

PLANNING SUSTAINABLE COMMUNITIES: EXPERIENTIAL LEARNING & DAVY LANDS PROJECT

Cities, Policy & Planning
research series



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PRINTING University of Calgary Printing Services
April 2008

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Planning Sustainable Communities

During the 1950s, the movement of people away from urban centers led to the evolution of the suburban residential neighbourhood, and ultimately to strip commercial and office development. Continuing demand for lower density housing resulted in consumption of large tracts of land at the expense of the environment and the increasing economic and social costs. In recent years, there have been concerted efforts in North America to deal with the urban sprawl that resulted from unchecked development and laissez-faire attitudes. The challenge in the future is to accommodate growth through development that is marketable and economically feasible; development that is guided by the principles of 'smart growth'; development that creates a sense of community and identity through effective planning and design solutions.



In this context, the new planning approaches are guided by the vision for sustainable cities as places that build on their assets and have a strong sense of place. People that live in these cities value healthy ecosystems, use resources efficiently and actively seek to retain and enhance a locally based economy. The planning process in these communities is engaging, inclusive and constructive.

Pedagogical Approach



This project provided an opportunity to apply these ideas in practice. Organised as a six-week intensive research course at the University of Calgary, the project created a framework for experiential learning and discourse on a wide range of strategies to pursue sustainability in practice. A group of planning students developed a community plan for Davy Lands—a new community on the edge of the city of Airdrie. Students broadened their knowledge on urban sustainability through field visits, lectures, hands-on community planning experience and interaction with developers, planners, architects, academics, and community activists. The pedagogical approach incorporates theoretical approaches to sustainability in the university curriculum through experiential learning and exposure to the real world of planning practice.

Students explored different aspects of the community planning process through census data analysis, research and evaluation of different development scenarios for the study area, as well as the design of a concept land use plan. The final outcome of this studio project provided a vital mechanism for collective learning as well as for the development of a range of practical urban planning skills.

Objectives

The overall objective of the project was to introduce students to planning approaches to achieve sustainability in new suburban communities. Specific objectives were:

- To provide a step-by-step introduction to the community planning process and planning policies aiming at sustainability;

- To provide an opportunity to apply sustainable community planning and design approaches to the development of a concept land use plan of Davy Lands;
- To enhance learning through a framework for efficient collaboration among student teams dealing with sector specific issues – housing, employment, transportation, community facilities, infrastructure.

Learning Outcomes



The work of the students illustrates the vision for Davy Lands, as well as the conceptual community plans presented to our client—the developer of Davy Lands. It incorporates their critical reflection on planning policy tools and instruments to plan and build sustainable communities. The community plans create a bold vision for a new community that is compact, transit oriented, and diverse in terms of housing choices and neighbourhood amenities. The planning policy framework advocates integration of land uses, clustering of neighbourhood activities and environmentally sensitive approach to development. It articulates the need to create a strong sense of place and neighbourhood identity through preservation of the cultural and environmental heritage on the land.

***Dr Sasha Tsenkova, MCIP, MIUA
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Regional Context

Location

* Airdrie is located in South-Central Alberta, just North of the City of Calgary. The Davy Lands are located immediately to the North of the North-West corner of Airdrie.



Population Projection

- * The annual percentage growth in the City of Airdrie has exceeded 5% over the last 6 years
- * in just over 12 years, the population has doubled
- * Rapid population growth has put tremendous strain on all aspects of development and has created a housing shortage
- * The population boom may be the cause of a significant increase in the construction of multifamily housing within the last two to three years

SWOT Analysis

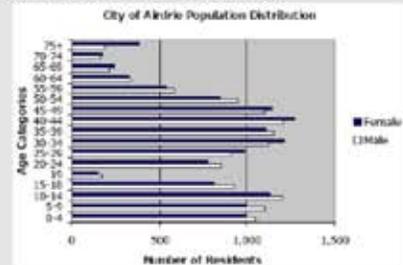
Strengths	Weaknesses
Greenfield development means a "clean slate"	Oil production on lands with rig on property
Creek has potential of environmental focus of community	Terrain of land poses some problems with development
The surrounding lands have a nicer view - not just flat	Railway division of lands (could be seen as strength for sense of place)
Old barns and structures have potential for sense of place	Main roads divide lands
Connecting pathways (roads and natural) are set in place	Creek division of land
Sloped lands that can help in stormwater runoff control	Not annexed yet
Infrastructure systems in place.	Potentially valuable agricultural land
Opportunities	Threats
Close to Calgary - transportation	Competition from other parts of Airdrie
Arterial highways are close	Balzac mall development could be potential competitor to local market
City of Airdrie wants higher density and sustainable community	Developers focus - retention ponds, single family dwellings and big box retail stores
Potential of agricultural land as a community garden or fertile lands	Enlargement of main road into a 35 row Connector
Potential for creative design and engineering	Airdrie land use policies

Employment & Income

- * The unemployment rate in the City of Airdrie for 2006 was 3.1%
- * The most popular employment sectors are:
 - Business, finance and administration occupations
 - Sales and service occupations
 - Trades
 - Transport
 - Equipment operators



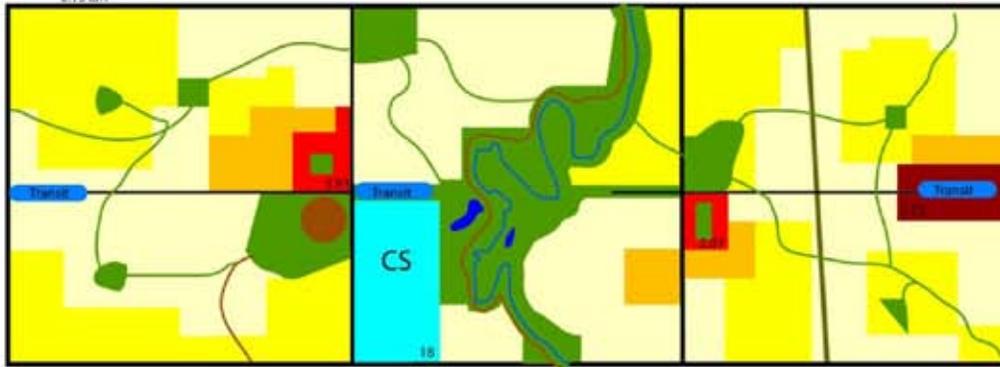
- * Little primary industry or processing employment is located in the city
- * The median income for the City of Airdrie in 2001 was \$27, 212, a figure which has likely increased to date



	2001	2006	2011	2016	2021	2026	2031
Population Projection (rounded)	11,500	21,400	28,000	27,800	41,900	51,000	61,900
Cumulative increase from 2001	-	9,900	16,500	16,300	30,400	40,000	50,400
Dwelling Unit Projection	6,600	8,300	10,400	12,950	16,020	19,080	24,000
Cumulative increase from 2001	-	1,700	3,800	6,350	9,420	12,480	17,400



Land Use Plan



Land Use Distribution

Total Land Area
480 acres

Environmental Reserve
50 acres
Nose Creek

Gross Developable Area (GDA)
430 acres

Municipal Reserve
Includes schools, open spaces, community services and playfields.
Percentage of GDA: 10%
43 acres

Community Services
Campus-style joint use elementary school/Junior high school (16 acres) with community centre (2 acres)
18 acres

Transportation
Modified grid: 27%
101.01 acres

Commercial
13.72 acres

Housing
257.09 acres

Density (UPA)
Net 14.2 acres
Gross 19.02 acres



Policy Matrix

Vision

To create a vibrant and diverse community that promotes liveable urban spaces and contributes to the overall social and environmental wellness of the "The Edge" community.

Policy	
Environmental Sustainability and Growth Objectives	<p>"The Edge" will be innovative and will be a leading community of environmental sustainability. The Edge community will provide options for green energy production and development practices that will be a viable alternative to fossil fuel energy production. The Edge will practice environmental stewardship and enhance the natural natural beauty of the area (Northwest Airdrie AEP).</p> <ol style="list-style-type: none"> 1. To protect and enhance the Nose Creek Natural Features 2. To protect the natural grasslands and natural vegetation in the community 3. To ensure that the natural features of the area are kept in their natural state and preserved for future generations 4. To minimize the effects of development on the environment and provide alternative methods of development to ensure environmental sustainability <p>Goal</p> <p>Transitions sustainable urban design with future growth using best practice principles of urban design.</p> <p>Goal</p>
Growth	
Retail	<p>To provide for local employment and retail opportunities within the community of "The Edge" while respecting the wider policy context of maintaining the character as the focus of commercial development and supporting a north-south trade as a complement to this policy (City of Airdrie Growth Area Management Plan).</p> <p>Objectives</p> <ol style="list-style-type: none"> 1. To provide for diverse pedestrian and bicycle friendly, vibrant neighbourhood-scale retail and recreational uses within the community of "The Edge". These areas are located to service the neighbourhood retail needs of the community (Airdrie Plan 2-2C.4) 2. To create a retail area in the community of "The Edge" to meet the community-scale retail needs of the community while not detracting from the commercial character of the downtown. 3. Ensure the safety of the residents of and visitors to the community.
School and Community Facilities	<p>To provide for community facilities for the community of "The Edge" that make efficient use of land, provide excellent quality of service and enhance the attractiveness of the community while ensuring services provided will be responsive to the changing needs of the community (Airdrie Plan 1-1, 1-3)</p> <p>Objectives</p> <ol style="list-style-type: none"> 1. To provide for early child development, pre-school and elementary school sites in the neighbourhood to provide for the educational and community needs of the town in all quadrants of "The Edge". The joint facility will be easily accessible to all residents of "The Edge" (Airdrie Plan, 2-5A, 2-10) 2. To provide for appropriate community facilities within the community and at the joint use facilities in "The Edge" 3. To design the rights-of-way and open pedestrian pathways that connect to the busy uses of the land, including parks, retail destinations and common neighbourhood uses.
Emergency Services	<p>Objectives</p> <ol style="list-style-type: none"> 1. To ensure a safe and secure environment for the residents of "The Edge" through the efficient and rapid provision of police, fire and emergency medical services to the community. (Airdrie Plan, 1-3C.1) <p>Goal</p> <p>To provide affordable, flexible and diverse housing types that meet the needs of all residents. The housing types will encourage an inclusive community by accommodating a broad spectrum of people, from those with diverse socio-economic backgrounds, cultural backgrounds, age groups and abilities.</p> <p>Objectives</p> <ol style="list-style-type: none"> 1. To increase the supply and diversity of housing in Airdrie, to provide 8% of the housing units as multi-family units (one and two units apartments, stacked townhouses, apartment townhomes and student townhomes). To provide 30% as open housing with (small single family - semi detached, small single family and medium single family units) 2. To provide a wide array of housing options to cater the needs of people from all socio-economic situations 3. To provide secure, affordable housing with community amenities. Foster an interconnected, community interaction and an inclusive design. 4. To encourage sustainable development practices with a goal towards LEED certified buildings. To promote higher density living in all intensities 5. and achieve better with the goal of 9 G.P.A. 6. To create distinct neighbourhoods that cater the needs of all residents and create a cohesive community. <p>Goal</p> <p>To ensure the reliable provision of water/wastewater storage and energy infrastructure while promoting energy and water conservation practices, water reduction and green infrastructure within the community. To ensure that utilities are located for a maximum that maximize utilization, require the natural environment and enhance the opportunity for the region of way to implement the open space system. (Airdrie Plan, 1-2.1)</p> <p>Objectives</p> <ol style="list-style-type: none"> 1. To provide for clean, safe water and wastewater infrastructure for the community while promoting water conservation and water recycling. 2. To meet the City of Airdrie's requirements for water management practices and eliminate storm water runoff into Nose Creek through a series of storm water management practices by strictly adhering to Sustainable Urban Drainage Systems (SUDS). 3. To reduce the quantity of solid waste generated in the community through the facilities while ensuring high environmental and health standards associated with solid waste (Airdrie Plan 1-2.3, 1-4.2) 4. To promote energy efficiency throughout the community while making provisions for local energy production. 5. To promote the use of green infrastructure practices such as rain roofs, storm water ponds, bioswales, porous paving and community composting facilities <p>Goal</p> <p>According to the Airdrie Open Space Plan the neighbourhood will be "a model of environmental stewardship and a highly valued community asset." The Edge will provide character of Airdrie's natural areas and will be consistent to the goals to be a "Green Place" (Infrastructure of Public Open Space - The Edge community will provide a comprehensive open space network that is compatible with the public realm and will thereby create a walkable, livable and complete community (Airdrie Open Space Plan Master Plan, 1.3, 4.3)</p> <p>Objectives</p> <ol style="list-style-type: none"> 1. To ensure that the open space and trail systems are well-integrated within the community (Airdrie O.P.S.P. 2.8) 2. To increase the quality and importance of the open space of the community 3. To respect the natural environment and foster stewardship 4. To provide a variety of places for physical activity, recreation, and to provide an area of outdoor enjoyment for the whole community. 5. To ensure that the present and future residents will get full benefits of the open space by creating multi-level and open use amenities and within walking distance of residential nodes. 6. To provide "The Edge" with comprehensive pathways that connect each neighbourhood and to supply the community with green and environmental spaces 7. To enhance the community's sense of place and to ensure an area that is suitable to shops, parks and housing where the community residents may meet, play, and enjoy their community surroundings. <p>Goal</p> <p>To provide well designed infrastructure with the capacity to support a sustainable transportation system that offers a convenient alternative to the automobile. The transportation system will focus on affordability and accessibility for all systems. It will be used as a way to attract in and out of the neighbourhood as well as within the community.</p> <p>Objectives</p> <ol style="list-style-type: none"> 1. The City of Airdrie wishes to have their transit system on DOTS to provide residents with a transit system that will facilitate transit from various destinations to their residences (Airdrie Transit Plan). DOTS are coordinated with the intention of creating a Transit Oriented Development (TOD) in the future. The Davy Lands community will integrate itself into the broader City of Airdrie system and use the higher density, vibrant use developments as a model for future TOD. 2. To provide a safe, secure, interconnected and of high quality that will maximize the long term efficiency and accessibility for a variety of transportation methods. In compliance with the City of Airdrie policies, will accommodate on-street and non-motorized traffic in a safe, efficient and balanced manner. It will emphasize and accommodate bicycle use, pedestrian circulation and connectivity with the community (Airdrie Neighbourhood Plan). 3. To decrease the dependence on automobiles by providing a multi-modal, street and sidewalk network of pedestrian, bicycle and other multi-use pathways that will encourage alternative modes of transportation throughout Davy Lands. To create a vibrant, safe and neighbourhood structure that promotes social interaction 4. To encourage long-term use of the transit system that ensures a decreased dependence on automobiles. A well designed and placed set of bus stations and transit stops. 5. To provide adequate parking for the Davy Lands community by using innovative urban design principles. <p>Environmental Assets</p> <p>The area of Nose Creek is a natural asset to the neighbourhood and links green spaces and pathways throughout the Airdrie area. "The Edge" provides the maintenance, preservation and stewardship of the creek, its riparian system and floodway floodway areas for use by future generations.</p> <p>Objectives</p> <ol style="list-style-type: none"> 1. To preserve the area of nose creek as a regional and local asset to the larger community and the area 2. To reduce urban impacts on riparian resources 3. Environmental assessment on the site needs to be conducted while the site is there is an active well on the site, prevent 1 over. Prior to development. The assessment should include both which assessment possible impacts with development, possible water contamination and sediment flow for construction (after production) 4. It is recommended by the Nose Creek Watershed Partnership that continuous study of the riparian vegetation and wildlife of Nose Creek is necessary for preservation and conservation of such a water way (NW Airdrie AEP, 2.7).

Objectives Through Design

- To achieve environmental, social, and economical sustainability through implementing strategic design principles and cohesive planning policies.
- To ensure connectedness to the neighbourhood and the surrounding neighbourhoods of the City of Airdrie through open space connectivity and pathways.
- To promote stewardship of the historical context of Airdrie to enhance a Sense of Place.
- To create a complete community that is inclusive, affordable and comprehensive by providing a variety of housing typologies.
- Open Space connectivity through a 400 m walkable pathway to Nose Creek Open Space and other areas in the neighbourhood.

Goals

Bold and Beautiful

Be a neighbourhood that is bold in its concepts of design and integration and to create a beautiful natural environment that people will enjoy.

Pedestrian Oriented

Be a pedestrian oriented neighbourhood that fosters greater connectivity and sense of place through balanced design.

Safe and Accessible

Be a neighbourhood that considers the safety and accessibility of local residents and visitors.

Character and Pride

Have a distinct character within the neighbourhood that fosters a sense of pride.

Environmental Stewardship

Have a clear understanding of the natural environment and guarantee that development contributes to the health and well-being of residents of Airdrie.

Integration of Open Space

Have a definitive and comprehensive integration of open spaces, streets, transit, pedestrian and bicycle pathways.



Residential Development

Goals

- To provide affordable, liveable and diverse housing types that suit the needs of all residents.
- The housing types will encourage an inclusive community by accommodating a broad spectrum of people: those from various socio-economic backgrounds, cultural backgrounds, age groups and lifestyles.

Housing Types

- To increase the supply and diversity of housing in Airdrie, to provide 61% of the housing units as multi-family units: low-rise apartments, stacked townhouses, courtyard townhouses and street townhouses.
- To provide 39% as single family units: small single family - semi detached, small single family and medium single family units.



Affordability

- To provide a wide array of housing options to suite the needs of people from all socio-economic statuses.

Co-housing

- To provide secure, affordable housing with a community atmosphere. Focus on sustainability, community interaction and an inclusionary design.

Housing Density/Diversity

- To encourage sustainable development practices with a goal towards LEED certified building.
- To promote higher density living in an innovative and unique fashion with the goal of 9 U.P.A.



Design Principles

To create distinct neighbourhoods that suite the needs of all residents and create a cohesive community.



Dwelling Type	Gross Density
Low Density	5-8 upa
Single detached on:	
60' lots	
50' lots	5 upa
40' lots	6 upa
	8 upa
Medium Density	11-18 upa
Small Singles on 30' lots	11 upa
Semi-detached on 30' lots	11 upa
Semi-detached on 27' lots	12 upa
Interlots	14 upa
Quattroplex	15 upa
Courtyard Townhouses	18 upa
High Density	20+ upa
Stacked Townhouses	20-25 upa
Walk-up Apartments	20-25 upa
Low-rise Apartments	30-40 upa
Four to eight storey	40-80 upa



Commercial

Goal:

• To provide for local employment and retail opportunities within the community of "The Edge" while respecting the wider policy context of maintaining the downtown as the focus of commercial development and supporting a north retail node as a compliment to this policy.

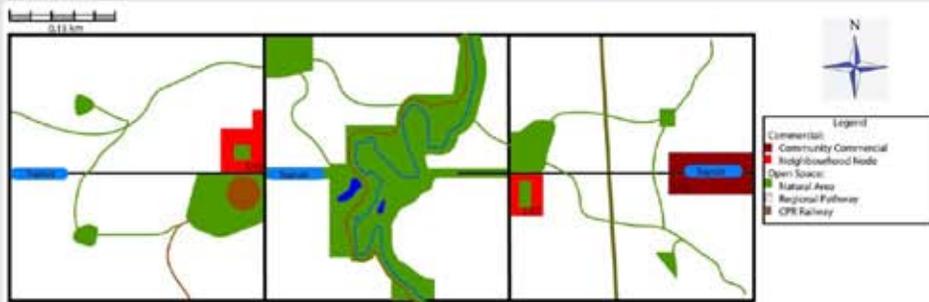
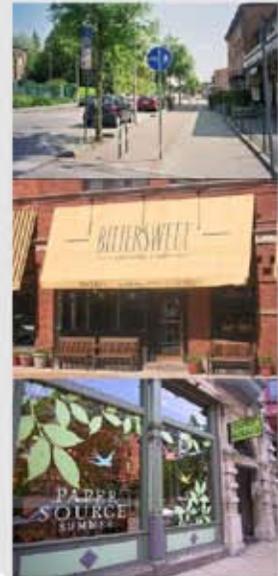
Objectives:

Neighbourhood Nodes

• To provide two separate pedestrian- and transit-friendly, vibrant community-scale retail, institutional and employment areas within the community of "The Edge". These areas are intended to service the neighbourhood retail needs of the community.

Community Retail

• To create a retail area in the community of "The Edge" to meet the community-scale retail needs of the community while not detracting from the commercial dominance of the downtown.



Required Commercial Acreage	
Commercial Space Required (Sq Ft/person)	20
Total Population	8536
Commercial Square Footage	170715
1 acre = 43560 sq ft	43560
Commercial Acreage	3.9191
Parking FAR	FAR 0.4 9.7977
Total Commercial Acreage	13.717

Commercial Types	Acres
1 Neighbourhood Node	3.93
1 Neighbourhood Node	2.07
1 Community Commercial	7.72
Total	13.72





Community Services and Schools

Goal

• To provide for community facilities for the community of "The Edge" that make efficient use of land, provide excellent quality of service and connect in appropriate ways to the community while ensuring services provided will be responsive to the changing needs of the community. (Airdrie Plan, 1-1 A.1).

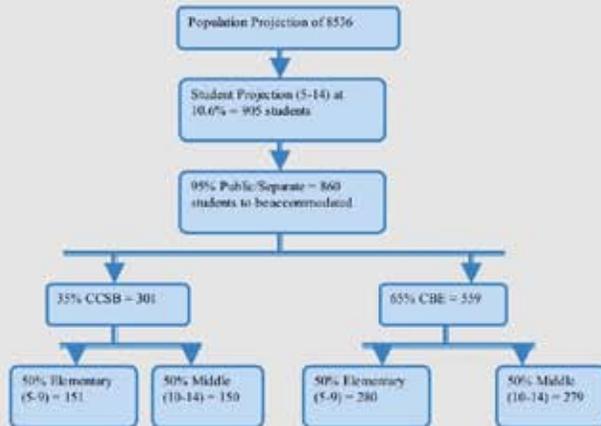


The barn currently located on site will be restored and serve as the community building

Allocation of MR (schools, community facilities)	
Land for schools	18.00
Community centres & services	2.00
Total Joint Use Site	18.00
School Population	905
Minus home schooled (5%)	860
Minus catholic school (35%)	559
Number of children in each school (junior & elementary)	279

Joint School / Community Centers

• **Objective:** To provide for one joint elementary/junior high school and community center site in the neighbourhood to provide for the educational and community needs of the two neighbourhoods of "The Edge". The joint facility will be easily accessible to all residents of "The Edge".



The City of Calgary School Board: "School Site Planning 5-14, Public and Private In Newly Developing Areas"



The elementary and junior high schools will make use of a shared facility



Emergency Services

• **Objective:** To ensure a safe and secure environment for the residents of "The Edge" through the efficient and rapid provision of police, fire and emergency medical services to the community. (Airdrie Plan, 1-1C.1).



Infrastructure

Goal

*To ensure the reliable provision of water/wastewater, sewage and energy infrastructure while promoting energy and water conservation practices, waste reduction and green infrastructure within the community. To ensure that utilities are located in a manner that maximizes utilization, respects the natural environment and enhances the opportunity for the rights of way to complement the open space system. (Airdrie Plan, 3-1.1)

Water/Wastewater

***Objective:** To provide for clean, safe water and wastewater infrastructure for the community while promoting water conservation and waste water recycling.



A windmill will pump water from stormwater ponds to prevent stagnation



Solar panels can be used as awnings in the retail districts



Rainbarriers conserve water and mitigate stormwater effects

Stormwater

***Objective:** To meet the City of Airdrie's requirements for storm water management practices and eliminate storm water runoff into Nose Creek through a series of storm water management practices by strictly adhering to Sustainable Urban Drainage Systems (SUDS).



Terraced wetlands can mitigate storm water runoff

Solid Waste

***Objective:** To reduce the quantity of solid waste generated in the community destined for landfills while ensuring high environmental and health standards associated with solid waste. (Airdrie Plan 1-2.3, 3-4.2).



A compost will be located in the restored barn

Energy

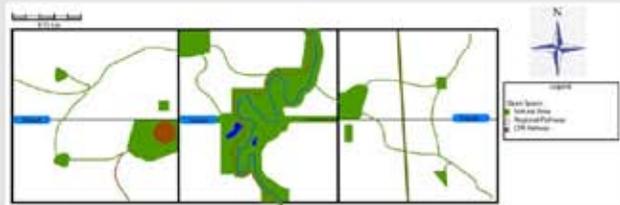
***Objective:** To promote energy efficiency throughout the community while making provisions for local energy production.



Transportation and Open Spaces

Goal:

- To provide well-designed infrastructure with the capacity to support a successful transportation system that offers a convenient alternative to the automobile.
- The transportation system will focus on affordability and accessibility for all citizens.
- It will be used as a way to travel in and out of the neighbourhood as well as within the community.



Objectives:

Destination Oriented Transit (DOT)

- Objective - the City of Airdrie wishes to focus their transit system on DOTs to provide residents with a transit system that will facilitate travel from various destinations to their residence.
- DOTs are established with the intention of creating a Transit Oriented Development (TOD) in the future.
- The Davy Lands community will integrate itself into the broader City of Airdrie system and use the higher density, mixed use developments as a model for future TOD.



Road Network

- To provide a cohesive, interconnected set of road that will maximize the long-term efficiency and accessibility for a variety of transportation methods. In compliance with the City of Airdrie policies it will accommodate vehicular and non-motorized traffic in a safe, efficient and balanced manner; it will emphasize and accommodate transit use, pedestrian circulation and connectivity within the community.



Multi-use Pathways (Pedestrians, Cycling and In-Line Skating)

- To decrease the dependence on automobiles by providing a unified, attractive and safe network of pedestrian, bicycle and other multi-use pathways that will encourage alternative modes of transportation throughout The Edge at Davy Lands.
- To create a vibrant, cohesive neighbourhood structure that promotes social interaction.

Parking

- To provide adequate parking for the Davy Lands community by using innovative urban design principles.



Vision/Policy Matrix

Prairie Skies Creekside Suburban Living

Professor Sasha Tsenkova

Open Space

A main priority of Davy Lands is to provide an open space network for public enjoyment of all aspects of community life. Integration of the community open space network into Airdrie's established system is imperative to facilitate connectivity. Another objective is to maximize the amount of open space in order to provide residents with open spaces for civic enjoyment while also providing green spaces as natural habitat for wildlife. Finally, community memberships are encouraged to be stewards of the open space system.



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Vision: Prairie Skies exemplifies sustainable suburban living, where environment, history and community are interconnected and valued.

Guiding Principles:

To realize this vision, three guiding principles are defined.

Prairie Skies:

- 1) follows the triple bottom line approach to achieve social, economic and environmental sustainability.
- 2) places utmost importance on housing affordability and variety, supporting a diversity of lifestyles and creating an inclusive community
- 3) recognizes the significance of the natural environment and tradition.

Environment

Davy Lands strives to be an environmental responsible community. To meet this goal, the community has multiple objectives, including water quality and conservation measures, storm water best management practices, waste reduction and recycling programs, community energy-saving initiatives, local energy production and land stewardship.

Recognizing its regional and local significance to the biophysical and social landscape, Davy Lands wishes to protect the ecological integrity of Nose Creek. To accomplish this goal, the community will protect the ecologically sensitive area of Nose Creek including riparian zones while promoting the creek as a natural amenity for residents to enjoy.



www.acenetworks.org



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Community Facilities and Schools

The main goal of Davy Lands is to provide the recreational and educational facilities required and desired for the residents of the community. At the same time, available land should be used as efficiently as possible in order to support the enhancement of Airdrie's existing open spaces system. To meet this goal, schools and community centers will occupy the same area to form a community campus. Allowing joint land use for complementary facilities fosters a sense of community while also maximizing land use. Establishment of neighborhood nodes is important to developing a sense of community within each neighborhood, as well as the entire community.



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REAL Planning Solutions

Rod Loring
Erin Stapleton
Alex Rowse
Lisa Eshpeter



ENVIRONMENTAL DESIGN | UNIVERSITY OF CALGARY

Regional Context

Prairie Skies Creekside Suburban Living

Professor Sasha Tsenkova

Strengths	Weaknesses
Developed Developer provides a clear plan	Achieve of well-located site
Nose Creek is a considerable environmental constraint	Bad soil conditions, frequent site
History of agriculture contributes to sense of place	Noise pollution from train
Training roadways and open space systems in Airdrie	Lack of agricultural land
City officials open to innovative production	Developer continues due to market trends
Strategic Development Plan providing strong zoning plan	Public resistance due to existing developments
Opportunities	Threats
Proximity to Calgary encourages transit and recreational development	Competition from other communities in Airdrie
City of Airdrie interested in addressing public transit	Competition from other communities in Calgary and Banff
Provision to implement high-density housing to address affordable housing	Developer focus on job-hobby residential self-supported units
Identifying a complete community	Service amenities (grocery, senior centre)
Enhance existing open space (cross-links) with open spaces	Public resistance, opposition, N2007/08
Locality of community supported by agricultural heritage and parks	

1.0 POPULATION STATISTICS

1.2 AIRDRIE POPULATION GROWTH (FROM 2006 GROWTH STUDY)

Year	Actual Population	Annual Percentage Growth	Index	2007 Break-Down Population **
2007	31,512	8.5%	1,000	31,512
2002	21,379	7.8%	1,107	21,379
2001	21,080	7.5%	1,176	21,080
2004	24,026	8.1%	1,323	24,026
2005	27,269	7.1%	1,483	27,269
2006	29,239	7.2%	1,388	29,239
2007	31,512	8.1%	1,477	31,512
2008	-	-	-	34,473
2009	-	-	-	37,546
2010	-	-	-	40,885
2011	-	-	-	44,528
2012	-	-	-	48,528
2013	-	-	-	52,942
2014	-	-	-	57,829

** 2007 Statistics Canada Census
2007 Break-Down Population = 100% (rounded). 20,469% (peak for 2007) is 20% and equals to 6,071 (peak) population density.

2.0 POPULATION AND DWELLING STATISTICS

2.1 POPULATION DISTRIBUTION BY AGE GROUP IN 2007

AGE	Male	Female	Total	Percentage of Population
0-4	4,217	4,308	8,525	27.1%
5-9	4,146	4,237	8,383	26.6%
10-14	4,075	4,166	8,241	26.1%
15-19	4,004	4,095	8,099	25.6%
20-24	3,933	4,024	7,957	25.1%
25-29	3,862	3,953	7,815	24.6%
30-34	3,791	3,882	7,673	24.1%
35-39	3,720	3,811	7,531	23.6%
40-44	3,649	3,740	7,389	23.1%
45-49	3,578	3,669	7,247	22.7%
50-54	3,507	3,598	7,105	22.2%
55-59	3,436	3,527	6,963	21.8%
60-64	3,365	3,456	6,821	21.3%
65-69	3,294	3,385	6,679	20.9%
70-74	3,223	3,314	6,537	20.4%
75-79	3,152	3,243	6,395	20.0%
80-84	3,081	3,172	6,253	19.5%
85-89	3,010	3,101	6,111	19.1%
90-94	2,939	3,030	5,969	18.6%
95-99	2,868	2,960	5,827	18.2%
100+	2,797	2,889	5,685	17.7%
Unknown	0	0	0	0%
Total Population	111,111	111,111	222,222	100%

2.2 RENTAL QUESTION

Question	Yes	No
1. Are you currently renting a home?	100	0
2. How long have you been renting?	100	0
3. How much do you pay for rent per month?	100	0
4. How much do you pay for utilities per month?	100	0
5. How much do you pay for parking per month?	100	0
6. How much do you pay for other services per month?	100	0
7. How much do you pay for maintenance per month?	100	0
8. How much do you pay for insurance per month?	100	0
9. How much do you pay for other fees per month?	100	0
10. How much do you pay for other expenses per month?	100	0

Regional Analysis

To assist in the planning process, demographic and economic information is required to ensure sound decision-making. Population composition, how it changes with time and income levels help determine demand for housing, facilities and services. Growth and housing market trends are particularly useful for developers in determining housing mix.

According to the 2007 Airdrie Civic Census, between 2006 to 2007 population growth rate of change was +8.53%, a net change of 2477 people.

Table: Population growth 2006-2007 (Airdrie Census 2007):

Total Population (2007)	31,512
Total Population (2006)	29,035
Rate of change	+8.53%
Net change	2,477

The average age range in Airdrie is 30-34, with 95% of the population being under the age of 65 years. This indicates that the city has a young population.

Table: Housing breakdown in Airdrie, 2007

Housing Type	Number of units	Percent of total units
Single detached	2138	69.3
Suite	48	1.4
Condo	463	14.2
Townhouse/Condo	39	1.1
Multi-apartment	2003	61.9
Other	440	13.7
Other	10	0.3
Other	10	0.3
TOTAL	31,122	100

According to the Calgary Real Estate Board, as of February 2008, the average sale price of a home in Airdrie is \$24,750.00.



The Airdrie City Plan (2007) provides a broad policy framework for future land uses for all areas of the City, as well as the design and provision of municipal and other services. An important theme of the plan is growth management. The following is a summary of Plan policies and direction for new developments, which have implications on Davy Lands.

New Developments:

- Shall be evaluated with the goal of encouraging energy efficiency, resource conservation and sustainability.
- Shall be encouraged to provide access to technology and telecommunication infrastructure necessary to serve home based businesses
- Shall have energy efficient design and construction
- Should provide options for innovative residential developments which accommodate secondary suites and other housing alternatives
- Shall provide linear parkway systems, where possible linking school sites, recreation facilities and major open space areas such as Nose Creek to the rest of the community
- Are not permitted to create direct runoff into Nose Creek
- Shall install storm water retention facilities as a means of preventing direct drainage to watercourses

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Land Use Concept

Prairie Skies Creekside Suburban Living

Professor Sasha Tsenkova

Available Land for development	Acres
1. Total Land Area (acres)	480
2. ER (creek)	50
3. Total gross developable lands	430
4. Utilities 5%	21.5
5. Municipal reserve at 10%	43
6. Land for Modified Grid (28%)	102.34
7. Land for Retail Development (0.4 FAR)	11
8. Net Developable Land	262.16
Density and Population	
1. Average Gross density (UPA)	9.6
2. Total Units	4135
3. Household Size	2.32
4. Population Projection	9611
5. Retail per person	0.0000459
6. Total Retail	4.4128
Summary	
Gross Density	9.6
Net Density	15.77

Housing Land-Use Breakdown by Typology

			percentage	acres	upa	units	total population served
apartment	4 storey		10%	25.216	40	1009	1715
apartment	low-rise		5%	12.608	25	315	536
multifamily	live/work		5%	12.608	20	252	504
multifamily	courtyard townhouses		20%	50.432	18	908	1816
multifamily	quattroplex		10%	25.216	15	378	756
small single	semidetached	30' lot	20%	50.432	11	555	1553
small single	detached	30' lot	15%	37.824	11	416	1581
medium single	detached	40' lot	15%	37.824	8	303	1150
						4135	9611



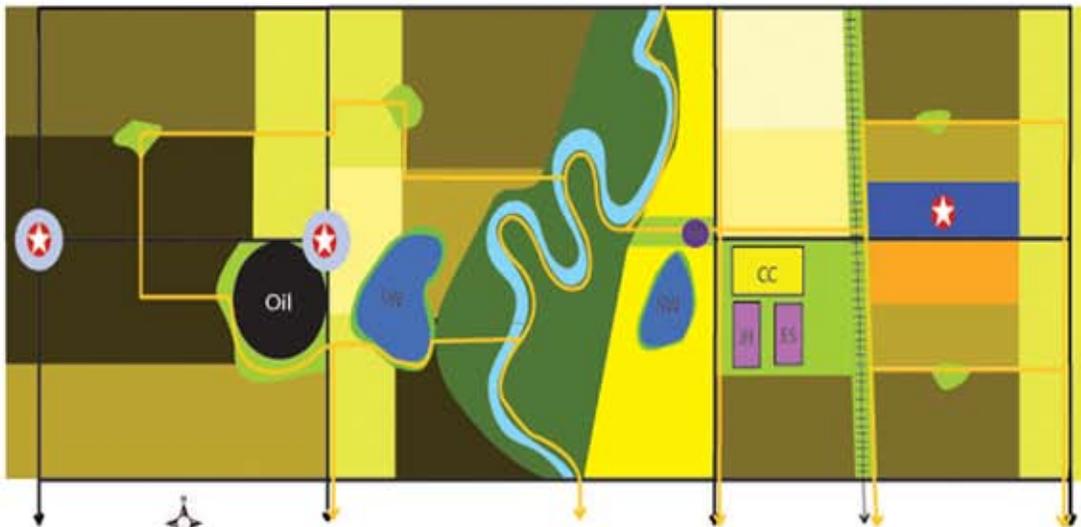
School demands

number of school aged children	1018.77
number to attend school	967.84
elementary	483.92
junior high	483.92
elementary schools needed	1.38
junior high schools needed	0.97

Accordingly with the joint use of the site, a minimal amount of municipal reserve will be used for the school site in this community. The addition of a community centre will act as a central hub for activities for the school as well as for members of the community who would not normally use the school facility.

Principles

The goals in the creation of this new community was not only to develop a complete community that would encourage a sense of community but also to integrate it visually, and within the current set of values held by the city of Airdrie. It takes into consideration communities on the boundary of this development, the need for more compact development, as well as the potential demands of the market in this area.



Residential

- 4 Storey Apartment
- Low Rise Apartment
- Courtyard Townhouses
- Quadro-Plex
- Semi-Detached 30' Lot
- Detached 30' Lot
- Detached 40' Lot
- Mixed Use

Commercial

- Neighbourhood Commercial
- Local Commercial

Other

- Environmental Reserve
- Open Space
- Community Center
- Junior Highschool
- Elementary School
- Marionette
- Road
- Pathway
- Railway

Scale 1cm=150m

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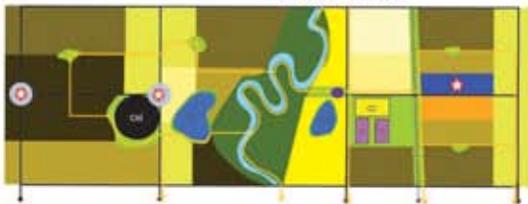
Housing

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Placement of housing types will be complementary to surrounding setting and land-use.



www.fabianiarch.com



www.downtownstadium.org

Live/Work units will be placed on the main street area, opposite to the community retail to create a diversity of commercial and residential spaces and a unique looking community.



granny suite on garage

www.cyburbia.org

Back garages will increase visibility to the street and interaction with neighbours.

Affordability

Provide housing for all levels of income to promote a diversity of residents.

Policy

- (1) To provide 15% of the projected population with affordable rental housing (based on Vancouver's policy as a precedent).
- (2) Granny units will be zoned into all small and medium single detached residential units.
- (3) 37% of all apartment style units should be affordable (recommended that the City of Airdrie be involved in ownership).



www.flickr.com

Unit Type	Style	Lot Size	Distribution (%)
Apartment	4 story	N/A	10
Apartment	Low-rise	N/A	5
Multi-family	Live/Work	N/A	5
Multi-family	Courtyard Townhouse	N/A	20
Multi-family	Quatroplex	N/A	10
Small Single	Semi-detached	30 foot	20
Small Single	Detached	30 foot	15
Medium Single	Detached	30 foot	15

Goal: Prairie Skies Community Plan will strive to foster an inclusionary, more compact community by providing affordable housing and a diversity of housing options.

The projected density of the Community area is 11.31 units per acre. This density is higher than the current goal of 5.5 to 9 units per acre in the City of Airdrie (Airdrie City Plan 2003); however, it has been shown that denser urban areas are more vital and have higher use if trees and other plants than lower density areas. This density will be achieved through a variety of housing options providing for a diverse community, in accordance with Airdrie's desire to provide "housing developments that provide a range of lifestyle and work alternatives" (Airdrie City Plan 2003).



www.flickr.com

Diversity

Prairie Skies will offer a range of housing types throughout the community.

Policies

- (1) Both neighbourhoods will consist of a combination of housing types to promote diversity throughout the community.
- (2) Housing design will be visually diverse throughout the community.
- (3) The following are suggested housing typologies:
 - i. 4-storey apartment
 - ii. Low-rise apartment
 - iii. Live/work
 - iv. Courtyard townhouse
 - v. Quatroplex
 - vi. Small single semi-detached
 - vii. Small single detached
 - viii. Medium single detached

Townhouse design is to be compatible with school campus and community centre buildings



www.flickr.com

www.flickr.com

www.homesandcottages.com

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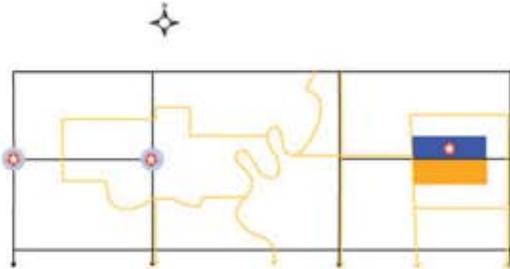


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Commercial Zones

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The orange zone is designated mixed use with an emphasis on Live/Work units to develop a more diverse and vibrant main street area.



Small-scale Commercial Development
Both the mixed-use centre and commercial neighbourhood nodes will be small in scale to support as much local commercial activity as possible.

Policies

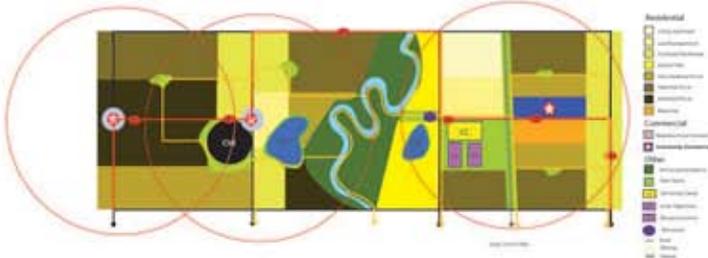
(1) Priority will be given to local independent business over large-scale commercial "big-box" retail.

Mixed-Use Development

Prairie Skies will provide commercial areas where residents can live, work, play and shop..

Policies

- (1) Zone for mixed-use development in the commercial areas (east community commercial area and west neighbourhood commercial areas).
- (2) The neighbourhood mixed-use developments will be located on what is presently Range Road 12 as well as on Range Road 13.
- (3) The community mixed-use centre will be located on Prairie Skies Boulevard.
- (3) Uses for the community mixed-use centre may include: retail, non-retail, office space, restaurants, cafes, grocery store or market, and community services.
- (4) Uses for neighbourhood mixed-use centres may include: retail, non-retail, office space, small restaurants cafes and residential units.



images represent mixed use walkable community and neighbourhood commercial districts. Retrieved from www.flickr.com

Goal: To provide an economically viable mixed-use area centrally located, with accessible local neighborhood commercial areas.

The Prairie Skies Community is primarily residential; however, with a projected population of 9611 people it is reasonable to provide diverse commercial activity within the community (Barton, Grant and Guise 2003). The majority of commercial activity will be provided in the community node, along Prairie Skies Boulevard. The remainder will be located in the west neighbourhood node. All residents will have access to commercial areas within 400-800 meters.

Mixed-use development reinforces the viability of centres, and establishing various uses provides multiple reasons for people to go and stay in the centre, as well as gives residents the benefit of being able to walk a short distance to get groceries or household items or see a movie. In addition, mixed-use development provides the opportunity for individuals to live and work in closer proximity (Barton, Grant and Guise 2003).



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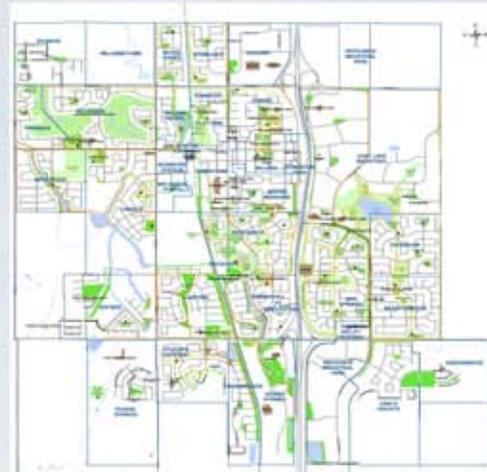
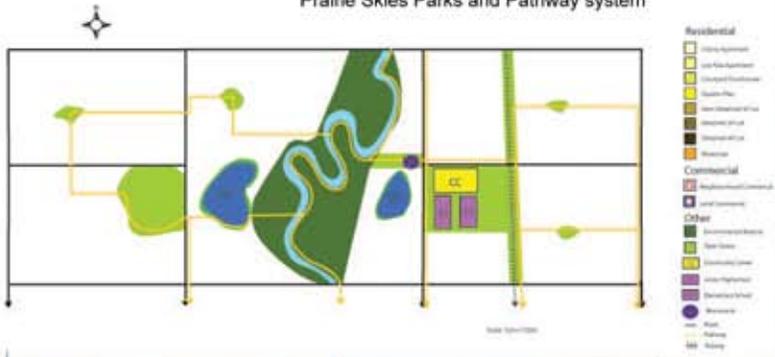


Open Spaces

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Prairie Skies Parks and Pathway system



Current pathway system from www.airdrie.ca

The community will include an extension of the open spaces system already in existence in Airdrie which will extend bicycle and walking paths as well as connect the open spaces that will be preserved in this new community.



www.flickr.com



www.flickr.com



Parks & Pathways Legend



www.flickr.com



www.flickr.com

The pathway system acts as a connection between the east and west sides of the community without having to build a vehicle bridge over the protected area around the creek. It is important that this area be usable by residents so it is accessible by foot or bicycle to approach, cross and travel beside in order to enjoy it without compromising its health and encouraging flourishing biodiversity.



Open spaces were determined by using the remaining land area from the municipal reserve after accounting for land area needed for the schools and community centre. These areas were dispersed through the community around residential areas and areas considered important for future preservation.

The pathway connects from the school campus site through the historical barn feature in the centre of the community. This feature is a recycled building from the original Davy Lands site which celebrates the history of the area as well as creates a monument which can help to create a sense of community and belonging in the new residents of Prairie Skies



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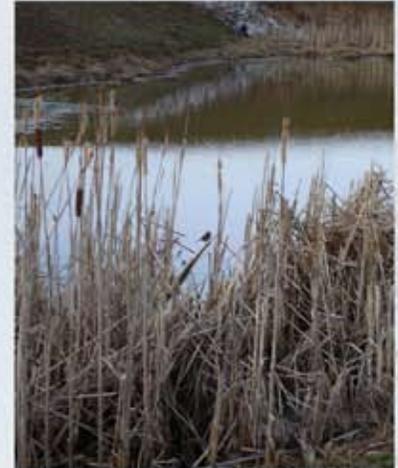
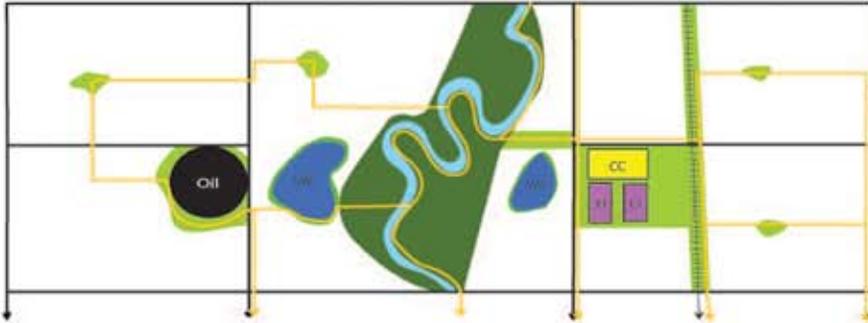
Environment

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Map of open spaces, creek with environmental reserve and open space surrounding as well as storm water retention ponds



Environment

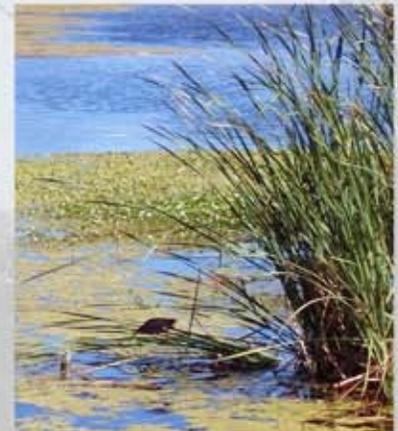
Goal: To promote environmental responsibility and to protect the ecological integrity of Nose Creek.

Objectives

Water: To implement water quality and conservation measures.

Storm water: To implement storm water best management practices to maintain watershed and human health.

Land stewardship: Davy Lands encourages residents to be stewards of the land, including celebrating historical use of the land, maintaining natural topography and understanding the ecological and recreational importance of Nose Creek riparian zones.



Possible pedestrian passage over Nose Creek



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All images retrieved from www.flickr.com showing possible functions of the riparian areas around Nose Creek and the storm water management ponds.

Environment

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www.acenetworks.org



www.swinny.net



www.soicher.org



Areas taken into consideration for Environmental Policy:

1. **Water**
Storm Water, retention ponds
2. **Waste**
Conservation, recycling
3. **Land Stewardship**
Preservation, urban agriculture
4. **Nose Creek**
Riparian areas, set-backs

Environment

Davy Lands strives to be an environmental responsible community. To meet this goal, the community has multiple objectives, including water quality and conservation measures, storm water best management practices, waste reduction and recycling programs, community energy-saving initiatives, local energy production and land stewardship.

Recognizing its regional and local significance to the biophysical and social landscape, Davy Lands wishes to protect the ecological integrity of Nose Creek. To accomplish this goal, the community will protect the ecologically sensitive area of Nose Creek including riparian zones while promoting the creek as a natural amenity for residents to enjoy.



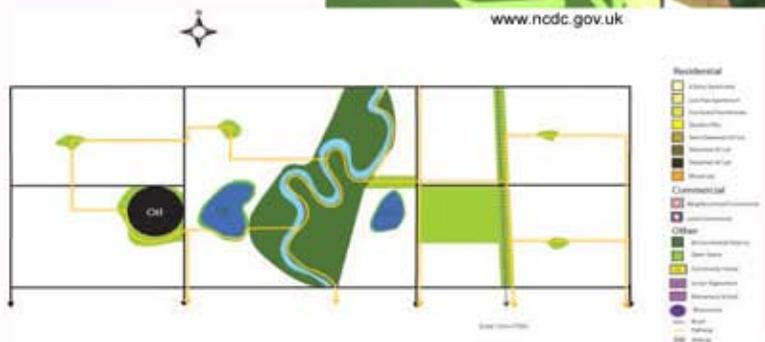
www.reidtechnology.co.nz



www.ncdc.gov.uk



www.grow-ars.informatica.com



This map shows all environmental reserve, retention ponds and open spaces

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Transportation

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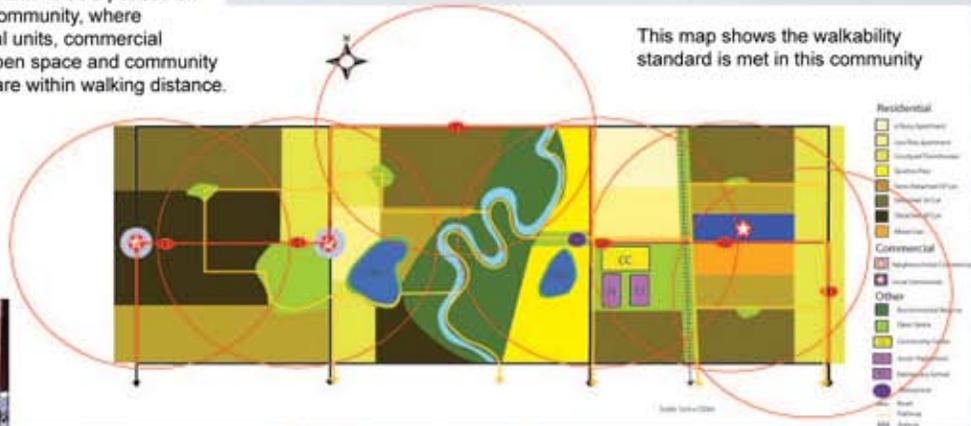


www.flickr.com

www.homesandcottages.com

Pedestrian Friendly

Prairie Skies will be a pedestrian friendly community, where residential units, commercial nodes, open space and community facilities are within walking distance.



This map shows the walkability standard is met in this community

Goal: To provide a transportation system that is pedestrian friendly, transit-oriented, enhances the existing trail network and is connected to the present and future regional road network.



www.globalexchange.com



www.thetransitcoalition.com



Airdrie's current public transportation route

Transit Oriented Development

To facilitate a future transit system, this community will be transit-oriented.

Policies

- (1) All development will accommodate and encourage future public transit usage.
- (2) Parking accommodation/facilities will be minimized in commercial areas/community and neighbourhood nodes in order to promote transit and pedestrian use/access.
- (3) Transit stops shall be no more than 400 meters walking distance from residences.
- (4) Highest density development will be zoned along transit routes.

Alternative Forms of Transportation

Alternate forms of transportation will be encouraged, including walking, cycling, car-sharing, rollerblading, skateboarding etcetera.

Efficient Road Network

Provide adequate road infrastructure to maximize connectivity between neighbourhoods and within community, while minimizing the role of the automobile.



www.richmond.ca



www.cs.ttu.edu



www.flickr.com



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Urban Design

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Urban Design

Goal: To create a sense of place through traditional design style and historical preservation while also incorporating newer design concepts for a universally appealing esthetic.

Objectives

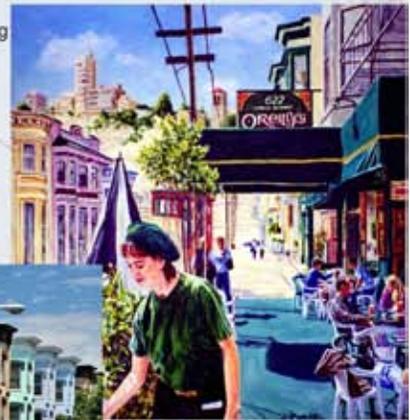
Community Identity – To incorporate traditional western prairie style and color palette and use the former barn as an historical landmark.

Universal - To make the community a place to be enjoyed by all, with accessible entrances, safe street crossings and wide sidewalks.

Pedestrian-friendly streetscapes– To create streets that cater to the pedestrian, with treed boulevards, pedestrian-scale buildings, small setbacks, unobstructed views, grid networks and separation of vehicular and pedestrian traffic.

Green – To create a green community full of natural plant life, including xeriscaping, greenways and open spaces.

New Urbanism – To implement elements of new urbanism, including back lanes, rear garages and front porches.



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