FUTURE CITIES CANADA

REIMAGINING PUBLIC SPACES

Accessible Public Spaces for All

A Practitioner's Toolkit

October 2022

EVERGREEN

ACKNOWLEDGEMENT OF INDIGENOUS LANDS AND TREATIES ACROSS CANADA

Evergreen and Future Cities Canada respectfully acknowledge that the sacred lands upon which we operate, 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 lands. We acknowledge that these 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 and we are grateful to have the opportunity to live and work on these lands.

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WHAT'S INSIDE

PREFACE

Communities across Canada are rich in public spaces of all kinds and sizes. These spaces are essential social and environmental infrastructure that can become a powerful lever towards building more sustainable communities for all. At their best, these physical spaces, part of the civic commons, foster greater livability, vibrancy, belonging and engagement. Positive outcomes range from stronger connection, wellbeing and community, to improved climate resilience, safety, inclusion and diversity. However, it can be challenging for communities to understand how to better tap into the potential of these spaces in ways that work for them.

Public Spaces are....

Areas or places that are open and accessible to all people, including streets, public squares, parks, beaches and civic spaces. Successful public spaces are designed with all residents in mind and allow people to interact with these spaces in different ways. Great spaces enhance livable cities by supporting a sense of connection, individual and social wellbeing, and community expression, identity and diversity.

Civic commons is a term to describe a network of public places and facilities that enable communities to learn, celebrate, express collective actions, collaborate and flourish, together. Can include libraries, parks, community centres, squares and more.

WHY THIS TOOLKIT

Public spaces are intended for everyone. Smart cities explore tech-enabled solutions through resilient, inclusive and collaborative processes that are human-oriented and welcoming for all people. Communities across Canada want to ensure that people of all abilities feel welcome and can participate as fully as possible, with dignity, respect and independence. At its heart, "accessibility is a human rights issue" highlighted Thea Kurdi of DesignABLE when interviewed. Many efforts have been made to make public spaces more accessible, but people with disabilities still face barriers and limitations in these places. Recognizing that we still have a long way to go towards inclusion of people with disabilities, communities across Canada are seeking innovative and smart ways to create inclusive public spaces for all ages and all abilities. The design of public spaces offers great potential "to facilitate independence, participation and wellbeing for a growing proportion of people. In a world in which we live 30 years longer than people did 100 years ago and survive illness and injury at record rates, most of us will experience at least periods of functional limitation in the course of our lives. It is not about "special" anymore."[1] Thea Kurdi of DesignABLE echoes this saying, "There's nothing more integral to successful, responsible and sustainable design than accessibility because disability is part of the human experience; we are all born with or get situational, temporary and long-term disabilities throughout our lives due to illness, accident or aging". Inclusive public spaces will benefit us all.

The **Accessible Public Spaces for All** toolkit is designed to support you and your team in understanding the elements of inclusive public spaces to better equip you to champion effective inclusion strategies in your project. It builds a foundation for prioritizing the engagement of people with disabilities in your processes which will inform designs to better meet the needs of diverse human users. "A well-designed public space brings all people together and plays an integral role in shaping a city. Public spaces are designed for people, and it's the people in public spaces that bring them to life."[2] Finally, it helps you to explore various elements of public space design, with innovative and smart solutions for accessibility, including data and connected technologies. By using this toolkit, your community has the opportunity to move forward with confidence to tackle inequities for people with disabilities, and to create public spaces for all of us.

The toolkit includes easy-to-understand tools for you to work through and take action on as you work towards inclusive public spaces where all will feel welcome. These tools cover three main themes:

1. **Introduction to Inclusion**
2. **Engaging People with Disabilities**
3. **Inclusive Innovation for Public Spaces**

Smart cities are resilient, inclusive and collaboratively-built cities that use technology and data to better the quality of life for all people.

Accessibility is the design of products, devices, services, or environments for people who experience disabilities.

Disabilities are an impairment or functional limitation that reduces someone's full involvement in society because of barriers they face

Barriers means "anything that hinders the full and equal participation in society of persons with an impairment, including a physical, mental, intellectual, cognitive, learning, communication or sensory impairment or a functional limitation. Barriers include anything physical, architectural, technological or attitudinal, transportation, anything that is based on information or communications, or anything that is the result of a policy or a practice that hinders this participation."

Inclusion is the "meaningful participation in all aspects of society with access to services and opportunities for persons with disabilities equal to that of people without disabilities; this requires active removal of barriers and provision of disability-related supports".

1 Institute for Human Centred Design, *Inclusive Design Cheat Sheet*, 2022, Available at https://ihcd-api.s3.amazonaws.com/s3fs-public/file+downloads/Inclusive+Design+Cheat+Sheet+6+18.pdf.
2 "Bringing the public into public spaces" (blog post), *Municipal World*, September, 2017. https://www.municipalworld.com/feature-story/bringing-the-public-into-public-spaces/

HOW TO USE THIS TOOLKIT

This toolkit is best used in the early stages of considering a public space project, as well as throughout the process as a reference. It can be useful in fostering a shared understanding of inclusive public spaces and in assessing how you are doing and where you aim to go from tech-enabled solutions to low-tech design strategies. It should complement and enhance other strategies and aspects for your public space project.It is most useful to work through with your team and key stakeholders collaboratively, bringing in a range of perspectives to build alignment and understanding. It is especially important to work through with people with lived experience, as highlighted in Tool 2. They are the experts of their own experiences. You will want to find authentic ways to understand their needs, priorities and preferences, as well as their concerns.

This resource is intended for leaders in communities in Canada of all sizes who are seeking to ensure they create inclusive public spaces for all. These include municipal staff, elected officials and leaders at other organizations who are working on accessibility, urban issues, smart solutions, connected technologies or data. It is meant to be an introduction and springboard for your accessibility journey, rather than a comprehensive or technical guide (see Resources at the end for more detailed guides).

We know that each community is unique, with its own strengths, assets and challenges. Communities and their leaders are invited to use the tools as they wish (they complement each other), to explore a range of options and craft their own public space initiative. **Use what works for you and feel free to adapt or expand along the way**. You are encouraged to explore the wide range of options and get creative in your unique approach to move your project forward.

Creating inclusive public spaces in your community is imperative in fostering connection, safety, belonging, health and resiliency for everyone.

Let's explore how to welcome people of all abilities to public spaces.

The journey towards more inclusive public spaces begins with deepening our understanding of disability, accessibility and inclusion. Designing for inclusion is a human-centred design process, with the user at the centre, regardless of ability. Canada's new Accessible Canada Act defines disability as "**an impairment or functional limitation that reduces someone's full involvement in society because of barriers they face.**"[3]. Disability is not a personal attribute or health condition but rather it is "a multi-faceted term [that] covers situational impairments, activity limitations, and participation restrictions [...]. It reflects the complex ways in which people interact with society."[4] Over our lifetimes, many of us will experience some kind of functional limitation, whether temporary, episodic, situational or permanent, from injuries and illness, to the impacts of aging.

Over 6 million Canadians, 22% of those over the age of 14, have at least one disability, and they experience higher levels of poverty than average[5]. People with disabilities may also be part of other under-served groups, experiencing a combination of barriers and impacts shaping their experiences. Accessibility in public spaces should be considered as a part of overall diversity, equity and inclusion efforts to work towards a cohesive inclusive approach.

DISABILITIES ARE DIVERSE

There are a range of disabilities that people face that can impact participation and movement, and some people experience more than one. Some disabilities are visible while many may not be obvious. Disability changes through a person's lifetime and may be acute or chronic and can include[6]:

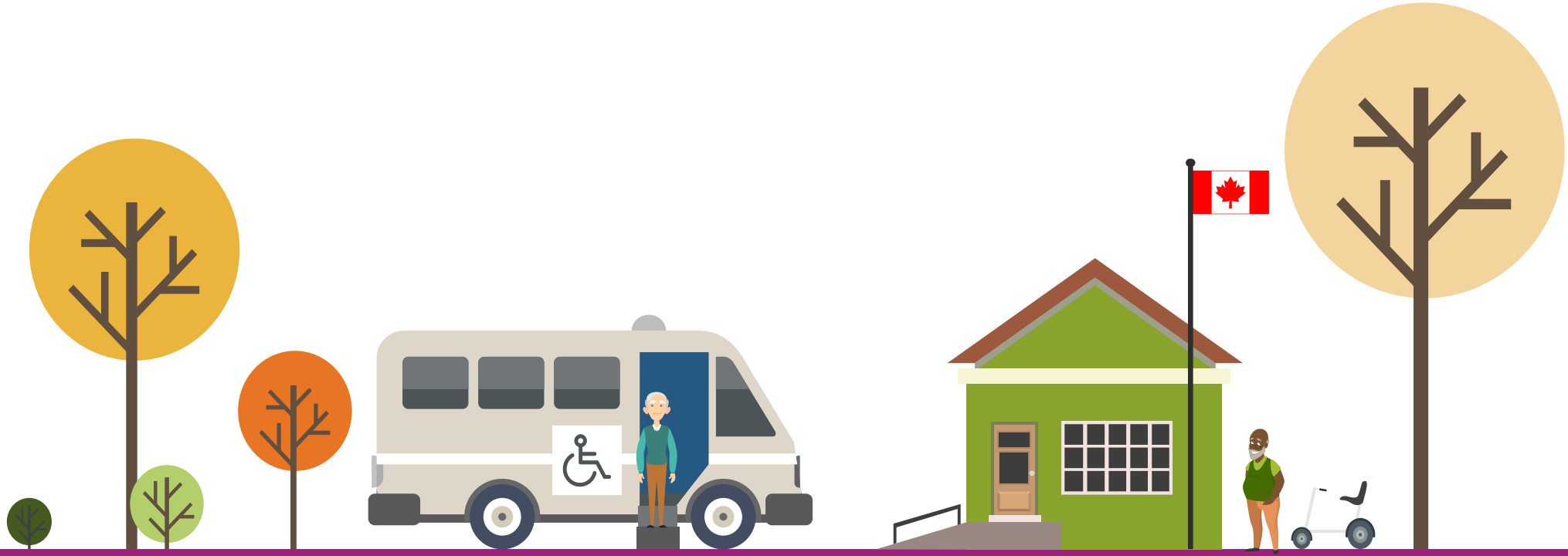
- Mobility limitations (e.g., use of a wheelchair, cane, walker, amputees, fatigue)
- Vision limitations (e.g., blind, use of a service animal)
- Hearing limitations (hard of hearing, sign language speaker and d/Deaf)
- Other physical limitations (e.g., Epilepsy, Brain injuries, chronic pain, dexterity/flexibility challenges, gastro-intestinal disorders, diabetes)
- Cognitive, Developmental & Intellectual and Learning limitations (e.g., Down syndrome, cerebral palsy, autism, dyslexia, memory loss)
- Communication limitations (e.g., speech impairments, aphasia, reliance on picture/letter boards or assistive devices)
- Mental health-related limitations (e.g., PTSD, Anxiety, Depression)
- Chemical sensitivities (e.g. adverse reactions to perfumes, plants, smoke)

The **Inclusive Design Assessment** is designed to help you dive into guiding principles for accessible and inclusive design, providing a framework for you to assess your own progress and start thinking about how to improve the design of your public space. It will also help provide a regulatory overview to refresh your understanding of important legislation and guidelines to keep in mind. This will help set the stage for you to develop public spaces that are "Accessible by Design", ideally exceeding what the law requires. Work through this tool in collaboration with your team and key stakeholders to build alignment and shared understanding.

3 Government of Canada, "Summary of the Accessible Canada Act", *Employment and Social Development Canada*, 2020. https://www.canada.ca/en/employment-social-development/programs/accessible-people-disabilities/act-summary.html.
4 Microsoft, Inclusive 101: *Inclusive Design Toolkit*, 11, 2016. Available here: https://www.microsoft.com/design/inclusive/
5 Government of Canada, "Towards and Accessible Canada", *Employment and Social Development Canada*, Accessed Aug. 23, 2022. https://www.canada.ca/en/employment-social-development/programs/accessible-canada.html.
6 Definitions consolidated from: Lisa Kovac, "Definitions of Disability Across Canada", *Accessibility for Ontarians with Disabilities Act*, Jan. 6, 2021.https://aoda.ca/definitions-of-disability-across-canada/; "What is disability?", *OHRC Website*, 2022. https://www.ohrc.on.ca/en/policy-ableism-and-discrimination-based-disability/2-what-disability; "Appendix B – Identifying disability types", *Canadian Survey on Disability, Statistics Canada 2017*, 2018. https://www150.statcan.gc.ca/n1/pub/89-654-x/2018001/app-ann-b-eng.htm; "Understanding the Act", *Human Rights Commission*, 2022. https://www.accessibilitychrc.ca/en/understanding-act.

TIPS

- ✓ Prioritize inclusion and accessibility from the very start, including in the pre-planning stages, for greatest success. Start too late and it will become much harder.
- ✓ Strive for not only physical accessibility but social inclusion and belonging for all.
- ✓ Put guiding legislation, frameworks and best practices into practice (see Resources). Apply accessibility guidelines for your local area.
- ✓ Develop projects with enough time and budget to achieve deep engagement and high accessibility standards. Be sure to research best practices and guiding legislation and frameworks.
- ✓ Get leadership on board as champions for accessibility; engage local political leaders to advocate.
- ✓ Get to know the accessibility standards and follow them (municipal) – there are lots of technical details to consider.

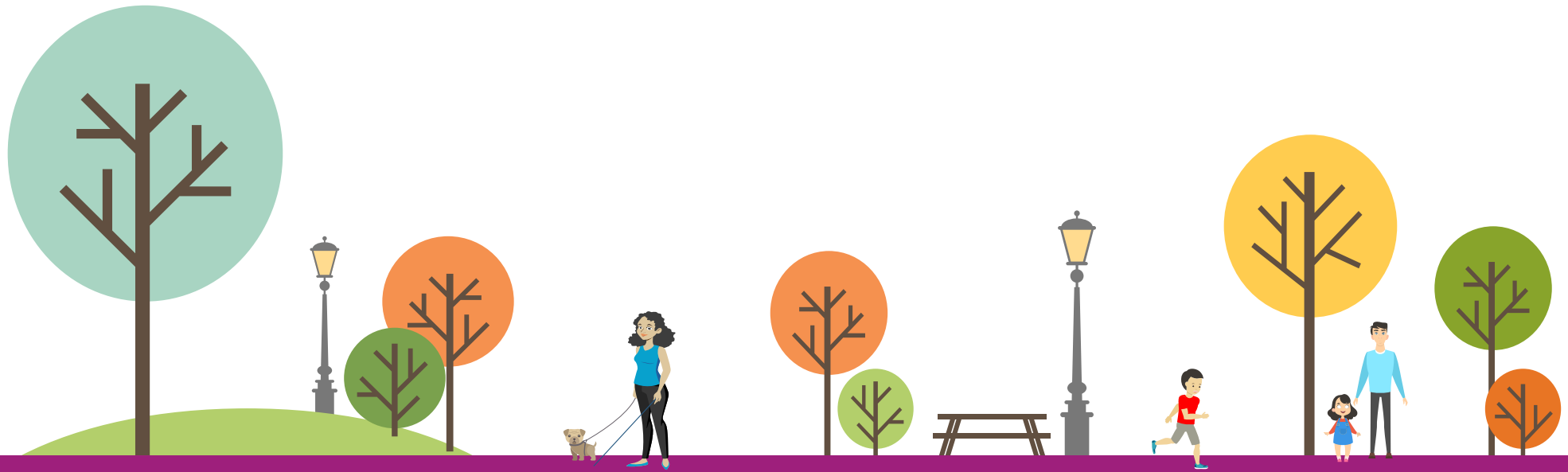


Awesome Accessible Views in Peggy's Cove

The popular site of Peggy's Cove, Nova Scotia, has opened up an accessible viewing platform and boardwalk to allow visitors of all abilities to get close to the water and take in the view of the iconic lighthouse and picturesque rocks. Responsive to input from the community members with and without disabilities, the site also boasts accessible washrooms, with child and adult change tables, accessible parking and access to a local restaurant and the nearby village. This visionary project that blends into the site has garnered positive feedback from people with disabilities and recently achieved RHFAC Gold (Rick Hansen Foundation Accessibility Certification).

Accessible Play Spaces for All Children in Toronto

At Holland-Bloorview Kids Rehabilitation Hospital in Toronto, Ontario, the Spiral Garden brings children with and without disabilities together for a range of programs. The site, the staffing model and the activities are all designed to be inclusive so all children can participate successfully, through facilitated programs. Innovative ideas abound in this play space, including accessible hand-wash stations; an accessible gazebo, along with water, nature and arts play. Also onsite is the state-of-the-art accessible play scape for hospital clients and students. The space promotes creativity through chalkboards and music elements, along with fully accessible swings, slides and even a wheelchair swing. Kids can get up close to nature on the accessible site, and the safe rubberized play surfaces also echo themes from nature. The design was rooted in engagement with young clients, their families and their teachers, clinicians and other staff and volunteers.



INTRODUCTION TO INCLUSION
Tool 1: Inclusive Design Assessment

Universal design is a globally accepted standard for accessibility around the world. Seven principles were established in 1997 to outline the principles of universal design – design for all. More recently, eight goals or outcomes for applying these principles in practice have been outlined to support the movement towards an inclusive and accessible world for all. "Universal design also includes making a place understandable for people, so they can build a cognitive map – both in signage and perceptions around who belongs", notes landscape design consultant Heidi Campbell University. Design promotes community interaction for all ages.

In collaboration with key stakeholders and people with lived experience (see Tool 2), review the principles, rank your current application of each and note how you might do better in your public space. As you move forward, use the goals to check your progress towards inclusion for people with disabilities.

Universal Design Principles[7]

Universal Design Principle	Principle in Practice	Doing Better
In a public space project	How well are you currently applying this?	Describe key areas for improvement and any ideas
1. Equitable Use Allow for a variety of users to easily utilize the same structure. For instance, a universally designed playground should offer options of multi-generational play as well as opportunities for users of all physical and mental abilities.	Not at all	
2. Flexibility in Use Accommodate a wide range of individual abilities and preferences, such as an adjustable height desk at a library which can be used from a seated or standing position.	Not at all	
3. Simple and Intuitive Use Make it easily understood with minimal user experience, knowledge, or language skills. For example, simple signage is easy for people of all ages to interpret.	Not at all	
4. Perceptible Information Communicate necessary information regardless of the user's sensory abilities (e.g. sight or sound) and the surrounding ambient conditions (e.g. background noise or dim lighting). For example, use a raised, tactile warning alerting of an intersection or the edge of a train platform.	Not at all	
5. Tolerance for Error Limit adverse consequences and hazards of unintended actions or accidents. For instance, a border along a trail to separate it from bordering wildlife or steep slopes may account for tolerance of error for those who are physically unable to see or respond to potentially dangerous features while using the trail.	Not at all	

7 Adapted from: Chester County Planning Commission, "Universal Design for Public Spaces", *Planning eTools*, Accessed Aug. 15, 2022. https://www.chescoplanning.org/MuniCorner/eTools/18-UniversalPublic.cfm

Universal Design Principle	Principle in Practice	Doing Better
In a public space project	How well are you currently applying this?	Describe key areas for improvement and any ideas
6. Low Physical Effort Allow for the equitable use for all individuals. An example of this is seamless transition surfacing for playgrounds or flooring in a public space.	Not at all	
7. Size and Space for Approach and Use Provide appropriately sized spaces for all users of varying body sizes, postures, and mobility. For instance, an extra-wide paved trail would permit a variety of recreational uses for users of all abilities.	Not at all	

Universal Design Goals[8]

Checking your progress towards these goals will help you stay focused on building a truly inclusive public space:

Body Fit: Are a wide range of body sizes and abilities accommodated?

Comfort: Have demands been kept within desirable limits of body function and perception?

Awareness: Does the space ensure that critical information for use is easily perceived?

Understanding: Are methods of operation and use intuitive, clear and unambiguous?

Wellness: Does the space contribute to health promotion, avoidance of disease and protection from hazards?

Social integration: Are all groups treated with dignity and respect?

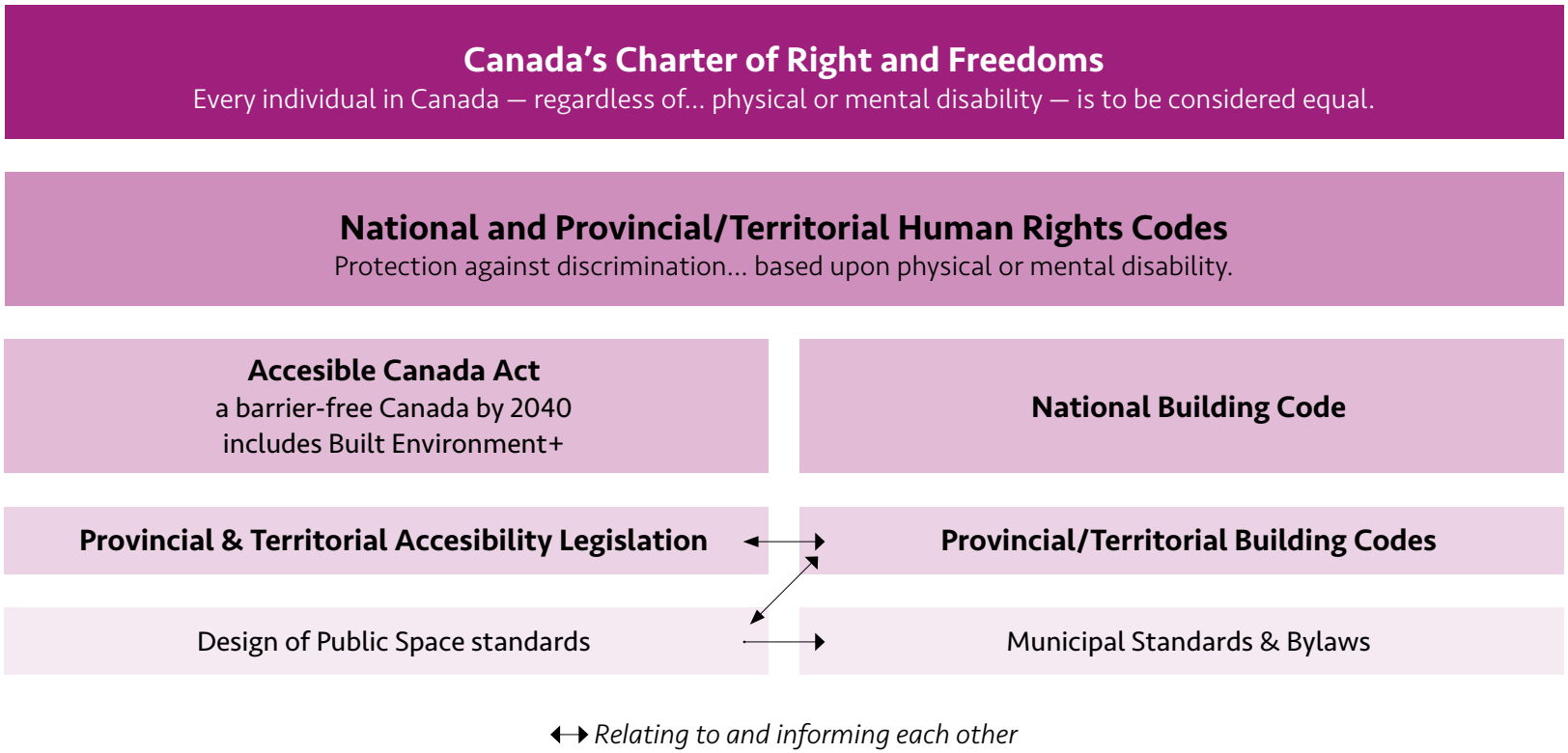
Personalisation: Are opportunities for choice and the expression of individual preferences been incorporated?

Cultural appropriateness: Are cultural values, along with the social and environmental contexts respected and reinforced?

8 "8 Goals of Universal Design", *Universal Design*, 2022. https://universalaccess.ie/universal-design/.

Regulation and Guidelines in Canada

Across Canada, there are legislation and guidelines that outline accessibility requirements for public space projects. Following only local regulations or building codes, which do not cover all aspects of accessibility, may result in gaps for accessibility, as outlined in the overarching Charter of Rights & Freedoms and Human Rights.[9]



9 Adapted from: Thea Kurdi, *RAIC Corporate Affiliates Webinar – Accessibility in Urban Planning* (webinar on YouTube), starting at 12:40 min, Dec. 21, 2020. https://www.youtube.com/watch?v=hrc-Qv1scNVY&t=767s.

International Accessibility Agreements[10]

Canada is part of global agreements governing accessibility for persons with disabilities.

United Nations Convention on the Rights of Persons with Disabilities (CRPD)

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All persons with all types of disabilities must enjoy all human rights and fundamental freedoms.

Sustainable Development Goals (SDG's)

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Accessibility woven through the SDGs
Goal 11: cities and human settlements that are inclusive, with special attention to the needs of those with disabilities and inclusive and accessible public spaces.

10 "Sustainable Development Goals (SDGs) and Disability", *Department of Economic and Social Affairs Disability, United Nations*, Accessed Aug. 18, 2022. https://www.un.org/development/desa/disabilities/about-us/sustainable-development-goals-sdgs-and-disability.html.

Public engagement is an important part of any public space project – engagement that is meaningful, timely and includes diverse voices. Co-creation with community members and key stakeholders is critical to shaping smart, innovative and effective projects that meet and respond to real needs, as highlighted in Evergreen's Toolkit for Public Engagement.[11] However, the inclusion of the voices of people with disabilities has often been inconsistent. It is important, therefore, for project leaders to apply the best practices of involving residents as active participants and equal partners, ensuring that a diversity of voices of people with a range of abilities are included in creating smart cities.

Think of engagement as the starting point for accessibility and inclusion, with the adage "nothing for us without us". People with disabilities are the real experts, with the best perspective on what will truly make a place accessible. Their unique and important perspectives will help to design a better space for everyone and can identify potential future barriers your team may not even notice, preventing costly fixes down the road. "The solution – whether technological or not – comes after sustained and direct engagement with residents – not before[12]." Research has shown that meaningful and effective engagement with Accessibility Advisory Committees (AACs) and persons with disabilities were considered to be a critical factor influencing the success of public space projects. However, effectively engaging people so they have opportunities to contribute meaningfully and influence the project was seen as a considerable challenge."[13] When persons with disabilities can share their direct experience with design teams, it can be a very powerful tool, adding a critical dimension to putting design standards into practice.

The Inclusive Engagement Planning Canvas is designed to help you think through important aspects for meaningful and accessible engagement with people with disabilities. It walks you through some key how-to's to keep in mind and then helps you to plan out who and when to engage in a holistic way. Thoughtfully developing an engagement strategy that includes a diversity of people with disabilities will help you and your team move towards a more inclusive process and project with human-centred smart solutions.

Accessibility Advisory Committees (AAC) advise their municipal councils about the requirements they must follow under Accessibility for Ontarians with Disabilities Act (AODA) standards, and also suggest ways that cities can implement these rules. They also advise city councils on how to complete their accessibility reports. In Ontario, AAC's are required for any municipal-

11 Evergreen Canada, "Universal Design", *City Builder Glossary*, Accessed Aug. 26, 2022. https://www.evergreen.ca/tools-publications/city-builder-glossary/#universal-design.
12 Evergreen Canada, *Toolkit for Public Engagement*, 2020. https://futurecitiescanada.ca/portal/wp-content/uploads/sites/2/2020/10/csn-from-consultation-to-public-engagement-toolkit-oct-2020-eng-compliant.pdf
13 Canadian Urban Institute, *AllAccess Toolkit, 38*, Accessed Aug. 26, 2022. http://allaccesspublicspace.ca/toolkit/

TIPS

- ✓ Create a comprehensive strategy that engages people with disabilities early, often and after. Katherine Deturbide from PEACH Research Unit notes that, "Projects that make an effort to consistently engage with the community tend to be the most successful ones. In large scale projects, community engagement efforts can get lost in the process. Having people involved every step of the way ensures the end product more clearly reflects what is important for them."
- ✓ Listen well with empathy and patience. Mikiko Terashima at PEACH Research Unit reflects, "It is critical that non-disabled people listen to the lived experience of persons with disability how inaccessible public spaces can make their life challenging, even less dignified – to really understand just how important it is to make spaces accessible".
- ✓ People with similar disabilities can have vastly different perspectives and experiences – for example, someone born blind navigates differently than someone newly blind; someone using a cane has different needs than someone using a guide dog. A wide diversity of voices is best.
- ✓ Deepen your learning – the more the designers and installers understand the needs of people with disabilities and what real inclusion looks like, the more likely that they will keep this top of mind throughout the process.
- ✓ Learn from past mistakes and strive to do better.

A Persons with Disabilities Advisory Committee in Vancouver

The City of Vancouver, British Columbia, has established a committee of over a dozen people with disabilities to advise Council on enhancing access for inclusion for persons with disabilities to fully participate in city services and civic life. Members of the Committee guide the city's Accessibility Strategy, as part of the Accessibility Task Force. Their objectives include the built environment and transportation, both key aspects of public spaces, and recent issues have included accessibility of community centres, public washrooms, parks and playgrounds, accessible parking and new developments.

Engaging People with Disabilities Antigonish

In the Atlantic town of Antigonish, Nova Scotia, they are building their Municipal Accessibility Plan through meaningful engagement with people with disabilities, with an aim to remove and prevent barriers in the community. Their process, with extended timelines, included diverse people with lived experience of disabilities. Stakeholder organizations included the Association of Community Living, nurses and caregivers, the public library, groups focused on aging, and Alzheimer's organizations. An Accessibility Committee, site walkthrough's, stakeholder interviews and focus groups, along with offering compensation and accommodations (e.g., live transcription and captioning), created a more inclusive engagement where all voices could be heard. The Engagement Summary and draft Accessibility Plan were shared back with the community.

Accommodations for disability means adjusting rules, policies, practices and places to enable people with disabilities to participate fully (more broadly, it relates to all grounds for discrimination). Accommodation means sometimes treating someone different in order to prevent or reduce discrimination. Organizations have a "duty to accommodate", especially as employers, as outlined in human rights codes.

ENGAGEMENT HOW-TO'S CHECKLIST[14]

Meaningful engagement of people with disabilities should be an important and integrated element of your overall engagement for your public space project. Apply human-centred and co-creation approaches that are key components of excellent engagement processes, to ensure meaningful engagement for all. Check that you are applying these how-to's to make your engagement accessible:

Approach/Strategy

Create a comprehensive community engagement strategy, in consultation with people with disabilities, that clarifies goals, key actions and how input will be incorporated and shared. Continue engagement after completion for ongoing feedback and improvement.

Use approaches that help to dig deeply into what the space means for the people in the community, including those with disabilities, and how they imagine using it. "Space is in a place and the place means something to the community. Understand the community", emphasizes Heidi Campbell at Evergreen.

Ensure that people with diverse disabilities can contribute meaningfully and influence the design throughout the process. Smart solutions can help enable continued and consistent consultation during the entire process.

Build trust through transparency and feedback loops that inform people on how decisions were made and how input was incorporated, being open about scope and scale.

Give enough time for participants to understand and engage, not rushing the development and engagement process.

Ensure the support for accessibility from senior decision-makers.

Allocate a fulsome budget to support the engagement.

14 Adapted from interviews and: CUI, *AllAccess*; Evergreen, *Toolkit for Public Engagement*; Government of Newfoundland and Labrador, *Inclusive Public Engagement Policy*, Accessed: https://www.gov.nl.ca/cssd/files/disabilities-pdf-inclusive-public-engagement.pdf; and Tim Ross, Kelly Arbour-Nicitopoulos, Ingrid M. Kanics, & Jennifer Leo, *Creating Inclusive Playgrounds: A Playbook of Considerations and Strategies, July 2022* Holland-Bloorview Kids Rehabilitation Hospital. Available at: EPIC Lab | Inclusive Playgrounds Playbook | Holland Bloorview.

Methods

Use a range of different methods. These might include site visits, virtual engagement, design charettes, workshops, open houses, public forums, theatre-based methods, images and words, play materials (drawing, building, storytelling, poster boards), artist-facilitated activities, and inter-generational approaches.

Include people with disabilities in discussion/break-out rooms, and aim for only 6-10 in a group.

Use fully accessible locations (entrances, lighting, visual alarms, audio systems, washrooms, accessible signage, etc.), and set up the space with clear sight lines, reserved seating and space for wheelchairs and scooters to move.

Offer accommodation for different user needs. Examples include technical aids, sign language interpreters, and/or live captioning, audible formats, accessible materials, easy access, braille, audio format, large print materials, inclusion of support persons and service animals, and providing meeting materials in advance.

Consider bringing engagement to people with disabilities, in a place where they are or through an agency that serves them.

Offer virtual, smart options which can be an asset for some people with disabilities. Use platforms and tools that are easy to use and have good accessibility features like live captioning, ensuring all materials like surveys and feedback sites are accessible.

Invite people with disabilities to do site audits or walk-throughs.

Participants

Include caregivers, family members and friends who may come to a space with a person with disability. Provide childcare if needed.

Offer to pay people for their time---people with disabilities may have limited resources.

Include people with disabilities and/or their advocates to be part of a task force, committee or advisory board.

Confirm that people with disabilities get to engagement events easily (e.g., public transit, accessible parking, appropriate time of day).

Make your promotional materials accessible, using plain language, advising on accommodations, providing clear directions and providing alternative options to provide input, with both digital and physical communications.

Ensure equitable access and digital literacy for methods using technology.

Charrette is a meeting in which all stakeholders (often from multiple disciplines) participate in activities focused on identifying solutions.

General Best Practices

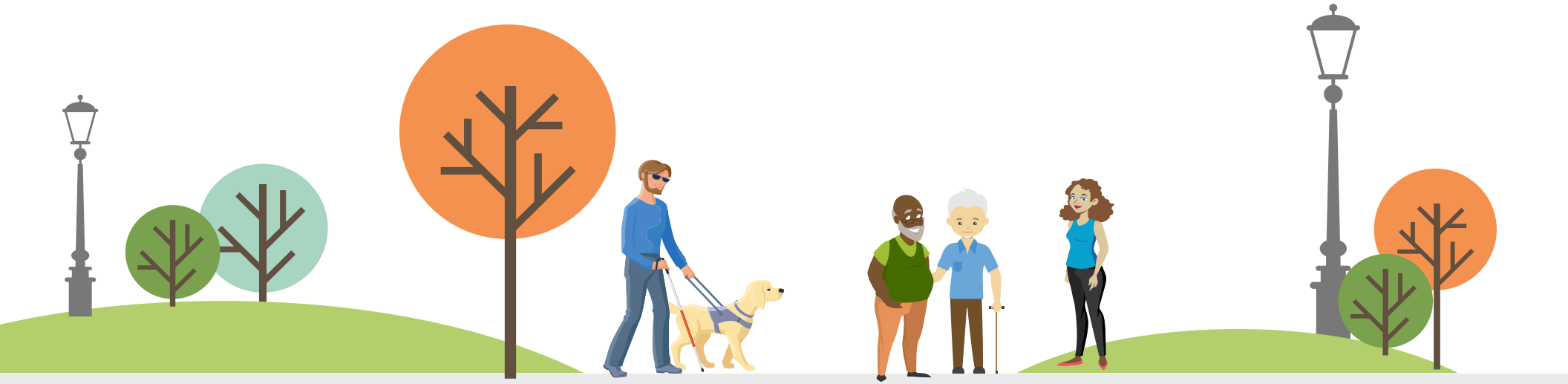
Use engagement facilitators who are skilled in engaging people of diverse abilities and who are familiar with accessibility features.

Hire people with disabilities to be part of your team or as designers or consultants, something often missing in planning[15].

Build your own capacity in engaging people with different abilities, such as learning American Sign Language (ASL) or how to translate the visual into words.

Engage people with lived experience, users of public space, in developing policy and guidelines as well as projects.

Use words with dignity when referencing persons with disabilities, beginning with the person, such as "person who uses a wheelchair" or "person who is blind".



15 Clemence Marcastel, "Are Canada's parks really accessible? (Blog post), *Park People*, July 22, 2019. https://parkpeople.ca/blog/are-canadas-parks-really-accessible/.

People with Lived Experience

Identify individuals and/or groups in your community with lived experience of disability, networks and expertise. "Invite people with lived experience from beginning to end, include in advisory committees, create as many opportunities as possible – really listen to what they're saying because they know the solutions", says Mikiko Terashima at PEACH Research Unit.

PEOPLE WITH LIVED EXPERIENCE	WHO MIGHT YOU ENGAGE?	NEXT STEPS
Aim to engage a diversity of people with lived experience of disability (chronic/acute) who may experience: • Mobility limitations • Visual limitations • Hearing limitations • Other physical limitations • Cognitive, Developmental, & Intellectual and Learning limitations • Communication limitations • Mental health-related limitations • Older adults • Caregivers for those with disabilities • People who use service animals or assistive devices		

KEY STAKEHOLDERS	WHO MIGHT YOU ENGAGE?	NEXT STEPS
Collaborate with key stakeholders, who can help you engage people with lived experience, provide expertise around accessibility and inclusion, and be champions for it. These may include: • Accessibility Advisory Committees • Agencies & organizations working with or representing people with disabilities -start local. (e.g., CNIB, Easter Seals, etc.) • Accessibility Consultants & Specialists • Diversity & Inclusion Committees • Disability Advocates, community activists & champions • Political and institutional leaders • Rehabilitation and education professionals with relevant experience		

WHEN TO ENGAGE

Think through the stages of your project and plan for how you might engage people with disabilities at each stage in a meaningful way. Remember to think about accessibility from a macro viewpoint and a detailed-level one. It is especially important to engage people with disabilities before a place is developed or built.

General Project Phases (initial phases may overlap)	How might you engage people with disabilities at this stage?
Project Design Team Selection (e.g. designers)	
Public Space Project Launch & Pre-Planning (Pre-Design)	
Project Conceptual Development & Site Plan	
Detailed Project Design	
Project Procurement	
Project Build	
Project Evaluation	
Public Space Operations, Maintenance, Feedback & Improvements	
Public Space Programming and Events	

There are many ways to welcome people of different abilities in public spaces, including applying universal design principles (Tool 1) and creating a sense of belonging. Across Canada, and around the world, communities and innovators are developing a range of creative approaches to help achieve inclusion goals. These range from tech-enabled solutions through the emerging world of smart cities, connected technologies and artificial intelligence, to low-tech design strategies, based in established approaches and research. A smart city for people with disabilities is human-oriented, applying digital solutions when useful.

The **Inclusive Solution Explorer** is designed to help you and your community explore innovative and smart solutions for key aspects of public space. It will help you to consider accessibility from the perspective of different types of users, to foster a holistic and empathetic approach. It highlights innovations from across Canada, and around the world, to inspire and catalyze creative thinking. The intention is to prompt your team to think creatively and systemically so that your public space(s) can truly welcome people with disabilities – and everyone. For more ideas and technical guides on accessibility dig into some of the resources at the end of this toolkit, and to refer to your own local legislation and guiding frameworks, and then to put them into practice.

TIPS

- ✓ Think about the user's whole experience, from leaving home to entering and using a public space, to staying and then returning home. "Meaningful access is determined by the user's whole experience of a place or space. It's the ease of use as a whole that determines the true accessibility of a public space. An accessible washroom is of little use to people with disabilities, parents with babies, or seniors with walkers if the connecting pathways, entrances, [etc.] aren't also accessible."[16]
- ✓ Technology can be a useful tool, but don't rely too heavily on the latest app—some people with disabilities don't/can't use some technology or may not have access to it, and some smartphones aren't accessibly designed, creating barriers.[17] Strive for digital inclusion by providing low-cost technology and digital access for people with disabilities, bridging the digital divide.
- ✓ Think about unintended consequences with other aspects of public space. For example, e-scooters and café tables on sidewalks can create barriers and risks for people with disabilities
- ✓ Hire design professionals and planners with experience in accessibility—but expect that they might not fully understand accessibility.
- ✓ Hire a qualified accessibility consultant to work with the designers and all stakeholders.

16 "Bringing the Public", *Municipal World*.
17 Aimi Hamraie, "A Smart City Is An Accessible City", *The Atlantic*, Nov. 6, 2018. https://www.theatlantic.com/technology/archive/2018/11/city-apps-help-and-hinder-disability/574963/.

Blindsquare in a Pedestrian Mall in St. John's

A pilot project in St. John's, Newfoundland and Labrador, is taking advantage of technology to make public space more accessible for people who are blind or partly blind. The navigation app Blindsquare uses GPS technology to provide location information for features in the public realm, and also gives directions to aid in navigation. Working in partnership with the CNIB and Frontier Accessibility, the city aims to learn from the pilot, and improve on some already identified challenges such as the app not working on Android devices, which many people who are vision-impaired use, and not enough consultation with users.

Innovative, inclusive Park in Abbotsford

An aging sports field at Grant Park in Abbotsford, British Columbia has been transformed into an "all in one" amenity with a focus on accessibility. Through deep consultation, they were able to create a place that met the real needs of everyone in their community. As one parent commented, "The new fields [synthetic] at Grant Park are amazing. Not only can we safely push my daughters' wheelchairs around the bases safely, but they can also engage with their team, peers, and coaches in the dugouts," Other features include a picnic shelter and inclusive playground for children of all ages, accessible year-round washrooms, and eight additional accessible parking spots adjacent to the facilities. The project also included environmentally friendly considerations and natural elements into the park, collecting and absorbing rain through the design.

1. User Avatars

Take on the perspective of someone with disabilities to explore the various aspects of your public space project more deeply, and what it would mean to be and feel included. While not a replacement for meaningful engagement of people with disabilities (see Tool 2), you can use these user avatars to help consider people with different types of disabilities. Feel free to create your own based on someone you know. Ideally, work collaboratively and apply a range of perspectives for a more fulsome and varied point of view.

Hannah
Age 23
—
Has chronic back pain and just broke her arm.

Nabil
Age 9
—
Autistic child who is non-verbal and comes with a caregiver.

Marianna
Age 32
—
Is vision-impaired and uses a service animal, and is mother to a 4-year-old child.

Ismail
Age 47
—
Is deaf and uses sign-languange.

Jo
Age 76
—
Uses a walker and has speech challenges.

CREATE YOUR OWN:

—

2. Explore the Innovations

With your user avatar in mind, it is time to think about holistic accessibility and inclusion for your public space project. Have an existing site plan or sketch handy to support your exploration.

Review the following **Areas of Consideration** and imagine your user avatar encountering these in your space, either on their own, or possibly with a friend, a family member or a caregiver. Check out the **Inclusive Innovations** and then jot down your strategies for making the public space one where everyone can feel welcome.

- How can the space foster physical and social inclusion, welcome, interaction and full participation?
- How can the space design foster dignity, respect and independence and keep all users safe?
- What are the barriers for people with disabilities?
- How can the space help people with disabilities feel safe and comfortable?
- How can users get there, enjoy it and stay?

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Area of Consideration[18]	Inclusive Innovations	Your Ideas for Inclusion in Public Space
GENERAL		
Point-to-point accessibility with a barrier-free path of travel	• Comfort zones: Consistently accessible, obstacle-free routes of travel within and to/from a public space. • Avoidance of conflicts with other users like cyclists & drivers Digital accessibility apps: crowdsourcing of rating and reporting on accessibility of places such as ● AccessNow and AXS Map ★ Deafspace Design Guidelines	
Signage	• Accessible signage that includes features such as large, sans-serif fonts at accessible heights (eye level), high tonal contrast and low glare, pictograms, and tactile & braille content (see accessibility guidelines for details) • Accessibility information provided at key junctures (e.g., surface material, width, slopes, accessible routes, amenities) ● Blindsquare accessibility app • Locational QR codes on tactile paths or decision points	

18 List adapted from: American Society of Landscape Architects, "Universal Design", *Professional Practice*, Accessed: Aug. 20, 2022. https://www.asla.org/universaldesign.aspx; GAATES, *The Illustrated Technical Guide to the Accessibility Standard for the Design of Public Spaces*, 2014. https://gaates.org/DOPS/default.php; Ross et al., *Creating Inclusive Playgrounds; Kurdi, Accessibility in Urban Planning*. (other content sourced and linked as indicated).

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Area of Consideration[18]	Inclusive Innovations	Your Ideas for Inclusion in Public Space
GENERAL		
Wayfinding	• Consistent and understandable multi-sensory wayfinding methods using tactile, visual and auditory cues, applying accessible signage principles (above) • Tactile Walking Surface indicators (TWSI) in paving, as part of paths of travel, to indicate direction and intersections • Audible signals and messaging, narration, warnings and audio guides ★ Maps that are tactile, have pre-recorded instructions and use braille, symbols, pictographs and 3-D maps, as well as 3-D tactile models of buildings tech-enabled ● Realtime navigation apps using audio instructions for routing and critical spatial information • Beacon navigation system pilot for visually impaired using GPS and Blindsquare app • Electronic markers for to send signals to devices for navigation for people with visual impairment	
Digital infrastructure	• Ensure any digital infrastructure (e.g. touch screens) are accessible. • Equitable access that addresses the digital divide tech-enabled Free wi-fi to support access to apps and platforms tech-enabled Accessible touch screens	
Lines of sight	• Protected lines of sight to provide safety and support sign language speakers and parents/caregivers • Clear lines of sights help users to "preview" a space to anticipate the amount of sensory information to support older adults and those with intellectual and/or sensory limitations	
Noise and sounds	• Limitation of ambient noise to support navigation by white cane, verbal communication and over-stimulation – trees, landscaping and smart design can help manage acoustics. • tech-enabled ● Audio hearing loops for direct audio feed to hearing aids	
Lighting	• Good lighting is key for people with vision impairment, for signing and to feel safe • Lighting that doesn't create issues like glare, backlighting, being in people's eyes or flickering can cause migraines and sensory overstimulation tech-enabled LED lighting for safe movement tech-enabled ● Autism-friendly lighting	
DESIGN ELEMENTS		
Entry areas	• Obstacle-free entry-ways that are firm, stable, and wide • Tactile surfaces and tonal contract to indication transitions • Community access ramps for stepped entry-ways	

TWSI (Tactile Walking Surface Indicator) refers to standardized detectable warning surfaces that communicate information to people impacted by blindness through texture and even sometimes sound.

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DESIGN ELEMENTS		
Sidewalks and trails	• Pathways that are firm, level/low-grade, stable and slip-resistant (even in rain & snow) and wide enough for two motorized mobility devices to pass comfortably or sign language speakers to communicate at all times. Turnaround zones should be included • Safe pathways with protected edges, safe slopes and free of hazards; minimized conflict with other users (e.g., cyclists on multi-use trails). Not everyone will see or hear other users. • Connected accessible routes from parking, pedestrian access, amenities and between elements. Avoid obstacles such as bins on garbage day ● Accessible Trail for users of different abilities AI for Inclusive Urban Sidewalks global project ● App-based mapping to make the TransCanada Trail more accessible	
Surfaces	• Firm, stable and slip resistant surfaces, free of glare. • Textures and tonal contrast help define key routes, indicate hazards or barriers and support wayfinding. • ● Tactile walking surface indicators (TWSI)	
Stairs and ramps	• Tonal and textural contrast to indicate transitions at top and bottom • Wider ramps as alternative to stairs, with appropriate grades, to accommodate larger mobility devices, with larger, level stopping places	
Handrails, grips & handles	• Handrails, grips & handles that are strong, high-contrast and good grip, on both sides of stairs and ramps. Round handrails and levers are best. • Accessible heights and potentially doubled for children or smaller adults. ● Extend handrails at top & bottom.	
Viewing & rest areas	• Frequent sheltered resting areas along sidewalks and walkways that are accessible and can be accessibly reached • Accessible and safe viewing options at lookouts and viewing areas ● Accessible viewing deck in popular tourist parks.	
Seating	• Seating with backs & arm rests. Ensure plenty of unimpeded and accessible space around seating and tables, with accessible connection to accessible pathways, for mobility aids, service animals or strollers. • Belonging is enhanced with a variety of seat heights and configurations, transfer seating (from a wheelchair) options (e.g., bench without one arm), and including accessible seating with regular seating, and space for groups of people with disabilities & non-disabled companions. Aim for 20%+ accessible. ● Accessible benches and tables in an urban park ★ Deafscape Guidelines for seating & spaces that works for people with hearing impairment	

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DESIGN ELEMENTS		
Quiet zones	• Escape spaces and quiet corners for people to get away from over-stimulation and noise • Enclosed and secure areas support d/Deaf and hard of hearing to connect ★ Autism friendly design	
Trees, shade & shelter	• Accessible shade & shelter areas in every site are key for cooling, respite and weather protection. Include shade for activity zones to enhance participation. • Placement of trees at intervals can create a "visual rhythm" for hearing impaired. • Be sure to keep plantings maintained to retain accessibility. Avoid allergens, fruit-bearing, throned or poisonous plants, especially near activity areas. ● Shade & shelter for play spaces (p. 78-80) AI & aerial imagery to optimize for shade	
Public art	• Offering a diversity of Public art installations that are tactile, mixed mediums and engaging to allow people with disabilities to experience and enjoy • Art shouldn't block pathways and routes for people with mobility aids or the visually impaired, or create obstacles or hazards, including overhead • Engage artists disabilities to create installations that reflect their personal experiences ● Accessible public art	
Amenities	• Amenities need to be accessible and findable year-round and include water fountains, waste and recycling and washrooms, without obstructing paths of travel • Charging stations for accessibility devices, oxygen and mobile help people to stay • Emergency call boxes (not everyone has a phone) • Water and relief areas for service animals and pets • Fully accessible washrooms for all ages are key – used independently or with a caregiver ● EV charging stations for electric mobility scooters (protected)	
SPECIAL PLACES		
Play spaces	• A range of activity options including stationary and active, from solitary and parallel paly to interactive and social paly • Consider sensory options – tactile, visual and auditory – and different forms of activity stationary and active Quiet zones for autistic children. • Include accessible seating and shade options for both children and adults nearby ● Inclusive Destination Playground ● Inclusive Playground	
Gardens & parks	• Plantings can add aesthetics, buffer noise, reduce glare, add sensory elements (calming). Plants should be plants that are non-thorny and non-toxic • Sensory and therapeutic gardens can be very beneficial ● Accessible Nature Centre ● Sensory gardens for different abilities.	

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SPECIAL PLACES		
Markets, events & pop-up's	• Welcome people with disabilities to pop-up's applying consistent best practices in accessibility. Provide ramps, accessible routes and comfortable rest areas as needed. • Paths of travel and waiting areas must remain accessible and easy to navigate, allowing passing,, with appropriate signage as needed. Beware of potential conflicts in users. ● Accessible events checklist and resources ● Sensory-friendly events	
Sports & recreation	• Facilities that support participation by people with disabilities • Consider access to assists, the program materials that enable all people to participate (ie. Skating chairs for skating rinks ● Deeply accessible sports facilities for people with all abilities to participate	
CONTEXT		
Connections to the street and surrounding area	• Prioritize and support accessible routes to get to your public space(s) Collaborative pedestrian GPS platform for optimized accessible routes Hearing loops on google maps ● ShopTalk smart beacons for audio wayfinding	
Street crossings and signals	• Audible pedestrian signals with raised arrows, tactile indicators and locator tones, reachable by all. Add countdown signals and tactile mapping at signal locations • Tactile walking surface indicators (TWSI)s, directional, low grade curb cuts (see sidewalks and trails above). Add in ground lighting at crossings Intelligent crosswalk for extra crossing time ● Accessible Pedestrian Signals	
Street crossings and signals	• Accessible mobility is a key element of inclusive public space, from public transit to low-carbon options like bicycles, electric vehicles and more • Bike storage should require minimal strength to use • Consider accessibility of path of travel, finding of stops, shelters, signage and information ● Tactile and braille signage at all Vancouver's bus stops Public transit audio beacons for the visually impaired Talking bus stops	
OTHER IMPORTANT CONSIDERATIONS		
RFP's, contracts & procurement	• Require consultants/contractors to have a foundation of accessibility in public space. Engage an accessibility/ DEI consultant to shape the RFP. Include accessibility in your scoring metrics.	

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OTHER IMPORTANT CONSIDERATIONS		
Construction, maintenance & weather	• Alternative routes need to be safe and accessible, just like regular routes, including signage, curb cuts, ramps, etc., as outlined above. Preserve entire path of travel. • Remove obstructions trim plantings, repair sidewalks and surfaces. • Clear snow, including parking, ramps & meters. This is a huge barrier. • Budget and plan for accessible construction and maintenance. Support issue reporting. ● Obstacle reporting app for public spaces.	
Communications	• Communications about the space should include up-to-date accessibility features, programming & event information, feedback opportunities, news and values, all with an accessibility lens • Communications (website, posters, social media, etc.) should apply accessibility principles including large, high contrast sans-serif fonts, descriptions of images, Hello Lamp post for communication and tech	

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GLOSSARY

Visit our Smart Cities Glossary on the Community Solutions Network Portal to explore more definitions.

Accessibility is the design of products, devices, services, or environments for people who experience disabilities.[19]

Accessibility Advisory Committees (AAC) advise their municipal councils about the requirements they must follow under Accessibility for Ontarians with Disabilities Act (AODA) standards, and also suggest ways that cities can implement these rules. They also advise city councils on how to complete their accessibility reports. In Ontario, AAC's are required for any municipality with 10,000 or more people.[20]

Accommodation for disability means adjusting rules, policies, practices and places to enable people with disabilities to participate fully (more broadly, it relates to all grounds for discrimination). Accommodation means sometimes treating someone different in order to prevent or reduce discrimination. Organizations have a "duty to accommodate", especially as employers, as outlined in human rights codes.[21]

Barrier means "anything that hinders the full and equal participation in society of persons with an impairment, including a physical, mental, intellectual, cognitive, learning, communication or sensory impairment or a functional limitation. Barriers include anything physical, architectural, technological or attitudinal, transportation, anything that is based on information or communications, or anything that is the result of a policy or a practice that hinders this participation."[22]

Charrette is a meeting in which all stakeholders (often from multiple disciplines) participate in activities focused on identifying solutions.[23]

Civic commons is a term to describe a network of public places and facilities that enable communities to learn, celebrate, express collective actions, collaborate and flourish, together. Can include libraries, parks, community centres, squares and more.

Disability is "an impairment or functional limitation that reduces someone's full involvement in society because of barriers they face.".[24]

Inclusion is the "meaningful participation in all aspects of society with access to services and opportunities for persons with disabilities equal to that of people without disabilities; this requires active removal of barriers and provision of disability-related supports".[25]

Inclusive Design means making a product or service easily accessible to several categories of users. It strongly focuses on the user experience to make sure the needs of the targeted categories are met and consequently acknowledges the diversity of the population.[26]

Public Spaces are areas or places that are open and accessible to all people, including streets, public squares, parks, beaches and civic spaces. Successful public spaces are designed with all residents in mind and allow people to interact with these spaces in different ways. Great spaces enhance livable cities by supporting a sense of connection, individual and social wellbeing, and community expression, identity and diversity.

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GLOSSARY

Visit our Smart Cities Glossary on the Community Solutions Network Portal to explore more definitions.

Smart cities are resilient, inclusive and collaboratively-built cities that use technology and data to better the quality of life for all people.

TWSI (Tactile Walking Surface Indicator) refers to standardized detectable warning surfaces that communicate information to people impacted by blindness through texture and even sometimes sound.[27]

Universal Design (or Design for All) is the design of design of environments, products and services to be accessed, understood and used by all people, to the greatest extent possible, without the need for adaptation or specialized design.[28]

27 CNIB "*Clearing our Path", [Design Needs>Exteriors and Interiors>TWSI)*
28 Evergreen "Universal Design".

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