Overview of urban ecology and ecological spatial planning

Global Platform for Sustainable Cities Cities for Biodiversity

C4B Deep-Dive Learning - Promoting Nature-Positive and Carbon-Neutral Cities

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Session Overview

This session provides an overview of urban ecology and ecological spatial planning, illustrating how urban ecology could be integrated into land-use planning and how ecological networks (i.e., green connectivity) can be forged through neighborhood-level, city-wide and regional planning



Urban ecology has multiple meanings

Four different meanings of ecology in general usage:

Ecology the science investigates nature's economy (flows of materials and energy or distribution and abundance of organisms)

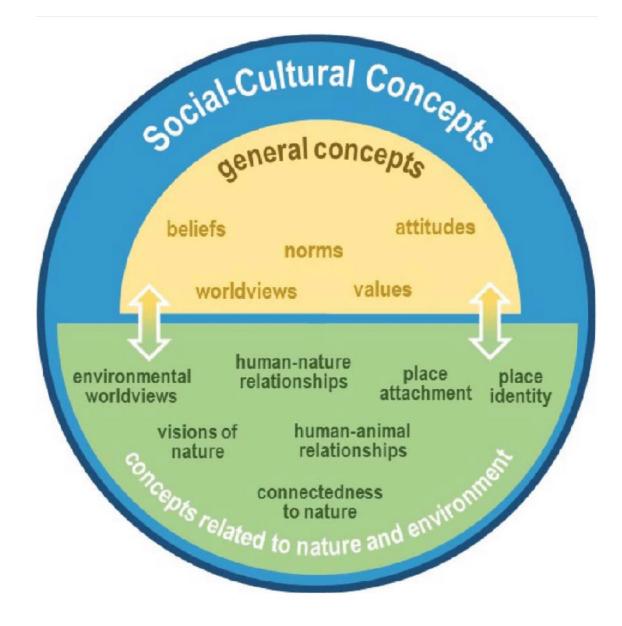
Ecology as nature sees nature as a resource base for humans

Ecology as an idea is a concept that views human existence in relation to ecology the science

Ecology the movement refers to political activities related to ecological and environmental issues.

(Haifa and Evans)

Ecological Planning is rooted in place: both biologically and culturally



Ecological Planning is a Type of Land Use Planning



A Community Vision for Urban Ecology is Essential

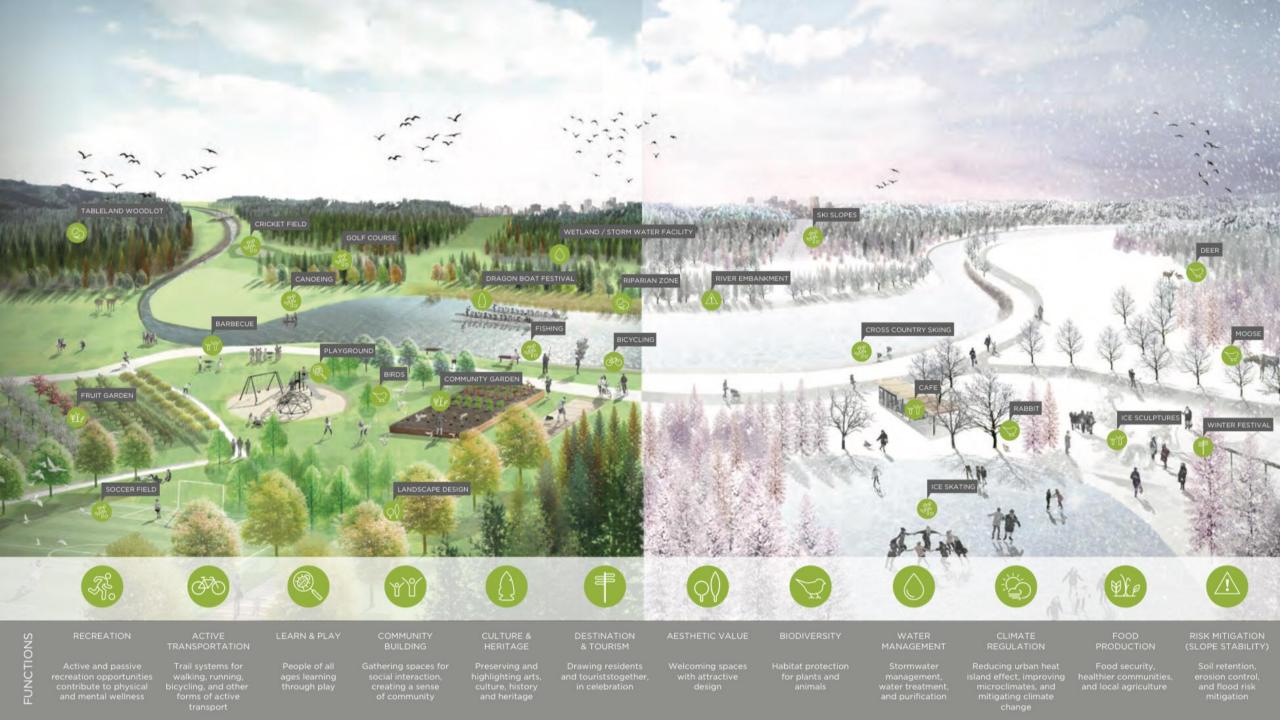
A community vision is the result of a process that engages the community to develop an idea of a **future** ideal state of you could overcome every obstacle.

Your community vision should:

- Be inspiring
- Reflect the perspectives, cultural identity, and aspirations of the community

Example: Breathe – Edmonton's Green Network Strategy (Parks and Open Space Strategy)

Edmonton offers an integrated, multifunctional network of parks and open spaces that is renowned as an iconic and defining feature of Alberta's capital city. The green network supports healthy ecosystems and diverse wildlife habitats, and meets the needs of communities present and future by connecting people with year-round opportunities to learn, commute, recharge, recreate, gather and celebrate. Edmontonians are proud of their green network and enjoy sharing the diverse environmental, economic and quality of life benefits the green network provides.



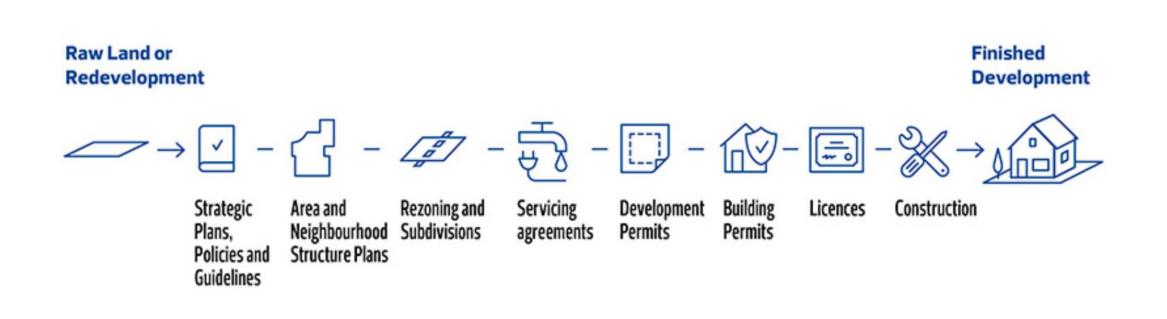
Edmonton's Wildlife Passage Engineering Design Guidelines.

It is essential that ecological planning is in your master plan

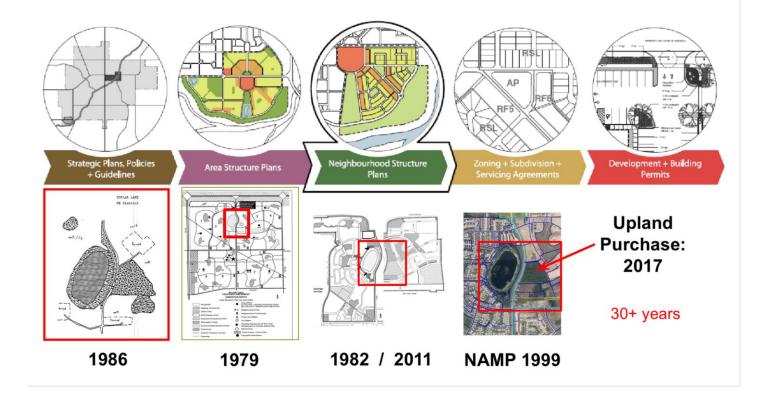
What is a Master Plan?

- A future vision and policy guide for the Town
- Plan for a community's physical evolution
- Comprehensive analysis of all aspects of community development
- Long-range (typically varies from five to 15 years)
- NOT a zoning bylaw or regulation
- Public policy document

Land Use Planning is a process flowing from the Master Plan

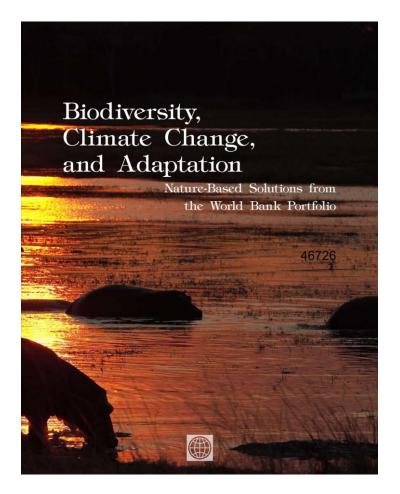


Land Use Planning Process Takes Time

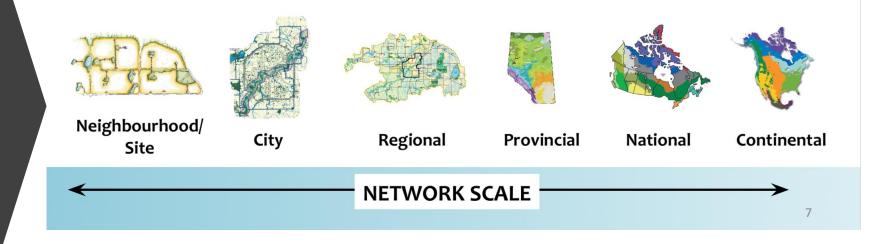


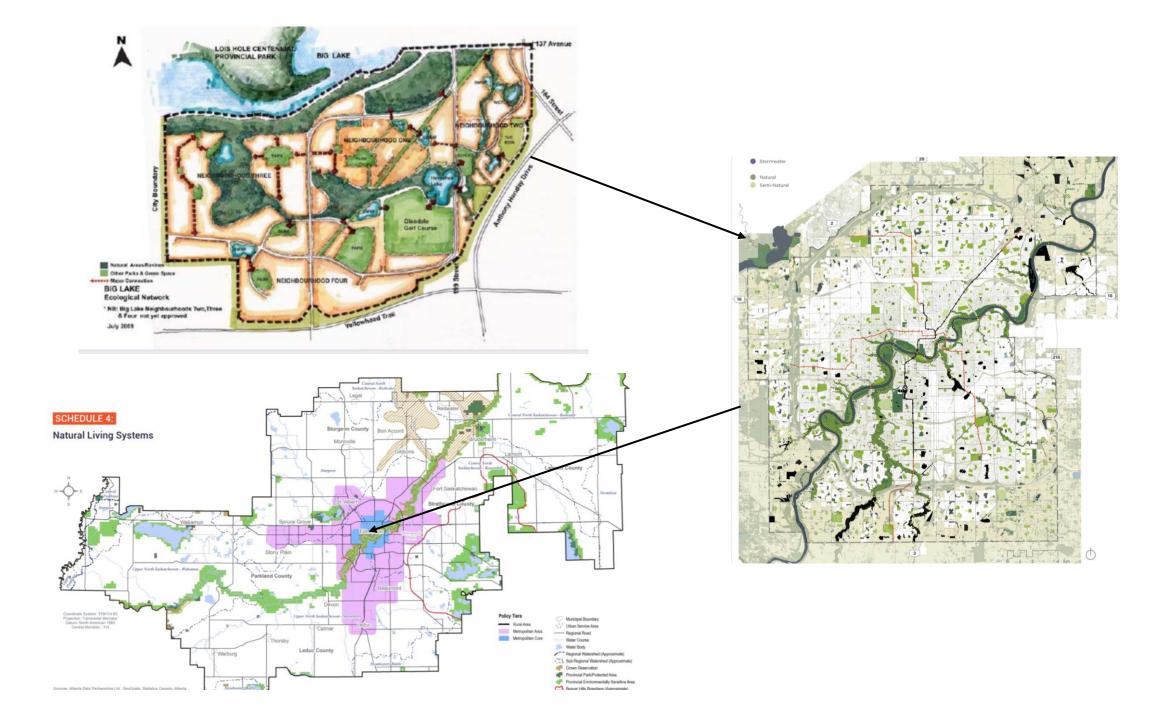
Landscape Connectivity is a Key Spatial Planning Concept

Maintaining connectivity between natural habitats and along altitudinal gradients will be a key strategy to allow plant and animal species to adapt to climate change. Corridors of natural habitats within transformed production landscapes and linking protected areas provide opportunities for species to move and maintain viable populations.

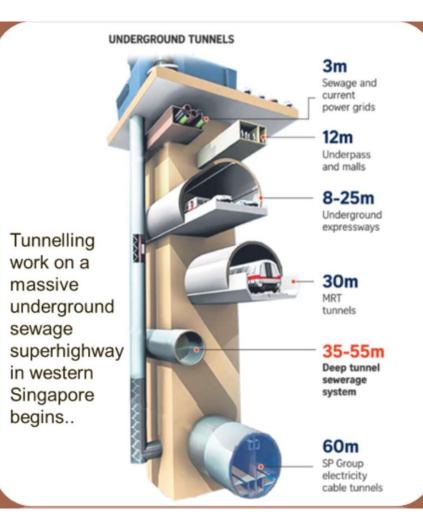


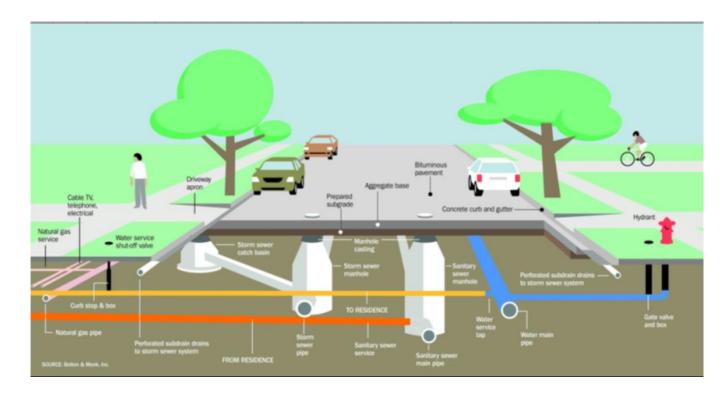
Plan ecological networks at multiple scales





Cities Are A Collection of Networks Competing For Limited Space



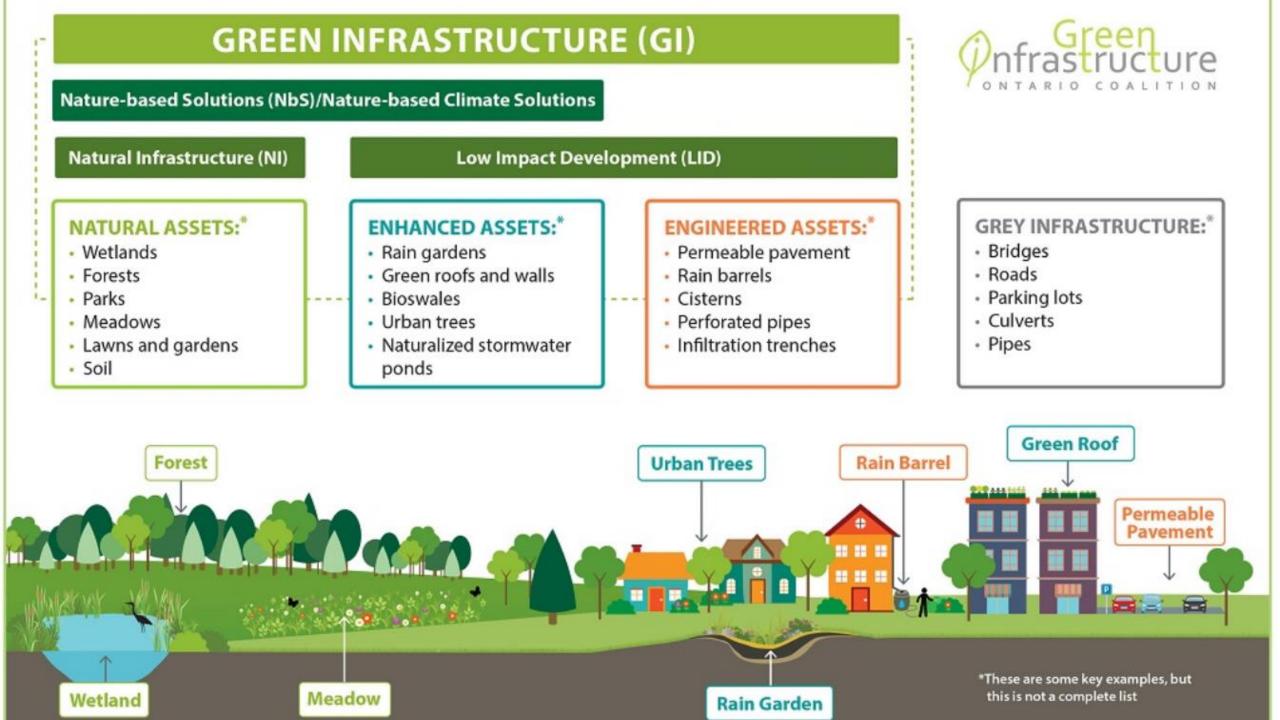


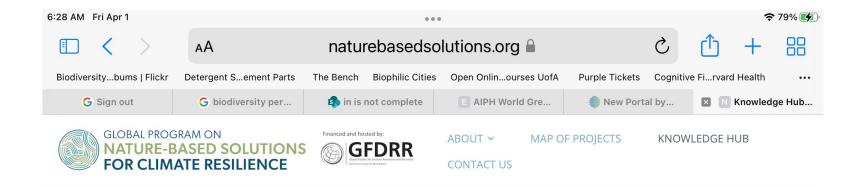
Green Infrastructure is the building blocks of ecological networks

What is "green infrastructure"? We define green infrastructure as *the natural vegetative systems* and green technologies that collectively provide society with a multitude of economic, environmental, health, and social benefits.

"Green Infrastructure can be broadly defined as a **strategically planned network** of high quality natural and semi-natural areas with other environmental features, which is designed and managed to deliver a wide range of ecosystem services and protect biodiversity in both rural and urban settings. More specifically GI, being a spatial structure providing benefits from nature to people, aims to enhance nature's ability to deliver multiple valuable ecosystem goods and services, such as clean air or water."

"...is the actions to build **connectivity nature protection networks** as well as the actions to incorporate multifunctional green spaces in urban environment."^[L]European Environment and Sustainable Development Advisory Councils (EEAC) (2009): Green Infrastructure and Ecological Connectivity.





The Knowledge Hub

OTHER NBS RESOURCES

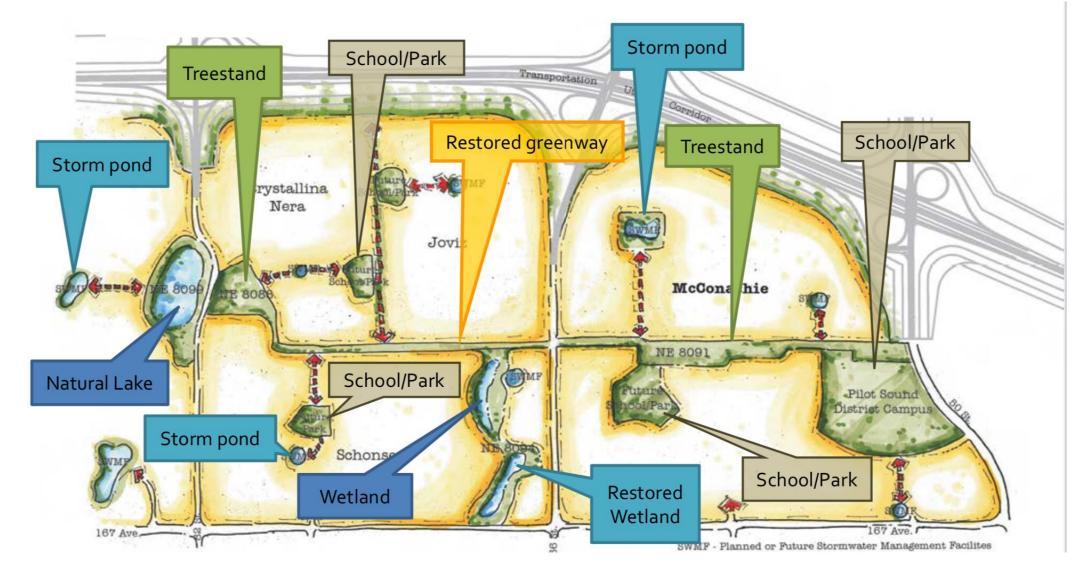
Welcome to our Knowledge Hub! Here you will find an ever-growing collection of the latest reports, case studies, and other knowledge products that can guide and inform the development of nature-based solutions projects. Feel free to browse through our selection of knowledge products below.



A Catalogue of Nature-Based Solutions for Urban Resilience

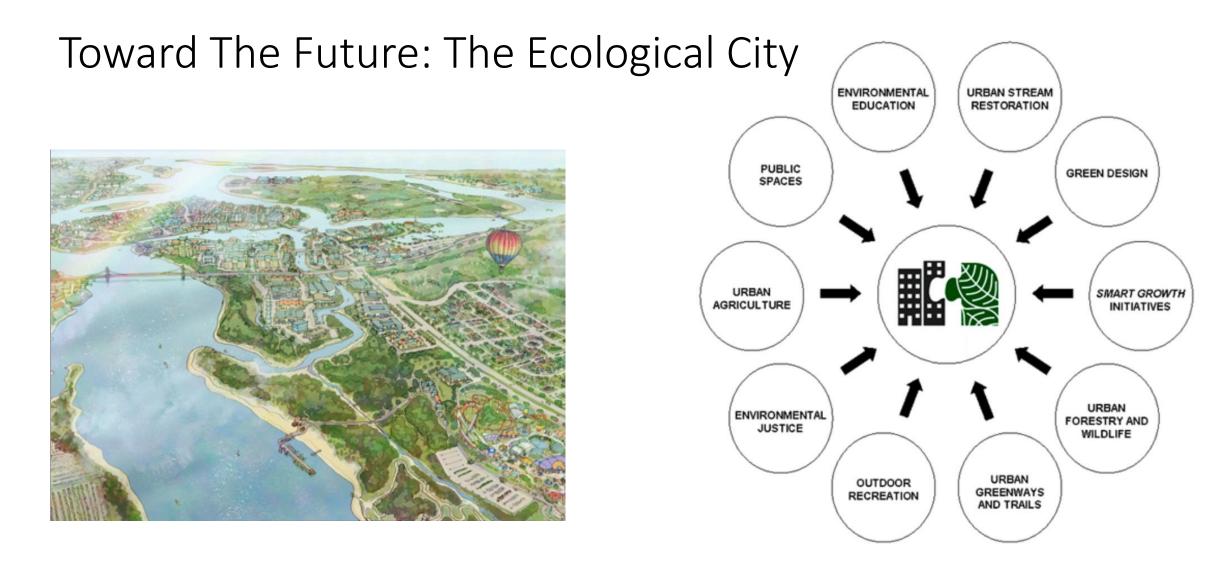
The catalogue aims to lay out the options for NBS contributing to resilience in cities, allowing for a primary identification of potential investments. It contains design drawings, good practice examples, implementation considerations, and background material for all main types of urban NBS Published November 4, 2021

Assembling Green Infrastructure Landscape Elements



Assembling Green Infrastructure Landscape Elements





(Diagram from www.ecologicalcities.org)

Summary: Six Points to Reflect Upon

- 1. Urban ecological planning is a type of land use planning but is also a way of thinking about cities
- 2. A vision for a future ecological city is essential for success
- 3. Plan at multiple scales: neighbourhood | city | region
- 4. The ecological network model allows better collaboration between other urban networks such as transportation and drainage networks
- 5. Green infrastructure is the building blocks of ecological networks
- 6. It is essential that your ecological planning vision and policies are included in your master plan