RIBBON *of* GREEN

ENVIRONMENTAL SCAN

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Prepared for

City of Edmonton

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This Environmental Scan will inform Edmonton's Ribbon of Green Project at its earliest stages through the review of best practices from around the globe. When searching for the these cases, the project team asked the following questions:

- How do comparable cities balance ecological and recreational uses in regionally significant park spaces?
- What are the factors considered when planning in, and connecting between, natural areas and environmentally sensitive areas?
- What are examples of innovative planning and design in environmentally sensitive areas?

River valley cities comparable to Edmonton were looked at, as well as cities that offer excellent examples of waterfront or riverfront planning, parks design, and landscape architecture.

The Environmental Scan is divided into three precedent sections, Waterfront + Riverfront Planning, Design, and Environmental Planning. Within these sections, a collection of best practice examples, including plans, concepts, reports, and physical places are highlighted. These examples each offer lessons that can positively contribute to the development of the Ribbon of Green Project.

Edmonton Alberta

Population:
899,447 *(2016)*

Metro Population:
1,363,300 *(2015)*

Population Per Square Kilometre:
1,186.8

Land Area In Square Kilometres:
684.4

RIVERFRONT + WATERFRONT

PLANNING PRECEDENTS

DOWNTOWN COLUMBUS RIVERFRONT

Columbus Ohio | 1998

2016 National APA Planning Excellence Award for Implementation

PROJECT RELEVANCE: *The Columbus Riverfront project is a successful example of using the redevelopment of riverfront parks as a catalyst for the revitalization of adjacent neighbourhoods through public-private partnerships. Reclaiming former degraded and formally unusable land has created additional public spaces while also positively contributing to the health of the aquatic environment.*

Columbus Ohio

Population:

850,106 *(2015)*

Metro Population:

2,021,632 *(2010)*

Population Per Square Kilometre:

1,511.3

Land Area In Square Kilometres:

562.5

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SUMMARY

- Spearheaded the restoration of the Scioto River through Downtown Columbus and the redevelopment of surrounding parks and public spaces
- Improved public access to the riverfront
- Spurred community reinvestment and the revitalization of adjacent neighbourhoods
- Led to the creation of 5 new downtown parks and the restoration of 179 acres of the riverfront ecosystem, including a 120-acre bird sanctuary on a brownfield site
- Removed two dams to create a navigable recreation, river corridor with the added benefit of restoring 179 acres of the riverfront ecosystem

PROCESS

- The 1998 Riverfront Vision Plan established the goals of creating a connected, active, and healthy river system
- The City created the Columbus Downtown Development Corporation to implement projects and guide improvements through public-private partnerships
- The Plan was followed by the Handbook for Private Development and Public Improvements in the Riverfront Corridor (2001) that provided design and development guidelines for the private sector

ENGAGEMENT

- An open planning process encouraged broad public support and helped increase the speed of implementation
- The restoration of the Scioto River, the most popular idea to emerge from that planning process, received wide public and private support enabling inter-agency and multi-governmental partnerships to be formed, simplifying implementation

RESULTS

- The downtown residential population has grown 108% since 2002
- The City, the Columbus Downtown Development Corporation, and the private sector have worked together to facilitate investments totaling $127 million (US) in 179 acres of new and renovated parkland
- The area now attracts millions of visitors annually, triggering $1.4 billion (US) in additional private investment in surrounding neighbourhoods

Sources:

https://planning.org/awards/2016/columbusriverfront.htm

https://issuu.com/mksk/docs/1998-2015downtowncolumbusriverfront

https://www.columbus.gov/uploadedFiles/Columbus/Departments/Development/Planning_Division/Document_Library/Library_Documents/PDFs/Riverfront%20Vision%20Plan.pdf

DETROIT RIVERFRONT CONSERVANCY

Detroit Michigan | 2003

2014 National APA Planning Excellence Award for Implementation

PROJECT RELEVANCE: *The Detroit RiverFront Conservancy is an example of an alternative governance structure that has been able to quickly and effectively implement projects and programming to revitalize Detroit's riverfront. For example, the ability to effectively fundraise has enabled significant corporate and private donations.*

SUMMARY

- The non-profit Detroit RiverFront Conservancy was created in 2003 through a public-private partnership
- The Conservancy was established to encourage economic development and enable public access to the riverfront
- Initially launched by the City, the Kresge Foundation, and General Motors, public-private partnerships have been integral to the Conservancy's success
- 5 ½ miles of the Detroit riverfront has been redeveloped from an unattractive and inaccessible landscape into vibrant, economically successful public spaces complete with plazas, pathways, pavilions, and green spaces
- The Conservancy is responsible for raising the funds needed for the construction, operation, maintenance, security and programming of public spaces located along the riverfront

PROCESS

- The Conservancy followed Baltimore's Inner Harbour redevelopment as a model, while working with the City, and seven private owners for land assembly

RESULTS

- The Conservancy offers daily programming to promote health, education, and recreation along the riverfront
- To date, more than 3 miles of RiverWalk have been redeveloped, creating pedestrian connections from the eastern riverfront to downtown and the rest of the city for the first time
- There has been a combined $1 billion (US) in total public and private sector investment
- In 10 years, the Detroit riverfront has been transformed from industrial wasteland to a regional attraction drawing three million visitors annually
- The area now generates an estimated $4.5 million (US) in annual tax revenue

Detroit Michigan

Population:

677,116 *(2015)*

Metro Population:

4,292,060 *(2010)*

Population Per Square Kilometre:

1,884

Land Area In Square Kilometres:

359.4

Click Here for More Information

Sources:

https://www.planning.org/awards/2014/detroitriverfrontconservancy.htm

http://detroitriverfront.org/

http://detroitriverfront.org/news/detroit-riverfront-conservancy-receives-national-planning-award

BALTIMORE INNER HARBOUR 2.0

Baltimore Maryland | 2013

2014 National APA Planning Excellence Award for Implementation

PROJECT RELEVANCE: *Although a highly urban plan, Baltimore Inner Harbour 2.0's process and methodology can be looked to for adapting and modernizing parks and public spaces based on community needs, and their public engagement on sustainable actions provide a useful model.*

Baltimore Maryland

Population:

621,849 *(2015)*

Metro Population:

2,797,407 *(2010)*

Population Per Square Kilometre:

2,966.8

Land Area In Square Kilometres:

209.6

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SUMMARY

- Following the initial completion of the Inner Harbour public promenade in 1973, the Harbour was showing signs of wear with over 14 million visitors annually, and needed upgrades to mitigate sea level rise, and improve accessibility
- The Plan proposed building off the institutional strengths of the National Aquarium and Maryland Science Center, by creating free amenities and attractions strategically located to extend the Inner Harbour District
- A goal was set to create a swimmable and fishable harbour by 2020, which is achievable through public education/engagement, and promoting environmental stewardship
- Living laboratory projects were implemented, including floating wetlands, rain gardens, and oyster wetland restoration
- The Plan set out a clear business case showing the economic benefits of increased Inner Harbour tourism and business activity

PROCESS

- The analysis involved an observation phase, and the assessment of a range of qualitative and quantitative aspects of the Inner Harbour
- Analysis findings were used to review current development projects, their aesthetic character, open space quality, and the overall needs of the public realm
- The project team developed a conceptual plan and planning principles which reflected the opportunities, philosophies, and ambitions that were identified during the community engagement, precedent study, and analysis

ENGAGEMENT

- The project team sought input from Harbour stakeholders, downtown and neighbourhood residents, Baltimore youth, the business community, and the design community
- The project team regularly met with these groups to gather qualitative information, develop design suggestions, and hear design critiques

RESULTS

- Increased access points for kayaks and canoes
- Implementation of projects that capture and treat stormwater runoff (e.g. Mr. Trash Wheel - see top photo)
- Investment in public spaces, and the creation of new destinations and amenities, including interactive art, water features, pedestrian bridge connections, and parks

Sources:

http://baltimorewaterfront.com/harbor-2-0/

http://baltimorewaterfront.com/wp-content/uploads/2015/06/Inner-Harbor2-0-Master-Plan-compressed.pdf

http://baltimorewaterfront.com/healthy-harbor-ecotours/

RIDEAU CANAL MULTI-USE CROSSING

Ottawa Ontario | 2013

2013 CIP Award for Planning Excellence: Mobility

PROJECT RELEVANCE: *The project team used innovative public engagement and research methods to determine the most appropriate location and design for this active transportation bridge, while also providing the data to support its funding by all three levels of government.*

SUMMARY

- This multi-use bridge will provide an important active transportation connection, decreasing the reliance on private vehicles for commuting
- The City's goal was to provide a functional connection, create a year round gathering place, minimize the visual impact of the bridge to adjacent properties, and introduce a contemporary landmark to a UNESCO World Heritage landscape
- The design incorporates the use of sustainable materials in the decking and handrails, as well as LED lighting to enhance public safety and to illuminate the bridge's architectural details
- The original capital cost estimate was $17.5 million, and the 2016 updated cost is $21 million

PROCESS

- Analysis findings were used to review current development projects, aesthetic character, infrastructure needs, open space quality, and the overall needs for the public realm
- An innovative review of community demographic profiles and existing travel behaviour enabled the project team to estimate the projected shift from auto trips to active trips, which helped inform the business case for investment in sustainable transportation infrastructure

ENGAGEMENT

- A visioning and design charrette brought together technical experts, regulatory agencies, interest groups, and the local community which resulted in a shared vision and design objectives
- An interactive blog fostered discussion, with real time public input
- Public open houses were organized as drop-in style sessions with a formal presentation by the study team, followed by a facilitated question and answer period

RESULTS

- The project team were able to select a bridge location and design with public support and client approval
- The bridge addresses a critical gap in Ottawa's active transportation network
- Construction will begin at the end of 2017, and the bridge will open in 2019

Ottawa Ontario

Population:

883,391 *(2011)*

Metro Population:

1,236,324 *(2011)*

Population Per Square Kilometre:

316.6

Land Area In Square Kilometres:

2,790.22

Click Here for More Information

Sources:

http://mmmgrouplimited.com/awards/rideau-canal-multi-use-crossing-receives-cip-award-of-merit-for-planning-excellence/

https://www.cip-icu.ca/Awards-and-Scholarships/Awards-for-Planning-Excellence

https://www.cip-icu.ca/Files/Awards/Planning-Excellence/2013-33-Rideau-FULL-PLAN.aspx

http://ottawa.ctvnews.ca/new-footbridge-to-be-built-over-the-rideau-canal-1.3040138

THE SPIRIT GARDEN

Thunder Bay Ontario | 2011

2012 CIP Award for Planning Excellence: Aboriginal Community Planning & Development

PROJECT RELEVANCE: *Thunder Bay's Spirit Garden is a successful example of a park and public space, that through a collaborative process with First Nations and Métis communities, increases the Indigenous presence in Thunder Bay's public realm. This unique park has become an icon of the city, and where Indigenous and non-Indigenous people can come together through contemporary Indigenous placemaking.*

Thunder Bay Ontario

Population:

121,596 *(2011)*

Population Per Square Kilometre:

330.1

Land Area In Square Kilometres:

328.2

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SUMMARY

- The design of the garden and park was inspired by the ecology of the northern shoreline site, and celebrates both the historical and contemporary artistic and cultural contributions of the local Indigenous communities
- The 4.4 acre site is a significant component of Thunder Bay's revitalized downtown waterfront
- Thunder Bay has a significant Indigenous population, yet prior to this project presence of this founding culture was greatly underrepresented in the city
- The project's key objective was to provide a prominent space that would draw people to events, celebrating all of Thunder Bay's cultures, and provide a source of identity and pride for Thunder Bay's Indigenous residents
- The garden features distinct environments: A Living Shoreline, the Gathering Circle, Fire Circle, Medicine Garden, and a significant public art component

PROCESS

- The design is a collaboration between the design team, local Indigenous communities, wetland ecologists, and the Department of Fisheries
- The consultant partnered with an local Ojibway architecture graduate to design the space
- Construction of the Gathering Circle incorporated adaptations of traditional building methods

ENGAGEMENT

- An integrated engagement approach drew together community representatives from the Fort William First Nation, communities of the Robinson Superior Treaty and Red Sky Métis in four design workshops

RESULTS

- The garden opened to the public in December 2011
- The space is actively used as gathering space for story telling, ceremonies, concerts and every day use
- Lakehead University uses the garden as an outdoor classroom
- The garden has received critical acclaim, and has become a tourist destination in the city

Sources:

https://www.cip-icu.ca/Files/Awards/Planning-Excellence/CIP2012-Awards-_-Spirit-Garden-Submission.aspx

http://www.theglobeandmail.com/arts/art-and-architecture/thunder-bays-revitalized-waterfront-a-declaration-that-aboriginal-culture-matters/article7516689/

https://www.canadianarchitect.com/features/raic-journal-power-indigenous-placemaking/

2012-2021 REGIONAL PARKS STRATEGIC PLAN

Capital Regional District - Victoria BC | 2009

2009 CIP Award for Planning Excellence: Recreation Planning

PROJECT RELEVANCE: *The Strategic Plan successfully identifies priorities that emerged from the public consultation and speaks to the fiscal challenges of building new parks and infrastructure while also maintaining existing facilities and services. The parallel Financial Program provided budget clarity to both strengthen existing recreation resources while incrementally adding new parks and trails. Additionally, contributions by local photographers make the plan to an attractive document.*

Capital Region District

Population:

370,000 *(2011)*

Population Per Square Kilometre:

49.2

Land Area In Square Kilometres:

2,341.1

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SUMMARY

- The Strategic Plan provides a program of park development and acquisition over a 9-year period
- A parallel financial program addresses funding sources to strengthen existing recreation resources while also adding new parks and trails as funding permits
- With ongoing suburban sprawl, the Plan understands that parks are increasingly valued for their ecological importance, and that regional trails can be utilized as primary transportation routes
- The Plan advocates for compatible recreational activities in regional parks and trails that help fill in gaps in the current system, connect communities, and address the needs of changing demographics
- Local photographers contributed all the plan images

PROCESS

- A Citizen Advisory Panel (CAP) was created to provide advice about the future direction of Regional Parks
- The Plan is a result of the work completed by the CAP over a 18 month period, and includes listening to the community, interest groups, park agencies, as well as a review of technical information

ENGAGEMENT

- At each stage of the plan, citizens, First Nations, governments, CRD Directors, and Regional Parks volunteers and staff were informed, consulted, and collaborated with

RESULTS

- The organization is working towards the goal of conserving at least half of the region's land and water base

Sources:

https://www.crd.bc.ca/docs/default-source/parks-pdf/regional-parks-strategic-plan-2012-21.pdf?sfvrsn=0

MARIBYRNONG RIVER VALLEY DESIGN GUIDELINES

Greater Melbourne Australia | 2010

PROJECT RELEVANCE: *By using river lengths as different character areas, these guidelines present a unique way of dividing and classifying sections of the study area. An Environmental Significance Overlay presents an effective planning tool to implement the goals of the Plan.*

SUMMARY

- A collaborative effort amongst several local governments, the City of Melbourne, and the State; the Plan presents guidelines for river health, habitat protection, heritage, parks and recreation, and tourism
- The Plan also includes design guidelines intended to influence building form along the river

PROCESS

- The river was divided into management lengths based on community consultation, each with its own character, for example: Brimbank length – a natural river, Footscray length – an urban river, Port length – a working river
- Preferred characteristics for each river length are discussed in detail, including what should be reinforced or conserved, what should be repaired, and what new characteristics should be created
- The lengths provide a format for identifying the preferred character of the river and giving specificity to the design guidelines

ENGAGEMENT

- Facilitated discussions at public workshops were focused on photo-based questions
- Images were chosen to illustrate a range of locations and development impacts along the river, and also included examples from other rivers or waterways to help facilitate the discussion

RESULTS

- Planning controls were amended, including overlaying the project area with an Environmental Significance Overlay (ESO), to ensure a broad range of actions that may threaten the river valley are now subject to permit approval
- The ESO provides guidance over buildings, earthworks, removal of vegetation, landscaping and subdivision
- The Plan created larger open space corridors including the creation of linked parkland corridors
- The Plan also established the Maribyrnong River Valley Coordinating Committee which provides a mechanism for raising the profile of the valley as a whole, and can assign specific agencies or departments to each plan action

Greater Melbourne Australia

Population:

3,999,950 *(2011)*

Population Per Square Kilometre:

400.4

Land Area In Square Kilometres:

9,990.5

Click Here for More Information

Sources:

http://www.dtpli.vic.gov.au/__data/assets/pdf_file/0017/229400/Maribyrnong_River_Valley_Design_Guidelines.pdf

http://www.dtpli.vic.gov.au/planning/plans-and-policies/waterways-planning/maribyrnong-river-planning

THE PEOPLE'S PLAN FOR THE RIVERFRONT RIBBON

Toronto Ontario | 2015

PROJECT RELEVANCE: *Though not a municipally-led plan, the People's Plan is a successful example of a plan led by a community organization. The Plan integrates past plans, studies, and historical narratives into current planning. The proposed interventions are bold moves to inspire future change.*

SUMMARY

- Launched in 2015 by Evergreen, the Plan is a vision for a 500-acre riverfront park on the Don River, and presents "audacious" design interventions at key locations
- The Plan proposes interventions to restore the valley's role as a natural system, and to highlight its rich history of institutions, recreation and industry; building stronger physical and social connections between the city, its people and the valley
- The Plan is meant to inspire both public and political support

PROCESS

- The process began with an analysis of the Lower Don River which included a review of its development, its ecological role within Toronto's ravine system, its existing uses and conditions, and the demographics of its adjacent neighbourhoods
- Past plans, reports, and recommendations were also consulted for themes
- Themes were presented at a design charrette which led to a series of preliminary master plans featuring bold interventions
- The interventions were then evaluated in the context of the background research
- Four interventions were selected, and a fifth was added through Ryerson University's Ecological Design Lab

ENGAGEMENT

- The Plan's themes were explored through contextual presentation boards at a design charrette where landscape designers from across North America discussed creative solutions

RESULTS

- Proposed interventions include a vegetated land bridge spanning the river, highway, and rail line; active transportation bridges; realignment of rail lines to be parallel with the Don Valley Parkway, converting streets to complete streets, and creating parks in areas when roadways and cloverleafs are removed
- The City of Toronto announced in Oct 2016 plans to create of a 480 acre green space spanning from the Evergreen Brickworks site south to Lake Ontario

Toronto Ontario

Population:

2,615,060 (2011)

Metro Population:

5,583,064 (2011)

Population Per Square Kilometre:

4,149.5

Land Area In Square Kilometres:

630.2

Click Here for More Information

Sources:

https://www.evergreen.ca/blog/entry/don-river-valley-park-marks-first-mile-of-city-of-torontos-ravine-strategy/?utm_campaign=drvp&utm_source=drvp.ca&utm_medium=web

http://donrivervalleypark.ca/downloads/PeoplesPlan_Final_PUBLIC%202016.pdf

http://donrivervalleypark.ca/

GREEN CITY, CLEAN WATERS

Philadelphia Pennsylvania | 2015

2015 National APA Planning Excellence Award for Implementation

PROJECT RELEVANCE: *Through its implementation, Green City, Clean Waters actively engages with residents through an engaging website, homeowner grants, and rain barrel program. Various City departments and agencies have come together to implement green stormwater infrastructure through multiple capital projects including parks, playgrounds and complete streets. Utilizing spaces for stormwater management will save the City millions and maximize the capacity of their existing system.*

Philadelphia Pennsylvania

Population:

1,567,442 *(2015)*

Metro Population:

6,051,170 *(2010)*

Population Per Square Kilometre:

4,513.2

Land Area In Square Kilometres:

347.3

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SUMMARY

- Green City, Clean Waters (GCCW) is a plan to shift from traditional stormwater management to sustainable infrastructure that mimics the natural water cycle
- With this plan, Philadelphia is first city in the U.S. to meet both state and federal water quality mandates through sustainable interventions
- GCCW relies almost entirely on green stormwater infrastructure (GSI) systems to capture rainwater, uses it to irrigate trees and plants, and then recycles it back into the groundwater
- The Plan provides a 25-year plan for GSI development to manage runoff from over 9,000 acres of impervious surface and to reduce sewage overflow pollution by 85%
- The Plan includes engineering models to show how green infrastructure can address water quality issues, a cost saving analysis, and a social impact analysis detailing long-term socio-economic and environmental benefits

ENGAGEMENT

- Residents of all socio-economic backgrounds helped identify green infrastructure opportunities and sites
- The City provides homeowners with free rain barrels and homeowner grants for the development of rain gardens, downspout planters and de-paving projects
- An accessible website was created with information, videos, stormwater management tools, an interactive projects map, and a “What’s In It For You” section

RESULTS

- The City will save an estimated $6.5 billion (US) in stormwater management costs
- Various City departments, school districts, and the City Planning Commission work together to identify opportunities for stormwater management in capital projects such as transportation improvements, park renovations, green schoolyards, and new community green spaces
- 113 projects have been completed, with 200 more in design or under construction
- Over 3,000 rain barrels have been installed, and 150 grants have been awarded
- The City provides technical and financial assistance to approximately 450 property owners to retrofit sites with green infrastructure, awarding over 14$ million (US) in grants

Sources:

https://www.planning.org/awards/2015/greencity.htm

http://www.phillywatersheds.org/what_were_doing/documents_and_data/cso_long_term_control_plan

http://www.phillywatersheds.org/doc/GCCW_AmendedJune2011_LOWRES-web.pdf

LETHBRIDGE RIVER VALLEY PARKS MASTER PLAN

Lethbridge Alberta | 2016

PROJECT RELEVANCE: *The Lethbridge River Valley Parks Master Plan (RVPMP) is a good example of a parks plan that incorporates a specific land use classification system. The RVPMP also supports ongoing efforts by the City of Lethbridge to work closely with Blackfoot peoples to identify, protect, and promote Indigenous heritage and cultural sites.*

Lethbridge Alberta

Population:

96,828 *(2016)*

Population Per Square Kilometre:

791.1

Land Area In Square Kilometres:

122.4

SUMMARY

- The Lethbridge River Valley Parks Master Plan is a long-term strategy to maintain the natural, historical and cultural character of the Lethbridge River Valley, guide its use and development, and enhance conservation and recreation activities
- The Plan provides an understanding of the current uses and future demand placed on the river valley; addresses gaps in accessibility, facilities, infrastructure, resource protection, and sustainable management practices

LAND USE TYPOLOGY CLASSIFICATION

- The land use typology divides the river valley into different classes for management and stewardship purposes
- The intent is to preserve areas of ecological and historical value, maintain and expand the appropriate recreational use of the land, and identify where public access is inappropriate. The classifications are:
  - Environmental Preservation – the highest level of protection to areas containing rare species, or landforms meriting special preservation
  - Natural Recreation – conserving the natural character and ecological integrity while ensuring sustainable recreational use
  - Intensive Recreation – areas where existing or potential intensive recreational facilities will cause limited environmental impacts such as campgrounds or sports fields
  - Commercial Recreation (private) – limited commercial recreation such as golf courses
  - Urban Services /Infrastructure – areas for essential public utilities
  - Interim Resource Extraction – accommodating resource extraction as an interim use
  - Heritage preservation – important historic and/or cultural features including both First Nation's traditional land use and post settlement historic and cultural features

TRADITIONAL KNOWLEDGE AND USE ASSESSMENT

- In 2016, a Traditional Knowledge and Use Assessment was commissioned by the City in partnership with Nations of the Blackfoot Confederacy to identify, understand, and protect sites of traditional use and occupancy that are significant to Blackfoot peoples
- The RVPMP supports this activity through policies and guidelines that protect and promote Indigenous heritage and cultural sites
- The findings of the Assessment will be incorporated into the implementation of the RVPMP

Click Here for More Information

Sources:

http://www.lethbridge.ca/living-here/Projects-Initiatives/Pages/River-Valley-Parks-Master-Plan.aspx

http://www.lethbridge.ca/Things-To-Do/Parks/Documents/DraftRiverValleyParksMasterPlan.pdf

TORONTO RAVINE STRATEGY DRAFT PRINCIPLES AND ACTIONS

Toronto Ontario | 2016

PROJECT RELEVANCE: *Toronto's Ravine Strategy Draft Principles and Actions successfully showcases a public project that clearly and effectively relays important information. The mapping products and discussion around placemaking are useful tools for presenting important planning concepts. Additionally, the combination of its clean layout, clear text, and interesting elements make this an effective public document to share project information and generate excitement.*

Toronto Ontario

Population:
2,615,060 (2011)

Metro Population:
5,583,064 (2011)

Population Per Square Kilometre:
4,149.5

Land Area In Square Kilometres:
630.2

SUMMARY

- The City of Toronto is developing a ravine strategy to guide ravine planning within the city, that also accounts for existing ravine related plans, regulations, and bylaws
- The strategy is being created by Parks, Forestry and Recreation, City Planning, and Toronto Water in consultation with other City divisions, the Toronto and Region Conservation Authority (TRCA), the public, and other stakeholders
- The Draft Principles and Actions document represents the project work as of June 2016, including the proposed guiding principles and actions
- The Strategy will be completed in spring 2017

DOCUMENT HIGHLIGHTS

- The document acts as a public introduction to the project, presenting the vision, a ravine system map, guiding principles, and 21 actions items
- It promotes the benefits of the ravine system for the City and its residents
- Several quotes about the importance of parks and the ravine system from prominent City staff and the Mayor are presented throughout the document
- There are several short success stories, tied to one of the guiding principles, of existing projects or events that have improved the Lower Don River in some way, such as the annual Paddle the Don event
- The final section, "Have Your Say!" poses clear questions to the public, such as "How should we celebrate ravines?" and "What partnership opportunities should we explore?" along with how people can contact the City to share their feedback
- The project's mapping products offer good examples of how the Ribbon of Green can present information spatially
  - A Biodiversity, Natural Heritage & Archeology Map layers areas of natural and scientific interest, significant wetlands, environmentally significant areas, and areas of archeological potential
  - An Intensification Maps shows the number of proposed residential units in relation to the ravine system
- A placemaking graphic offers an interesting way of thinking about placemaking in Edmonton's River Valley and Ravine System by showing the connection between an interface (park users, wayfinding, etc.), parks and green spaces, infrastructure, the natural environment, and the overall experience of a place

Click Here for More Information

Sources:

http://www1.toronto.ca/City%20Of%20Toronto/Parks%20Forestry%20&%20Recreation/03Trees%20and%20Ravines/Files/pdf/R/Ravine_Strategy_Draft_Principles.pdf

RIVERFIRST: THE MINNEAPOLIS UPPER RIVERFRONT MASTER PLAN

Minneapolis Minnesota | 2012

PROJECT RELEVANCE: *The RiverFIRST Vision provides a clear focus and planning direction for the Minneapolis – St. Paul Waterfront anchored in comprehensive research and analysis, design inquiry, community outreach and consensus building. Like the Ribbon of Green, this project will balance ecological integrity with recreational programming for all seasons.*

Minneapolis Minnesota

Population:
382,578 (2015)

Metro Population:
3,524,583 (2010)

Population Per Square Kilometre:
2,528.6

Land Area In Square Kilometres:
151.3

SUMMARY

- RiverFIRST provides a 20-year vision for riverfront parks along the Mississippi River
- The Plan is a result of an interagency partnership between the Minneapolis Park and Recreation Board, the City of Minneapolis, and the Minneapolis Parks Foundation
- Objectives include realizing seven projects within 5 years of adoption, laying the foundation for visionary projects and ensuring interagency coordination

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PROCESS

- Defined guiding and design principles include urban ecology, mobility, green networks, water, emergent/meadow areas and riparian/upland areas
- Established two types of projects: Priority Projects to be implemented within 5 years and Visionary projects to be developed between 5 and 20 years
- Provided high level concepts for each of the priority projects with illustrative schematics and renderings
- Created a detailed implementation guide

ENGAGEMENT

- Employed tactics such as youth ambassadors, community meetings, a survey, steering committee, technical committee and advisory committee
- Multiple communications tactics were employed such as Twitter, Facebook, traditional media and a project newsletter
- Comments and letters of support were attached to the final document

RESULTS

- The priority projects are underway and the Minneapolis Park and Recreation board are seeking development partners

Sources:

http://www.slideshare.net/MplsRiverfrontDesign/riverfirst-vision-april-2012

WATERFRONT SEATTLE FRAMEWORK

Seattle Washington | 2012

PROJECT RELEVANCE: *Though this project focuses on an urban, ocean waterfront, the process and document structure have relevance to the Ribbon of Green project, most notably through an emphasis on public outreach, understanding the waterfront's place within a larger context, and breaking down the waterfront into it sub areas with different focuses.*

Seattle Washington

Population:

608,660 (2015)

Metro Population:

3,059392 (2010)

Population Per Square Kilometre:

1,649

Land Area In Square Kilometres:

369.1

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SUMMARY

- The Waterfront Framework capitalizes on the removal of the Alaskan Way Viaduct and the replacement of the Elliot Bay Seawall
- The framework covers an area from Pioneer Square to Belltown and includes 20 acres of public space
- The project emphasizes the connections between the waterfront and neighbourhoods to serve all modes of travel

PROCESS

- Guiding principles were established including 'Create a Waterfront for all', 'Put the shoreline and innovative sustainable design at the forefront', 'Reconnect the city to its Waterfront' among others
- Conceptualized the waterfront at three scales – City, Centre City, and Waterfront
- Reviewed the waterfront's history and contribution to the city
- Studied and planned sub areas within the waterfront
- Presented a variety of design solutions and visions for different waterfront components
- To supplement the Framework Plan, a Strategic Plan and Design summary were released to provide a detailed description of implementation and design

ENGAGEMENT

- A variety of communications tactics were used to generate interest, including placing project symbols and yellow chairs at strategic locations, temporary art installations, a kids and family photo booth and an information kiosk along with more traditional communications tactics such as social media, a website and partnerships with approximately 60 community organizations
- For engagement, the project team hosted four large scale public meetings, five workshop-style community forums, over 80 briefings and community events and online commenting

RESULTS

- Multiple projects are in various stages of detailed design and construction
- The seawall is under construction
- The Waterfront Seattle team continues to develop monthly reports of their progress to City Council and hosts ongoing public engagement and events along the waterfront to keep the public informed on the project

Sources:

http://waterfrontseattle.org/Media/Default/Library/Other/framework_plan_full.pdf

http://www.waterfrontseattle.org/Media/Default/pdfs/design/Main_Corridor_Schematic_Design_Report_October_2013.pdf

THE RIVER PLAN

Portland Oregon | Ongoing

PROJECT RELEVANCE: *The River Plan is a comprehensive plan for the land adjacent to the Willamette River. It is similar to the Ribbon of Green in that it is an update to an older plan, the 1987, Willamette Greenway Plan, greenway zoning code, and greenway design guidelines.*

SUMMARY

- The River Plan is a multi-objective plan that will update the planning direction for the Willamette River.
- The River Plan will be completed over three phases, with each phase focused on a different reach of the Willamette River: North Reach, Central Reach and South Reach
  - The North Reach is Portland's working harbour
  - The Central Reach is highly urban in nature, with the waterfront serving as the city's main civic space.
  - The South Reach has unique fish and wildlife habitat, parks and trails and is easily reached from established neighbourhoods

PROCESS

- North Reach: Council unanimously adopted a plan for this portion of the waterfront in 2010. In 2012, the Oregon Supreme Court reviewed an industry appeal of the plan. Moving forward, the project team will continue to consult with industry, environment and community stakeholders to review implications and craft potential solutions
- Overall: In 2014, City Council adopted the updated information about land uses, ownership, natural resources, recreation and historic and cultural resources within the Willamette River Greenway
- Central Reach: The City has launched the River Plan/Central Reach as part of the update of the Central City Plan with the goal to create an opportunity to revitalize this public space for swimming, kayaking, boating, sailing and enjoying the waterfront. The current design concepts will be reviewed and approved in early 2017
- South Reach: Work has yet to begin on this portion of the plan

ENGAGEMENT

- Presentations and Workshops about: Healthy Rivers, a Robust River Economy, and Vibrant Waterfront Districts
- Working Groups
- Willamette River Symposiums

RESULTS

- Design options for a portion of the Central Reach are being sent to Council in 2017
- The North Reach is referred back for further public consultation
- Work has yet to begin on the South Reach

Portland Oregon

Population:

632,309 *(2015)*

Metro Population:

2,389,228 *(2010)*

Population Per Square Kilometre:

1,829.6

Land Area In Square Kilometres:

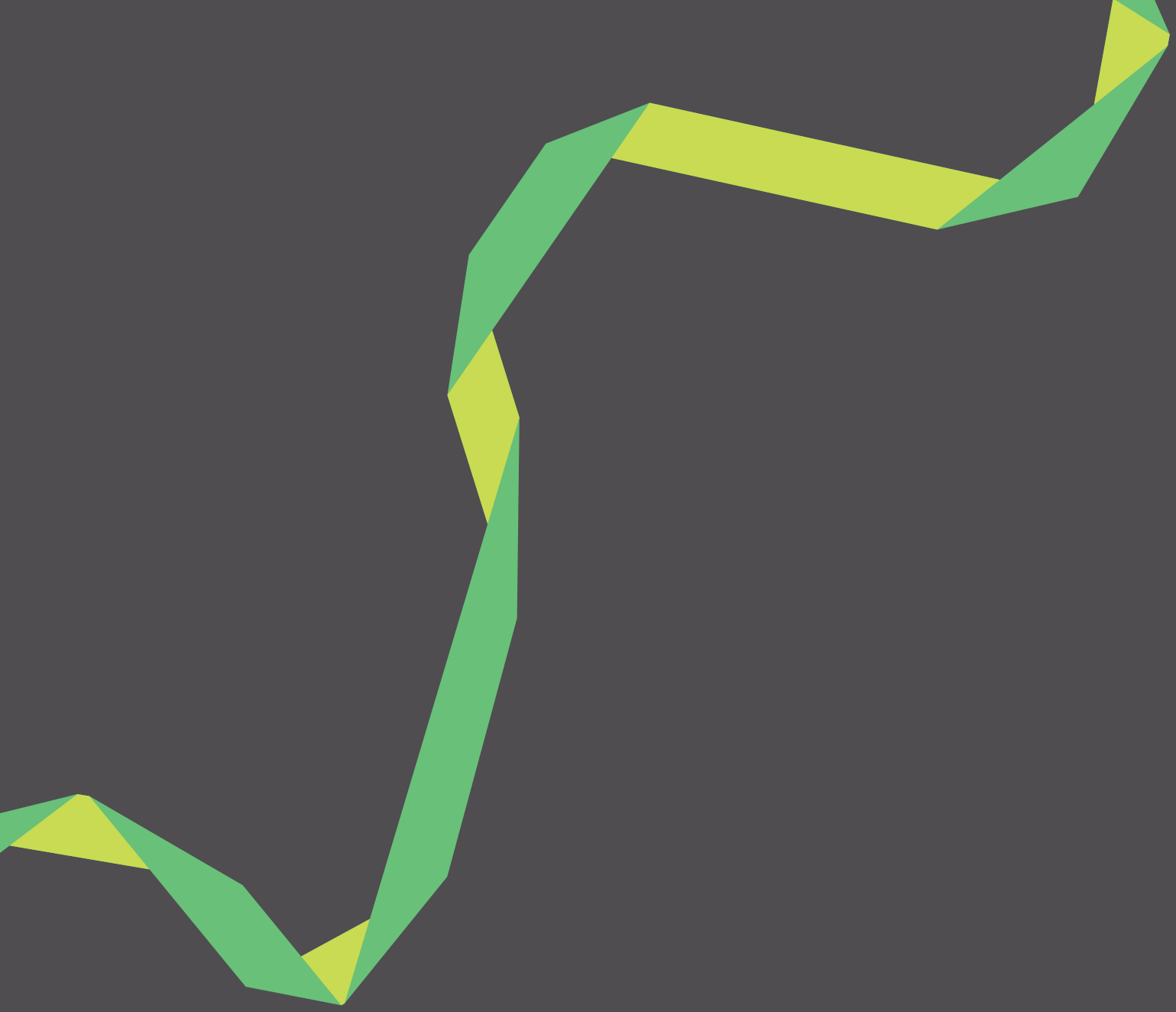
345.6

Click Here for More Information

Sources:

https://www.portlandoregon.gov/bps/42540

DESIGN PRECEDENTS



Design Precedents:

RESTORATIVE, TRANSFORMATIVE, & DYNAMIC

LOWER DON TRAIL ACCESS, ENVIRONMENT AND ART MASTER PLAN

DTAH

2014 CSLA Regional Honour Planning & Analysis Award

PROJECT RELEVANCE: *The Lower Don Trail Access, Environment and Art Master Plan is an example of a design strategy that builds upon years of river valley improvements by many designers and community groups. Small interjections in the landscape help to increase access and enhance the visitor experience.*

SUMMARY

- Public and stakeholder consultation played a large role in the Master Plan
- The Plan includes designs for new stairs to access the river valley, trail improvements and cyclist network improvements within the river valley
- The Plan also includes open space improvements and river crossings
- The Master Plan goals include:
  - Recommending strategies to improve environmental protection and access
  - Considering possibilities for public art in the lower Don River valley lands
  - Providing a long-term strategy to establish a theme, create positive user experiences and improve access into the river valley
  - Incorporating all existing studies, plans and initiatives into the study area

Toronto Ontario

Population:

2,615,060 *(2011)*

Metro Population:

5,583,064 *(2011)*

Population Per Square Kilometre:

4,149.5

Land Area In Square Kilometres:

630.2

Click Here for More Information

Sources:

http://www.csla-aapc.ca/awards-atlas/lower-don-trail-access-environment-and-art-master-plan

https://www.evergreen.ca/downloads/pdfs/Lower_Don_Master_Plan_Final_2013-09-09.pdf

EAST BOWMONT NATURAL ENVIRONMENT PARK DESIGN DEVELOPMENT

O2 Planning + Design Inc. with AECOM and Watershed+

2015 CSLA National Merit Planning & Analysis Award

PROJECT RELEVANCE: *The East Bowmont Natural Environment Park Design Development combines the cultural significance and ecological function of the Bow River into an immersive visitor experience while improving the water and environmental quality.*

SUMMARY

- The site is a former gravel quarry in Calgary's Bow River Valley
- The designers combined a stormwater treatment complex with a natural park for the public to enjoy
- The project includes a groundbreaking stormwater quality retrofit which incorporates numerous water-based landscapes and artworks
- The design helps to illustrate the journey of the water's cleansing process from storm sewer inlet to Bow River outlet

Calgary Alberta

Population:

1,096,833 *(2011)*

Metro Population:

1,214,839 *(2011)*

Population Per Square Kilometre:

1,329

Land Area In Square Kilometres:

825.3

Click Here for More Information

Sources:

http://www.csla-aapc.ca/awards-atlas/east-bowmont-natural-environment-park-design-development-plan

MILL RIVER PARK AND GREENWAY

OLIN

2015 ASLA Honor and General Design Awards

PROJECT RELEVANCE: *The Mill River Park and Greenway is a transformed landscape adjacent to downtown Stamford Connecticut. The project transformed the river's edge into an ecological and community gathering place from a derelict industrial region.*

Stamford Connecticut

Population:

128,874 *(2015)*

Population Per Square Kilometre:

955.3

Land Area In Square Kilometres:

134.9

Click Here for More Information

SUMMARY

- The design process maintained a spirit of community and collaboration
- Mill River Park has become a place for gathering and festivities
- It is a 14-acre park and river restoration completed by the Army Corps of Engineers and designed by OLIN
- The park runs along the Rippowam River, which stretches 17 miles inland
- The lower nine miles of the river courses through Downtown Stamford and was coined Mill River in 1642
- Mill River suffered from industrial pollution
- The demolition of the dam and restoration efforts have helped to reverse the effects of river's degraded ecological systems, re-establish wildlife migration patterns and reduce sedimentation into Mill River
- The project had three goals:
    1. Create a park that meets the recreational and civic needs of a diverse population
    2. Provide a natural habitat for native flora and fauna, and
    3. Offer a vision that is economically viable, maintainable and implementable

HIGHLIGHTS OF THE PROJECT INCLUDE:

- Integrates of pre- and post-contact history, natural heritage
- Addresses invasive species, flooding and siltation
- Includes a collaborative design process: ecologists, civil engineers, engaging the public
- Incorporates techniques to encourage natural flow of water and flood management

Sources:

https://www.theolinstudio.com/featured-projects#/mill-river-park-and-greenway/

https://www.asla.org/2015awards/95842.html

PARC DIAGONAL MAR

EDAW EMBT

2005 ASLA General Design Award of Honor

PROJECT RELEVANCE: *Parc Diagonal Mar is an example of a river-front open space plan that combines ease of water access, ecological restoration and engaging sensory experiences for park visitors in a dense urban context.*

SUMMARY

- $900 million mixed-use project that began in 1997 with a 10-year development plan
- The site is located on a former railyard and became part of an 84-acre mixed use development (34 acres is devoted to the park)
- Parc Diagonal Mar became a greenway that leads hundreds of thousands of residents from the surrounding communities to the Mediterranean Sea
- Design elements and the park's composition reference modern art, which is valued in Barcelona
- The park includes engaging, playful and interactive elements
- The design was a result of significant collaboration between the private developer and client and the public agencies for parks and urban design
- A major element of the park's function is storm water retention
- The project resulted in the first public/private sustainability agreement in Spain; sustainable design features were integrated into the park design

Barcelona Spain

Population:

1,602,000 *(2014)*

Population Per Square Kilometre:

15,721.3

Land Area In Square Kilometres:

101.9

Click Here for More Information

Sources:

https://www.asla.org/awards/2005/05winners/492.html

http://www.landezine.com/index.php/2009/09/park-diagonal-mar/

TRINITY RIVER PARK

MVVA | 2016-ongoing

PROJECT RELEVANCE: *Trinity River Park is an excellent example of design influencing park experience by embracing the natural ebb and flow of the river landscape. Residents of Dallas are immersed in the riparian landscape and able to access the river at different flooding levels.*

Dallas Texas

Population:

1,258,000 *(2013)*

Population Per Square Kilometre:

1,258.9

Land Area In Square Kilometres:

999.3

SUMMARY

- Long stretches of undeveloped land and limited access opportunities have separated the residents of Dallas, Texas from the Trinity River for many years
- The design of Trinity River Park by MVVA contributes to municipal efforts to connect the river with the city
- The park's design has two core concepts:
    1. Civic spaces (playgrounds, fountains, plazas and lawns providing a connection between the city and the floodplain while protecting programmatic areas from extreme flooding and bringing a sense of identity to the dry side of the city's levees)
    2. Naturalistic/riparian landscapes (restoring the ecological function and natural beauty of the channel and its banks while reducing the vulnerability of pathways and other important design elements)
- The schematic design separates programmatic and ecological zones to ensure the maximum functionality of each
- The design also protects city from major flood events with adaptable landscapes, making the park accessible even in 10-year storms

Click Here for More Information

Sources:

http://www.mvvainc.com/project.php?id=114&c=parks

LOS ANGELES RIVER REVITALIZATION MASTER PLAN

Mia Lehrer + Associates, with Civitas Inc., and Wenk Associates

2009 ASLA Honor Award

PROJECT RELEVANCE: *Although the Los Angeles River's environmental integrity has been greatly diminished, and is located in a highly-urbanized area, compared to Edmonton's North Saskatchewan River, the Plan provides innovative examples of river-focused public spaces that still provide ecological functions. As well, the Plan identifies bold moves such as reconnecting adjacent neighbourhoods to the river through active transportation paths, greenways, and public open space.*

Los Angeles California

Population:

3,971,896 *(2015)*

Metro Population:

13,131,431 *(2013)*

Population Per Square Kilometre:

3,271.7

Land Area In Square Kilometres:

1,214

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SUMMARY

- The 2009 Plan puts forward a vision to transform the channelized Los Angeles River into a recreational and ecological resource, with the creation of a public greenway corridor
- Initially channelized by the Army Corps of Engineers in the 1930s for flood prevention, the Los Angeles River is envisioned within this Plan to become a 32 mile green spine traverssing Los Angeles
- Twenty 'Community Opportunity Areas' were selected along the river corridor to illustrate what might be feasible through implementation of various improvement scenarios
- The Master Plan developed goals that can be implemented through design solutions, such as:
  - Revitalizing water quality: by enhancing flood storage to slow flow velocities, enabling the reintroduction of vegetation; improving water quality using stormwater treatment; creating better public access via terraces, ramps, pocket parks and ponds; and restoring the riparian ecosystem
  - Greening neighbourhoods: by creating a green spine through the city; connecting neighbourhoods to the river by green streets; transforming brownfield sites into parks; building bridges and gateways; and by pubic art and programmed events
  - Adding value: by spurring development through open space revitalization, and creating increased tax revenue
- The Plan is intended to be a 25-50 year blueprint for implementing comprehensive improvements that would make the Los Angeles River a treasured landmark and a catalyst for a sustainable development
- Architect Frank Gehry is currently working with the City and the Los Angeles River Revitalization Group to draft an updated master plan that will flesh out design elements that were left out of the 2009 Plan, including bridge, bike path, and walkway designs
- Gehry's involvement can help spur change for the concrete-lined river

Sources:

https://www.asla.org/2009awards/064.html

http://boe.lacity.org/lariverrmp/CommunityOutreach/pdf/LARRMP_Final_05_03_07.pdf

http://www.latimes.com/local/lanow/la-me-ln-la-river-frank-gehry-20150807-story.html

Design Precedents:

CULTURAL FOCUS

A CIVIC VISION AND ACTION PLAN FOR THE CENTRAL DELAWARE RIVER

Wallace Roberts & Todd, LLC

2009 ASLA Honor Award

PROJECT RELEVANCE: *The Plan for the Central Delaware River is a landmark project that focuses on increasing access to the river for under-served members of the population and encouraging public participation in urban planning.*

Philadelphia Pennsylvania

Population:

1,567,442 *(2015)*

Population Per Square Kilometre:

4,271.0

Land Area In Square Kilometres:

367

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SUMMARY

- The design of the riverfront was a collective process
- The goal was to reconnect underserved and isolated communities to the river
- In part, the goal was accomplished by balancing development and a world class park system while giving public will a voice to change the city's future
- This was the first time in nearly two generations that the City of Philadelphia and its citizens engaged in a public discussion about the future of a major section of the city
- The design addresses the ad hoc urban development that had occurred in recent history after the decline of industry in the city

Sources:

https://www.asla.org/2009awards/564.html

http://planphilly.com/praxis-projects/central-delaware-riverfront-planning-process/a-civic-vision-for-the-central-delaware

PHILADELPHIA'S INCREMENTAL LANDSCAPE

1996-ongoing

PROJECT RELEVANCE: *The shoreline of the Schuylkill River in Philadelphia provides an example of a landscape with socio-cultural value that helps to stimulate economic and community growth through active public use.*

SUMMARY

- Incremental public realm restructuring of the Schuylkill River by the City of Philadelphia Streets Department started in 1996
- Bulkheads were installed along the bank and the shoreline was filled to create flat, programmable land area
- New high rises, activated park spaces, and improved connections now exist along the river's edge as a result of years of public space improvements
- The river's edge, which was once an industrial site, has become a welcoming civic amenity
- The armature, created by a simple paved path, led to impactful offshoot projects and a networked public realm
- The pathway connects to the Art Museum, Water Works, Boathouse Row and the greater Fairmount Park system
- The City of Philadelphia, along with Schuylkill Banks Development Corporation, continued to make incremental improvements over the years
- This project emphasizes the idea that by taking the first step, no matter how small, a municipality can show commitment and build support for continued improvement in the public realm

Philadelphia Pennsylvania

Population:

1,567,442 *(2015)*

Population Per Square Kilometre:

4,271.0

Land Area In Square Kilometres:

367

Click Here for More Information

Sources:

https://www.schuylkillbanks.org/landmarks/schuylkill-river-park

CITY/PARK HYBRIDIZED

SWA Group

2013 ASLA Analysis and Planning Honor Award

PROJECT RELEVANCE: *City/Park Hybridized is a large-scale landscape design that integrates ecological and anthropogenic functions into a larger urban network scheme, resulting in small-scale, tangible improvements for the residents of Changsha, China.*

Changsha Furong China

Population:

523,730 (2010)

Population Per Square Kilometre:

12,470

Land Area In Square Kilometres:

42

SUMMARY

- Goal to reconnect people to the cultural heritage of the river through the Changsha River Park
- The project was a response to the channeling and consolidation of river systems throughout southern China and the separation of the city and river through the levee system, which was constructed due to losses from flooding
- Four strategies to connect the river back to the city were implemented:
    1. Increase the size of the levee and add terraces for a more transitional landscape
    2. Create a series of 'Green Fingers' that extend into the city, providing drainage for runoff as well as a bicycle network for the city
    3. Combine landscape and architecture in the surrounding development, integrating a layered pedestrian and green terrace system with retail and residential/office towers, increasing the value of the park on the urban edge
    4. Create new wetlands for runoff, bio-filtration, habitat creation and recreation

Click Here for More Information

Sources:

https://www.asla.org/2013awards/212.html

OODENA CELEBRATION CIRCLE

HFTC Planning & Design

1995 CSLA National Honour Award, 2007 CSLA National Merit Award

PROJECT RELEVANCE: *The Oodena Celebration Circle was inspired by the myths and sacred places of the many peoples drawn to The Forks over its 7,000-year history. The client's need for a spiritual and ceremonial 'heart' for The Forks at the junction of the Red and Assiniboine Rivers was seen as an opportunity to reconnect with the cultural history of the site and the natural forces of earth, water and sky.*

SUMMARY

- Situated at the Forks, at the confluence of the Red and Assiniboine Rivers, which has been a gathering place for thousands of years
- Called the Oodena Celebration Circle, after the Ojibwa word meaning "heart of the city"
- The circle was conceived as an opportunity to demonstrate reverence for the long cultural history of the site

PROJECT HIGHLIGHTS INCLUDE:

- A 3-metre-deep excavation unearthed a 3,000 year old layer of soil rich in artifacts
- The resulting bowl became a spiritual gathering place without reference to cultural specific symbols
- Monoliths surrounding the bowl align to direct the visitors attention to the sun on the horizon, and act as guideposts for constellations at night
- Aside from passive uses, the space is used as a theatre for events and performances

Winnipeg Manitoba

Population:

663,617 *(2011)*

Population Per Square Kilometre:

1,417.7

Land Area In Square Kilometres:

468.1

Click Here for More Information

Sources:

http://www.theforks.com/uploads/ck/files/AboutOodena.pdf

http://www.htfc.mb.ca/projects/oodena-celebration-circle/

GRORUDPARKEN (GROUND PARK)

LINK Landskap | 2013

PROJECT RELEVANCE: *Grorudparken (Ground Park) is a Norwegian example of a landscape that builds on the cultural significance of the river while including the needs and desires of a multi-cultural community.*

Oslo Norway

Population:

618,683 *(2012)*

Population Per Square Kilometre:

1,362.7

Land Area In Square Kilometres:

454

SUMMARY

- One of four new neighbourhood parks in Groruddalen
- The park includes facilities for athletics, play, recreation, youth programs, social interaction and cultural activities for a diverse population
- Municipal departments including The Department of Recreation, The Planning Office, The Office of Cultural Heritage Management and the District of Grorud were involved in the planning and design of the park
- It helps to create a continuous landscape and recreation corridor along the River Alna, integrating cultural and historical artifacts with new experiences
- The project addresses flood mitigation, stormwater management by purifying runoff and cleaning sub-surface materials from surrounding areas
- There is a focus on lighting, which Edmonton may or may not want to consider depending on the ecological context

Click Here for More Information

Sources:

http://www.landezine.com/index.php/2015/04/grorudparken-by-link-arkitektur/

CHICAGO RIVERWALK EXPANSION

Sasaki, Ross Barney Architects, Alfred Benesch Engineers, Jacobs/Ryan Associates | 2015-2016

PROJECT RELEVANCE: *The Chicago Riverwalk Expansion is part of a larger system of river edge improvements in Chicago, Illinois. The project successfully integrates the active use of the river (boating, running, cycling) and passive urban enjoyment of the river, enriching the total experience of the landscape.*

Chicago Illinois

Population:

2,720,546 *(2015)*

Population Per Square Kilometre:

4,488.6

Land Area In Square Kilometres:

606.1

SUMMARY

- This project responds to the continued effort to re-integrate the Chicago River as part of the city for ecological, recreational and economic benefit
- Recent improvements in water quality allow the river to be used for recreation
- Phases Two and Three include six blocks between State Street and Lake Street to provide a pedestrian connection between the lake and the confluence of the river

Click Here for More Information

PROJECT HIGHLIGHTS INCLUDE:

- Creating accessible connections to the river from the urban network
- Integrating the river pedestrian network into the city's network
- Creating opportunities to use the river for recreation, particularly boating, and places to observe the river
- Integration of the river into the city's urban culture

Sources:

http://www.landezine.com/index.php/2016/07/chicago-riverwalk-expansion-by-sasaki/

WANUSKEWIN HERITAGE PARK

Crosby Hanna & Associates

1996 CSLA National & Prairie Region Honour Awards, 1996 Design Council of Saskatchewan: Premier's Award of Excellence

PROJECT RELEVANCE: *This major First Nations culture heritage park, immediately north of Saskatoon, is of national significance. Particular care has been devoted to ensuring that its development presents an appropriate cultural and environmental image, in conjunction with a strong visitor experience. The park offers an excellent example of combining First Nations culture and heritage, with tourism, public education and recreation.*

Saskatoon Saskatchewan

Population:
222,189 *(2011)*

Metro Population:
260,600 *(2011)*

Population Per Square Kilometre:
1,060

Land Area In Square Kilometres:
209.6

Click Here for More Information

SUMMARY

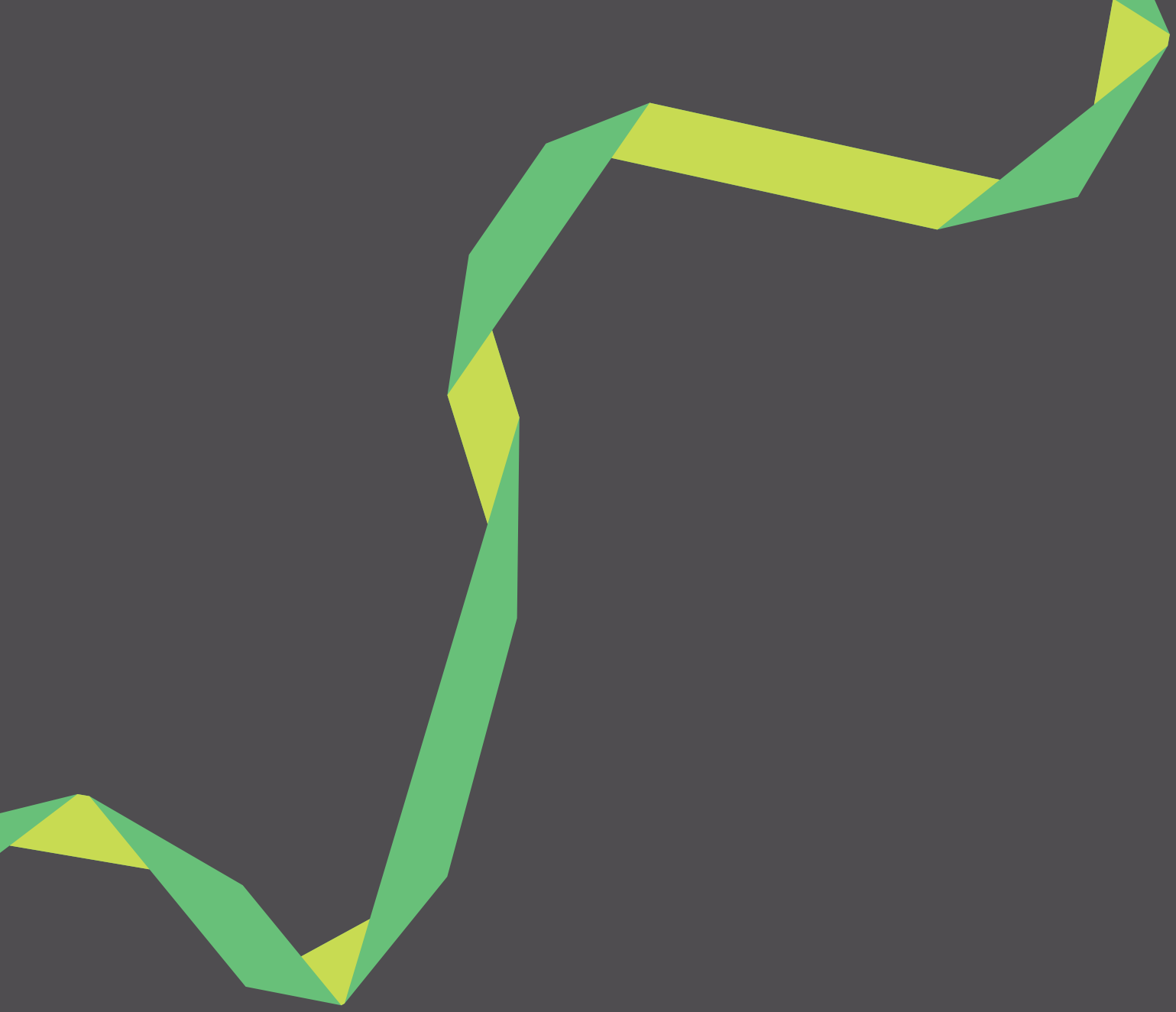
- In conjunction with its participating parties, the Meewasin Valley Authority purchased land in 1983 to begin development for what is now an international heritage site to depict the history of First Nations people in the Northern Plains
- Officially opened in 1993, the Wanuskewin Heritage Park is managed by the Wanuskewin Heritage Park Authority, a non-for-profit organization governed by a Board of Directors consisting of both Aboriginal and non-Aboriginal members
- The 136-hectare park includes a thematic entrance, an amphitheatre, an activity area, an extensive trail network including creek crossings, various interpretive stations, site exhibits including a Medicine Wheel, and a major interpretive/administration centre
- Wanuskewin is Canada's longest-running archaeological dig, with ongoing archaeological work being done by the University of Saskatchewan
- The Heritage Park shares the stories and lifestyles of the First Nations people who have gathered at this meeting place for over 6,000 years, through hands-on demonstrations, traditional cuisine, art galleries, indoor and outdoor activities and overnight Tipi wilderness camps

Sources:

http://crosbyhanna.ca/project/wanuskewin-heritage-park/

https://wanuskewin.com/

http://meewasin.com/visitors/wanuskewin-heritage-park



Design Precedents:

PLANNING & ANALYSIS FOR DESIGN

CREDIT RIVER PARKS STRATEGY

Schollen & Company

2014 CSLA Regional Honour Planning & Analysis Award

PROJECT RELEVANCE: *The Credit River Parks Strategy (CRPS) is an example of a detailed analysis study that resulted in policy and design recommendations to benefit the ecological systems in the Credit River Valley as well as social benefits to the surrounding communities.*

Mississauga Ontario

Population:

713,443 *(2011)*

Population Per Square Kilometre:

2,439.9

Land Area In Square Kilometres:

292.4

SUMMARY

- The Credit River Valley is the largest and most diverse natural area in the City of Mississauga
- The study area encompasses a 27km segment of the Credit River Valley (650ha) and contains seven "Feature Sites" that warrant special consideration
- The goal of the study is to develop a sustainable, innovative and environmentally responsible Master Plan to guide the planning, development, conservation and management of the publicly-owned and publicly accessible parkland and natural areas
- The project team integrated community consultation into every stage of the project
- The CRPS is made of three components: a Master Plan for the valley corridor, a Concept Plan for each of the seven "Feature Sites" and an Implementation Plan for the recommendations
- The Master Plan recommends the creation and protection of a continuous Natural Corridor in the river valley as well as Transitional Beltlands that act as a buffer
- The Master Plan also recommends the establishment of the Credit River Heritage Route
- The project is comprised of comprehensive, detailed site inventory and analysis, including previous studies and reports, and the integration of cultural and natural heritage as essential elements to the Plan

Click Here for More Information

Sources:

http://www7.mississauga.ca/departments/rec/parks/crps/pdf/CRPS-PART1-August-8-2013.pdf

http://www.csla-aapc.ca/awards-atlas/credit-river-parks-strategy

CAPITAL REGION RIVER VALLEY PARK

EDA Collaborative Inc.

2008 CSLA National Merit Award

Capital Region

Includes:
Devon
Parkland County
Leduc County
Edmonton
Strathcona County
Sturgeon County
Fort Saskatchewan

PROJECT RELEVANCE: *Formed in 1996, the River Valley Alliance's vision is to create a continuous integrated river valley park system in the Capital Region, from Devon through Parkland County, Leduc County, Edmonton, Strathcona County and Sturgeon County to Fort Saskatchewan. The park aims to cover 18,000 acres linking over 88 kilometres through the valley of the North Saskatchewan River. The central focus of the River Valley Alliance is to protect the natural capital of the river valley while ensuring access for a variety of active and passive pursuits. A capital program plan was developed in 2012 and implementation is ongoing.*

Click Here for More Information

SUMMARY

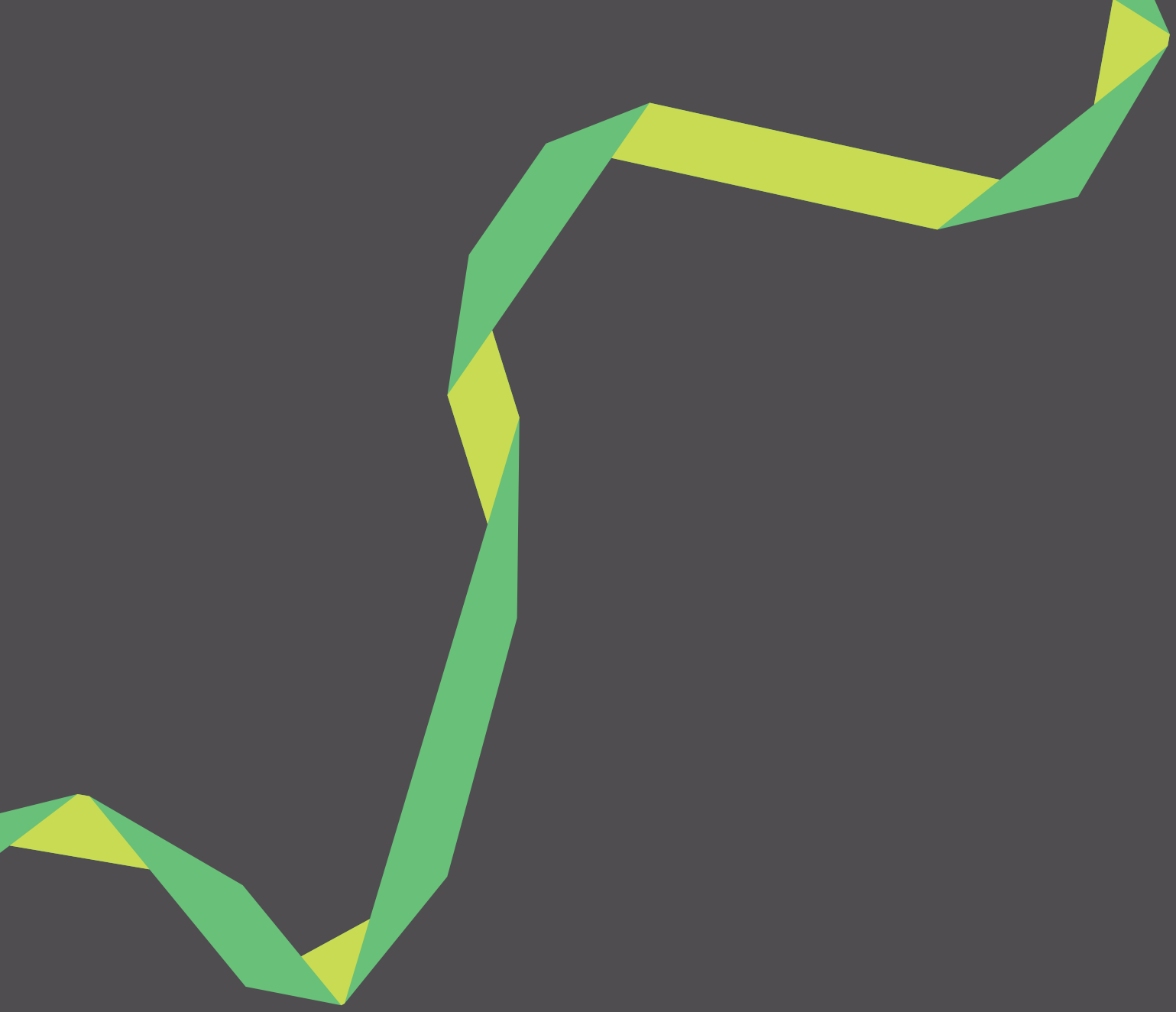
- The project comprises the development of an Integrated Concept Plan, bringing together the plans and ideas of government and stakeholders within each of the seven municipalities
- The end result is a Plan of Action that expands on the integrated Concept Plan by outlining proposed features and amenities of the open space system
- A key element of the site analysis includes the identification of privately owned parcels that will likely be required to improve connectivity and amenity development
- The Capital Region River Valley Park will be one of the largest river valley parks in the world
- In 2016, the River Valley Alliance submitted to its members a Draft Capital Program 2017-2022, which contained an overview of proposed projects
- These projects would build on the existing trails system and complete a continuous trail from Devon, through Edmonton to Fort Saskatchewan by adding additional trails, bridges, docks, and launches

HIGHLIGHTS OF THE PROJECT:

- Integrated Concept Plan
- Plan of Action
- Connectivity and Mapping Initiative
- Priority Mapping

Sources:

http://eda.ca/projects/2012/05/29/capital-region-river-valley-park/



Design Precedents:

DESIGN ELEMENTS

EVERGREEN BRICKWORKS
Collaborative | Toronto Ontario

PROJECT RELEVANCE: *The Evergreen Brickworks is a community hub in the Don River valley in Toronto, Ontario. This retrofitted industrial building provides the community with recreational and market amenities, improving the local economy and supporting underserved communities. The landscape design and architectural improvements are adaptive and responsive to the seasonal flooding that occurs in the valley.*

Click Here for More Information

MASONIC AMPHITHEATRE AND SMITH CREEK PEDESTRIAN BRIDGE
design/buildLAB | Clifton Ford Virginia

PROJECT RELEVANCE: *The amphitheatre and bridge provide community gathering and performance spaces, while creating a light touch on the landscape. The designs are reflective of the local environment.*

Click Here for More Information

OTONABEE RIVER TRAIL
Basterfield & O'Brien Joint Venture | Peterborough Ontario

PROJECT RELEVANCE: *The Otonabee River Trail design expresses the story of the town of Peterborough and re-integrates the river into the downtown. The trail includes spaces for public art, community events, performing arts, festivals and outdoor markets. There are also connections to private sector opportunities including food service and recreational opportunities.*

Click Here for More Information

Sources:

https://www.evergreen.ca/news-media/media-kit/backgrounder-evergreen-brick-works/

http://www.landezine.com/index.php/2015/01/masonic-amphitheatre-and-smith-creek-pedestrian-bridge-by-designbuildlab/

http://www.csla-aapc.ca/awards-atlas/otonabee-river-trail

TOMMY THOMPSON PARK PAVILIONS
Montgomery Sisam | Toronto Ontario

PROJECT RELEVANCE: *The pavilions provide visitors the opportunity to learn about the Leslie Street Spit and the volunteer ecology that has developed over the decades within the park. The architecture responds to the landscape and is small in scale.*

Click Here for More Information

SHERBOURNE COMMONS
PFS Studio | Toronto Ontario

PROJECT RELEVANCE: *The pavilion in Sherbourne Commons not only acts as a cafe and shelter, it also contains technology to filter water that is drawn into the park from Lake Ontario with UV technology.*

Click Here for More Information

THE FORKS
Winnipeg Manitoba

PROJECT RELEVANCE: *The Forks in Winnipeg is a combination of passive park space, recreation amenities, and visitor attractions located at the junction of the Assiniboine and Red Rivers. With over four million annual visitors, The Forks is Winnipeg's most visited tourist destination. The site is operated by The Forks North Portage Partnership.*

Click Here for More Information

Sources:

http://www.montgomerysisam.com/projects/tommy-thompson-park-infrastructure

http://www.landezine.com/index.php/2013/09/sherbourne-common-by-pfs-studio/

http://www.theforks.com/

RIVERWALK COMMONS
Janet Rosenberg & Studio Inc. | Newmarket Ontario

PROJECT RELEVANCE: *Janet Rosenberg & Studio created a community space outside the Newmarket Community Centre & Lions Hall, integrating an outdoor stage, event space and opportunities for winter activities such as skating.*

Click Here for More Information

ST. PATRICK'S ISLAND PARK
W Architecture / Civitas with IBI Group | Calgary Alberta

PROJECT RELEVANCE: *St. Patrick's Island Park integrates many amenities and activities that are well-suited to the riverside location. They include a shared-use pathway, event pavilions, picnic areas and a boat launch.*

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TERRA NOVA PLAY EXPERIENCE
Hapa Collaborative | Richmond British Columbia

PROJECT RELEVANCE: *This playground offers a variety of play experiences, focusing on natural play. The experience of the larger landscape (including the intertidal foreshore, dykes, remnant sloughs, and past and present agricultural use) is included in the playscape design.*

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Sources:

http://www.csla-aapc.ca/awards-atlas/riverwalk-commons

http://www.csla-aapc.ca/awards-atlas/st-patricks-island-park

http://www.landezine.com/index.php/2014/10/terra-nova-play-experience-by-hapa-collaborative/

INTO THE WILD
Dmau, Openfabric | The Hague Netherlands

PROJECT RELEVANCE: *This play experience includes natural play elements and hard surfaces to allow children the opportunity to run, cycle, climb and invent games in a natural environment.*

Click Here for More Information

RECREATION TRAILS MASTER PLAN
Hamilton Ontario

PROJECT RELEVANCE: *In 2016, the City of Hamilton updated its Recreational Trails Master Plan originally developed in 2007. The goal of the Plan is to guide the development of a connected, comprehensive, accessible and sustainable multiuse trails network throughout the City of Hamilton and the surrounding communities to improve health and wellness for pedestrians, cyclists and trail users. A classification system and parameters are recommended for design elements such as trail width, accessibility standards, lighting, and surfacing.*

Click Here for More Information

Sources:

http://www.landezine.com/index.php/2016/09/into-the-wild-by-openfabric-dmau/

https://d3fpllf1m7bbt3.cloudfront.net/sites/default/files/media/browser/2016-06-27/hamilton-recreational-trails-master-plan-2016.pdf

EAST POINT BIRD SANCTUARY
PLANT | Toronto Ontario

PROJECT RELEVANCE: *Small structures dot the landscape to create bird blinds and informational signs.*

Click Here for More Information

PARK OF LUNA
HOSPER Landscape Architecture and Urban Design | Netherlands

PROJECT RELEVANCE: *Public education and recreational opportunities are integrated into the ecological improvements in this decade-long park project.*

Click Here for More Information

JARDIN DES PREMIERES NATIONS
Williams, Asselin, Ackaoui et Associes Inc. | Montreal Quebec

PROJECT RELEVANCE: *The Jardin des Premieres Nations is a project that was created collaboratively with First Nations people for the purposes of commemoration and education.*

Click Here for More Information

MEEWASIN VALLEY AUTHORITY
Saskatoon Saskatchewan

PROJECT RELEVANCE: *Meewasin Valley Authority is a conservation agency created in 1979 with the purpose to conserve the cultural and natural resources of the South Saskatchewan River Valley. Programming is offered in the Beaver Creek Conservation Area to educate visitors and school groups on the natural environment. The City of Saskatoon, the Government of Saskatchewan, and the University of Saskatchewan are the three participating partners of the agency.*

Click Here for More Information

Sources:

http://www.branchplant.com/building/eastpoint.html

http://www.landezine.com/index.php/2011/06/park-of-luna-by-hosper-and-drftwd-office-associates/

http://www.csla-aapc.ca/awards-atlas/jardin-des-premi-res-nations

http://meewasin.com/

ROCHETAILLEE BANKS OF THE SAONE
In Situ Architectes Paysagistes | Lyon France

PROJECT RELEVANCE: *The park layout provides a balanced mix of recreational and resting opportunities for park visitors. The site furniture is unique to the park and creates an identity for the area.*

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SIMCOE WAVEDECK
DTAH, West 8 | Toronto Ontario

PROJECT RELEVANCE: *The curvature of the wave decks create a unique pedestrian experience while improving fish habitat along the water edge.*

Click Here for More Information

LA PROMENADE DE LA MER
Pluram Urbatique (now Lemay) | Rimouski Quebec

PROJECT RELEVANCE: *The nautical theme of the designed pathway is a familiar cultural reference for residents of Rimouski. The design emphasizes the unique character of the area and provides access to the water.*

Click Here for More Information

Sources:

http://www.landezine.com/index.php/2016/09/rochetaillee-banks-of-the-saone-by-in-situ/

http://www.landezine.com/index.php/2009/08/simcoe-wavedeck/

http://www.csla-aapc.ca/awards-atlas/la-promenade-de-la-mer-rimouski

RIVER FOREST ISLAND
SWA Group | Changsha China

PROJECT RELEVANCE: *Boardwalks and pathways meander through the riparian landscape, creating moments and experiences and generating the feeling that the water is always within reach. The site design creates an intimate experience with the river ecology.*

Click Here for More Information

HORNSBERGS STRANDPARK
Nyréns Architects | Stockholm Sweden

PROJECT RELEVANCE: *Circular decks may be used for resting or educational opportunities. Visitors can either look out into the water or back to the city landscape.*

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Sources:

http://www.landezine.com/index.php/2016/08/river-forest-island-by-swa/

http://www.landezine.com/index.php/2013/02/hornsbergs-strandpark-by-nyrens-architects/

ENVIRONMENTAL PLANNING PRECEDENTS

MOVING BIODIVERSITY CONSERVATION TO A LANDSCAPE APPROACH

Ministry of Natural Resources and Forestry | Ontario

PROJECT RELEVANCE: *Many jurisdictions, including the Province of Ontario, have concluded that biodiversity conservation, sustainable resource management, and restoration of degraded habitats are best accomplished using an ecosystem and landscape-based approach. Increased population levels, urbanization and intensification of agriculture has placed greater pressure on the landscape and natural resources. An integrated, strategic landscape approach to biodiversity conservation has proved to be an effective and efficient method for stewardship, resource management, and planning activities.*

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SUMMARY

- The approach goals are:
  - Adopt a modern and sustainable approach to managing Ontario's natural resources over broader areas and longer time periods.
  - Support, enable and advance ecosystem-based, landscape management approaches in Ontario over time.
- These goals will be realized by identifying the best opportunities to develop and implement a broader landscape approach to better address the biodiversity conservation challenges we face today. Some steps include:
  - Supporting stewardship and restoration activities that address multiple objectives and the needs of broader landscape management
  - Finding opportunities for coordinating and aligning natural resource management programs
  - Re-assessing the size of management units to seek economies of scale
  - Setting management priorities based on the risk to natural resources and the public
- Where appropriate, the approach identifies ecologically meaningful areas (such as natural heritage systems, ecosystems, watersheds, or broader species distribution – e.g. see Figure 1) and demonstrates how the project will benefit these ecological functions and structures at a higher scale
- The provisional Natural Heritage System consists of the following mapped components:
  - Core Areas – The least fragmented areas of natural cover that are at least 500 m wide
  - Core Area Enhancement Zones – Opportunities to expand and enhance Core Areas through restoration, where the existing natural cover is fragmented
  - Potential Core Areas - Opportunities to build new Core Areas through restoration, where the existing natural cover is fragmented
  - Corridors – Areas that connect or have the potential to connect through restoration, terrestrial and/or aquatic core areas
  - Linkages – Areas that connect or have the potential to connect through restoration, terrestrial and/or aquatic cores areas together along riparian systems
  - Adjacent Areas of Existing Natural Cover – Slightly fragmented areas of existing natural cover that are located within 100m of any of the other components described above

Sources:

https://www.ontario.ca/page/moving-biodiversity-conservation-landscape-approach

INTEGRATION OF LANDSCAPE FRAGMENTATION ANALYSIS IN REGIONAL PLANNING

A statewide multi-scale case study from California, USA

PROJECT RELEVANCE: *This paper provides a systematic, quantitative, and intuitive method to analyze the cumulative impacts of multiple fragmented features across a range of spatial scales within a variety of planning units. This approach could be used for analyzing the impact of future land development scenarios, and integrated into regional planning processes*

SUMMARY

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- Administrative and watershed boundaries are used as planning units to calculate an effective mesh size for the state of California. Two spatial scales of administrative boundaries were assessed:
  - Counties
  - Caltrans districts
- Six spatial scales of watersheds were used in this analysis:
  - hydrologic regions
  - hydrologic units
  - hydrologic areas
  - hydrologic sub-areas
  - super-planning watersheds
  - planning watersheds
- The effective mesh size landscape metric (m_{eff}) expresses the likelihood that any two randomly chosen points in the region under observation may or may not be connected. The more barriers (e.g., roads, railroads, urban areas) erected in the landscape, the less chance that the two points will be connected. It can also be interpreted as the ability of two animals of the same species – placed randomly in a landscape – to find each other. In this study, simple rules of polygon connectivity were used to define the unfragmented patched bounded by roads, urban areas, and/or agricultural areas. This probability is converted into the effective mesh size. The more barriers in the landscape, the lower the probability that the two locations will be connected, and the lower the effective mesh size.

IMPLICATIONS FOR WILDLIFE MANAGEMENT AND LAND USE PLANNING

- Effective mesh size serves as an analytical tool in regional planning for the following purposes:
  - Quantitative assessments of the degree to which planned future transportation and urban development scenarios will increase landscape fragmentation within a given planning unit. This approach can also be used retroactively, to assess the rate of fragmentation in a planning unit over time. This approach also permits the quantification of the cumulative effects of several projects combined.
  - It is possible to determine how much each category of fragmenting elements (e.g. different types of roads and urban areas), add to the total degree of landscape fragmentation.
  - The method can be applied to identify and test future scenarios for the removal of roads or installation of wildlife crossing structures that would have the greatest positive effect on the effective mesh size.
  - The level of fragmentation of regions can be analyzed in relation to their human population density and economic productivity and other relevant factors.

Sources:

Evan H. Girvetz, James H. Thorne, Alison M. Berrya Jochen A.G. Jaeger, Landscape and Urban Planning 86 (2008) 205–218

PLANNING FOR LIVING LANDSCAPES

Perspectives and Lessons from South Africa

PROJECT RELEVANCE: *This report offers lessons based on the South African experience of systematic conservation planning to achieve integration of biodiversity priorities into municipal policies and programs.*

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SUMMARY

- Six ingredients of an operational framework to create a conservation plan:
  - Key ingredient #1: Ask "Who wants this plan and what is it aimed at achieving?"
  - Key ingredient #2: Pay attention to project design
  - Key ingredient #3: Involve implementing agencies in the conservation assessment team
  - Key ingredient #4: Involve stakeholders in a focused way to understand their needs and interests
  - Key ingredient #5: Conduct the conservation assessment according to systematic conservation planning principles
  - Key ingredient #6: Interpret the conservation assessment results, and mainstream the conservation planning outcomes
- By treating all sectors as custodians of biodiversity rather than as threats to biodiversity, and involving them in developing a conservation strategy and action plan, stakeholders are able to view themselves as positive contributors to conserving biodiversity in priority areas
- Ensuring that there is at least one locally based champion who is involved both in the conservation plan and in its implementation

Sources:

Driver, A., Cowling, R. M., & Maze, K. (2003). Planning for Living Landscapes, Perspectives and Lessons from South Africa. Cape Town: Botanical Society of South Africa.

DESIGNING AND IMPLEMENTING ECOSYSTEM CONNECTIVITY IN THE OKANAGAN

PROJECT RELEVANCE: *This document outlines the considerations necessary to identify and undertake land use planning for wildlife corridors and ecosystem connectivity. It also offers a general discussion of the types of regulatory tools and opportunities to permit inclusion of connectivity areas in land use plans, and other resource management planning initiatives.*

SUMMARY

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- Physical and functional links between ecosystems (called connectivity) are necessary to support biodiversity. A connected network of ecosystems supports ecosystem services, provides opportunities for animal movement across the landscape and sustains natural areas close to populated areas. Connectivity plans define core areas (also called ecosystem patches) connected by elements like landscape corridors, stepping stone corridors, linear corridors, and buffer zones.
- Key Messages about Ecosystem Connectivity
  - Connectivity, comprised of physical and functional links between ecosystems, is necessary to support biodiversity.
  - Keeping native vegetation will help provide habitat for native pollinators, support their movement between habitats and support the viability of agricultural crops
  - Planning for connectivity helps limit the impact of roads on species at risk
  - A connected network of ecosystems supports ecosystem services, provides opportunities for animal and plant movement across the landscape and sustains natural areas close to populated areas
  - Ecosystem connectivity tends to be reduced where people work and live (e.g. low elevations; flat terrain; areas near water)
  - The building blocks of a connectivity strategy include ecosystem patches linked by connective elements such as landscape and linear corridors. Buffer zones to limit impacts of adjacent land use may also be added. Where corridors are not possible, providing connections between habitats for vulnerable species groups like amphibians and also avoids losses resulting from roads and vehicles
  - Connectivity for some species can sometimes be achieved by small ecosystem patches (stepping stones corridors).
  - Ecosystem connectivity supports the delivery of ecosystem services and particularly helps conserve riparian areas, water purification and flood control areas
  - Ecosystem connectivity also moderates impacts of climate change on temperature, carbon dioxide storage and overall biodiversity
  - Ecological connectivity supports genetic diversity; connectivity also supports movement opportunities that wildlife and plants require for their reproduction and survival
  - Ecological connectivity provides a cost effective way to protect species at risk, reduce wildlife conflicts and address challenges created by man-made barriers
  - Ecological Connectivity combines benefits for ecosystems and species with benefits for people
- Select the best patches:

- Conserve larger ecosystem patches; they generally have higher biodiversity, and are rarer than small patches
- Conserve natural areas containing native ecosystems and species, as well as structural diversity
- Conserve natural areas containing distinctive features that are rare on the landscape like wetlands, streams, wildlife trees, large woody debris, talus slopes, caves, and cliffs
- Focus on retaining natural areas in low elevation, flatter valley bottoms as these generally are capable of supporting higher biodiversity. Natural areas like these are less common than those on steeper slopes or higher elevations
- Conserve aggregated or adjacent patches. If this is not possible, conserve patches separated by agricultural areas, backyards, recreation areas and other areas that retain some important features of natural areas

> Meet the needs of species:
  - Work with scientists, and federal and provincial government staff to manage for a variety of species with similar needs.
  - Consider the patch size, edge and core area needs of target species
  - Consider the capacity of species to move between patches (some can fly, some can move easily across long distances along the ground, while some move slowly).

> Enhance, maintain or restore the quality of existing patches:
  - Select patches in locations that will support and maintain ecological processes like pollination, predation, and seed dispersal
  - Manage natural areas to reduce the amount of edge. This helps to limit opportunities for the invasion of exotic plants and animals into natural areas

> Plan Strategically:
  - Conserve natural areas that can help serve multiple functions such as recreation, hiking, flood and erosion protection, water quality and connectivity
  - While mapping for connectivity in the community is the best way to plan strategically, do not be afraid to start small and move toward conserving connectivity

Sources:

Susan Latimer and Alison Peatt. 2014. Designing and Implementing Ecosystem Connectivity in the Okanagan. Prepared for the Okanagan Collaborative Conservation Program.