

5.2 Watershed and Ecological Function



The City of Peterborough Watershed Plan
peterborough.ca/en/city-services/our-watershed-our-blueprint-peterborough-watershed-plan.aspx

The City of Peterborough's Watershed Plan envisions "a healthy and resilient watershed that protects, sustains and enhances our evolving communities". The campus framework recognizes the role of the Otonabee River, Trent Severn Waterway, and associated waterbodies and watercourses in preserving and enhancing natural hydrological functions, water quality, and aquatic and terrestrial habitats.

Recognizing interdependencies between hydrology and ecology is important to maintaining the health of both systems and in building resilience to climate change.

- **Water quality** – wetlands and riparian areas provide a filtering and processing function in a watershed.
- **Water quantity control** – wetlands, permeable surfaces, and meandering watercourses reduce flood impacts by slowing water down, providing a source of water during dry periods, providing infiltration to support groundwater, avoiding exacerbation of flood peaks, and protecting wetlands and riparian areas for water quality.

- **Nutrient cycling and productivity** – important for water quality, but also as an integral function in the ecology of a watershed.
- **Fish and wildlife habitat** – the hydrologic system provides habitat for a broad range of wildlife, including fish, amphibians, reptiles, birds, mammals, and insects.
- **Vegetation communities** – soil and soil moisture are important factors in determining the types of vegetation communities and plant species present, and consequently the habitats provided for wildlife.
- **Biodiversity** – wetlands and other waterbodies are highly biodiverse and are critical to protecting biodiversity in the long term.

The Symons Campus will support a hydrologic system that effectively filters and infiltrates water into the ground, providing inputs to groundwater sources and improving water quality before it enters into the river. The resilience of this system will ensure a healthy watershed and beautiful natural places to explore, learn from, and enjoy for generations to come.

General Guidelines

CELEBRATING HERITAGE

- Explore opportunities to integrate educational signage and interpretive art that recognize the significance of the Otonabee River to the many communities that it serves.
- Showcase the presence of the University along the banks of the Otonabee River for those travelling along it.
- Acknowledge the pluralistic heritage of the University in its location along the banks of the Otonabee River, on the treaty and traditional territory of the Michi Saagiig Anishinaabeg.

CONNECTING EAST AND WEST BANKS

- The Faryon Bridge is a structure of heritage significance and should continue to function as the main pedestrian connector between the east and west banks of the campus.
- Explore opportunities to provide a secondary pedestrian crossing at a key juncture within the Symons Campus, improving access for students between the two banks and providing an opportunity for seating and observation of activities taking place on the river (as shown conceptually on Figure 9).

- Explore design interventions and technologies that seek to reduce the impact of cold winds and ice build-up as retrofit opportunities for the Faryon Bridge or design features of a new bridge.

ACCESS AND RECREATION

- Coordinate proposed building siting and heights within the Campus Core to maintain views to the Otonabee River, to the extent possible.
- Provide direct routes to viewing areas along the river's edge, including additional or enhanced trail access and seating opportunities.
- Pedestrianization of the east bank river's edge is a key priority of this Plan, with consideration to reclaim the riverfront and convert the existing Nassau Mills Road into a multi-use trail as envisioned by the original Ron Thom Master Plan. This vision is consistent with the City's goals and objectives to provide public access to the shoreline of the Otonabee River and Trent Severn Waterway (to be coordinated with the City of Peterborough).
- Maintain opportunities to take part in recreational activities on the river, including swimming, rowing, and riverside walking and observation.

WATER AS AN ACADEMIC AND RESEARCH STRENGTH



Cleantech Commons
cleantechcommons.ca

Cleantech Commons' focus is clean and green technology manifested in the companies and the products created that affect the amount of water that we consume, its many and various uses and applications, and the logical re-use of the resource time and time again.

Trent has strong expertise in the water technologies industry. Peterborough and its academic institutions have significant research capabilities in the sector (including infrastructure and academic programs) along with significant employers in the region involved in the water technology and testing sector.

Trent's Water Quality Centre is one of the world's premier facilities for research on environmental contamination of water.

Trent offers a Bachelor of Science degree in Water Sciences, within the Trent School of the Environment.

Trent holds the David Schindler Professorship in Aquatic Sciences.

Trent has been involved in long term studies with Indigenous Communities in Canada's north on protection of drinking water, through our Indigenous Environmental Studies program and our Institute for Watershed Studies, with federal funding.



River Views from Campus Buildings



Students Swimming in the Otonabee

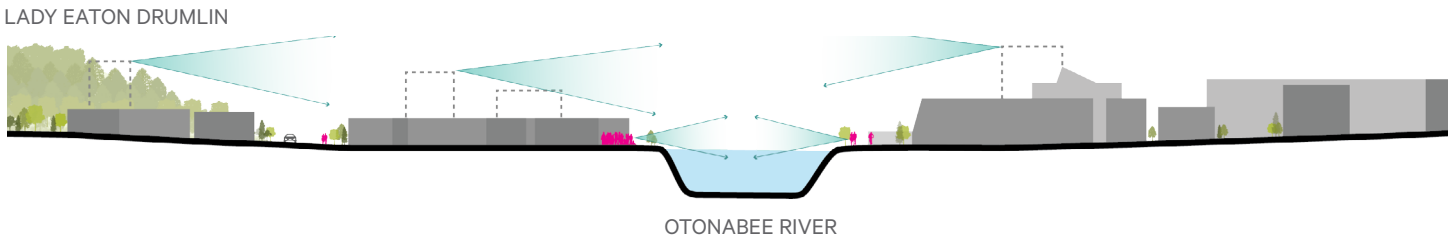


Figure 8: Preserving Views to the River



Figure 9: Enhancing Physical Connections to and Across the River

TOURISM ON THE SYMONS CAMPUS



The Great American Loop
greatloop.org/

- Promote the Symons Campus and Trent University on public pedestrian and cycling trails running alongside the Otonabee River and Trent Severn Waterway.
- Promote the river as an eco-tourism destination and raise awareness of the available natural and recreational experiences.
- Highlight and showcase the University's environmental leadership and conservation efforts utilizing signage and placemaking initiatives.
- Recognize the role of the Otonabee River to the Michi Saagiig communities and integrate Indigenous placemaking elements and signage along the river's edge, including Indigenous names and heritage.
- Explore opportunities to add designated spaces for boards to dock, inviting travellers along the Trent Severn Waterway and the larger American Great Loop to visit the University campus.

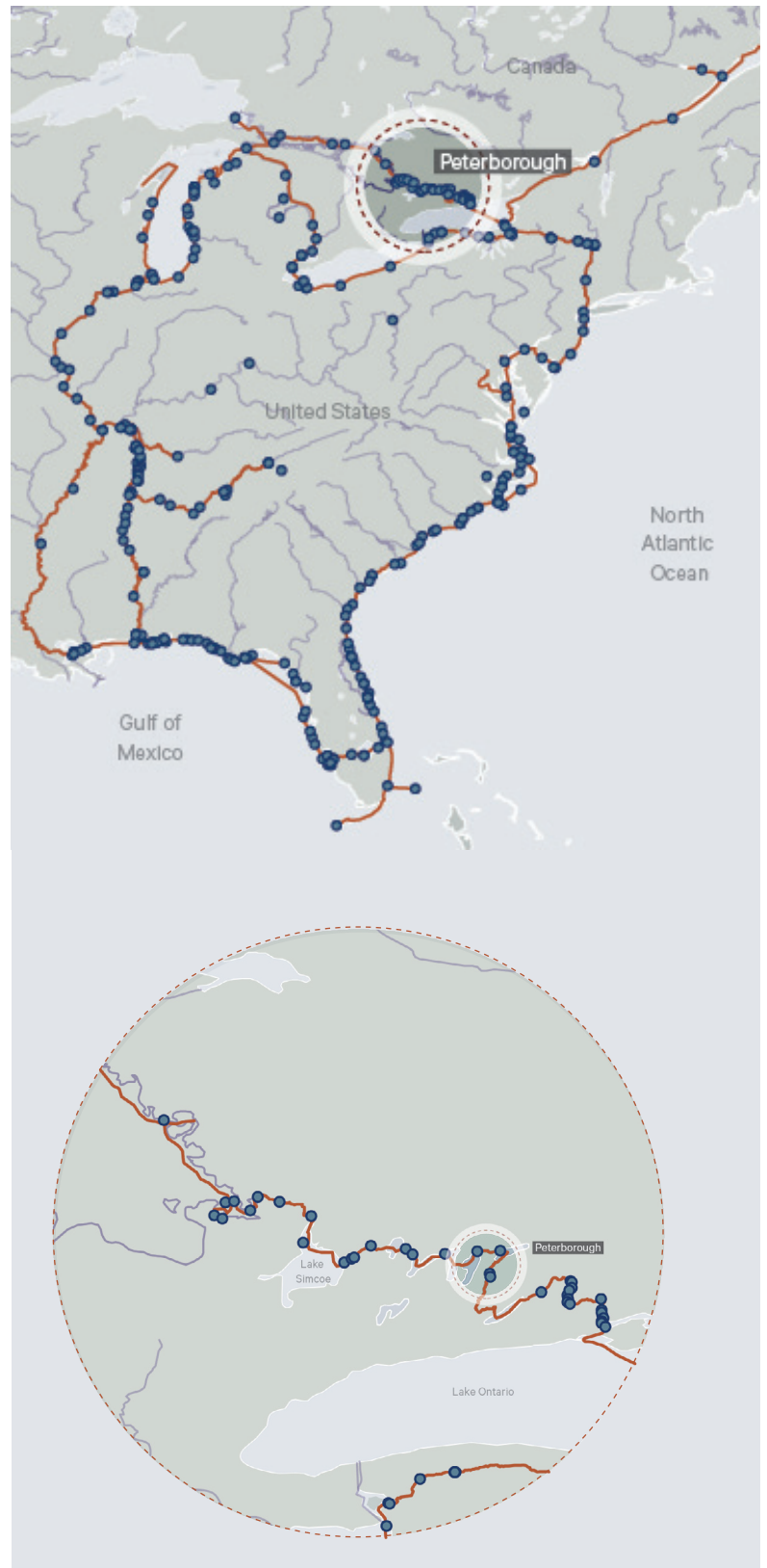


Figure 10: The Great Loop and the Trent Severn Waterway

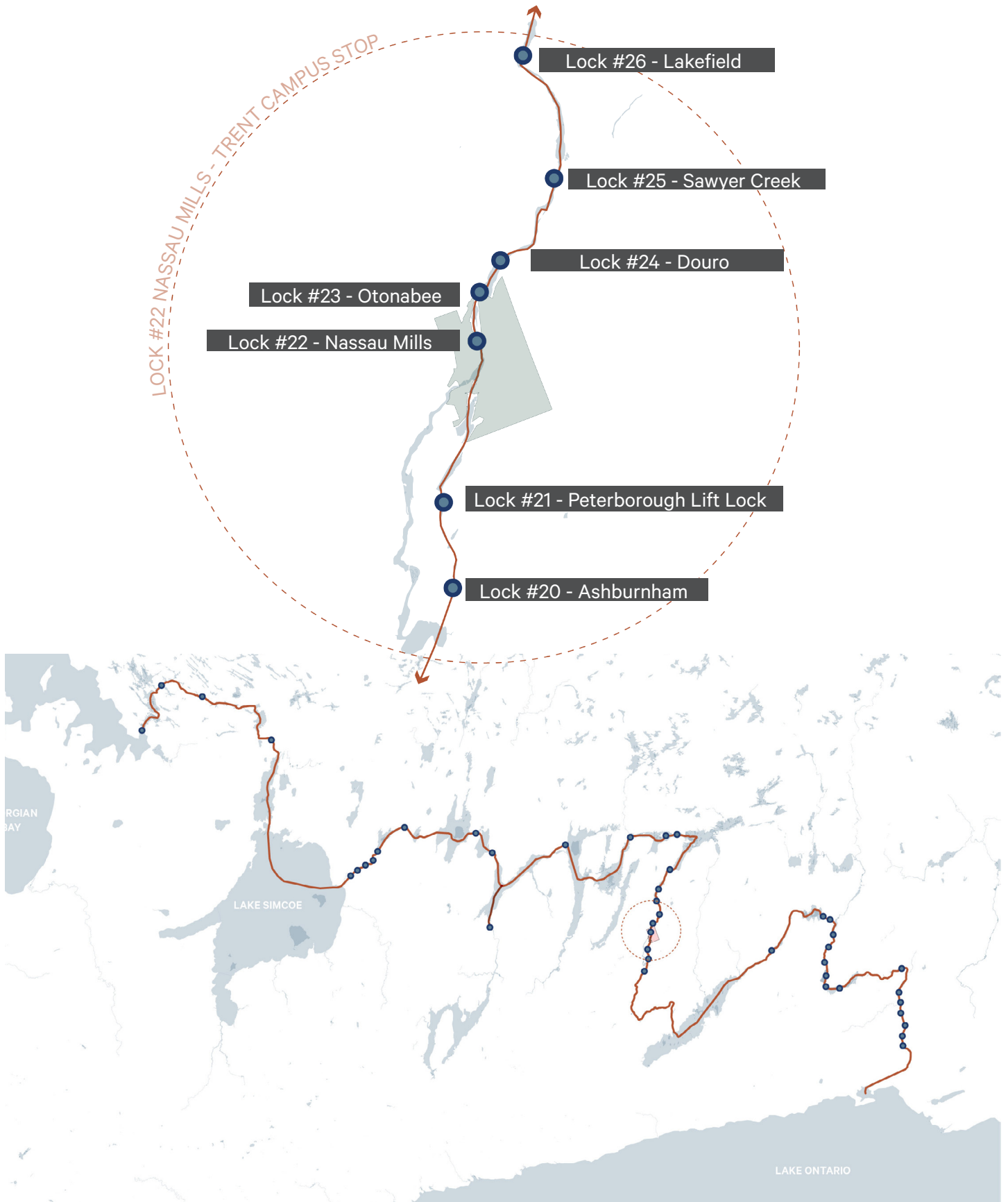


Figure 11: Tourism on the Symons Campus

DEMONSTRATION

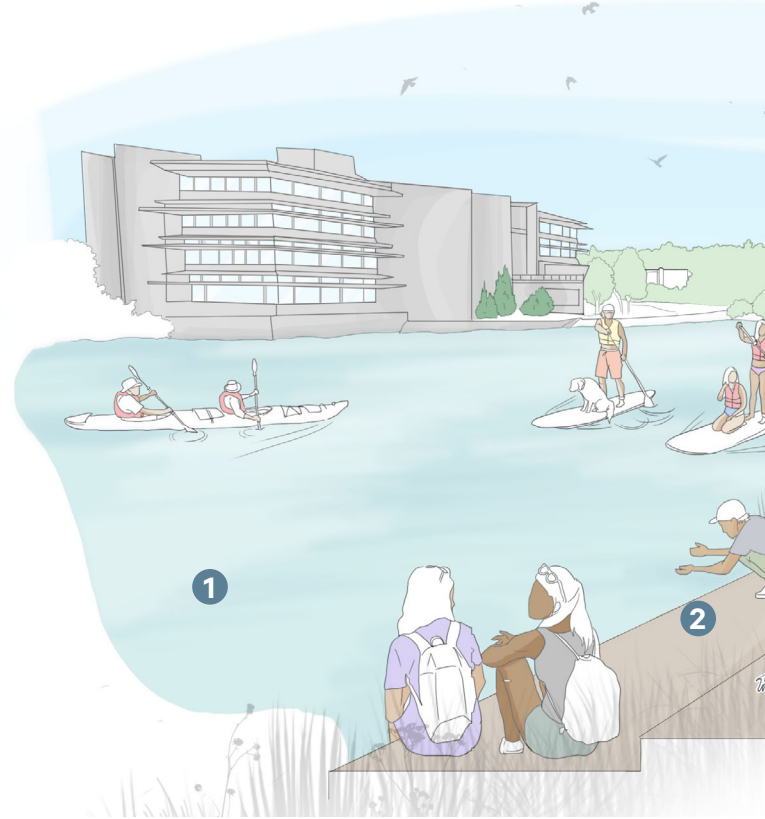
RIVER'S EDGE

The Otonabee River is a distinguishing feature of the Symons Campus identity and a major focus for leisure with a potential for tourism. The following demonstration reimagines the eastern edge of the river as a soft, pliable and programmed riverside landscape, relocating the Nassau Mills Road away from the water to improve pedestrian and cyclist safety, and open up new opportunities for resilience, biodiversity, and access. Removing fast-moving car traffic from this edge reclaims the bank as an inviting place that is accessible to everyone: locals and tourists, individuals and groups, adults and children. Riverside spaces and complete, connected paths are destinations for spontaneous learning, play, reflection, and connection to nature. Cycling paths connect to a wider network of trails in the Peterborough Region. Eco-tourism opportunities include water sports such as kayaking, canoeing, and paddleboarding.

The Otonabee River's edge also forms a vital protective barrier from the wide and flowing river. The riverside landscape is restored as a resilient and functional ecosystem, integrating naturalized slope stabilization and sediment filtration strategies, restored natural riparian areas, terrestrial and aquatic habitat, and carving out spaces that can safely absorb flooding and drainage.

A River Hub where Water Meets Land

- 1 Consolidated multi-use hub (i.e. bikes, kayaks, boats, etc.).
- 2 Places for public access and enjoyment.
- 3 Safe links across the river to connect to existing amenities and green spaces on the embankment.
- 4 Prioritized pedestrian and cyclist network.
- 5 Naturalized river's edge integrating aquatic and terrestrial habitat restoration efforts.
- 6 Comprehensive signage and mapping.



1 Consolidated multi-use hub



Source: Local Food Tours



4 Prioritized pedestrian and cyclist network



Source: David Lloyd, SWA

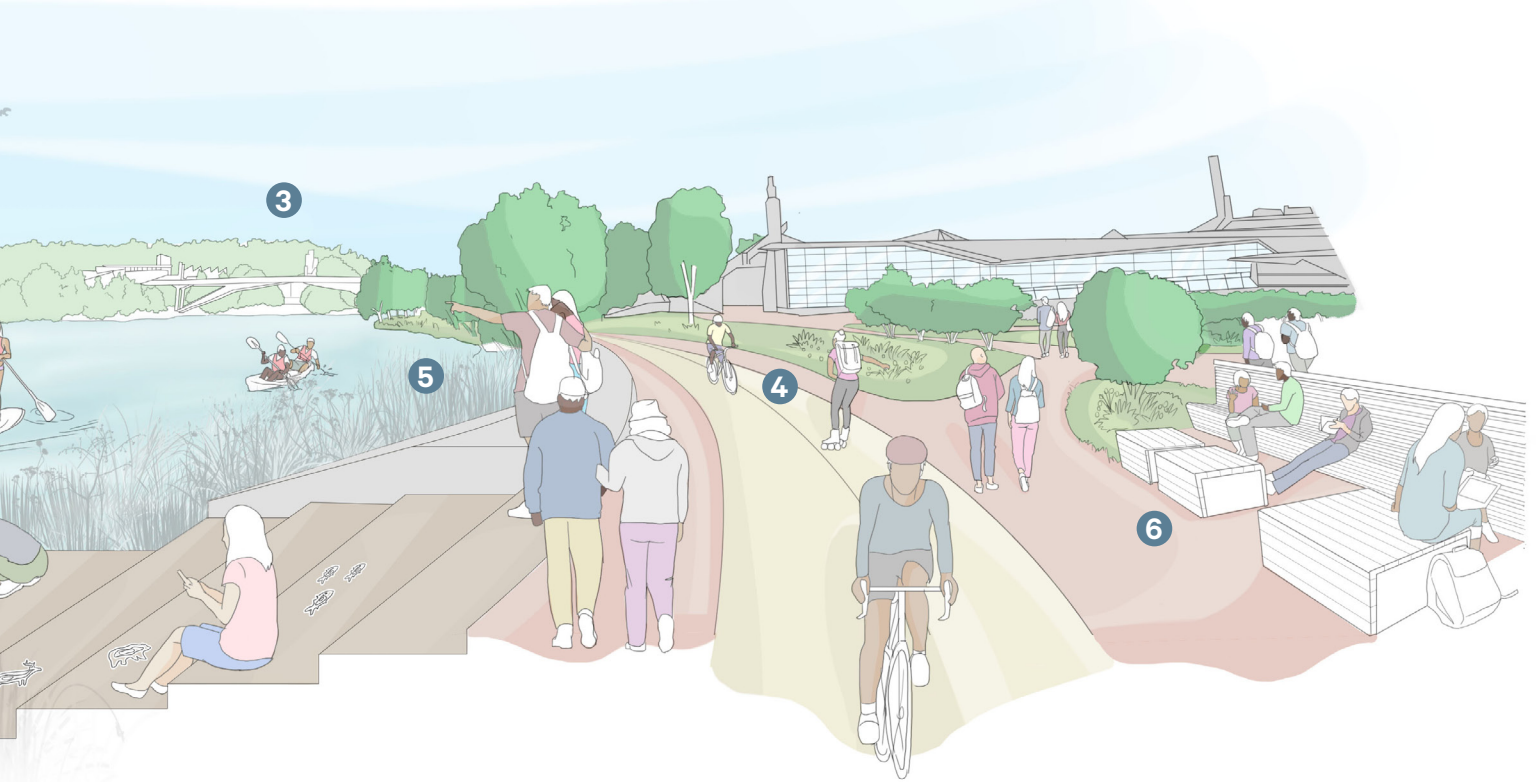
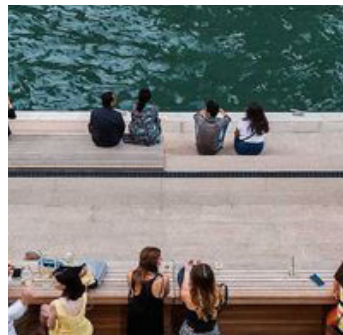


Figure 12: Vision for a Pedestrianized River's Edge

2 Places for public access to the river



Source: 3XN

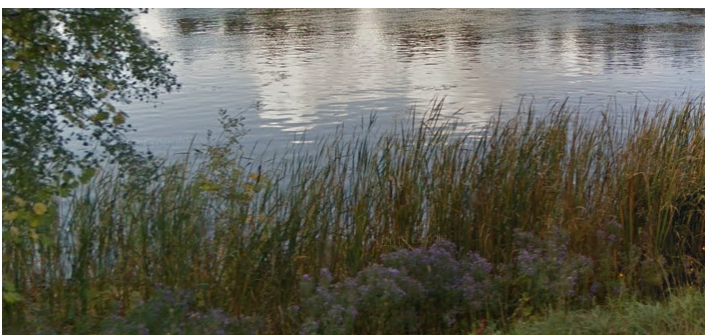


Source: Christian Phillips Photography

3 Safe links across the river to connect riverbanks



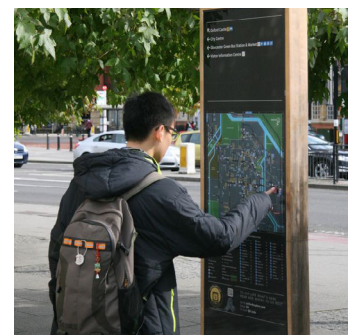
5 Naturalized and restored edge



6 Comprehensive signage and mapping



Source: Carlos Alejandro/ Jim Moffett



Source: Placemarque+