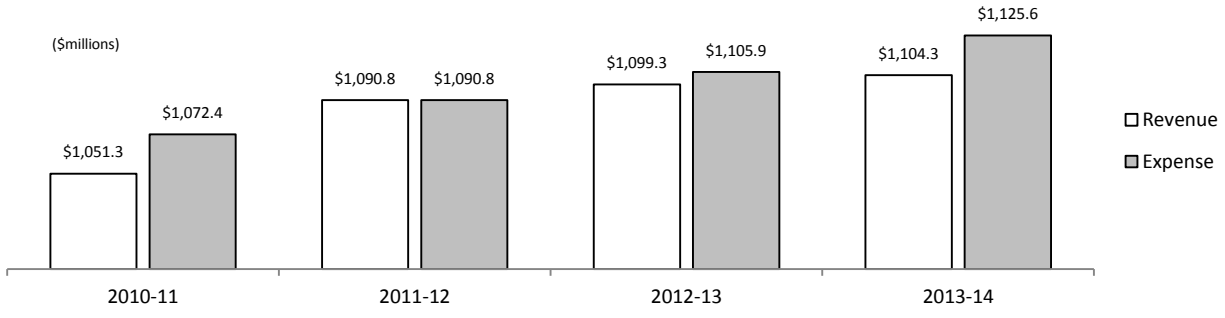
A. CONSOLIDATED BUDGET AND TWO-YEAR FORECAST

The University of Calgary is budgeting expenditures of $1.09 billion for the 2011-12 fiscal year, which results in a balanced budget. A forecast deficit of $6.6 million in 2012-13 is expected to grow to $21.3 million by 2013-14, largely resulting from rising salary and benefits costs against slower revenue growth. This forecast will be managed so that the University of Calgary produces balanced budgets each year.

Table 2 – Consolidated Budget and Two-year Forecast for 2011-12

($millions)	*Prior Year*	*Budget*	*Forecast*	*Forecast*
	2010-11	2011-12	2012-13	2013-14
Revenue				
Government of Alberta Grants	506,926	509,371	509,371	509,371
Other Government Grants	118,385	123,228	123,228	123,228
Donations and Other Grants	70,314	72,730	72,755	72,781
Credit Tuition and Related Fees	162,043	175,460	182,641	186,294
Non-credit Tuition and Related Fees	17,155	16,793	17,127	17,467
Sales of Services and Products	93,910	97,650	98,559	99,477
Amortization of Earned Capital	56,124	66,365	66,365	66,365
Investment Income	26,478	29,211	29,259	29,306
Total Revenue	1,051,335	1,090,808	1,099,305	1,104,289
Expenses				
Salaries	496,350	517,471	530,378	542,764
Benefits	96,779	101,482	106,449	109,174
Materials - supplies and services	242,096	213,535	208,235	210,677
Amortization of capital assets	84,533	94,615	95,162	95,719
Utilities	33,352	30,194	30,798	31,414
Scholarships - grants and awards	62,179	69,871	70,295	70,327
Travel	22,440	23,175	23,345	23,518
Cost of goods sold	18,353	17,892	18,249	18,613
Maintenance and repairs	12,030	14,557	14,799	15,045
Financing	4,295	8,016	8,176	8,340
Total Expenses	1,072,407	1,090,808	1,105,886	1,125,591
Net Excess/(Deficiency)	(21,072)	0	(6,581)	(21,302)

Figure 4 – Consolidated Budget and Two-year Forecast for 2011-12



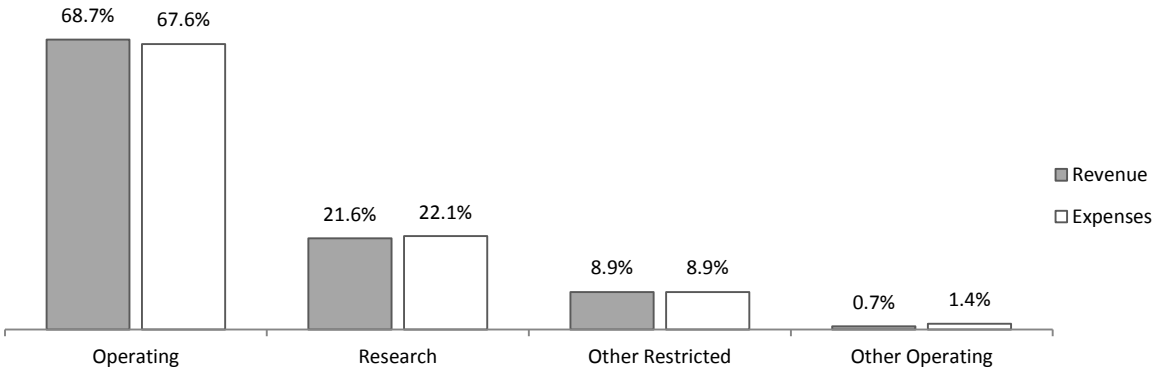
B. STATEMENT OF REVENUE AND EXPENSES BY FUND

The operating budget accounts for $737.2 million, or 67.6% of the total 2011-12 budgeted expenses. Other operating and other restricted are 1.4% and 8.9% respectively, with sponsored research at 22.1% (Table 3 and Figure 5).

Table 3 – Statement of Revenue and Expenditures by Fund for 2011-12

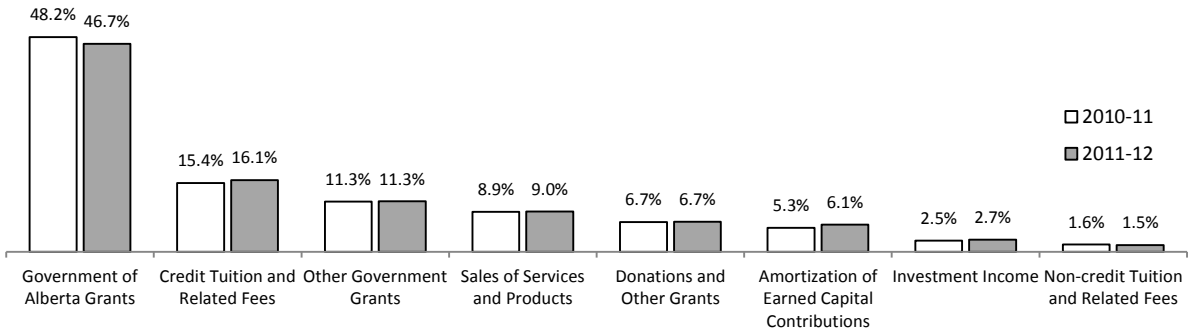
($millions)	*Total 2010-11*	*Operating*	*Other Operating*	*Other Restricted*	*Research*	*Total 2011-12*
Revenue						
Government of Alberta Grants	506,926	431,715	344	21,303	56,009	509,371
Other Government Grants	118,385	19,892	12	1,116	102,208	123,228
Donations and Other Grants	70,314	5,059	3,320	12,955	51,396	72,730
Credit Tuition and Related Fees	162,043	175,440	20	-	-	175,460
Non-credit Tuition and Related Fees	17,155	16,675	118	-	-	16,793
Sales of Services and Products	93,910	90,902	4,182	2,047	519	97,650
Amortization of Earned Capital	56,124	-	-	46,377	19,988	66,365
Investment Income	26,478	9,468	42	13,761	5,940	29,211
Total Revenue	1,051,335	749,151	8,038	97,559	236,060	1,090,808
Expenses						
Salaries	496,350	399,960	4,796	11,282	101,433	517,471
Benefits	96,779	85,864	860	1,329	13,429	101,482
Materials - supplies and services	242,096	127,445	4,884	19,121	62,085	213,535
Amortization of capital assets	84,533	27,334	916	46,377	19,988	94,615
Utilities	33,352	30,183	-	-	11	30,194
Scholarships - grants and awards	62,179	20,045	824	16,920	32,082	69,871
Travel	22,440	8,488	1,816	1,759	11,112	23,175
Cost of goods sold	18,353	17,842	50	-	-	17,892
Maintenance and repairs	12,030	12,083	1,008	771	695	14,557
Financing	4,295	8,016	-	-	-	8,016
Total Expenses	1,072,407	737,260	15,154	97,559	240,835	1,090,808
Net Excess/(Deficiency)	(21,072)	11,891	(7,116)	0	(4,775)	0

Figure 5 – Projected Revenue / Expense by Fund (2011-12)



Revenue

Figure 6 – Projected Revenue by Type



Government of Alberta Grants

Grants from the Government of Alberta (Advanced Education and Technology) are budgeted to account for 46.7% of total revenue for 2011-12 (Figure 6). With the exception of one-time funding, the U of C expects that these grants will be held constant over the planning period, and will decrease as a percentage of total revenue as the institution focuses on diversifying its revenue base.

Other Government Grants

Other Government Grants are budgeted to account for 11.3% of total revenue for 2011-12. Research revenue makes up 82.9% of Other Government Grants and the University is forecasting that research revenue will remain relatively flat throughout the planning period. As research revenue includes both operating funding and investments in capital, it is difficult to accurately predict the amount that will be earned in a particular year. Research revenue is a function of the amount of funding available and the success rate achieved. Accurately budgeting research revenue is further complicated by the fact that it is only recognized for accounting purposes as expenditures are incurred.

Donations and Other Grants

Donations and Other Grants are budgeted to account for 6.7% of total revenues for 2011-12 the University will continue to establish aggressive targets for fundraising. Accurately budgeting for donations is difficult due to the nature of fundraising. Donation revenue is affected by several external and economic factors that are hard to predict accurately.

Credit Tuition and Related Fees

Credit Tuition for 2011-12 is budgeted to be $175.5 million (2010-11 - $162.0 million), resulting from an average 0.35% tuition increase (linked to the Alberta CPI in accordance with the provincial *Public Post-Secondary Institutions' Tuition Fees Regulation*), market adjustment for select professional programs, growth in international and domestic student course load, and an increase in general fees.

Non Credit Tuition and Related Fees

Continuing Education course revenues are the largest contributing factor to this line item. Due to current market conditions, the non-credit tuition is expected to decrease in 2011-12, with modest but steady growth thereafter.

Sales of Services and Products

Sales of services and products continue to grow as the university develops alternative revenue sources to support the activities of the university. Sales and services are projected to grow significantly in 2011-12 across ancillary services as a result of the new Yamnuska residence and additional rental income from the recently opened downtown campus.

Amortization of Deferred Capital Contributions

Amortization of deferred capital contributions is the recognition of revenue related to capital funding from external funding sources. The deferred capital contribution revenue is recorded as an offset to the amortization expense of the book value of the capital assets.

Investment Income

Investment income is comprised of income from the University's working capital pool as well as endowment related income. Investment income for the University of Calgary's working capital will continue to be influenced by interest rates, prevailing market conditions and the research commercialization of the university's subsidiaries. The University of Calgary's Endowment income will be influenced by interest rates for the fixed income portion of the fund and by the volatility of the equity markets for the equity portion. For a long-term fund to maintain real value and generate sufficient income to support endowment programs evidence dictates that a diversified portfolio must be structured to include asset classes that have some risk and volatility. The university is budgeting for investment income to improve in 2011-12 as result of the markets continuing to rebound from the 2008 financial meltdown.

ASSUMPTIONS

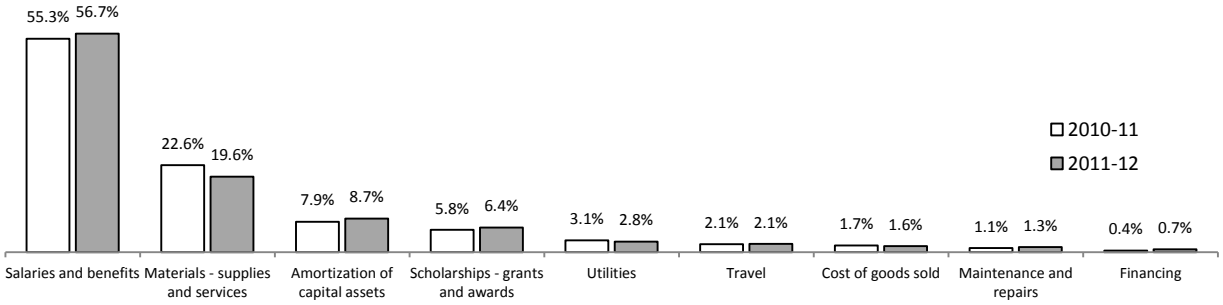
The base Provincial operating grant represents a slight increase in funding in 2011-12 of $5.4 million for Lights-on funding to support the operations of new facilities including the Taylor Family Digital Library (TFDL) and Energy, Environment, and Experiential Learning (EEEL) buildings. Provincial grants are projected to remain flat with no growth through subsequent years. Credit tuition and other fees are expected to increase by Alberta CPI, in accordance with the provincial tuition fee regulation.

RISKS

The base operating grant and all other forms of government funding (including other agencies or business entities that are not AET related) are forecasted to remain flat over the remaining two years of the plan. The budget assumes that positive returns will be obtained in the investment market sufficient to sustain endowment expenditure levels. Indirect Costs of Research support from the federal government (at $11.8 million annually) is assumed to be ongoing. Achieving enrolment targets will have an impact on credit tuition income as the budget for 2011-12 and the forecasts for the future years assume that the U of C will achieve its enrolment targets.

Expenses

Figure 7 – Projected Expenses by Type



Salaries and Benefits

Salaries and benefits represent the largest investment at the University of Calgary. For 2011-12, the salary and benefit budget are budgeted to be $619.0 million or 56.7% of the total university budget (Figure 7). This is an increase of $25.8 million from the prior year that is primarily related to annual salary increases and from increased activity from Other Restricted Funds and Sponsored Research.

Materials – supplies and services

This is the second largest university expense behind salaries and benefits. For 2011-12, the materials budget is projected to be $213.5 million, or 19.6% of the total budget. This is a decrease from 2009-10, largely resulting from lower anticipated expenditures on the university's Innovative Support Services (iS^2) program. The research component of this budget is $62.1 million for 2011-12.

Amortization of capital assets

Amortization represents the gradual reduction in the useful life of the University's asset pools, a portion of which is expensed each year. The portion of amortization expense relating to externally-restricted grants is equally offset by revenue in Earned Capital Contributions (ECC). Given the large number of capital grants received to fund the University's capital program, a greater proportion of amortization expense will be offset by ECC in future years. Amortization costs are budgeted to increase by $10.1 million primarily as a result of several new buildings opening in 2011-12.

Utilities

The utilities budget is $30.2 million for 2011-12. The university has implemented a hedging strategy with supply agreements for the majority of its required utilities. This strategy has lowered the risk associated with significant changes in the commodity prices. Although several new buildings open in 2011-12 costs are budgeted to decrease from 2010-11 as a result of the co-generation plant coming on-line allowing the university to produce utilities internally at a lower rate and favourable market rates for un-hedged requirements.

Scholarships – grants and awards

The Scholarships – grants and awards budget for 2011-12 is $69.9 million (2010-11 - $62.2 million), $49.0 million of which is in the areas of Sponsored Research and Other Restricted, with the majority of the year-over-year growth relates to activity in these areas.

Travel

The travel budget for 2011-12 is $23.2 million (2010-11- $22.4 million), of which $11.1 million is related to sponsored research.

Cost of goods sold

This expenditure item represents the cost of sales of services and products by the university.

Maintenance and repairs

With the magnitude of deferred maintenance and an aging physical plant the maintenance and repair budget has been increasing over the past few years. Although the university should be spending more per year to address its deferred maintenance liability, it does not have sufficient funds to spend at a higher level without impacting academic programs and priorities.

Financing

Interest expenses consist of financing to service long-term debt as well as the interest component of capital leases. Since the university will continue to borrow to fund a number of capital initiatives, financing costs are projected to increase over the next several years. Financing charges are budgeted to increase by $3.7 million as debt repayment begins for the new building opening in 2011-12.

ASSUMPTIONS

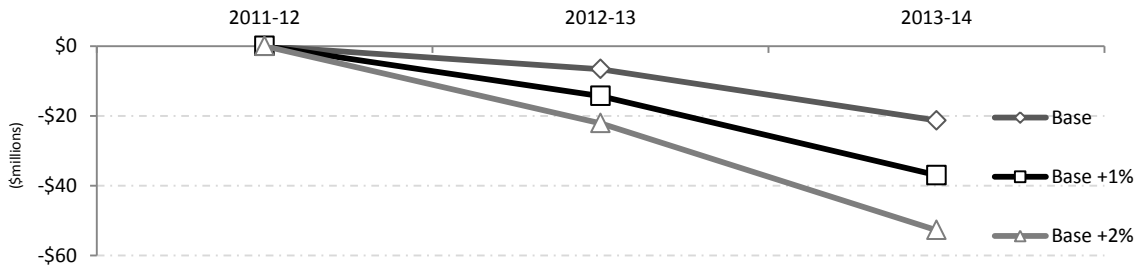
Inflation is assumed to be 2% for the forecast period. No significant emergency repairs are required to the physical plant, facilities and buildings.

RISKS

Although the forecasts contain a reasonable estimate for salary and benefit cost increases, the results of collective bargaining negotiations are unknown. An aging physical plant and the magnitude of deferred maintenance mean that expensive emergency repairs will become unavoidable. The deferred maintenance liability exceeds $300 million or approximately 11% of the replacement value of the university's asset pool. Increasingly, faculty positions are being supported through external funding. While this is beneficial, there are risks that the funding will be discontinued and the university will be required either to assume responsibility or discontinue positions. Costs for pension benefits are based on the current parameters of the pension plan. Significant changes to the plan, such as an increase in the maximum pensionable earnings level, could significantly increase the pension costs. Continued risks exist related to the unfunded pension liability.

Figure 8 shows the effect of higher than planned inflation on the forecast deficiency of revenue over expenditures.

Figure 8 – Forecast Deficiency of Revenue over Expenses – Sensitivity



C. BUDGETED CASH FLOW STATEMENT

The Budgeted Cash Flow Statement records the amount of cash and cash equivalents projected to enter and leave the University of Calgary in 2011-12 (Table 4). It provides an understanding of how the institution is operating, where its resources are coming from, and how they will be spent in the following three areas: 1) operating activities, 2) investing activities, and 3) financing activities.

Table 4 – Budgeted Cash Flow Statement for 2011-12

		2010-11	2011-12
1) Cash Provided by (Used in) Operating Activities			
Excess / (Deficiency) of Revenue over Expenses		-	-
Amortization of Earned Capital Contribution		(56,096)	(66,365)
Amortization of Capital Assets		84,533	94,615
	Sub-total	28,437	28,250
2) Cash Provided by (Used in) Investing Activities			
Capital Asset Additions			
Internally Funded		(17,300)	(20,900)
Externally Funded		(394,100)	(164,800)
Externally Financed		(41,000)	(3,100)
	Sub-total	(452,400)	(188,800)
3) Cash Provided by (Used in) Financing Activities			
Capital Contributions Received		394,100	164,800
Long Term Debt		41,000	3,100
	Sub-total	435,100	167,900
Net Increase (Decrease) in Cash before changes in working capital		11,137	7,350

D. TUITION FEE PROJECTIONS

Table 5 and Table 6 show tuition fees for 2011-12 and tuition fee forecasts from 2012 to 2014.

Table 5 – Tuition Fee Projection (Canadians and Permanent Residents)

	2010-11	2011-12	2012-13	2013-14
UNDERGRADUATE				
5 courses (30 units)	5,238	5,257	5,275	5,293
5 half courses (15 units)	2,619	2,628	2,638	2,647
4 half courses (12 units)	2,095	2,103	2,110	2,117
3 half courses (9 units)	1,571	1,577	1,583	1,588
1 course (6 units)	1,048	1,051	1,055	1,059
1 half course (3 units)	524	526	528	529
B. Commerce 1 half course (3 units)	756	759	762	764
Law				
Total Fees (36 units)	11,976	12,019	12,061	12,103
Per Session (18 units)	5,988	6,009	6,030	6,051
Law - Full Course (6 units)	1,996	2,003	2,010	2,017
Law - Half Course (3 units)	998	1,002	1,005	1,009
Medicine				
Maximum	14,384	14,435	14,485	14,535
Per Session	7,192	7,217	7,243	7,268
Full Course (6 units)	2,706	2,715	2,725	2,734
1 half course (3 units)	1,353	1,358	1,362	1,367
Post Graduate Medical	472	472	474	475
Max per year (12 months)	934	944	947	950
Vet Medicine				
Total Fees (per 8 month year)	10,566	10,603	10,640	10,677
Co-op / Internship Education				
4 month work term (15 units)	411	413	414	416
Internship Max 3 Terms				
4 month work term (15 units)	411	413	414	416
GRADUATE				
Full Time (except MBA)				
PhD Degree	5,440	5,459	5,478	5,478
Master's Degree with Thesis	5,440	5,459	5,478	5,478
Subsequent Years Fee & Continuing	1,583	1,588	1,593	1,593
Course Based and PT (Except MBA)				
Min. Fee Course-based programs	5,561	5,581	5,600	5,620
Full Course	1,390	1,395	1,400	1,405
Half Course	695	698	700	702
	2010-11	2011-12	2012-13	2013-14
MBA				
Thesis-Based	11,148	11,187	11,227	11,266
Full Course	2,533	2,542	2,551	2,560
Half Course	1,267	1,271	1,275	1,280
Executive MBA (per 8 month)	27,386	27,482	27,675	27,772

Table 6 – Tuition Fee Projection (International Students)

	2010-11	2011-12	2012-13	2013-14
UNDERGRADUATE				
5 courses (30 units)	17,836	17,898	17,961	18,024
5 half courses (15 units)	8,918	8,949	8,980	9,012
4 half courses (12 units)	7,134	7,159	7,184	7,210
3 half courses (9 units)	5,351	5,369	5,388	5,407
1 course (6 units)	3,567	3,580	3,592	3,605
1 half course (3 units)	1,784	1,790	1,796	1,802
Law				
Total Fees (36 units)	39,807	39,946	40,086	40,226
Per Session (18 units)	19,903	19,973	20,043	20,113
Law - Full Course (6 units)	6,634	6,658	6,681	6,704
Law - Half Course (3 units)	3,317	3,329	3,340	3,352
Medicine				
Maximum	56,001	56,197	56,394	56,592
Per Session	28,001	28,099	28,197	28,296
Full Course (6 units)	9,211	9,243	8,275	9,308
1 half course (3 units)	4,605	4,621	4,638	4,654
Post Graduate Medical	1,603	1,608	1,614	1,620
Max per year (12 months)	3,206	3,217	3,228	3,240
Vet Medicine				
Total Fees (per 8 month year)	31,698	31,809	31,920	32,032
Co-op / Internship Education				
4 month work term (15 units)	1,398	1,403	1,408	1,412
Internship Education (Max 3 Terms)				
4 month work term (15 units)	1,398	1,403	1,408	1,412
GRADUATE				
Full Time (except MBA)				
PhD Degree	12,347	12,391	12,434	12,477
Master's Degree with Thesis	12,347	12,391	12,434	12,477
Subsequent Years Fee & Continuing	3,592	3,605	3,617	3,630
Course Based and PT (Except MBA)				
Min. Fee Course-based programs	12,625	12,669	12,713	12,758
Full Course	3,156	3,167	3,178	3,189
Half Course	1,578	1,584	1,589	1,595
MBA				
Thesis-Based	24,599	24,685	24,771	24,858
Full Course	5,603	5,623	5,643	5,662
Half Course	2,802	2,811	2,821	2,831
Executive MBA (per 8 month)	27,386	27,482	27,675	27,772

E. RESIDENCE FEE PROJECTIONS

Table 7 shows per person room rates (two semesters – September to April) for each residence facility for 2011-12, effective May 1, 2011.

Table 7 – Residence Fee Projection

	2010-11	2011-12	2012-13	2013-14
Phase II Norquay Hall, Brewster Hall, Castle Hall**				
Studios	5,900	6,080	6,414	6,767
1 Bedroom	6,815	7,020	7,406	7,813
2 Bedroom	5,000	5,150	5,433	5,732
4 Bedroom	4,625	4,760	5,032	5,309
Phase III Olympus Hall, Glacier Hall**				
Studios	6,789	6,730	7,306	7,708
1 Bedroom	7,519	7,450	8,091	8,536
2 Bedroom	5,980	5,924	6,436	6,789
4 Bedroom	6,129	6,070	6,596	6,959
Phase IV Cascade Hall**				
Studios	6,460	6,820	7,258	7,658
1 Bedroom	7,210	7,610	8,102	8,548
2 Bedroom	5,510	5,813	6,193	6,533
4 Bedroom	5,130	5,410	5,771	6,088
Living Learning – Large Double	5,100	5,380	5,731	6,046
Living Learning – Small Single	5,600	5,910	6,298	6,645
Living Learning – Large Single	6,100	6,440	6,858	7,235
Phase V International House**				
2 Bedroom	6,200	6,480	6,836	7,212
Phase VI – Yamnuska (Suite Style)				
1 Bedroom		5,600	5,908	6,233
2 Bedroom		6,200	6,541	6,901
3 Bedroom		5,890	6,214	6,556
Traditional Kananaskis Hall & Rundle Hall**				
Single	4,600	4,850	5,148	5,432
Double	2,850	3,010	3,186	3,361
Student Family Housing Town Home				
1 Bedroom	965	1,010	1,066	1,124
2 Bedroom	1,065	1,110	1,171	1,235
3 Bedroom	1,095	1,150	1,213	1,280

** Forecast - Inflationary residence fee increases are forecast at 3.0%-5.5% annually. Amounts will vary resulting in rounding to the nearest $10.*

***Academic Year contracts are for eight months starting at the commencement of the Fall Term and ending in April.*

8. Resource Implications

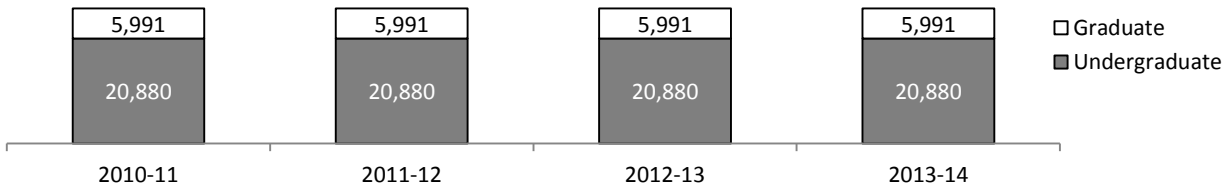
This section describes the resource implications associated with the goals and priority initiatives described within this plan. It highlights areas where existing resources are available, areas where incremental resources are required, and it identifies plans to leverage funds from other sources.

A. ACCESS AND QUALITY

Access

The University of Calgary will manage its enrolment at 26,871 Full-Load Equivalent (FLE) students annually over the next three years (Figure 9). This is consistent with growth in the 18-24 year old age group, which is expected to decrease from a previous high of 5% to 0% expected over the planning period. Although no expansion is forecast, this plan remains focused on recruiting, retaining and rewarding highly qualified students, providing a high quality learning environment, supporting and encouraging students to graduate in a timely manner.

Figure 9 – Enrolment Projection by Year (FLE)



Quality

To address the changing needs of Albertan learners, the University of Calgary continually evaluates its program offerings. Program renewal, contraction, and development initiatives are intended to enrich existing programs by adding new concentrations, eliminate programs no longer addressing student and labour market demand, and develop new programs to meet future demand. This process is a collaborative one involving Campus Alberta partners who work in partnership to expand rural, aboriginal, northern, and international student access through credential laddering, transfer programs, and other learner pathways such as alternative delivery, blending working and learning, and valuing and assessing previously acquired skills and knowledge. Detailed descriptions of renewal and new program development initiatives are appended to this plan.

B. RESEARCH

Immediate Research Priorities

Within its 2010 Institutional Research Plan (IRP), the University of Calgary organized its research priorities into the following six (6) areas of research focus (Figure 10).

Figure 10 – Research Areas of Focus

Advancing Health and Wellness

"Advancing Health and Wellness" encompasses a vast area of research that strives to improve the health of the population in the most efficient manner by aligning with the strategic priorities of the province of Alberta, in particular with the Alberta Health Research and Innovation Strategy. As demands on healthcare continue to increase, it is imperative develop new therapies – in a continuum from basic health sciences and biomedical research to clinical trials – and to assess healthcare outcomes and update health policies. The University of Calgary actively engages research across this spectrum, with research priorities extending from discoveries in basic and molecular sciences to the critical assessment of health systems and healthcare delivery based upon public health research. Research in Health and Wellness at the University of Calgary cuts broadly across a number of Faculties (including Medicine, Nursing, Kinesiology, Science, Social Work, Arts, Engineering, and Veterinary Medicine) and represents the concerted effort of over 2000 regular and clinical faculty members and a research budget in excess of $130 million.

Communication, Culture, Language, and Learning

The research focus area involves several sub areas of focus, including elements of creative writing, dance, second language acquisition, pedagogy and scholarly communication. This area is supported by researchers within the Libraries and Cultural Resources Centre, and across many faculties including Arts, Education, Medicine, Nursing, Social Work and Veterinary Medicine. The University of Calgary prides itself on the strength of its research programs in the social sciences, humanities and Arts and the research leadership it shows through the funding received from the Social Sciences and Humanities Research Council (SSHRC) as well as other funding organizations in the field. Although this area of research focus does not figure prominently in the priorities of the AI corporations, this field and its outputs are crucial to the mandates of many government ministries, including Aboriginal Relations, Advanced Education and Technology, Culture and Community Spirit, Education, Employment and Immigration, Health and Wellness, and Seniors and Community Supports. A healthy society must be able to appreciate and understand its own culture, in addition to its language and the means through which its people learn. Thus, support for the University of Calgary's research in this area is important not only important to the overall educational mandate, but to the entire community and to Albertan society as a whole.

Ethics, Social Responsibility, and Governance

The research focus area of "Ethics, Social Responsibility and Governance" involves several sub areas of focus, including social and economic policy and ethics, medical bioethics, law, policy, governance and dispute resolution, and business ethics and governance. While some of the research foci in this area align very well with areas of the mandates of each of the four AI corporations, other aspects of the research are more directly relevant to the mandates of several government ministries including Advanced Education and Technology, Finance and Enterprise, Public Affairs Bureau, International and Intergovernmental Relations, Solicitor General and Public Security, and Sustainable Resource Development, among others.

Information Systems and Technologies

The research focus area involves several sub areas of focus, including elements of computer science, electrical and computer engineering, physics, mathematics and other disciplines relating to informatics. Information Systems and Technologies research focuses on applying engineering and science principles to a range of technologies for gathering, storing, retrieving, processing, analyzing, and transmitting information. Information systems themselves are broad in scope and application, encompassing radio, television, mobile devices, computer hardware and software, digital networks, global navigation satellite systems (GNSS), and Earth/space observation technologies. In turn, these systems are enabled by a series of technological platforms including communications and radio devices, digital imaging, micro-nanotechnology, geographic/navigational/positioning technology, and software engineering. Research is also being conducted into quantum technology, which is certain to have a powerful enabling role in the future.

The University of Calgary currently has strong research capacity and international recognition across these fields. Researchers have contributed and continue to develop a wide range of applications including systematic monitoring techniques to measure, model, and track resource and environmental phenomena (e.g. forest inventories, crop health, biodiversity tracking, and water monitoring), advanced web-based Geographical Information Systems for concerns related to land use and water quality, and improvements of Global Navigation Satellite Systems-based service for heightened positioning accuracy. The commercialization of some of these areas is being promoted by TECTERRA, a not-for-profit Centre of Excellence for Commercialization and Research (CECR) hosted by the University of Calgary. This Centre will support products and services of integrated resource management industries.

Sustainability of Energy and Environment

Energy and environment research at the University of Calgary focuses on developing cost-effective solutions to the environmental challenges of energy production and use. These complex areas of study rely on the collaborative and interdisciplinary work of various Faculties and Schools, including Science, the Schulich School of Engineering, Environmental Design, Law, Haskayne School of Business, Arts, Social Work, Veterinary Medicine, and the School of Public Policy. Partnerships with the University's Institute for Sustainable Energy, Environment and the Economy (ISEEE, an interdisciplinary research and teaching institute), the Canada School of Energy and Environment (CSEE) and with industry and government further these endeavours.

Opportunity exists for post-secondary institutions to develop new technologies that will meet growing energy requirements in environmentally responsible ways. But meeting the growing challenges and converting even a small fraction of the huge potential into sustainable prosperity will require a major expansion in research, innovation, and highly qualified energy & environment professionals. Most oil and gas companies closed their research facilities and abandoned or reduced their research spending after the mid-1980s. However, rather than trying to rebuild their own research and training capacity, they now see consolidation and expansion of research and education at selected universities as a better approach.

Efforts are focused on new technologies to access and use Albertan natural resources in an environmentally responsible manner. Sustainability will come from less energy- and water-intensive oil sands and in-situ operations and from increased developments in alternative energy systems, such as wind, solar, and geothermal power. Among many endeavours, researchers in Engineering and in Science are strongly active in Carbon Management Canada (CMC), a national research network focused on carbon management in Canada's fossil energy sector, including Alberta's energy sector. Research at the University of Calgary is leveraged through association with approximately 100 researchers from over 20 Canadian universities.

Within this area of research, there exists the closest possible alignment with the priorities of the Alberta Government to foster a vibrant, sustained energy resource sector for the province that put back as much into the environment as it receives. Thus, our work in the area finds a primary home in Alberta Innovates – Energy and Environmental Solutions (AI-EES). Indeed, this sub-focus areas reflects an almost complete cross section of themes supported by AI-EES including Energy Technologies (recovery and processing, clean carbon, unconventional gas), Environmental Technologies (carbon capture and storage, water research, enhanced ecology) and Renewable and Emerging Resources (renewable energy and emerging technologies). However, because of the interdisciplinary nature of almost all of our work, the relevance also crosses over broadly in the mandate of the other Alberta Innovates Corporations with respect to Biosolutions, challenges in the energy sector, and understanding the health issues surrounding the energy Industry. Lastly, this is an area where technology transfer and commercialization is at the forefront of the research enterprise, as evidenced by industrial research chairs in this area and ventures such as RISE (Research for In-Situ Energy, formerly the Alberta Ingenuity Center for In-Situ Energy), the Alberta Sulphur Research Institute, and spinoff companies such as Gushor Inc.

Understanding Life on Earth

The research focus area of "Understanding Life of Earth" encompasses a broad area of research with the premise that to understand the terrestrial world requires that we study the earth and our origins from both within and from afar. In particular understanding and utilizing the properties of the upper atmosphere and near orbital region, is a primary driver of our knowledge based economy with benefits from agriculture to informatics to engineering and medicine, while the new technologies being developed for the remote exploration of space will provide spin offs in technology that will drive a new generation of computing and form an important component of the Alberta Aerospace and Defense Strategy.

C. INFORMATION TECHNOLOGY

The University of Calgary has one of the largest computer networks in the City of Calgary. Significant capital investments are required each year to maintain its systems and infrastructure so that they continue to enhance the student experience, support research excellence, and ensure business continuity. Within this plan, the University of Calgary has identified its most immediate Information Technology (IT) requirements, categorizing them as "application" and "infrastructure". Table 8 and Table 9 show the significant external investments of $68.5M required over this multi-year plan. Detailed descriptions of each IT project are appended to this plan.

Table 8 – Information Technology Plan

($M)	2010-11	2011-12	2012-13	2013-14	Total
Application Services					
1. ERP Roadmap	0	3.0	7.0	5.0	15.0
2. Faculty Applications	0	1.0	1.0	1.0	3.0
3. Staff and Tools	0	0.4	0.2	0.2	0.8
4. Faculty Initiatives	0	1.7	1.7	1.8	5.2
Sub-total	0	6.1	9.9	8.0	24.0
Infrastructure Services					
1. Storage Strategy	0	1.0	1.0	1.0	3.0
2. Network Strategy (ongoing)	0	1.0	1.0	1.0	3.0
Network Strategy (one-time)	0	4.0	14.0	13.0	31.0
3. Telephone Strategy	0	0.8	0	0	0.8
4. Data Centre	0	0.3	0.2	0.2	0.7
5. Learning Environments	0	2.0	2.0	2.0	6.0
Sub-total	0	9.1	18.2	17.2	44.5
Total	0	15.2	28.1	25.2	68.5

Table 9 – IT Projects Budget (2011-12)

Project ($M)	Sub-total Internal Sources	Unsecure Government Funding	Financing	Pledged Donations	Research Agencies	Sub-total External Sources	Total
Application Services							
1. ERP Roadmap	0	15.0	0	0	0	15.0	15.0
2. Faculty Applications	0	3.0	0	0	0	3.0	3.0
3. Staff and Tools	0	0.8	0	0	0	0.8	0.8
4. Faculty Initiatives	0	5.2	0	0	0	5.2	5.2
Sub-total	.0	24.0	0	0	0	24.0	24.0
Infrastructure Services							
1. Storage Strategy	0	3.0	0	0	0	3.0	3.0
2. Network Strategy (ongoing)	0	3.0	0	0	0	3.0	3.0
Network Strategy (one-time)	0	31.0	0	0	0	31.0	31.0
3. Telephone Strategy	0	0.8	0	0	0	0.8	0.8
4. Data Centre	0	0.7	0	0	0	0.7	0.7
5. Learning Environments	0	6.0	0	0	0	6.0	6.0
Sub-total	0	44.5	0	0	0	44.5	44.5
Total	0	68.5	0	0	0	68.5	68.5

D. CAPITAL PLAN

The central priority the University of Calgary continues to place on its capital program is directly linked to accommodating students and providing them with a high quality learning environment. Currently, the teaching and research objectives of the University cannot be attained without major renovations and alterations to current buildings. Because the physical environment has a monumental impact on the way students learn and interact, this capital plan is about creating great places to learn inside and outside the classroom.

The total expected investment in capital for the 2011-12 fiscal year is $188.8M (Table 10). This one-year budget is part of a $1.3B multi-year plan that describes necessary investments in new capacity and maintenance of existing assets.

Table 10 – Capital Budget (2011-12)

Project ($millions)	Reinvestment & restructuring	Board & carry-over reserves	Other internally funded	Total Internal	External financing	Funded from external sources	Total External	2011-12 Budget
Books and Collections (IR)	-	-	9.0	9.0	-	1.2	1.2	10.2
Systems (IT)	-	-	2.3	2.3	-	0.3	0.3	2.6
Furnishings & Equipment	-	-	2.0	2.0	-	28.2	28.2	30.2
Minor Capital Projects	1.1	1.9	3.6	6.6	-	4.4	4.4	11.0
Major Capital Projects	-	-	1.0	1.0	3.1	130.7	133.8	134.8
Total	1.1	1.9	17.9	20.9	3.1	164.8	167.9	188.8

Projects in Planning

Table 11 identifies projects in planning ranked in order of importance. Table 12 shows the source of funds for these projects ranging from internal to externally funded capital. Detailed project descriptions are appended to this plan.

Table 11 – Projects in Planning (2011-14)

Project ($millions)	Forecast Prior Yrs	Budget 2011-12	Estimate 2012-13	Estimate 2013-14	Estimate Future	Total
Engineering Reno & Expansion (future phases)	1.4	0.6	-	-	166.4	168.4
Science A Redevelopment- Phase 2	-	-	-	-	128.0	128.0
MacKimmie Tower & Block Redevelopment	0.5	-	-	-	119.5	120.0
MacEwan Hall/Nickle Arts Redevelopment	0.2	0.1	-	-	-	0.3
Energy Performance Projects- Phase 4	0.4	1.0	-	-	-	1.4
Building Envelope Renewal Program	0.0	0.5	8.5	-	-	9.0
West Campus Development	2.5	0.5	-	-	-	3.0
Faculty & Unit Initiatives	-	-	6.5	4.8	10.3	21.6
Total	5.0	2.7	15.0	4.8	424.2	451.7

**Approval for Projects in Planning includes forecast & budget years only*

Table 12 – Projects in Planning by Funding Source (2011-12)

Project ($millions)	Secured Sources* Sub-total	Government	Financing	Pledged Donations	Research Agencies	Other & Interest	Unsecured Sources* Sub-total	Unfunded*	Total
Engineering Reno & Expansion (future)	2.0	-	-	-	-	-	-	166.4	168.4
Science A Redevelopment- Phase 2	-	-	-	-	-	-	-	128.0	128.0
MacKimmie Tower & Block	0.5	-	-	-	-	-	-	119.5	120.0
MacEwan Hall/Nickle Arts Redevelopment	0.3	-	-	-	-	-	-	-	0.3
Energy Performance Projects- Phase 4	1.4	-	-	-	-	-	-	-	1.4
Building Envelope Renewal Program	9.0	-	-	-	-	-	-	-	9.0
West Campus Development	-	-	-	-	-	-	-	3.0	3.0
Faculty & Unit Initiatives	0.5	-	-	2.0	-	-	2.0	19.1	21.6
Total	13.7	-	-	2.0	-	-	2.0	436.0	451.7

* *For secured sources, funding has been received; unsecured has funding identified but not received. Unfunded indicates funding source has not been identified.*

Projects in Construction

Table 13 – Projects in Construction (2011-14)

Project ($ millions)	Forecast Prior Yrs	Budget 2011-12	Estimate 2012-13	Estimate 2013-14	Estimate Future	Total
Energy, Environment & Experiential Learning	188.7	30.4	3.0	-	2.0	224.1
EEEL Building	155.1	23.8	-	-	-	178.9
Science A Redevelopment- Phase 1	0.5	6.5	3.0	-	2.0	12.0
Math Sciences Data Centre Infrastructure Upgrade	7.6	-	-	-	-	7.6
Other EEEL-funded projects including CCIT/ InSitu	25.5	0.1	-	-	-	25.6
Taylor Family Digital Library	205.1	4.1	0.5	-	-	209.7
Taylor Family Digital Library	187.6	4.1	0.5	-	-	192.2
High Density Library	17.5	-	-	-	-	17.5
Foothills Campus Redevelopment	165.2	30.0	-	-	-	195.2
Health Research Innovation Centre	105.5	15.0	-	-	-	120.5
Undergraduate Medical Education Expansion	11.1	0.7	-	-	-	11.8
Foothills Campus Critical Maintenance	32.1	13.0	-	-	-	45.1
Veterinary Medicine Facilities- Foothills Campus	16.5	1.3	-	-	-	17.8
Cogeneration/ Energy Performance Projects	62.5	0.1	-	-	-	62.6
Central Heating and Cooling Plant Expansion	47.9	0.1	-	-	-	48.0
Pre-KIP Central Heating & Cooling Plant Costs	2.6	-	-	-	-	2.6
Energy Performance Projects- Phase 2	12.0	-	-	-	-	12.0
Other	70.1	78.5	31.9	14.4	-	194.9
ACWA Pine Creek Project Phase 1	0.1	16.6	13.2	-	-	29.9
Infrastructure Maintenance Program (IMP)	18.5	14.4	14.4	14.4	-	61.7
Roof Replacement Program	12.2	2.6	2.6	-	-	17.4
Residence Renewal	15.9	4.1	-	-	-	20.0
Olympic Oval Roof Replacement	0.4	9.6	-	-	-	10.0
Craigie Hall Projects	5.5	3.5	-	-	-	9.0
Bose Biomaterials & Tissue Product Dev Centre	0.4	9.6	-	-	-	10.0
Resolute Bay Incoherent Scatter Radar (RISR)	7.5	7.1	-	-	-	14.6
Faculty & Unit Initiatives	9.6	11.0	1.7	-	-	22.3
Total	691.6	143.1	35.4	14.4	2.0	886.5

** Approval for Projects in Construction includes all years*

Table 14 – Projects in Construction by Funding Source (2011-12)

Project ($ millions)	Secure Sources* Sub-total	Government	Financing	Pledged Donations	Research Agencies	Other & Interest	Unsecured Sources* Sub-total	Unfunded*	Total
Energy, Environment & Experiential Learning	221.6	-	-	-	2.5	-	2.5	-	224.1
EEEL Building	178.9	-	-	-	-	-	-	-	178.9
Science A Redevelopment- Phase 1	12.0	-	-	-	-	-	-	-	12.0
Math Sciences Data Centre Infrastructure Upgrade	7.6	-	-	-	-	-	-	-	7.6
Other EEEL-funded projects including CCIT/ InSitu	23.1	-	-	-	2.5	-	2.5	-	25.6
Taylor Family Digital Library	206.5	-	-	3.2	-	-	3.2	-	209.7
Taylor Family Digital Library	189.0	-	-	3.2	-	-	3.2	-	192.2
High Density Library	17.5	-	-	-	-	-	-	-	17.5
Foothills Campus Redevelopment	191.7	-	-	-	-	0.6	0.6	2.9	195.2
Health Research Innovation Centre	118.0	-	-	-	-	-	-	2.5	120.5
Undergraduate Medical Education Expansion	11.8	-	-	-	-	-	-	-	11.8
Foothills Campus Critical Maintenance	44.7	-	-	-	-	-	-	0.4	45.1
Veterinary Medicine Facilities- Foothills Campus	17.2	-	-	-	-	0.6	0.6	-	17.8
Cogeneration/ Energy Performance Projects	62.6	-	-	-	-	-	-	-	62.6
Central Heating and Cooling Plant Expansion	48.0	-	-	-	-	-	-	-	48.0
Pre-KIP Central Heating & Cooling Plant Costs	2.6	-	-	-	-	-	-	-	2.6
Energy Performance Projects- Phase 2	12.0	-	-	-	-	-	-	-	12.0
Other	143.5	23.8	-	15.9	10.4	-	50.1	1.3	194.9
ACWA Pine Creek Project Phase 1	2.4	15.7	-	1.5	10.3	-	27.5	-	29.9
Infrastructure Maintenance Program (IMP)	61.7	-	-	-	-	-	-	-	61.7
Roof Replacement Program	17.4	-	-	-	-	-	-	-	17.4
Residence Renewal	20.0	-	-	-	-	-	-	-	20.0
Olympic Oval Roof Replacement	10.0	-	-	-	-	-	-	-	10.0
Craigie Hall Projects	9.0	-	-	-	-	-	-	-	9.0
Bose Biomaterials & Tissue Product Dev Ctr	1.8	-	-	8.2	-	-	8.2	-	10.0
Resolute Bay Incoherent Scatter Radar	1.0	8.1	-	5.5	-	-	13.6	-	14.6
Faculty & Unit Initiatives	20.2	-	-	0.7	0.1	-	0.8	1.3	22.3
Total	825.9	23.8	-	19.1	12.9	0.6	56.4	4.2	886.5

E. SUSTAINABILITY PLAN

The University of Calgary has developed a comprehensive Institutional Sustainability Plan to deliver on its commitment to excellence and leadership in the pursuit of sustainability within teaching, research, service and operations. Although much of the success of the plan relies on internal resources, the following initiatives (in priority order) will require provincial investment.

1. Energy Performance

The multi-phased Energy Performance Initiative (EPI) initiative targets reductions in GHG emissions and annual utility costs. Phase II energy retrofit projects completing in March 2011 will result in an annual GHG emission reduction of 29,000 metric tonnes. Phase III includes optimizing operating hours and class scheduling; rolling out now through summer it is expected to produce an annual GHG emission reduction of 5,000 metric tonnes. Phase IV planning is in progress and includes 35 energy performance audits and 22 building envelope studies to identify and prioritize the next suite of energy retrofits. An annual capital investment of approximately $15 million for each of the next three years will enable implementation of prioritized Phase IV energy retrofits. These retrofits have the added benefit of reducing deferred maintenance and reducing operating costs.

2. Transportation Management

A Transportation Demand Management Strategic Plan is required to provide a long range plan for managing future growth in students and staff and for reducing the impacts of current commuting. The plan will reduce greenhouse gas emissions, lessen regional traffic impacts, and improve regional air quality. An investment of $4 million over the next three years will enable completion of the plan and implementation of prioritized components of the plan. One key element is implementation of a local bus loop to connect the U of C campus, the Alberta Children's Hospital, and the future West Campus with the existing Light Rail Transit station on the east side of the campus.

3. Underground Services and Storm Water Management

An integrated resource management plan is required to address aging underground storm water infrastructure. The plan will provide a campus wide storm water management master plan and include water quality improvement strategies, water re-use strategies, rate and flow control, and identify research priorities to support related technology development and transfer. An investment of $10 million will enable completion of the plan and implementation (design and construction) of prioritized components of the plan.

4. Recycling and Waste Management

A recycling and waste management plan has been developed to support the institutional goal of becoming a net zero waste organization, a significant improvement from the current waste diversion rate of approximately 40%. A capital investment of $1 million is required for recycling and composting infrastructure.

9. Appendix

PERFORMANCE MEASURES (DEFINITIONS)

1. Average Entering Grade

Colleges and universities promote high levels of student achievement by emphasizing the importance of academic admission standards concerning student performance.

2. Undergraduate Retention Rate

The undergraduate first to second year retention rate is an indicator of university performance providing a basis for understanding at what stages in degree programs students leave. This knowledge is useful in formulating and assessing interventions to minimize student withdrawal.

3. Undergraduate Student Engagement

The University of Calgary monitors the quality of the learning environment and overall level of satisfaction reported by senior level undergraduate students through their responses to the National Survey of Student Engagement (NSSE) question, "How would you evaluate your entire educational experience at this institution?," (1 = poor, 2 = fair, 3 = good, 4= excellent).

4. Graduate Student Engagement

The University of Calgary monitors the quality of the learning environment and overall level of satisfaction reported by graduate students in regular programs through responses to a Canadian Graduate and Professional Student Survey (CGPSS) question, which assesses the percentage of thesis students (Master's and PhD) rating the quality of their graduate program as excellent or very good.

5. Graduate Satisfaction

The University of Calgary assesses the quality of the learning environment through student responses to the question "Rate the quality of your education experience" (satisfied / very satisfied) on a Government of Alberta survey completed two years after graduation.

6. Graduation Rate

The graduation rate is an indicator of university performance providing a basis for understanding how many students ultimately graduate from a starting cohort.

7. Time to Completion

The time-to-degree measure describes the average number of years taken to complete a first degree by students who started at the university. This knowledge is useful in formulating and assessing interventions to increase "efficiency" in the sense that less time to complete a degree is considered to be more cost effective.

8. Sponsored Research Income

The level of sponsored research income is a comparative measure of research income and intensity among Canadian universities.

9. Tri-Council Revenue

The level of Tri-Council research income is a comparative measure of research income, intensity, and quality among Canadian universities.

10. Employment Rate (Government of Alberta Graduate Outcomes Survey)

The University tracks how well it responds to the needs of the individual learners and to the social, economic and cultural needs of the province through the percentage of graduate survey respondents employed within a specified period following completion.

11. Unrestricted Net Assets

One index of a university's financial well-being is the level of its unrestricted net assets. As a general guideline, universities work to establish positive unrestricted net asset balances.

12. Administration Expenses

The University of Calgary tracks how efficiently it provides quality learning opportunities to the greatest number of students at a reasonable cost through a Government of Alberta measure that expresses administration expenses as a percentage of total expenses less ancillary expenditures (combined average of the prior two years).

13. Fundraising

The University tracks the extent to which it engages the community in its research, scholarship and creative activity through the level of funds it raises to support these activities.

14. Endowment Balance

The endowment balance provides a measure of the cumulative support the University of Calgary has received over the years, as well an indication of capacity to support the institution’s teaching, research and service mandate in the years to come.

15. Facilities Condition Index

The quality of institutional facilities is monitored by the Facility Condition Index (FCI) measure which is the current backlog of repairs over the current replacement value of the facilities.

ACCESS AND QUALITY (DETAILS)

At any given time, the University of Calgary offers thousands of courses at various levels across many disciplines. These are grouped within Faculties and departments to address employment, academic, and personal needs. The majority of new program development and expansion initiatives are intended to provide exciting opportunities to students at the undergraduate and graduate level. These new program areas also have the potential for placing the University of Calgary in a position of research leadership both nationally and internationally. The following renewal and realignment initiatives provide assurance that the University of Calgary encourages program innovation and quality to meet the post-secondary demands of Albertan learners.

Program Renewal and Realignment

1. Concurrent BEd Program

Over the past year, the University of Calgary has been actively engaged in renewing and realigning its teacher education program. High school students who wish to complete the concurrent Education program can apply for direct entry into one of the Faculties of Arts, Science, or Kinesiology and the Faculty of Education simultaneously; students who choose this option have the opportunity to graduate with two degrees in five years.

2. EdD

The Faculty of Education is proposing revisions to its EdD program so that it is a three-year program consisting of: (i) course work, (ii) a candidacy examination and (iii) a dissertation. The catalyst for this program is work stemming from the Carnegie Project on the Education Doctorate which calls for the alignment of the goals, purposes, and methods within this degree route to better reflect preparation of stewards of the profession.

3. MEd

The University of Calgary's proposed MEd program aligns with its EdD program. It will be a two-year program designed to accommodate students who are generally working full- or part-time. Proposed revisions will result in an innovative, current, and practitioner-oriented master of education program that will assist current and future educational professionals to develop the knowledge, skills, and dispositions to succeed in educational positions.

4. Dance/Human Motion Undergraduate Program

A philanthropic contribution has helped to transform significant interest in the areas of dance and human motion into a program possibility. Preliminary discussions have begun internally with the goal of revitalizing dance undergraduate courses and related community service programs.

5. Manufacturing Engineering

Over the planning period, the University of Calgary redesigned this program from a major to a minor. Previously, the first two years of the program were the same as the Mechanical Engineering Program, with specialized Manufacturing Engineering courses being offered during the third and fourth years. The School transferred the quota of 45 students to Mechanical Engineering and provided a Minor in Manufacturing.

6. Engineering Common Core

The University of Calgary is currently conducting a review of its common core curriculum to ensure that it is effective at meeting the needs of all engineering disciplines. The first year engineering course review completed in 2009 focused on the sustainability of courses and desired learning outcomes. This review resulted in a major change to the first year engineering curriculum as well as changes to the engineering mechanics and circuits curricula implemented in 2010/2011. Currently, the University of Calgary is reviewing second year engineering courses and its common core service courses.

7. Computer Engineering

Over the planning period, the University of Calgary intends to redesign this program from a major to a minor. Currently, the first two years of the program are the same as the Electrical Engineering major with specialized computer engineering courses being offered during the third and fourth years.

8. Information Security (MSc)

The University of Calgary intends to continue to resource this nationally and internationally important research area. Currently there is a concentration in the Department of Computer Science. It is felt that students would be better served with a program identified with Information Security to bring in elements from other Faculties and Departments and to integrate existing research institutes into the student experience.

9. Bachelor of Social Work (BSW)

In fall 2010 a revised and streamlined BSW curricula was approved at the Faculty level, allowing for better integration of university transfer and post-diploma students. The revised BSW curriculum is now moving through University of Calgary procedures for approval. The 2011-12 academic year will be a year of transition as the existing undergraduate curriculum will need to be delivered to current students, while the new curriculum is implemented to new students.

10. Master of Environmental Design – MEDes (Planning)

The Faculty of Environmental Design is proposing to modify its existing MEDes (Planning) into a Master of Planning degree. This would be a course-based program aligned with professional organization's and student's desires around a planning degree. The program will offer three planning streams: (A) regional and environmental planning; (B) city and community planning; and (C) urban design and development. The MEDes (Planning) is currently the only accredited (recognized) planning program being offered in Alberta. There is an acute need for a professional planning program in Alberta given the number and variety of new planning initiatives occurring at local, regional, provincial and national scales.

New Programs under Development

1. Undergraduate Planning – Minor (120 FLE)

The Faculty of Environmental Design (EVDS) is planning to offer an undergraduate planning minor taught by EVDS and the Department of Geography beginning in September 2013.

2. Concurrent Five-year Undergraduate Bachelor of Education Program (150FLE)

Students wanting to graduate with two degrees in 5 years in Education, the Arts, Sciences, and Kinesiology will be able to do through a combined Bachelor of Education degree.

3. Professional Kinesiologist Program (30 FLE) ($300k)

If Enrolment Planning Envelop (EPE) funding becomes available, the Faculty of Kinesiology is planning to offer the new professional Kinesiologist designation.

4. Bachelor and Master of Social Work (BSW and MSW) Upgrading

The Faculty of Social Work plans to offer credit certificates and diplomas in family therapy, mental health and addictions, etc., and develop a route to the BSW for addictions counselling.

5. Master of Architecture – Post-professional Certificates (30 FLE)

EVDS is planning to offer credit certificate programs that build on Master of Architecture course offerings (e.g., digital design and fabrication, building performance simulation, etc.).

6. Actuarial Science – Graduate Program (20 FLE) ($392k)

If EPE funding becomes available, the Faculty of Science will increase the number of post-degree graduates available at the MSc level in Actuarial Science beginning in Sept. 2013.

7. Synthetic Biology Graduate Program (8 FLE)

The Faculty of Science is planning to offer a new graduate program in synthetic biology, which is scheduled to begin in Sept. 2013.

8. Fuel Cell Development - Graduate Specialization (40 FLE) (Group D: $784k)

If EPE funding becomes available, the Faculty of Science plans to offer a specialization at the graduate level to students interested in green energy alternatives beginning in Sept. 2012.

9. Information Security Graduate Program (20 FLE) (Group D: $392k)

If EPE funding becomes available, the Faculty of Science plans to offer this course-based program, which is scheduled to begin in Sept. 2013.

10. Engineering Physics (160 FLE) (Group C: $2.15M)

If EPE funding becomes available, the Faculties of Engineering and Science plan to offer this inter-disciplinary program to students starting in Sept. 2013.

11. Northern Studies (30 FLE) (Group B: $312k)

The Faculty of Science plans to offer a northern studies undergraduate program starting in Sept. 2013, if EPE funding becomes available.

12. Paleontology (20 FLE) (Group B: $208k)

If EPE funding becomes available, the Universities of Calgary and Alberta are planning to leverage their association with the Royal Tyrell Museum in Drumheller to offer a B.Sc. degree in paleontology starting in Sept. 2013.

INFORMATION TECHNOLOGY PLAN (DETAILS)

IT Applications

To achieve the objectives of this plan, the University of Calgary must continually improve its Information Technology (IT) applications to meet student, faculty and staff demands, as well as legislated requirements. The total investment required over the planning period reflects a mix of one-time and ongoing investments.

1. ERP Roadmap

Recent upgrades to finance and human resources systems require additional investments to upgrade modules and enhance functionality, which will improve administrative processes. These investments will increase client self-service functionality, portal integration, improve student systems, improve reporting for researchers, finance and students, as well as enhance security compliance. This project forms the basis of a longer term ERP plan, which will ensure that the benefits of institutional and Campus Alberta investments are realized.

2. Faculty Applications

A significant investment is required to rationalize the many application solutions that have been created over the years. Where possible, these applications will be transitioned / standardized from Faculties and units into the centralized IT area as part of the ongoing iS^2 project.

3. Staff and Tools

Investments are required to create an appropriate training and certification program for staff, and to provide application teams with testing, version control, and other development tools.

4. Faculty Initiatives

Although a significant portion of the application landscape is managed within PeopleSoft, substantial investments are required to support pre-award research processing, e-learning and collaboration, and space planning and facilities management. These investments will directly benefit the research and student communities, as well as operational units.

IT Infrastructure

To achieve the objectives of this plan, the University of Calgary must continually improve its Information Technology (IT) infrastructure to meet student, faculty and staff demands, as well as legislated requirements. The total investment required over the planning period reflects a mix of one-time and ongoing investments to address deferred maintenance, mitigate risks, and remain competitive.

1. Storage Strategy

Approximately 40% of the University of Calgary's central storage hardware will reach the end of its service life in 2011. To maintain a reliable storage environment, investments are required to replace hardware and address significant growth in central storage to support research, administrative, and student records.

2. Network Strategy

Although the University of Calgary has one of the largest computer networks in the City of Calgary, much of it is old and in poor condition. This makes it challenging to upgrade because of the fragility and complexity of existing network infrastructure. Issues requiring immediate attention include cabling and network devices. Estimates for cabling range from $20M - $25M. Addressing this issue will enable VoIP telephone service to be installed in all buildings, enhance data and video services, enhance the lab and classroom computing environment, support Cloud Computing, and enable connectivity to high performance computing clusters such as WestGrid. Estimates to upgrade network devices are $5.8M, excluding an on-going requirement of $1M annually to achieve a sustainable seven-year rolling upgrade cycle.

3. Telephone Strategy

The phone switch deployed in 1985 is not on a currently supported software load, and it will not be hardware supportable from the manufacturer within one year. This project provides a temporary fix for 5-7 years, which will allow the time necessary to transition to VoIP technology.

4. Data Centre Changes

Significant progress is being made to address deferred maintenance issues that existed in the main data centre. An investment of $10.0M was made recently in two data centre facilities. Although the data centres have been upgraded, ongoing equipment maintenance costs need to be addressed.

5. Learning Environments

The integration of technology within classrooms and labs remains a central component of the university's strategy to provide a high quality learning environment. An aggressive plan has been developed to integrate technology within all teaching space on campus, which will require an investment of $2.0M per year over five years. This investment will not only enhance the learning environment by bringing in new formats of information and providing new flexibility in pedagogy, it will significantly reduce operating costs.

CAPITAL PLAN (PROJECT DESCRIPTIONS)

1. Engineering Renovation & Expansion (Future Phases)

Strategic renovations and an expansion are required to upgrade and preserve the existing Engineering Complex, and to provide new capacity in support of Engineering education and research. This proposal will construct approximately 7,710 GSM of new space, and the subsequent redevelopment of up to 15,000 GSM in the existing (currently occupied) complex.

2. Science A Redevelopment – Phase 2

The Science A building was constructed in 1960, and houses chemistry and biology laboratory instruction, chemistry research, general purpose classrooms and theatres, and major academic support operations. To meet changing instructional requirements and methods, as well as current building code requirements, this project provides a sequenced approach to completely reconstruct the building and add an additional floor and two 250-seat theatres. It will provide approximately 8,900 GSM of additional space, and renovations to approximately 12,500 GSM of existing space.

3. MacKimmie Tower & Block Redevelopment

With the completion of the Taylor Family Digital Library in early 2011, significant portions of the MacKimmie Library complex's over 20,000 square metres of space will become available for repurposing. Detailed assessments of the MLT and MLB (including geotechnical, building code, structural, mechanical, electrical, vertical conveyances and architectural systems) have revealed the pressing need to update, renovate and in some instances demolish and rebuild complete building systems, if the complex is to serve contemporary learning, research and support needs.

4. MacEwan Hall/Nickle Arts Redevelopment

A master planning exercise is underway to optimize space use and prioritize renewal efforts in the MacEwan complex and to address future use of the Nickle Arts Museum as collections move to the Taylor Family Digital Library.

5. Energy Performance Projects – Phase 4

A significant component of the University of Calgary's annual operating budget is committed to utilities costs. Energy Performance Projects are targeted to direct the ways and means of energy utilization to achieve the most cost efficient, responsible use of university resources.

6. Building Envelope Renewal Program

Government of Alberta support for this project has been received. Planning for the best use of this grant will continue through the 2011/12 fiscal year.

7. West Campus Development

The West Campus Development will be an exemplary community that is environmentally sound, socially responsive, and financially solid, building on the character and strengths of the neighbourhoods surrounding the university.

Comments and questions may be sent to:

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