

CITY OF EDMONTON ANNEXATION APPLICATION

# APPENDIX 23.0

CITY OF EDMONTON NATURAL SYSTEMS  
POLICY (C531)



MARCH 2018

Edmonton



# CITY POLICY

**POLICY NUMBER:** C531

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**REFERENCE:**

Council 1995 07 25

**ADOPTED BY:**

City Council  
17 July 2007

**SUPERSEDES:**

Policy C467

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**PREPARED BY:** Office of Natural Areas

**DATE:** 5 June 2007

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**TITLE:** **Natural Area Systems**

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**Policy Statement:**

Since Edmonton was settled more than 100 years ago, the natural environment has supported us and shaped our collective identity. Edmontonians are proud of the city's natural heritage. To safeguard our natural capital and the associated ecological services, the City of Edmonton is committed to conserving, protecting, and restoring our natural uplands, wetlands, water bodies, and riparian areas, as an integrated and connected system of natural areas throughout the city. Natural area systems provide essential habitat for plants and animals, support biodiversity, and maintain a high quality of life for current and future citizens by supplying critical ecological services, as well as opportunities for education, research, appreciative forms of recreation, and aesthetic and spiritual inspiration.

The City of Edmonton will balance ecological and environmental considerations with economic and social considerations in its decision making and demonstrate that it has done so. The City of Edmonton recognizes that it can accomplish the work that is required to achieve conservation more efficiently and effectively by supporting and developing partnerships to achieve effective conservation results. Therefore, the City will lead by example – engaging the public in natural area issues, and encouraging businesses, residents, and the community to secure new natural area systems and steward what we have effectively.

**The purpose of this policy is to:**

- Enhance and sustain the quality of life for Edmontonians.
- Conserve, protect, and restore biodiversity throughout Edmonton recognizing the urban context that we work within;
- Ensure consistent, uniform and equitable conservation practices that are based on the best available science;
- Direct Administration to:
  - plan our city so that our ecological systems will function effectively at neighbourhood, city and regional scales,
  - conserve natural area systems in discharging their duties, and
  - require ecological information to support planning and development applications;
- Conserve, protect, and restore natural area systems through the physical planning and development process; according to the provisions of municipal, provincial and federal policy and legislation;
- Encourage voluntary conservation and corporate and private sponsorship of natural areas;
- Promote the awareness and participation of landowners, the general public and non-government organizations in conserving, preserving, and restoring natural areas; and
- Incorporate the local ecological knowledge of Edmonton's citizens and organizations into our decisions.

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**This policy is subject to any specific provisions of the Municipal Government Act or other relevant legislation or Union Agreement.**



# CITY PROCEDURE

**POLICY NUMBER:** C531

**AUTHORITY:** City Manager

**EFFECTIVE DATE:** 5 June 2007

**TITLE:** Natural Area Systems

**PAGE:** Page 1 of 13

## DEFINITIONS

**Biodiversity:** Biodiversity, or biological diversity, refers to the variability among living organisms - within species (genetic diversity), between species (species diversity), and in ecosystems (ecosystem diversity).

**Conservation:** The wise use and stewardship of natural area systems and the processes they support from the direct or indirect impacts of urban development or harmful recreational use.

**Ecological Information:** Information provided by the proponent in conjunction with development proposals and strategies. This information may include but is not limited to an identification and description of affected natural areas, a description of the proposed development and associated facilities and services that may affect the natural areas, a description of the potential impacts of the proposed development on the affected natural areas; an analysis of the relationship of natural areas to Edmonton's ecological network, and indication of interest in voluntary conservation.

**Ecological Services:** services which humans derive from ecological functions such as photosynthesis, oxygen production, and water purification.

**Local Ecological Knowledge:** Information held by Edmonton community members about the city's natural area systems, generally as a result of direct and ongoing experience of these areas.

**Major Amendment:** Where broad structural changes to land use, servicing or roads are proposed and may impact natural systems. The policy will apply to sites identified within the plan amendment area, and off-site impacts should also be taken into consideration.

**Natural Area:** An area of land or water that is dominated by native vegetation and relatively undisturbed by human activity. Such areas could include grasslands, forests, wetlands, peatlands or riparian areas. Areas such as groomed parks, sports fields and schoolyards are not natural areas.

**Natural Area Management Plan:** a document formulated to ensure that all responsibilities and actions necessary to support a natural system's conservation are considered and understood.

**Natural Area System:** A network of natural and/or semi-natural landscape elements that is configured and managed with the objective of maintaining or restoring ecological functions as a means to conserve biodiversity while also providing appropriate opportunities for education, research and passive recreation.

**Natural Capital:** natural resources, such as water, the land which provides space on which to live and work, and the ecosystems that maintain clean water, air and a stable climate.

**Protection:** Administrative designation of a natural area for the purposes of conservation (e.g. through a conservation easement, municipal or environmental reserve, zoning, ownership by the City, etc.)

**Restoration:** the re-establishment of habitat in order to improve ecological processes or connectivity.

**Uplands:** The elevated, typically forested lands beyond the lowlands that border rivers or wetlands.

**Riparian:** Relating to the banks of a natural course of water.



# CITY PROCEDURE

**POLICY NUMBER: C531**

---

**AUTHORITY:** City Manager

**EFFECTIVE DATE:** 5 June 2007

---

**TITLE:** Natural Area Systems

---

**PAGE:** Page 2 of 13

---

## AREA OF APPLICATION AND EFFECTIVE DATE

This policy applies to all City of Edmonton staff. The ecological information outlined in Attachment II is required in conjunction with development proposals and strategies or any major amendments to approved development proposals and strategies on substantially undeveloped lands in the City of Edmonton.

## **RESPONSIBILITIES**

City Council to:

- a) approve this policy and any amendments to this policy.

Transportation and Public Works Committee to:

- a) review and recommend to City Council any change to this policy.

City Manager to:

- a) review and recommend to Transportation and Public Works Committee any changes to this policy, and
- b) approve the City Procedure.

Deputy City Manager and General Managers to:

- a) ensure that their departments are aware of this policy, its intent and guidelines;
- b) ensure that projects undertaken in their departments have due consideration of the existence of natural systems, and the protection of Edmonton's ecological network (including core natural areas, stepping stones and ecological linkages) – see maps included in Attachment 1;
- c) identify and mitigate the impact of planned projects on identified natural systems;
- d) provide support for development of management plans for conserved natural systems;
- e) use the ecological information provided by development applicants to assess the ecological structure and function of the natural systems and to propose voluntary conservation, where appropriate;
- f) monitor the ecological impacts of their operational activities on natural area systems





# CITY PROCEDURE

**POLICY NUMBER: C531**

---

**AUTHORITY:** City Manager

**EFFECTIVE DATE:** 5 June 2007

---

**TITLE:** Natural Area Systems

---

**PAGE: Page 3 of 13**

---

through their respective environmental management systems (as applicable) and/or through EcoVision annual reports, supporting the Office of Natural Areas in its monitoring duties;

- g) include the Policy C-531 City Procedure in their respective environmental management systems;
- h) access technical expertise in the form of consultants or a technical committee, as appropriate, to determine final recommendations regarding conservation of natural areas; and
- i) evaluate Corporate and private development and conservation proposals on their own merits, based upon the unique site(s) and development situation.

General Manager, Deputy City Manager's Office to:

- a) provide guidance and support for the implementation of biodiversity protection programs and projects, including direction on communications, public involvement and regional conservation planning;
- b) give high regard to ecological issues in corporate business planning;
- c) participate in the general review, analysis and monitoring of the state of Edmonton's natural systems through administration of the City's Enviso program and the completion of annual EcoVision reports; and
- d) administer the Environmental Advisory Committee, a public committee responsible for advising Administration on policy issues from an environmental perspective.

General Manager, Asset Management and Public Works to:

- a) participate in the review, analysis and negotiation related to conserving natural systems through the development and private conservancy processes;
- b) provide guidance and support for the securement of natural systems (e.g. purchase, development of agreements, etc.);
- c) provide guidance and support for the development of management plans for conserved natural systems;
- d) manage conserved natural systems where other agencies/groups have not assumed the responsibility;
- e) identify funding sources for the acquisition of natural systems; and
- f) ensure that the following take into consideration the conservation of Edmonton's



# CITY PROCEDURE

**POLICY NUMBER: C531**

---

**AUTHORITY:** City Manager

**EFFECTIVE DATE:** 5 June 2007

---

**TITLE:** **Natural Area Systems**

---

**PAGE: Page 4 of 13**

---

ecological network:

- a. park and open space planning
- b. municipal reserve and environmental reserve dedications
- c. drainage planning
- d. waste management.

General Manager, Planning and Development to:

- a) ensure that long range and strategic planning supports conservation activities;
- b) coordinate and provide guidance for the consideration of all natural systems and their connectivity in planning applications and major plan amendments;
- c) coordinate the review, analysis and negotiation related to conserving natural systems through the development process;
- d) inform applicants of this policy by incorporating policy requirements into the Terms of Reference for Area Structure Plans, Neighbourhood Area Structure Plans, Neighbourhood Structure Plans, and Servicing Concept Design Briefs and the Land Use Bylaw;
- e) when applying for information on subdivision or development, an applicant shall be informed of the policy, and of ecological information requirements (Attachment II) and shall be provided with a Terms of Reference for information requirements;
- f) advise appropriate AMPW staff of proposed development with the potential to impact natural systems, so that a business case can be made for potential purchase of appropriate sites;
- g) serve as the main point of contact for all ecological information requirements; and
- h) assist development proponents interested in voluntary conservation of natural areas.

General Manager, Community Services to:

- a) provide support for development of management plans for conserved natural systems, in particular from an emergency response perspective;
- b) advise the Office of Natural Areas, as requested, in the preparation of conservation, management and monitoring agreements; and
- c) provide support for community engagement in and education about the protection of natural systems.



# CITY PROCEDURE

**POLICY NUMBER: C531**

---

**AUTHORITY:** City Manager

**EFFECTIVE DATE:** 5 June 2007

---

**TITLE:** Natural Area Systems

---

**PAGE:** Page 5 of 13

---

General Manager, Transportation to:

- a) Design Edmonton's transportation system with high regard for the city's ecological network.

General Manager, Corporate Services to:

- a) assist in review and analysis and provide legal advice on a case by case basis, on conservation issues, proposals or opportunities as they arise, as requested by the Office of Natural Areas; and
- b) assist the Office of Natural Areas, as requested, in the preparation of conservation, management and monitoring agreements.

General Manager, Finance and Treasury to:

- a) provide financial information and analysis, including the identification of funding sources for the acquisition of natural systems; and
- b) support the Office of Natural Areas in incorporating natural systems information into the City's infrastructure inventory.

Natural Areas Policy Implementation Committee to:

- a) report to Senior Management Team on issues of ecological importance;
- b) provide formal sign-off on all natural area management plans;
- c) provide plan and policy direction to the Office of Natural Areas; and
- d) work collaboratively to integrate City operations to support the protection of Edmonton's ecological network.

Environmental Policy Leadership Committee to:

- a) provide plan and policy direction to the Office of Natural Areas on issues of environmental importance.



# CITY PROCEDURE

**POLICY NUMBER: C531**

---

**AUTHORITY:** City Manager

**EFFECTIVE DATE:** 5 June 2007

---

**TITLE:** Natural Area Systems

---

**PAGE:** Page 6 of 13

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Office of Natural Areas to:

a) Corporate Activities:

1. act as liaison with other levels of government to ensure jurisdictional harmony with regard to conservation policies and programs;
2. act as a liaison with other conservation groups;
3. act as a resource for the Corporation;
4. coordinate conservation of natural areas, including public and private lands, for the Corporation;
5. provide an integrative function for the Corporation by fulfilling a mandate that crosses all City departments;
6. provide guidance and support for the consideration of natural areas in development proposals and City of Edmonton plans and strategies;
7. support the development of management plans for conserved natural systems;
8. ensure that conservation activities consider tableland and river valley natural areas as an integrated ecological network;
9. complete strategic conservation plans and implementation plans and update them as needed;
10. encourage corporate decision-making that prioritizes biodiversity protection in all City operations, within core areas, ecological linkages and the matrix;
11. administer the Natural Areas Advisory Committee, a public committee responsible for advising Administration on policy issues from an ecological perspective;
12. administer the Natural Areas Policy Implementation Committee, an internal committee responsible for coordinating between departments and branches and advising on strategic direction for ecological planning and management;
13. develop a list of natural areas for priority acquisition and explore possible sources of external funding for conservation and management of natural systems;

b) Monitor and Report

1. develop and implement a monitoring program to evaluate the Corporation's success in attaining the objectives of the policy;
2. contribute to the development of annual EcoVision reports;





# CITY PROCEDURE

**POLICY NUMBER: C531**

---

**AUTHORITY:** City Manager

**EFFECTIVE DATE:** 5 June 2007

---

**TITLE:** **Natural Area Systems**

---

**PAGE: Page 7 of 13**

---

3. make recommendations to the General Managers, as appropriate, on issues and activities related to the conservation of natural areas;
  4. report regularly to Senior Management Team;
- c) Land Development Process
1. act as resource person to the Administration and the development industry throughout the land development process;
  2. review ecological information requirements and develop and update associated Terms of Reference as required;
- d) Private Conservancy
1. encourage and support voluntary private conservancy and conservation sponsorships, and refer interested landowners/groups to established conservation organizations (e.g. Edmonton and Area Land Trust);
- e) Education and Outreach
1. encourage and support education and awareness on the value of conservation within Edmonton;
- f) Stewardship and Partnerships
1. develop, encourage and support opportunities for Edmontonians to become directly engaged in stewarding Edmonton's protected natural areas; and
  2. work in partnership with local conservation organizations, other orders of government, the private sector and other municipalities within the Capital Region in support of local and regional conservation efforts.

## **ATTACHMENTS**

Attachment 1: City of Edmonton Natural Systems Maps

Attachment 2: Information Requirements

Attachment 3: City of Edmonton Environmental Reserve Guidelines



# CITY PROCEDURE

POLICY NUMBER: C531

---

AUTHORITY: City Manager

EFFECTIVE DATE: 5 June 2007

---

TITLE: Natural Area Systems

---

PAGE: Page 8 of 13

## ATTACHMENT 1: CITY OF EDMONTON NATURAL SYSTEMS MAPS

### 1. City of Edmonton Ecological Network Map



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### 2. Edmonton's Natural Areas in 2005



Edmonton\_Natural\_  
Areas.pdf (93...

**NOTE:** These maps are provided for reference only, and application of this City Procedure **is not limited to the natural systems identified**. The maps will be updated as necessary, and additional natural systems may be added.



# CITY PROCEDURE

POLICY NUMBER: C531

AUTHORITY: City Manager

EFFECTIVE DATE: 5 June 2007

TITLE: Natural Area Systems

PAGE: Page 9 of 13

## ATTACHMENT 2: INFORMATION REQUIREMENTS

**Information Requirements** – ecological information provided by the proponent in conjunction with development proposals and strategies. This may include an identification and description of affected natural systems; a description of the proposed development and associated facilities and services that may affect the natural systems; a description of the potential impacts of the proposed development on the affected natural systems; an indication of interest in voluntary conservation; and a description of the activities to be undertaken and associated roles and responsibilities in managing the natural systems. *In select cases, requirements for ecological information may vary. Note that each of these requirements applies only if it has not been completed at a previous stage of planning.*

### Legend

- ✓ Information requirement applies and must be completed
- \* Information requirement applicability is at the discretion of the Planning & Development Department, in consultation with the Office of Natural Areas
- Information requirement does not apply

	INFORMATION REQUIREMENTS					
	Ecological Network Report		Ecological Design Report	Natural Area Management Plans	Environmental Reserve (ER) Guidelines	Provincial Bed & Shore Claim Guidelines
	Stage 1	Stage 2				
<b>PRODUCT DESCRIPTION</b> →	Final Report	Final Report	Final Report	Final Plan (signed off by relevant City branches <sup>1</sup> )	ER Guidelines considered and ER delineated	Letter from Province stating extent of claim
<b>Plans Approved Subsequent to Policy</b>						
New ASP, SCDB	✓	*	*	–	✓	✓
<b>Residential Area</b>						
New NSP, NASP	✓	✓	*	–	✓	✓
Rezoning	*	–	–	✓	✓	✓
Subdivision	–	–	–	✓	✓	✓
Development Permit	*	–	–	–	–	✓
<b>Employment Area</b>						
Rezoning	*	–	–	✓	✓	✓

<sup>1</sup> Relevant City branches include those that have some assigned responsibility for activities related to, or that could impact natural areas conservation and/or management.



# CITY PROCEDURE

POLICY NUMBER: C531

AUTHORITY: City Manager

EFFECTIVE DATE: 5 June 2007

TITLE: Natural Area Systems

PAGE: Page 10 of 13

	INFORMATION REQUIREMENTS					
	Ecological Network Report		Ecological Design Report	Natural Area Management Plans	Environmental Reserve (ER) Guidelines	Provincial Bed & Shore Claim Guidelines
	Stage 1	Stage 2				
<b>PRODUCT DESCRIPTION</b> →	Final Report	Final Report	Final Report	Final Plan (signed off by relevant City branches <sup>1</sup> )	ER Guidelines considered and ER delineated	Letter from Province stating extent of claim
Subdivision	—	—	—	✓	✓	✓
Development Permit	—	—	—	—	—	✓
<b>Plans Approved Prior to Policy</b>						
<b>Residential Area</b>						
Major Amendments to ASP, SCDB	✓	—	*	—	✓	✓
NSP, NASP Approved Prior to Policy						
Rezoning	*	—	—	—	✓	✓
Subdivision	—	—	—	—	✓	✓
Development Permit	*	—	—	—	—	✓
Major Amendment to existing NSP, NASP	✓	✓	*	✓	✓	✓
No NSP in place						
Rezoning	*	—	—	—	✓	✓
Subdivision	*	—	—	—	✓	✓
Development Permit	—	—	—	—	—	✓
<b>Employment Area</b>						
Major amendment to ASP, SCDB or Outline Plan	✓	✓	*	—	✓	✓
Rezoning	—	—	—	✓	✓	✓
Subdivision	—	—	—	—	✓	✓
Development Permit	—	—	—	—	—	✓
<b>No Approved Statutory Plan in Place</b>						
Rezoning	*	*	—	*	*	✓
Subdivision	*	*	—	*	*	✓
Development Permit	—	—	—	—	—	✓



# CITY PROCEDURE

POLICY NUMBER: C531

AUTHORITY: City Manager

EFFECTIVE DATE: 5 June 2007

TITLE: Natural Area Systems

PAGE: Page 11 of 13

## ATTACHMENT 3: CITY OF EDMONTON ENVIRONMENTAL RESERVE GUIDELINES

### Guidelines for Determining Environmental Reserve (ER) Dedication for Wetlands and Other Water Bodies

The following guidelines have been developed for determining an appropriate buffer zone for wetlands and other water bodies with respect to lands to be dedicated as Environmental Reserve (ER)<sup>2</sup>. They are based on several sources of information including a literature review and guidelines from other jurisdictions. For a more thorough explanation of the rationale for these guidelines please consult the accompanying background document.

The Alberta Municipal Government Act Section 664 allows for the City of Edmonton (as a subdivision authority) to take "...part of that parcel of land as environmental reserve if it consists of

- (a) a swamp, gully, ravine, coulee or natural drainage course
- (b) land that is subject to **flooding** or is, in the opinion of the subdivision authority, **unstable** or
- (c) a strip of land, not less than 6 metres in width, abutting the bed and shore of any lake, river, stream or other body of water for the purpose of
  - (i) **preventing pollution**, or
  - (ii) providing **public access** to and beside the bed and shore."

Therefore, ER dedication of an appropriate buffer zone needs to address how to determine areas subject to flooding, areas considered to be unstable and areas required for pollution prevention and public access. These guidelines deal with each of these ER components individually with the intent that the overall ER dedication should be the greatest extent of all of the individual components<sup>3</sup>.

#### Steps:

1. Determine the boundary of the wetland or other water body.

If the Crown **has** claimed the bed and shore of a water body, a legal survey is required to determine the legal bank. Under Section 17(2) and (3) of the Alberta Survey Act, the legal bank should extend through the wetland vegetation and be located where distinct vegetation or soils exist (Kwasniak, 2001). It is also

<sup>2</sup> Please note that the River Valley Area Redevelopment Plan (ARP, 1985) provides provisions for determining ER for lands designated within the North Saskatchewan River Valley and Ravine System. These new guidelines may or may not be implemented within the ARP lands. The primary intent of these guidelines is to provide direction for ER dedication within the City of Edmonton not covered by the ARP.

<sup>3</sup> Please also note that any area required for other wetland functions, in particular for habitat and biodiversity, must be acquired through other means such as municipal reserve or acquisition.



# CITY PROCEDURE

**POLICY NUMBER: C531**

---

**AUTHORITY:** City Manager

**EFFECTIVE DATE:** 5 June 2007

---

**TITLE:** **Natural Area Systems**

---

**PAGE: Page 12 of 13**

recommended that when the legal survey is conducted by a certified Alberta Land Surveyor, representatives from both the landowners/developers and Alberta Public Lands be present.

If the Crown **has not** claimed the bed and shore of a water body, a legal survey **is not** required but would be beneficial in determining buffer zones requirements. If a developer/landowner chooses not to obtain a legal survey of the bed and shore, a qualified environmental consultant should be retained to define the boundary of the wetland and/or water body. This boundary determination will be subject to approval by the City of Edmonton.

2. The wetland buffer zone should be measured from the boundary of the wetland or water body (legal bank where applicable).
3. Determine the buffer zone width requirements for each of the following components of ER separately (e.g. flooding, unstable lands, pollution prevention and public access)
  - a. Flood Protection:

The following should steps be taken to determine the appropriate floodplain:

- 1) Determine the boundary (legal bank/ bed and shore where applicable) of the wetland or water body.
- 2) Determine the extent of the natural drainage basin (pre-development).
- 3) Determine the critical (highest) storm water level (100-year) based on the following assumptions
  - a. Normal antecedent moisture conditions
  - b. Initial water level at the bed and shore line
  - c. Pre-development land use runoff conditions (e.g. agricultural)
- 4) Plot this floodplain with respect to the wetland boundary (legal bank).

Please note that for wetlands, hydroperiod dynamics should be considered in this determination.

b. Unstable Lands:

Any unstable land should be identified through appropriate geotechnical and/or hydrogeological studies. These lands may include steep slopes or areas where the water table is extremely close to the surface. All of these lands should be included within the buffer zone.

c. Pollution Prevention:





# CITY PROCEDURE

**POLICY NUMBER: C531**

---

**AUTHORITY:** City Manager

**EFFECTIVE DATE:** 5 June 2007

---

**TITLE:** **Natural Area Systems**

---

**PAGE: Page 13 of 13**

A fixed minimum buffer width of 30 m from the wetland or other water body boundary should be used.

d. Public Access:

Emergency access needs should be used as the minimum requirement.

Please note that ERD (Emergency Response) should provide input into this determination until standard guidelines are developed.

4. Provide a figure/map showing overlays each of these delineations, including the initial boundary as overlays. A short report defining and providing the rationale for each of these delineations, including the initial boundary must also be provided.
5. The greatest extent of all of the ER components should be identified as the required area for ER dedication.