



Land Use Master Plan

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LAND USE MASTER PLAN for Red Deer College

Table of Contents

| | |
|--|----|
| 1. Introduction | 6 |
| Red Deer College | 6 |
| Purpose of Plan | 6 |
| Study Area | 7 |
| Planning Process | 7 |
| 2. Background: Context for Future Campus Development | 9 |
| Regional Setting | 9 |
| Existing and Future Surrounding Land Uses and Facilities | 9 |
| Existing Buildings, Facilities and Organization of Campus | 10 |
| <i>Figure 2.1 Community Setting</i> | 10 |
| Natural Environment and Site Characteristics | 11 |
| Site Access and Connections | 12 |
| Existing Internal Transportation Systems (pedestrian, bicycle and vehicle) | 12 |
| Parking Systems | 13 |
| Existing Site Services and Utilities | 13 |
| Historical Student Enrolments | 14 |
| Existing Student Oriented Residential Development | 14 |
| Current City Land Use Planning Policies Applying to Campus | 16 |
| <i>Figure 2.2 Comparison of RDC Campus to Other Alberta Campuses</i> .. | 17 |
| 3. Vision and Planning Principles | 18 |
| Red Deer College Vision and Values | 18 |
| Vision for Land Use Master Plan | 18 |
| Planning Principles and Assumptions | 19 |
| Sustainability | 20 |
| Student Enrollment | 21 |
| Housing | 23 |
| Parking | 25 |
| Diversity Of Uses | 25 |
| Open Space | 26 |
| Density Of Building Development / Building Height | 26 |
| <i>Figure 3.1 Defining and Reinforcing the Main Entry</i> | 26 |
| Urban Design and Aesthetic | 27 |
| <i>Figure 3.2 Improving Visibility and Accessibility at the Main Entry</i> | 27 |
| Landscaping / Signage | 27 |
| Safe Campus | 28 |
| Transportation | 29 |
| Utility Servicing | 29 |

| | |
|--|----|
| Natural Area..... | 29 |
| College As A City / Regional Focal Point..... | 30 |
| Contribution To Quality Of Life Of Central Alberta..... | 30 |
| 4. Red Deer College – Land Use Master Plan..... | 31 |
| Introduction | 31 |
| Campus Wide Planning Strategies | 31 |
| Sustainability..... | 31 |
| Transportation..... | 32 |
| <i>Figure 4.1 Regional Pathway System</i> | 35 |
| Landscaping, Signage and Open Space | 36 |
| <i>Figure 4.2 Sample Trail Head</i> | 37 |
| <i>Figure 4.3 Dry Creek Concept</i> | 38 |
| Open Space..... | 40 |
| <i>Figure 4.4 Integration of Open Space with Buildings</i> | 40 |
| Safe Campus | 41 |
| Urban Design and Aesthetic | 41 |
| Diversity of Uses..... | 42 |
| <i>Figure 4.5 Example of Mixed Use Building</i> | 44 |
| 5. Precinct Analysis | 45 |
| Precinct 1 ▪ Campus Core | 45 |
| Precinct 2 ▪ North East Area | 48 |
| Precinct 3 ▪ North West Area | 49 |
| Precinct 4 ▪ West Area..... | 50 |
| Precinct 5 ▪ Natural Area | 51 |
| Precinct 6 ▪ South Lands | 52 |
| Bower Lands..... | 53 |
| 6. Site Services and Utilities | 55 |
| Precinct 1 ▪ Campus Core | 55 |
| Precinct 2 ▪ North East Area | 56 |
| Precinct 3 ▪ North West Area | 56 |
| Precinct 4 ▪ West Area..... | 57 |
| Precinct 5 ▪ Natural Area | 57 |
| Precinct 6 ▪ South Lands, Bower Lands | 58 |
| 7. Management and Implementation of the Master Plan | 60 |
| Consultation / Approval Process..... | 60 |
| Phasing of Development..... | 60 |
| Relation to Other Board Policies and Plans..... | 61 |
| Interpretation and Intent..... | 62 |
| Amendments..... | 62 |
| Review and Monitoring | 62 |

| | |
|---|----|
| 8. Supporting Documents / References..... | 63 |
|---|----|

Appendices

| | |
|---|----|
| Appendix "A" Growth Projections for Red Deer College | 64 |
| Appendix "B" Land Use Statistics and Development Impact | 67 |
| Appendix "C" Current Parking Capacity..... | 70 |
| Appendix "D" Building Area Summary | 68 |
| Appendix "E" Canadian Sustainable Discovery Centre | 72 |

List of Drawings

| | | |
|----------------------|---|---------|
| Exhibits | 1. Site Context..... | 1 / 11 |
| | 2. Precinct Plan | 2 / 11 |
| | 3. Demonstration Plan One | 3 / 11 |
| | 4. Demonstration Plan Two | 4 / 11 |
| | 5. Site Circulation Plan..... | 5 / 11 |
| | 6. Phasing Plan | 6 / 11 |
| Site Servicing Plans | 7. Precinct 1 • Campus Core | 7 / 11 |
| | 8. Precinct 2 • North East Area | 8 / 11 |
| | 9. Precinct 3 • Northwest Area | 9 / 11 |
| | 10. Precinct 4 • West Area | 10 / 11 |
| | 11. Precinct 5/6 • Bower Lands, Natural Area, South Area | 11 / 11 |

RED DEER COLLEGE LAND USE MASTER PLAN

1. Introduction

Red Deer College

Red Deer College (RDC) has a long history of providing post-secondary education to the citizens of Alberta. Founded in 1963, RDC is located in the southwest corner of the City of Red Deer on a large campus encompassing approximately 117 hectares (290 acres) of land. It is a public community college committed to meeting the changing learning needs of people in the central Alberta region.

To fulfill their mandate, RDC provides programming in adult development, career-oriented studies, apprenticeship and trades training, and university undergraduate studies. These programs, along with other community programming services, facilitate the development of skills and knowledge that assist in meeting career aspirations, life skills and industry requirements.

For the first few years after it's founding, RDC was housed in what has now become part of the Lindsay Thurber High School located in the central part of the City. Starting in 1966 development of the current site began and in 1968 the College relocated to its present location. Enrolment at the College has grown along with the growth of the region and current enrolment consists of between 5,000 and 6,000 full and part-time students. Today, RDC serves a wide area beyond the city boundaries, with 64% of its students from central Alberta, and 28% from northern and southern Alberta.

Purpose of Plan

The College has identified the need for an overall land use master plan to facilitate the sustainable long-term development of the Red Deer campus. A land use master plan is defined as a strategy that will provide the framework and guiding principles within which RDC can make decisions on how to best utilize its land base to meet future needs. This plan updates key elements contained in the 1994 Master Plan.

RDC views their land holdings as a valuable resource that can facilitate the growth and competitiveness of the College's offerings. Alliances with industry, diversified learning opportunities and participation in Alberta's progressive economy through skill and knowledge development are factors that will influence the success and accomplishments of RDC. An innovative and well-planned land use design offers a means of positioning the College to take the most advantage of these factors.

The Plan is intended to be a guide for decision making rather than a rigid set of development requirements. To this end, the Plan contains a discussion of various policy

areas or precincts for sub-areas of the study area in addition to general direction on issues that apply across the overall campus. The discussion on directions and policies is supported by two demonstration plans for a fully built out, developed campus. While the Plan proposes a long-term vision (beyond a twenty-year horizon) for land uses and development at RDC, it does not specifically provide a time frame for any particular development. Rather, the Plan anticipates incremental growth based on projected needs and potential opportunities driven by College programs, alliances with industry, and provision of resources for the community.

Study Area

The study area encompasses lands owned by Red Deer College and lands owned by the Bower family as shown on the Precinct plan. The study area's boundaries are defined by existing major roadways with Highway 2 along the west boundary, 32nd Street arterial along the north boundary and the Taylor Drive arterial road along the east boundary. The area owned by Red Deer College amounts to 117.4 hectares (290 acres) located in the north and southwest portions of the study area.

While not all of the land covered in the study area belongs to the College, the major roadways create logical boundaries for an area that could benefit from comprehensive planning. The intent is to acknowledge the interrelationships between the lands owned by the College and the lands owned by the Bower Family and put forward a plan that reflects and can accommodate the needs and aspirations of both.

Planning Process

The process of preparing a Land Use Master Plan for the College involved an interdisciplinary approach drawing on the expertise of architects, engineers, urban and industrial designers, environmental scientists and planners. A 'Land Development Leadership Team' consisting of representatives of College staff and faculty, City of Red Deer administration and planning, and architectural, engineering and planning consultants was assembled to guide the plan process.

At the start of the process members of the Land Development Leadership Team established a vision for the Land Use Master Plan. This vision statement was reviewed by the College Board of Directors as part of their annual retreat.

Subsequently, two student groups from the University of Calgary's Faculty of Environmental Design were invited to prepare design concepts for the study area. The results of the students' work and efforts are found under separate cover. This material provided a starting point for generating ideas and options that could be incorporated into the Land Use Master Plan being prepared by the Land Development Leadership Team. It also served to challenge assumptions about issues related to development of the campus lands and sparked considerable discussion.

Once the student designs were prepared, a Project Team consisting of a subset of the Land Development Leadership Team prepared a draft plan containing a set of principles

and assumptions. Detailed strategies for future development and demonstration plans illustrating the potential future build out of the campus were then prepared. This draft was subsequently reviewed with the Land Development Leadership Team.

Consultation with the College community and larger community on the draft Land Use Master Plan was facilitated through limited referral of the draft to individuals and organizations for comments, making the draft available for public review and hosting an open house and public meeting.

The recommended Land Use Master Plan will be presented to the College Board of Governors for their consideration and approval in August 2003.

2. Background: Context for Future Campus Development

Regional Setting

Red Deer College is located in the City of Red Deer, situated in the central region of Alberta. The city is equidistant between two major metropolitan areas, Edmonton and Calgary, and is home to 70,000+ residents. The College itself is located on the southwestern perimeter of the city, adjacent to Alberta's most utilized thoroughfare, Highway #2. It is located on approximately 290 acres of land, which includes the existing college facility and grounds, the natural area along Waskasoo Creek, and the College-owned agricultural lands south of Waskasoo Creek. The campus is located on a unique area of land, which boasts a park-like setting featuring Waskasoo Creek and an extensive natural area.

Red Deer's projected population growth rates in the near term are expected to be approximately 2.5% per year. The economic base of the community consists of agriculture and related services and industries, services and industries relating to the production and refinement of oil and gas, public and government services for the regional centre as well as regionally-oriented commercial, business and personal services. Red Deer's primary and secondary trade areas cover a population of close to 200,000.

Red Deer College is the ninth largest employer in Red Deer, with the David Thompson Regional Health Authority, the three local school divisions, and the Michener Centre being the five largest employers. Over 50% of Red Deer's adult population has achieved some level of post-secondary education, the majority of these being non-university diplomas or certificates.

The City of Red Deer is located in central Alberta's distinctive Aspen Parkland. Embracing these rich ecosystems, the city is traversed with a network of natural parklands, creeks, and the central Red Deer River valley. The parkland is carried through the city by way of a network of natural pathways, parkways, boulevards, and an abundance of native vegetation and green spaces. The significant green corridor system divides the city into several distinct urban quarters that converge on a central downtown.

Existing and Future Surrounding Land Uses and Facilities

The RDC campus is located in the southwest quarter of Red Deer approximately half a mile southwest of the downtown area. The existing residential neighbourhood of West Park lies to the north along the north boundary of the campus while the lands to the east of the campus have been developed and are used for arterial or highway commercial purposes oriented to Gaetz Avenue, the main north-south artery of Red Deer. Farther to the southeast of the campus is the South Pointe Common commercial area that is developed as a regional power centre. To the east of the campus are hotel and conference centre facilities. Lands to the south and west of the campus and study area

are predominantly used for agricultural purposes with some country residential and institutional development present.

Arterial roadways and the Highway 2 corridor define the edges of the study area. Highway 2 is the most notable facility along the west edge of the campus and offers significant opportunities for exposure on what is referred to as Alberta's "main street." The Taylor Drive and 32nd Street arterial roads provide similar opportunities for high visibility to those using these two significant regional and local roadways. While these roads, particularly Highway 2, provide high visibility, the ability to obtain direct vehicle access is limited and no direct access from Highway 2 is possible.

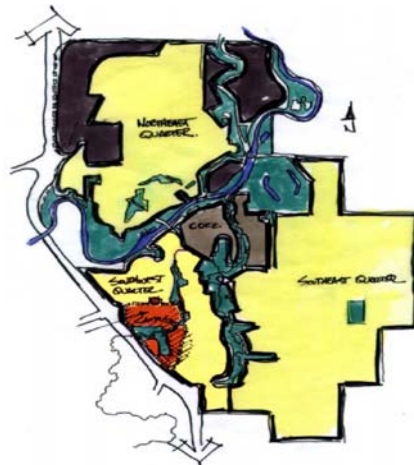


Figure 2.1 – Community Setting

Notable future land uses and facilities that will influence development of the study area include the now developing residential community of West Lake. Situated to the northwest of the study area this development comprises a westward expansion of the West Park neighbourhood. Residential development in this area, in combination with the residential development in the West Park area provides housing opportunities in close proximity to the College for students, faculty and staff alike. In addition to surrounding residential development, the highway commercial area between Taylor Drive and Gaetz Avenue continues to fill in with commercial development. This provides commercial and entertainment services reasonably accessible by the College community as well as part-time employment opportunities for students.

Existing Buildings, Facilities and Organization of Campus

RDC provides a variety of amenities for the community. These include playing fields and athletic facilities, adult educational programs, and considerable natural areas for recreational use. The RDC Arts Centre is a major performance venue for Red Deer and area, and offers programs for adults and children in the performing arts. The new library facility at RDC is accessible to the community and incorporates regional collections from the Red Deer library system.

The campus being an all weather campus, the buildings are internally connected by a series of internal walkways. The main building has developed as a mega-structure with

all additions having been constructed as additions to the previous structure. These tended to focus on the internal pedestrian network at the expense of exterior routes and spaces. With the exception of the Arts Centre, administrative office tower and the residence towers, the existing building is a combination of one and two storey structures.

A mix of residential types is found on the campus which provides housing for single, married and family accommodations. The oldest residential facilities are located immediately south of, and connected to, the main academic structure. These Tower Apartments also include the disabled housing at this time. Most of the newer student housing is located outside the ring road to the south and east of the academic campus. This housing consists of low density townhouse development.

Natural Environment and Site Characteristics

Alberta's climate is predominately continental and, therefore, is subject to significant extremes in weather. The City of Red Deer is located on open prairie, and is susceptible to cold air masses from the north. At the same time, the Rocky Mountains to the west maintain the cold air masses within whilst preventing moist, warm Pacific air flow into the province. As a consequence, Red Deer experiences cold, long winters, and warm short summers, with adequate year round precipitation. The mean temperatures for Red Deer range from -13.4° C in January to 16.8° C in July. Prevailing winds in Red Deer are from the northwest, southwest and west. Wind from the southwest and west brings warmer weather; Arctic air masses from the north bring cool weather. Wind changes in the winter months can cause extreme temperature fluctuations due to the phenomenon of Chinooks. These climatic conditions have historically favoured an all-weather approach to development of the campus.

The overall site contains some undulating terrain and depressed areas. The key physical feature of the site is Waskasoo Creek which meanders through the College property and eventually flows into the Red Deer River. The flow of water in the creek varies from season to season and year to year and the creek course and a resident beaver population and human impact due to development have altered flow. With the exception of the creek valley and the Spruce covered ridge south of the creek, the study area is generally level. The College property lying south of the creek generally slopes towards the creek and the northeast. In the north portion of the campus, the east area generally slopes towards the southeast and the creek while the west area tends to slope towards the south.

Red Deer College exists within the Transitional Boreal Forest vegetation zone, termed the "aspen parkland" eco-zone. The most common and dominant species of this eco-zone is the Aspen Poplar. The Waskasoo Creek valley contains a variety of vegetation representative of six distinct land zones. These zones include: aspen parkland, open meadow, riparian, ephemeral wetlands, agricultural land and excavated lands. The area has an array of native vegetation (trees, shrubs and herbs) within the various identified land zones.

The diversity and complexity of the natural area allows for a variety of wildlife species. The area not only provides habitat to a variety of animal and plant species, but it is also

an integral part of a wildlife corridor within the City Red Deer. Moose and Mule Deer use this natural area as pathway for movement and migration. This corridor functions as a source of connectivity between more isolated habitat patches within the City and allows animals movement through the City and to more external areas.

In the northeast corner of the study area is a former landfill that is evident by the hill close to the intersection of Taylor Drive and 32nd Street. The presence of this former landfill site poses some constraints to development. Specific uses, such as permanent residential and commercial activities involving food preparation, are not permitted within 300m of the former landfill without the consent of the Deputy Minister of Environment. The College has obtained consent for the placement of the new student residences along the south boundary of the landfill. Further developments within the 300m setback may require additional approvals from Alberta Environment based on the nature of the proposed development. Further development on or in close proximity to the landfill will face additional costs associated with remediation of the landfill area. With the exception of landscaping, the area occupied by the former landfill is considered uneconomical to develop.

Site Access and Connections

The developed north portion of the College property is accessed at two points off the 32nd Street arterial road along the north boundary of the study area. The main entrance, located between 55th Avenue and 57th Avenue, provides access for private vehicles and City transit to the main entry of the College building and the soon to be named Ring Road which leads to various parking areas. A recently improved access at 60th Avenue provides access for private vehicles to the west end of the campus and the associated building entries and large parking areas.

Pedestrian and bicycle access to the campus is provided by a series of sidewalks and pathways that connect into the City's overall sidewalk and trail network at the perimeter of the property. Three main pedestrian and bicycle crossing points into the campus are located at the signal lights at the main entrance, the intersection of Taylor Drive and 32nd Street, and the signal lights on Taylor Drive at the intersection with 28th Street.

Existing Internal Transportation Systems (pedestrian, bicycle and vehicle)

The internal road system on the developed portion of the campus consists of two access roads linking into a ring road that circles the existing main building. This ring road provides access to the parking areas dispersed around the main building and the student residences to the southeast and east of the main building. Access to the CollegeSide Community site is also provided from the ring road.

A turn-around loop leading to the passenger drop-off and unloading zones in front of the Arts Centre and the main building entry extends from the point where the ring road intercepts the main entry road. A City transit stop is located along this section of road within short walking distance of the new library, Arts Centre and main building entries.

Sidewalks along the two access roads leading off 32nd Street provide pedestrian and bicycle routes leading to the entries of the main building. A trail leading from the northeast corner of the campus provides a more direct route in the direction of downtown. Sidewalks around the main building lead into quads and open space areas as well as provide connections to the parking areas, student residences and the trail system within the natural area along Waskasoo Creek. This trail system consists of a series of loops of natural (i.e. unpaved, not graveled) trails paralleling the creek and extended south of the creek along the spruce covered ridge straddling the property line between the College and Bower lands.

Parking Systems

Approximately 3,000 parking stalls currently exist on the campus for the use of students, faculty, staff and the general public. Parking areas consist of paved parking lots close to the main building and gravel lots farther away from the main building. The largest parking areas and number of parking stalls are located to the west of the main building, which is primarily oriented to student parking. Public parking areas for the main building, library and Arts Centre are located close to the entries for these facilities and the main entrance road. Smaller parking lots are distributed around the ring road and the student residence areas have their own dedicated parking areas. Parking on campus is managed through an assigned parking process and makes use of stickers/parking passes, control gates, parking meters and differential parking fees.

Existing Site Services and Utilities

Most of the existing campus development, including academic and residential buildings and parking lots are contained in the Campus Core area, with corresponding utilities centred in and around the existing development.

Existing water distribution infrastructure consists of a distribution system loop, which primarily follows the alignment of the existing College Ring Road, and has several branch lines that extend to the various campus buildings. Most of the water lines in the system are 200 mm in diameter. The campus water distribution network connects to the City of Red Deer's water distribution network at three locations with 200 mm diameter watermains extending across 32nd Street. The most westerly connection is located near the new CollegeSide Community facility, and is connected to an existing 350 mm diameter City of Red Deer watermain. The second connection is located on the east side of the main entrance road, and is connected to an existing 200 mm city watermain. The third connection is just west of the existing track and is also connected to an existing 200 mm city watermain.

The existing sewage collection system consists of mains primarily 200 – 300 mm in diameter. The sewage collection system connects to a 375 mm diameter City of Red Deer main on 32nd Street at two points, the first is at the intersection of the of 32nd Street with the college's main entrance road, and the second is approximately 175 m to the east.

The existing stormwater management system consists of two sewer systems, both of which outlet to Waskasoo Creek, south of the existing College development. Both of the storm sewer systems are operating at or near their designed capacity, and a third system has been planned for future servicing of the CollegeSide Community and a portion of the existing development on the west side of the campus.

Historical Student Enrolments

The following table gives a historical overview of enrollment at RDC

| <u>Year</u> | <u>FLE</u> | <u>Academic</u> | <u>Trades</u> | <u>Credit Free</u> |
|-------------|------------|-----------------|---------------|--------------------|
| 1992/93 | 4,110 | 3,865 | 245 | NA |
| 1993/94 | 3,920 | 3,691 | 229 | NA |
| 1994/95 | 3,848 | 3,633 | 215 | NA |
| 1995/96 | 3,823 | 3,595 | 228 | 6,038 |
| 1996/97 | 3,682 | 3,437 | 245 | 5,332 |
| 1997/98 | 3,440 | 3,170 | 270 | 7,206 |
| 1998/99 | 3,523 | 3,211 | 312 | 7,494 |
| 1999/00 | 3,583 | 3,228 | 355 | 7,281 |
| 2000/01 | 3,541 | 3,157 | 384 | 7,471 |
| 2001/02 | 3,545 | 3,090 | 455 | 7,990 |

Existing Student Oriented Residential Development

- **Current Unit count**
 - 542 single beds
 - 26 family housing units
- **Current Unit types**

The existing residences are housed in a variety of housing types, including:

- 4 bedroom apartments (Towers)
- 4 bedroom townhouses
- 2 bedroom townhouses
- 8 bachelor apartments
- 2 bedroom apartments for the disabled
- 2 bedroom family townhouses
- 4 bedroom family townhouses

- **Summary of Residences**

| Year Built | No. of Units | Type | No. of Beds |
|------------|--------------|----------------------------------|-----------------|
| | | | |
| 1972 | 40 | 4 bedroom apartments (5 towers) | 160 beds |
| | 18 | 2 bedroom family townhouses | |
| 1983 | 42 | 4 bedroom townhouses | 168 beds |
| | 17 | 2 bedroom townhouses | 34 beds |
| | 8 | bachelor units | 8 beds |
| | 6 | 2 bedroom units for the disabled | 12 beds |
| | 8 | 4 bedroom family units | 96 beds |
| 2000 | 24 | 4 bedroom townhouse units | 96 beds |
| 2001 | 18 | 4 bedroom townhouse units | 72 beds |
| | | | |
| | | Totals: | 542 beds |
| | | | 26 family units |

- **Relationship to the Campus**

The tower residences are the closest to the main campus. These apartment style units in the 5 towers and the apartment units for the disabled are physically connected to the campus. All other units are within an easy, exterior walk. The housing units are to the south and east of the campus building complex. Two common buildings serve the Residences (containing mail, laundry, lounge and administration functions).

- **Demand**

The existing student residences have a 1% vacancy rate, during the fall and winter term.

The current vacancy rate in the City of Red Deer is about 1.3% (optimum is about 3%).

Family housing is typically occupied throughout the year (including summer); there are currently 26 family units with a waiting list of 55 families.

The single student housing is rented out, hotel style, during the summer months; occupancy during the summer fluctuates depending on program activity at the college.

Residence applications are accepted starting on December 1. Between December and September approximately 1200 residence applications are processed. The waiting list at the end of summer is typically minimal as the majority of applicants have found alternate accommodations.

The current number of beds provided is approximately 15% of the RDC FLE student population.

The number of single units, especially since the new units were built in 2000 and 2001, appears to meet the needs of the single student population. The demand for family units is quite high as the waiting lists for the family units have consistently been 2 applicants on the waiting list for every 1 unit in residence.

- **Residence Parking**

The current supply of parking for the residences is approximately 65 stalls per 100 beds. Overall, this number appears to be adequate. The proximity of parking stalls relative to housing units is not optimal, with a number of tower residence students having to park in the ring road cluster parking lots.

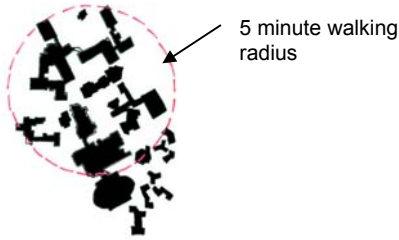
Current City Land Use Planning Policies Applying to Campus

As with other lands within its jurisdiction, the City of Red Deer has in place a series of land use planning and development policies that influence the physical development of the campus and the nature of the uses allowable in this particular part of the community. The City's Municipal Development Plan identifies the study area as a combination of three broad land use categories. The north portion of the College lands is identified as 'Public Service' reflective of the existing development of this area as a major public educational facility. College lands along Waskasoo Creek and south of the creek and a portion of the Bower property are identified as 'Parks' largely reflective of the natural area along the creek and the heavily treed ridge lying south of the creek. The Bower property, in the southeast portion of the study area is identified as a 'Commercial/Residential Study Area' recognizing the potential for either use or a mixed use area.

The general guidance on the nature of uses allowed in various parts of the study area provided by the Municipal Development Plan is supported by more specific direction through the City's Land Use Bylaw. The developed north portion of the College lands is designated "Public Service (Institutional or Government) District". In addition to the permitted use of 'institutional service facility', which covers the primary activities of the College, a series of discretionary uses which may be allowed on the campus are identified. This list includes residences, nursing homes, research facilities, diagnostic services, work placement services, and/or technical or administrative support related to the education of students at Red Deer College. The Land Use Bylaw does not provide specific guidance on yard or setback requirements, building design requirements or site development requirements. These items are determined by the City's Municipal Planning Commission through the review of development permit applications.

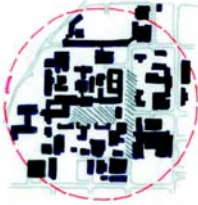
The Arts Centre at Red Deer College is identified as a historically significant building as it was designed by renowned Canadian architect Arthur Erickson. This designation does not prevent further renovation, additions or modifications of the exterior façade of the building. Demolition would require review by the City's Heritage Preservation Committee.

Figure 2.2 Comparison of RDC Campus to Other Alberta Campuses



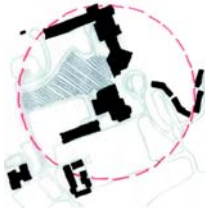
The University of Calgary campus functions as an island within the neighbouring urban fabric. Large vehicular thoroughfares contain it on all sides. Buildings form an independent pattern, and are arranged roughly perpendicular to Crowchild Trail. The primary campus lies within a ring-road and takes the form of multiple pedestrian paths amidst a picturesque landscape. Vehicular traffic and parking is restricted to the periphery. The U of C campus provides facilities for +/- 22,000 full load equivalent students.

University of Calgary Campus



The University of Alberta campus is integrated closely with the neighboring urban fabric. A clearly definable boundary between the campus and community is not readily apparent. The campus is organized around a strong central space providing a gravitational centre. Remnants of the surrounding street grid system subtly influence the organization of the buildings. The U of A Campus provides facilities for +/- 26,000 students

University of Alberta



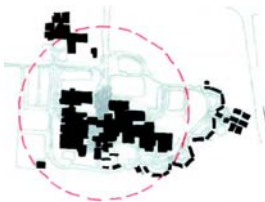
The University of Lethbridge also functions as an island within the neighbouring urban fabric. Geographical features both isolate the campus and serve as the primary organizing element. The steep ridge on the eastern edge of campus is one such element, with buildings following the downward slope of the hill. University Hall, in conjunction with the Student Union Building, frame a large central open space. The U of L campus provides facilities for +/- 5,500 FLE students.

University of Lethbridge



The SAIT campus is isolated from the surrounding urban context both by large vehicular arterials and geography. Heritage Hall and the adjoining sporting pitch overlook downtown Calgary. Together they function as the primary organizing element for the campus. The SAIT campus provides facilities for +/- 8,000 FLE Students.

Southern Alberta Institute of Technology



The Red Deer College campus functions as an island within the neighbouring urban fabric. It is bounded on three sides by substantial vehicular arterials and on the south by the Waskasoo Creek. The primary organizing feature for the campus is the main entry promenade which bisects the campus into academic and trade components. Further organizational structure is provided by a ring-road that serves to encompass and contain campus development. The buildings form one giant 'mall-like' building form connected by internal circulation corridors. The RDC campus provides facilities for +/- 3500 FLE students

Red Deer College

3. Vision and Planning Principles

Red Deer College Vision and Values

As part of its strategic planning initiative, the Red Deer College Board of Governors has established the following broad vision:

“To be the best comprehensive college in Canada.”

The following six key values reflect both reality and the aspirations of Red Deer College. These values will influence the planning and development of Red Deer College.

Exploration
Inclusiveness
Excellence
Integrity
Community
Accountability

Vision for Land Use Master Plan

The Red Deer College campus in Red Deer will be developed so that it:

1. *recognizes the educational mandate of the College as paramount*
 - physical development supports the educational mandate and does not detract from this principal role
 - space to accommodate long-term future learning needs is available
 - long-term future learning needs are not sacrificed for short-term or one-time gains
2. *acknowledges that the College land is a trust and the College is the steward of this trust*
 - College retains ownership of the lands forming the existing campus to maintain control over long term land use
 - provides flexibility in meeting future learning needs
 - future development needs are balanced with the intrinsic and educational value of protecting significant natural areas on campus
 - seeks appropriate types and intensity of development to make efficient use of the limited land base balanced with maintaining the quality of campus life (i.e. natural areas, open space, natural light)
 - contributes to the ability to monitor and manage activities occurring on campus
3. *reflects the College's relationship with the larger community and surroundings*
 - links positively with the City's overall community planning initiatives and provides connections between the campus and surrounding areas of the larger community (i.e. trail extensions, transit, access, wildlife corridors)

- serves as a focal point in the larger community through involvement in sports and the arts
 - creates and takes advantages of synergies with the adjacent Bower lands
4. *supports mutually beneficial partnerships*
 - explores the potential for partnerships in the development of the campus
 - enhances access and interaction with partners and the members of the larger community
 5. *promotes a strong identity and visible presence within the larger community*
 - creates identifiable boundaries and entrances that distinguish the campus from other areas
 - projects the presence of RDC to existing and prospective students and the larger community
 - incorporates unique design elements that contribute to an area that is visually distinctive within the overall community
 6. *provides an integrated design contributing to a strong sense of place*
 - maximizes the retention of green open space and its integration with the existing and future buildings and facilities
 - creates a positive relationship between built and natural environments
 - incorporates unique design elements that contribute to an attractive, friendly and safe campus
 - ensures that individual projects, buildings and facilities complement and are compatible with the College's overall aesthetic and design
 7. *manages long-term development needs in a sustainable manner*
 - ensures infrastructure systems are capable of supporting the desired type and intensity of development
 - controls vehicle traffic and minimizes the amount of land devoted to accommodating vehicles
 - encourages the use of walking, bicycling and public transit to get to, from and around the campus
 - supports protection of ecosystems and the restoration of natural systems
 - harmonizes with the natural landscape

Planning Principles and Assumptions

The land use master plan that has been prepared is based on a series of assumptions regarding the future needs and nature of campus development as well as a set of planning principles that provide a physical dimension to the plan's vision. This section identifies the various assumptions made and used during the planning process and the principles that guided the formulation of policies and directions for future campus development. While the items discussed appear in an order this is not intended to reflect the importance of one item relative to others.

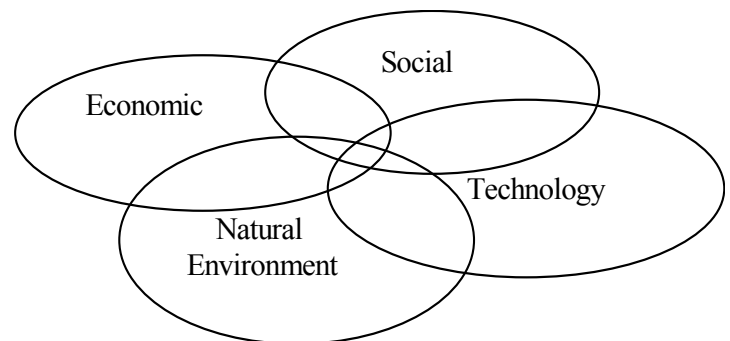
Sustainability

The College's Board of Governors believe sustainable development is achieved through the responsible stewardship of resources. The College is committed to this end, and sees it being attained through effective decision-making strategies that engage a multidisciplinary perspective.

The process of building-out the campus presents an opportunity to demonstrate the importance of intergenerational equity. The extent that future generations will be able to achieve their full potential is dependent on the responsible stewardship of resources today.

The following principles are intended to encourage the implementation of best practices based on a heightened awareness of sustainable development issues, perspectives and knowledge.

- **A Planned and Integrated Community**
Physical change will evolve as an intentional community, demonstrating new understandings of sustainable development and profiling leadership in urban planning, architecture and landscape design.
- **Responsible Design and Use of Spaces**
As new space requirements arise, they will be designed to their full potential and balance strategic options including efficient utilization, renovation and expansion.
- **Varied Access**
In addition to accommodating automobiles, the campus will effectively integrate viable alternatives such as public transit, bicycling and walking.
- **Responsible Stewardship of the Natural Areas**
This valued and unique environmental feature requires decision-making that balances conservation and preservation with enriching experiences for student, staff, campus residents, visitors and the broader community.
- **A Park-Like Setting**
Landscape designs will express a park-like setting that unifies the campus while stimulating social interactions among community members, offering comfort and security and reflecting the college's environmental consciousness.
- **Life-Cycle Costing**
College decision-makers routinely make choices tailored to meet the College's education, applied research and innovation ends. The practice of sustainability influences these choices by pushing ingenuity and motivating a holistic perspective. In addition, this holistic outlook encourages the assembly of a multidisciplinary team capable of balancing the integration of social, economic, technological and



Balancing integrating factors to achieve campus aims

The notion of a sustainable future requires both new actions, as well as explorations into life-cycle costing. Within the land development and construction sectors, this means asking questions that address constructing, operating and disposing of buildings and their related infrastructure. During the planning and design phases of projects, it is also important for users to consider both design and equipment choices that minimize both waste streams and consumables.

In an effort to create a more sustainable campus, the College requests that design teams, including investors, planners and users of new spaces, consider both capital and operating costs in their technical review and budgeting processes.

- **Sustainable Building Standards & Environmental Assessment Protocols**

To ensure effective land uses, the College will guide and assess new construction projects with benchmarks set by Canadian high performance, sustainable building standards and internationally recognized assessment protocols, such as the Leadership in Energy and Environmental Design (LEED) rating system.

Student Enrollment

The memorandum “Growth Projections for Red Deer College”, from the college’s Office of Institutional Research (see Appendix “A”), establishes baseline information for student population and program growth at Red Deer College. The following table provides the enrolment projections for Red Deer College with 2001 / 2002 as the base year:

| <i>Year (projection based)**</i> | <i>FLE*</i> | <i>Credit Free (population based)**</i> | <i>Credit Free (initiative + population)***</i> |
|--------------------------------------|---------------------|---|---|
| <i>2001/2002</i> | <i>3,545 (base)</i> | <i>7,990 (base)</i> | <i>7,990 (base)</i> |
| <i>5 year</i> | <i>3,935 (11%)</i> | <i>8,325 (5%)</i> | <i>9,988 (25%)</i> |
| <i>10 year</i> | <i>4,210 (19%)</i> | <i>9,000 (13%)</i> | <i>11,985 (50%)</i> |
| <i>20 year</i> | <i>4,435 (25%)</i> | <i>10,866 (36%)</i> | <i>13,982 (75%)</i> |

* “Full Load Equivalent” represents a student taking a full academic course load

** represents Credit Free growth based on predicted population growth

***represents Credit Free growth based on both increased initiatives and population growth

Growth projections for Red Deer College suggests there will be conservative growth in most programs over the next 5 to 10 years. However, there will be greater than normal program growth in the following areas:

- Apprenticeship and Contract Training
- Health Care (Licensed Practical Nurse, Dementia and Brain Injury Studies)
- Undergraduate Studies (4 year degree in Bachelor of Arts, Bachelor of Fine Arts and Bachelor of Kinesiology & Sport Studies)

The 5 year projected growth, when translated into space needs, will in part, be absorbed by the additional space made available by the following initiatives:

- recycled space made available by the old library
- approximately 10,000 square feet of designated space within the CollegeSide Intergenerational Community
- new Visual Arts Space (to be programmed)
- vacated Visual Arts Space (approx. 20,000 sq. ft)

It is anticipated the above spaces will accommodate student and program growth related to the academic streams.

Trades space is currently at capacity. Trades programs are anticipating positive growth which will require new space.

Credit Free Programming will experience growth simultaneous with population increase in the region. However, the college has a goal to further increase credit free programming through a variety of initiatives

Student enrolment growth at Red Deer College beyond 20 years is not addressed within the scope of studies done at this point. It is assumed growth will continue and strategies in land consumption should leave flexibility to accommodate this.

The current gross building area of the campus (Main, Trades and Arts Center) is 66,825 m². The Trades program is delivered in the 800 wing, which consists of 14,039 m². The balance of the campus is fundamentally academic programming, consisting of 52,786 m². Assuming the facility is at capacity with the current student population, future space needs can be projected from current FLE counts. The 2001 / 2002 FLE count is a total of 3,545 (455 Apprenticeship and 3090 Academic). In planning for future growth, 31 m² of floor space is needed for each FLE student in the Trades programs and 17 m² of floor space is needed for each FLE student in Academic programs. Assuming increments of 100 students the Trades growth would be 2800 m² per 100 and the Academic would be 1700 m² per 100.

The Trades growth, for planning purposes, is assumed to be single storey (in reality it would be closer to 1.5 stories, including mezzanine development). Stacking space is not considered realistic for Trades expansion due to volume of space normally required.

The Academic growth, for planning purposes, is assumed to be 2 storey.

Currently approximately 75% of Credit Free programming occurs between September and April with 25% during the Spring / Summer sessions. Approximately 90% of the credit free programming during the Fall / Winter sessions occurs during "off peak" hours (evenings and weekends). The assumption is this will continue; however, increased demand during "peak" hours is projected to grow. Additional building area will be required to accommodate this day time, during the week use (new facilities such as CollegeSide, new Visual Arts facility, new Sports Facilities and additional computer labs could accommodate a large part of this).

The growth of credit free programming, particularly during the Fall / Winter sessions, creates a need for residence accommodation focussed toward short term stays.

family, and barrier free housing should continue to be provided with the proportions dependent on demand and availability in the community. The first priority for growth should be given to family units. The next would be apprenticeship students, where there is definite growth. Their housing needs are in 8 week cycles (2 – 8 week blocks before Christmas and 3 – 8 week blocks after Christmas). The current number of units for the disabled is adequate. It is recommended future single student housing be designed to accommodate additional “accessible” units.

- **Location**

Housing for families needs to have a certain amount of separation from housing for singles. Optimally, the family housing will be in a safe enclave removed from traffic. On and off campus options need to be explored. Consideration could be given to locating family housing within the new West Lake development, or the West Park School site if it becomes vacant, or the College or Bower Lands south of Waskasoo Creek. Future single student housing should be located in reasonable proximity of the existing residences to facilitate optimum management and operation. If a future complex is of significant size, then a “satellite” management operation could be incorporated, thereby, allowing a more distant separation. The current tendency of keeping the residences on the periphery of the campus building complex is appropriate and a recommended strategy for the future. Road noise from Highway 2 is a significant negative factor in locating residences to the west area of the campus. Taylor Drive and 32nd Street traffic noise is deemed more tolerable.

- **Type**

The latest housing type built at RDC has been single student, 4 bedroom, split-level townhouses. This type of housing has been very popular with the students and has been a unit type pursued at many college campuses throughout Alberta (except in Calgary and Edmonton). The density of this unit type is not high and as such, is land consuming. In consideration of optimum utilization of college lands it is recommended that future residences be of a higher density. At this point medium rise, apartment style housing (4 to 6 floors) makes sense, in conjunction with stacked parking (2 to 3 floors). If family student housing is pursued off campus, the recommended housing type is townhouse style, with direct access to a grade level contained play area.

- **Services**

Any significant future growth in student residences should address the following needs:

- convenience store
- laundry facilities
- space for residence life (lounge / activity / meeting space)
- music rooms
- computer labs
- daycare for family housing
- recreation and fitness facilities

- **Conference and Off Season Business**

Revenues from summer accommodation activity related to conferences, Summer Series, music and art programs for youth, sport clinics and tournaments, and a range of other activities have been significant and are growing. Consideration, in future growth, should be given to this aspect of residence activity.

- **International Students**

Currently, it is deemed desirable for international students to be integrated with the rest of the students, with no distinct separation. The College is actively pursuing more international students, which, over time may suggest consideration be given to their needs. This could potentially tie in with an international centre that may evolve in the future.

- **Design Considerations**

- creating a sense of “community” is extremely important (RDC housing has some good and bad examples)
- overview of existing residences reveals an issue with poor sound and smell separation
- ensure the design takes safety and security issues into consideration

Parking

Existing parking is provided for students living off campus (2150 stalls), students living on campus (406 stalls), staff (481 stalls) and public (192 stalls) for a total of approximately 3,390 stalls. The current FLE is approximately 3670 students giving a parking ratio of 0.7 stalls per student. The current staff count is approximately 700 (full/part time), giving a parking ratio of 0.71 stall per staff. The average for other post secondary institutions (colleges, NAIT and SAIT) is approximately 0.5 stalls / staff and students. The goal, as the college grows, is to become less land consuming with parking and reduce the current ratio of parking for staff and students to be closer to the 50% range or less. The demand for parking will be offset by improved public transit, incentive programs such as car pooling and improved pedestrian and bicycle access.

As the college reaches the “built-out” stage the intent is to consolidate a portion of the parking into parkades serving both the east and west areas of the campus.

Diversity Of Uses

- There is interest by private and public sector entities in developing facilities for their needs on college lands. Through the process of exploring a “built-out” campus there is a demonstrated capacity to accommodate this. Historically, the college lands have been exclusively used for post secondary use. This trend has shifted, somewhat, when the CollegeSide development was approved, accommodating a long term care and assisted living facility.

- The notion of a land use strategy that would have a mix of some commercial, residential and other public use facilities is appropriate in the context of exploring the linkage to the college’s educational mandate. Any future development external to direct college use must meet established criteria including compatibility with existing and future land uses on campus and surrounding properties.

Open Space

Within the current ring road area the following is the breakdown of grade level land at grade devoted to major land use categories:

| | |
|------------------|------|
| Buildings: | 23% |
| Parking & roads: | 32 % |
| Open space: | 45% |

Precinct 1 is the enlarged area created by the expanded ring road. The goal is to achieve a more compact campus that is more sustainable and less land consuming, yet retain a reasonable amount of open space. The target for open space is 30%.

Precincts 2, 3, 4 and 6 currently have minimal development with open space in the range of 95% to 100%. The target for open space, as these areas become built-out, is a minimum of 40%.

Precinct 5 (Natural Area) is currently 100% open space and the target is to retain this at close to 100% with the exception only being stormwater management facilities and transportation corridors including paths and trails.

Density Of Building Development / Building Height

Building Density: The current footprint of building development, within the existing ring road, is approximately 23%. Factors that influence density are capacity of services (water, sanitary, natural gas and electricity), transportation systems (access, transit, parking capacity etc.), realistic number of floors for the type of activity, economics of construction etc.

Building height: Currently, the most dominant landmark at RDC is the fly tower of the Arts Center which is approximately 25m (82 ft.) in height. The goal is to retain a campus element that has the dominant height, whether it remains as the Arts Center or another new identity element. Any non-college structure would fall below this height. The proposed restrictions on height are as follows:

| | |
|------------------------------------|--------------------|
| Residential / administration: | up to 18m (60 ft.) |
| Academic: | up to 9m (30 ft.) |
| Mixed use (including RDC housing): | up to 18m (60 ft.) |
| Others (parkades, partners etc.): | up to 15m (50 ft.) |

Density of development may need to be reassessed in the future if the proposed high speed train service between Edmonton and Calgary evolves and a station in close proximity to college lands is created.

Urban Design and Aesthetic

- The Arts Center fly tower at 25 meters should be retained as a landmark to assist in way-finding and achieving identity
- Emphasis on the “out door” environments (courtyards, landscape corridors, and visual corridors)
- All weather campus opportunities combined with outdoor routes
- Exterior cladding complimentary, but not necessarily uniform
- Compatible materials
- Human scale, good proportions (building form, windows etc.)
- Barrier Free Design wherever possible
- Contribute to “way-finding”
- Visibly distinct entries and focal points

*Figure 3.1 –
Defining and Reinforcing
the Main Entry*



- Unique, identifiable “character areas” with a strong “sense of place”
- Positive edges (e.g. strong visual presence along Highway # 2)
- Attractive exposure on all building faces
- Seek opportunities to create views and vistas of buildings, natural areas, outdoor space (both inside and outside building)
- Wherever possible use buildings to frame the street (place parking in less dominant locations)
- Pursue flexible building design with adaptability for future changes and expansion
- Mixed use development (i.e. combining commercial, institutional and residential uses in one building), stacked vertically is encouraged

Landscaping / Signage

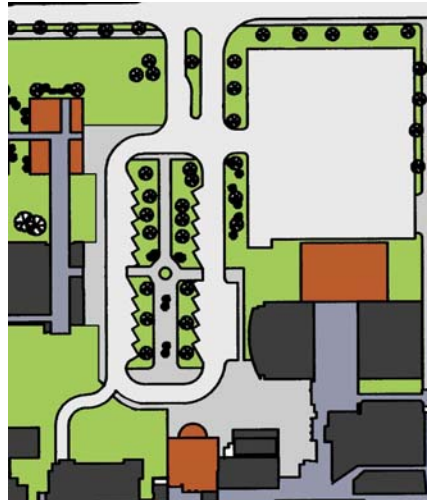
- Preserve and enhance existing landscape areas and buffers
- Reinforce the following:

Tree-lined, formal main entrance

Landscape buffer along 32nd Street
Preservation of existing landscaped quads

- Improve landscaping along Highway # 2 to create a positive image
- Provide landscape connections to natural area (e.g. dry creek bed link to North Precinct)
- Create landscape and signage features at key vehicular and pedestrian entranceways; as well as high visibility locations such as Highway # 2
- Capitalize on opportunity for signage on the fly tower of the Arts Center
- Develop an attractive and consistent signage system for way-finding
- Create a theme for landscape treatment
- Emphasize using natural vegetation and natural landscape features wherever possible
- Use landscaping to soften / breakup building mass and parking lots.

*Figure 3.2 – Improve
Visibility and Accessibility to the
Main Entrance*



Safe Campus

Current and future development of the campus should use **CPTED (Crime Prevention Through Environmental Design)** concept and principles.

The CPTED concept uses design, management and activity strategies to reduce opportunities for crime to occur, to reduce fear and to improve quality of life.

CPTED Principles

| | |
|----------------------|--|
| Natural Surveillance | The design and placement of physical features in such a way to maximize visibility. |
| Access Management | The physical guidance of people coming and going from a space. |
| Territoriality | The delineation of private, semi-private and public space. The use of physical attributes that express ownership. The reduction of unassigned space. |

| | |
|----------------------|--|
| Physical Maintenance | The repair, replacement and general upkeep. Allows for the continued use of a space for its intended purpose. Serves as additional expression of ownership. |
| Order Maintenance | The attention to and reduction of minor acts. Measures by which expectations regarding acceptable behavior are clearly stated and consequences for unacceptable behavior are known and applied when appropriate. |
| Activity Support | The planning and placement of activities to enhance casual natural surveillance, access management and territoriality. The provision for facilities and space to accommodate programs, gatherings and events. |

Transportation

- Use TAC Guidelines (Transportation Association of Canada) wherever possible to provide safe and functional roads and intersections.
- Encourage greater use of public transit, walking and bicycling (relates to LEED and compact form), support future transit hub on campus, promote car pooling, increase parking rates etc.
- Link to city systems (arterial trails).
- Migrate parking to different entrance points (de-emphasize main entrance in favor of 60th Ave. and future connection to 28th Street).
- Expanded access as needed to accommodate future growth in an efficient manner.
- The potential of a high speed train link between Edmonton and Calgary, with a stop at Red Deer, near the college, would have an influence on transportation strategies.

Utility Servicing

- Maximum use of existing utilities (e.g. key building infrastructure such as main boiler plant).
- Prioritize capacity and use for college needs first.
- Follow Alberta Environment design guidelines and City of Red Deer guidelines for sewer, water and storm.
- Plan for dual feeds and looping for convenience and continuity of service and safety.
- Placement / alignment allowing for ease of maintenance / upgrading.

Natural Area

- Preservation of the central core of the natural area should be an overriding goal.
- Facilitate greater management and monitoring.
- Integration of natural and developed areas.
- Maintain current uses of the natural area (education, recreation, habitat, wildlife corridor).
- Acknowledge need to link the areas north and south of the creek, but in the least obtrusive way.
- Minimize impact on natural area through proper management of storm water, utilities, roads and pathways.

- Facilitate access for the General Public.

College As A City / Regional Focal Point

- Partnerships with the City of Red Deer and community groups continue to be significant, with joint use agreements for the sports fields, the performing arts center and the library. Private / public partnerships have begun to take place (CollegeSide) and are anticipated to continue. Models for future development include the visual arts wing, art gallery and a sports complex.
- Public use of the college lands (grounds and natural area) will continue and be further enhanced.
- Venues for community events (e.g. Speaker Series), spectatorship of sports, and general education (e.g. future interpretive center).

Contribution To Quality Of Life Of Central Alberta

- Social well being through life long learning; arts and culture opportunities increase in importance
- Relationships with larger community such as economic impact, contribution to labor force and regional knowledge base and potential partnerships will increase in significance.

4. Red Deer College – Land Use Master Plan

Introduction

The Plan contained in this section to guide the future development of the Red Deer campus consists of guidelines and strategies that apply across the entire campus and more specific guidelines and strategies for sub-areas or precincts. Issues that are more appropriately discussed and managed on a campus-wide basis are presented first. This is followed by separate discussions for each of the six precincts based on the sub-areas illustrated on the precinct map.

As shown in the discussion for each precinct, the sub-areas that make up the campus are not autonomous areas or islands onto themselves. There is a considerable degree of inter-relationship between the areas. Decisions made in one precinct will have consequences for future decisions in other areas. Where possible, these inter-relationships and trade-offs are identified and their potential implications are discussed.

Contained within this document is set of key exhibits that are intended to communicate how the guidelines and strategies discussed in this section may be applied. The first exhibit is the precinct map which identifying the sub-areas of the campus and the geographic application of specific guidelines and strategies. This is followed by two demonstration plans which illustrate what the net effect of the Plan's strategies could be on the campus once the campus is fully built-out or developed. These two plans are intended to demonstrate potential scenarios and are not meant to be interpreted as strict requirements for future construction of buildings and improvements. The two plans are similar except they demonstrate alternative locations for family housing and the sports complex.

Campus Wide Planning Strategies

Several aspects of future campus development affect the study area as a whole and cover more than one of the precincts. Strategies that have broad application are discussed below. Additional detail, where needed, is provided in the discussion for individual precincts.

Sustainability

As stewards of the natural environment, Red Deer College will challenge developers, and designers to help build a better campus. By working together in an integrated approach, one can build a higher performance campus that will provide a superior learning environment, while reducing life cycle costs through conservation of energy and natural resources.

The implementation of a sustainable building policy will ensure that all new construction meets minimum sustainability requirements. The adopting of the "Leadership in Energy and Environmental Design" (LEED™) standard as a benchmark can be used in

comparing different design proposals and as a resource for investigating opportunities in sustainable design.

LEED is a sustainable design assessment tool that helps design teams and owners determine sustainable project goals, identify sustainable design strategies, measure and monitor progress and document success. It is a feature-orientated system where credits are awarded for satisfying different criteria. In addition, there are prerequisites that every building must meet in order to be certified. The system evaluates from a “whole building” perspective over a building life cycle and incorporates the following aims:

- Sustainable design methodology must include implementation strategies, verification and measurement.
- Two key processes required for sustainable implementation strategies are life cycle assessment and integrated design approach.
- Verification and measurement ensures the strategies are designed, installed and operated to their optimum.

With the aim of recognizing environmental leadership in the building industry, the LEED rating system helps decision-makers mix and match best practices in the following areas:

1. Sustainable Sites (14 points)
2. Water Efficiency (5 points)
3. Energy Efficiency and Atmospheric Protection (17 points)
4. Materials and Resources (13 points)
5. Indoor Environmental Quality (15 points)
6. Innovation & Design Process (5 points)

Based on accumulated points (maximum 69 points), a building project can achieve different levels of certification:

- LEED Certified – 26 points
- LEED Silver Certified – 33 points
- LEED Gold Certified – 39 points
- LEED Platinum – 52 plus points

The College’s Board of Governors has adopted an executive limitation that requires all new construction projects on the campus be benchmarked using the LEED assessment protocol.

Transportation

The future transportation system envisioned for the campus supports the use of private automobiles, walking, bicycling and use of City transit to access and move about the campus. While the private automobile is the most common means of getting to the campus at present and will likely be so into the near future, it is envisioned that use of

City transit, walking and bicycling will increase provided facilities and programs to support these forms of transportation are available.

Access to External Roads

The City's system of arterial roads and the Provincial highway system is the primary means of getting people and goods to the campus from other parts of the City and from the region. Direct access into the Plan Area is only available from 32nd Street to the north and Taylor Drive to the east.

Over the short to medium term, access to the north portion of the campus will continue to be provided by the existing main entrance between 55th Avenue and 57th Avenue and the entrance at 60th Avenue. As the amount of traffic along 32nd Street and the amount of traffic going into the campus increases to the point where changes are warranted, these two intersections will be improved to maintain safe and functional access for the College and surrounding areas.

Improvements at the 60th Avenue access are expected to take the form of traffic signals responding to traffic entering/exiting both the campus and the newly developing neighbourhood of West Lake to the north.

Improvements at the main entrance of the campus involve reconfiguring the intersections of 55th Avenue and 57th Avenue. Both existing intersections at 55th Avenue and 57th Avenue leading into the West Park neighbourhood will be closed and a new east-west connector road paralleling 32nd Street would link 55th Avenue and 57th Avenue to the existing intersection at the College's main entrance. As part of this change, the displaced ball diamonds would be relocated onto the campus.

A new access to Taylor Drive will eventually be required. This access road will connect to the east leg of the Ring Road, extend through the student residence area, cross Waskasoo Creek and form a signalized four way intersection with Taylor Drive at 28th Street. At least one residence building will need to be relocated to a site farther to the west along the Ring Road. To facilitate the ability of wildlife and trail users to cross the new road, the road surface will be designed such that the impact to the crossing of wildlife and trail users will be limited.

Earlier planning for a right-in/right-out onto Taylor Drive immediately north of the new student residences has been abandoned due to the costs of construction and the difficulty in obtaining support and funding from Alberta Infrastructure. Having an all-directional access at 28th Street also provides more future benefits than the right-in/right-out in terms of overall traffic management, routing of City transit and access by emergency vehicles.

The primary vehicle access to the campus area south of Waskasoo Creek will be provided through the private lands in the southeast portion of the Plan area by a collector road tying into Taylor Drive at 22nd Street. This access will not become

available until the private lands immediately south undergo subdivision and development or the cost of the connection is borne by development.

The order of priority and specific timing for changes and improvements to vehicle access to the campus will be determined in consultation with the City of Red Deer. The following items will be taken into account in determining the timing of any particular improvement:

- maximizing the potential of existing access points and making improvements to existing intersections prior to construction of new intersections or more significant changes
- ability to access lands needed for roadways where the lands are owned by private landowners
- responding to needs identified through ongoing traffic monitoring and traffic assessments of major development projects on campus

Internal Roads

The main feature of the internal road system will continue to be the Ring Road. Each of the three main accesses discussed above will connect to the Ring Road to disperse vehicle traffic to various parts of the campus.

As development progresses, the west portion of the Ring Road will be extended towards the west boundary of the campus, closer to the access at 60th Street. The two points where the Ring Road intersects the main entrance will be consolidated into a single four-legged intersection. This intersection will require traffic management and will be improved on an as-needed, as-warranted basis to ensure that it functions in an efficient and safe manner.

At several points along the Ring Road, stub roads lead up to main building entrances, parking areas, passenger drop-off areas and service entrances. These roads are intended to provide necessary vehicle access and emergency vehicle access to all future building sites while enabling pedestrian connections between buildings to be uninterrupted by roads.

To facilitate service vehicle and emergency vehicle access to the area south of Waskasoo Creek, a limited access road (6m wide) will be provided. This road or lane will consist of a narrow paved surface making use of an existing bridge structure to cross the creek. To restrict use of the road, control gates and vehicle barriers will be installed at both the north and south ends of the road.

Pedestrian and Bicycle Connections

Opportunities to access and move through the campus by walking or bicycling are expected to increase over time. The following connections to the City-wide trail network will be facilitated by Red Deer College:

- Extension of the sidewalk along the 60th Avenue access road north to allow the crossing of 32nd Street into new West Lake neighbourhood and through to the Red Deer River valley;
- Connection of the sidewalk along the east sides of the Main Entrance road to allow the crossing of 32nd Street into the West Park neighbourhood;
- Connection of the trail leading from the intersection of 32nd Street and Taylor Drive;
- New trail to be constructed along new access road connecting to Taylor Drive and that will provide linking by the developer of the private lands into a future trail extension along the west side of Taylor Drive;
- Extension of trails around the perimeter of the natural area will be facilitated on College property and will facilitate trail development in the private lands to the east;
- New Trail providing a more direct route across the natural area between the College main building and future development on the private property to the southeast.



To increase safety for pedestrians and cyclists coming to the campus, pedestrians and cyclists will be directed to controlled crossing points along 32nd Street and Taylor Drive. These controlled crossing points are identified as ‘intersection treatment’ areas on the demonstration plans. This may include the installation of a fence or similar barrier to direct pedestrians and cyclists to crossing points and removal of some paths that encourage jaywalking across 32nd Street and Taylor Drive.

Figure 4.1 – Regional Pathway System

Throughout the campus, all weather pedestrian routes will generally connect buildings to one another and provide opportunities to move through the campus into the natural area to the south. In the western portion of the campus, this aspect will take the form of a corridor along an artificial creek bed intended as part of the storm water management system.

To facilitate more use of bicycles to access the campus, bicycle parking facilities will be provided close to main building entries wherever possible.

City Transit

Future use of City transit is expected as the campus develops. The changes to the main accesses to the campus and the internal road system are intended to support the current and future expanded use of City transit. To further encourage the use and assist with the provision of transit service:

- Two potential transit stop/lay-by locations are identified along the north portion of the Ring Road close to main entries of future buildings intended to be used by the general public and providing secure and sheltered waiting areas;
- Turn-around opportunities and multiple points of accessing the campus will be included in the road system to assist with transit routing and the potential future use of the campus as a transit hub serving the southwest portion of the City;
- Portions of the Ring Road and access roads identified as bus routes will be constructed to a standard that supports the operation of buses.

Parking and Distribution of Vehicle Traffic

As future development occurs on the campus, the amount of land devoted to parking will be decreased. Two locations for the development of vehicle parkades are identified: one serving the west portion of the campus and one serving the east portion of the campus. Vehicle parkades may be constructed once there is no longer sufficient space to provide parking at grade in reasonable proximity to buildings and building entrances.

Shared use of parking between different activities and uses will be encouraged. However, as noted in the precinct discussions, some uses and sub-areas are expected to be self-sufficient in the provision of their needed parking stalls. Large scale surface parking areas will be considered an interim use of land that may be displaced by future building construction.

The placement of parking areas and parking facilities will be guided by the following considerations:

- Providing dispersed 'pockets' of parking to enable close access to entries into buildings;
- Dispersing major parking facilities for students, faculty and staff in locations that encourage motorists to use the 60th Avenue and 28th Street accesses rather than the main entrance at 32nd Street;
- Locating designated public parking close to facilities and buildings used by the general public.

Landscaping, Signage and Open Space

Landscaping, signage and open space will be planned and developed to assist in the creation of a highly attractive built environment and fostering of a strong sense of place.

These elements can contribute to the identity of the campus making it a unique area within the overall setting of the city.

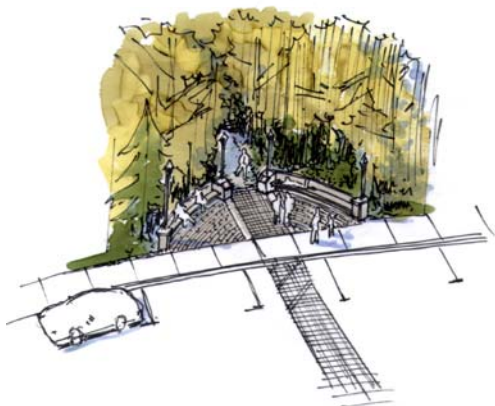
In general, the approach to landscaping on the campus will seek to accomplish the following aims:

- preservation and enhancement of the existing landscaped areas and buffers wherever possible and not in conflict with the planned location of building or parking facilities;
- providing clustered plantings of trees and low level vegetation to shield pedestrians and buildings from predominant winter winds and function as snow traps;
- softening the visual appearance and minimizing the perceived mass of large buildings and large parking areas;
- creation of areas of visual interest;
- recognizing that landscaping is part of the 'infrastructure' that contributes to the overall appearance of the campus; and
- contributing unifying elements in the overall design and aesthetic of the campus.

The landscaped buffer along 32nd Street will be maintained and enhanced where necessary to create an attractive landscaped edge along the north side of the campus. The landscaping in this area will also be planted to create a physical and visual barrier that, in conjunction with fencing, will channel pedestrians and bicyclists to the controlled crossings along 32nd Street.

Existing landscaped quads and courts will be preserved. It is anticipated that new quads and courts will be developed as new buildings are constructed. New quads may take the form of formally landscaped green spaces or more urban spaces through the use of hard landscaping.

Internal landscaped islands will be provided in larger parking areas where the number of stalls exceeds 25. These islands will be planted at the end of rows of parking and distributed throughout the parking area to create the appearance of a series of smaller parking lots.



Landscaping will be used to establish interesting 'outdoor rooms' that enhance the overall appearance of the campus and provide identifiable points of reference. The figure to the left provides an example of such a feature. Elements such as plantings, elevated planters, low walls and terraces, street furniture and hard landscaping may be used to accomplish this aspect.

Figure 4.2: Sample Trail Head – Identifiable Area Using Landscaping Features

A formal landscaping treatment will be applied to the main entrance boulevard of the campus to reinforce the existing tree-lined, formal appearance of this access route. The establishment of a visually appealing vista terminated by the entrance to the main campus building will be a prime objective for the landscaping design of this boulevard.

Similar to the main entrance road, a tree-lined boulevard along the north and west portions of the Ring Road and the 60th Avenue access road will be developed. This will complement efforts to establish more attractive and pedestrian friendly streetscapes in these areas.

Landscaping along Highway 2 will focus on creating an attractive, visually interesting edge to the campus and, in conjunction with the design of buildings proximate to the highway, emphasize view corridors into the campus. The design of landscaping along this edge of the campus should be consistent with the level of landscaping provided along 32nd Street.



Figure 4.3 – Dry Creek Concept

Landscaping will be used to establish links to the Natural Area. One key link is the *dry creek bed* that is shown running north-south through the west portion of the Campus Core and into the Northwest Precinct. The open space corridor that accommodates the creek also provides opportunities for the planting of tree clusters and vegetative cover consisting of species found within the Natural Area. At the same time, portions of this corridor may have a decidedly 'urban' character consisting of hard landscaping and sidewalks linking buildings. At select points, indoor pedestrian routes bisect the corridor to facilitate all-weather connections between buildings. Sets of doors will be needed to maintain the flow of pedestrians north-south along the open space corridor.

The nature of landscaping treatments to be used across the campus and in specific locations will vary depending on the physical setting and the aim to be achieved. As general guidelines or 'theme' for the selection of landscaping materials to be used, the following criteria should be observed:

- landscaping materials will be selected to provide a year round effect that will include a combination of deciduous and coniferous trees and shrubs;
- landscaping materials will be selected for educational values;
- deciduous and coniferous trees will be provided in equal proportions and two deciduous shrubs will be provided for every one coniferous shrub;

- natural or indigenous vegetation and natural landscaped features will be used and incorporated into new landscaping to the greatest extent possible;
- use of plant species that are relatively drought resistant and resilient and have educational value will be considered a priority in selecting plantings;
- landscaping clusters will consist of a mixture of low level, mid-level and higher level vegetation to provide for visual interest at each level; and
- hard landscaping consisting of paving stone, stamped concrete and similar materials will be used to create plazas and formal walks.

Due to the anticipated time to build out the campus, sizeable portions of the study area will remain in their natural state or continue to be used for agricultural purposes. These large landscaped areas, consisting mostly of natural grass and scattered vegetative cover, will be considered an interim use of land until the area is required for building or facility development. Existing mature and attractive vegetation will be incorporated into more detailed site designs where possible.

Signage

At entranceways and highly visible boundaries of the campus, a combination of landscaping and signage will be constructed. These features are intended to announce the presence of Red Deer College to passers-by along key travel routes such as Taylor Drive, 32nd Street and Highway 2. Some of these features will form entrance markers at points of access to the campus. Others will take the form of signage on key buildings visible within and beyond the edges of the campus. Specific locations identified on the Demonstration Plans include:

- the southwest corner of the intersection of Taylor Drive and 32nd Street oriented towards the northeast;
- the west side of the new access across Waskasoo Creek connecting to the southeast portion of the Ring Road oriented towards the southeast;
- within the median and to the sides of the main entrance road off of 32nd Street;
- within the median of the 60th Avenue access road; and
- along the west edge of the West Precinct oriented towards Highway 2 or west;
- along the south land.

Signage placed on buildings will also be used to announce the presence of the College and assist visitors in navigating on campus. Two main opportunities involve the fascia signage over the main building entrance and fascia signage on the fly tower of the Arts Centre.

A consistent theme should be used for all College signage at the key locations noted above based on the visual identify guidelines of the College. This includes consistency in the use of colour combinations, proportions of logo to text, proportions of text to copy face and illumination. An effective and consistent on-campus signage system that assists visitors and those new to the campus to find their way around will be established. This may include naming 'streets' on campus to fit in with the citywide addressing

conventions used by the City. Establishment of 'street' names and other means of identifying portions of the campus are intended to contribute towards safety (i.e. emergency response) and the creation of a 'visitor friendly' campus. The campus map at the visitor pull-off along the main entrance will be updated as part of the implementation of the adopted signage system.

Signage on non-College buildings will be compatible with the signage used on other buildings on campus. The design, placement and scale of sign will require the approval of the College to ensure that proposed signage does not detract from the overall appearance of the campus and is not obtrusive. Signs that protrude above the eave line of buildings and billboard signs will not be allowed.

Open Space

The overall proportion of the campus that is planned to remain as open space is substantial. While a compact campus is desirable, provision of well designed open spaces is necessary to moderate the psychological effect of increasing building density and help maintain a high quality of living environment. For the purposes of this plan, open space refers to all areas not used for buildings, roads and parking facilities.

In addition to the Natural Area precinct, a minimum of 30 percent of the campus area outside of the Natural Area will be retained as open space. The Campus Core is expected to be the most densely developed portion of the campus and open space will comprise at least 30 percent of the land area within this precinct. To offset the more compact nature of the Campus Core, peripheral precincts will be required to maintain a higher proportion of their land area as open space. At least 40 percent of the area within the Northeast, Northwest, and West and South precincts will be maintained as open space.

Open space areas will be used to accommodate sports fields, gathering and seating areas, sculptures and art, formal and informal landscaping, signage, storm water management ponds and pedestrian and bicycle trails. Smaller open spaces, quads and courts between buildings will be used to provide visually interesting views from internal spaces and provide access to natural light.

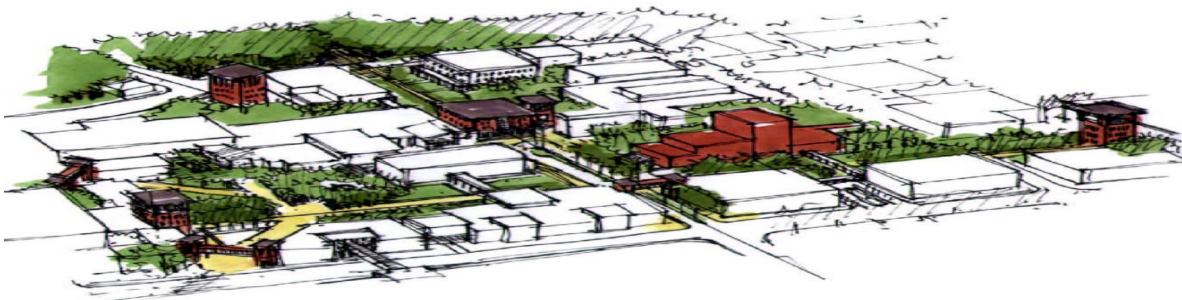


Figure 4.4: Integration of Open Space with Buildings

Safe Campus

Current and future development of the campus should use **CPTED (Crime Prevention Through Environmental Design)** strategies to attain a safe campus.

Generic CPTED Strategies

- Provide clear border definition of controlled space.
- Provide clearly marked transitional zones, which indicate movement from public to semi-public to private space.
- Relocate gathering areas to locations of natural surveillance and access control; as to locations away from the view of would be offenders.
- Place safe activities in unsafe locations to bring along the natural surveillance of these activities (to increase the perception of safety for normal users and risk for offenders).
- Place unsafe activities in safe spots to overcome the vulnerability of these activities with natural surveillance and access control of the safe area.
- Re-designate the use of space to provide natural barriers to conflicting activities.
- Improve scheduling of space to allow for effective use and appropriate “critical intensity”.
- Redesign or revamp space to increase the perception or reality of natural surveillance.
- Overcome distance and isolation through improved communications.
- Minimize pedestrian, bicycle and vehicular conflict.
- Good emergency vehicle access and alternative routing.
- Adequate and well maintained emergency infrastructure (e.g. water supply, sensors / alarms, fire suppression systems, surveillance system).

Urban Design and Aesthetic

Red Deer College’s image and environment offers a unique sense of place and experiences for all to enjoy. New urban design and development concepts will need to preserve, strengthen and expand on these existing assets. As the campus lands build out into higher densities, the continuation of open space will be paramount. This balancing element of natural landscape with the man-made environment introduces variety and contrast that allows for natural storm water management, recreation and environmental education or natural habitat.

The development of this open space is impacted directly by the placement of surrounding buildings and requires a careful review of design aesthetics prior to development.

Urban design and aesthetics will be guided by the following strategies:

- Maximize visual presence along Highway 2 and 32nd Street while maintaining Red Deer College identity.
- Emphasize an urban edge along the ring road.

- Provide for ease of linkage to existing and future circulation to continue the all weather campus concept.
- Orientate development to maximize sustainable design and safe campus strategies. (Natural daylighting).
- Compact and clustered development patterns are encouraged.
- Development is to be a focus from the street/natural area and main promenade to enhance gateways and distinguish entrances.
- Celebrate the identity of the campus at entryways.
- Incorporate human scale design principals to enhance the pedestrian environment.
- Minimize blank walls that lack windows or relief that front on the street edge and visible corridors.
- Building designs should complement in materials, scale, texture, proportions, pattern, colors and window rhythms.
- Ensure all buildings are barrier free and accessible to all persons.
- Ensure sun penetration to open spaces, pathways and streets.
- Provide for a variety of open spaces and plazas.
- Protect views and vistas to the natural area and to the College identifying elements.

Diversity of Uses

The land use master plan envisions a greater diversity of uses located on the campus than is currently the case. This is largely due to the opportunities to accommodate uses that, while having some relationship to the College's educational mandate, have historically not been allowed to develop on the campus.

Over the past few years, there has been interest by both private and public sector organizations in developing buildings and facilities for their own needs on College lands. There remains interest in this type of development. This plan seeks to take advantage of the interest in developing on the campus and the ability to form unique and mutually beneficial partnerships. The Demonstration Plans show how future build-out of the campus can accommodate both traditional post-secondary academic needs, shared facilities with the larger community, and opportunities to partner with private sector and public sector organizations.

In addition to changes in the organizations that may be building on campus, the range of uses and mixture of uses is envisioned to increase as the Plan is implemented. Types of uses that may develop include:

- Post secondary education facilities and related ancillary and support services
- Major indoor community recreation and cultural facilities
- Student residences consisting of single student housing and family housing
- Convenience retail and retail uses catering to on-campus population
- Applied Research facilities
- Light industrial wholly contained within enclosed buildings
- Office commercial

- Demonstration projects and interpretative centres
- Business development centre
- Nursing homes
- Educational support
- International joint venture

All uses that are contemplated for development on campus lands will be required to demonstrate a relationship to the College's educational mandate. It is expected that all uses approved on campus will enhance the overall status of Red Deer College as a high quality, post secondary facility.

Potential partnerships and uses will be evaluated based on the following set of criteria:

- compatibility with and ability to support and respect the College's core business as a regional post-secondary education institution (teaching and learning);
- ability to provide benefits to the people and communities served by the College;
- opportunity to maximize the value of the land;
- potential to extend the College's alliances and relationships with business and industry;
- development of direct links to current educational program offerings or potential for the development of new educational programs;
- provision of new learning space and/or support space;
- creation of opportunities to generate new sources of revenue to support educational offerings through participation in research projects, business ventures and lease revenue;
- contribution towards prosperity and economic development within the central Alberta region; and
- compatibility with existing and future land uses on campus and surrounding properties.

To ensure that uses advance the mission of the College, the lands owned by the College will not be subdivided to facilitate transfer of title to or ownership by potential partners. The College will instead consider entering into long-term leases that meet the requirements of Alberta Learning. An example of this is the approach taken with the CollegeSide Community project.

In addition to increasing diversity of uses on campus generally, future buildings may house a broader range of uses than currently takes place. Opportunity exists in the plan to create mixed use buildings that accommodate, for example, academic and community oriented uses on lower levels while accommodating more administrative and student residential uses on upper levels. The figure below provides an illustration of how this mixture of uses can be accomplished in a single building. Stacking uses vertically rather than horizontally is intended to facilitate a more efficient use of land, particularly within the Campus Core.

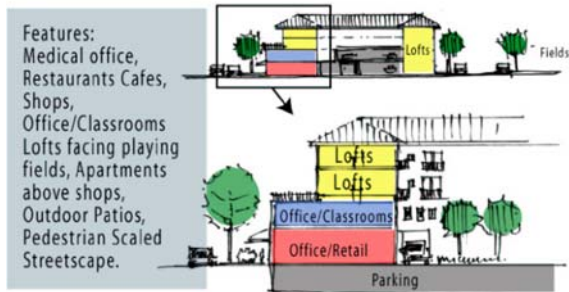


Figure 4.5: Example of Mixed Use Building

5. Precinct Analysis

The planning strategies for the Land Use Master Plan have evolved from three key categories:

- assessment of components of the college lands (through precinct analysis)
- transportation strategies (vehicular and pedestrian access and circulation)
- infrastructure strategies (storm and sanitary sewer, power, natural gas and water distribution)

For planning purposes the college lands have been divided into 6 precincts, with one of the precincts, Precinct 5, (Waskasoo Creek and Natural Area) being part of College lands and part of Bower Lands. The Bower Lands, although not viewed as a precinct, is a parcel of land where future development will have an important influence on the future transportation access to the college, north of the creek as well as future transportation and site services access to the college South Lands (Precinct 6).

Each precinct has been reviewed and analyzed separately, where in some cases, a number of development solutions have been explored. The over all Land Use plan depicted in “**Demonstration Plan One**” and “**Demonstration Plan Two**” reflects the consolidation of the recommendations for each precinct in conjunction with the recommendations related to transportation and infrastructure strategies. The plans depict a “build out” solution that would take well beyond the 20 year time frame to be realized. The plan is a suggested framework that would be fluid and responsive to change in a positive, evolutionary process.

Precinct 1 • Campus Core

The Campus Core Precinct is the area currently contained within the existing “ring road” as well as the area to the west that will be encompassed by the expansion of the “ring road”, as depicted in the 1994 Master Plan. The area contains the existing RDC facility footprint, including the 800 Wing for Trades, the 900 to 2600 Wings for Academics, the new Library, Students’ Association, Bookstore, Cafeteria, the Administrative / Service Wing and the Performing Arts Center. This precinct also includes the existing residences to the east and south of the main campus (i.e. on the east and south side of the “ring road”).

Features:

- This precinct is defined by the area contained by the expanded “ring road” as per the 1994 Campus Master Plan.
- Contains existing RDC facilities ‘footprint’ (an “all-weather” campus), the existing residences, two ball diamonds, two soccer fields, and all of the student and staff parking lots except Lot S.
- The precinct is set back from 32nd Street by a ¼ kilometer long boulevard / esplanade.

Potential Uses:

- Expansion space for Trades and Academic facilities
- Proposed Visual Arts Centre
- Possible parking structures
- Sports facility expansion
- Private / Public partnerships with 15 to 20 year term leases
- Housing for single students and families

Recommendations:

The essence of this precinct is the accommodation of current and future growth needs of the college's academic and related core functions. Sufficient land is available, within the expanded ring road for future projected growth needs (academic, trades, college services and sports facilities) in conjunction with capacity for longer range growth. The recommendations for the Campus Core Precinct are described below in 5 zones for future growth:

1. **East / North East** off the end of the **800 Wing**

This is the logical area for **Trades Expansion**. This zone offers the opportunity to more than double the current capacity for Trades. It is anticipated the existing pattern of single story and mezzanine / partial second floor development will be continued. The future road link to the south (connecting the college to 28th Street and Taylor Drive through Bower Lands) will establish another entrance focal point for the college. The alignment of this road with a cul-de-sac drop-off, would provide the Trades area with an opportunity for a distinctive entrance, strengthening both identity and visibility for this key program area. This is in keeping with the notion that as the college grows there is a need for dispersed focal entry points.

2. **North** of the **900 Wing**

This area could be either a major **Sports Complex** (Demonstration Plan Two) or **Academic** expansion (Demonstration Plan One). From an efficiency, sustainability and an "all weather campus" perspective the sports complex in this location is the most logical. The facility would provide growth to both the Kinesiology and Athletic programs / functions of the college. The 3 key functions depicted in the "build out" plan are a Field House, Olympic size Rink and a 50 meter competitive swimming pool; numerous ancillary activities would also be accommodated. The vision for this facility is to continue the existing partnership / joint use relationship with the City of Red Deer and surrounding region.

3. **South** of the **1400 / 1600 Wings**

This is the logical expansion area of the **Science** stream of the academic programs. It would see the removal of the existing 1400 wing mobiles which have far outlived their original intent of temporary accommodation for classrooms and faculty offices. This is not a large area for expansion, but would accommodate a two or three story building linked to both the 1400 and 1600 wings and the 2600 Wing (2nd floor). Current exhaust issues related to the Chemistry and Biology labs would need to be addressed.

4. **North of the Performing Arts Center**

This is the logical expansion area for the new **Visual Arts Wing** and **Art Gallery**. In this location the front area zone of the college continues to be reinforced as clusters of activity with a strong community link. This expansion would displace the existing Public Parking lot, which would, ideally be relocated to the north of the new Library. The Visual Arts Wing and Art Gallery are currently in the pre-design / space programming stage and it is anticipated the two functions will evolve with a need for adjacency or close proximity. The linkage to the Performing Arts Center would capitalize on shared support space (e.g. loading dock) and possibly share upgraded mechanical systems.

5. **West of the 1500 / 1600 Wings / Performing Arts Center**

This is the largest expansion zone for the college and would be primarily focussed toward **Academic** expansion. The expansion to the west is expected to evolve in building blocks that continue the “all weather” connectivity. The existing west portion of the “ring road” would no longer be continuous and would be re-worked as 2 cul-de-sac roadways, accessed separately from the north and the south. The termination of the roadway would facilitate “at grade” linkage between the existing and new buildings.

The capacity for growth in this area would facilitate the expansion needs of the college well beyond the 20 year horizon. It is uncertain whether the whole of the west zone of this precinct would ever be needed; however, the western reach could be developed into private / public partnership clusters. Medium term leases (15 to 20 years) are proposed where, if the college were to experience a significant population increase, RDC would absorb the space for college growth. Optimally the design of the buildings would be suitable for future adaptation to college classrooms, administration or service space. Successful examples of this type of arrangement between private corporations and universities and colleges are in existence.

The dominant building form in the West zone would be 2 stories with some areas being developed into 3 or 4 stories. The north portion of this zone could be developed into a “mixed use” type facility where the ground floor activity would have commercial activity, the second floor would be classrooms and / or offices and the third and fourth floors would be developed as housing for single students. Separate apartment block type buildings are also depicted for single students (these buildings would be 5 to 6 floors in height). Demonstration Plan One depicts a pocket of family oriented housing in the south area of this zone (approximately 42 units are depicted that could be developed in phases). This area is more suitable for family housing than the North Precinct (as depicted in Demonstration Plan Two), since it is closer to daycare and classrooms and to the natural area. As well, it has lower volumes of vehicular traffic.

The demonstration plans show future development that creates a mix of open space with landscaped courtyards, smaller pockets of at grade parking lots,

future parkade structures and several cul-de-sac roads, branching off from the “ring road”. The demonstration plans depict a significant landscape feature that creates a natural like, north / south, dry creek bed that provides a right of way for storm water service linkage between the north precinct and the natural area precinct. This serves to provide visual connectivity with the natural lands and serves to help give relief to repetitious building expansion.

Over and above the listed zones for expansion, the college will continue to create more space within the existing footprint through further strategies of consolidation. Examples of this include 2nd and 3rd floor expansions of the Office / Service Wing and a 2nd floor expansion of the 900 wing. Continuing this type of optimum utilization of space supports the College’s goal to pursue sustainable type development where there is increased density and more efficient use of infrastructure.

Precinct 2 • North East Area

This precinct is defined by 32nd Street to the north, the main college access road to the west, Taylor Drive to the east and the redefined “ring road” and college residences to the south. Much of this area (easterly portion) is non-developable due to the land fill. The developable area is west of the main soccer field.

Features:

- Former land fill site with 300m developmental zone, any encroachment of this zone will require mitigation; the area is currently a grassed hill with minimal planting.
- Class “A” soccer field and running track.
- Informal soccer practice fields (west of main soccer field)
- Lot “S”, a graveled student parking lot.
- Large expanse of landscaped area (grass and trees).

Potential Uses:

- Sport complex (field house, competitive swimming pool, ice rink)
- Student residence complex
- Retail uses (student focused)
- Parkade facility
- Passive recreation / Landscape features
- Pedestrian and bike trails (along Taylor and diagonally through the site)
- Potential relocation for 2 ball diamonds
- Future service yard for College Grounds Dept.

Recommendations:

The east portion of this precinct is proposed to remain much as it is today with the main soccer pitch, a student parking lot (Lot “S”) and a large mound over the old abandoned landfill. In the long range plans the college service yard / grounds

keeping building is proposed to be relocated to the north end of Parking Lot “S”. A feature sign at the very north east corner of this precinct is proposed to provide improved exposure and advertising potential for the college at one of the most busy intersections of the city (32nd Street and Taylor Drive). In the late 1990’s the City had given approval for an electronic sign to be located at this corner. To date this has not been implemented.

Demonstration Plan One depicts the westerly portion of this precinct as the site for the following:

- A future Sports Complex (as described in Precinct 1, which is the alternative location). This would include site development of surface parking, related to the sports complex and landscaping. This location, although separate from the main college (i.e. not part of “all weather” campus), would be very accessible to the community and be less constrained by site area. The negative aspect would be the isolation from the current sports facilities and athletic related programs.

Demonstration Plan Two depicts the westerly portion of this precinct serving three potential functions:

- Two ball diamonds (displaced from the north side of 32nd and part of an agreement with the city and community to accommodate these if the revisions to the roadway system at the college entrance / West Park link proceeds).
- Single student-housing complex, with apartment style buildings of a medium rise density (i.e. 5 to 6 floors). Part of the ground floor space could be dedicated to commercial development serving the college and resident needs.
- Future parkade, consolidating a portion of the college parking needs into a more compact, less land consuming structure.

Precinct 3 • North West Area

This precinct is defined by 32nd Street to the north, the main college entrance to the east and the new 60th Avenue roadway link to the south and west.

Features:

- CollegeSide Intergenerational Community (being developed in partnership with David Thompson Health Region, Bethany Care Society, and Red Deer College)
- Electrical substation
- Landscape buffer along main access road and existing sculpture garden
- Currently vacant undeveloped land (grain field)

- Potential Uses:
- Expansion of CollegeSide’s long term care and/or assisted living
 - Family or single student housing (a zone could be created west of CollegeSide for either type)
 - Health services related facilities (would need to examine “connectivity”, “synergy” with College)
 - Private / Public partnerships
 - Applied research partnerships

Recommendations:

This area is proposed to be a combination of land uses. The CollegeSide facility, currently under construction, is primarily a long term care facility, in conjunction with an assisted living apartment complex and 904 m² of college related activity. The land consumed by the complex, including buildings, parking and landscaped areas, is approximately 1/3 of the precinct.

In the proposed Demonstration Plans, the land parcel to the west of CollegeSide is depicted as two different functions. In Demonstration Plan One this middle zone is designated for future private / public partnerships, which could be a continuation of the health care related type activity or office / research functions. In Demonstration Plan Two this middle zone is depicted as family student housing. This is in response to the existing shortfall of family student housing as well as the desire to make family housing distinct from single student housing. It is a large enough parcel where a sense of community for the families could evolve, and this form of housing is deemed compatible with the long term care facility to the east. The family housing complex could be developed in phases, as demand evolves.

In both Demonstration Plans the west zone of this precinct (the remaining 1/3) is allocated for Public / Private partnerships, where office / research type facilities could be built. Given the unlikely need for this area for long term growth of the college, the land lease arrangement would be long term (i.e. 30+ years). Sufficient parking, serving the needs of this development and complying with land use bylaws, would be required. The north west area of this precinct, currently a low lying marsh area, is proposed to be enhanced as a natural area that could serve as a storm detention pond. It, in turn, would be connected to the storm water / dry creek system, which flows south to Waskasoo Creek.

Precinct 4 • West Area

This precinct is defined by Highway 2 to the west, 32nd street to the north, Waskasoo Creek and natural area to the south and bounded by a future expanded “ring road” and new 60th Ave. roadway to the east.

- Features:
- Old road right-of-way paralleling Highway 2, currently owned by the City of Red Deer
 - Buffer space between college core and Highway 2

- Grounds Service Building and yard
- Wood kiln

Potential Uses:

- research / office facility (private / public partnership)
- light industrial / business / commercial (if acceptable to City of Red Deer and can justify link to RDC)
- Potential area for soccer fields or ball diamonds displaced from other areas
- Surface parking

Note: Roadway purchase from City of Red Deer should evolve to consolidate all college lands

Recommendations:

This area is west of the new 60th Avenue access road and west of the future expanded ring road. The primary land use designation is Private / Public Partnerships, with a long-term land lease arrangement. The building forms would be organized, parallel to Highway 2, providing optimum exposure to passing vehicles. All parking required by this development would have to meet within the designated lease and meet the land use bylaws. A feature landscape buffer along Highway 2, with a visual, landscaped “allée” to the core campus is proposed. This is deemed as an important opportunity to gain positive exposure and visual presence along the highway.

A pocket of land in the very north west area is visually isolated from Highway 2 in a depression formed by the northbound off-ramp of the 32nd Street overpass. This area would work well for outdoor sports activity. Two ball diamonds are depicted in Demonstration Plan One and two soccer fields are depicted in Demonstration Plan Two. The ultimate “build-out” of this precinct would displace the existing grounds service building / yard, which is proposed to be relocated to Precinct 2 (North East Area).

Precinct 5 • Natural Area

This area runs in an east / west strip, encompassing Waskasoo Creek, between Highway 2 and Taylor Drive. The natural area has a south-reaching arm from Waskasoo Creek south to the electric power right-of-way, close to the intersection of Highway 2 and Taylor Drive.

Features:

- A natural wooded and grassed area where preservation is deemed a high priority (living ecological laboratory for students, passive recreation area for College and Community)
- The natural area along Waskasoo Creek is within college lands; while the large portion of natural area south of

Waskasoo Creek is within Bower lands.

Potential Uses:

- Continuation of current low-impact usage.
- Enhance system of pedestrian and bike paths.
- Develop low impact vehicular links through the natural area at the west edge, accessing the South Land precinct.
- Future environmentally sensitive, low-impact transportation corridor connecting the Bower property and campus core precinct.

Recommendations:

In response to the stewardship commitment in the “Vision for Land Development Master Plan” discussed to in chapter 3, the natural area is depicted as being effectively untouched. To minimize future impact, vehicular access through the natural area is kept to the fringe areas. A new road access to the college core (Precinct 1) is recommended, but is kept as close to Taylor Drive as possible. A low-impact vehicular access (for emergency and service vehicles only) located within the western portion of the natural area is recommended (complete with access control gates at each end), which would link the Campus Core (Precinct 1) to the South Land (Precinct 6). The existing, concrete service bridge, would be incorporated into this route. The major use of this road would be pedestrians and cyclists. A more formal path system (i.e. paved or graveled) is proposed for the perimeter of the natural area. An analogy is the sea wall at Stanley Park where the perimeter of the park is well defined by a formal path system with natural / low impact paths branching off into the natural area. Vehicle parking would be incorporated at the trailhead to provide a convenient access point to the Natural Area trails.

For planning purposes, the assumption is made that the natural lands on Bower property will be set up as a natural reserve and continue to be an integral part of the college natural lands, in a consolidated cluster. A joint management strategy for the natural area needs to be developed between the College, the Bower family and the City of Red Deer. The proposal is to develop a core reserve system which identifies priority areas for minimal activity (scientific / educational study) and includes buffer zones that help to maintain the naturalness and ecological function of the priority areas while providing for human use and enjoyment (see diagram).

Precinct 6 • South Lands

This precinct is defined by Highway 2 to the west / south west, the natural lands to the north and east and the electric power right of way to the south.

Features:

- Large tract of land to the south west of the College Core, isolated by virtue of surrounding land uses, ie: Bower property to the east, highway 2 to the west, and the

natural / creek to the north.

- Currently there is no road access and no utility infrastructure for this area; direct access from Highway 2 will not be permitted.
- The area is topographically divisible into two zones. A relatively flat zone along Highway 2 and a low lying zone to the east of this, nestled against the natural area.

Potential Uses:

- Centre for Sustainable Development including applied research / partnerships, interpretive / conference centre
- Recreation, sports fields
- Family housing along easterly edge
- Public / Private partnerships

Recommendations:

This area has been divided into two zones. The zone in the west area, with excellent visual exposure to Highway 2 is depicted as Private / Public Partnership land use, where long-term land leases would be incorporated. The building forms would be developed into three or four clusters along the highway with a prominent landscape buffer. The access road (and utility service corridor) would be routed through the Bower Lands from the south. The road would parallel Highway 2 and loop back. No major road linkage is proposed to connect to the College lands to the north. An existing service bridge across Waskasoo Creek is proposed to be upgraded and utilized for emergency and service vehicle access that will also serve as a pedestrian / bike path.

The pocket of land nestled between the highway zone land use and the natural area is depicted as a low-impact land use zone. Uses that could be considered are a center for sustainable development, in conjunction with demonstration projects, an interpretive center and possibly a small-scale conference center. This type of activity is deemed appropriate because of its visual isolation from Highway 2 and adjacency to the natural area.

A detailed description of the proposed sustainable development center that is proposed to ultimately be located in this precinct may be found in the Appendix to this report.

Bower Lands

The Bower Lands are not considered part of the Precinct development of the College, since ownership and future development is outside the scope of this study. However, there are a number of simultaneous issues impacting future development of both the Bower Lands and the college lands, leading to a need to include a discussion of the Bower Lands in this report. The Bower lands are defined by Taylor Drive to the east, Waskasoo natural area to the north, a shared property line, through the natural lands to the west and Delburne Road to the south.

Features:

- Currently owned by the Bower family, this adjacent land is

currently used for agricultural purposes. The site forms part of Natural Area extending south between the College's South Land and this area.

- Includes a utility right away for overhead high tension power lines.
- Southern extremity includes a former sand quarry.

Recommendations:

This area is not within the control of the college, yet the future development will influence the college in a number of ways. Any transportation linkage from the south into the north college lands would have to be through the Bower lands. Furthermore, the college's South Lands would require transportation and service linkage from the south and other portions of the Bower land. The timing of the development of Bower lands will likely dictate the college development of the South Land. A perimeter pedestrian / bicycle path system, as described in the Natural Area Precinct, hopefully, would be included in the future development of the Bower Lands.

6. Site Services and Utilities

Precinct 1 • Campus Core

The construction of several buildings in the campus core area will require the upgrade of several segments of the water distribution network and the sanitary collection system, and may require the realignment of several services, depending on the exact building locations. New service mains will also be required for servicing of proposed realigned roadways and new buildings.

Construction of new academic buildings in the southwest corner of the campus core will likely require the realignment of a 250 m segment of the existing water distribution loop. This watermain should be moved to the west and upgraded to 300 mm diameter. The westward realignment of the water loop for the academic expansion would also tie in with the existing water loop along the south leg of the Ring Road and service future student housing at the southwest end of the campus core.

Future trades expansion in the southeast area of the Campus Core Area would tie into the water distribution loop to the east, and could coincide with the upgrade of that segment of the water loop.

The proposed location for construction of the east parkade and realignment of the northeast portion of the ring road would require the realignment of several segments of the existing water, sanitary and storm mains to the north, west and east of the proposed parkade. The existing lift station may have to be adjusted to outlet to a new main to the north, depending on the location of the parkade.

As both existing storm sewer systems are operating near capacity, continued development of the campus core precinct will require special attention to stormwater management measures. To maximize system capacity, inlet control devices (ICDs) should be installed in catch basins to limit flow into the storm sewers during large storm events.

A new west storm sewer trunk main, originally proposed in the “Red Deer College Northwest Area Infrastructure Plan (2001)” would accept the stormwater flows from a portion of the southwest area of the campus core, and alleviate the demands on the existing west storm sewer system. Ultimately, this storm trunk main will be required to service all development west of the existing campus buildings, as well as the CollegeSide Community and will have to be sized accordingly.

As Alberta Environment will likely require a controlled release rate into Waskasoo Creek, a Stormwater Detention Pond would be required north of the Creek’s floodplain, adjacent to the new student family housing. This pond may have to operate as a “wet” pond, permanently retaining a minimum water level to improve the quality of water outlet to Waskasoo Creek.

The existing gas and electrical networks could be extended to loop around the existing College Ring Road for future Campus Core building connections, with an additional loop

along the expanded College Ring Road for servicing of the other precincts north of Waskasoo Creek.

Precinct 2 • **North East Area**

Development of the northeast area is presently limited to sports fields, a gravel parking lot and an inactive landfill. Approval from Alberta Environment must be obtained prior to construction within the landfill's 300 m setback. However, a setback relaxation has previously been granted for student housing in the Campus Core Area.

Two watermain connections to the City's distribution network, complete with water meter vaults, and a sanitary collection main both extend through the precinct in a north-south alignment. A field house is proposed for the area.

Stormwater management will be provided to the North East Area through the existing east storm sewer system, which is presently at capacity. Development of this precinct will therefore require measures within this precinct and the Campus Core to ensure outlet rates are controlled within the capacity limits of the existing storm sewer system. Providing inlet control devices at catch basins within the North East and the Campus Core will have to be evaluated to determine its impact on the hydraulic grade line of the storm sewer system during heavy rainfalls. A stormwater detention pond may also be required for areas adjacent to the field house, while mitigating any impacts on the landfill.

Natural gas and electrical servicing could tie into the system loops along the existing College Ring Road.

Precinct 3 • **North West Area**

Recent development of the North West area include the CollegeSide Community at the east end of the precinct, and the 60th Avenue access to the College, which connects to the Ring Road. Existing sanitary collection mains in the precinct drain east and connect to the collection main along the main entrance road. Storm sewer mains are presently connected to the west storm sewer system via a temporary main.

Water distribution mains to service future development can connect to the existing distribution mains in the precinct, and will form part of a west water loop extension servicing the West Area and connection to the main loop along the south end of the ring road.

Sanitary servicing can be provided with west and south extensions of the 300 mm mains servicing the CollegeSide Community. As the topography of the area is relatively flat, and future extension of the collection system to the West precinct could be accomplished by an extension of the system from the North West Area, collection mains would likely have to be a minimum 300 mm diameter.

The existing west storm sewer system does not have sufficient capacity to service further development of the North West Area. Along with the southwest portion of the Campus Core and the West Area, the North West Area will be serviced by a new trunk main west of the existing Campus Core buildings. A stormwater detention pond adjacent to the south of the Ring Road will release runoff to Waskasoo Creek at predevelopment rates.

Precinct 4 • **West Area**

Except for an existing storage building and a service road, there is no existing development in the West Area. A treed area is located in the north end of the precinct. Water distribution mains will be extended to the precinct from a connection to the distribution mains in the North West Area. A distribution main will extend south and east along the extended Ring Road alignment to connect to the existing water distribution loop.

Sanitary servicing can be provided with west extensions of the existing collection mains servicing the Campus Core Area. Alternately, the topography of the area allows for servicing of the precinct by extending a collection main west from the existing manhole located west of the walkway connecting the Arts Centre and the main academic buildings. Although minimum grades for all sewer diameters can be achieved with this alternate alignment, the size of the sewer mains will be dependent on the demands of the development in the precinct.

Stormwater servicing of the precinct will direct stormwater east to the future storm trunk main west of the existing Campus Core Area. The trunk main will be directed toward a detention pond north of the Waskasoo Creek flood plain, which will outlet stormwater to the creek at pre-development rates.

Natural gas and electrical servicing could tie into the system loops along the 60 Avenue segment of the expanded natural gas and electrical loops.

Precinct 5 • **Natural Area**

The Waskasoo Creek and Natural Areas are planned to be kept in a natural state to the best extents possible. However servicing of the South Campus Lands (Precinct 6) will require the extension of a watermain, a sanitary forcemain and a natural gas line from the existing College services to the south side of Waskasoo Creek. Directional boring of these lines across the Creek will likely prove to be the most environmentally sensitive and cost effective means of extending servicing to the south side of the South Campus Lands. Similarly, electrical servicing may be extended from the north side of the Creek, or may connect to the existing electrical right-of-way bordering the south side of the South Campus Lands.

Precinct 6 • **South Lands**

To extend water services to the South College Lands, a water distribution main would be extended to the College's existing network north of the Creek.

The natural topography of the precinct allows for gravity collection mains to extend from the south end of the precinct to Waskasoo Creek. A lift station would be required pump wastewater across the creek to the existing Campus Core gravity sanitary collection system.

The natural topography of the area provides for stormwater drainage towards Waskasoo Creek. Post development stormwater runoff must be held to the pre-development runoff rates and quality. Depending on the type and density of development within the precinct, stormwater servicing may be achievable with overland drainage courses and no detention ponds. If the level of development is enough to require a storm sewer system and stormwater detention, a storm sewer and detention pond with a controlled outlet rate would be located south of the Waskasoo Creek floodplain.

Natural gas servicing will come from a connection to the College system north of Waskasoo Creek, while electrical servicing may come either from the existing system in the Campus Core, or from a connection to the existing electrical right-of-way to the south.

Bower Lands

The Bower Lands area is bordered to the west by the College's south precinct, to the north by Waskasoo Creek and to the west by Taylor Drive. A storm pond in order of 1 ha in area is located in the southwest portion of the site and receives runoff from a stormwater trunk main on the east side of Taylor Drive.

Presently, the opportunities for connection to the City of Red Deer water distribution network are limited as there is no water trunk main extending north along Taylor Drive adjacent to the Bower Lands. One possible tie in location is a 300 mm trunk main that extends a short distance along the east side of Taylor Drive south of the TransAlta right-of-way. A 200 mm watermain that extends half the distance from Gaetz Avenue to Taylor Drive along 28 Street is also an option for connection. A third option for water connection is an extension of a watermain east along 22 Street to the Gaetz Avenue trunk main.

The topography of the Bower Lands generally drains towards the northeast corner of the area and gravity sanitary collection mains can be used for internal servicing of the area. However, as the topography east of Taylor Drive rises towards the east, a sanitary lift station and forcemain may be required to pump sewage into the City's existing collection system.

The natural topography of the area provides for stormwater drainage towards Waskasoo Creek at the north end of the Bower Lands. Runoff from the development can be released into the Creek, but may require a stormwater detention pond to control the

outlet rate to pre-development levels and protect water quality. It is unlikely there is enough excess capacity in the existing stormwater detention pond to accommodate the development of a large portion of the area, therefore a second stormwater detention pond may be required at the north end of the site. Two stormwater outlets direct runoff from developed City areas into the Creek just north of the Bower Lands property line, and may necessitate greater flow control of water outlet to the Creek at that location.

7. Management and Implementation of the Master Plan

Consultation / Approval Process

The Land Use Master Plan needs to fit within the City of Red Deer's Land Use Bylaw. Approval of the proposed land uses and direction for growth should be sought, in principle, by the City of Red Deer. As the college continues to grow, each component of significant growth will require a development permit. An approved Land Use Master Plan provides the framework for this growth and will help ensure there will be a positive process in the future with incremental development. Part of the process for approval by the city will be the engagement of the following in a consultation process:

- West Park community
- City of Red Deer Engineering and Transportation Department
- Alberta Environment

Phasing of Development

The phasing of the development is strategically aligned with the precincts that have been formed in the Land Use Master Plan. Some precincts, such as the Campus Core (Precinct 1) and the North West Area (Precinct 3), have portions firmly developed or underway. Other precincts are currently undeveloped, such as the West Area (Precinct 4) and the South Lands (Precinct 6).

The ten-year build-out plan is focussed on the likely areas of growth for the campus over the next decade. The anticipated areas for growth in this time frame are as follows (in the most likely sequence):

- Visual Arts Wing and Art Gallery (depicted on the north side of the Performing Arts Center)
- Trades expansion (first phase would be immediately off the north east corner of the 800 Wing; subsequent phases would continue in a north east direction).
- Academic Expansion to the west
- Family Student Housing (to the west or north, likely in two phases)
- Sports Complex (this could be built in either the Campus Core Precinct or the North East Precinct).
-

Outside of the Campus Core Precinct, the North Precinct (currently under development with the new CollegeSide project), is the most likely precinct to experience the next stage of implementation. The site services are close at hand and access is very good off the new 60th Avenue link. The "built-out" solutions could be focussed toward public / private partnerships only or a combination of public / private partnerships and family housing.

The West Precinct and South Lands Precinct implementation are deemed as longer term due to the cost for infrastructure. The level of market demand for leasing in these areas will dictate the timing.

Transportation strategy implementation is likely in the following sequence:

- Upgrade 32nd Street and College Entrance (integrate this intersection with the merging of 55th and 57th avenues within West Park)
- 28th Street / Taylor Drive link through Bower Lands (the timing of this will depend on the timing of the Bower lands development)
- Expansion of the “Ring Road” to the west to create a larger campus core
- South Lands road link from the south through Bower Lands.

The upgrading of the public transit will evolve with the college growth. It is anticipated a significant upgrade will transpire once the new Visual Arts Wing and Art Gallery are built, with an increase in service and a new bus stop facility north of the new Visual Arts Wing.

Any significant growth of the college will require additional storm-water outflows to the Waskasoo Creek, which in turn will require an approved stormwater management plan. Further discussions and approval need to be sought with Alberta Environment and the City of Red Deer.

Relation to Other Board Policies and Plans

The Red Deer College Board of Governors operate under the “Policy Governance Model” wherein, the Board leads by setting policy in four areas, (Ends, Executive Limitations, Board-CEO Relations and Board Governance Process).

Board of Governance Ends E-6 “Development of College Lands” indicates the following:

“The people we serve will benefit from the appropriate development, by way of long-term lease, of College lands in a manner that is both advantageous to the College and respects the core business of the College (teaching and learning).”

This includes but is not limited to:

- .1 Innovative program delivery*
- .2 Facilities for contract and customized training*
- .3 Applied research*
- .4 Business incubation*
- .5 Community activities*
- .6 Shared facilities for commercial enterprises and learning opportunities*
- .7 Services for the College community*

The “**Red Deer College Land Use Master Plan**” provides a framework for development of the overall college lands. Part of this planning process has been exploring, in a broad sense, the growth needs of the college (i.e. projected student enrollments, program and service growth) to ensure the land use strategy will accommodate the long term direct

needs of the college. A more in-depth analysis of the projected evolution and growth of the college must be undertaken. The last time this process occurred was approximately ten years ago and was formalized in the report: "Red Deer College Campus Master Plan, March 1994". An up to date master plan would assess current and projected trends in credit and credit free program offerings, population and student enrollment growth, and evaluate in more depth the current and projected facility needs. Short, medium and long term needs and strategies would be made. The culmination of this more specific process would be developed into the "**Red Deer College Master Plan, 2004**".

Interpretation and Intent

The Land Use Master Plan is a document that will provide a framework for decision making as the college experiences direct growth or has an opportunity to partner in accommodating affiliated growth on college lands. The report will provide insight into the issues related to appropriateness, opportunities and constraints in the areas of land use and infrastructure. The plan will be interpreted with flexibility and ultimately the Board of Governors will make decisions on implementation.

Amendments

An amendment to this Plan will be required if a significant overall shift in the overall direction of land use were to take place such as:

- re-assessment of land use within the precincts
- change in transportation circulation system
- significant change to open space and natural area preservation

Review and Monitoring

The land use strategy outlined in the report should be reviewed on a 5-year basis or as dictated by circumstance and the pace or intensity of change taking place. Monitoring should be ongoing to ensure the principles, assumptions and strategies are being duly considered.

8. Supporting Documents / References

- .1 Appendices
 - A. Growth Projections for Red Deer College
 - B. Land Use Statistics and Development Impact
 - C. Current Parking Capacity
 - D. Building Area Summary
 - E. Canadian Sustainable Discovery Centre

- .2 Exhibits
 - 1. Site Context
 - 2. Precinct Plan
 - 3. Demonstration Plan One
 - 4. Demonstration Plan Two
 - 5. Site Circulation Plan
 - 6. Phasing Plan

- .3 Site Servicing Plans
 - 7. Precinct 1 • Campus Core Area
 - 8. Precinct 2 • North East Area
 - 9. Precinct 3 • Northwest Area
 - 10. Precinct 4 • West Area
 - 11. Precinct 5/6 • Bower Lands, Natural Area
South Area

Office of Institutional Research

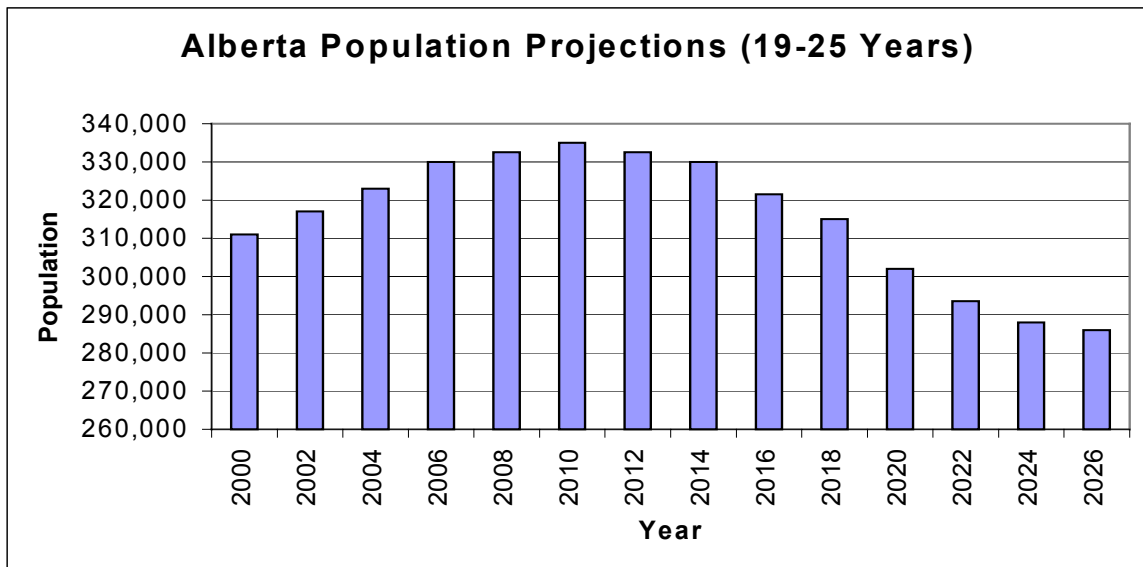
Memorandum



To: Lynne Mulder
From: Tony Skorjanc
Date: November 26, 2002
Subject: Growth Projections for Red Deer College

Several factors play a role in projecting enrollment growth over the next 5, 10 and 20 year periods at Red Deer College. Over the next 20 years enrolments at Red Deer College will likely grow as a result of overall population increases and demand in some programs areas.

Some enrolment fluctuations will be realized over the next 5, 10 and 20 year period as the echo baby-boomers move in and out of the 19-25 year cohort. Statistics Canada population projections for Alberta indicate that by 2007 the 19-25 cohort will almost be at its' peak, realizing a 5% increase over current (2002) levels. However, after 2010 the 19-25 cohort is expected to decline back to current (2002) levels by 2017 and then lose an additional 7% by 2022.



Overall, the population fluctuations for the 19-25 year cohort will have modest effects on total enrolments for Red Deer College. While approximately 58 percent of Red Deer College students are between the ages of 19-25 years (and 73 percent between 18-25 years), the overall population increases and growth in specific programs areas will more than offset the fluctuations that are concomitant with the affects of the echo-baby boom.

5, 10 and 20 Year Population Projections for Alberta and the City of Red Deer

From the City of Red Deer demographic profiles we estimate that for 2002 there are approximately 7,800 residents in the 19-25 cohort. As this cohort follows the provincial pattern of increase then decrease, Red Deer College can also expect some fluctuations in demand for post-secondary education.

| <u>Year</u> | <u>Red Deer</u> | <u>Alberta 19-25 Cohort</u> | <u>Estimated Red Deer 19-25 Cohort</u> | <u>Cohort % Change From Base Year</u> |
|-------------|-----------------|---------------------------------|--|---|
| 2002 | 69,978 | 317,000 | 7,800 | Base Year |
| 2007 | 76,000 | 331,500 | 8,160 | + 4.6% |
| 2012 | 81,100 | 332,500 | 8,180 | + 4.9% |
| 2022 | 92,400 | 293,500 | 7,200 | - 7.4% |

Applying the fluctuations in population cohorts to enrolment projections for Red Deer College is also complicated by the impact of program growth in certain fields of study, expansions made to new campuses or regions (including international), and increased access due to the provision of alternate methods of program delivery.

Program Areas with Above Average Growth

Over the next 5-10 year period, Red Deer College is anticipating greater than normal program growth in the following areas:

- 1) Apprenticeship and Contract Training (50 FLE in 5 years & 100 FLE in 10 years)
- 2) Health Care (75 FLE in 5 years & 150 FLE in 10 years)
- 3) Undergraduate Studies in Collaborative Programs (145 FLE in 5 years & 290 FLE in 10 years)

New Campuses

The addition of new buildings and additional off-campus sites should also increase enrolments for Red Deer College over the next 20 years. (175 FLE in 5 years & 350 FLE in 10 years)

- Potential Sites:
- Bethany Care Centre
 - Rocky Mountain House Campus
 - Programs offered internationally
 - New Visual Arts Building
 - Recycled RDC campus space (including the new Library Information Common)

Alternate Methods of Delivery and Credit Free Enrolment

Increased enrolments are also anticipated as Red Deer College continues to incorporate new technologies to improve learner access to program offerings through distance delivery and offering courses during non-traditional times. (50 FLE in 5 years & 100 FLE in 10 years)

Similarly, as Red Deer College continues to promote its credit-free offerings we can expect the number of course registrations to continue grow along side of population growth for the City of Red Deer. (500 registrations in 5 years, 1,000 registrations in 10 years & 2,900 registrations in 20 years)

5, 10 and 20 Year Enrolment Projections for Red Deer College (On Campus)

| | <u>FLE (Base Year)</u> | <u>Cohort Contribution*</u> | <u>Specific Program Growth</u> | <u>FLE Total</u> | <u>Credit Free Registration</u> |
|---------------------|----------------------------|---------------------------------|--|----------------------|-------------------------------------|
| Base Year (2001/02) | 3,545 | = | = | 3,545 | 7,990 |
| 5 Year Projection | 3,545 | 120 | 270 | 3,935 | 8,425 |
| 10 Year Projection | 3,545 | 125 | 540 | 4,210 | 9,000 |
| 20 Year Projection | 3,545 | -190 | 1,080 | 4,435 | 10,900 |

* The 19-25 year cohort proportion changes were applied to the 18-25 year cohort for Red Deer College (which comprises approximately 73 percent of the total College enrolment).

Red Deer College
 LAND USE MASTER PLAN
 Land Use Statistics and Development Impact

| Precincts | Demo Plan | Gross Land Area (ha) | Gross Land Area M2 | Building Footprint (m2) | Roads / Parking (m2) | Open Space % | Open Space | % | Total Floor Space (m2) | Total New Residential Units |
|----------------|-----------|----------------------|--------------------|-------------------------|----------------------|--------------|------------|-----|------------------------|-----------------------------|
| Precinct 1 | 1 | 37.7 | 377,407 | 101,422 | 87,592 | 23% | 188,393 | 50% | 90,951 | 42(f) 64 (s) |
| Precinct 1 | 2 | 37.7 | 377,407 | 112,824 | 86,468 | 23% | 178,115 | 47% | 85,067 | |
| Precinct 2 | 1 | 14.7 | 147,055 | 18,557 | 20,499 | 14% | 105,409 | 73% | 21,006 | |
| Precinct 2 | 2 | 14.7 | 147,055 | 7,288 | 19,054 | 13% | 120,713 | 82% | 13,745 | 96 (s) |
| Precinct 3 | 1 | 14.9 | 149,201 | 21,937 | 19,420 | 13% | 106,327 | 71% | 36,056 | 72 (f) |
| Precinct 3 | 2 | 14.9 | 149,201 | 18,006 | 18,314 | 12% | 111,359 | 75% | 27,524 | |
| Precinct 4 | 1 & 2 | 11.8 | 118,066 | 11,976 | 12,126 | 10% | 93,964 | 80% | 23,952 | |
| Precinct 5 | 1 & 2 | 35.7 | 356,680 | 0 | 3,005 | - | 353,675 | - | | |
| Precinct 6 | 1 & 2 | 14.6 | 146,440 | 26,946 | 17,691 | 12% | 101,803 | 70% | 53,876 | |
| Existing Core* | | 18.8 | 188,291 | 43,026 | 59,613 | 32% | 865,325 | 45 | | |

* Defined by existing Ring Road,
 (f) = family residence assuming one family per dwelling
 (s) = single student residence, 4 persons per unit

Summary of College Parking Facilities

A. Current Campus Parking Capacity

| Lot # | Spaces | Surface | Allocation | Energized | Rate |
|--------------|--------------|-----------------|------------------|------------|---------------|
| C | 350 | Paved | Student | No | \$135 / year |
| D | 180 | Paved | Student | No | \$135 / year |
| E | 50 | Paved | Staff | Yes | \$265 / year |
| F | 148 | Paved | Staff | all but 43 | \$265 / year |
| G | 150 | Paved | Trades | No | \$5.50 / week |
| H | 110 | Paved | Trades | No | \$5.50 / week |
| I | 37 | Paved | Staff | Yes | \$265 / year |
| J | 33 | Paved | Staff | Yes | \$265 / year |
| L | 170 | Paved | Staff | Yes | \$265 / year |
| M | 200 | Paved | Student | No | \$125 / year |
| N | 450 | Gravel | Student | No | \$115 / year |
| O | 43 | Paved | Staff /St | Yes | \$265 / year |
| P | 150 | Paved | Public | No | Hourly |
| R | 500 | Gravel | Student | No | \$115 / year |
| S | 350 | Gravel | Student / Trades | No | \$85 / year |
| Metered | 42 | Paved | Public | No | \$1 / Hour |
| Total | 2,963 | Vehicles | | | |

Parking Ratio: $\frac{\# \text{ Vehicle Stalls}}{\# \text{ Staff} + \# \text{ Students}} = \frac{2963}{4370} = 0.678$

B. Parking Assignment Ratio

* Ratio: $\frac{\# \text{ Staff Stalls}}{\# \text{ Student Stalls}} = \frac{481}{1,840} = 0.261$

* Some students may be assigned to staff lots and vice versa, some lots may be booked over 100%, but these anomalies may be considered insignificant.

C. Current Residence Parking Capacity

| Lot # | Spaces | Surface | Allocation | Energized | Rate |
|---------------|------------|-----------------|------------|-----------|--------------|
| Towers | 118 | Paved | Student | Yes | \$150 / AcYr |
| Row Housing | 163 | Paved | Student | Yes | \$150 / AcYr |
| Block Housing | 125 | Paved | Student | Yes | \$150 / AcYr |
| Metered | 21 | Paved | Student | Yes | Hourly |
| Total | 427 | Vehicles | | | |

Parking Ratio: $\frac{\# \text{ Vehicle Stalls}}{\# \text{ Single} + \text{ Family Units}} = \frac{427}{576} = 0.741$

D. Residence Type Ratio

Ratio: $\frac{\text{Family Housing Units}}{\text{Single Units (Beds)}} = \frac{26}{550} = 0.047$

**BUILDING AREA
SUMMARY**

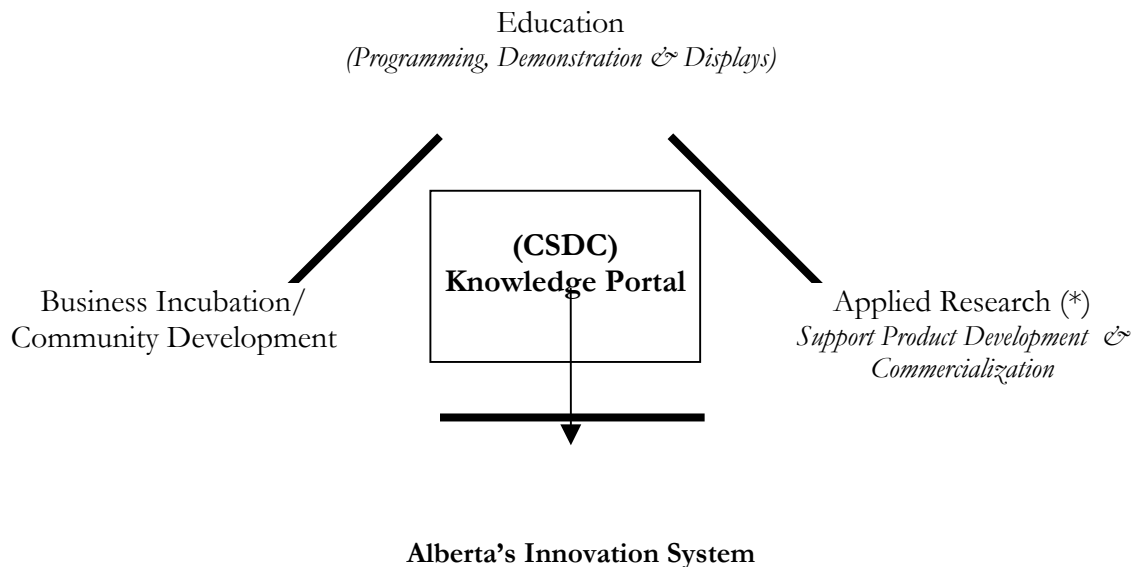
| LOWER | Trades | Academic | Support | Total |
|---------------|---------------|-----------------|----------------|--------------------------|
| B800 | - | - | 414 | 414 |
| B900 | - | 412 | 444 | 856 |
| B100 | - | - | 2,053 | 2,053 |
| B200 | - | 59 | 1,945 | 2,004 |
| B500 | - | 324 | 1,293 | 1,617 |
| Arts Center | - | - | 939 | 939 |
| | - | 795 | 7,088 | 7,883 sq. meters |
| MAIN | | | | |
| 800 | 8,769 | - | 2,611 | 11,380 |
| 900 | - | 860 | 1,706 | 2,566 |
| 1000 | - | 1,487 | 9,868 | 11,355 |
| 1100 | - | - | 1,013 | 1,013 |
| 1200 | - | 186 | 2,866 | 3,052 |
| 1300 | - | 1,616 | 470 | 2,086 |
| 1,400 | - | 2,228 | 876 | 3,104 |
| 1500 | - | 870 | 1,041 | 1,911 |
| 1600 | - | 632 | 1,178 | 1,810 |
| 1800 | - | 208 | 227 | 435 |
| Arts Center | - | 2,520 | 1,953 | 4,473 |
| | 8,769 | 10,607 | 23,809 | 43,185 sq. meters |
| SECOND | | | | |
| 800(2nd) | 2,100 | - | 145 | 2,245 |
| 900(2nd) | - | - | - | - |
| 2000 | - | 1,730 | 2,007 | 3,737 |
| 2100 | - | - | 583 | 583 |
| 2200 | - | 159 | 1,674 | 1,833 |
| 2300 | - | 522 | 212 | 734 |
| 2400 | - | 522 | 212 | 734 |
| 2500 | - | 786 | 966 | 1,752 |
| 2600 | - | 930 | 817 | 1,747 |
| Arts Center | - | 471 | 1,441 | 1,912 |
| | 2,100 | 5,120 | 8,057 | 15,277 sq. meters |
| THIRD | | | | |
| 3100 | - | - | 480 | 480 sq. meters |
| totals | 10,869 | 16,522 | 39,434 | 66,825 sq. meters |

The following is a description of the proposed sustainable development center that is proposed to ultimately be located in Precinct 5 ▪ South Lands:

Canadian Sustainable Discovery Centre (CSDC)

In March 2002, a discussion paper was prepared and the Canadian Sustainable Discovery Centre was introduced as a new virtual centre on the campus. Since that time a working group has been holding strategic discussions to extend their knowledge and exchange ideas on action plans tailored to advance the aims of the Centre.

The College sees the Centre evolving into knowledge portal where academics, industry, community members and government can share ideas, explore new approaches and initiate collaborative ventures. The following schematic provides an overview of the Centre’s integrated aims:



The working group is committed to mobilizing stakeholders, including investment partners, to explore, develop and implement value-added propositions under three targeted themes:

Sustainable Communities – focus on introducing and mobilizing tailored solutions that are aimed at enhancing quality-of-life and guiding the creation of

intentional communities. Implementation action plans will be structured to balance the integration of economic, social, environmental and technological factors.

Sustainable Products/Processes - strive to encourage, facilitate and promote the adoption of new sustainable products and processes. The emphasis will be on demonstrating, modeling and commercializing “green” technology solutions related to areas such as emission reduction, enhanced work environments and energy efficiencies.

Specific technology considerations include:

- Solar Technologies – heat, electrical, passive
- Geothermal Technologies – storage / ground source heat pumps
- Water Management Systems
- Fuel Cells

Sustainable Companies - bridge the intellectual capital within Red Deer College and its knowledge network with industry decision-makers. The goal being to help participating companies improve their competitiveness and sustainability through the adoption of innovative processes, industry best practices and new technologies.

Targeted Capital Investments

Within a 20 year development horizon the Canadian Sustainable Discovery Centre’s identity, knowledge capacity and innovation undertakings are expected to evolve and position the College as a valued contributor to sustainable development studies.

The land development master plan has incorporated provisions within the precincts for two progressive capital investments that will be tailored to enhance the Canadian Sustainable Discovery Centre’s physical presence on the campus.

Phase 1:

The first phase sees the construction of a research facility that will be up to 1400 m² in size and include spaces for applied research, education and product prototyping. To encourage synergies with existing college programs, decision-makers are proposing to locate this initial physical development in Precinct 1 – Campus Core. Three potential development sites have been identified; one is a land parcel next to the apprenticeship programming cluster, the other is a land parcel adjacent to the science programming cluster and the third option is to explore synergies with the new visual arts building project.

The Centre’s functional program plan will profile a multidisciplinary position by engaging a knowledge team with varied skills, including ethics, ecology, engineering, apprenticeship, recreational administration, micro-biology and business. The applied research embedded in the planning, design, and construction of this new space will

shape the Canadian Sustainable Discovery Centre's initial identity.

Once built, this new applied research space will be guided by activities within the three targeted themes. It will also act as a knowledge hub to advance pedagogy of place theories, studying the connections between cultures, geography, life experiences and learning extensions. It is expected the findings will provide new understandings relating to the influence these connections have on leadership, decision-making and outcomes.

Phase 2:

Red Deer College will use the successes achieved in Phase 1 to shape the development of a research park on the South Campus Lands. Red Deer College sees this strategic setting, next to the natural area, as an opportunity to advance best practices and innovation in the field of sustainable development. Stakeholders from education, government, industry and community circles will be invited to participate in the research park's strategic planning process.