IMAGINING THE ANTI-CITY: RE-CLAIMING URBANIZED PARKLAND IN EDMONTON, ALBERTA'S RIVER VALLEY

by

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Submitted in partial fulfilment of the requirements
for the degree of Master of Architecture

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DALHOUSIE UNIVERSITY

SCHOOL OF ARCHITECTURE

The undersigned hereby certify that they have read and recommend to the Faculty of Graduate Studies for acceptance a thesis entitled “IMAGINING THE ANTI-CITY: RE-CLAIMING URBANIZED PARKLAND IN EDMONTON, ALBERTA’S RIVER VALLEY” by Andrew James Slinko in partial fulfilment of the requirements for the degree of Master of Architecture.

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ABSTRACT

This thesis, located in Edmonton, Alberta, aims to magnify the differences between urban development and nature. It proposes a vision of future Edmonton in which the River Valley Park system is restored as an intensive greenway through the heart of the city, acting as a necessary counterpoint to urbanization.

Contrasting elements such as natural vs artificial, celestial vs the clock, recreation and relaxation vs work and stress are the basis for treating the river valley an anti-city rather than as an extension of it. This does not mean that the park system is isolated from the city, but that development in the River Valley is concerned in opposition to the city.

Architectural interventions in the River Valley take advantage of landscape and environmental processes to enhance the experience of being in this natural “wilderness”.

ACKNOWLEDGEMENTS

To Christine Macy, Omar Gandhi, and John Zuck for their enthusiasm and critical insight throughout the development of this thesis.

To all of my friends, for their encouragement over the years and the memories made.

To my parents, for their love and support; and always believing in me.

Thank you.

CHAPTER 1: INTRODUCTION

1.1 THE IMPORTANCE OF NATURE TO THE CITY AND ITS INHABITANTS

Thesis Question

How can architecture take advantage of natural processes to enhance the experience of an urban river valley?

When we think of parks, or nature, we invoke images of large open green spaces filled with forests, grasslands, meadows, rivers, streams, lakes, or ravines. We think of paths, trails, promenades, and a diverse array of social spaces, from small and private, to large and monumental. All of these things together represent a vast landscape that is essential to any large metropolitan area as an engaging outdoor recreation ground for a wide range of people. As James Corner states in *Large Parks,* "These huge experimental reserves are the great outdoor nature theatres of the city, stages for the performance of natural and cyclical time along side the reveries of social use and event". (Czerniak and Hargreaves 2007, 11)

Cutting through the heart of the city, Edmonton's river valley is dramatically influenced by natural elements such as weather, geology, vegetation, and wildlife at such a scale that it effectively creates an ecosystem separate from that of the surrounding urbanization. The ecological characteristics of this system are immensely beneficial: the sprawling areas of parkland help manage stormwater, to direct and cool air from adjacent urban development, and to provide habitat for all manner of plant and animal life. From experiential, cultural, and ecological aspects, large parks are priceless to the cities that are lucky enough to have and maintain them.

Central Park in New York, Hyde Park in London, or Montreal's Parc du Mont-Royal are all examples of successful parks containing elements of both park and wilderness. In order to classify what makes a natural area successful, it is important to define the words "park" and "wilderness". By my definition, "park" implies activity and elements of design while

“wilderness” indicates a lack of program and area influenced entirely by natural forces. In the context of this thesis, a successful park system is one that allows for nodes of program and design while allowing abundant wilderness so as to preserve the natural ecology of Edmonton’s river valley.

Architects can have an important role in identifying and establishing the relationships between natural and man-made systems as well as designing the nodes and edge conditions where program is most appropriate. At a building scale, the physical design of edge conditions and programmatic nodes can have a great experiential impact. However, urban scale issues such as defining the edges of city, park, and wilderness; how one enters and travels through the park; and where destinations might be within the system are what will drive the development and understanding of how the city and its inhabitants interact with each other.

This thesis focuses on an area of river valley adjacent to Edmonton’s downtown core that has been urbanized by residential and industrial development despite the fact that much of the area lays within a flood plain. The area will be redeveloped as a model for the rest of the river valley and will re-establish the valley as a continuous green corridor through the city.

1.2 THE NORTH SASKATCHEWAN RIVER VALLEY

The River Valley has had a major impact on the development of Edmonton as a city and it remains a strong link to the past.

1.2.1 Origin and Overview

Figure 1. Saskatchewan River drainage basin. Musser, 2007.

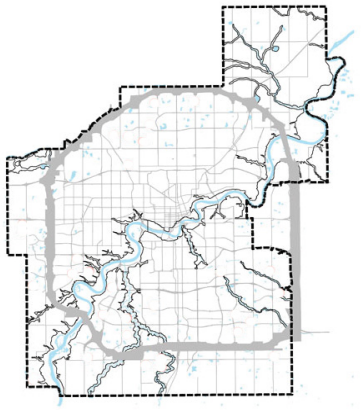


Figure 2. Edmonton city limits with North Saskatchewan River. City of Edmonton - Conservation Atlas. 2011.

Originating at the Columbia Glacier in the Canadian Rockies, the North Saskatchewan River winds its way through the City of Edmonton on its way to Lake Winnipeg. Occupying over 7,400 hectares in Edmonton and surrounding area it is the longest urban river valley parkland in North America (Figure 6). Cutting through a prairie region, the River Valley offers topographic relief to an otherwise flat landscape (Figures 3 and 4). Its combination of physical, biological, climatic, and scenic variations are rarely found in a major metropolitan area, and offer great recreational and educational potential.

The natural qualities of the Edmonton River Valley are unique. While other river cities have intensified their rivers with industrial or residential development, Edmonton has managed to preserve the majority of its valley as park land, thanks in part to Frederick Todd's recommendations of 1907. This thesis will address areas near the downtown core (Figure 5) that abandoned this approach during times of rapid growth. The result of this development within the floodplain is an interrupted park system. By reclaiming natural parkland in the valley, the goal is to emphasize the backdrop that is the downtown core and provide a state of wilderness in the heart of the city.

Figure 3. Flat farmland in the Alberta prairies. 2010.

Figure 4. North Saskatchewan River.
From The North Saskatchewan Watershed Alliance.

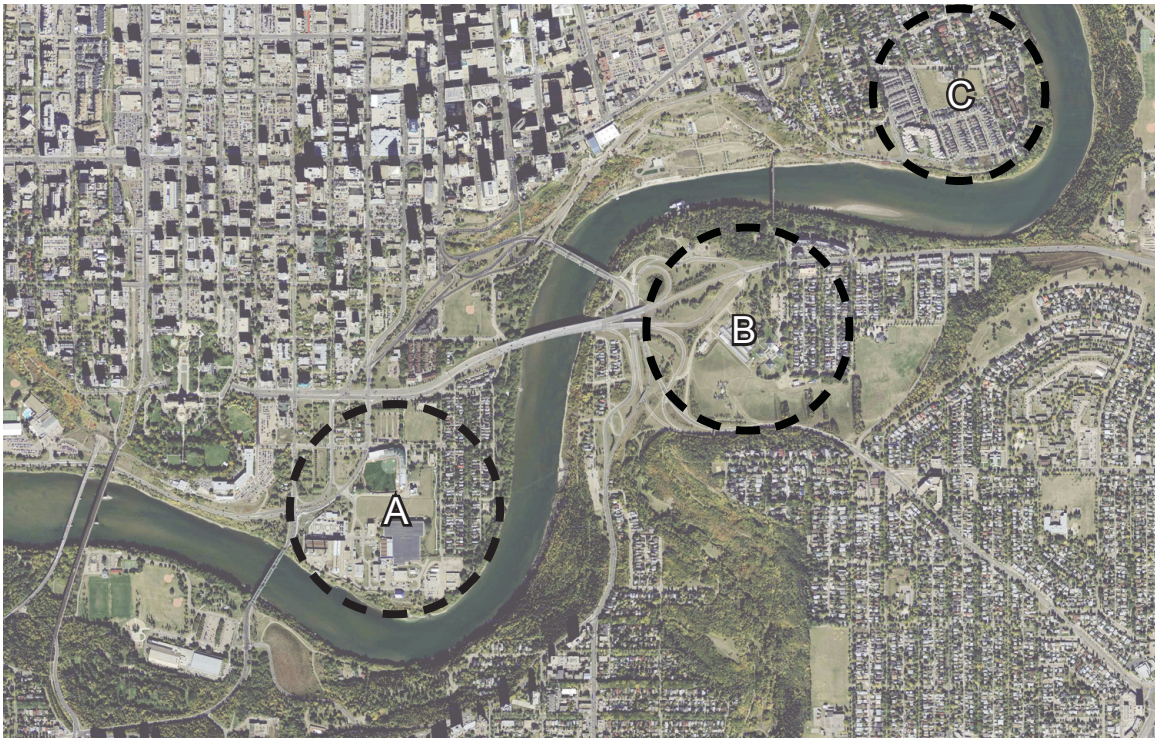


Figure 5. Map. Areas of urbanization that interrupt the park system and are the focus area for this thesis. Base image from Google Maps.
A: Rossdale B: Cloverdale C: Riverdale

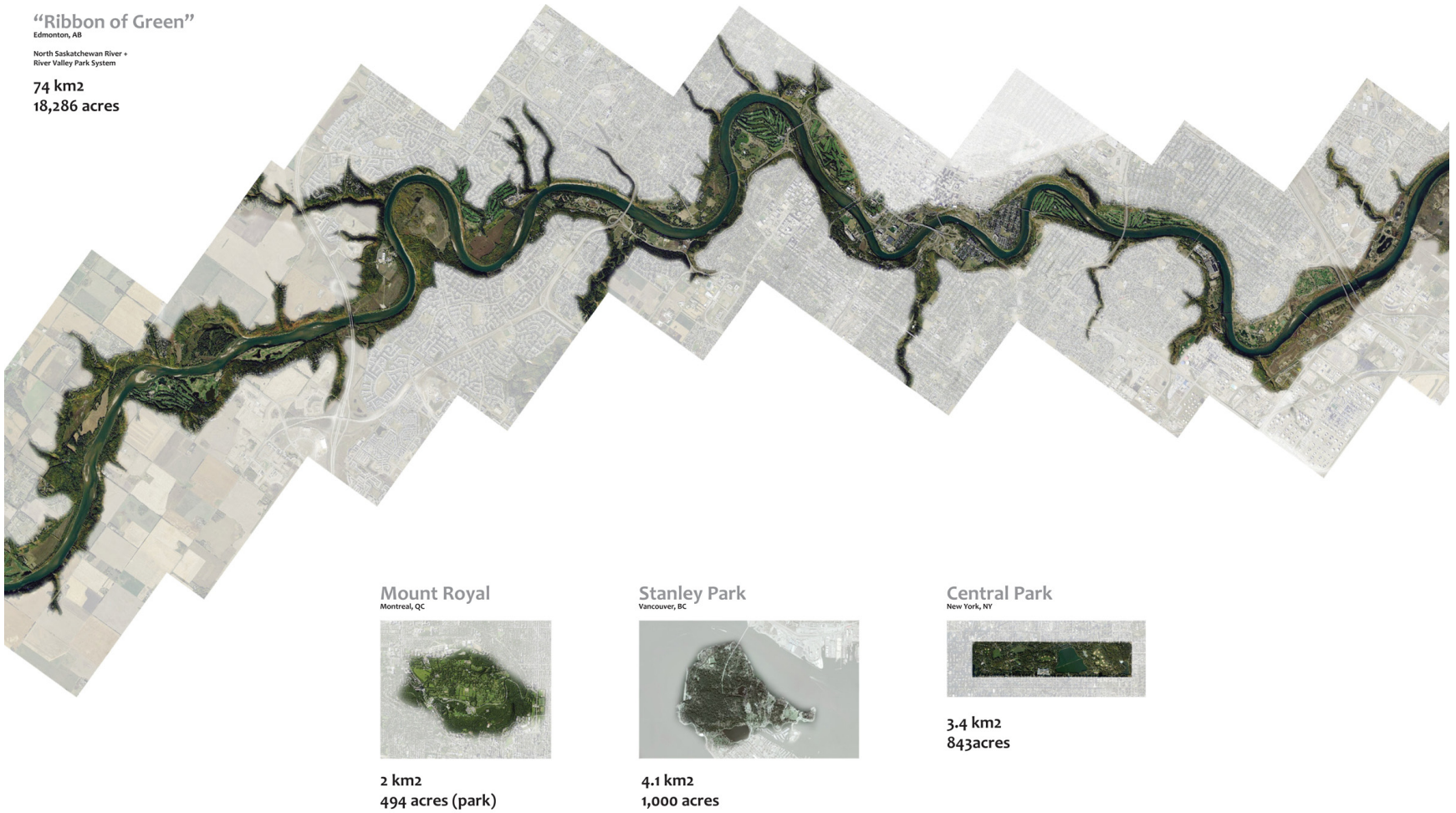


Figure 6. Park Size Comparison (original size (20" x 30")

1.2.2 Settlement

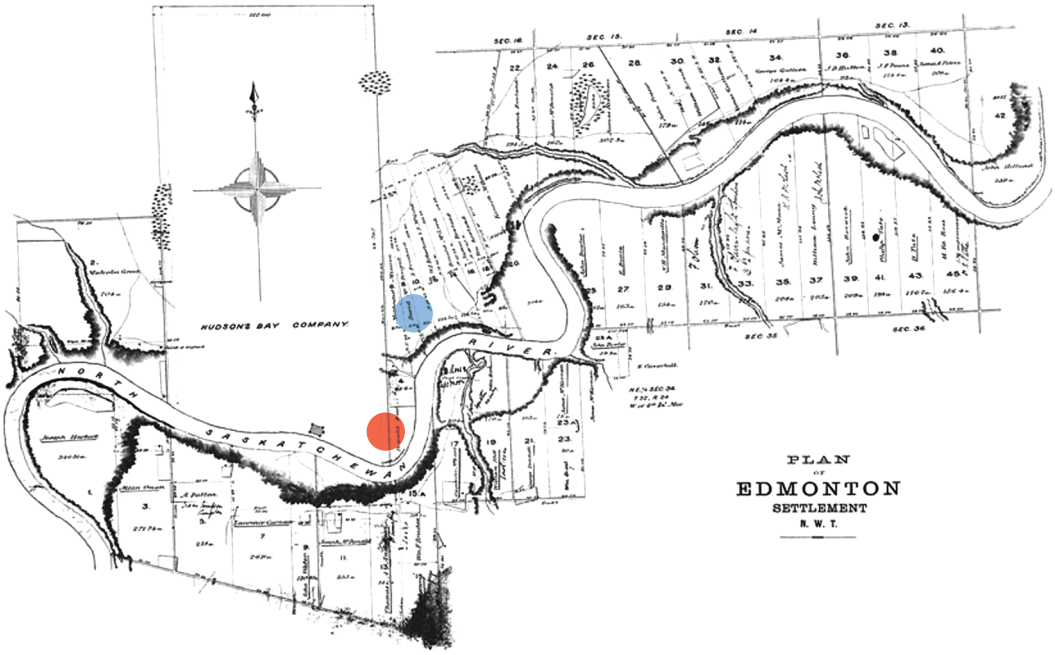


Figure 7. Surveyors Plan of Edmonton, 1882. From University of Alberta Map Collection.
Red indicates original site of Fort Edmonton.
Blue indicates modern day downtown Edmonton.

Settlements along the North Saskatchewan River began with trading posts and missions that were usually situated on sites favored by the Métis and others as seasonal encampments. These sites were best for shelter, protection, and resource harvesting. Guided by the native tribes, the earliest European explorers adopted these advantageous sites along the river.

As shown in Figure 7, Fort Edmonton was originally built by in the area now known as the Rossdale flats, an area used for thousands of years by aboriginal people as a North Saskatchewan riverside seasonal camp. After repeated flooding in the area, the fort was relocated in 1830 to the present site of the Legislature Buildings, where it remained until 1915, when it was dismantled and moved to the top of the riverbank where downtown is today.

1.2.3 Industry

A major trading post for the Hudson's Bay Company, Fort Edmonton soon became the main distribution and supply center for the northwest. As agriculture began to grow in the late 19th century, Edmonton's future as a major regional economic power was cemented with the increasing number of settlers coming to the city to take advantage of the fertile farmland in the area. Edmonton also gained a reputation during the Klondike Gold Rush as a "gateway to the north" since it was the last major stopping point along the North Saskatchewan River for prospectors to collect goods before trekking to the Yukon.

Fur Trading

The Hudson's Bay Company established Fort Edmonton in 1808, because of the plentiful beaver pelts that were being collected by the large aboriginal population in the area.

Coal Mining

Coal seams in the Edmonton river valley are up to 3m thick and stretch many kilometres horizontally in all directions. Before 1900, over 100 small coal mines operated within the valley around Edmonton.

Gold Mining

The valley was also the main area for gold mining along the entire length of the North Saskatchewan River. Mining in the river valley reached its peak between 1895 and 1907.

Clay Bricks

Over 12,000 years ago, a glacier covered the Edmonton area. Glacial Lake Edmonton was formed as the glacier melted and the drainage of the North Saskatchewan River was blocked by ice near Fort Saskatchewan. Thin, dark clay-rich bands were deposited on the bottom of the lake during the winters when the lake was covered with ice. Glacial Lake Edmonton clays found in the Edmonton River Valley have been used locally to make textured wire-cut bricks, an important industry in the early development of the city.

Industry Today

The site of old Fort Edmonton still has an industrial presence today. The soon to be decommissioned Rossdale Power Plant and a water treatment plant currently occupy the river valley land (Figure 8). With new industry being developed elsewhere to replace these aging facilities, this area should be re-claimed as park land in the heart of the city.

Figure 8. Existing Rossdale Site. 2010

1.2.4 Development Initiatives

In 1907, the City of Edmonton commissioned landscape architect Frederick Todd to evaluate Edmonton's potential for public parks. He argued that the integrity of the city's park system and its survival is heavily dependent on its natural appeal:

> ...a crowded population, if they are to live in health and happiness, must have space for the enjoyment of that peaceful beauty of nature – which because it is the opposite of all that is sordid and artificial in our city lives – is so wonderfully refreshing to the tired souls of city dweller; therefore most of the large cities have provided themselves with parks and large open spaces to be used as parks when necessity requires… (Herzog 2000).

It was not until the disastrous flood of 1915, in which the North Saskatchewan River breached its banks and flooded the Capitol Region, that the Government of Alberta moved to adopt Todd's vision for the river valley "in-principle". That year the City of Edmonton incorporated the concept of a river valley park system into the City Plan. In 1970, Edmonton adopted a Top-of-the-Bank policy that defined the limit of the North Saskatchewan River Valley and Ravine system. (City of Edmonton - Strategic Plan 2009, 8).

Ferries and fords along the river are a significant component of river heritage. A river crossing-based settlement emerged at the site of nearly every ferry. A post office and general store were located at most North Saskatchewan River ferry crossings (Figure 10). These became the centre of local communication and trade. Bridges were not common on the river until after WWII, except for urban areas such as Edmonton, and were usually built in the vicinity of ferry crossings, thus continuing the historical river-crossing routes.

Figure 9. High Level Bridge, Edmonton. From The Paltry Sapien.

Figure 10. Historic Walterdale Ferry Crossing, 1913. From Provincial Archives of Alberta.

An understanding of development zones is gained by examining the valley in a series of sections. Areas of steep slope are often unsuitable for development and are better left for low impact preservation activities, while plateaus are suitable for moderate recreational development so long as they are not in the flood plain.

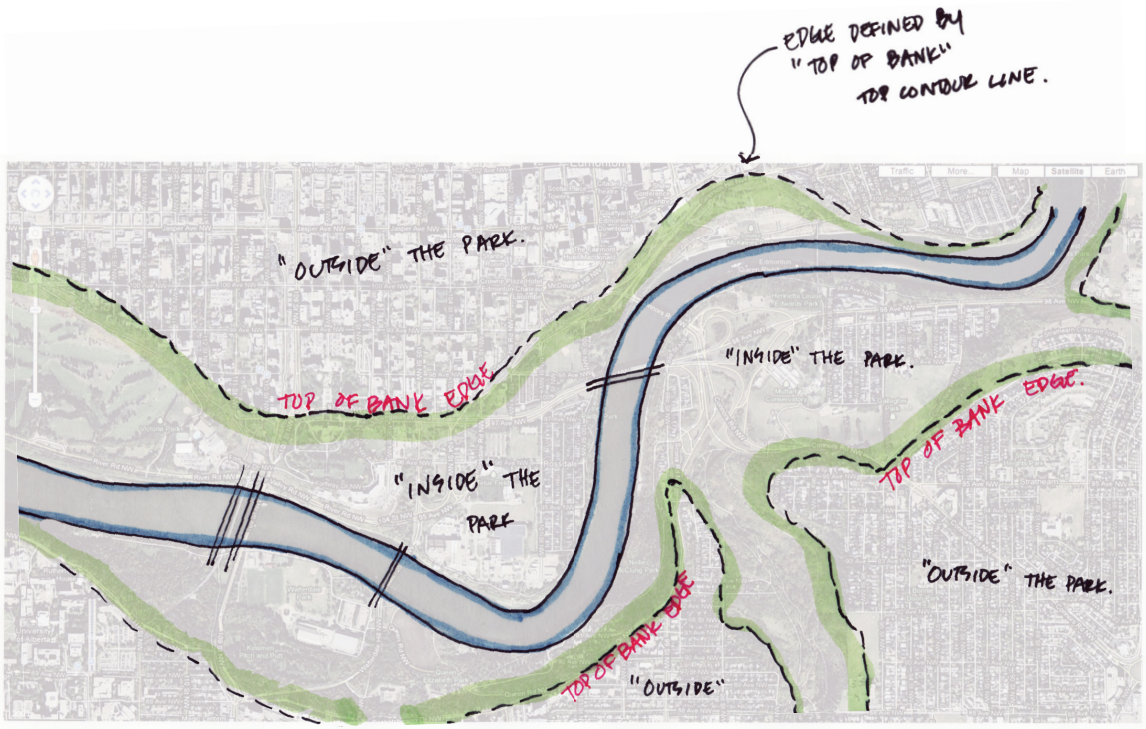


Figure 11. Sketch. Defining the edge between park and city. The edge is defined by the natural valley embankments.

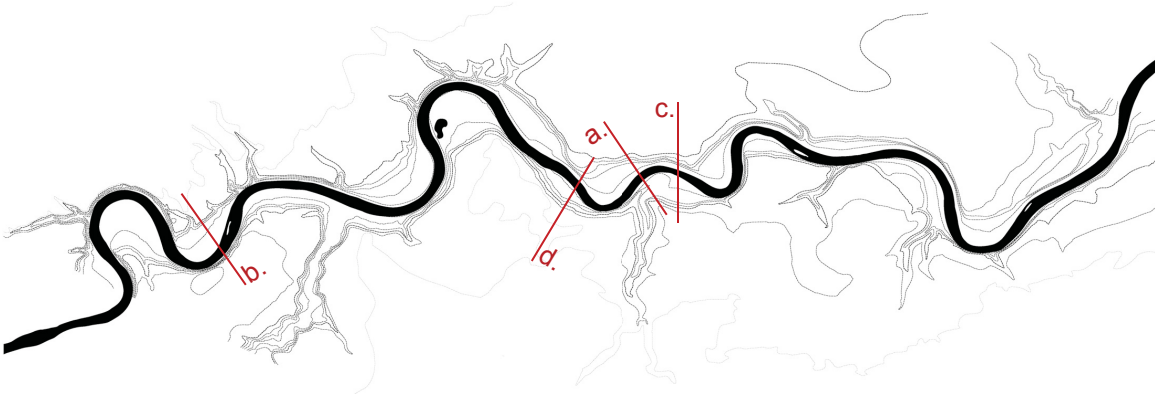


Figure 12. Map. Identifying location of Section cuts. shown in Figures 13, 14, 15,16. (existing conditions)

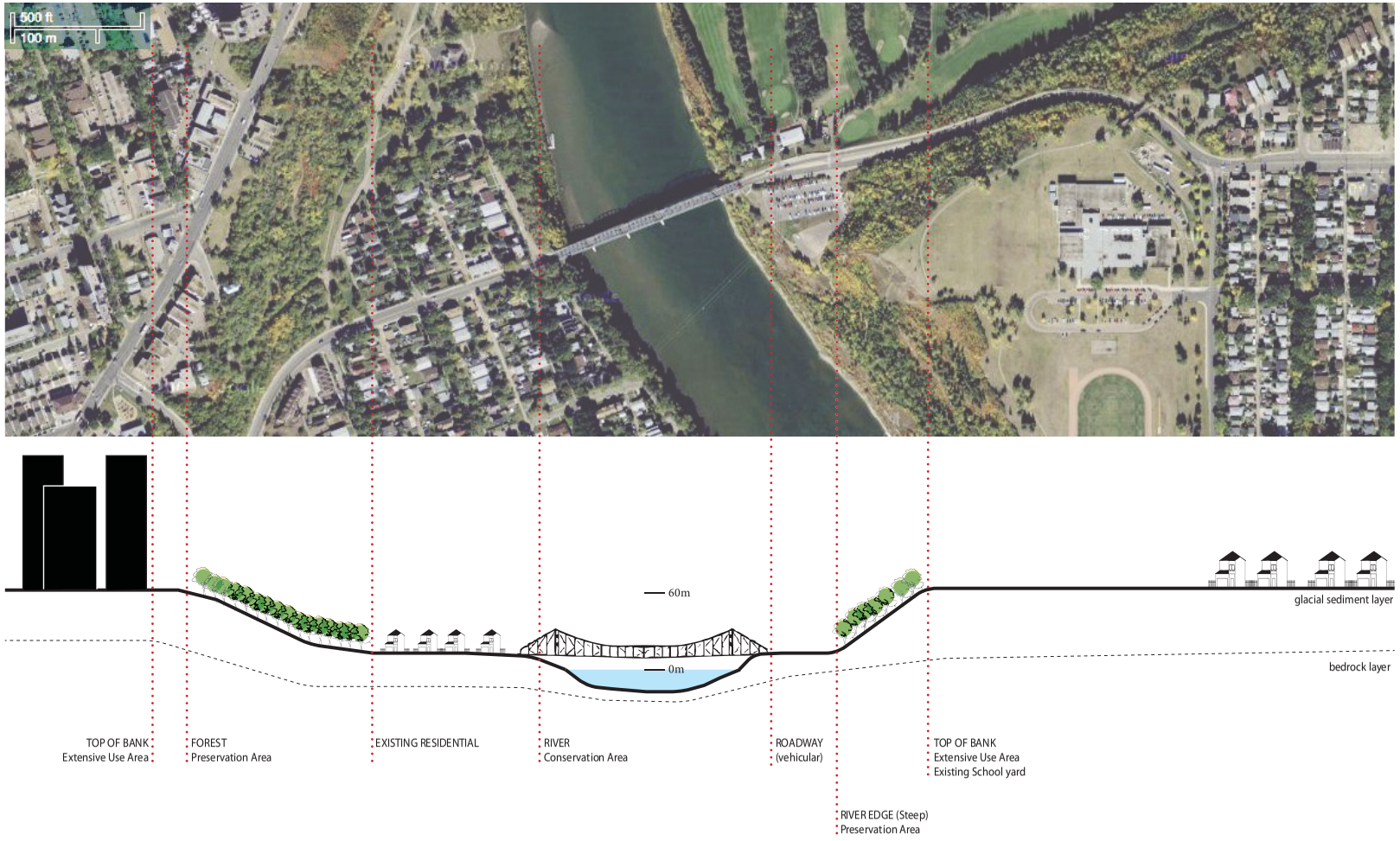


Figure 13. Section “a”. James MacDonald Bridge.

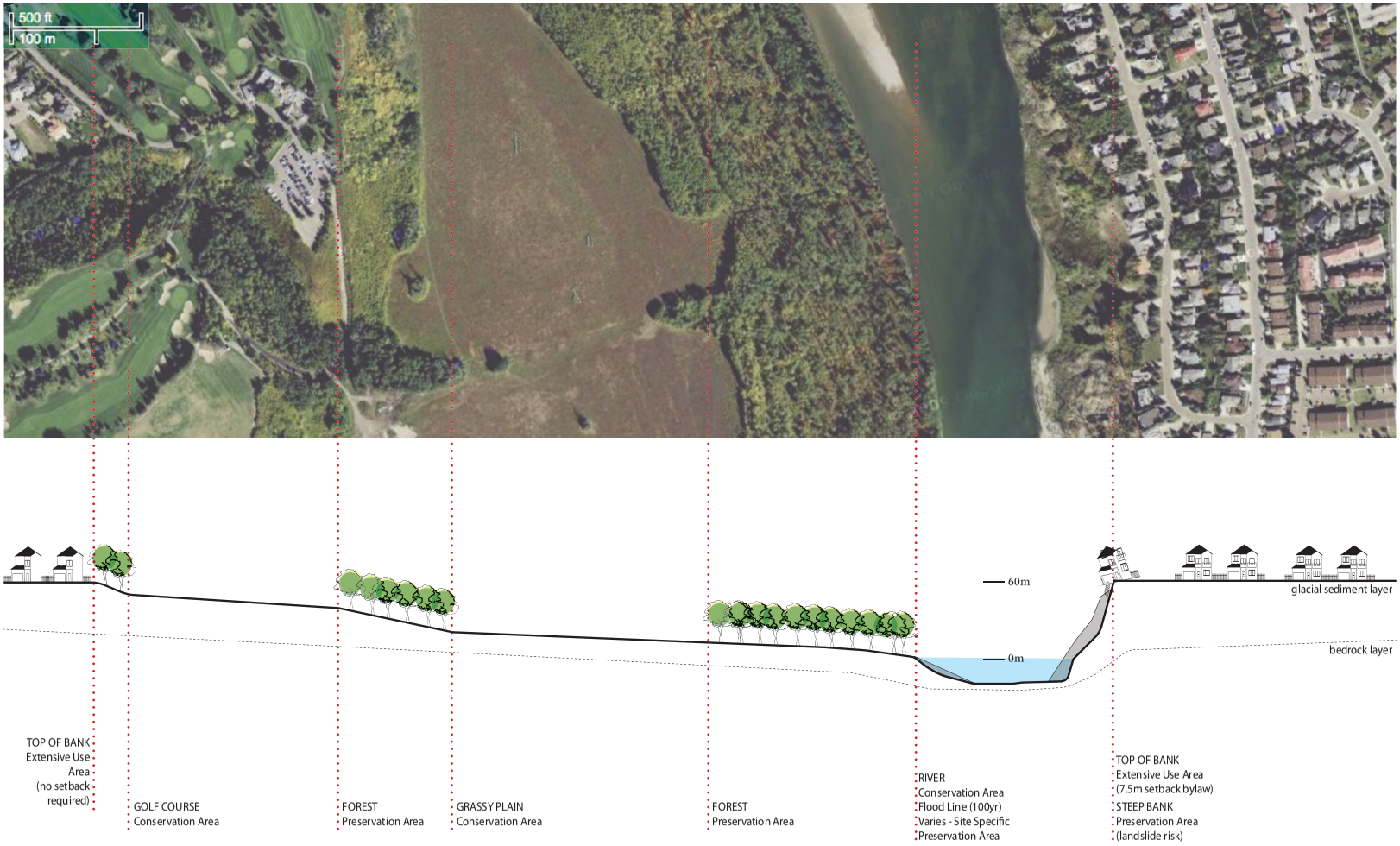


Figure 14. Section “b”. Ramsay Heights. The steep river bank is prone to erosion. In 1999 three houses were lost to a landslide and others are still at risk today.

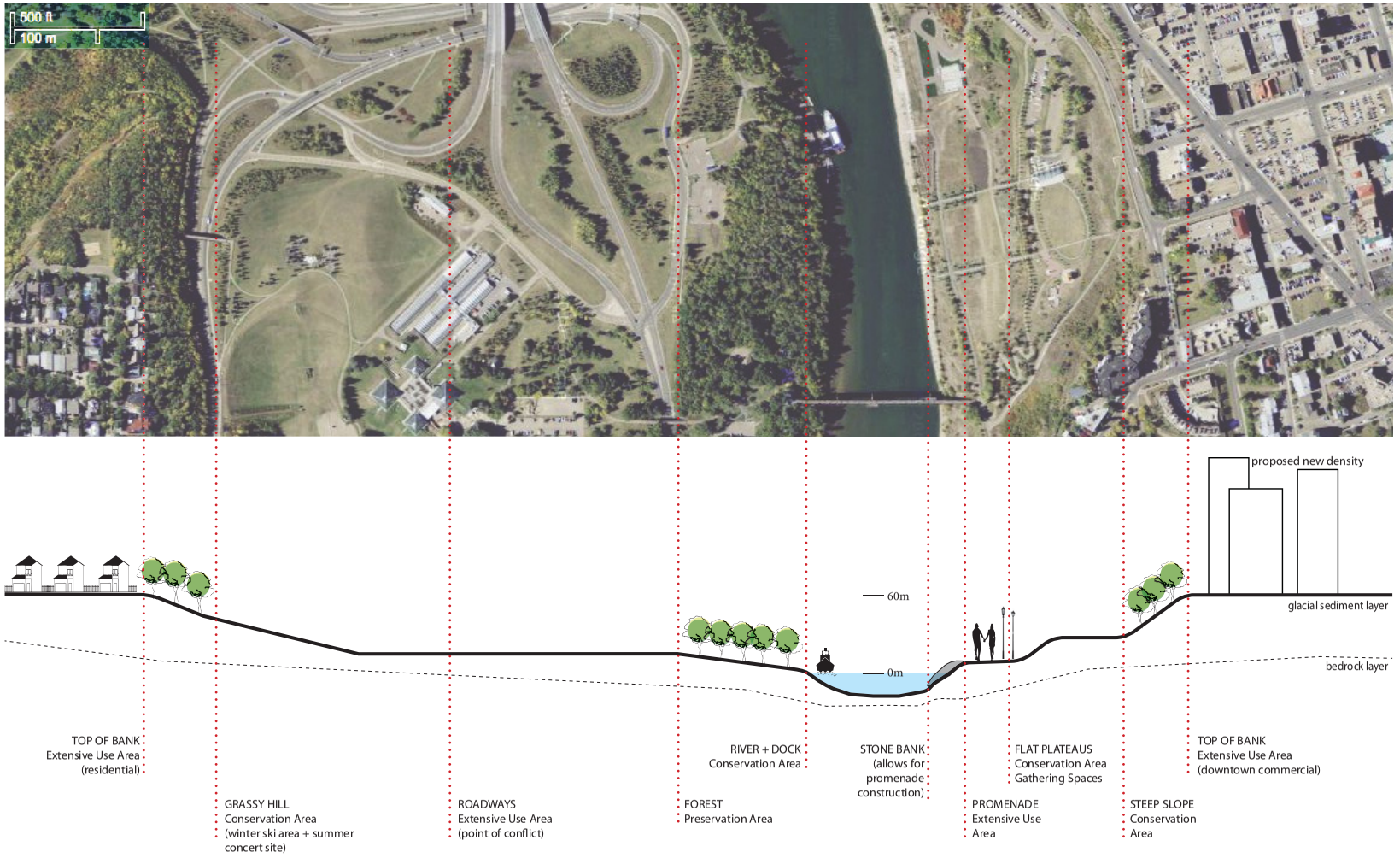


Figure 15. Section “c”. Louise McKinney Park. Previously a steep embankment prone to landslides, the land has been built up and stabilized as a set of large terraces.

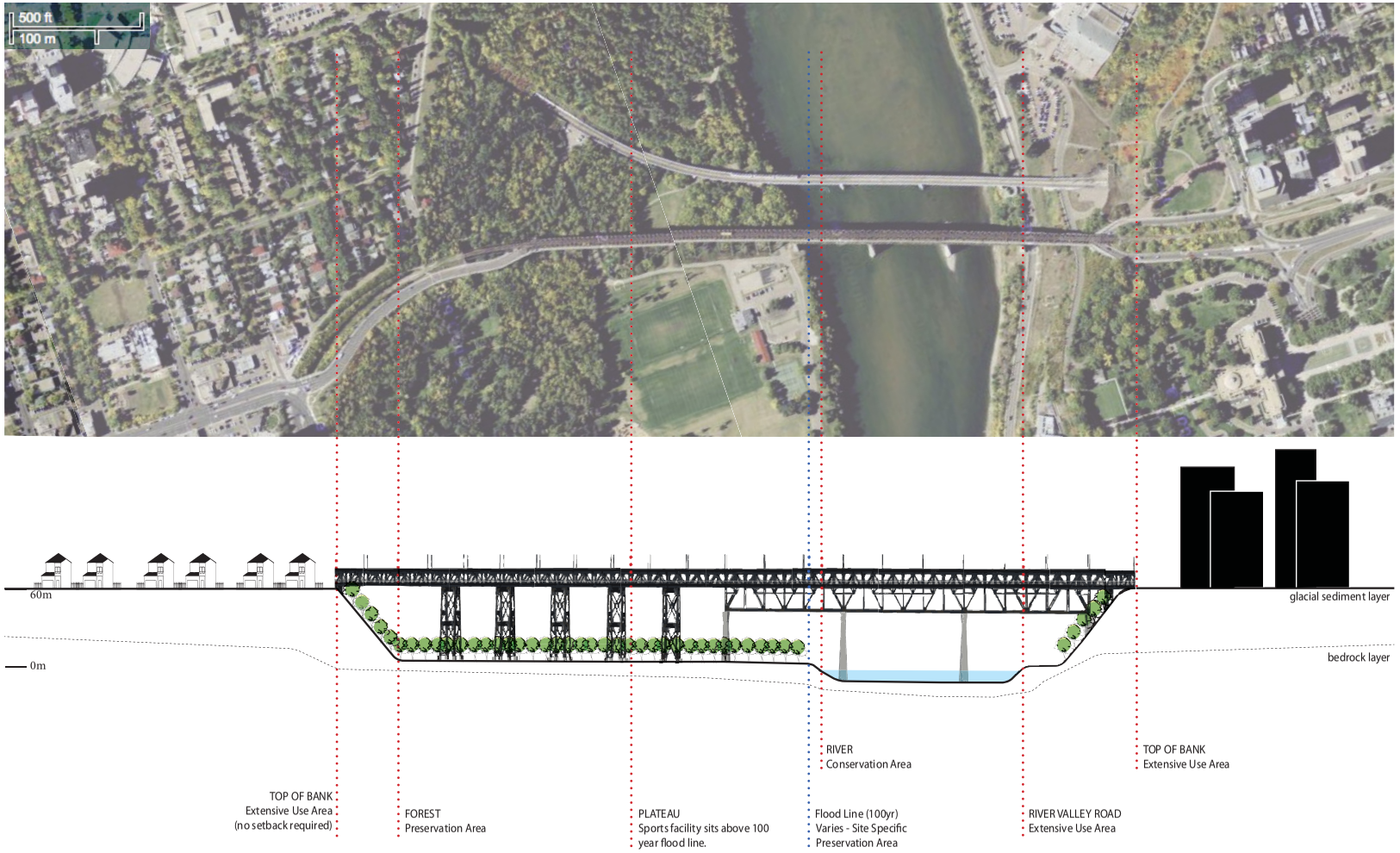


Figure 16. Section “d”. High Level Bridge. Edmonton’s only top-of-bank to top-of-bank bridge. An excellent example of how roadway infrastructure can be separated from the park system.

1.3. MAPPING THE RIVER VALLEY

By mapping the river valley, a number of patterns become quite clear. We see that the most heavily forested areas are in the ravines and steep valley walls that are unsuitable for development (Figures 17, 18). We also see how the city grid reacts to the valley edge by shifting its axis, and where urbanization intrudes into the park (Figures 19, 20, 21). Trial systems are mapped (Figures 22, 23, 24) to better understand the movement of people through the river valley. This includes studying where and how people cross the river, as well as where stairs and viewpoints are currently located. Following this series of mappings, it becomes evident that development in the valley near downtown Edmonton represents the greatest interruption to the park system. This area is denoted as the area circled on the maps and is the focus site for this thesis.

1.3.1 Vegetation

Figure 17. Forest areas in relation to the river. There is a noticeable void in natural vegetation adjacent to downtown where the valley has been urbanized. (existing condition)

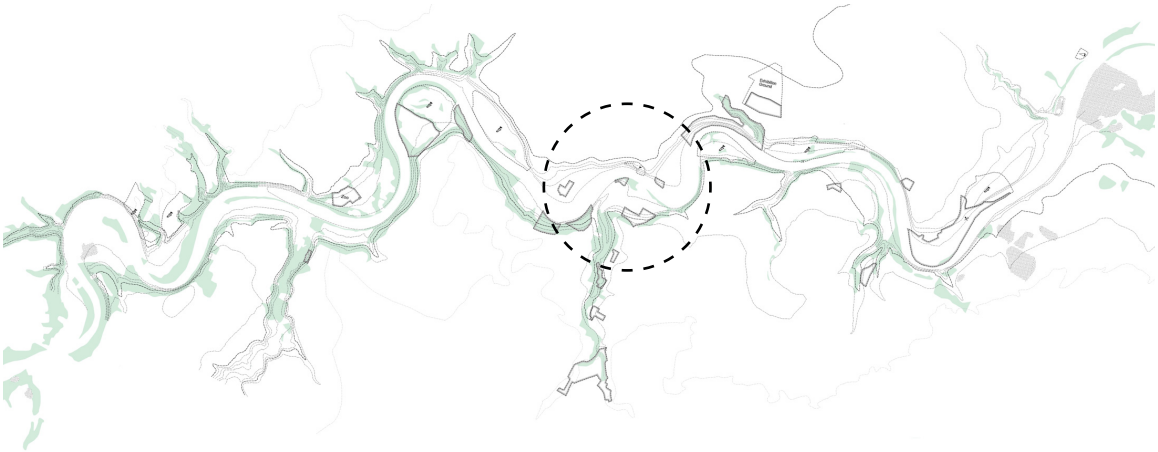


Figure 18. Map. Natural vegetation in relation to contour lines. Areas with natural forest and vegetation are in the ravines and in areas of steep slope. (existing condition)

1.3.2 Roadways

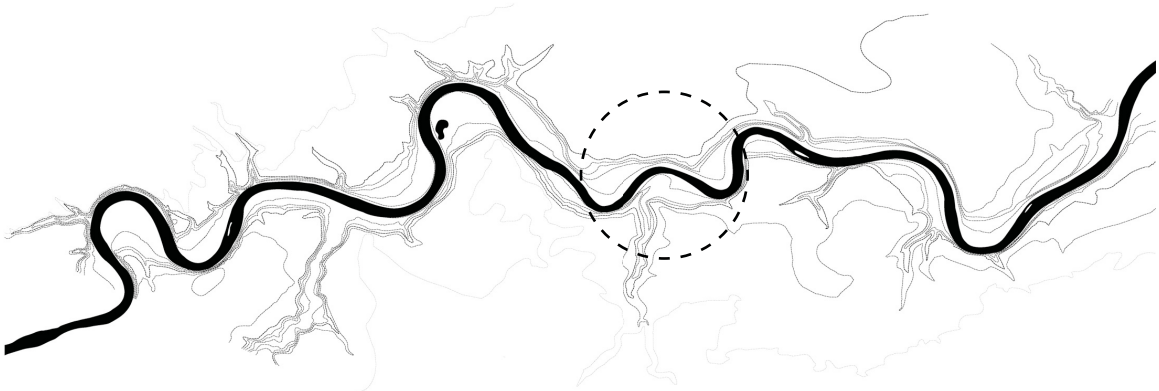


Figure 19. Contours in relation to the river identifying low laying areas and top of bank. Contour lines represent 10m intervals. (existing condition)

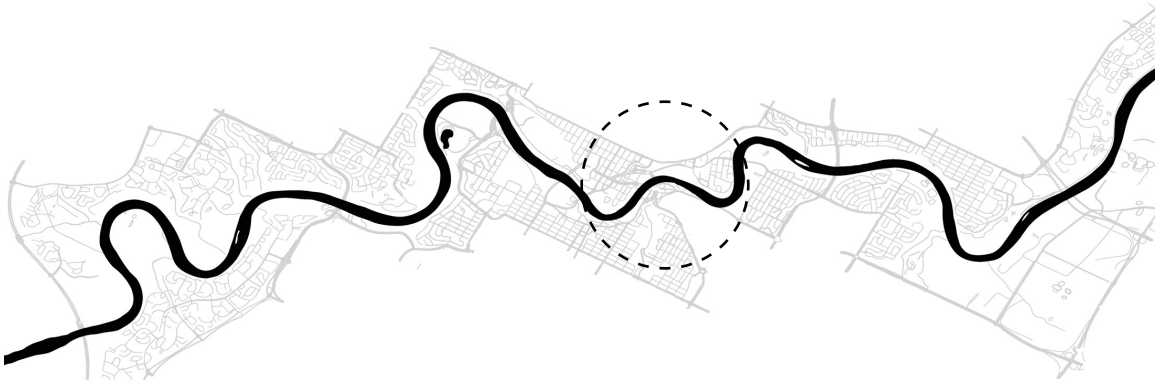


Figure 20. City grid in relation to river. The roadway grid shifts so that it remains perpendicular to the valley. (existing condition)

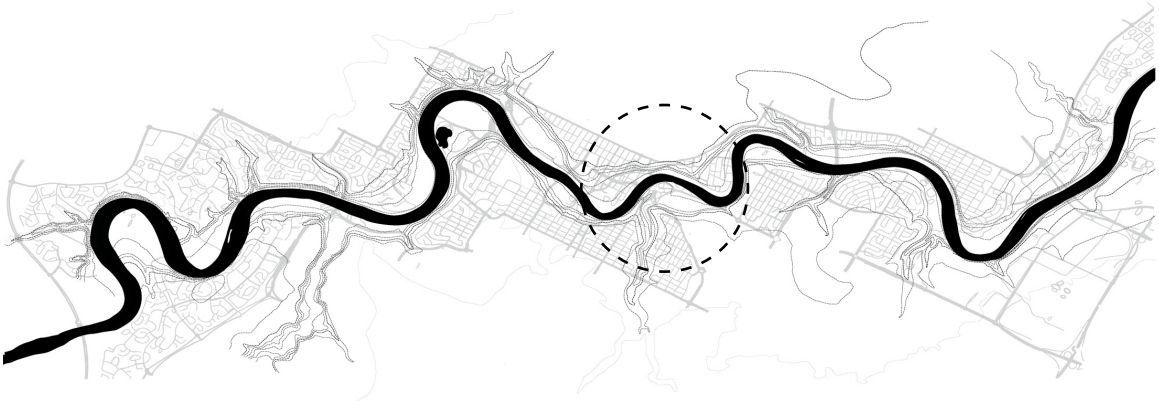


Figure 21. City grid and contours overlay. (existing condition)

1.3.3 Trail System

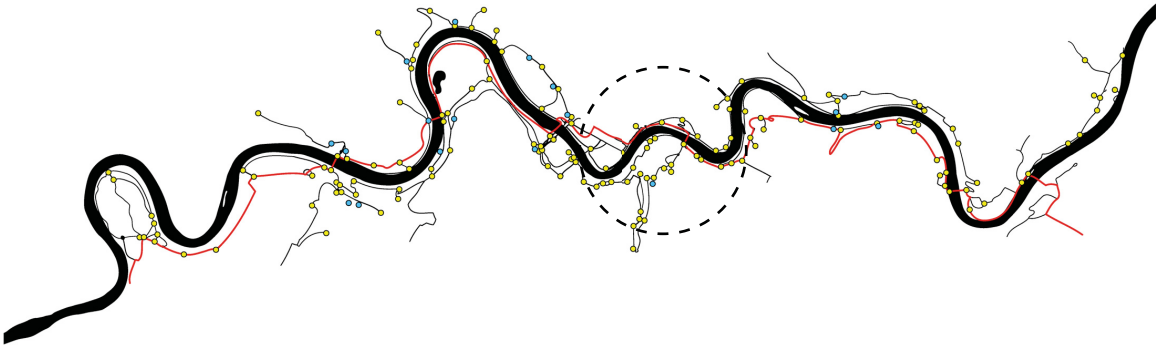


Figure 22. Trail network in relation to river. (existing condition)
Red line indicates Trans Canada Trail.
Blue dots: major stair into the valley
Yellow: view points, rest areas, trailheads.

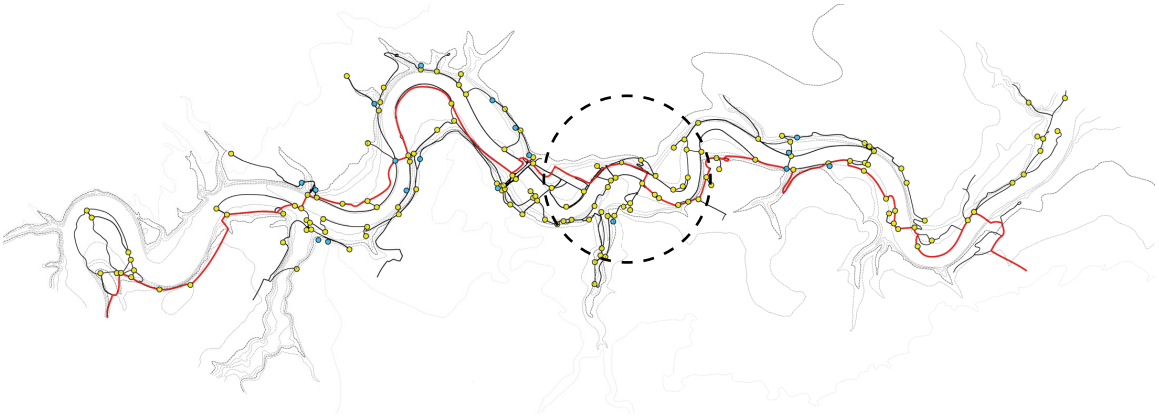


Figure 23. Trail network in relation to contour lines. (existing condition)
Most trails run parallel to the steep valley walls and enter the park where the slope is more gradual.

Figure 24. Trail network in relation to the city grid. (existing condition)

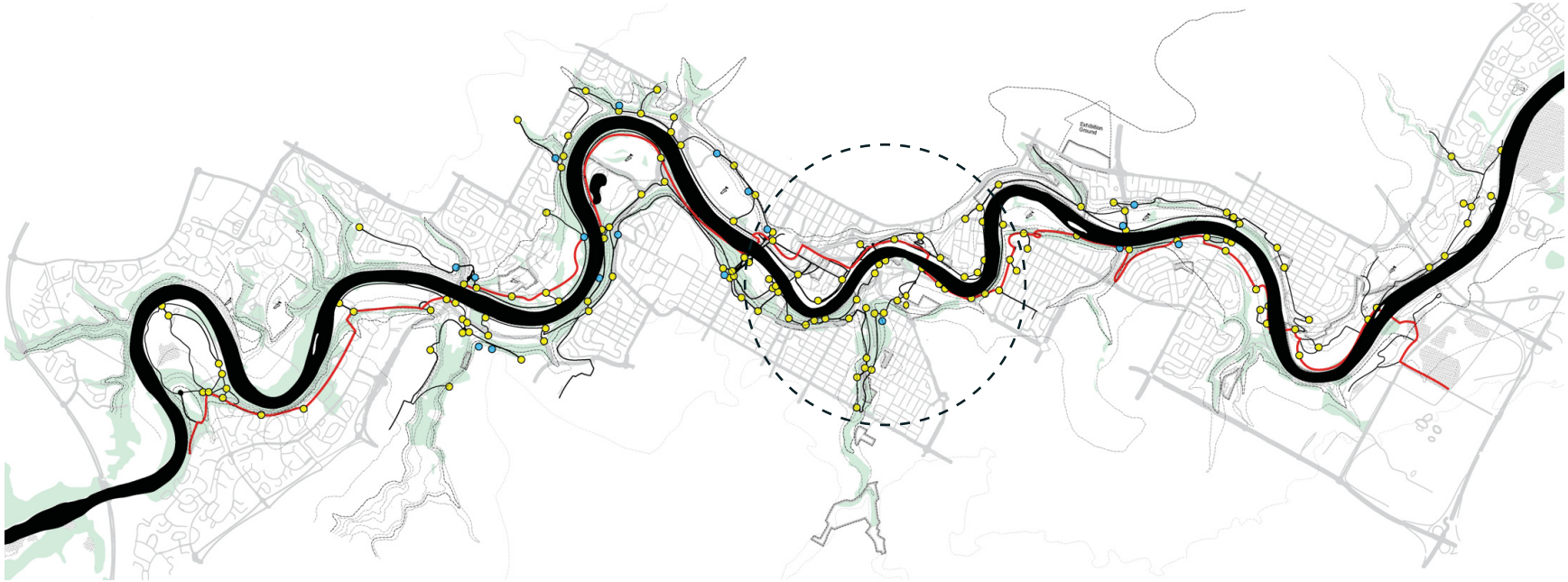


Figure 25. Overlay of all preceding maps

Figure 26. Zoom in on site.

CHAPTER 2: DESIGN

As a forward thinking initiative, this thesis looks at a future Edmonton. A city whose river valley has flooded before, and will flood again. It is proposed that areas of currently urbanized parkland are reclaimed as natural areas to restore the natural habitat that has been lost. Based on the preceding study of the river valley as a system, its boundaries, and its program, one gains an to understanding that the valley must be treated in a much different manner than the urban condition that flanks it.

2.1 THE RIVER VALLEY AS AN ECOSYSTEM

The concept of anti-city is based on the need for preserving the integrity and continuity of natural ecosystems in the river valley. The City of Edmonton defines a natural area as:

> An area of land or water that is dominated by native vegetation in naturally occurring patterns. Such areas could include grasslands, forests, wetlands, peatlands or riparian areas. Areas such as groomed parks, sports fields and schoolyards are not natural area. (City of Edmonton - *Strategic Plan* 2009, 10)

Natural areas are important for their ecosystem characteristics. They absorb rainfall, filter pollutants out of the water, and remove carbon dioxide from the air. Maintaining and reclaiming natural areas in the river valley will help reduce the need for extensive stormwater infrastructure and naturally clean the river water, making it more suitable for recreation activities, and the city less dependant on water treatment facilities. As natural areas are lost to development the city loses the benefits associated with them and is forced to build related infrastructure that is both costly and inefficient.

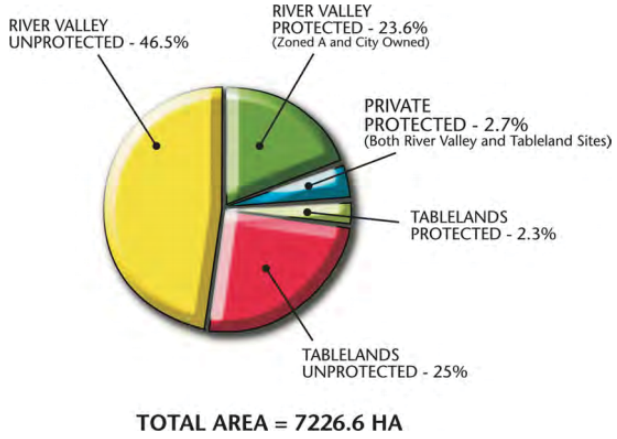


Figure 27. Status of Edmonton's Natural Area's in 2005. From City of Edmonton - Biodiversity Action Plan.

2.1.1 Systems

Natural Habitats

Located in a “parkland” zone between the boreal forests to the west and prairies to the east, Edmonton’s river valley acts as a transitional, biologically diverse corridor that supports a diverse range vegetation and wildlife (Figure 28). Plant life influenced by sunlight, moisture, and soil types in turn influence the type of wildlife in the park. Four main habitats exist within the river valley ecosystem: the river, mixed-wood forest, deciduous forest, and flood plains.

The river is clearly the most dominant habitat in the valley. Aside from being Edmonton’s major source of drinking water, it supports a wide range of life from aquatic to terrestrial. The speed of currents and depth of the water change seasonally and have a direct impact on river life. Protection of the riparian area, or river edge, is important as it helps to stabilize the river banks while providing protection for fish and other aquatic life.

Mixed-wood forests consisting mainly of evergreens and conifers are typically found on the north facing, steep protected slopes and in the ravines. This habitat provides winter shelter for birds and animals by catching and holding snow on the branches of coniferous trees, which acts as natural insulation. When the deciduous trees in this zone die off they become deadfall on the forest floor, providing more habitat for small animals.

The deciduous forest habitats grow mainly as tree stands and are found in open, dry areas such as low lying plateaus in and around the flood plain. This area is a major food source for wildlife as undergrowth and fruiting plants thrive here.

The flood plains and wetlands are vital as they provide habitat for migratory birds and act as a corridor between woodlands for larger mammals. Despite the fact that there is a risk of flooding, flood plains and low lying plateaus are the most common areas for urbanization due to their relative stability and flat landscape. This development often leads to a break in the continuity of the system, negatively impacting migratory or grazing patterns of animals in the area.

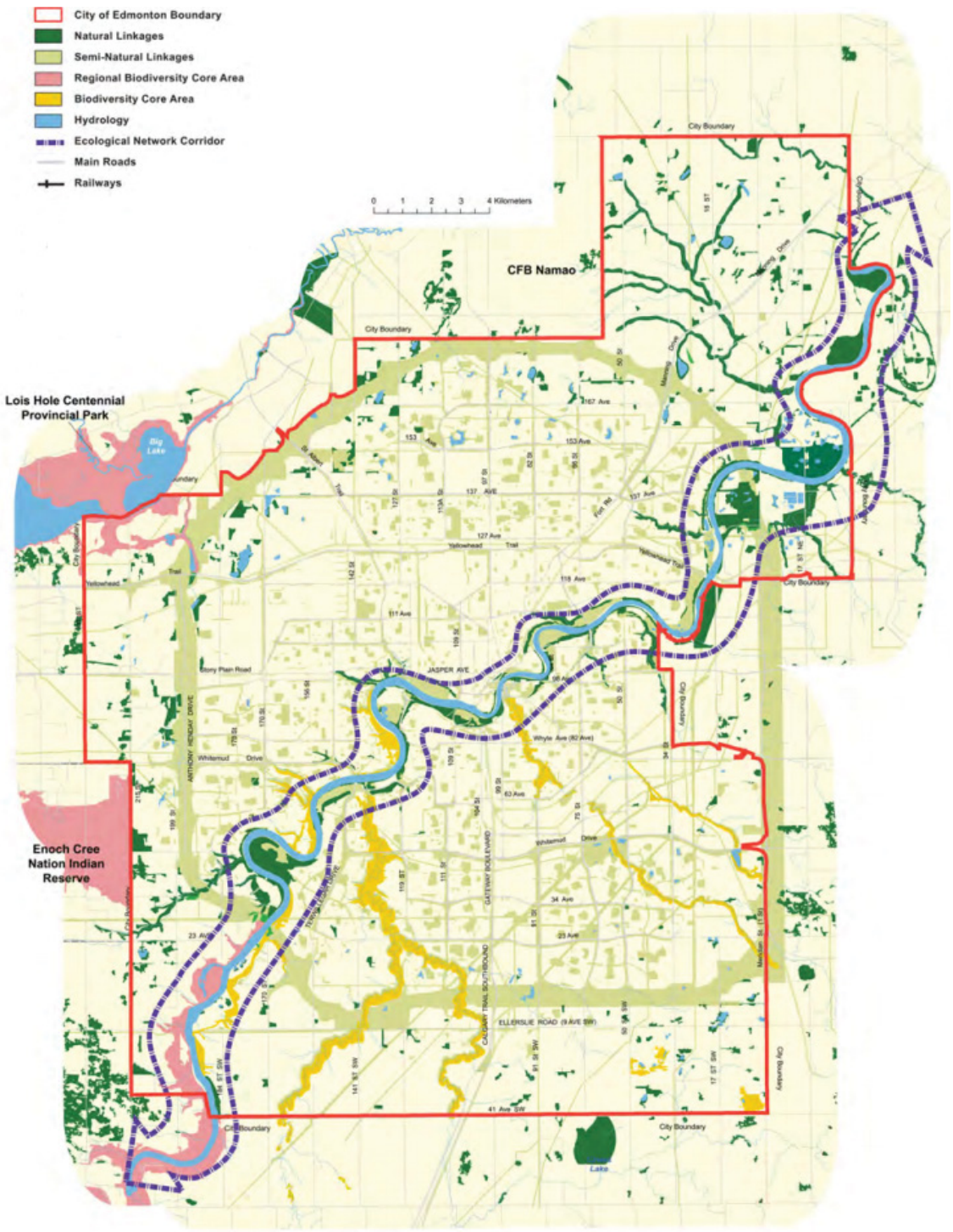


Figure 28. Edmonton's Ecological Network. From City of Edmonton - Strategic Plan. This map shows the biodiversity corridor that the river valley creates through the heart of the city.

River Bank Characteristics and Flood Cycle

The mean river depth in Edmonton is 4.6 feet and can rise to a depth of 14 feet in high seasons. While water levels in the spring are higher than average due to snowmelt in the mountains, June and July are the months when flooding is most likely to occur. Large summer rainstorms are the cause of this flood risk and it is not uncommon for the water level to rise as much as ten feet over night due to heavy rainfall upstream.

The Atlas of Canada web site lists major Edmonton floods in 1915, 1978, 1981 and 1986. (Edmonton Public Library, *Edmonton - Floods*). In 1915, the river rose to 42 feet (12.8 metres) above the low water level in what remains Edmonton's worst flood. The flood completely decimated the communities of Walterdale, Rossdale, and Cloverdale; the same three communities that today still have urban development and that this thesis aims to address (Figure 5). Even with multiple dams being added upstream to try and control flooding, in 1986 the river swelled to a depth of 38 feet, once again causing serious damage to homes in the flood plain. (Edmonton Public Library, *North Saskatchewan River*)

Figure 29. 1915 Edmonton Flood. From Geoscape Edmonton.

Figure 30. 1905 Low Water Level. From Geoscape Edmonton.

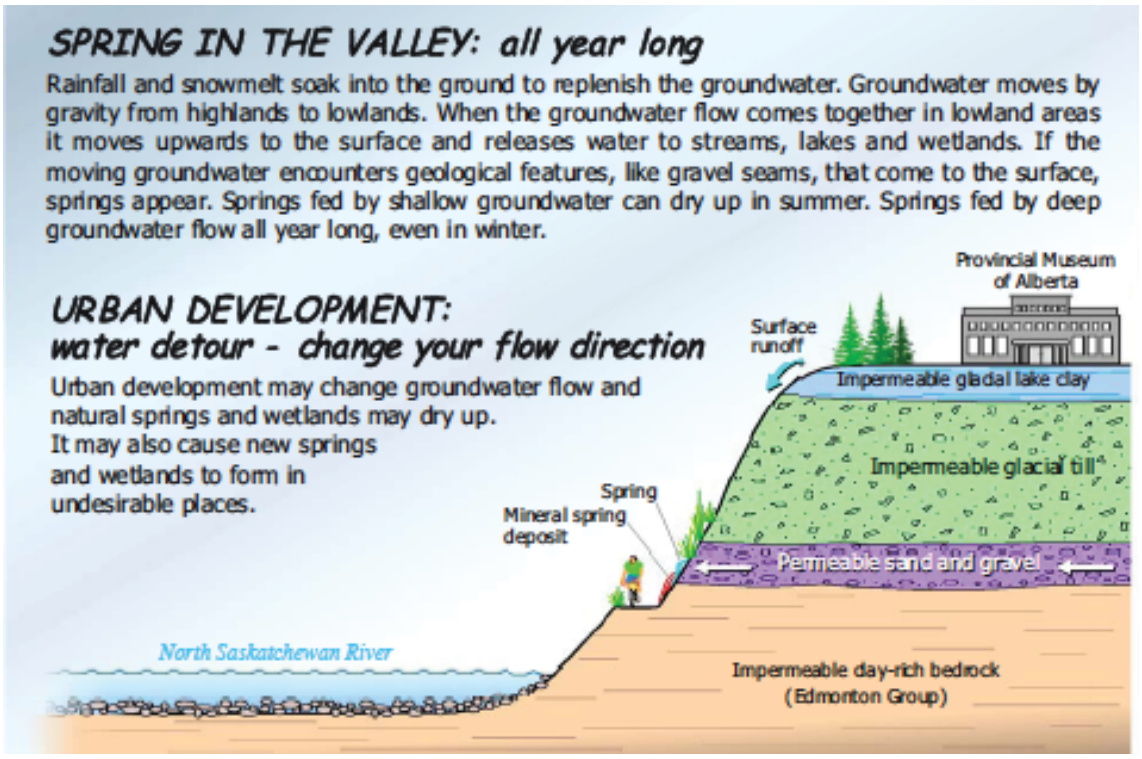


Figure 31. Water Table and Valley Section. From Geoscape Edmonton.

The valley averages 60 metres from top of bank to water level and varies from 1 to 1.6 kilometres in width. As shown in Figure 31, Edmonton sits on a bed of glacial till and as such the valley banks are generally unstable for development due to constant erosion. The banks are therefore best kept as buffer and access zones from urban top of bank development to the park land in the flood plains below.

In a meandering river, like the North Saskatchewan, erosion happens at the outside edge of turns where the water flows fastest while deposition occurs on the inside edge leading to a gradual shallowing of the river bank. (Figures 32, 33)

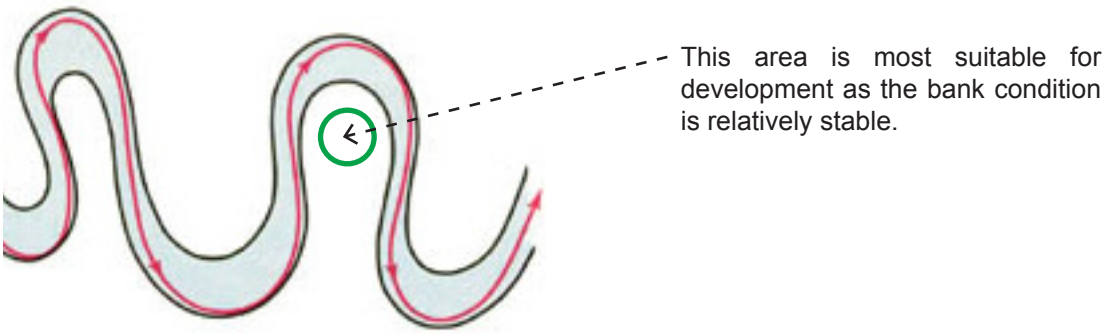


Figure 32. Sketch. Water flow pattern of a meandering river.

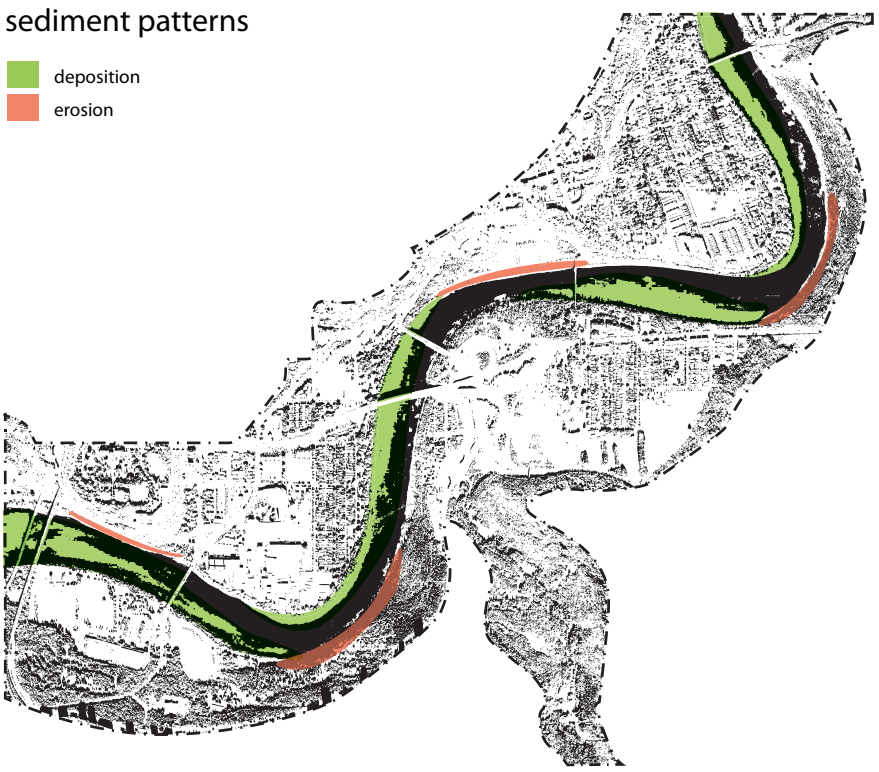


Figure 33. Sediment and Erosion Pattern.

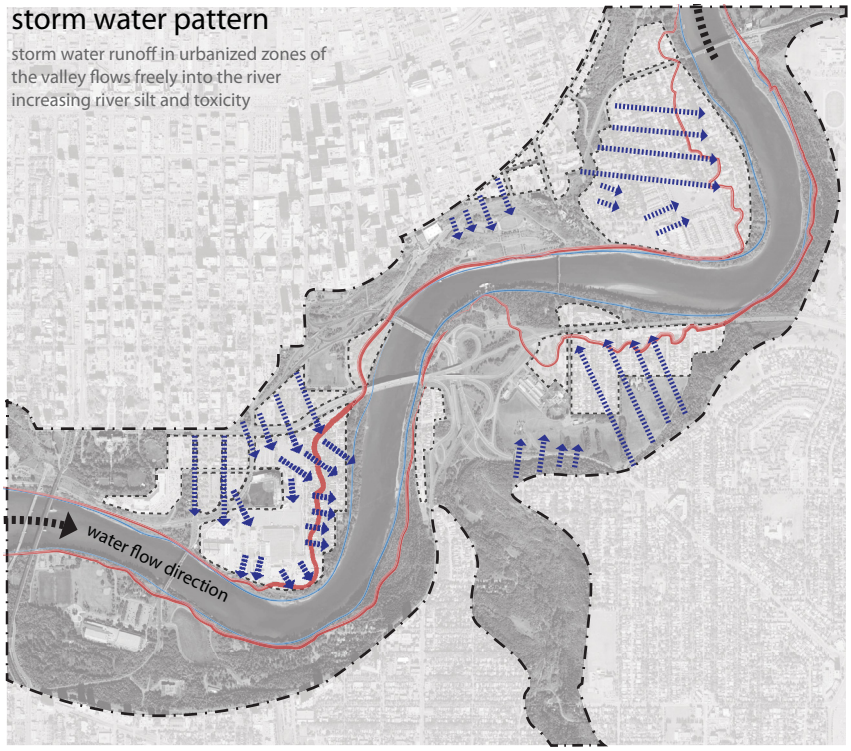


Figure 34. Storm Water Runoff.
Current conditions allow for storm water to flow uninterrupted in to the river, increasing sediment buildup. Red line indicates 100yr flood line.

The outside edge of a meandering river, where the water flows fastest, represents the most unstable area for development. Top of bank development is also at risk of landslides (Figure 35) which led to the city's policy of a minimum 7.5m setback from the valley edge in high risk areas.

Figure 35. Site of the 1999 Whitemud Road landslide.
From Geoscape Edmonton.

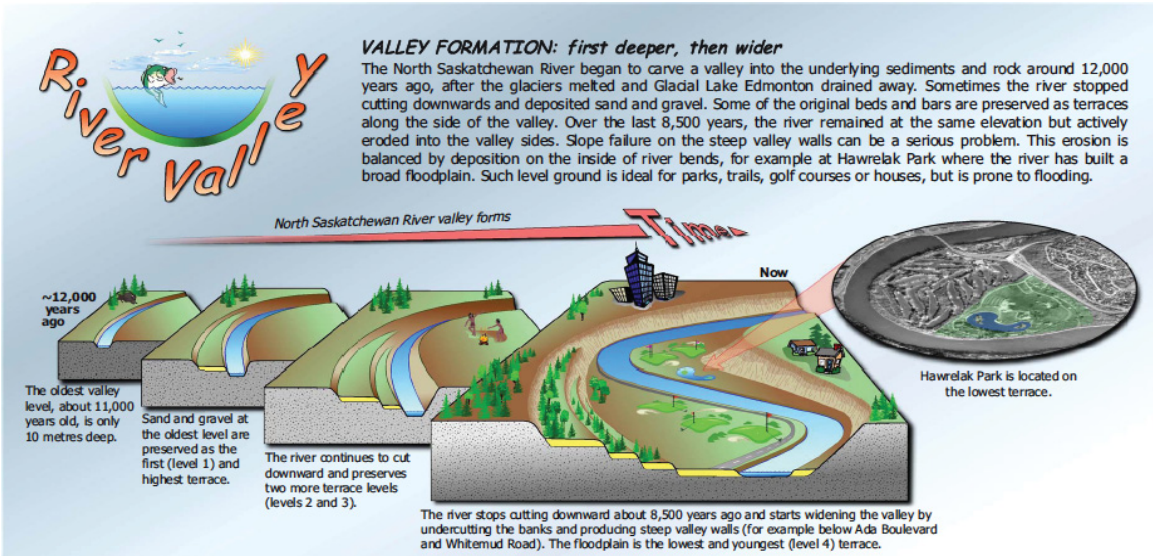


Figure 36. River Valley Formation. From Geoscape Edmonton.

A study of the river currents informed the planning of new river docking facilities (Figure 37). The most suitable location for canoe and boat docks is on the inside curve of river bends where water speed is the slowest. As previously shown in Figure 33, sediment is not a factor as most of the deposition occurs after the river bend.

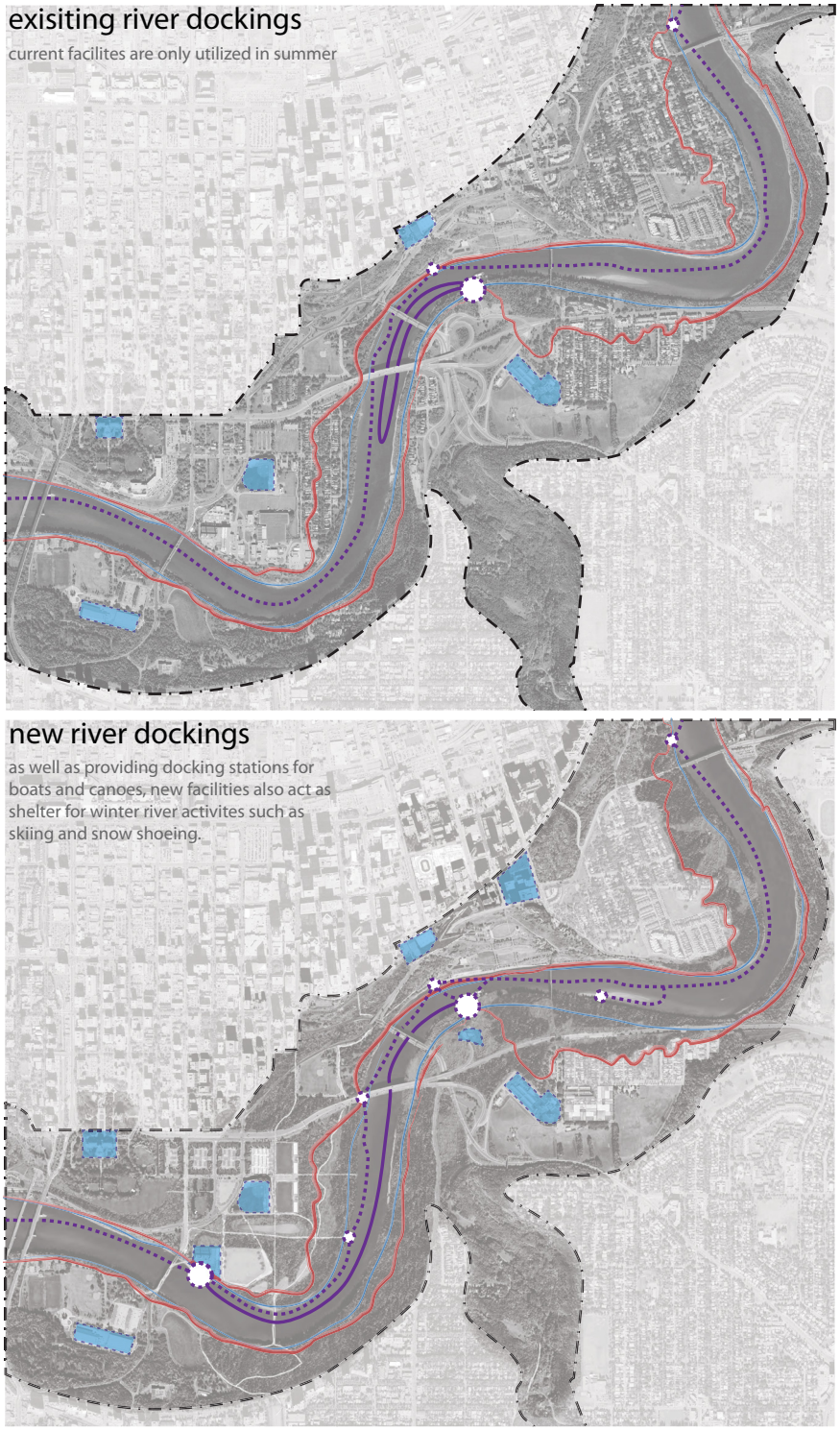


Figure 37. Existing and Proposed Docking Facilities.

Building on the study of erosion patterns, new river promenades can be constructed in areas where the river bank must be stabilized to protect top of bank development. Viewing platforms can be strategically placed to provide panoramic top of bank views of the valley.

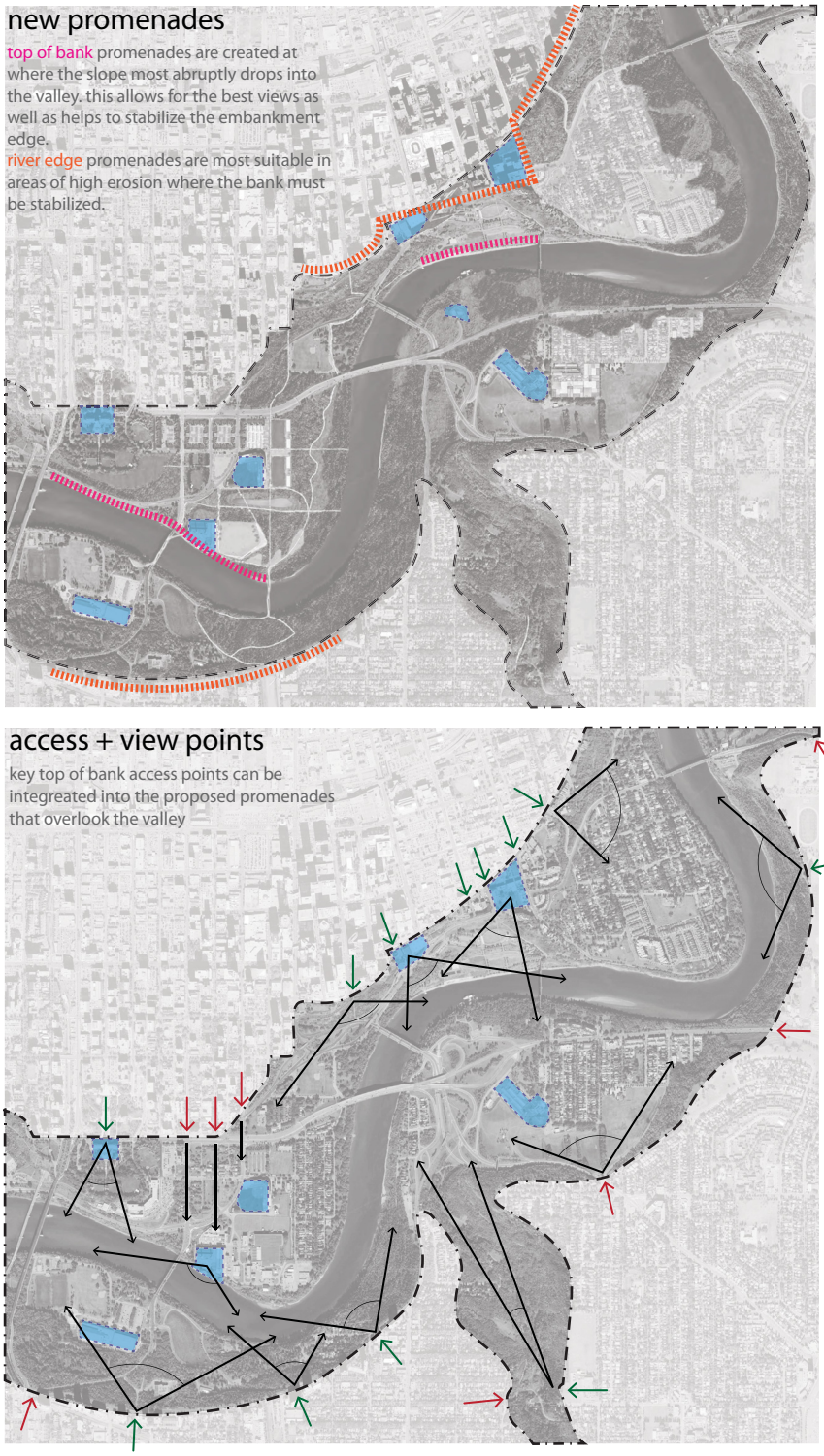


Figure 38. Enhancing edge conditions

2.1.2 Edges

This thesis aims to identify and emphasize the contrast of various edges, thereby strengthening the characteristics of adjacent zones. By clearly defining the edges between the valley and urban development the idea of the anti-city becomes more apparent as the user gains a greater awareness of the differences between urbanization and nature.

Natural Edges

Natural edges can be defined as those relating to naturally occurring elements in the landscape such as rivers, cliffs, streams, ravines, forests, or grasslands. These edges often vary in size and are permeable to animal and human movement.

Examples of natural edges:

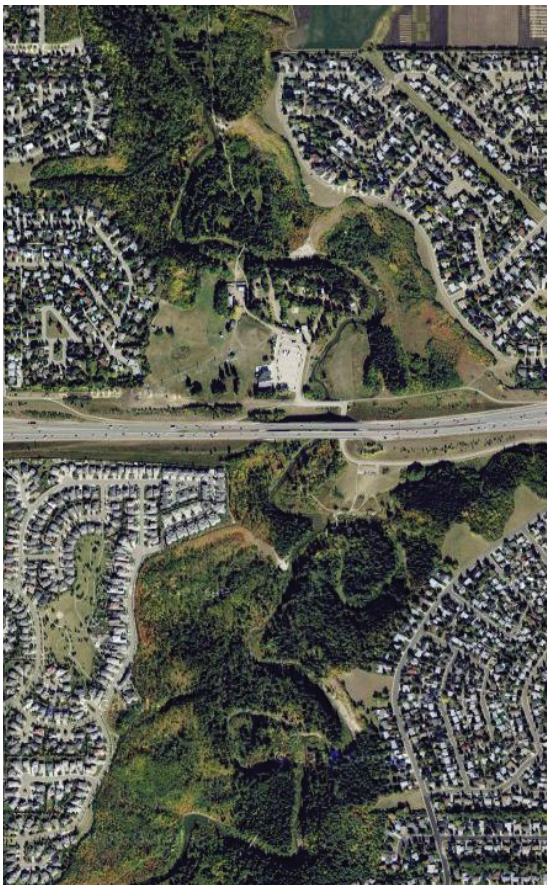


Figure 39. Edmonton Ravine. From Google Maps.
Notice the housing patterns adjusting to the edge of the ravine.

Figure 40. Photograph of North Saskatchewan River bank, Edmonton. 2010

Artificial Edges

Artificial edges are man made. These include things such as zoning bylaws, roads, bridges, dams, or buildings. These edges are often “hard” and serve to direct or control the movement of people or natural processes. These types of edges can help to define the limits of the valley, but must be carefully designed when they cut through park so as not to be a barrier within the eco system.

Examples of artificial edges:

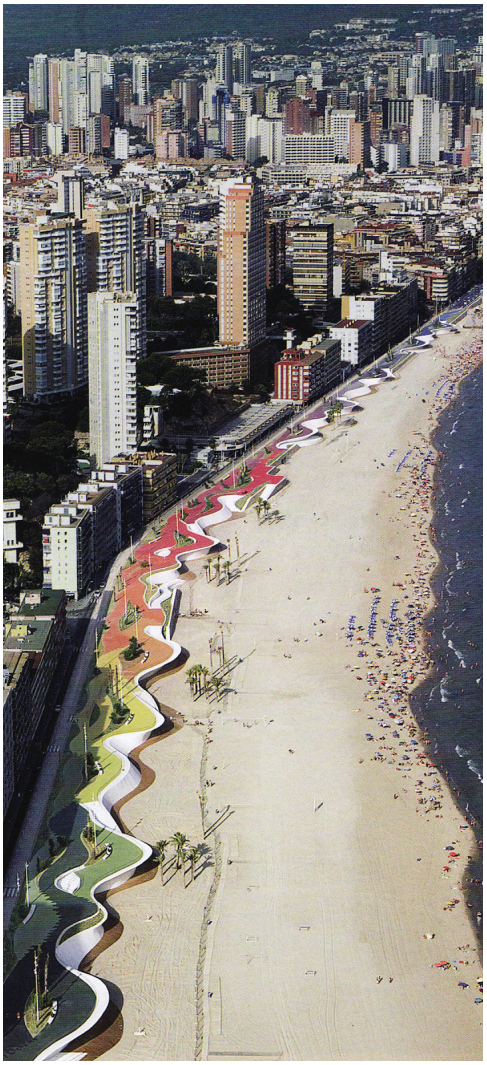


Figure 41. Playa de Poniente Esplanade, Benidorm. Photograph by Alejo Bague, from CCCB, 2010.

Figure 42. Cloverdale Roads. Edmonton river valley. From Google Maps.

Figure 43. Central Park, New York. From USA Travel Pics,

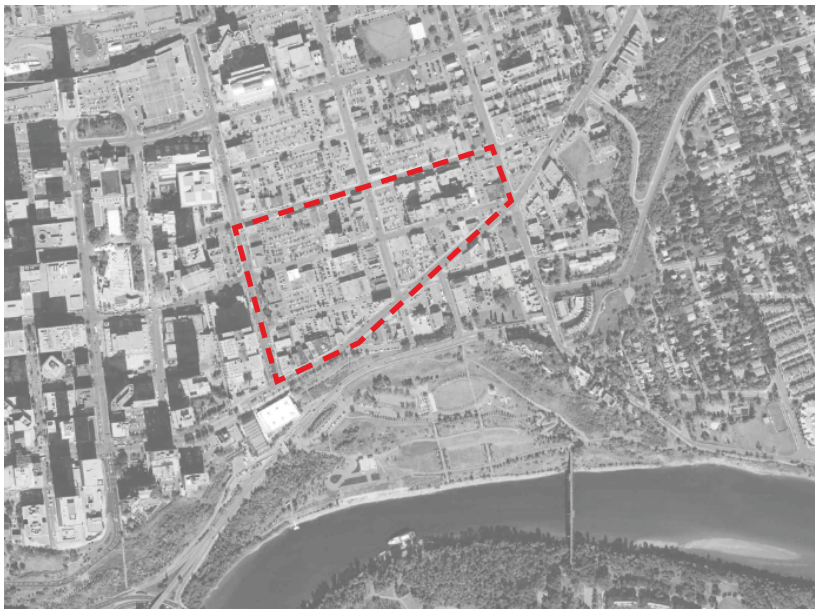


Figure 44. Sketch. Proposed area for urban density increase north of Louise McKinney Park.

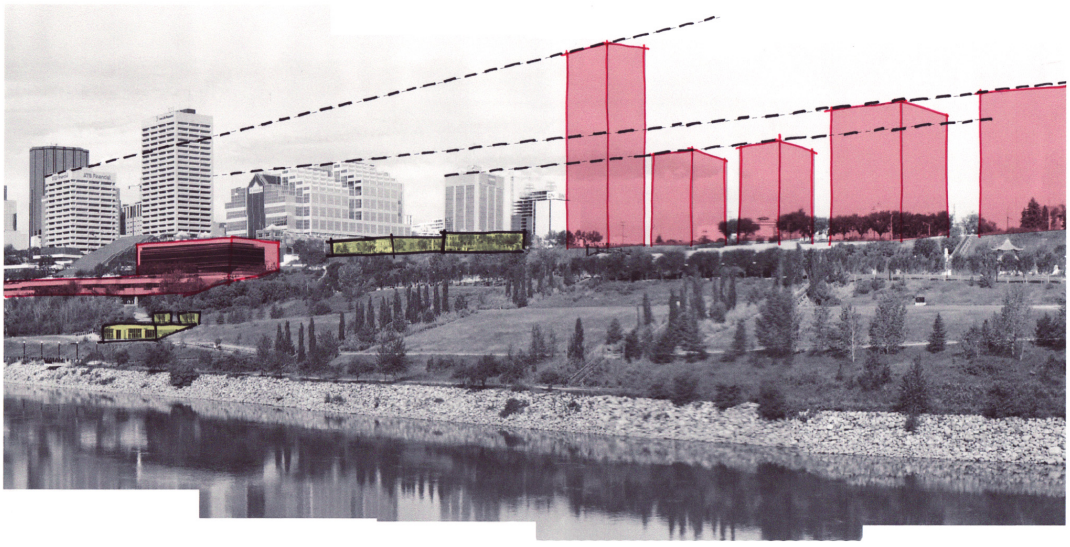


Figure 45. Sketch. Proposed density increase at the edge of the park, much like that around New York's Central Park. The densification also increases property values of the new buildings as they will have panoramic views of the valley.

Figure 46. Vignette. The proposed urban density increase creates an artificial edge that emphasizes the boundary between park and city. At the river edge where the bank has been stabilized against erosion, the existing promenade can be extended.

Entry Points

Major entry points are places where access to valley has been enhanced. These can be extensive structures such as Seattle's Olympic Sculpture Park, or simple stairs that aim to minimize their impact on the landscape. Entry points can also be defined as areas that reach into the urban fabric penetrate the artificial edge or urban development, as do the Edmonton Legislature Grounds. Ravines, which act as 'green fingers' extending into the urban fabric, also have the potential to serve as entry points to the park

Examples of entry points:

Figure 47. Edmonton Legislature Grounds. From Google Maps.
A major roadway tunnels under the grounds to maintain the continuous green space.

Figure 48. Photograph of Wood Stairs, Edmonton river valley. 2010.
Wood stairs are typically used in areas of steep hillside. These are not considered major entry points to the river valley, as they are often crudely constructed and are not universally accessible.

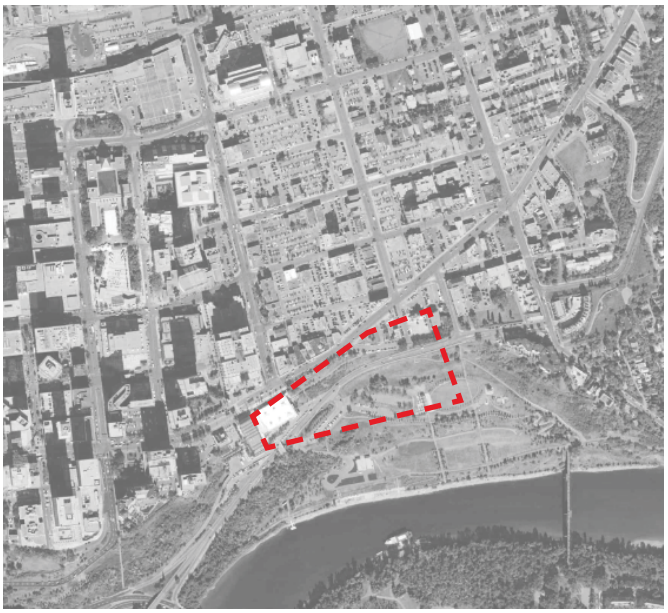


Figure 49. Proposed area for large ramping park to bridge roadway and better connect the river valley with the city.

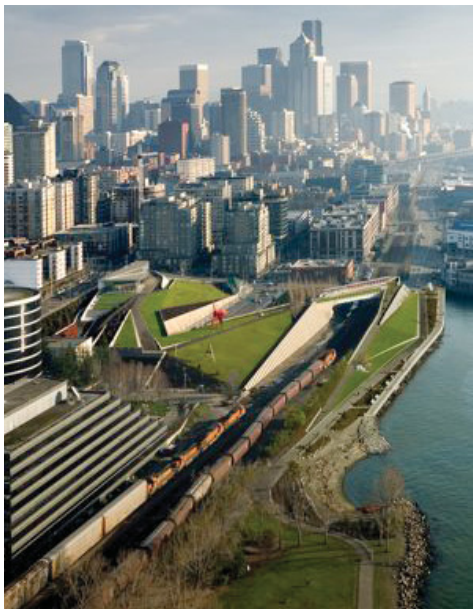


Figure 50. Olympic Sculpture Park for the Seattle Art Museum. Benschneider, 2008.

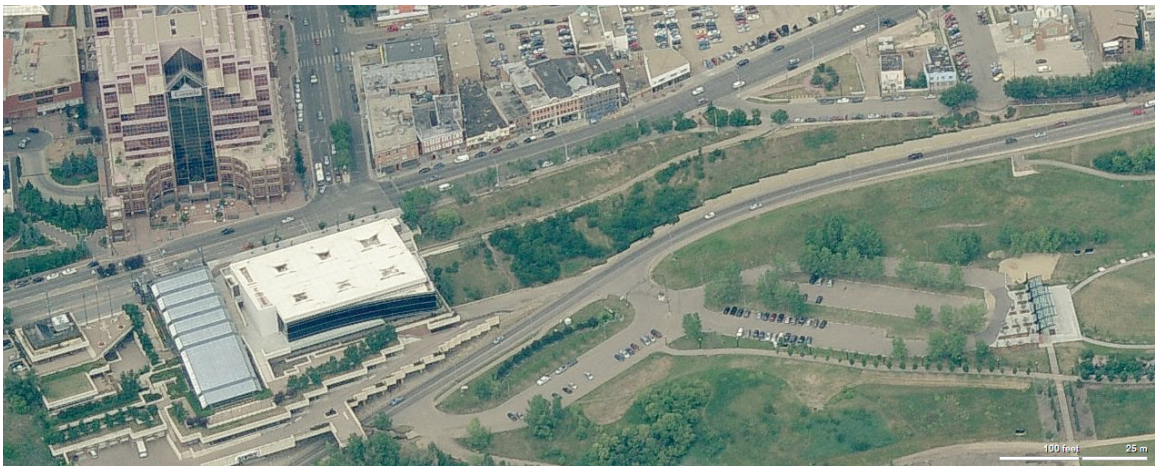


Figure 51. Shaw Conference Center. Bing Maps, 2011. The area that is highlighted in the sketch above.

Figure 52 Vignette. The new park is inspired by Seattle's Olympic Sculpture Park. It wraps the conference center and ramps over the existing road into the valley below.

2.1.3 River Valley Program

Public program in the river valley is primarily of a recreational nature. (Figures 54, 55)

> The valley system includes 14 ravines, 22 parks, over 100 kilometres of trail and four lake system. There are 58 kilometres of paved trails, 39 kilometres of granulated trails, 28 kilometres of pedestrian trails, 7 kilometres of equine trails, and 48 kilometres of ski trails.
>
> The valley also includes: 2 ski hills, 6 golf courses, 1 driving range, 29 day campsites, an equine centre, 25 reservable picnic sites, 2 outdoor pools, 70 staircases, 95 viewpoints, 6 toboggan hills, 58 minor bridges and 5 major bridges.
>
> There are 39 facilities in the River Valley as well as major attractions such as Muttart Conservatory, Fort Edmonton Park, the Valley Zoo and the Kinsmen Sports Centre.
>
> (Edmonton Public Library. *River Valley - Edmonton*)

By re-developing the areas labelled in Figure 53, a break in both the natural ecosystem and the public programming will be filled to create a continuous park system.

Figure 53. Map showing areas of residential and industrial development within the river valley. Dashed line indicates top-of-bank. Base image from Google Maps.

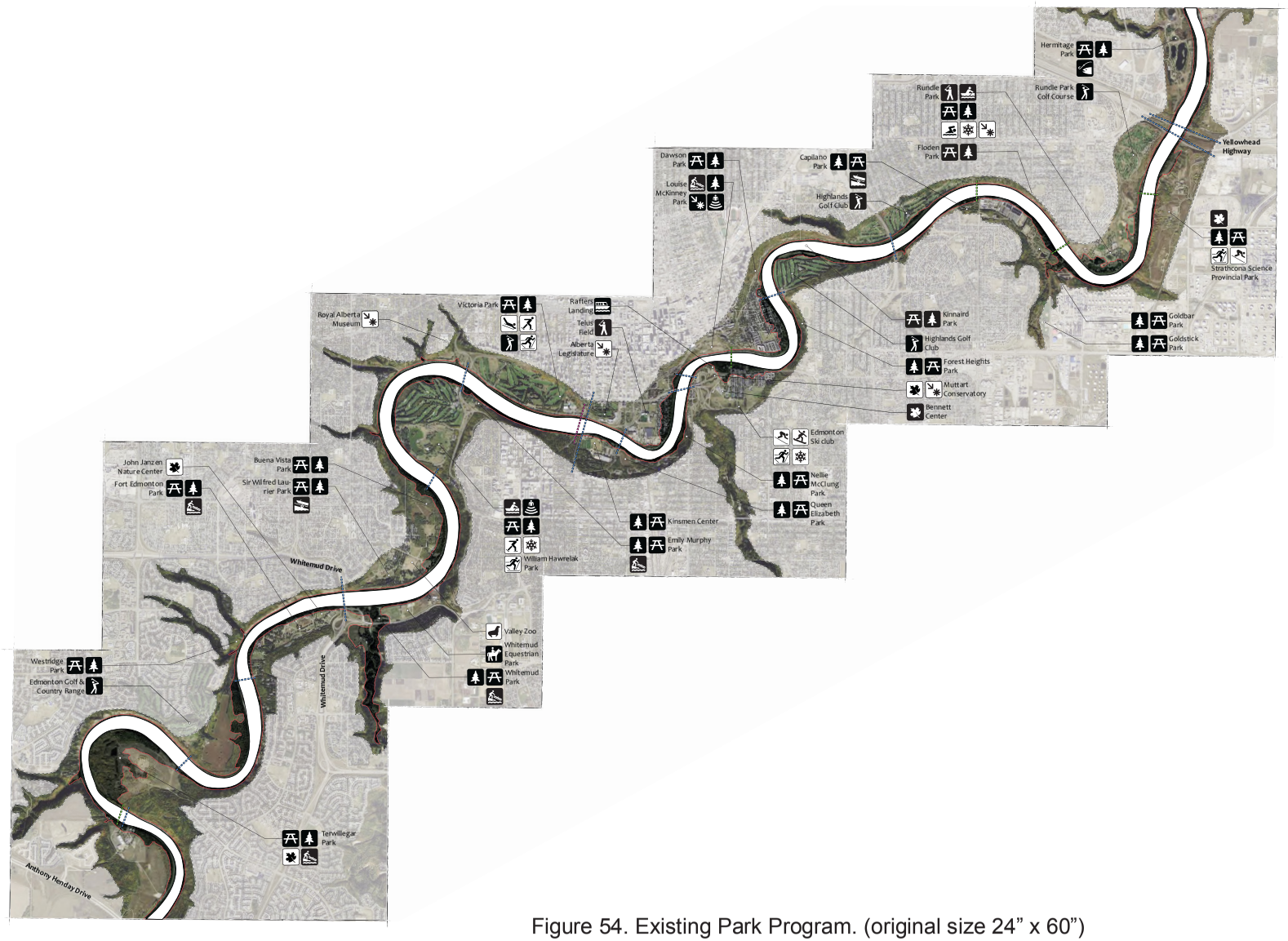


Figure 54. Existing Park Program. (original size 24” x 60”)

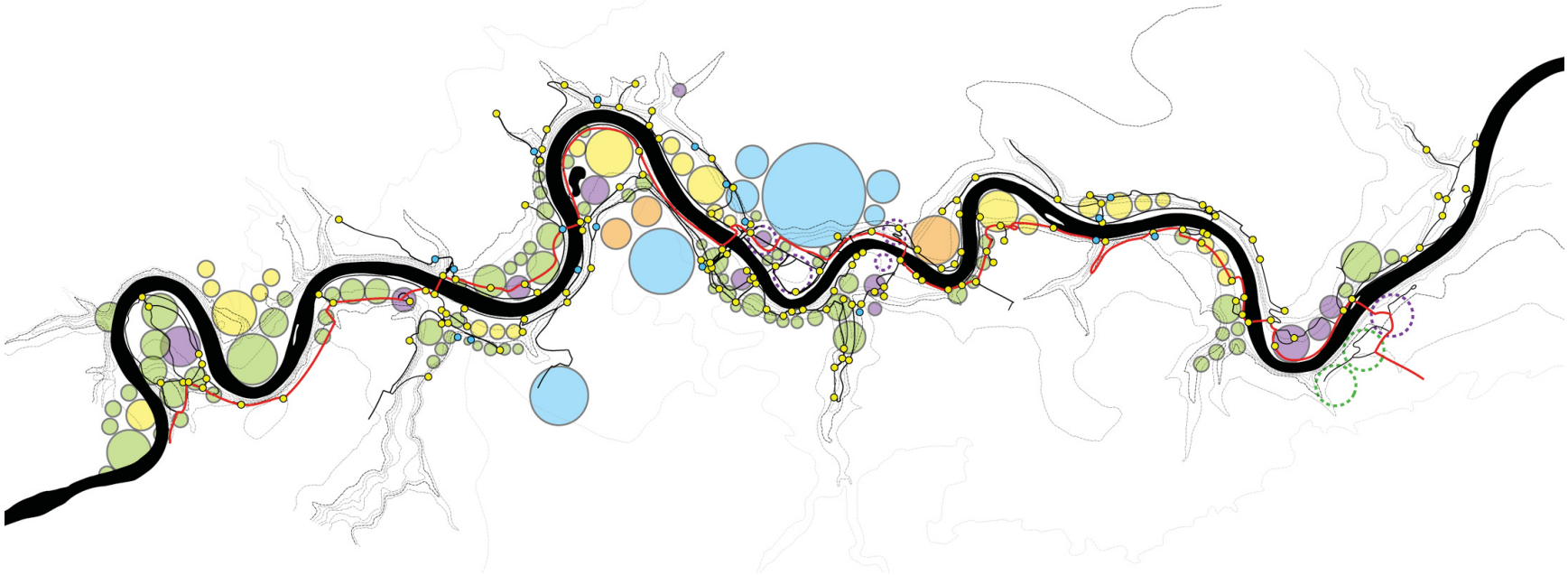


Figure 55. Existing Park Program Diagram. (existing condition)
Blue: Civic + Institutional, Yellow: Golf Course, Purple: Cultural + Recreational, Orange: Residential, Green: Natural Parkland

Residential development inside the 100 year flood zone is re-claimed as natural wilderness. New development is densified at the edges of the park. A new park destination is created through the adaptive reuse of the Rossdale power plant.

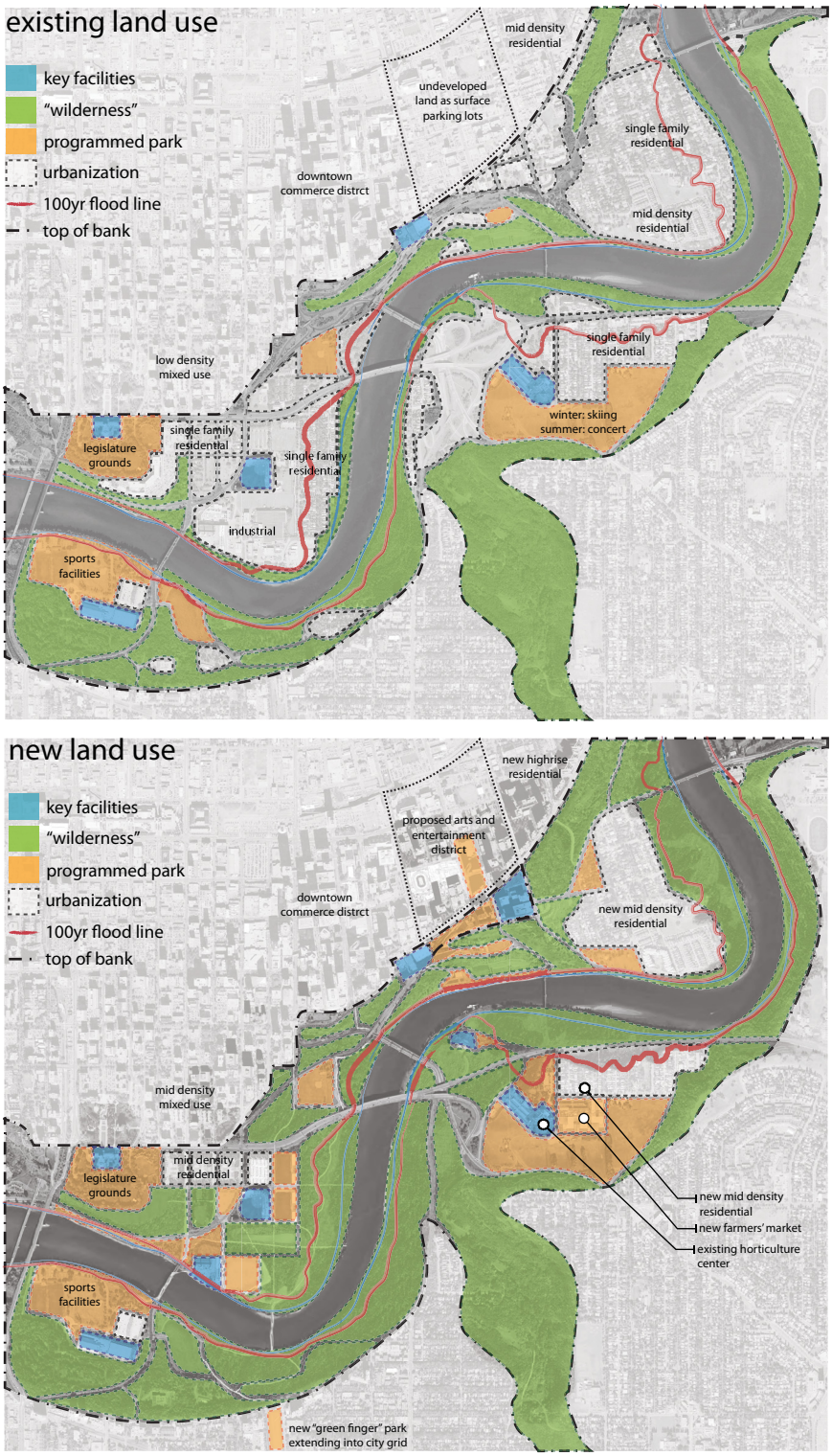


Figure 56. Existing and proposed land uses.

The new trails created by the re-claimed park land allow for a continuous green way experience through the heart of the city. New linkages also create shorter travel times between park destinations and re-link the Trans Canada Trail with the river.

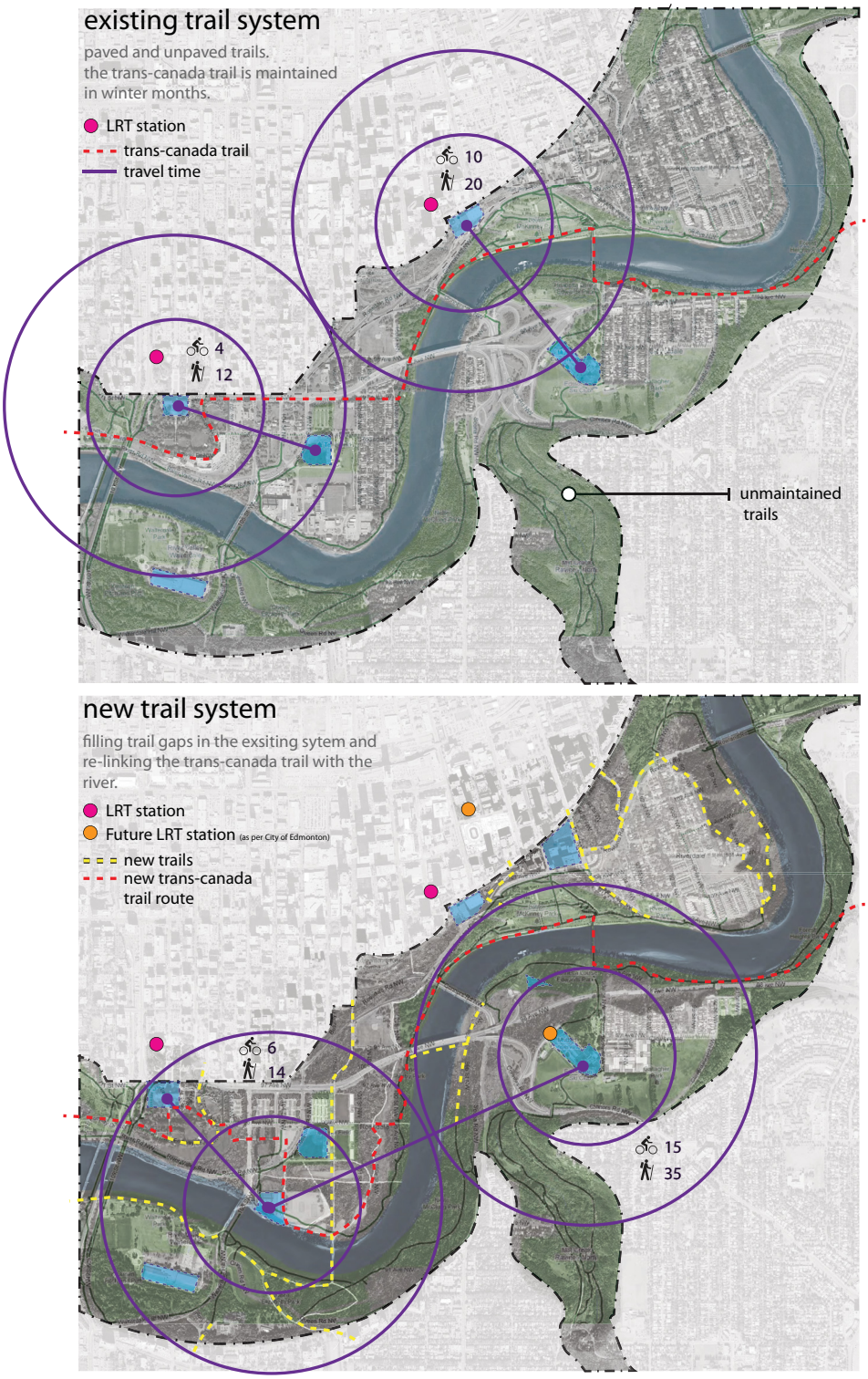


Figure 57. Existing and proposed trail system.

2.2 DESIGN SCALES

Building on the previous studies and Section 2.1, the complete scope of this thesis is best understood as design elements at three different scales. This shows how the initial site analysis leads to design solutions at the scales of urban, landscape, and building/path, all of which are essential to a cohesive river valley strategy.

2.2.1 Urban

At the largest scale, a radical transformation takes place. Vast new areas of wilderness occupy the flood plains while roadways are streamlined and building density is increased at the top-of-bank edge. A continuous park system would then exist just minutes from downtown Edmonton.

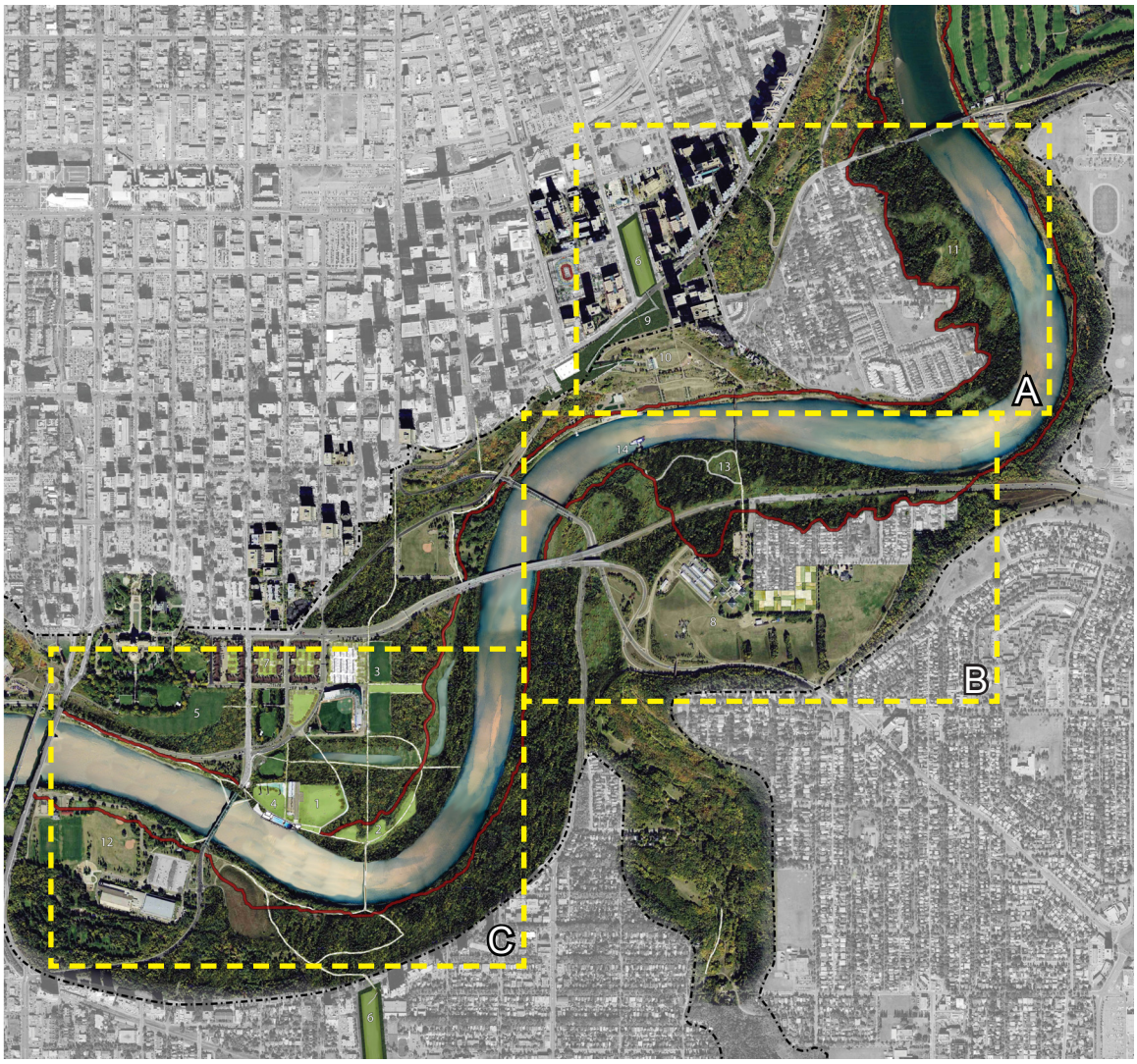


Figure 58. Final Urban Plan. Original Size 44” x 50”. Red line indicates 100yr flood line. Mapping style inspired by Eric Sanders’s, *Mannahatta.*

6. “GREEN FINGERS”
New parks are stretched into the city fabric. Much like the natural ravines, these areas serve to draw people to the river valley.

9. SHAW CONFERENCE CENTER PARK
A new art park ramps into the river valley below and acts as a major gateway to the river valley.

10. LOUISE MCKINNEY PARK
Existing park that features a performance stage and river promenade.

11. RIVERDALE PARKLAND
The new parkland features an off leash dog park and picnic facilities that provide activity space for the surrounding residential communities while providing a unique “wilderness” experience.

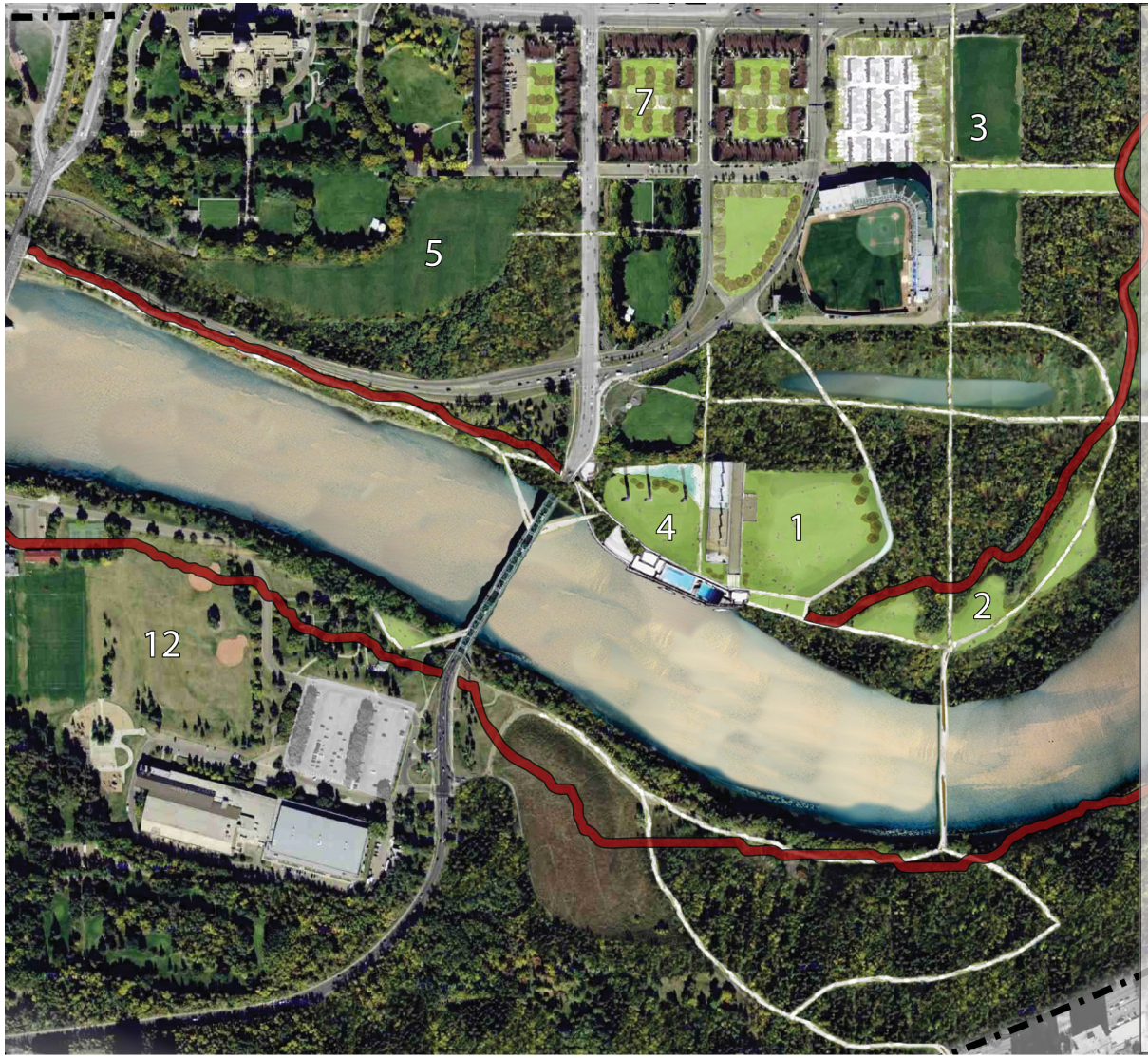
Figure 59. area ”A” enlarged.

8.MUTTART CONSERVATORY
Existing horticultural center that is a year round destination. The adjacent hillside acts a winter ski/tobogan area and summer festival site.

13. CLOVERDALE PARK
An existing pedestrian bridge and rest area provide a link across the river.

14. RIVER QUEEN DOCK
Existing River Queen paddleboat dock. The new dock at the Rossdale Center will provide the start of a multi-stop river network.

Figure 60. area ”B” enlarged.



1. GREAT LAWN

This south facing lawn is protected from the north-western winter winds by the converted power plant. It provides a venue for summer and winter festivals as well as unprogrammed public activities. This links to the history of the site as the former exhibition grounds of the city.

3. SPORTS FIELDS + PARKLAND

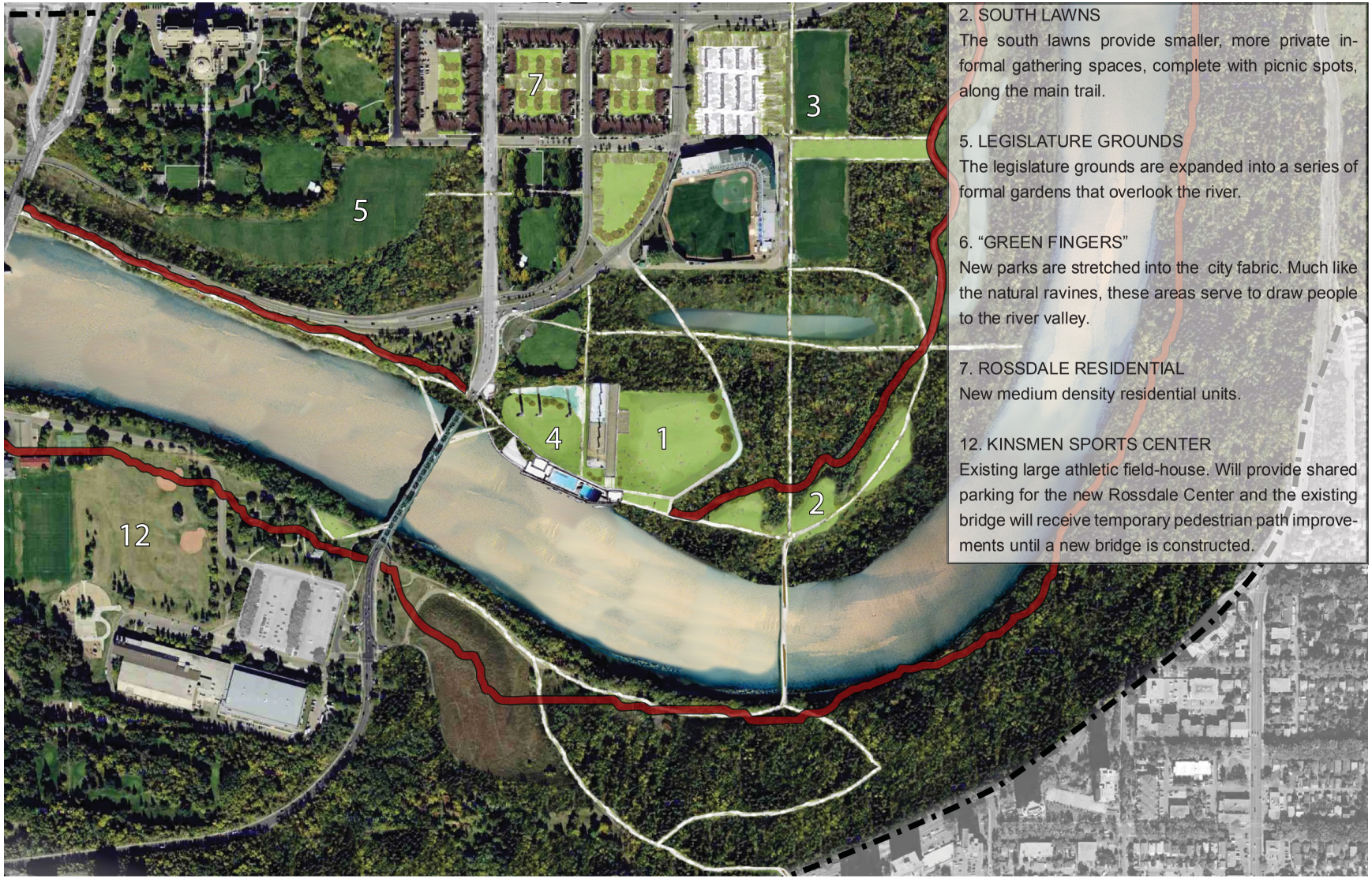
New soccer fields share the facilities of the adjacent baseball stadium, and act as natural surface overflow parking for baseball games or large seasonal events. Adjacent to the new fields is reclaimed parkland which continues the ecology of the river valley system.

4. ROSSDALE CENTER

One wing of the old power plant is transformed into an Industrial Arts Gallery for the post secondary schools in Edmonton. A secondary wing is converted into a History of River Industry, and River Ecology interpretive center. These programs serve to educate the public about the importance of the River Valley to the city, as weill as provide a continued link to educational institutions. A new restaurant in the attic of the power plant, and a public rooftop garden create unique experiences with 360 degree views.

The two pump houses anchor a public outdoor pool. A cafe, equipment rental shop, and docking facilities for the Edmonton River Queen fill out the program. The west facing park contains a summer wading pool that can be converted into a skating surface in winter. The three original smoke stacks are retained as markers of previous industry. See Figure 78 for concept rendering.

Figure 61. area ”C” enlarged.



2. SOUTH LAWNS
The south lawns provide smaller, more private informal gathering spaces, complete with picnic spots, along the main trail.

5. LEGISLATURE GROUNDS
The legislature grounds are expanded into a series of formal gardens that overlook the river.

6. “GREEN FINGERS”
New parks are stretched into the city fabric. Much like the natural ravines, these areas serve to draw people to the river valley.

7. ROSSDALE RESIDENTIAL
New medium density residential units.

12. KINSMEN SPORTS CENTER
Existing large athletic field-house. Will provide shared parking for the new Rossdale Center and the existing bridge will receive temporary pedestrian path improvements until a new bridge is constructed.

Figure 62. area ”C” enlarged (site description continued)

2.2.2 Landscape

A dynamic wilderness landscape is created within the flood plain. The re-claimed parkland is allowed to function naturally as part of the river ecosystem; wildlife habitat is restored and new trail systems allow for a both summer and winter park activities such as hiking and cross-country skiing only minutes from Edmonton's downtown core.

As shown in the mapping studies, this new wilderness landscape will fill a void in the biodiversity and recreation corridor that is the North Saskatchewan River Valley. Figure 64 shows a typical new river landscape model and how architectural moments can be integrated into the landscape and take advantage of natural river valley conditions to enhance the experience of being in this new wilderness.

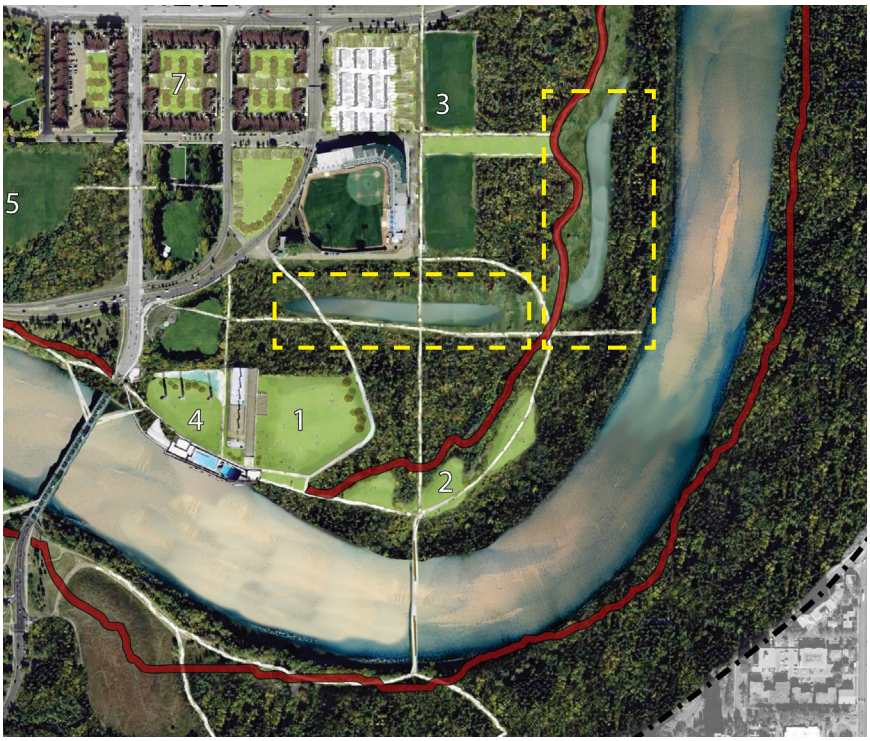


Figure 63. Areas highlighted with yellow show new storm water retention ponds that help to filter toxins and sediment from the water before it enters the river. The areas are flanked by dense upland forest and riparian wetlands at the river's edge.

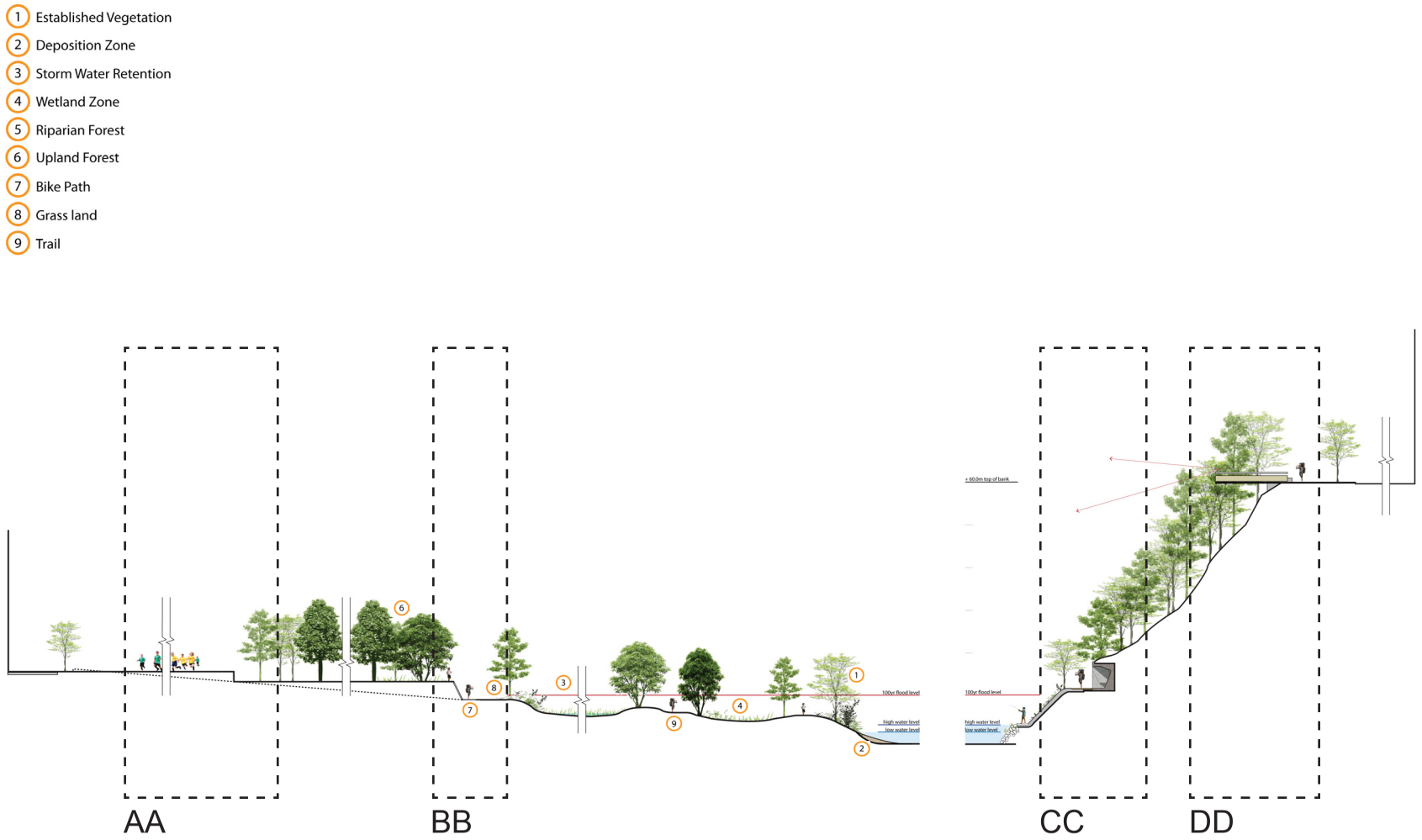


Figure 64. Typical new river valley section. Original size 24” x 72”

Figure 65. The new sports fields create a unique experience of “playing in the forest”.

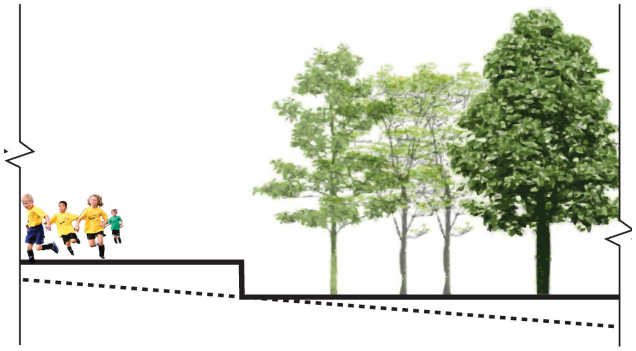


Figure 66. Landscape Section ”AA” enlarged.

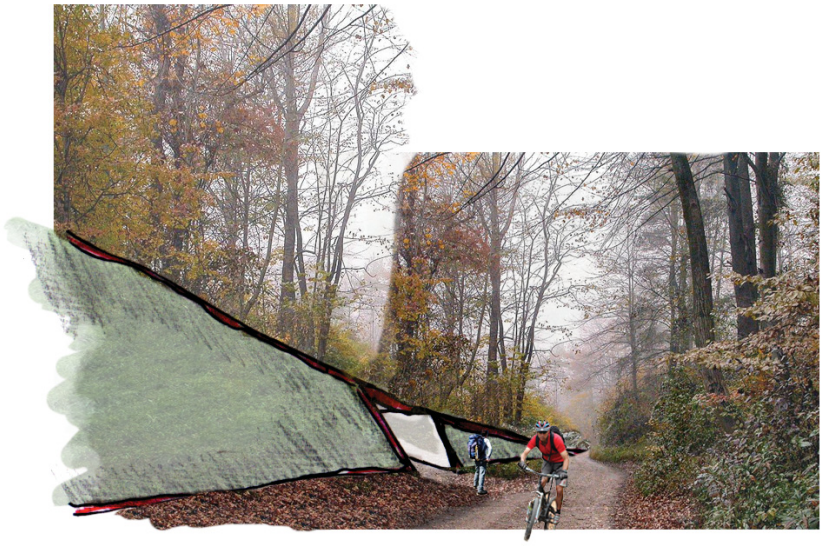


Figure 67. The flood plain is emphasized through the creation of an embankment. This also allows for a dual trail system: a formal bike path within the flood plain and a hiking trail at the edge of the upland forest.

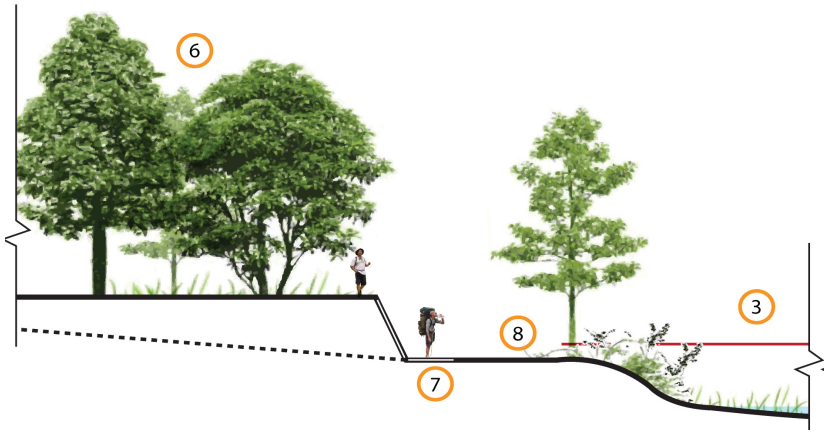


Figure 68. Landscape Section ”BB” enlarged.

Figure 69. The Shelter Pod in its context. Inspired by the projects of the Trollstigen National Tourist Route, Norway, the pod is functional in its design and becomes a part of the landscape.

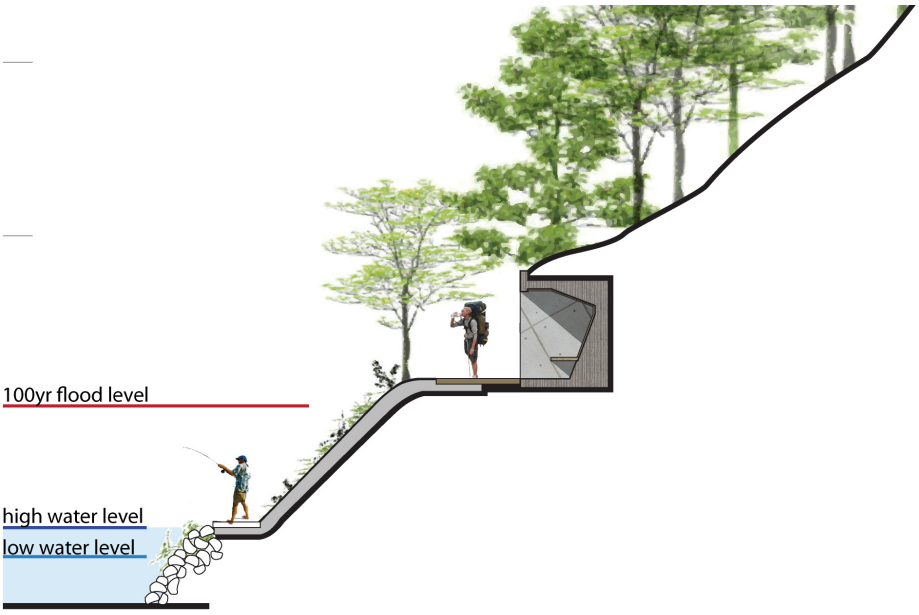


Figure 70. Landscape Section ”CC” enlarged. The steep embankment is reinforced to prevent erosion and the Shelter Pod is embedded into the hillside. The pod acts a rest area and landslide shelter. A concrete outer structural wall is lined on the with a wood finish and bench providing a more comfortable interior space.

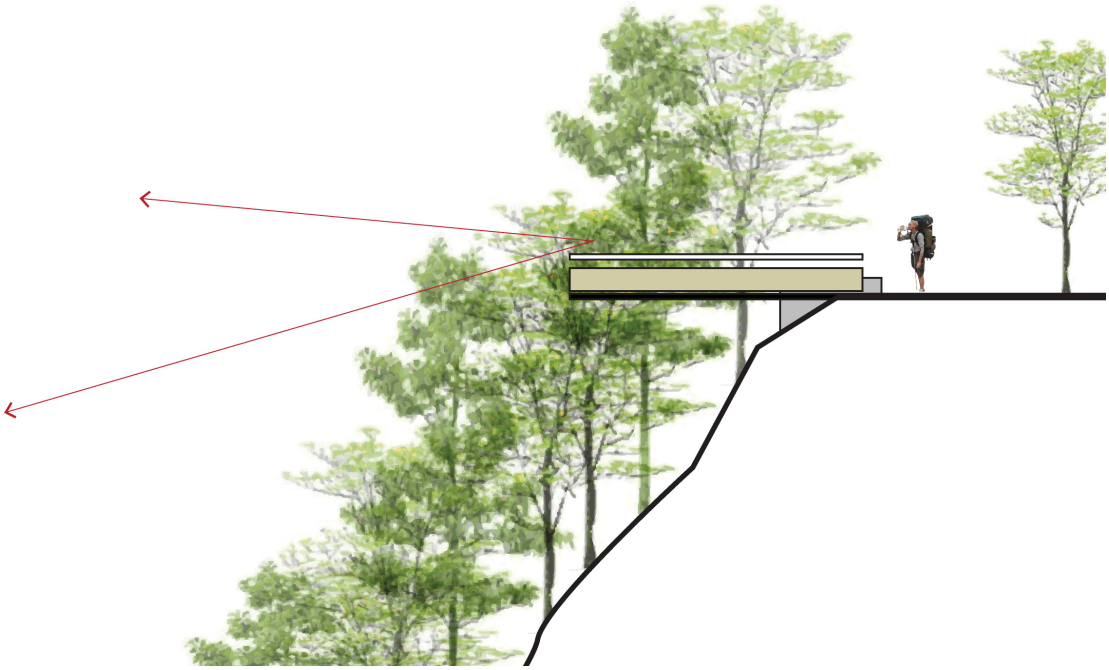


Figure 71. Landscape Section ”DD” enlarged.
By extending through the tree line one can get a uninterrupted, panoramic top of bank view of the river valley.

Figure 72. Lookout view concept. Uninhibited views of the river valley.

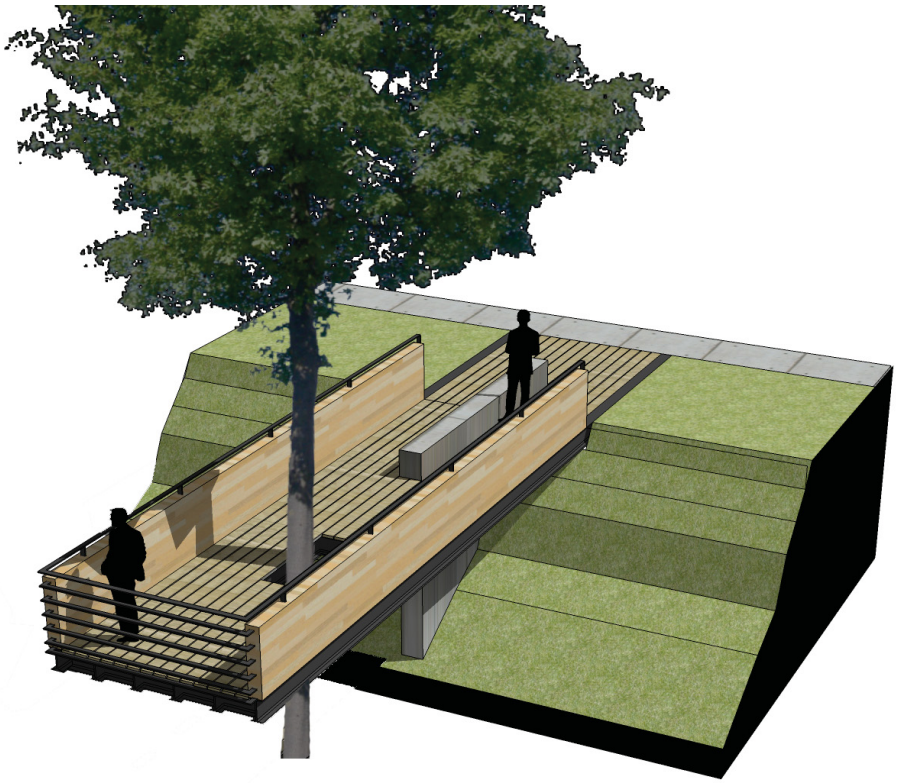


Figure 73. Lookout Design. Inspired by the projects below, the lookout is focused on becoming a part of the landscape. The concrete anchor acts as both bench and cantilever support. The wood walls guide the visitor to the end of the platform where they extend past the treeline. Where applicable, the cantilever can be built around exiting trees that in essence puncture the deck and become part of the experience.

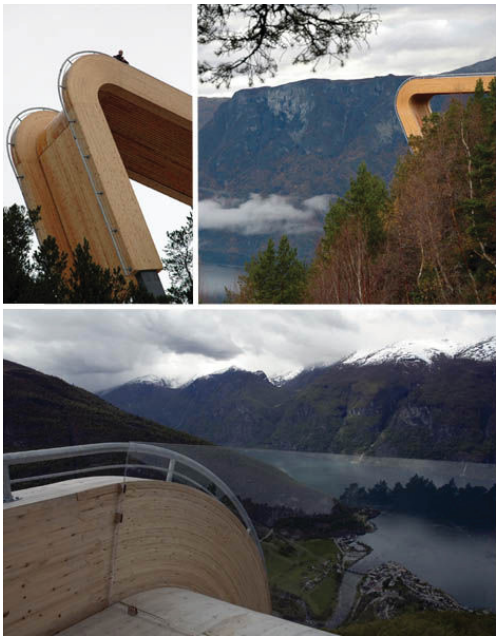


Figure 74. Aurland Lookout, Norway. Photograph by Saunders.

Figure 75. Outlookpoint, Norway. Photograph from e-architect.

2.2.3 Building / Path

At the scale of the person, as seen in the design of the landscape Shelter Pod and Lookout, material and experience become the focus of architectural interventions. Some designs are temporary and show the potential of future constructions such as improved bridges, while others focus on the adaptive reuse of existing buildings where possible.

Temporary Structures

Bridges present a great opportunity for temporary interventions. In an effort to improve the trail system, walkways can be hugh from the undercarriage of bridges so that valley users can cross the river without having to exit the valley. With over 15 major river crossings, bridges should be designed to maximize their programmatic potential rather than exist simply as vehicular infrastructure.

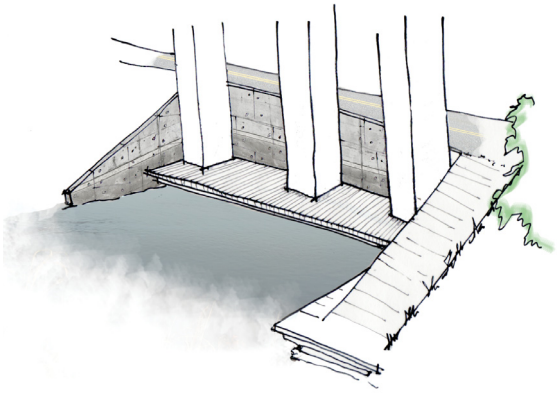


Figure 77. Sketch. Summer canoe dock and winter skiing rest area built into bridge supports at river bank.

Figure 76. Photograph Underneath Bridge

Figure 78. Sketch. Temporary walkway hung under bridge.

Adaptive Reuse

Built in 1902, the power plant iconically represents the industrial history of the site. The plant was decommissioned in 2009 and has been historically designated as a Heritage Site with some of the buildings being preserved for non-industrial reuse. This thesis proposes a vision of what the site might become in the context of the urban and landscape scheme. The vision of the new power plant lands takes into account all of the previous studies and works with the natural river currents to create a new major river hub. Public program (as stated in Figure 61) is added to the buildings as a means of drawing people to the site. There is no on-site parking however, as the building shares parking with stadium to the north and the sports complex across the river to the south. This enforces the idea that the new program is embedded in the park and by enjoying a short walk to the site, visitors gain an appreciation for the fact that they are in a wilderness park.

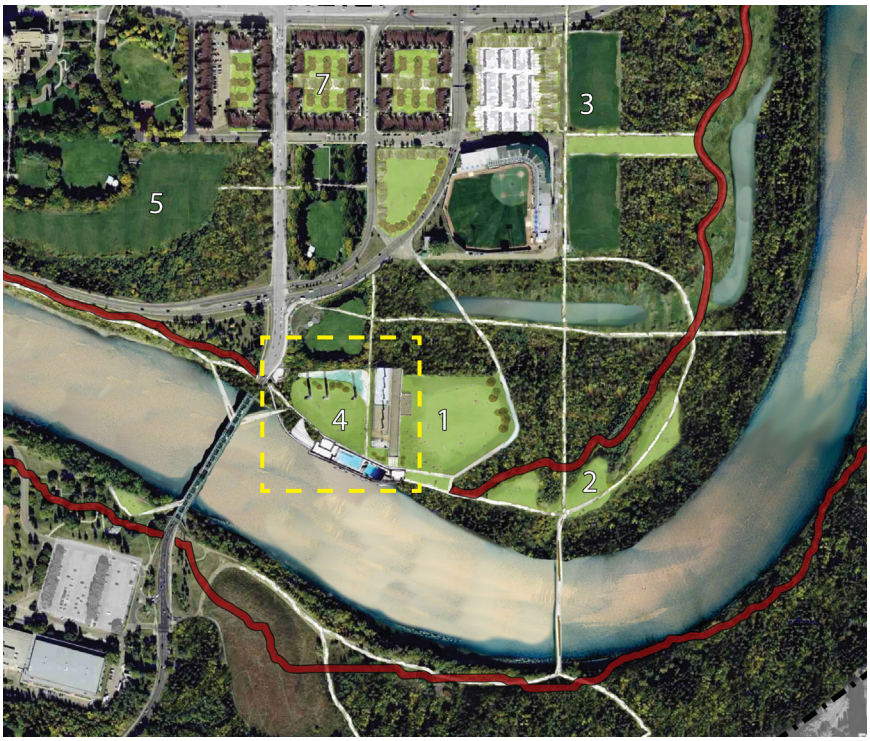


Figure 79. Area highlighted with yellow shows the location of the existing power plant . This area becomes a new park destination and a major river access point.

Figure 80. Buildings of the Rossdale Power Plant in Edmonton, Alberta. WinterforceMedia, 2010.

Figure 81. Vignette. A vision for the potential reuse of the power plant lands.

Figure 82. Vignette. Reuse of the Rossdale Rower Plant. (Original image 20” x 30”.)
A new promenade stabilizes the river bank and is accessed by a set of south facing great stairs that allow for various levels of public seating. The promenade acts as informal docking facilities for small watercraft as will as a fishing area. The pumphouse on the right is converted into an equipment rental shop and a small cafe. The pumphouse on the left acts as a viewing platform and is the new docking point for the Edmonton Queen Riverboat. The main power plant building is infused with public program and such as an attic restaurant and a public green roof terrace. The three large smoke stack are retained as a reminder of the industrial past as will as being a visual waypoint.

CHAPTER 3: CONCLUSION

This thesis is not based on the idea of “sustainability” but rather that Edmonton has a chance to turn its magnificent river valley into its defining feature. Any city lucky enough to have a major river valley in its boundaries should realize the distinct advantages of preserving and enhancing natural landscape features.

While this thesis proposes a bold new vision for Edmonton, it has the potential to act as a model for other cities that are looking to enhance their greenways or river valleys. I believe the most challenging part to “selling” this scale of urban wilderness will be to those who think building condominiums in a flood zone is a good idea.

At urban and landscape scales, the focus was primarily on restoring an intensive greenway through the city. By removing residential and industrial elements from the flood plain, the river gains a natural buffer from urbanization. In this buffer space, natural wildlife habitat is restored and a void in the park system is filled. In restoring the valley to a wilderness state, the relationship between city and park was also examined. By strengthening the edge condition between these two conditions the qualities of each become enhanced. In studying the valley at a large scale, it is clear how much of a dominating force the river valley is to Edmonton.

After implementing large scale changes to the valley, it became apparent where architectural moments at the scale of the human body could be incorporated into the plan. These instances were developed with the intention of enhancing the user’s experience of wilderness.

In summary, this provides an ambitious, forward looking vision or Edmonton, developed at three distinct scales in a city that needs it. I hope that this proposal may inspire visionary thinking and investment.

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