

Community Solutions Network

Smart and multi-solving public spaces

October 2024

Led by:



Lead technical partner:



With funding provided by:



ACKNOWLEDGEMENT OF INDIGENOUS LANDS AND TREATIES ACROSS CANADA

The sacred lands and waterways upon which Evergreen operates and the built communities and cities across the country are the traditional territories, homelands and nunangat of the respective First Nations, Métis Nations and Inuit who are the long-time stewards of these land. These lands are occupied lands and subject to inherent rights, covenants, treaties and self-government agreements to peaceably share and care for the lands and resources across Turtle Island. These regions are still home to diverse Indigenous peoples who are still fighting for their sovereign rights and tirelessly protecting their traditional territories. As uninvited guests who live and work on these lands, we have a responsibility to know the treaties that tie us together, advocate for Indigenous rights and commit to learning our responsibilities to each other.

ACKNOWLEDGEMENTS

This resource was created for the Community Solutions Network led by Alison Herr and written by Angela Parillo and Marielle Nicol with support from Lorraine Hopkins, Ismail Alimovski and Cheryl Gudz. It is supported by secondary research of relevant initiatives across Canada. We are grateful for the knowledge and experience of many experts in these fields who have inspired and informed this research brief and all community members who have participated in our events through the Community Solutions Network program.

The Community Solutions Network is a program led by Evergreen in partnership with Open North. Our team works with communities to build capacity and improve the lives of residents using data and connected technology approaches. We deliver advisory services, workshops and online resources that focus on key areas such as climate resilience, **data governance**, inclusive public space, technology procurement and public engagement. The Community Solutions Network is supported by funding from the Government of Canada. The views expressed in this publication do not necessarily reflect those of the Government of Canada.

EXECUTIVE SUMMARY

This introductory research brief is intended for leaders in communities in Canada who are interested in leveraging data and technological solutions to build multi-solving public spaces. This brief explores the diversity of data and technological innovations that can support better public spaces in communities in Canada. Through low-tech and high-tech examples, this brief showcases the ways in which public spaces improve the community experience.

INTRODUCTION

Public spaces can be multi-solving pillars in a community, providing spaces for people to gather and connect, build **climate resilience** and improve safety, health and well-being. From a community library that provides books, resources, learning opportunities and inclusive events to a green open space or trail network for personal exploration, physical activity and education, public spaces are multi-faceted and diverse in the kinds of services they can provide. Public spaces are an opportunity to improve the neighbourhood experience and create more sustainable and vibrant communities.

Data and technological innovations can be leveraged to maximize the potential of public spaces through information gathering, design planning, automated sensors, modelling, analysis and a host of other solutions. These innovations can extend the reach and expand the opportunities of public spaces by improving connections, disseminating information and education, building climate resilience to address local climate risks and a myriad of other solutions.

Smart innovations can vary from low-tech (such as **nature-based solutions** or the use of simple data collection sensors) to high-tech (such as the use of **machine learning** or predictive analytical tools) solutions that address a particular need. Any solution implemented in a public space should be human-centric and fill a necessary gap to ensure a meaningful and positive outcome that serves its community.

Smart innovation is a broad term that can encompass a myriad of data and technological approaches to support better public spaces. In any smart endeavor, strong **data governance** is important to maintain quality data, storage, security and privacy that align with FAIR (findable, accessible, interoperable and reusable⁴) and CARE (collective benefits, authority to control, responsibility and ethics⁵) principles.

Data and technological innovations support multi-solving public spaces from how community engagement is conducted to understanding and addressing the complexities of building local climate resilience. Well-managed and effective public spaces serve their communities creating more vibrant, inclusive and cohesive neighbourhoods.

Case Study: Energy Pop-up Park Prototype

Energy Pop-Up Park is a prototype of a mobile structure designed by Maciej Golaszewski, a Landscape Architect at Stantec in Vancouver. The goal of the pop-up park is to educate the community on energy consumption and can be moved to different parks and spaces. Visitors can learn about energy principles in interactive ways such as creating energy by pedaling a bike or turning small windmills and solar panels to face the sun and wind.¹ The “energy captured through these activities can be stored in the park batteries and used for a purpose the player chooses, like charging their phone or sharing energy with other players.”² The Energy Pop-Up Park creatively explores energy literacy in an interactive and functional space, “building urban resilience through education.”³

DIGITAL SPACES FOR PUBLIC PARTICIPATION AND ENGAGEMENT

Community engagement and participation refers to the ongoing process of meaningful involvement from all community members around community-based projects. Community engagement is a participatory process that “seeks to include a range of diverse voices working together [...] to ensure that a community’s aspirations, concerns and needs are incorporated into all stages of decision-making.”⁶ This supports transparency, accountability and a shared sense of ownership⁷ to reflect and adapt to the needs of the community.⁸

Community members are the primary users of public spaces so their needs and values should be reflected throughout the planning, implementation, activation and management of a space. Community involvement advances community wellbeing through improved social connections resulting in more productive, healthy and safe communities.⁹

Data and technological innovations have improved the ways in which community members can contribute and seek involvement in public space projects. For example, virtual consultation tools such as online surveys, dedicated consultation websites, live-streaming townhalls and council meetings, and 24/7 virtual chat opportunities provide accessible opportunities for community members to engage and share thoughts and ideas to contribute to different community-level projects. Reciprocal and collaborative tools foster democratic consensus building¹⁰ that reflects the needs, values, interests and feasibility of a project and its community. Digital connections provide accessible and more frequent opportunities for community involvement to provide feedback on a public space project. For example, [Be Heard Regina](#) encourages online community engagement through various digital information sharing and feedback opportunities such as through emailed updates on projects, surveys, polls and comments. The digital website provides a convenient space for anonymous feedback and is moderated by [Bang the Table](#), a third-party organization and owner of the software to ensure secure discourse.

Decision-makers can also leverage innovations to disseminate information to community members as well as gather information from community members using interactive maps, digital StoryMaps and other visualization tools to share and showcase public space projects. For example, a [StoryMap of Okanagan flood events](#) was created to document and share the history of flooding in the region and includes digital flood maps and resources for users to better understand flooding and be more prepared for flood events.¹¹

Digital maps can serve as an inventory of public spaces (see [Evergreen’s toolkit on building a public space inventory](#)) in the community to identify and showcase spaces for increased use but also support users in planning a visit to the space or to share cultural heritage or knowledge about the space. For example, Kamloops, BC maintains an [interactive map of public spaces](#) highlighting public parks, memorial benches and public art embedded with photos and descriptions of each space. Kamloops also has a series of digital maps available for public use including a [Parks, Trails and Bikeways map](#), a [Parks and Sports Fields map](#) and a virtual [Urban Tree Tour](#).

Open data and tools such as digital dashboards contribute to community involvement and regional information sharing. For example, [the Province of New Brunswick’s greenhouse gas emissions dashboard](#) enables users to explore historical data and forecast emissions using interactive data and easy-to-read charts that visualize the information. Open access data portals can be supported by community-led data gathering efforts (such as open

data portals like [DataStream](#) and [Living Lakes Canada](#) and subsequently shared regionally or nationally (such as [Climate Data for a Resilient Canada](#)) for broader use and management.

Data and technological innovations improve the ways in which community members can engage with public spaces. From increased opportunities for sharing feedback and ideas to more accessible information about the value and use of public infrastructure. Public spaces are an opportunity for improved community engagement which builds a stronger sense of ownership and social cohesion.

PUBLIC SPACES FOR ACCESSIBILITY AND INCLUSION

This brief understands the accessibility of a public space as both:

- the means in which community members access the space (considering factors such as location and the transportation options available to visit the space) and
- the ability of the space to be used equitably (considering factors such as the design and services for use by people with different abilities).

Public spaces are for everyone to use and enjoy, providing an opportunity for the participation and inclusion of all community members. Innovations in data and technology have created new opportunities for public spaces to be more inclusive, accessible, safe and equitable. Provincial legislations such as Nova Scotia's [Accessibility Act](#) and Ontario's [Accessibility for Ontarians with Disabilities Act](#) provide a list of targets to eliminate barriers and commitments to establish an accessible province.

Case Study: Multi-Use Path Project on Bowen Island, BC

Bowen Island's Multi-Use Path is a 20-year, ambitious project to create a safe, cross-island pathway that connects with the existing North Shore Spirit Trail to complete over 40km of an all ages and abilities (AAA) pathway. The project is a result of community engagement and feedback encouraging the creation of improved active transportation infrastructure through the [Transportation Plan](#) to create effective connections between people and places as well as increase choices for transportation that support the health of people and the environment. The Multi-Use Path also directly addresses the community interest in creating more "safe and comfortable pedestrian and bicycle facilities" for travel to school.¹² The project aims to address the safety concerns of existing transportation options (only 0.5km have sidewalks), enhance inclusive transportation options and improve health and wellbeing options.

The pathway will be "a 3-metre wide paved bi-directional path that is physically protected from vehicle traffic"¹³ that follows a [collaborative wayfinding strategy](#) for easy navigability, including colourful pavement art installations. The Multi-Use Path Project is an ongoing project that showcases simple and effective innovations that includes high-tech elements in the long-term design and planning (maps) and low-tech elements in the space itself (wayfinding).

Smart technology such as automated lights, accessible touch-screen wayfinding maps, audio hearing loops and auditory stopping stations (bus stops, benches, lamp posts) can create a more welcoming and inclusive public space for all. Data and technological innovations can also be leveraged in the design, implementation and management of a public space using **artificial intelligence** (AI) and aerial imagery to better plan and maintain the space for optimal use. For example, [Urban/Rural Rides](#) is a charity that uses AI-powered software to provide regional ride-share transportation targeting seniors, low-income and people with disabilities.¹⁴

Further, communities can use smart phone applications and digital tools to improve wayfinding and to identify tactile surfaces within the space for improved user experience. **Shared mobility** options also provide an inclusive way to access and use a space, either through shared mobility such as on-demand transit and rideshares or shared micromobility such as bike, e-bike and e-scooter rentals. Shared mobility options increase the number of community members who have access to the space providing improved opportunities for community members to enjoy the space. Additionally, shared mobility reduces the use of personal vehicles and greenhouse gas emissions.

Public spaces should be available and enjoyed by everyone. As such, public spaces should be accessible to the community members they serve through viable transportation options, wayfinding aids and mapping and other opportunities that can be supported through innovative data and technology.

PUBLIC SPACES FOR CLIMATE RESILIENCE

Public spaces are an opportunity to build local climate resilience through the implementation of natural and **green infrastructure**, through innovations in energy use and storage for built infrastructure, and through the expansion and management of **green spaces**. Canada's [National Adaptation Strategy](#) recognizes the importance of tree canopy coverage, urban forests and ecological corridors and includes a target to create 15 new urban parks by 2030.¹⁵ From low-tech approaches like **nature-based solutions** (e.g. green infrastructure such as green roofs on a community centre or rain barrels for a community garden), to sophisticated AI predictive technologies and analysis, there are a many ways that data and technology can be used to build climate resilience through public spaces.

Nature-based solutions “leverage nature and the power of healthy ecosystems to protect people, optimise infrastructure and safeguard a stable and biodiverse future.”¹⁶ Nature-based solutions in public spaces serve multiple purposes. For example, in [Sackville, New Brunswick](#), a naturalized stormwater retention pond collects and stores stormwater, support plants that filter pollutants from stormwater, provides habitats for birds and aquatic animals and is used as a passive park for community enjoyment.¹⁷ Nature-based solutions in public spaces can also share the benefits of natural infrastructure in building local climate resilience with visitors through signage or tours.

Natural infrastructure are natural assets that can be measured and monitored and provide capital value and services for communities. **Natural asset management** creates an inventory of natural assets and their public services to recognize their value and support maintenance planning for the assets.¹⁹ Context-specific assessments of natural and green infrastructure in a region can be used to assess the financial benefits of natural assets. For example, an assessment of the Kettle River Floodplain in Grand Forks, BC estimates that “the floodplain provided between \$500 and \$3,500 per hectare in flood damage reduction during high flow events.”²⁰

Further, data collection and monitoring of natural and green infrastructure can lead to a better understanding of the role nature-based solutions can play in building resilience to local climate risks leading to improved maintenance, management and planning. For example, [Comox, BC](#) implemented an enhancement strategy on Brooklyn Creek after evaluating its benefits using natural asset management.²¹ The assessment of Brooklyn Creek established the creek’s role in securing ecological services that directly supported flood management in the area ensuring the creek maintains its capacity to function as part of Comox’s drainage systems.²²

Another example in Laval, QC is the Oasis du Bergerac. A group of community members came together to lobby the municipal administration to protect a natural area within a zone that was slotted for industrial and commercial development.²³ They were able to demonstrate that the wetlands are vital to several bird species and “help retain runoff and floodwaters from the two streams that run through the area.”²⁴ Due to their efforts, the local city council “placed a renewable two-year reserve on 12-hectares (nearly 30 acres). During this period the municipal authorities will try to acquire the land that makes up this area of ecological interest.”²⁵

The role of natural and built environments in local climate resilience can be better understood through data and technology like remote and digital sensors, aerial and satellite imagery, mapping, surveys and other data collection tools. For example, [the National Capital Region](#) (Gatineau, QC and Ottawa, ON) conducted a tree canopy assessment using aerial imagery and **LiDAR** to identify tree canopy in the region and support decision-making around the benefits of trees and future analysis (such as through the National Capital Commission’s [Forest Strategy](#)).²⁶ Further, tools like AI and machine learning can analyze, interpret and forecast data and information for more informed decision-making to improve climate resilience. For example, AI can be used to help predict wildfire behaviour as leveraged in [Alberta](#) and [British Columbia](#).

Case Study: Evergreen Brick Works, Toronto

Evergreen Brick Works is an example of a public space with climate resilience and nature-based solutions built into its design. The Brick Works is a revitalized brick factory, which today is a collection of buildings, outdoor spaces, ponds and trails. The site is situated in a flood plain, and on July 16th, 2024, experienced the worst flood it had seen in 10 years. Thankfully, the site has numerous nature-based solutions and innovative facets that allow the space to be resilient to natural flooding events. One example is that the buildings’ foundations are made of [Cupolex](#), an engineering solution which raises the floor and helps water, moisture and gases escape from underneath. There are greenways that run parallel to many of the buildings that provide natural corridors for local wildlife and are designed to slow the flow of stormwater runoff and redirect it to the stormwater ponds. Water cisterns and pervious concrete are a few other examples of innovative built infrastructure that support the climate resilience of the public space.¹⁸

Smart, green solutions in public spaces – from bioswales to increased tree canopy coverage for improved shade to community centres with green roofs and [green energy](#) – are an opportunity to leverage natural and built infrastructure to improve the climate resilience of a community. Evergreen’s [toolkit on creating an inventory of public spaces](#) guides communities in understanding existing public assets. Further, Evergreen’s research brief on [Innovations in data collection, monitoring and analysis](#) discusses the value of natural assets in building climate resilience and other data and technological tools that can be leveraged by communities in their public spaces.

CONCLUSION

Public spaces offer a meaningful way to address many of the complex challenges facing communities across Canada. By harnessing the power of data and innovative technologies, we can create solutions that not only address today’s issues but also strengthen communities for the future. Whether through low-tech approaches like integrating nature-based solutions or advanced innovations like aerial imaging, the possibilities are vast. These tools help shape public spaces that are inclusive, accessible, and resilient to climate change, fostering environments where everyone can thrive.

GLOSSARY

Artificial Intelligence (AI) is the “simulation of human intelligence in programmed machines.”²⁷ AI can play a major role in climate adaptation, mitigation and resilience efforts by collecting and interpreting large datasets in real time, which can help detect early warnings for severe weather occurrences and implement prevention efforts earlier.²⁸

Climate resilience describes the capacity to respond to and adapt to or cope with climate change impacts and is “the capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, and learning and transformation.”²⁹

Data Governance is the process of managing the integrity, use, security and availability of data. Data governance can organize our complex and evolving relationship with data as a matter of public policy.³⁰

Green infrastructure is infrastructure that manages and controls elements of the natural vegetative systems and green technologies that collectively provide society with a multitude of economic, environmental, health and social benefits.³¹

Green space refers to green infrastructure, natural spaces, open space or engineered green spaces that promote health and climate change mitigation.³²

LiDAR (Light Detection and Ranging) is an active remote sensing technology used to map the earth’s surface.³³

Machine learning is a form of artificial intelligence where computers use data and algorithms to “learn” over time, improving the performance of tasks over time and mimicking how humans learn.³⁴

Natural asset management is an approach that recognizes the benefits natural assets in decisions about the management of infrastructure assets.³⁵

Nature-based solutions leverage nature and the power of healthy ecosystems to protect people, optimise infrastructure and safeguard a stable and biodiverse future.³⁶

Open data is data that anyone can access, use and share. Any person, business or organization can use open data to bring about social, economic and environmental benefits.³⁷

Shared mobility is transportation shared among users. A range of mobility solutions and business models shared either concurrently or sequentially by users. Any form of transportation that is not people using their own personal vehicles (like a private car or bicycle) is a form of shared mobility.³⁸

¹ The Globe and Mail. (2019, July 26). *Five ways smart cities can change daily life in the public realm (for the better)*. <https://www.theglobeandmail.com/business/adv/article-five-ways-smart-cities-can-change-daily-life-in-the-public-realm-for-better/>

² The Globe and Mail. (2019, July 26). *Five ways smart cities can change daily life in the public realm (for the better)*. <https://www.theglobeandmail.com/business/adv/article-five-ways-smart-cities-can-change-daily-life-in-the-public-realm-for-better/>

³ Stantec. (2018, June 19). *Building urban energy resilience through education: The E-Pop Park*. <https://www.stantec.com/en/ideas/content/article/2018/building-urban-energy-resilience-through-education-the-epop-park>

⁴ Wilkinson, M. D., Dumontier, M., Aalbersberg, I. J., Appleton, G., Axton, M., Baak, A., Blomberg, N., Boiten, J., Da Silva Santos, L. O. B., Bourne, P. E., Bouwman, J., Brookes, A. J., Clark, T. W., Crosas, M., Dillo, I., Dumon, O., Edmunds, S., Evelo, C. T., Finkers, R., . . . Mons, B. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data*, 3(1). <https://doi.org/10.1038/sdata.2016.18>

⁵ CARE Principles — Global Indigenous Data Alliance. (2023, January 23). Global Indigenous Data Alliance. <https://www.gida-global.org/care>

⁶ City Builders Glossary – Evergreen Resource Hub. Evergreen Resource Hub. <https://www.evergreen.ca/learn-and-discover/city-builder-glossary/>

⁷ United Nations Peacebuilding. (2023). *Community Engagement Guidelines on Peacebuilding and Sustaining Peace*. United Nations. https://www.un.org/peacebuilding/sites/www.un.org.peacebuilding/files/documents/un_community_engagement_guidelines.august_2020.pdf

⁸ National Collaborating Centre for Determinants of Health. (2013). *A Guide to Community Engagement Frameworks for Action on the social determinants of health and health equity*. National Collaborating Centre for Determinants of Health, St. Francis Xavier University. https://nccdh.ca/images/uploads/Community_Engagement_EN_web.pdf

⁹ Parkin, A., Ayer, S., & Environics Institute for Survey Research. (2022). Connection, Engagement and Well-being. In *A Report From the 2022 Social Capital in Canada Study*. https://www.environicsinstitute.org/docs/default-source/default-document-library/env-canadiansocap-full-eng-v04_final.pdf?sfvrsn=f1e69675_0

¹⁰ Center for Collaborative Planning. (n.d.). *Collaborative Approaches to Decision-Making*. <https://www.conservationgateway.org/ConservationPlanning/partnering/cpc/Documents/Collaborative%20Approaches%20to%20Decision.pdf>

¹¹ Okanagan Basin Water Board. (2020, May 6). *Okanagan Water Board launches website, helping valley prepare for future flooding*. <https://obwb.ca/okanagan-water-board-launches-website-helping-valley-prepare-for-future-flooding/>

¹² Urban Systems Ltd. (n.d.). *Bowen Island School Travel Plan*. Bowen Island Municipality. <https://bowenisland.civicweb.net/document/226503/>

¹³ Bowen Island Municipality. (2024, April 11). *Multi-Use Path Project - Bowen Island Municipality*. <https://bowenislandmunicipality.ca/our-government/capital-projects/multi-use-path-project/>

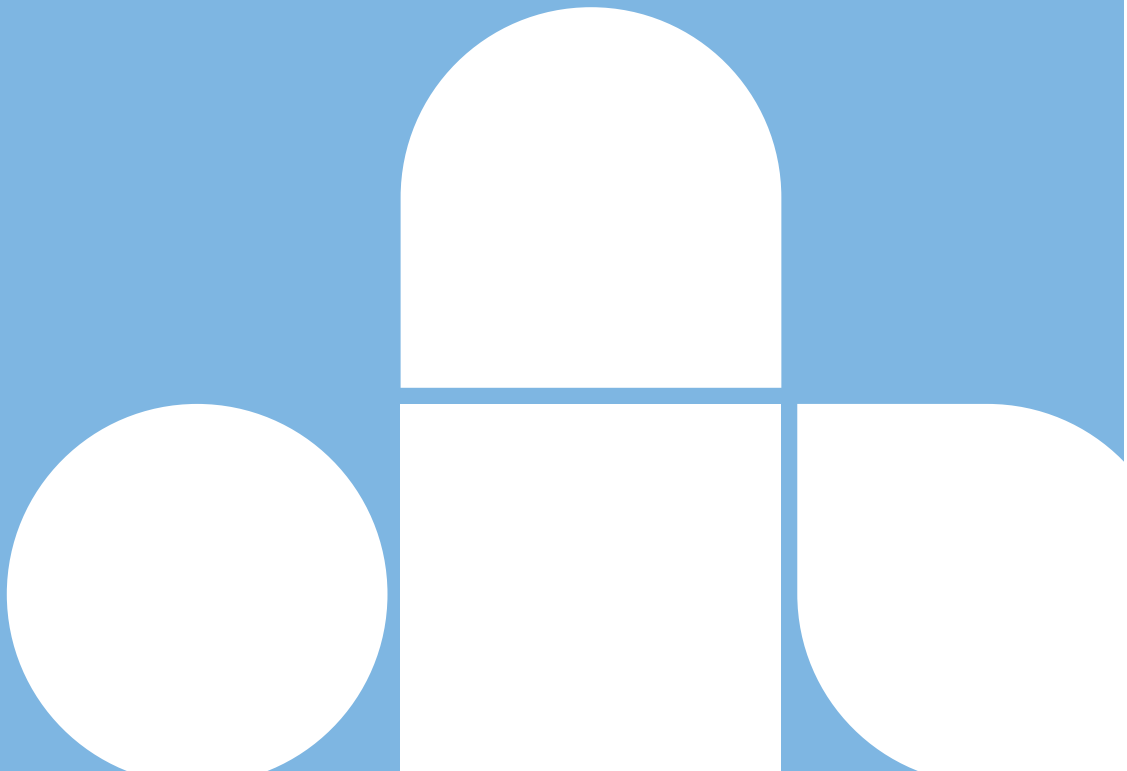
¹⁴ Silberman, A. (2024, May 27). N.B. commits \$2M to launch AI-powered volunteer ride platform. *CBC*. <https://www.cbc.ca/news/canada/new-brunswick/nb-commits-2m-ai-powered-volunteer-ride-platform-1.7216085>

¹⁵ Government of Canada. 2023. "Canada's National Adaptation Strategy." 2023. https://publications.gc.ca/collections/collection_2023/eccc/en4/En4-544-2023-eng.pdf

¹⁶ International Union for Conservation of Nature. (n.d.). *Nature-based Solutions*. IUCN. <https://iucn.org/our-work/nature-based-solutions>

- ¹⁷ Natural Infrastructure NB. (n.d.). *This is a Naturalized Stormwater Retention Pond*. <https://www.naturalinfrastructurebc.ca/wp-content/uploads/2020/01/Sackville-Pond-Interpretation-panel-1.pdf>
- ¹⁸ Evergreen. (2024, July 16). *Managing floods with green design at Evergreen Brick Works* - Evergreen. <https://www.evergreen.ca/stories/managing-floods-with-green-design-at-evergreen-brick-works/>
- ¹⁹ Brooke, R., O'Neill, S. J., & Cairns, S. (2017). Defining and scoping municipal natural assets. <https://mnai.ca/media/2018/02/finaldesignedsept18mnai.pdf>
- ²⁰ BC Ministry of Municipal Affairs and Housing, Union of BC Municipalities, & Asset Management BC. (2019). *Integrating Natural Assets into Asset Management*. <https://www.assetmanagementbc.ca/wp-content/uploads/Integrating-Natural-Assets-into-Asset-Management.pdf>
- ²¹ BC Ministry of Municipal Affairs and Housing, Union of BC Municipalities, & Asset Management BC. (2019). *Integrating Natural Assets into Asset Management*. <https://www.assetmanagementbc.ca/wp-content/uploads/Integrating-Natural-Assets-into-Asset-Management.pdf>
- ²² The Partnership for Water Sustainability in BC. (2018). *Assessing the worth of ecological services using the ecological accounting process for watershed assessment: Brooklyn Creek demonstration application in the Comox Valley*. Brooklyn Creek Watershed Society. https://brooklyncreek.ca/wp-content/uploads/2019/04/EAP-Demonstration_Sep2018.pdf
- ²³ Nature Quebec, & Jacques, M.-H. (2024). *Nature-based climate solutions for municipalities*. Nature Quebec. https://naturequebec.org/wp-content/uploads/2024/05/GU_municipalites_ENSM_2024_ENG_HR.pdf
- ²⁴ Nature Quebec, & Jacques, M.-H. (2024). *Nature-based climate solutions for municipalities*. Nature Quebec. https://naturequebec.org/wp-content/uploads/2024/05/GU_municipalites_ENSM_2024_ENG_HR.pdf
- ²⁵ Nature Quebec, & Jacques, M.-H. (2024). *Nature-based climate solutions for municipalities*. Nature Quebec. https://naturequebec.org/wp-content/uploads/2024/05/GU_municipalites_ENSM_2024_ENG_HR.pdf
- ²⁶ National Capital Commission. (2019). *Tree Canopy Assessment: Canada's Capital Region*. https://ncc-website-2.s3.amazonaws.com/documents/FINAL_Tree_Canopy_Assessment_EN.pdf
- ²⁷ Smart Cities Glossary - Evergreen Resource Hub. Evergreen Resource Hub. <https://evergreen.ca/resource-hub/resources/smart-cities-glossary/>
- ²⁸ Fighting climate change with the AI for the Planet Alliance. (2023, April). UNESCO. <https://www.unesco.org/en/articles/fighting-climate-change-ai-planet-alliance>
- ²⁹ Intergovernmental Panel on Climate Change. 2022. "Annex II - Glossary - Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change." https://archive.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-AnnexII_FINAL.pdf
- ³⁰ Smart Cities Glossary - Evergreen Resource Hub. Evergreen Resource Hub. <https://evergreen.ca/resource-hub/resources/smart-cities-glossary/>
- ³¹ What is Green Infrastructure? (n.d.). Green Infrastructure Ontario. <https://greeninfrastructureontario.org/what-is-green-infrastructure>
- ³² Kingsley, M. & EcoHealth Ontario. (2019). Commentary – Climate change, health and green space co-benefits. *Health Promotion and Chronic Disease Prevention in Canada: Research, Policy, and Practice*, 39(4), 131–135. <https://www.canada.ca/en/public-health/services/reports-publications/health-promotion-chronic-disease-prevention-canada-research-policy-practice/vol-39-no-4-2019/climate-change-health-green-space-co-benefits.html>
- ³³ LidarBC. (2024, February 13). Province of British Columbia. <https://www2.gov.bc.ca/gov/content/data/geographic-data-services/topographic-data/lidarbc>
- ³⁴ Evergreen. (2023). Smart resilience for Canadian municipalities. In Evergreen Resource Hub. <https://evergreen.ca/resource-hub/wp-content/uploads/2023/11/csn-research-brief-smart-resilience-nov-2023.pdf>
- ³⁵ Brooke, R., O'Neill, S. J., & Cairns, S. (2017). Defining and scoping municipal natural assets. <https://mnai.ca/media/2018/02/finaldesignedsept18mnai.pdf>
- ³⁶ International Union for Conservation of Nature. (n.d.). *Nature-based Solutions*. IUCN. <https://iucn.org/our-work/nature-based-solutions>
- ³⁷ City Builders Glossary – Evergreen Resource Hub. Evergreen Resource Hub. <https://www.evergreen.ca/learn-and-discover/city-builder-glossary/>
- ³⁸ Smart Cities Glossary - Evergreen Resource Hub. Evergreen Resource Hub. <https://evergreen.ca/resource-hub/resources/smart-cities-glossary/>

evergreen.ca



Led by:



Lead technical partner:



With funding provided by:



Infrastructure
Canada

Canada