

Alberta Land-use Knowledge Network



June 2020

Natural Infrastructure

The **Land-use Knowledge Network** was launched in 2011 and the **Land Use Planning Hub** in 2018. These two tools continue to grow and support research-based land use decision making throughout the province. If this newsletter was forwarded to you, please consider **subscribing** to our monthly publication.

Review **past issues** of our newsletter



Source: **Construct Connect**

Addressing Climate Change with Natural Infrastructure

Green infrastructure is a network of green spaces or natural ecosystems interspersed throughout an urban environment, and Di Marino and Lapintie (2018) include “waterways, wetlands, woodlands, wildlife habitats and other natural areas” (p. 141) as well as green spaces, parks, and conservation spaces into a definition of green infrastructure. The Friends of the Greenbelt Foundation (FGF, 2017) included technologies that replicate ecosystem functions as a component of green infrastructure as well. Built systems such as porous pavement and cisterns that store and filter storm water are part of this Ontario organization's green infrastructure guide. The FGF suggest green infrastructure that filters water enhances this resource for the benefit of humans, animals, and plants whereas sewage systems are developed only for drainage and often the storm water ends up in the same treatment plants as human sewage. Green et al. (2016) explained that their research concluded that green infrastructure has a positive impact on reducing the costs associated with adapting to climate change and reduces vulnerability to the impact of climate change.

Gill et al. (2007) performed a modelling study to determine the impact of increasing green spaces in the Greater Manchester area of the United Kingdom of which 40% is farmland and 60% consists of ten cities and towns. They estimated that 59% of the urbanized areas were evapo-transpiring surfaces (either some type of vegetation or water) although the town centres exhibited only 20% evapo-transpiring surfaces. Of the vegetated areas, only 12% consisted of tree cover. Using 1961-1990 as a climate baseline, Gill et al. noted that wooded

areas can expect surface temperature increases of 1.5°C to 3.2°C by 2080. Town centres, in contrast, can expect increases of 2°C to 4.3°C. The baseline temperatures for these different environments were a maximum of 18.4°C in the woodlands and 31.2°C in the built up centres (p. 122). Keeping in mind that grass cover may have limited protection since it is highly susceptible to drought, Gill et al. noted that increasing green space in town centres with as little as 10%— by adding trees or roof greening— can maintain the 1990 baseline temperatures and decrease water runoff from 74% to a possible low of 32% (p. 125).

Di Marino, M., & Lapintie, K. (2018). Exploring the concept of green infrastructure in urban landscape. Experiences from Italy, Canada, and Finland. *Landscape Research*, 43(1), 139–149.

Friends of the Greenbelt Foundation. (2017). *A green infrastructure guide for small cities, towns and rural communities*. Green Infrastructure Ontario Coalition

Gill, S. E., Handley, J. F., Ennos, A. R., & Pauleit, S. (2007). Adapting cities for climate change: the role of the green infrastructure. *Built Environment*, 33(1), 115–133.

Green, T. L., Kronenberg, J., Andersson, E., Elmqvist, T., & Gomez-Baggethun, E. (2016). Insurance value of green infrastructure in and around cities. *Ecosystems*, 19(6), 1051–1063.



Natural Assets

Green infrastructure, according to the **Municipal Natural Assets Initiative (MNAI)** is a broad category that includes natural assets and designed and engineered elements that have been created to mimic natural functions and processes in the service of human interests, as depicted in the diagram. Their website includes a list of reasons great reasons for managing and sustaining natural infrastructure in our communities including:

- Natural assets such as aquifers, forests, streams, riparian areas and foreshores can provide municipalities with vital services equivalent to those from many engineered assets.
- Emerging evidence shows that identifying, measuring and managing natural assets as part of an overall asset management strategy can save capital and operating costs and reduce risk.
- Local governments are finding that natural assets are resilient and adaptable to climate change. With effective monitoring, maintenance and rehabilitation now, natural assets can provide service and add value for decades in ways that many engineered assets cannot match.

New on the Land Use Planning Hub

The **Land Use Planning Hub** is an informal network that supports the implementation of Alberta’s regional plans. It is regularly updated with news, resources, and information on regional planning in Alberta. It was launched in 2018 as a complement to the **Land-use Knowledge Network**. Check out the resources and join the conversation.

For more information about the Land Use Planning Hub, contact the website’s coordinator, **Jeff Wiehler**.



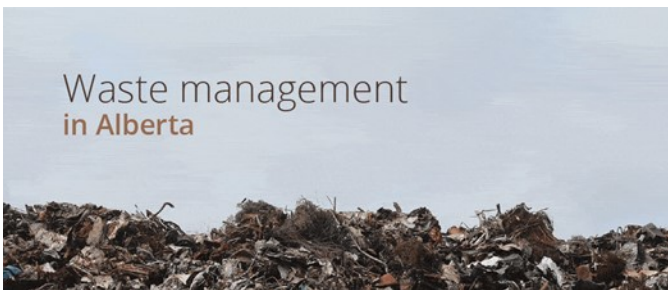
Resources for natural infrastructure planning in Alberta

Five resources – from reports to webinars – to understand and quantify natural infrastructure.



Identifying wildlife with citizen science

To assist with the identification of wild animals in Calgary, a joint project is getting help from citizen scientists in order to analyze photos from remote cameras.



Tracking waste in Alberta's municipalities

An overview of the waste management system in Alberta focuses on the context of waste at home and around the world, and models or solutions to improve diversion and reduce waste.



Canadian Conservation and Land Management Portal

A knowledge network for boreal caribou conservation, wetland best practices, land restoration, and land reclamation.



An Ongoing Request for Feedback

We would appreciate your input on what we can do to provide the tools and resources on topics that align with your 2020 land use planning priorities. Please complete our **two-question poll** so we can customize our planning resources to fit your needs.



The **Land-use Knowledge Network** is a repository of a wide variety of resources to support your land use and planning research. Check out these items...



Benefits of Adopting Natural Infrastructure: A Comparison of Natural and Grey Infrastructure Solutions

This report is intended to inform the decision-making practices of governments, businesses, and organizations who are in a position to influence the choice between engineered and nature-based approaches to infrastructure development. Its core focus is to document the benefits of 'natural infrastructure' (NI) used to address three specific infrastructure challenges, and compares these benefits, values and costs associated with conventional 'grey infrastructure' (GI) development.



Combatting Canada's Rising Flood Costs: Natural infrastructure is an underutilized option

Flood risk can be limited through conservation and restoration of natural infrastructure features, such as ponds, wetlands, and vegetated areas. This report demonstrates how to quantify the benefits and costs of these natural features as a strong complement or a viable alternative to grey infrastructure option for flood mitigation.



Canadian Sustainability Plan Inventory

The University of Alberta's Centre for Sustainable Rural Communities (ACSRC) is proud to announce the launch of the Canadian Sustainability Plan Inventory (CSPI). This searchable online inventory is the most comprehensive collection of sustainability plans in Canada.

The CSPI can be accessed at www.augustana.ualberta.ca/cspi/

News Items

STATEMENT: COP26 Delayed Until November 2021

The COP26 climate summit has been rescheduled to November 1-12, 2021, one year later than originally planned, due to the coronavirus pandemic. President & CEO Andrew Steer said: "Shifting the date of COP26 is understandable, but there can be no let-up in tackling the climate crisis. Just as we have witnessed extraordinary determination and courage in the face of the COVID-19 pandemic, we need a similar commitment to avoid a climate catastrophe."

Integrating Copernicus Climate Data in the Sustainable Asset Valuation

The International Institute for Sustainable Development (IISD) is proud to announce that we are contracting with the Copernicus Climate Change Service (C3S), one of the six thematic information services provided by the EU'S Copernicus Earth Observation Programme. Under the contract, we will connect authoritative data on climate in Europe and the rest of the world to the Sustainable Asset Valuation (SAVi).

Finding Water: Healthy Land, Healthy Stream (Documentary)

A non-profit group of southern Alberta landowners, the Livingstone Land Owners Group released a new documentary video on the sources of Canada's prairie rivers.

'Finding Water: Healthy Land, Healthy Stream' is an exploration of the headwaters of the Oldman River on the eastern slopes of the Canadian Rockies.

This 25-minute documentary film is both a celebration of some of the most beautiful streams anywhere, and a cautionary warning about their vulnerability to our use of the surrounding land.

Events

If you have an event, announcement, or new report that you would like to see included in our monthly newsletter, please email [Linda](#) with the details.

Many of the events noted here have been postponed due to the Covid19 pandemic. We will update our events pages as soon as we receive new information on each event. Stay safe everyone.

June

Date changed and sessions are now completely online

Canadian Water Network: Blue Cities 2020

1-4 June, 2020, online

Miistakis Monday Webinar: Biodiversity Conservation

8 June 2020, online

WRI Webinar: Water Stewardship: Getting Started and a Path Forward

17 June 2020, online

Celebration has been postponed, AGM is now online

North Saskatchewan Watershed Alliance (NSWA) AGM and 20 Year Anniversary Celebration

24 June 2020, online

September

No changes announced yet

Alberta Professional Planners Institute (APPI) Annual Conference: Beyond Success: Growth by Failure

20-22 September, 2020, Lethbridge

Save the Date, no changes announced yet

Western Canada Water Conference and Exhibition 2020

22-25 September, Regina, Saskatchewan

October

Cancelled

Alberta Ecotrust Environmental Gathering: Lead Boldly

1-2 October, 2020, Edmonton

Save the Date, no changes announced yet

FCM's Sustainable Communities Conference

20-22 October, 2020, St. John's, NL

November

Save the Date, no changes announced yet

RMA 2020 Fall Convention & Tradeshow

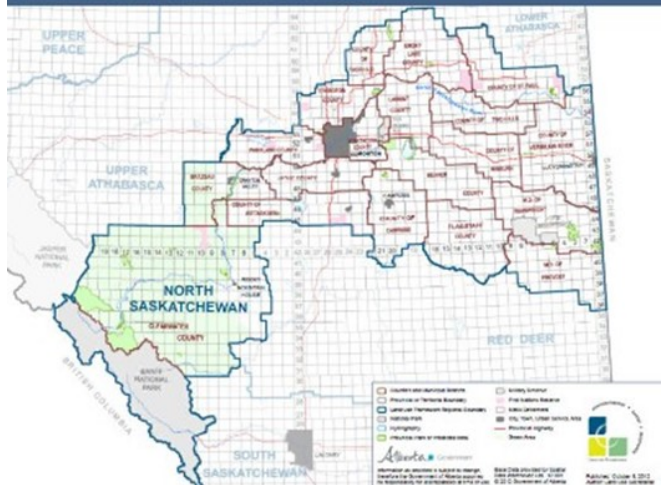
2-5 November, 2020, Edmonton

North Saskatchewan Regional Plan (NSRP)

The North Saskatchewan Region contains a diverse landscape encompassing Rocky Mountain, rolling foothill and prairie parkland ecosystems. The North Saskatchewan Region includes headwaters forests that provide clean water to downstream communities, mountains foothills, and parkland that support a diversity of habitats that provide homes for species at risk and serves as a major source of recreation and tourism.

The North Saskatchewan Regional Advisory Council

North Saskatchewan Region: Counties and Municipal Districts



fRI Research
Informing Land & Resource Management



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