



## **PHASE ONE MAPS-BOW RIVER**

### **RIPARIAN AREAS MAPPING PROJECT FOR THE CITY OF CALGARY**

Prepared by: O2 Planning + Design Inc. with  
The Alberta Riparian Habitat Management Society (Cows and Fish)

Submitted to: The City of Calgary Water Resources

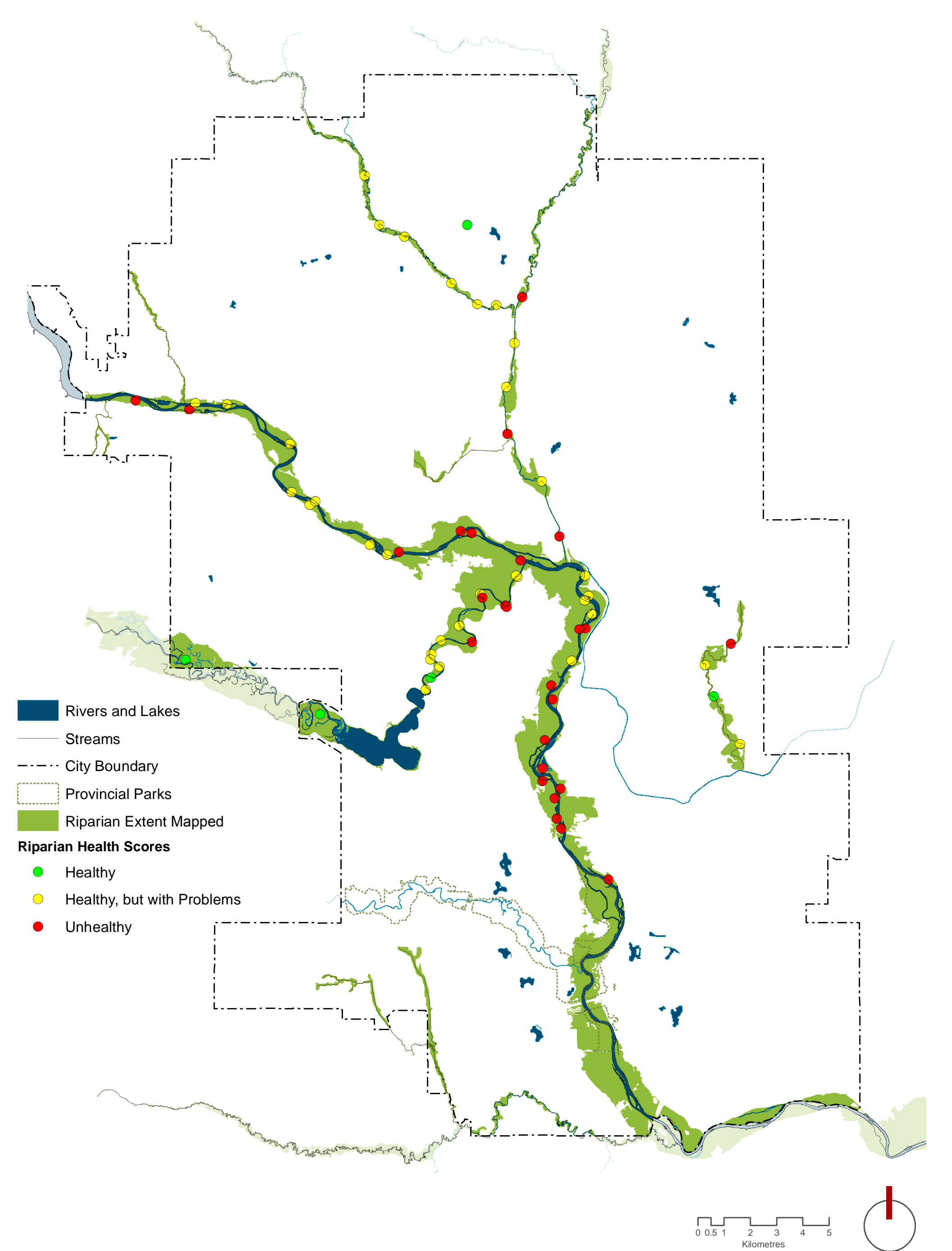
October 19 | 2012





# RIPARIAN AREAS MAP PROJECT

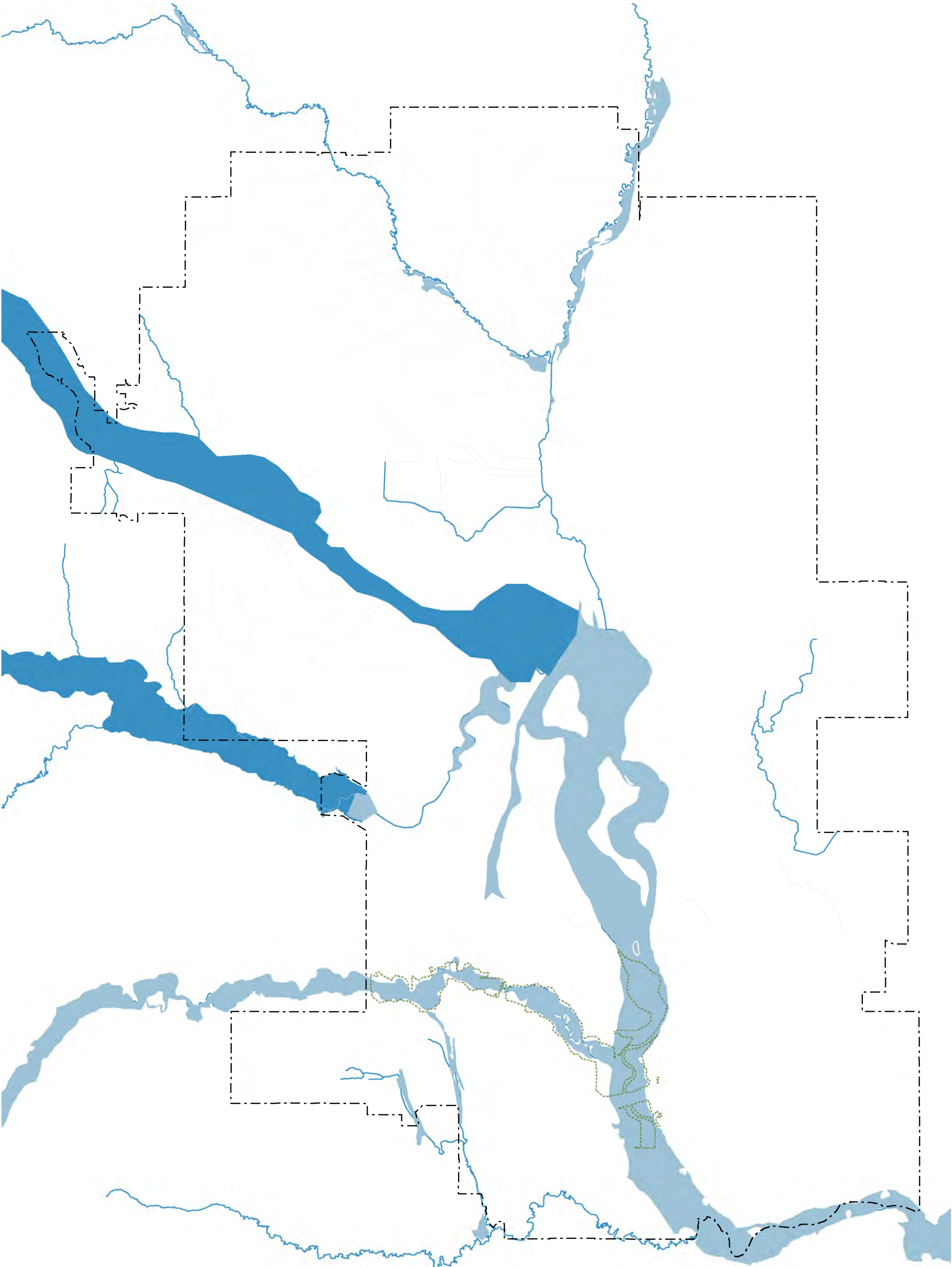
## CITY WIDE MAP - RIPARIAN LOCATION AND FUNCTION



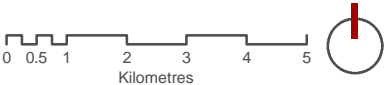


# RIPARIAN AREAS MAP PROJECT

## CITY WIDE MAP - ALLUVIAL AQUIFERS



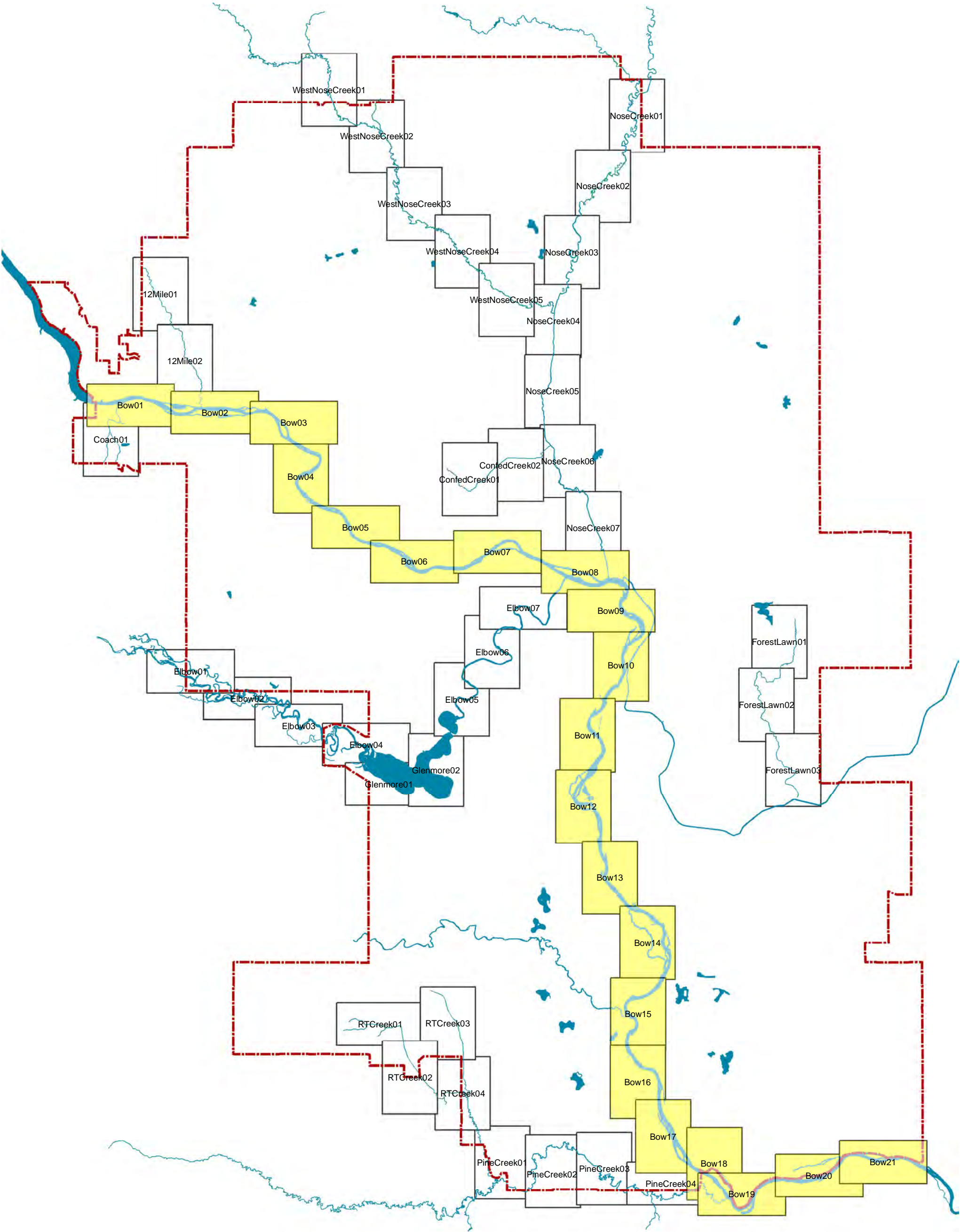
- City Boundary
- - - Fish Creek Provincial Park
- Mapped Alluvial Aquifer (ARC 2009)
- Potential Large Alluvial Aquifers in Coarse Sediments (Moran 1986)
- Streams / Rivers
- Lower Order Streams





# RIPARIAN AREAS MAP PROJECT

## CITY WIDE MAP - MAP BLOCK CODE

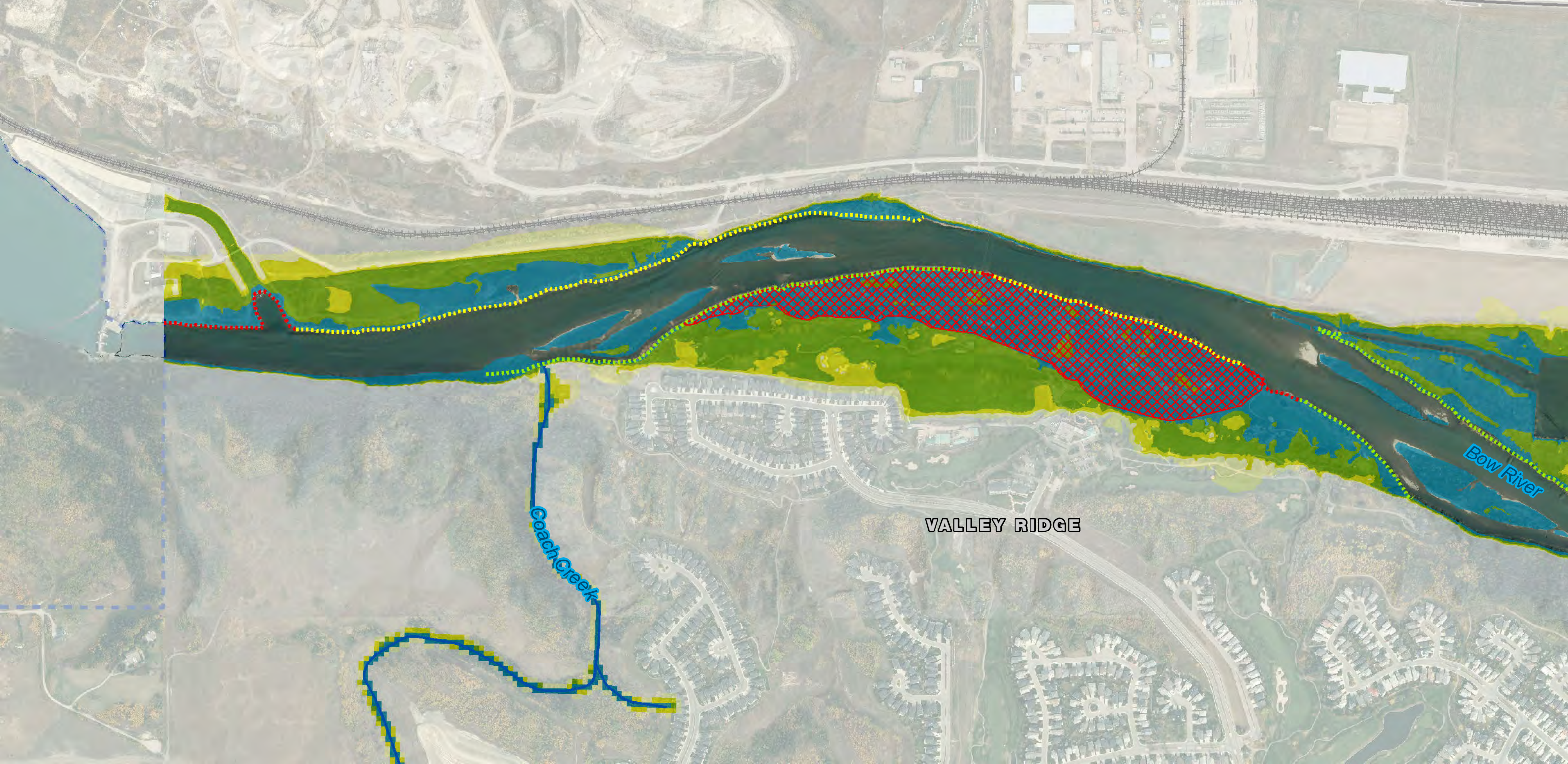


### Legend

- Map Block Code ID
- City of Calgary Boundary
- Water Surface







**Riparian Zone\***

Inner Riparian Zone

Middle Riparian Zone

Outer Riparian Zone

Potential Outermost Riparian Zone

**Riparian Health\*\***

Healthy

Healthy, but with Problems

Unhealthy

**Bank Health\*\*\***

Good

Moderate

Poor

\*\*\*Based on field studies of major rivers / creeks, excluding private residential riverfront lots or steep valley slopes with limited riparian habitat

City Boundary

Major Roads

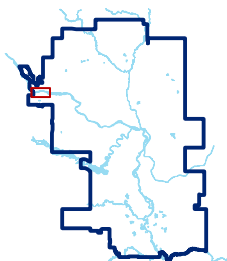
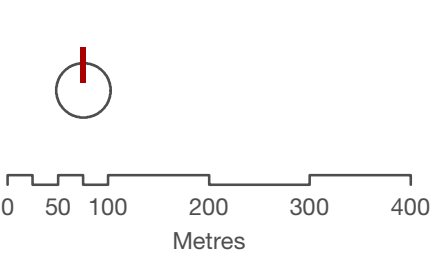
Rail

Streams

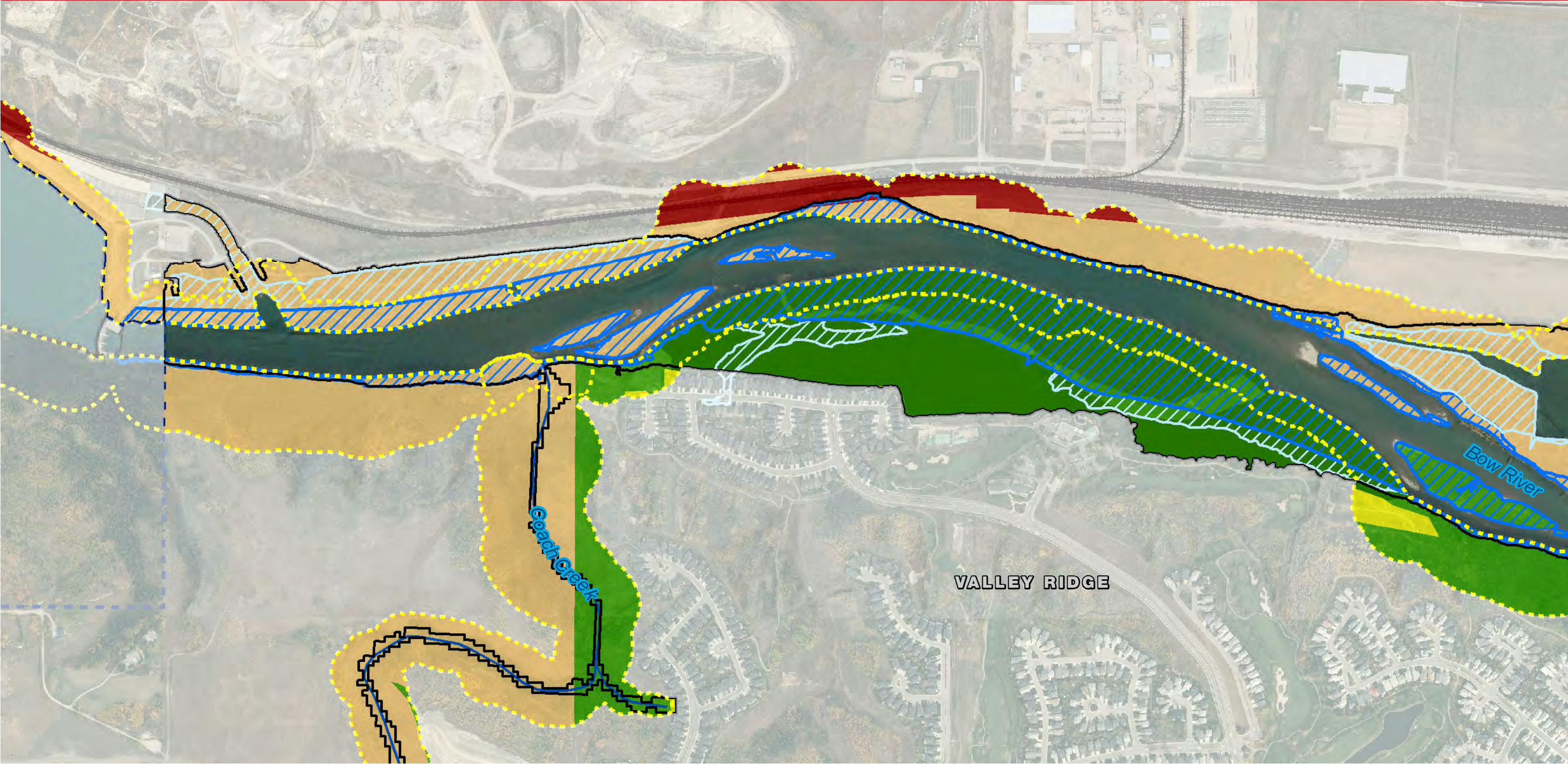
Fish Creek Provincial Park

\*Variable Width Riparian Model Outputs

\*\*Based on field studies of sampled riparian polygons only







Land Use Type

Commercial

Future Urban Development

Industrial

Institutional

Major Infrastructure

Mixed Use

Residential

Parks, Recreation and Public Education

Golf Course

City of Calgary ER Setback Policy\*

Nose Creek Water Management Plan Setback \*\*

Floodway

Flood Fringe

Flood Extent - 100 Year (Nose Creek/West Nose Creek)

Outer Riparian Zone Boundary

Streams


Major Roads

Rail


City Boundary

Fish Creek Provincial Park

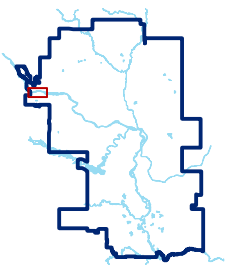
\*Note that ER setbacks for lower order streams are not mapped as they were out of the project scope  
\*\*Recommended setback boundary of Nose Creek Watershed Partnership including floodplain, meander belt width and adjacent escarpments >15%



THE CITY OF  
CALGARY



0 50 100 200 300 400  
Metres



O2

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RIPARIAN AREAS  
MAP PROJECT

EXISTING INFRASTRUCTURE AND POSSIBLE IMPROVEMENTS  
BOW RIVER 01



● Storm Outflow Location

■ Stormwater Lift Station

— Storm Main (> 900mm diameter)

— Sanitary Main (>600mm diameter)

— Water Main (>400mm diameter)

--- Siphon

— Pipeline River Crossing Locations

▲ Water / Waste Water Treatment Plants

▨ Existing Storm Retrofit Pond

▨ Possible Location of Storm Retrofit Pond

■ Existing Storm Pond

— Existing Bank Infrastructure (e.g., Rip Rap, Retaining Walls, Weirs)

■ Bank Erosion Hotspot

▲ Candidate Flood / Erosion Control Projects

— Paved Trails

--- Gravel Trails

— Bridge

■ Buildings

■ Parks (Maintained Turf Areas)

— City Boundary

— Major Roads

+++ Rail

— Streams

■ Fish Creek Provincial Park

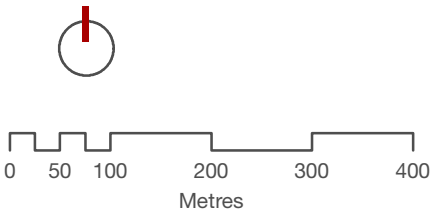
The non-masked area is based on the greater of:  
(i) outer riparian zone of the variable width model,  
(ii) City ER setback policy boundary,  
(iii) Nose Creek Watershed Partnership recommended setback policy  
(See Theme 2-Land and Regulatory Issues)



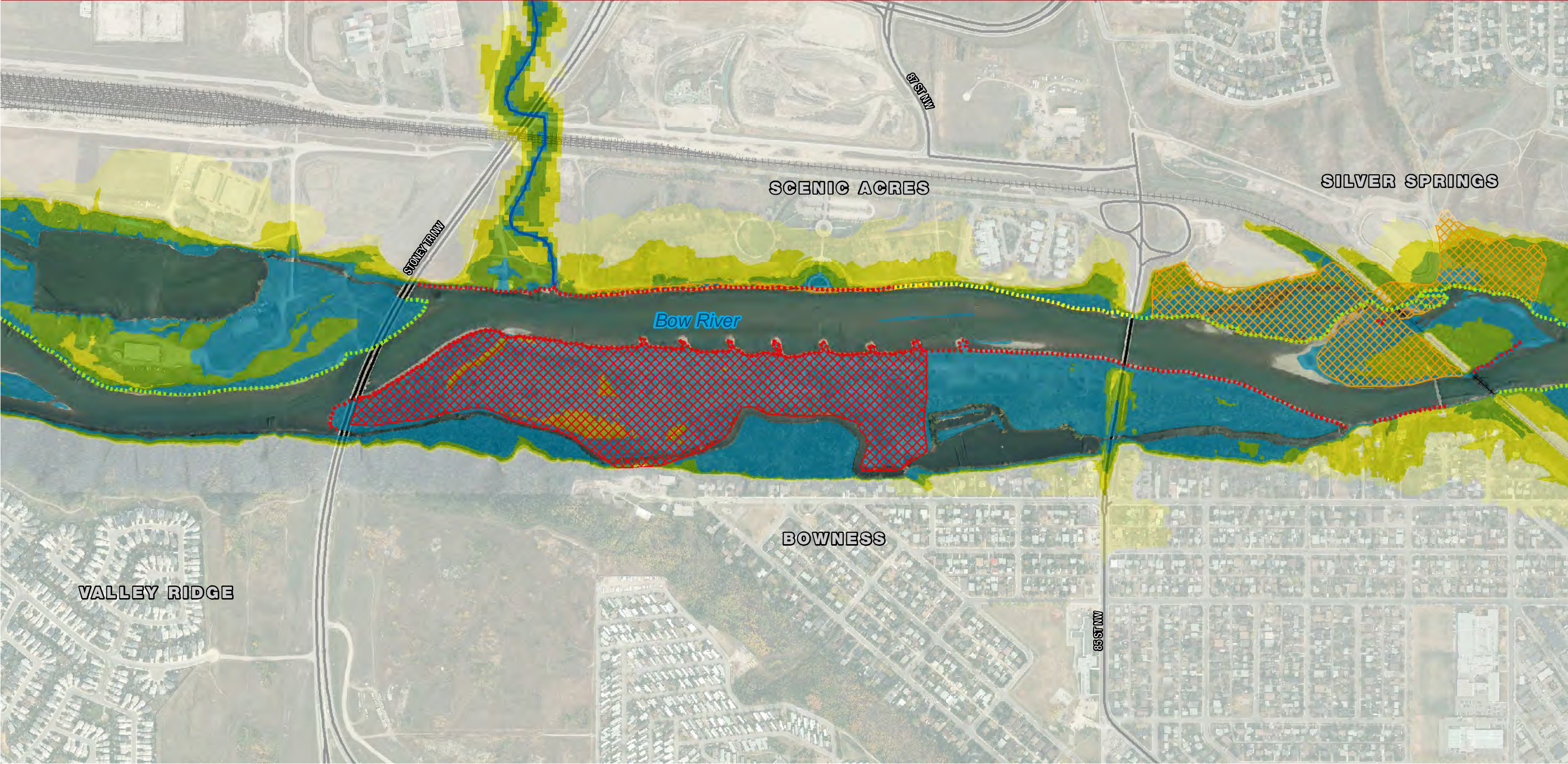
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**Riparian Zone\***

- Inner Riparian Zone
- Middle Riparian Zone
- Outer Riparian Zone
- Potential Outermost Riparian Zone

**Riparian Health\*\***

- Healthy
- Healthy, but with Problems
- Unhealthy

**Bank Health\*\*\***

- Good
- Moderate
- Poor

\*\*\*Based on field studies of major rivers / creeks, excluding private residential riverfront lots or steep valley slopes with limited riparian habitat

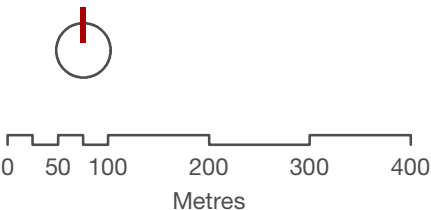
City Boundary

Major Roads

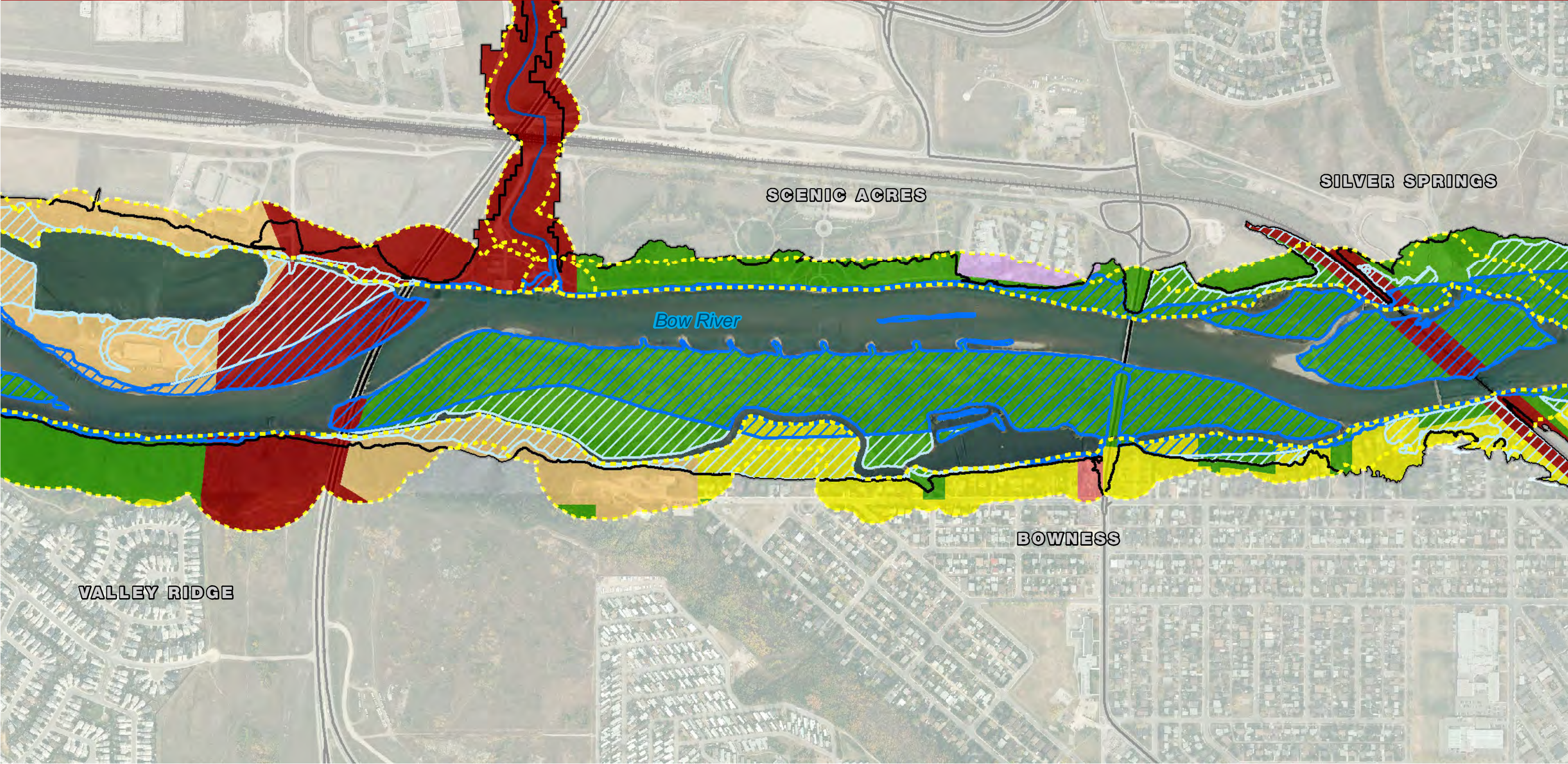
Rail

Streams

Fish Creek Provincial Park







**Land Use Type**

Commercial

Future Urban Development

Industrial

Institutional

Major Infrastructure

Mixed Use

Residential

Parks, Recreation and Public Education

Golf Course

City of Calgary ER Setback Policy\*

Nose Creek Water Management Plan Setback \*\*

Floodway

Flood Fringe

Flood Extent - 100 Year (Nose Creek/West Nose Creek)

Outer Riparian Zone Boundary


Streams

Major Roads

Rail

City Boundary


Fish Creek Provincial Park




THE CITY OF  
CALGARY

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0 50 100 200 300 400  
Metres



\*Note that ER setbacks for lower order streams are not mapped as they were out of the project scope

\*\*Recommended setback boundary of Nose Creek Watershed Partnership including floodplain, meander belt width and adjacent escarpments >15%



RIPARIAN AREAS  
MAP PROJECT

EXISTING INFRASTRUCTURE AND POSSIBLE IMPROVEMENTS  
BOW RIVER 02



● Storm Outflow Location

■ Stormwater Lift Station

— Storm Main (> 900mm diameter)

— Sanitary Main (>600mm diameter)

— Water Main (>400mm diameter)

--- Siphon

— Pipeline River Crossing Locations

▲ Water / Waste Water Treatment Plants

▨ Existing Storm Retrofit Pond

▨ Possible Location of Storm Retrofit Pond

■ Existing Storm Pond

— Existing Bank Infrastructure (e.g., Rip Rap, Retaining Walls, Weirs)

■ Bank Erosion Hotspot

▲ Candidate Flood / Erosion Control Projects

— Paved Trails

--- Gravel Trails

— Bridge

■ Buildings

■ Parks (Maintained Turf Areas)

■ City Boundary

— Major Roads

+++ Rail

— Streams

■ Fish Creek Provincial Park

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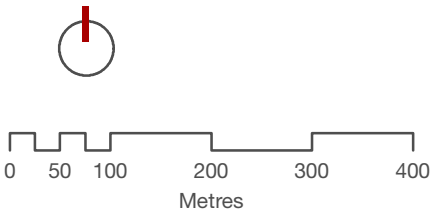
(See Theme 2-Land and Regulatory Issues)

THE CITY OF

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**Riparian Zone\***

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**Riparian Health\*\***

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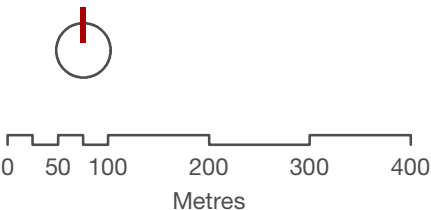
- Good
- Moderate
- Poor

- City Boundary
- Major Roads
- Rail
- Streams
- Fish Creek Provincial Park

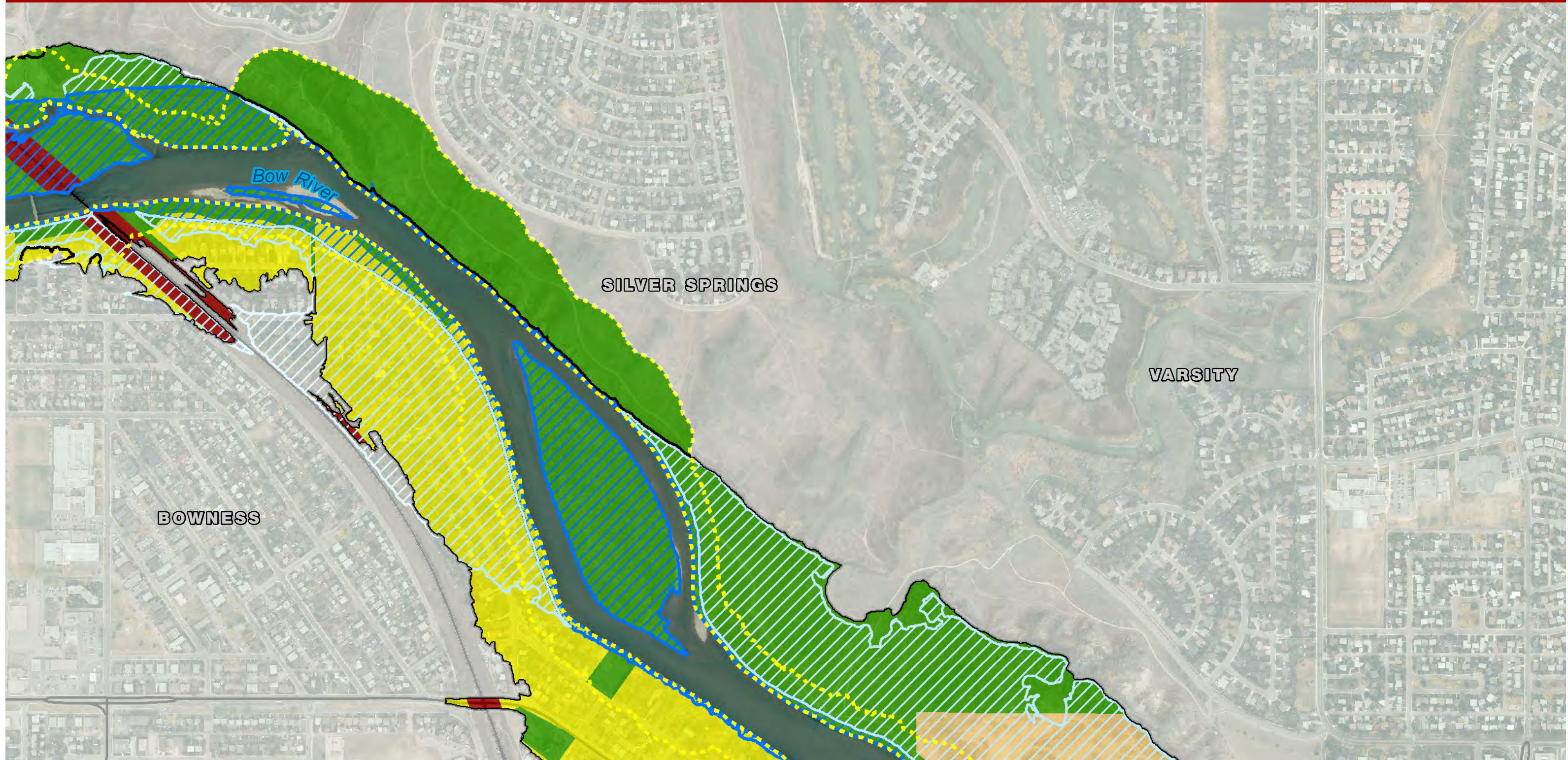
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\*\*Based on field studies of sampled riparian polygons only

\*Variable Width Riparian Model Outputs







### Land Use Type

	Commercial
	Future Urban Development
	Industrial
	Institutional
	Major Infrastructure
	Mixed Use
	Residential
	Parks, Recreation and Public Education
	Golf Course

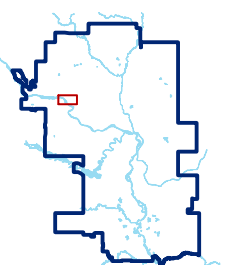
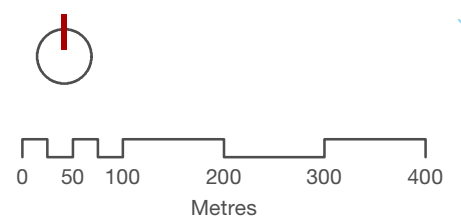
	City of Calgary ER Setback Policy*
	Nose Creek Water Management Plan Setback **
	Floodway
	Flood Fringe
	Flood Extent - 100 Year (Nose Creek/West Nose Creek)
	Outer Riparian Zone Boundary
	Streams
	Major Roads
	Rail
	City Boundary
	Fish Creek Provincial Park

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\*\*Recommended setback boundary of Nose Creek Watershed Partnership including floodplain, meander belt width and adjacent escarpments >15%



THE CITY OF  
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RIPARIAN AREAS  
MAP PROJECT

EXISTING INFRASTRUCTURE AND POSSIBLE IMPROVEMENTS  
BOW RIVER 03



● Storm Outflow Location

■ Stormwater Lift Station

— Storm Main (> 900mm diameter)

— Sanitary Main (>600mm diameter)

— Water Main (>400mm diameter)

--- Siphon

— Pipeline River Crossing Locations

▲ Water / Waste Water Treatment Plants

▨ Existing Storm Retrofit Pond

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■ Existing Storm Pond

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— Paved Trails

--- Gravel Trails

— Bridge

■ Buildings

■ Parks (Maintained Turf Areas)

■ City Boundary

— Major Roads

+++ Rail

— Streams

■ Fish Creek Provincial Park

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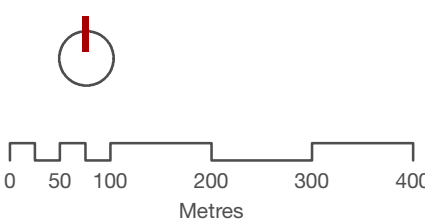
(See Theme 2-Land and Regulatory Issues)

THE CITY OF

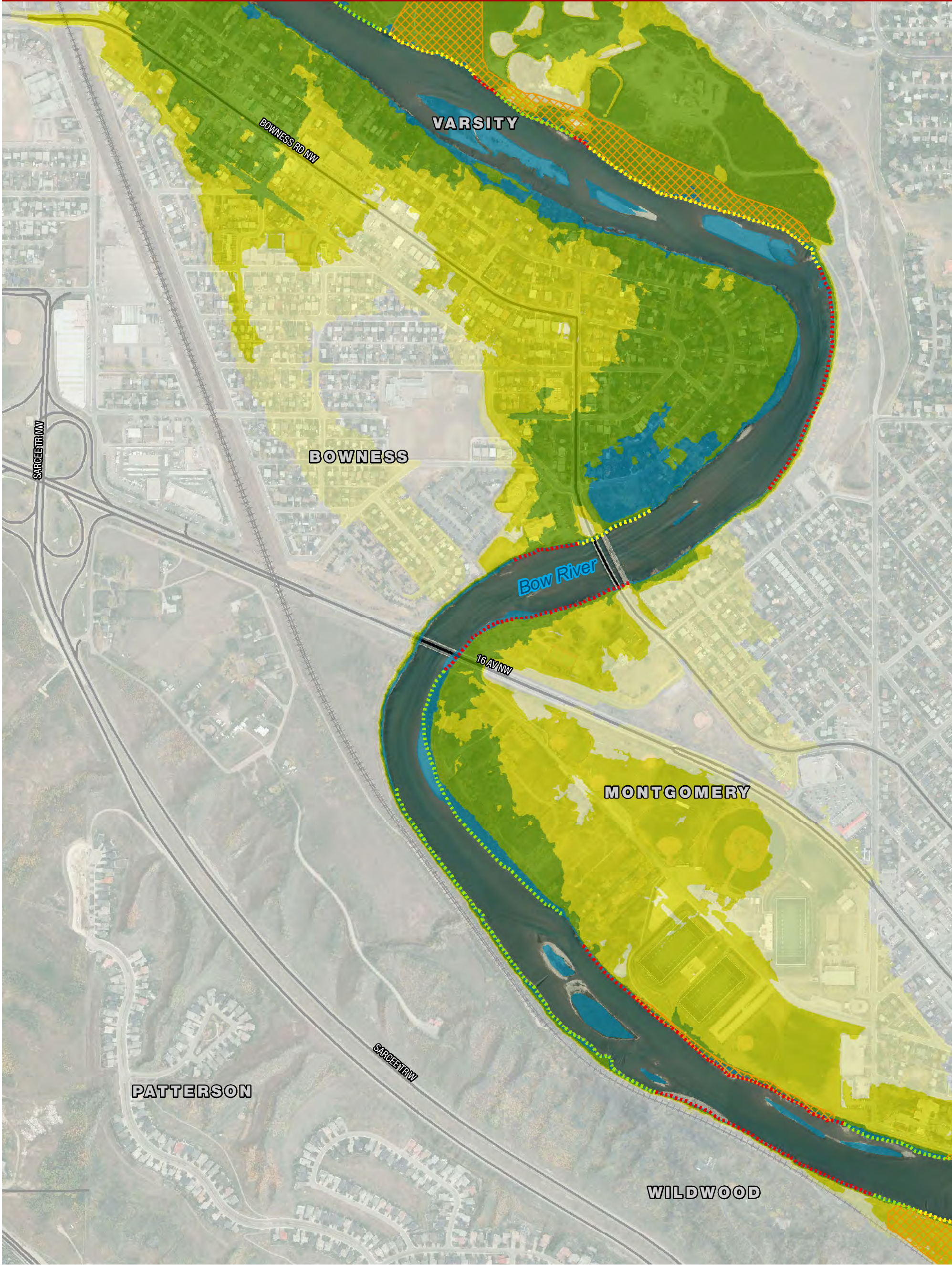
CALGARY

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**Riparian Zone\***

Inner Riparian Zone

Middle Riparian Zone

Outer Riparian Zone

Potential Outermost Riparian Zone

**Riparian Health\*\***

Healthy

Healthy, but with Problems

Unhealthy

**Bank Health\*\*\***

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City Boundary

Major Roads

Rail

Streams

Fish Creek Provincial Park

THE CITY OF CALGARY

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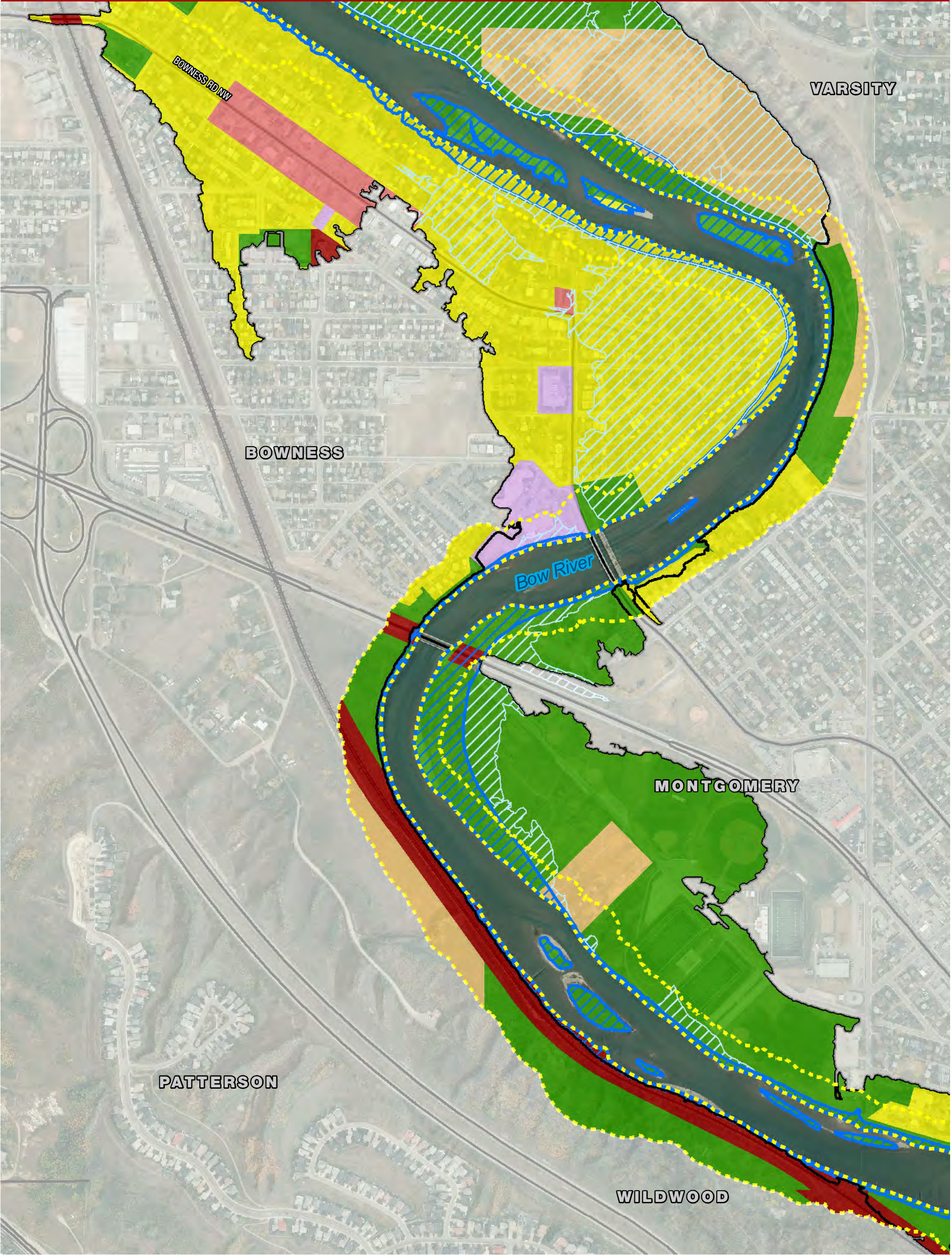
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0 50 100 200 300 400

Metres





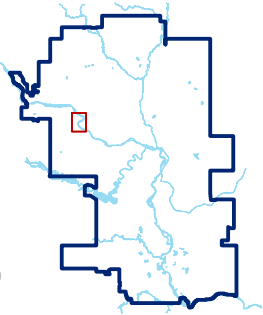
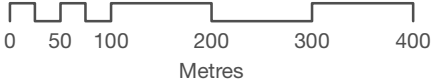
- Land Use Type**
- Commercial
  - Future Urban Development
  - Industrial
  - Institutional
  - Major Infrastructure
  - Mixed Use
  - Residential
  - Parks, Recreation and Public Education
  - Golf Course

- City of Calgary ER Setback Policy\*
- Nose Creek Watershed Partnership Setback\*\*
- Floodway
- Flood Fringe
- Flood Extent - 100 Year (Nose Creek/West Nose Creek)
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- Streams
- Major Roads
- Rail

- City Boundary
- Fish Creek Provincial Park

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--- Gravel Trails

— Bridge

▭ Buildings

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— City Boundary


— Major Roads

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— Streams

▭ Fish Creek Provincial Park

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(See Theme 2-Land and Regulatory Issues)




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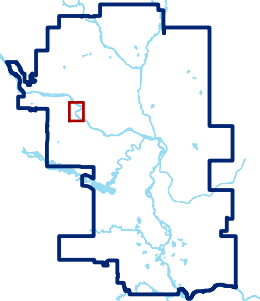
O2

PLANNING + DESIGN

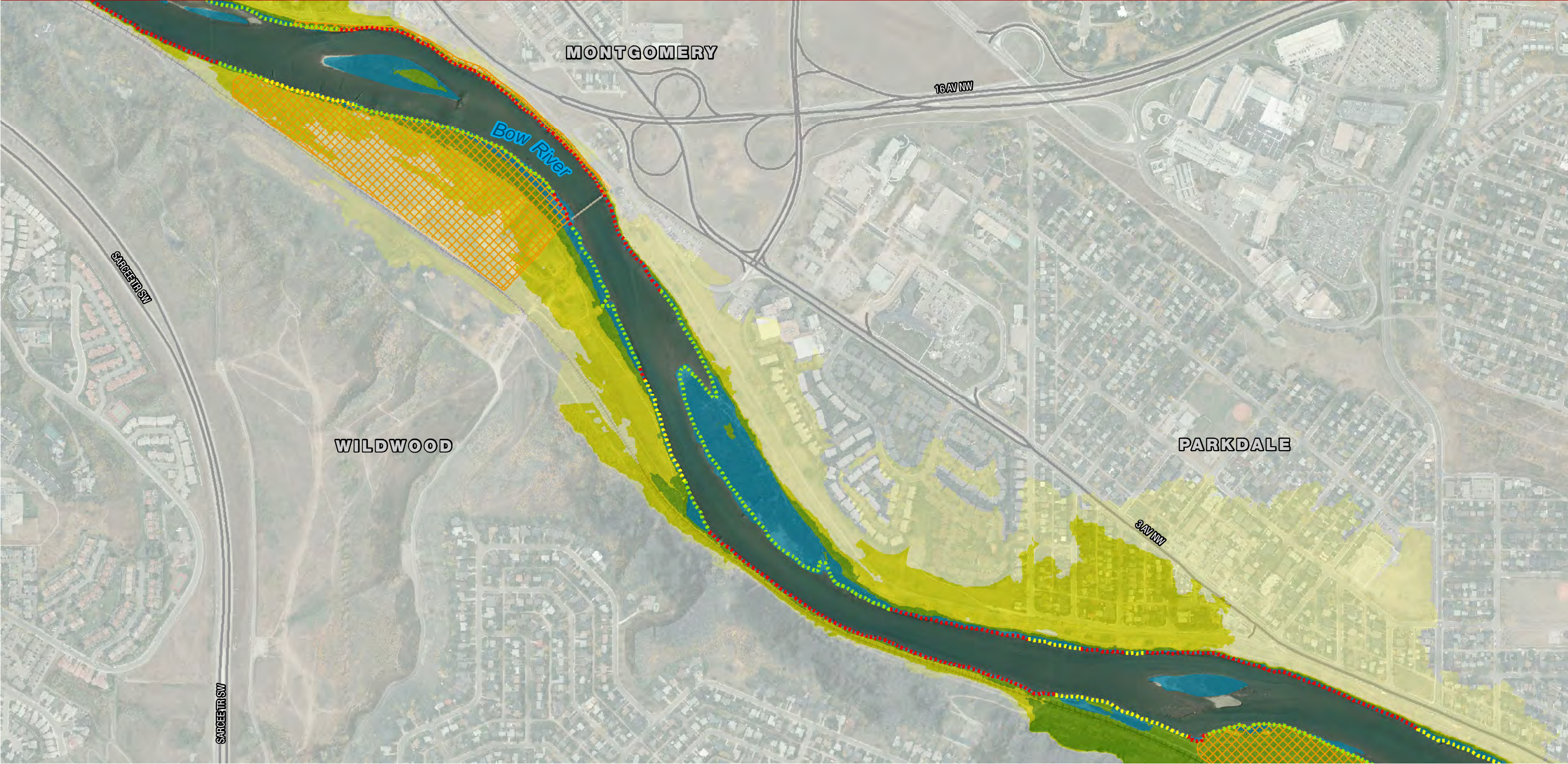
0 50 100 200 300 400

Metres









**Riparian Zone\***

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**Riparian Health\*\***

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- City Boundary
- Major Roads
- Rail
- Streams
- Fish Creek Provincial Park

\*Variable Width Riparian Model Outputs

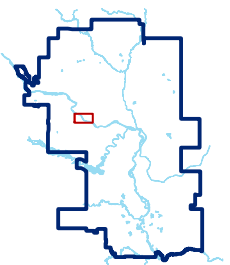
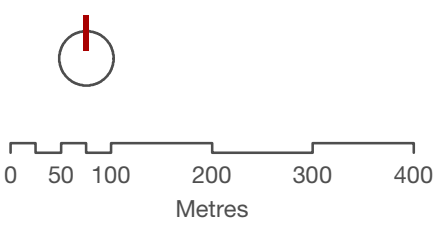
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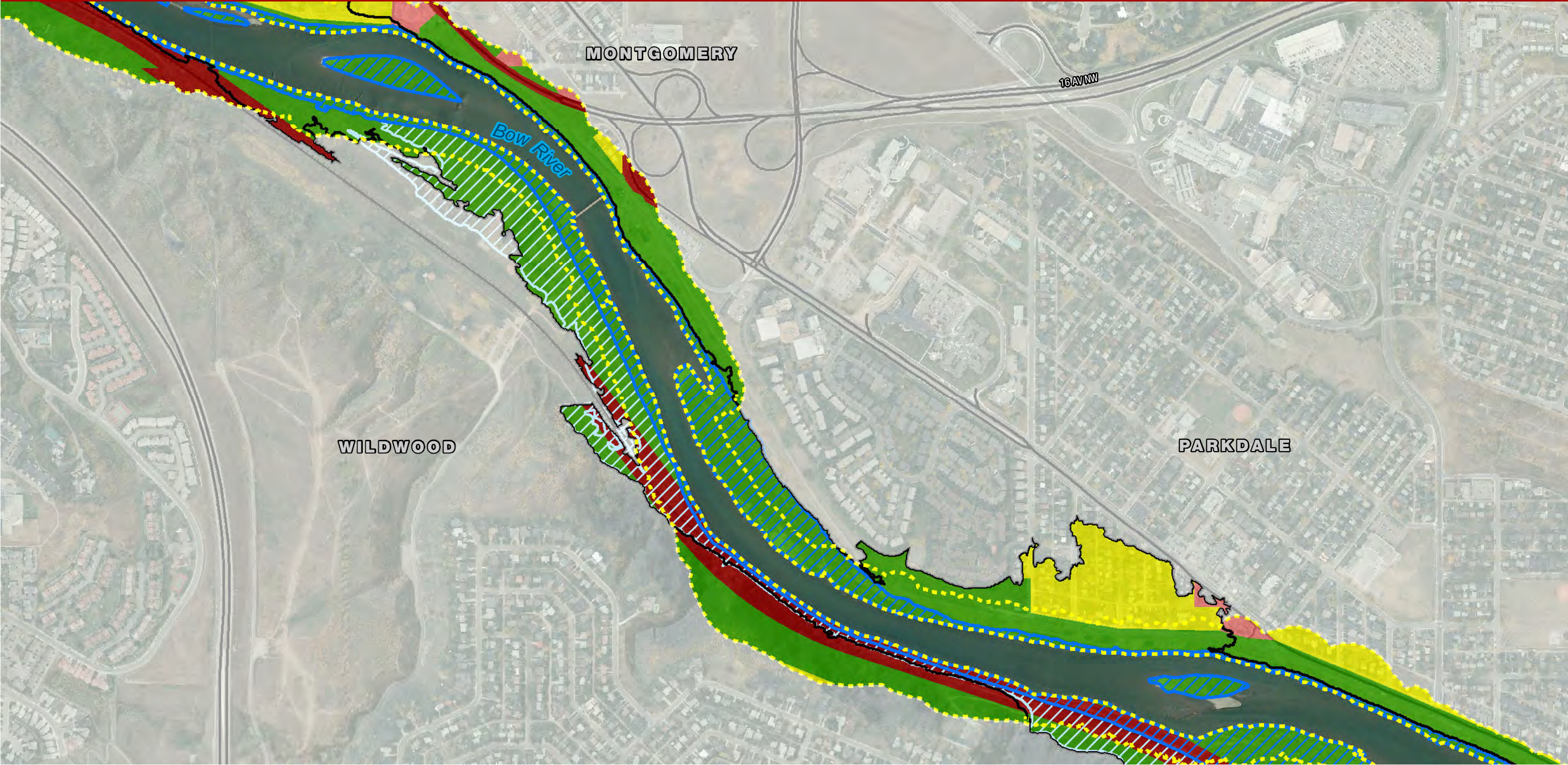
THE CITY OF  
**CALGARY**



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Land Use Type

Commercial

Future Urban Development

Industrial

Institutional

Major Infrastructure

Mixed Use

Residential

Parks, Recreation and Public Education

Golf Course

City of Calgary ER Setback Policy\*

Nose Creek Water Management Plan Setback \*\*

Floodway

Flood Fringe

Flood Extent - 100 Year (Nose Creek/West Nose Creek)

Outer Riparian Zone Boundary

Streams


Major Roads

Rail


City Boundary

Fish Creek Provincial Park

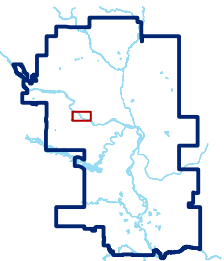
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THE CITY OF  
CALGARY



0 50 100 200 300 400  
Metres



O2

PLANNING + DESIGN



RIPARIAN AREAS  
MAP PROJECT

EXISTING INFRASTRUCTURE AND POSSIBLE IMPROVEMENTS  
BOW RIVER 05



- Storm Outflow Location

■ Stormwater Lift Station

— Storm Main (> 900mm diameter)

— Sanitary Main (>600mm diameter)

— Water Main (>400mm diameter)

--- Siphon

— Pipeline River Crossing Locations

▲ Water / Waste Water Treatment Plants

▨ Existing Storm Retrofit Pond

▨ Possible Location of Storm Retrofit Pond

■ Existing Storm Pond

— Existing Bank Infrastructure (e.g., Rip Rap, Retaining Walls, Weirs)

■ Bank Erosion Hotspot

▲ Candidate Flood / Erosion Control Projects

— Paved Trails

--- Gravel Trails

— Bridge

■ Buildings

■ Parks (Maintained Turf Areas)

— City Boundary

— Major Roads

+++ Rail

— Streams

■ Fish Creek Provincial Park

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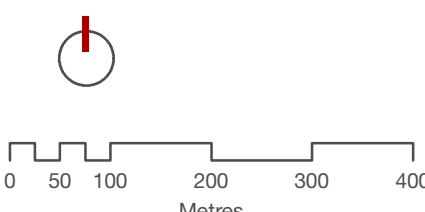
(See Theme 2-Land and Regulatory Issues)



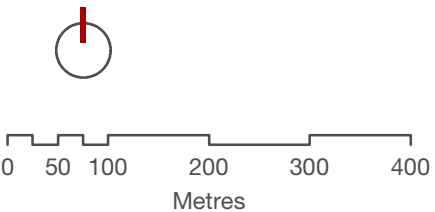
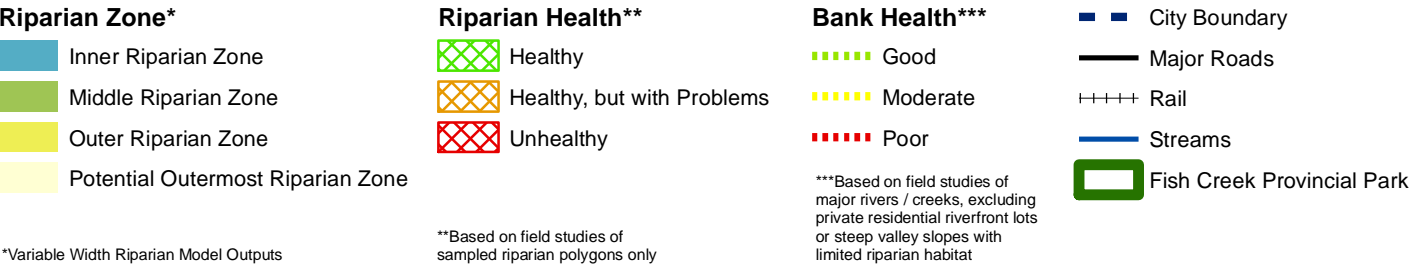
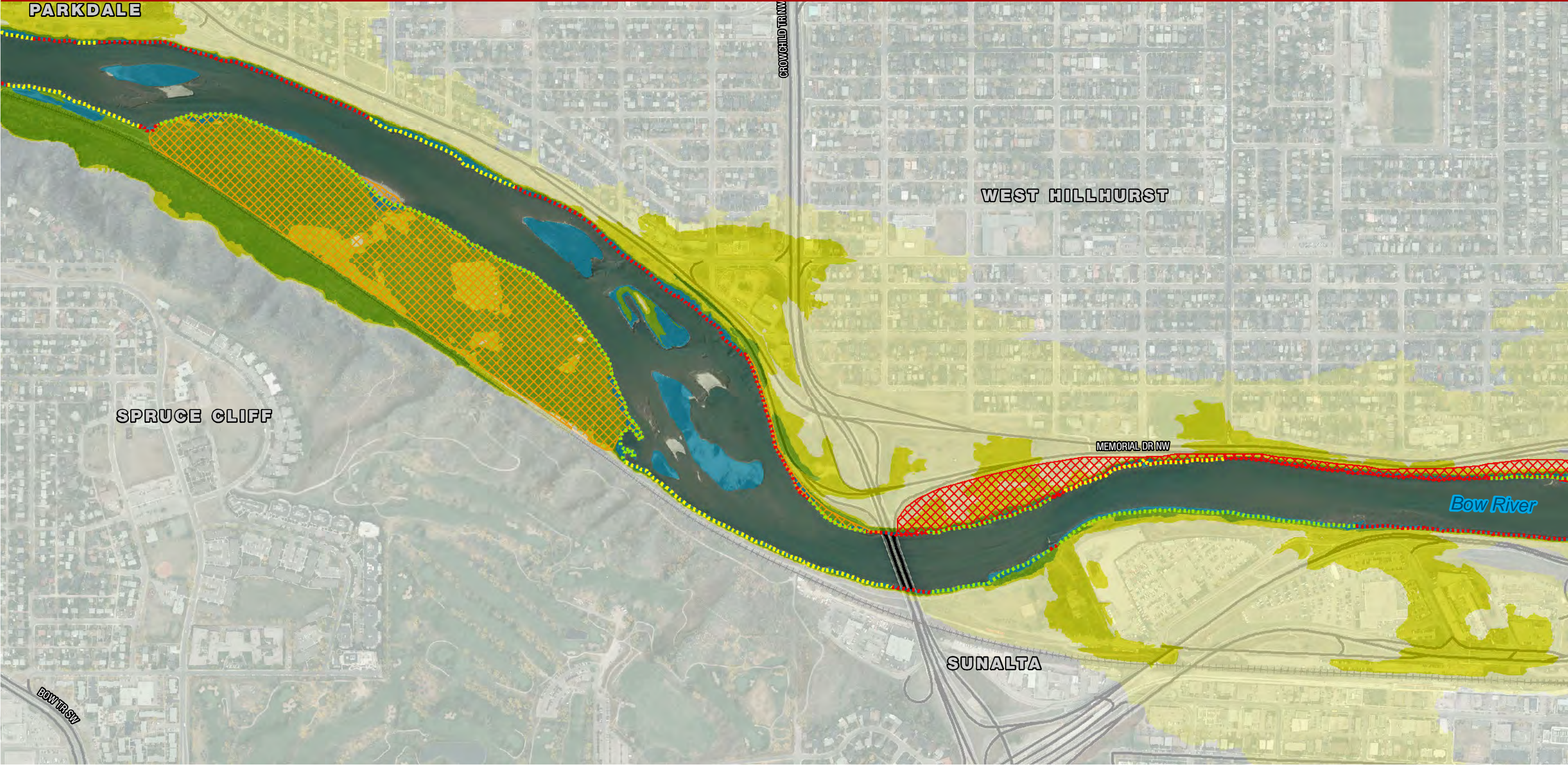
THE CITY OF  
**CALGARY**

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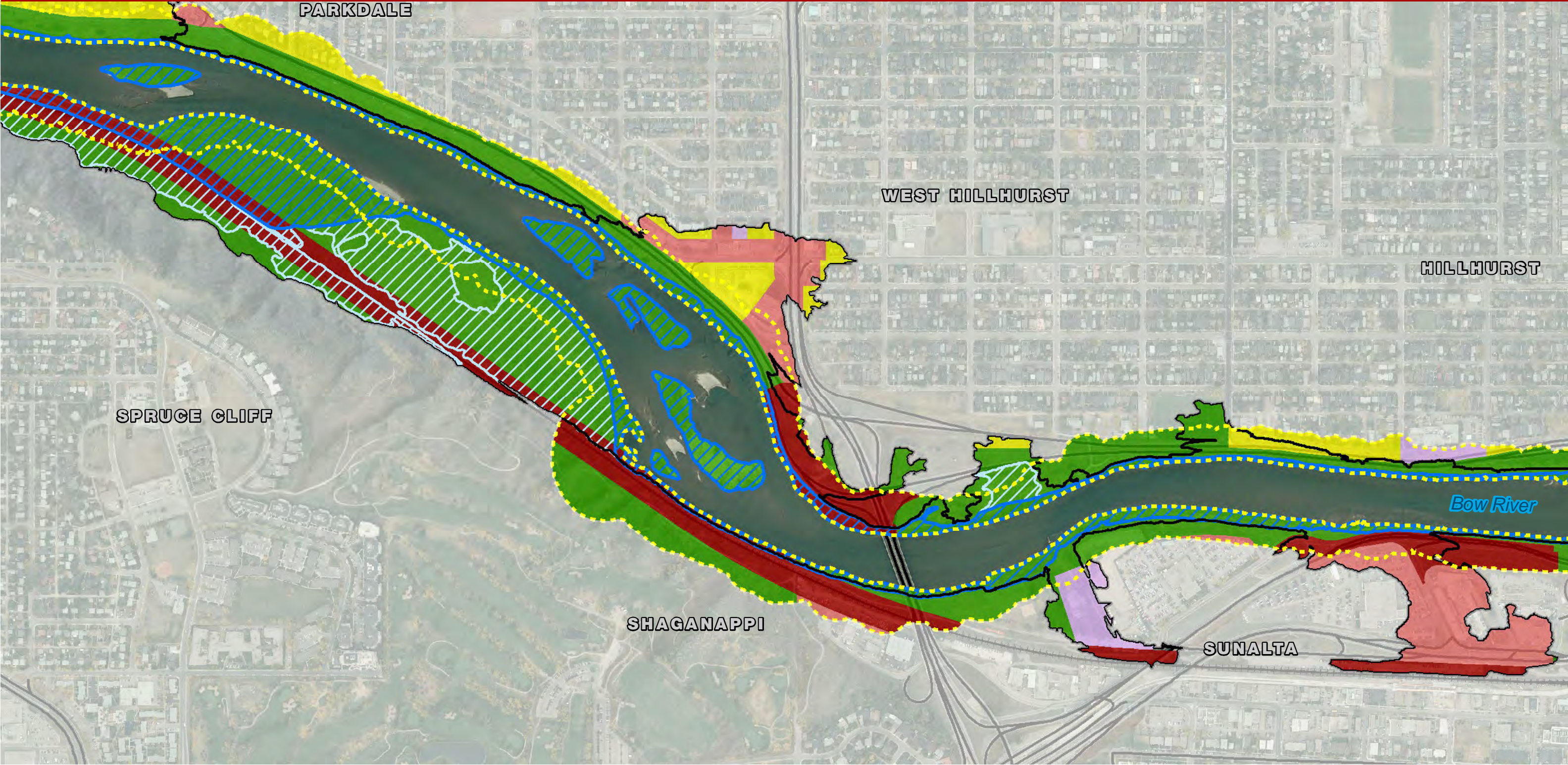
PLANNING + DESIGN











Land Use Type

Commercial

Future Urban Development

Industrial

Institutional

Major Infrastructure

Mixed Use

Residential

Parks, Recreation and Public Education

Golf Course

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Nose Creek Water Management Plan Setback \*\*

Floodway

Flood Fringe

Flood Extent - 100 Year (Nose Creek/West Nose Creek)

Outer Riparian Zone Boundary

Streams

Major Roads

Rail

City Boundary

Fish Creek Provincial Park

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THE CITY OF  
CALGARY



RIPARIAN AREAS  
MAP PROJECT

EXISTING INFRASTRUCTURE AND POSSIBLE IMPROVEMENTS  
BOW RIVER 06



● Storm Outflow Location

■ Stormwater Lift Station

— Storm Main (> 900mm diameter)

— Sanitary Main (>600mm diameter)

— Water Main (>400mm diameter)

--- Siphon

— Pipeline River Crossing Locations

▲ Water / Waste Water Treatment Plants

▨ Existing Storm Retrofit Pond

▨ Possible Location of Storm Retrofit Pond

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--- Gravel Trails

— Bridge

■ Buildings

■ Parks (Maintained Turf Areas)

■ City Boundary

— Major Roads

+++ Rail

— Streams

■ Fish Creek Provincial Park

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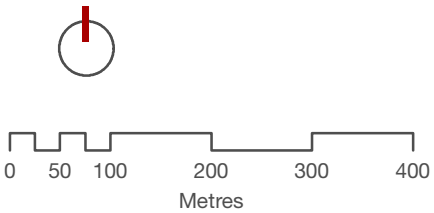
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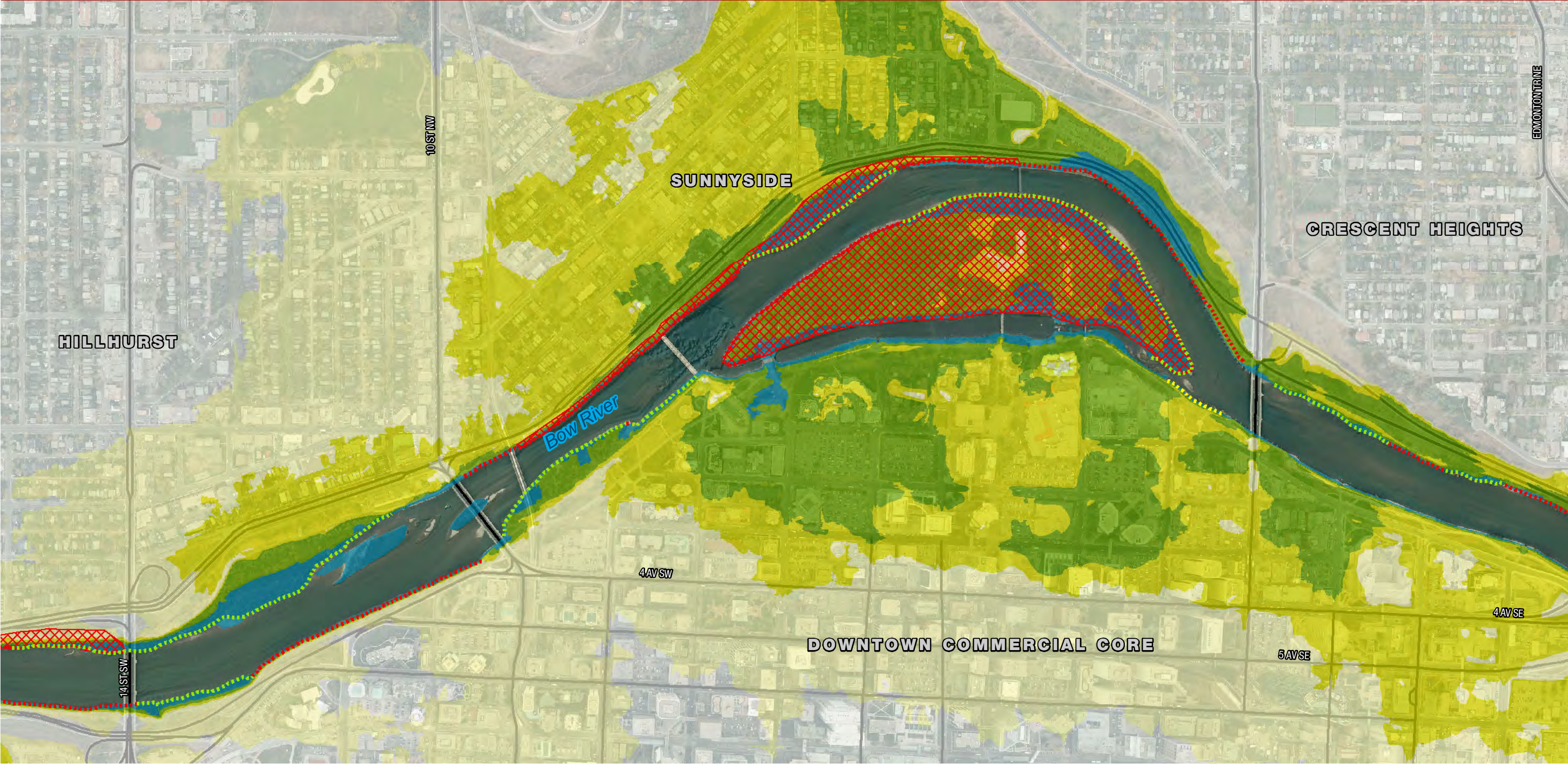
THE CITY OF  
**CALGARY**

O2

PLANNING + DESIGN







**Riparian Zone\***

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Outer Riparian Zone

Potential Outermost Riparian Zone

**Riparian Health\*\***

Healthy

Healthy, but with Problems

Unhealthy

**Bank Health\*\*\***

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Moderate

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City Boundary

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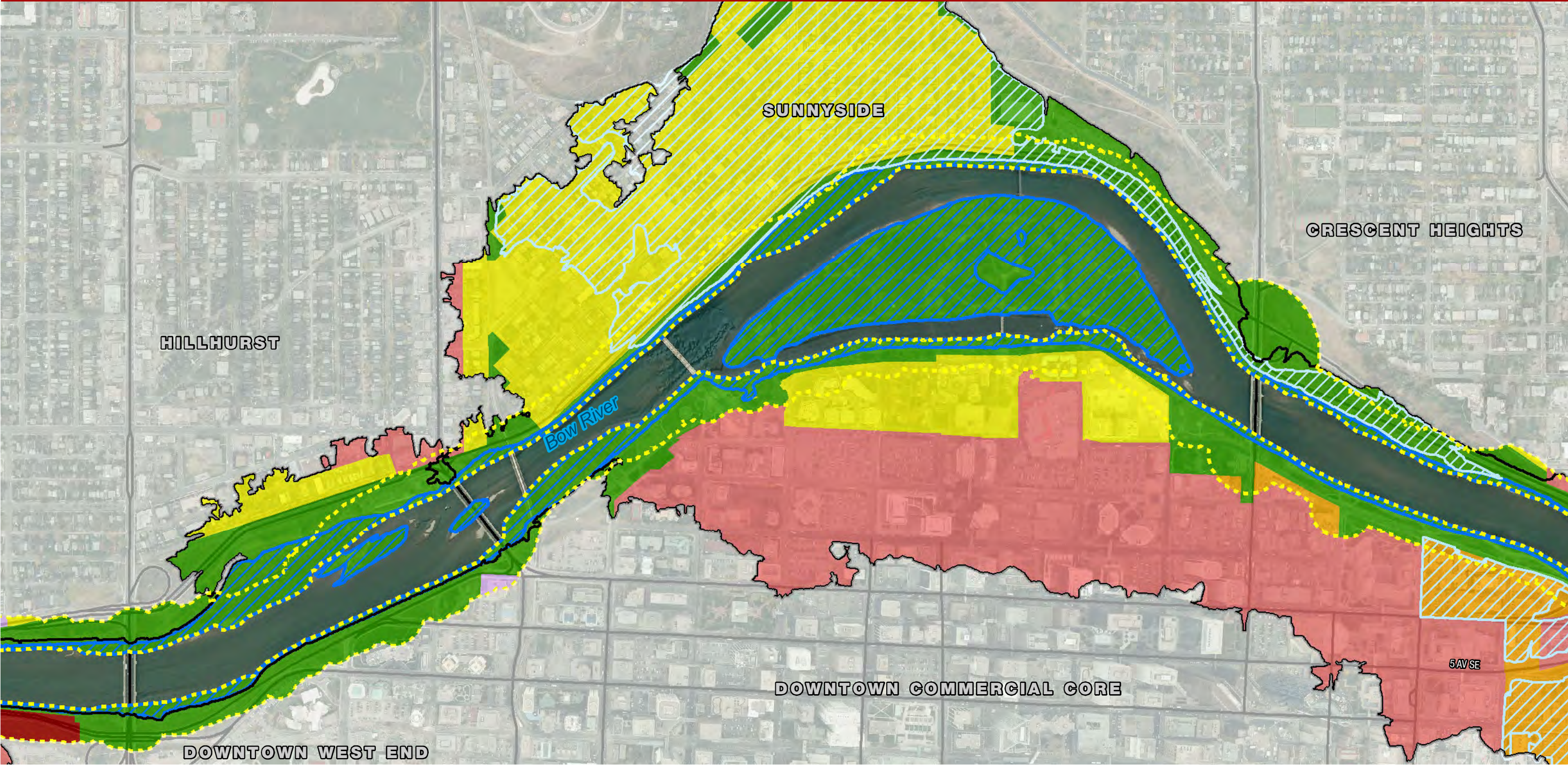
O2

PLANNING + DESIGN

A north arrow pointing upwards and a scale bar showing distances from 0 to 400 metres.

An inset map of the province of Alberta, Canada, with a red rectangle indicating the location of the study area in the southern part of the province.





Land Use Type

Commercial

Future Urban Development

Industrial

Institutional

Major Infrastructure

Mixed Use

Residential

Parks, Recreation and Public Education

Golf Course

City of Calgary ER Setback Policy\*

Nose Creek Water Management Plan Setback \*\*

Floodway

Flood Fringe

Flood Extent - 100 Year (Nose Creek/West Nose Creek)

Outer Riparian Zone Boundary

Streams


Major Roads

Rail


City Boundary

Fish Creek Provincial Park


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THE CITY OF  
CALGARY



0 50 100 200 300 400  
Metres



O2

PLANNING + DESIGN



RIPARIAN AREAS  
MAP PROJECT

EXISTING INFRASTRUCTURE AND POSSIBLE IMPROVEMENTS  
BOW RIVER 07



● Storm Outflow Location

■ Stormwater Lift Station

— Storm Main (> 900mm diameter)

— Sanitary Main (>600mm diameter)

— Water Main (>400mm diameter)

--- Siphon

— Pipeline River Crossing Locations

▲ Water / Waste Water Treatment Plants

▨ Existing Storm Retrofit Pond

▨ Possible Location of Storm Retrofit Pond

■ Existing Storm Pond

— Existing Bank Infrastructure (e.g., Rip Rap, Retaining Walls, Weirs)

■ Bank Erosion Hotspot

▲ Candidate Flood / Erosion Control Projects

— Paved Trails

— Gravel Trails

— Bridge

■ Buildings

■ Parks (Maintained Turf Areas)

— City Boundary

— Major Roads

— Rail

— Streams

■ Fish Creek Provincial Park

The non-masked area is based on the greater of:

(i) outer riparian zone of the variable width model,

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(iii) Nose Creek Watershed Partnership recommended setback policy

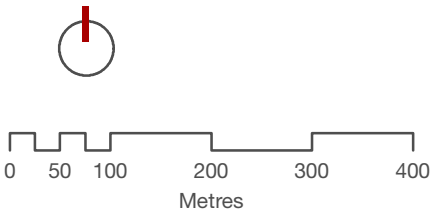
(See Theme 2-Land and Regulatory Issues)



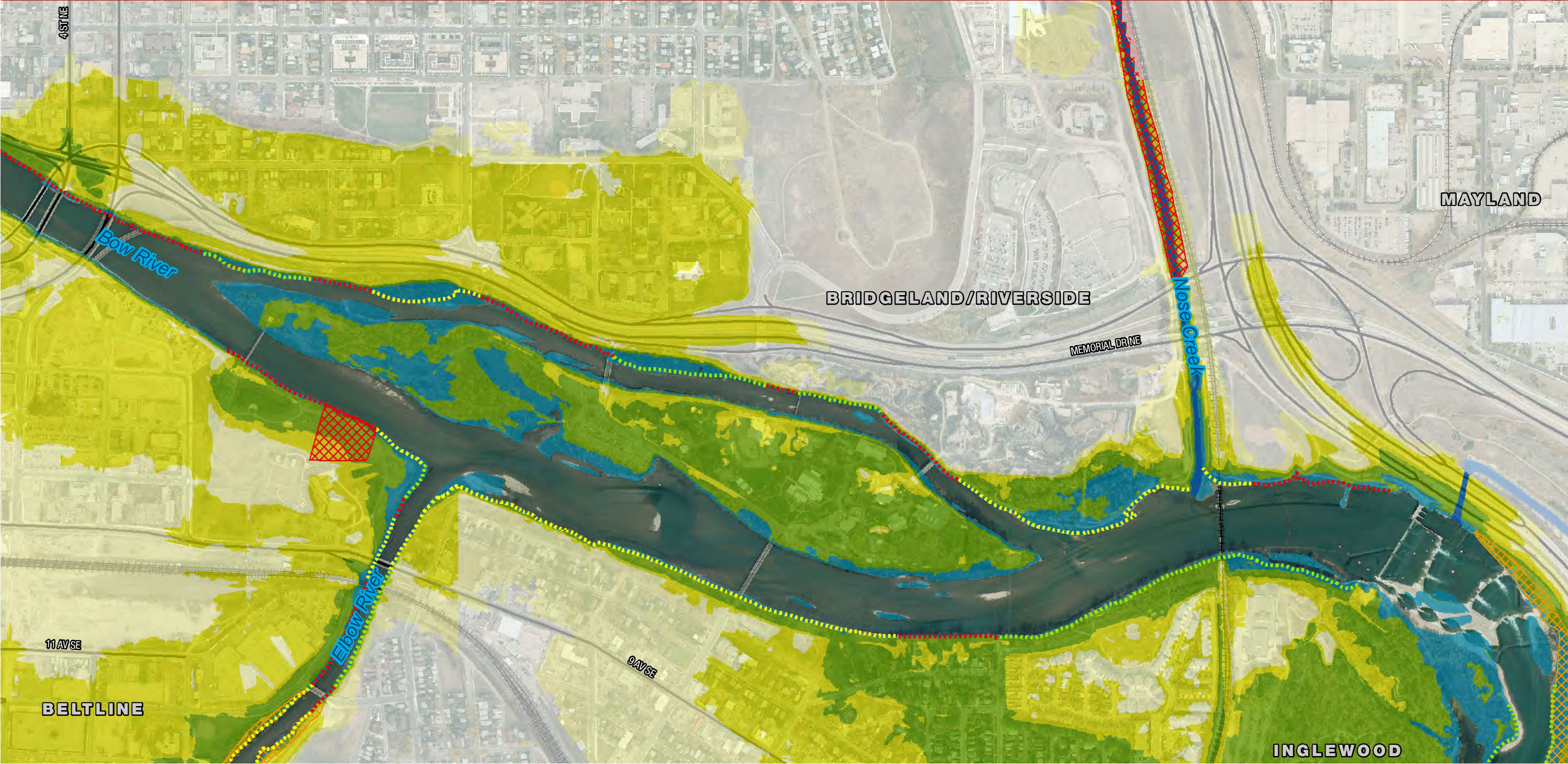
THE CITY OF  
CALGARY

O2

PLANNING + DESIGN







**Riparian Zone\***

- Inner Riparian Zone
- Middle Riparian Zone
- Outer Riparian Zone
- Potential Outermost Riparian Zone

**Riparian Health\*\***

- Healthy
- Healthy, but with Problems
- Unhealthy

**Bank Health\*\*\***

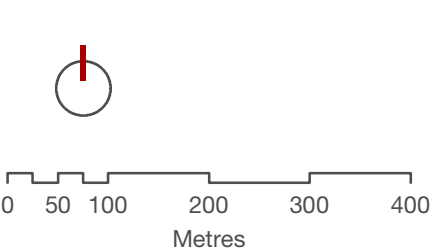
- Good
- Moderate
- Poor

- City Boundary
- Major Roads
- Rail
- Streams
- Fish Creek Provincial Park

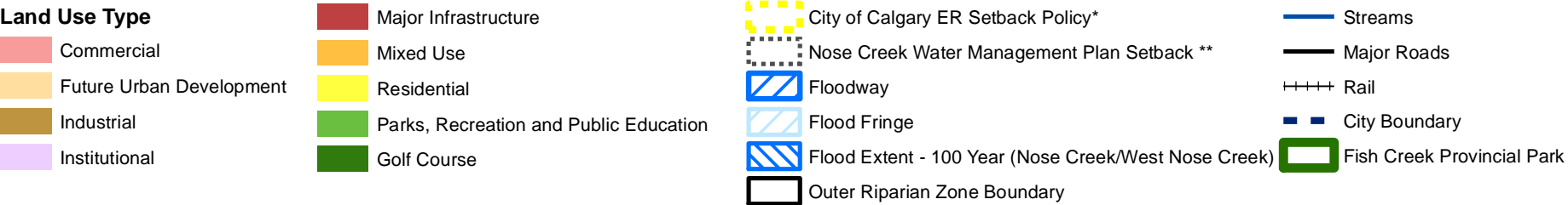
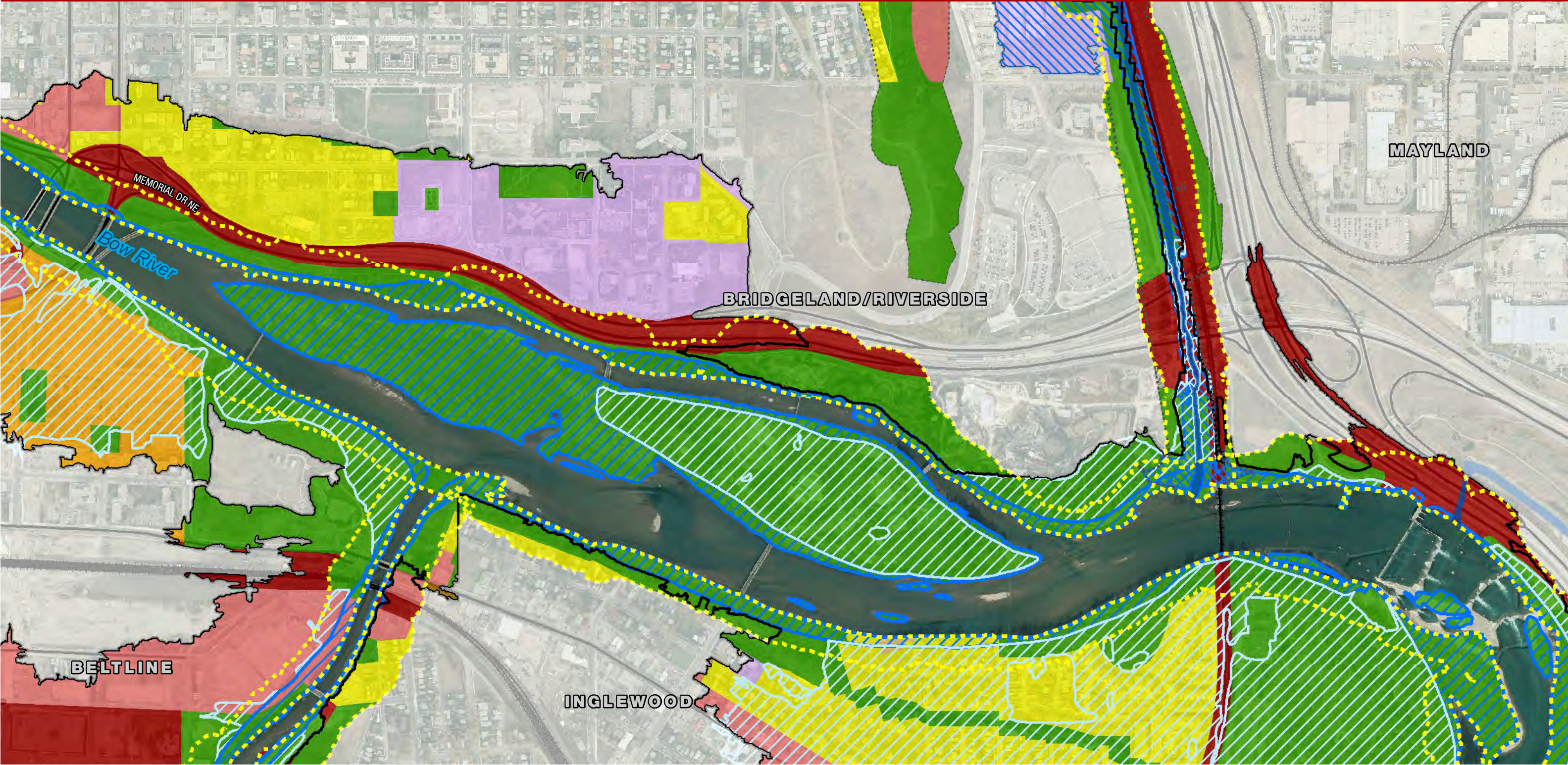
\*\*\*Based on field studies of major rivers / creeks, excluding private residential riverfront lots or steep valley slopes with limited riparian habitat

\*\*Based on field studies of sampled riparian polygons only

\*Variable Width Riparian Model Outputs







\*Note that ER setbacks for lower order streams are not mapped as they were out of the project scope  
\*\*Recommended setback boundary of Nose Creek Watershed Partnership including floodplain, meander belt width and adjacent escarpments >15%



RIPARIAN AREAS  
MAP PROJECT

EXISTING INFRASTRUCTURE AND POSSIBLE IMPROVEMENTS  
BOW RIVER 08



● Storm Outflow Location

■ Stormwater Lift Station

— Storm Main (> 900mm diameter)

— Sanitary Main (>600mm diameter)

— Water Main (>400mm diameter)

--- Siphon

— Pipeline River Crossing Locations

▲ Water / Waste Water Treatment Plants

▨ Existing Storm Retrofit Pond

▨ Possible Location of Storm Retrofit Pond

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— Existing Bank Infrastructure (e.g., Rip Rap, Retaining Walls, Weirs)

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▲ Candidate Flood / Erosion Control Projects

— Paved Trails

— Gravel Trails

— Bridge

■ Buildings

■ Parks (Maintained Turf Areas)

■ City Boundary

— Major Roads

+++ Rail

— Streams

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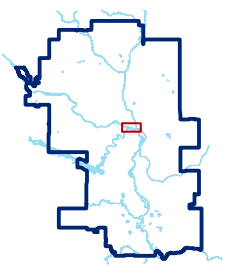
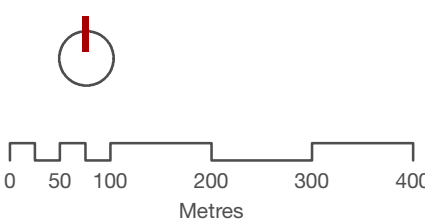
(See Theme 2-Land and Regulatory Issues)



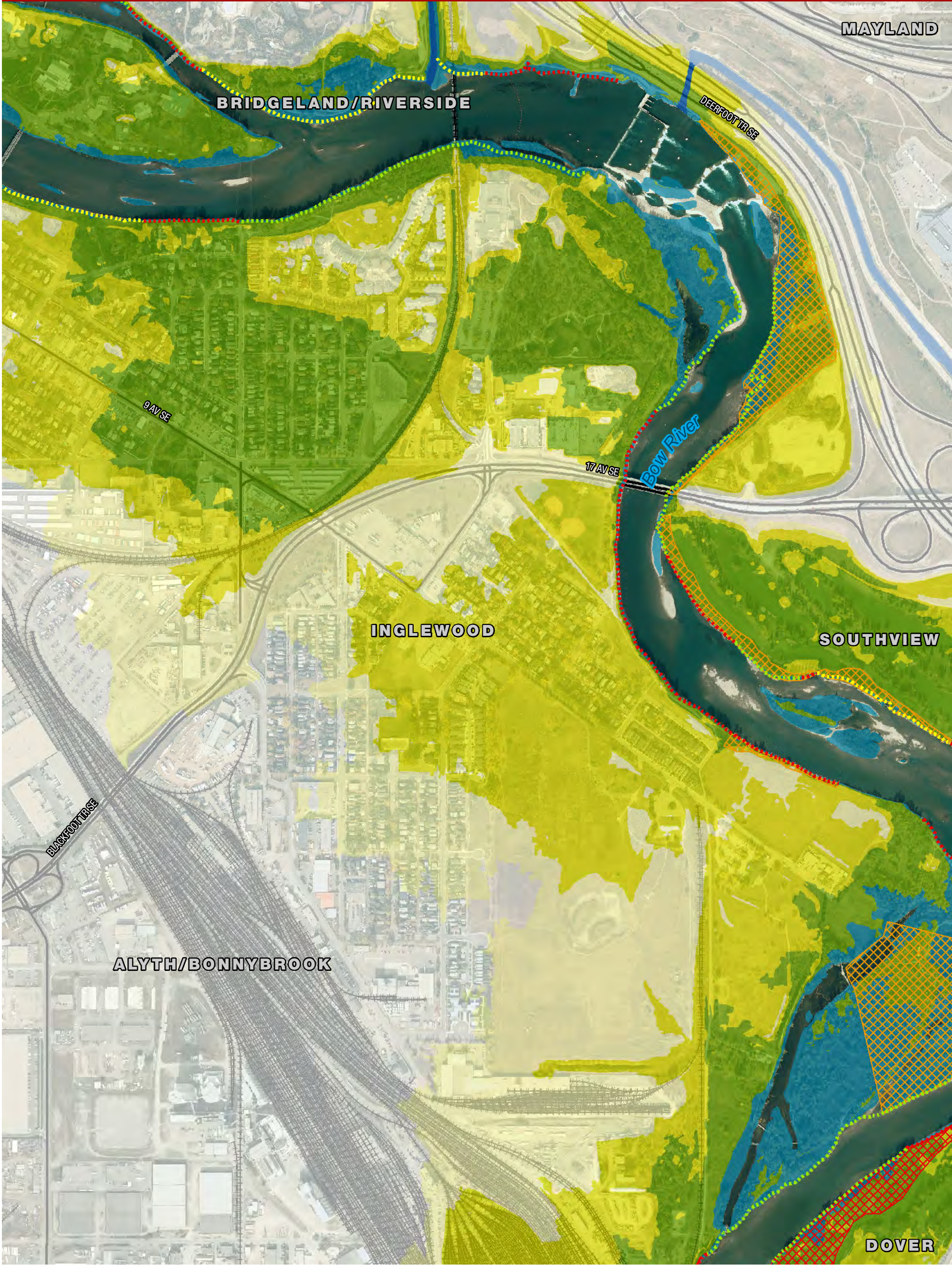
THE CITY OF  
CALGARY

O2

PLANNING + DESIGN







**Riparian Zone\***

- Inner Riparian Zone
- Middle Riparian Zone
- Outer Riparian Zone
- Potential Outermost Riparian Zone

**Riparian Health\*\***

- Healthy
- Healthy, but with Problems
- Unhealthy

**Bank Health\*\*\***

- Good
- Moderate
- Poor

\*\*\*Based on field studies of major rivers / creeks, excluding private residential riverfront lots or steep valley slopes with limited riparian habitat

**Legend**

- City Boundary
- Major Roads
- Rail
- Streams
- Fish Creek Provincial Park

**THE CITY OF CALGARY**

**O2** PLANNING + DESIGN

**Scale**

0 50 100 200 300 400 Metres

**Orientation**

North arrow pointing up.

**Inset Map**

Map of Calgary showing the location of the study area in the southeast corner.

\*Variable Width Riparian Model Outputs

\*\*Based on field studies of sampled riparian polygons only





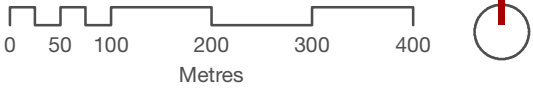
- Land Use Type**
- Commercial
  - Future Urban Development
  - Industrial
  - Institutional
  - Major Infrastructure
  - Mixed Use
  - Residential
  - Parks, Recreation and Public Education
  - Golf Course

- City of Calgary ER Setback Policy\*
- Nose Creek Watershed Partnership Setback\*\*
- Floodway
- Flood Fringe
- Flood Extent - 100 Year (Nose Creek/West Nose Creek)
- Outer Riparian Zone Boundary
- Streams
- Major Roads
- Rail

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- Fish Creek Provincial Park

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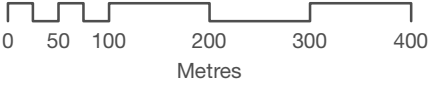




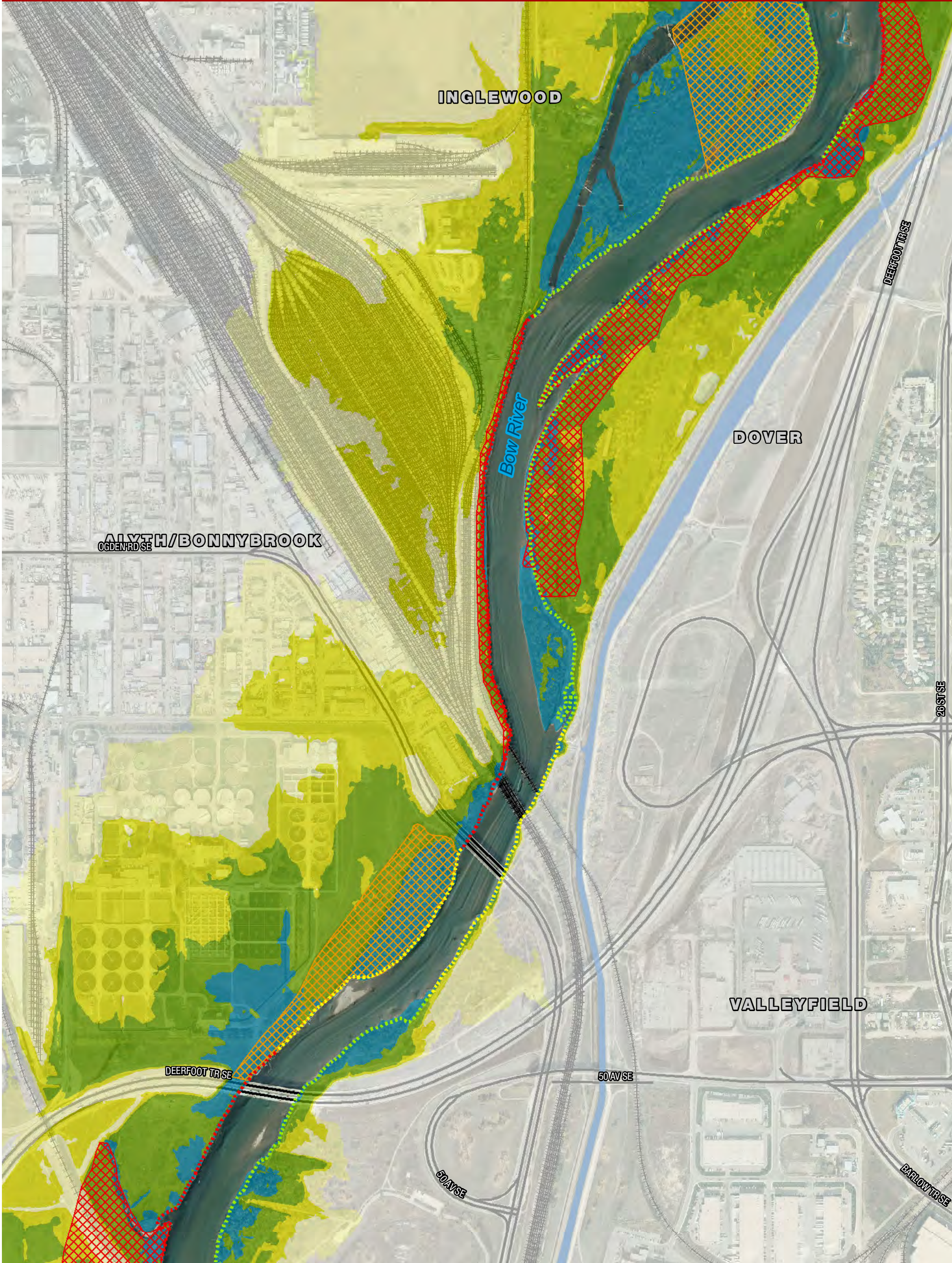


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- - - Siphon
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- Gravel Trails
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(See Theme 2-Land and Regulatory Issues)







**Riparian Zone\***

Inner Riparian Zone

Middle Riparian Zone

Outer Riparian Zone

Potential Outermost Riparian Zone

**Riparian Health\*\***

Healthy

Healthy, but with Problems

Unhealthy

**Bank Health\*\*\***

Good

Moderate

Poor

\*\*\*Based on field studies of major rivers / creeks, excluding private residential riverfront lots or steep valley slopes with limited riparian habitat

City Boundary

Major Roads

Rail

Streams

Fish Creek Provincial Park

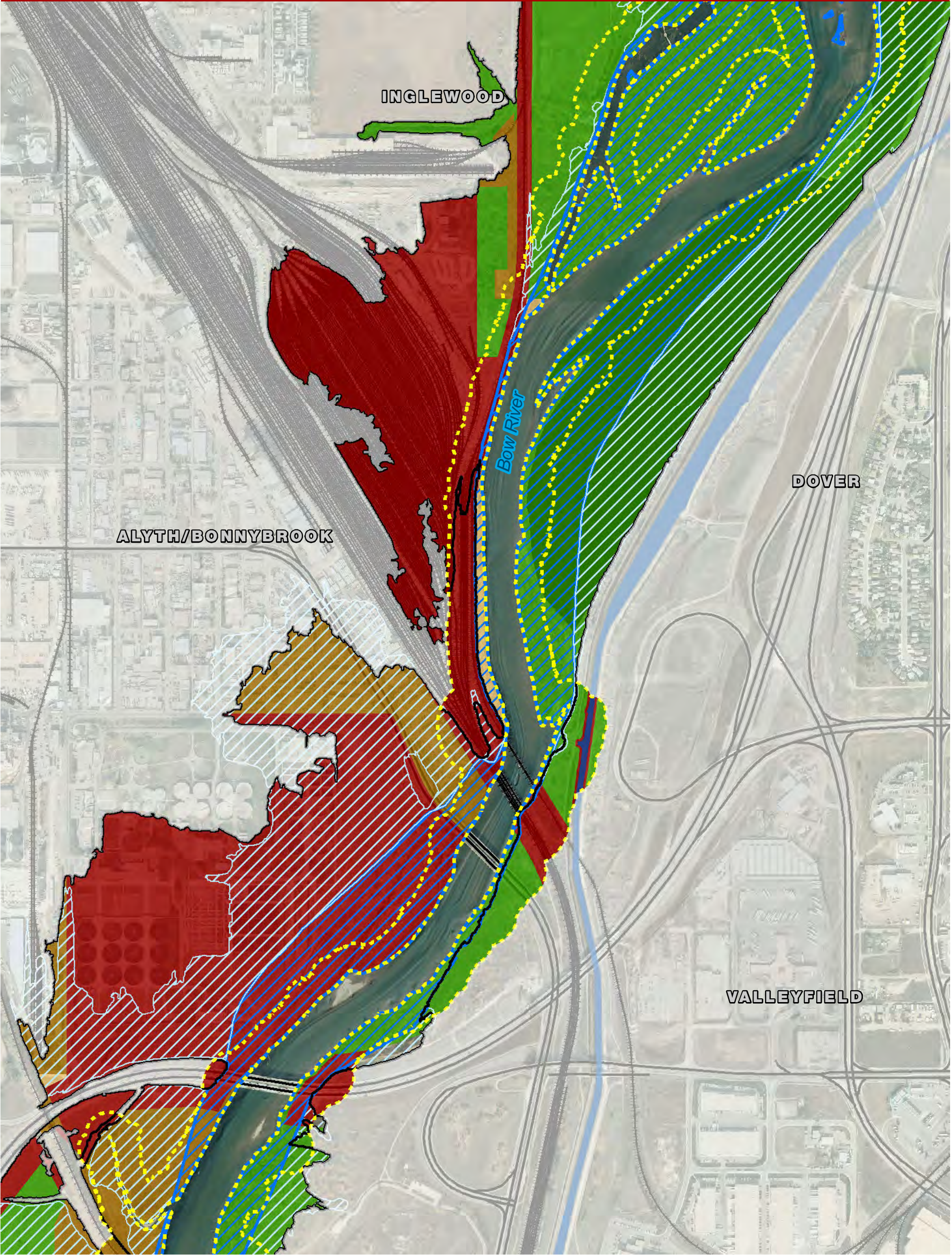
THE CITY OF CALGARY

O2 PLANNING + DESIGN

0 50 100 200 300 400

Metres





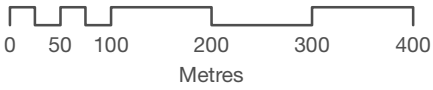
Land Use Type

- Commercial
- Future Urban Development
- Industrial
- Institutional
- Major Infrastructure
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- Residential
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
THE CITY OF  
CALGARY


O2

PLANNING + DESIGN

050100200300400

Metres









**Riparian Zone\***

Inner Riparian Zone

Middle Riparian Zone

Outer Riparian Zone

Potential Outermost Riparian Zone

**Riparian Health\*\***

Healthy

Healthy, but with Problems

Unhealthy

**Bank Health\*\*\***

Good

Moderate

Poor

\*\*\*Based on field studies of major rivers / creeks, excluding private residential riverfront lots or steep valley slopes with limited riparian habitat

City Boundary

Major Roads

Rail

Streams

Fish Creek Provincial Park

THE CITY OF CALGARY

O2 PLANNING + DESIGN

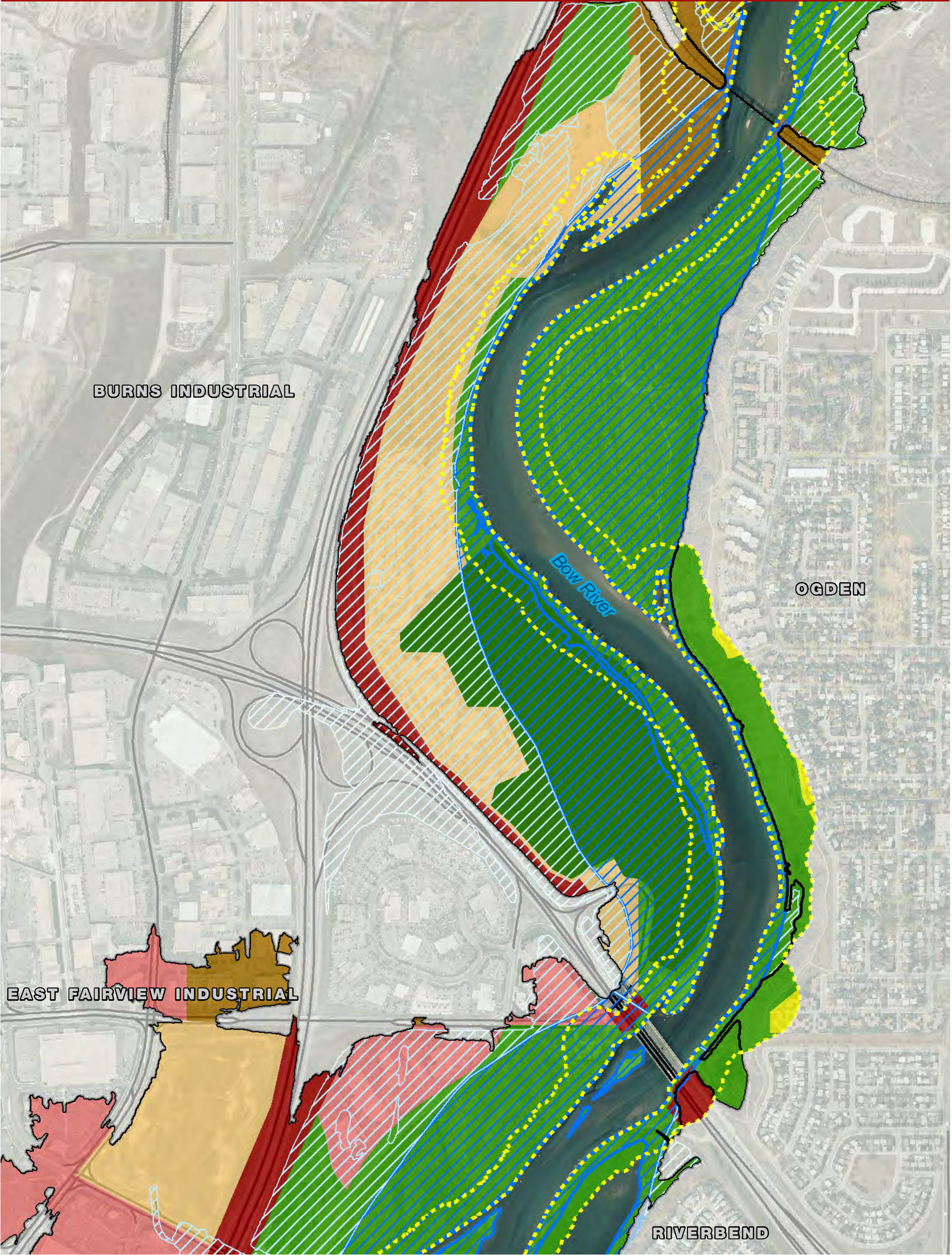
\*Variable Width Riparian Model Outputs

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0 50 100 200 300 400

Metres





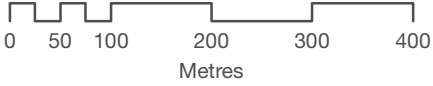
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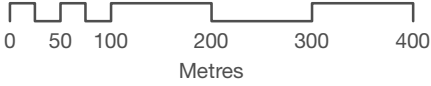
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(See Theme 2-Land and Regulatory Issues)







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Healthy, but with Problems

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**Bank Health\*\*\***

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Moderate

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City Boundary

Major Roads

Rail

Streams

Fish Creek Provincial Park

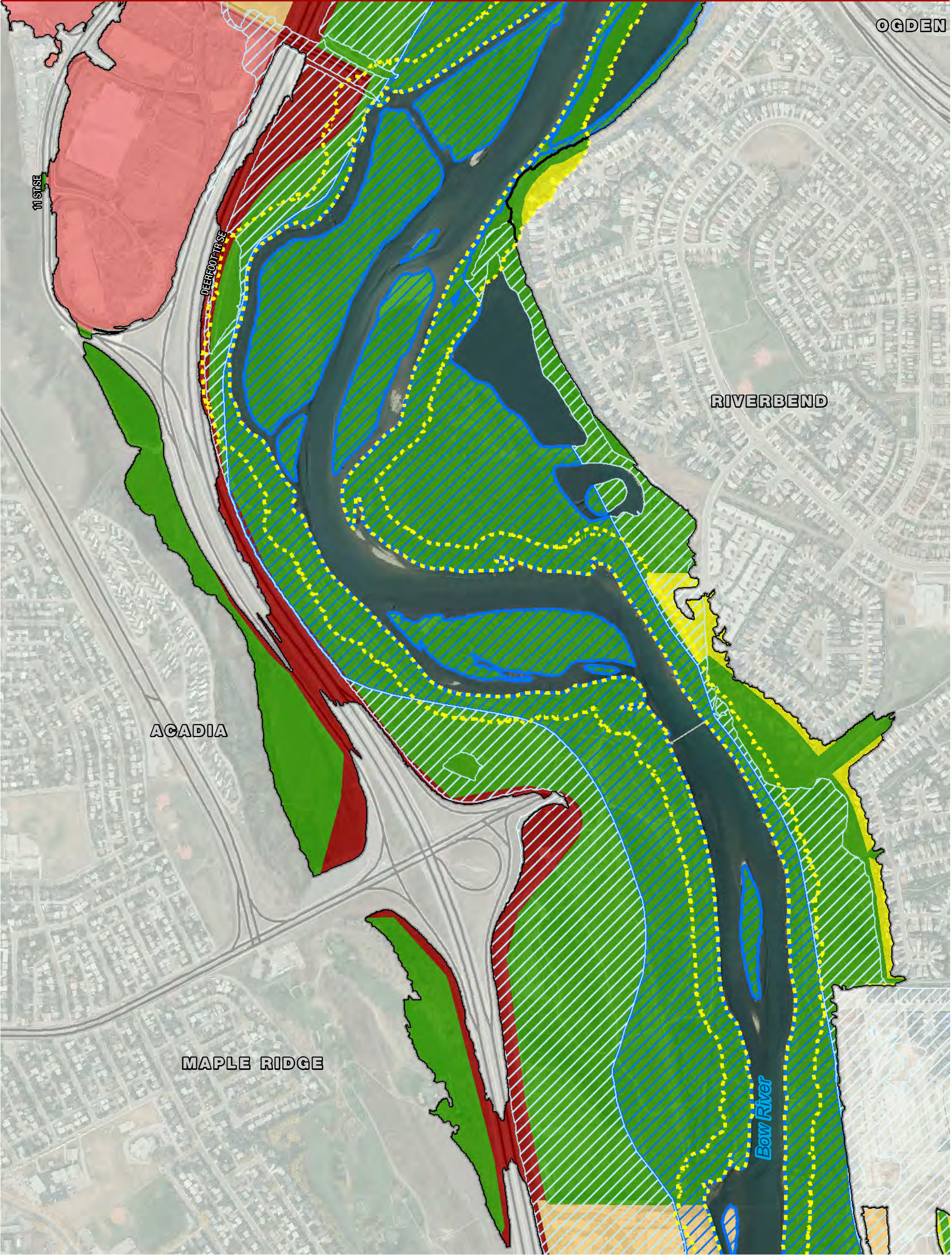
THE CITY OF CALGARY

O2 PLANNING + DESIGN

0 50 100 200 300 400

Metres





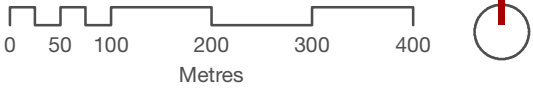
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(See Theme 2-Land and Regulatory Issues)




THE CITY OF  
CALGARY




O2



0 50 100 200 300 400  
Metres









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THE CITY OF CALGARY

O2

PLANNING + DESIGN

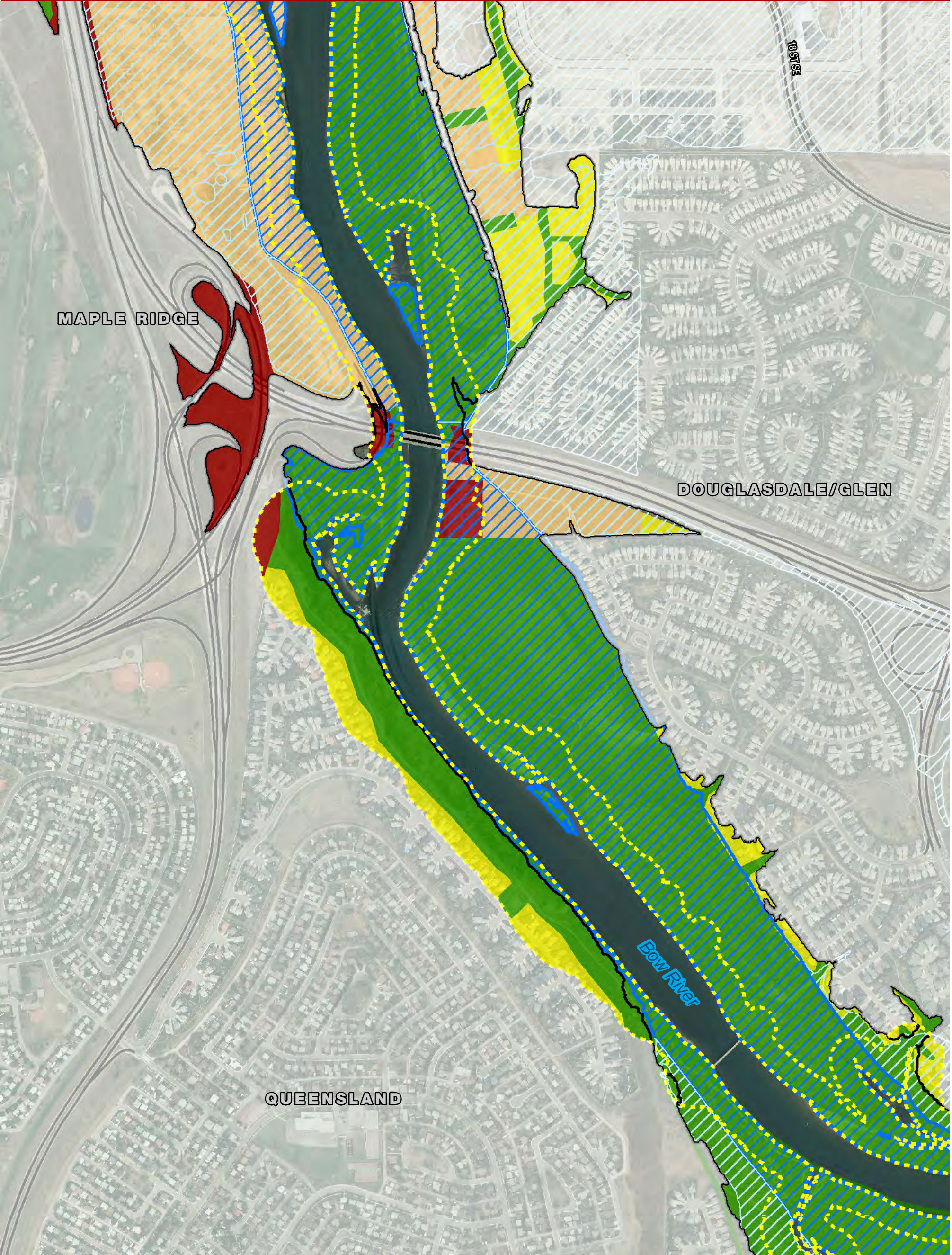
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0 50 100 200 300 400

Metres





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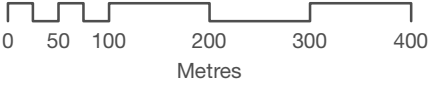




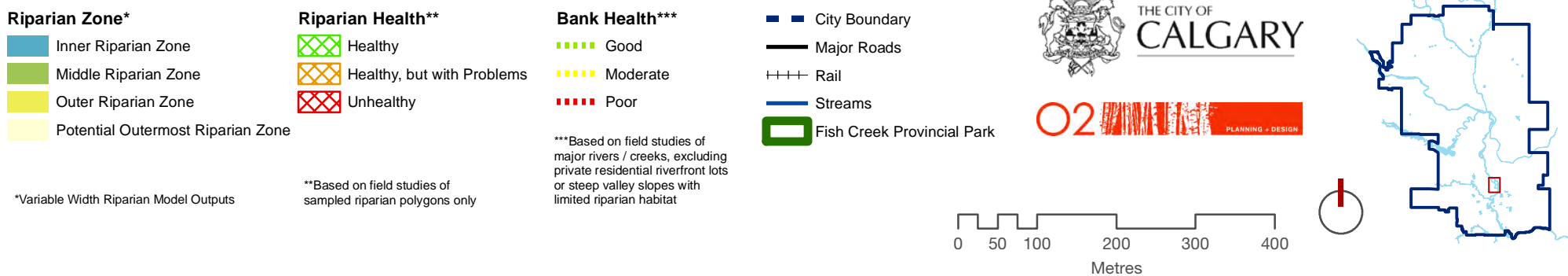


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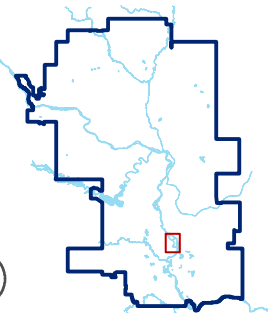
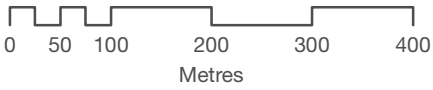
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Bridge

Buildings

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City Boundary

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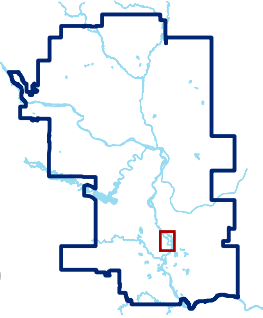
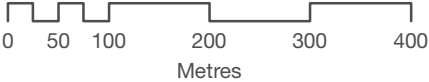
Streams

Fish Creek Provincial Park

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**Riparian Zone\***

Inner Riparian Zone

Middle Riparian Zone

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Potential Outermost Riparian Zone

**Riparian Health\*\***

Healthy

Healthy, but with Problems

Unhealthy

**Bank Health\*\*\***

Good

Moderate

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\*\*\*Based on field studies of major rivers / creeks, excluding private residential riverfront lots or steep valley slopes with limited riparian habitat

City Boundary

Major Roads

Rail

Streams

Fish Creek Provincial Park

THE CITY OF CALGARY

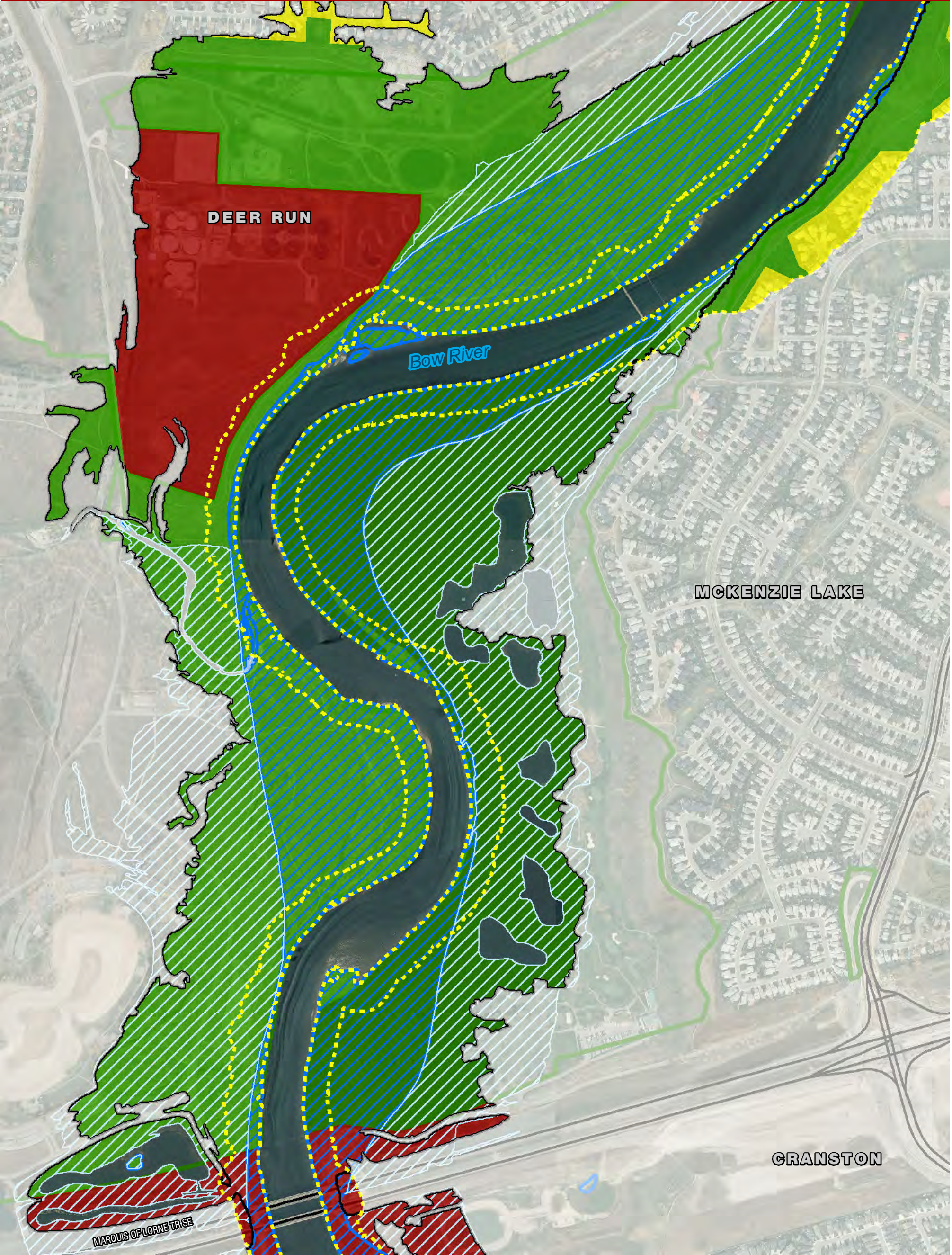
O2

PLANNING + DESIGN

0 50 100 200 300 400

Metres





Land Use Type

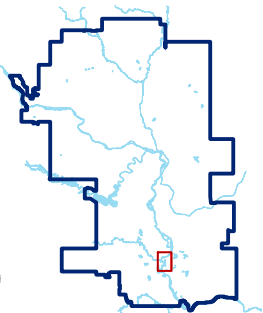
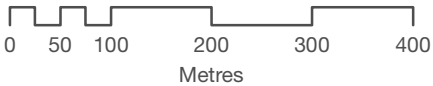
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(See Theme 2-Land and Regulatory Issues)

THE CITY OF  
CALGARY

O2

  
0 50 100 200 300 400  
Metres









**Riparian Zone\***

Inner Riparian Zone

Middle Riparian Zone

Outer Riparian Zone

Potential Outermost Riparian Zone

**Riparian Health\*\***

Healthy

Healthy, but with Problems

Unhealthy

**Bank Health\*\*\***

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Streams

Fish Creek Provincial Park

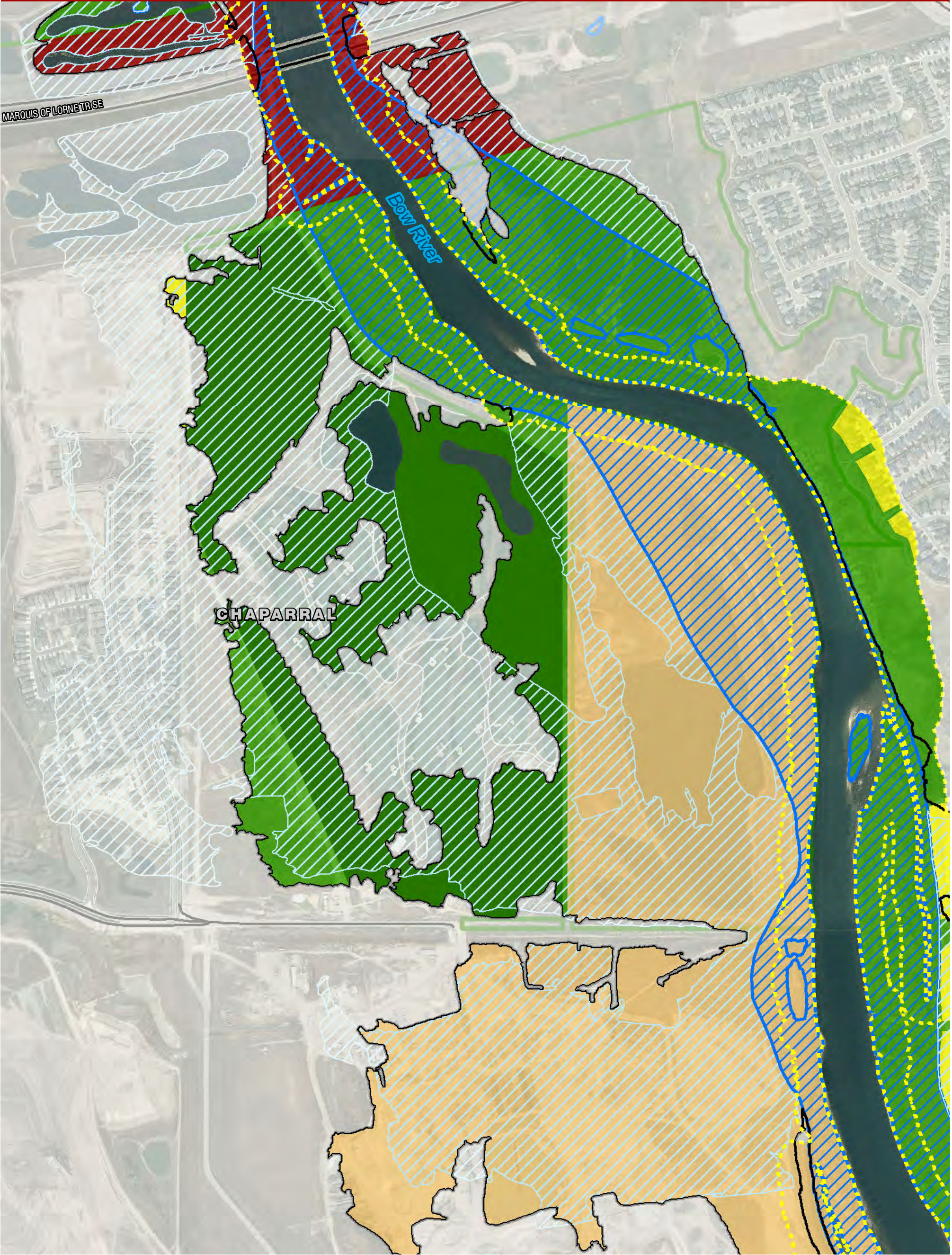
THE CITY OF CALGARY

O2 PLANNING + DESIGN

0 50 100 200 300 400

Metres





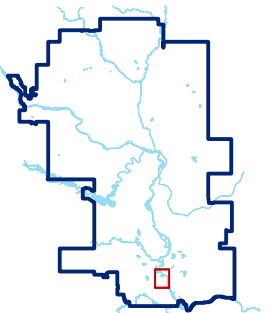
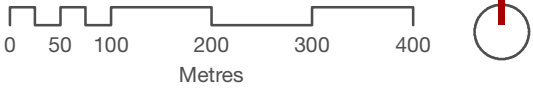
- Land Use Type**
- Commercial
  - Future Urban Development
  - Industrial
  - Institutional
  - Major Infrastructure
  - Mixed Use
  - Residential
  - Parks, Recreation and Public Education
  - Golf Course

- City of Calgary ER Setback Policy\*
- Nose Creek Watershed Partnership Setback\*\*
- Floodway
- Flood Fringe
- Flood Extent - 100 Year (Nose Creek/West Nose Creek)
- Outer Riparian Zone Boundary
- Streams
- Major Roads
- Rail

- City Boundary
- Fish Creek Provincial Park

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\*\*Recommended setback boundary of Nose Creek Watershed Partnership including floodplain, meander belt width and adjacent escarpments >15%







Storm Outflow Location

Stormwater Lift Station

Storm Main (>900mm diameter)

Sanitary Main (>600mm diameter)

Water Main (>400mm diameter)

Siphon

Pipeline River Crossing Locations

Water / Waste Water Treatment Plants

Existing Storm Retrofit Pond

Possible Location of Storm Retrofit Pond

Existing Storm Pond

Existing Bank Infrastructure (e.g., Rip Rap, Retaining Walls, Weirs)

Bank Erosion Hotspot

Candidate Flood / Erosion Control Projects

Paved Trails

Gravel Trails

Bridge

Buildings

Parks (Maintained Turf Areas)

City Boundary


Major Roads

Rail

Streams

Fish Creek Provincial Park

The non-masked area is based on the greater of:  
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(See Theme 2-Land and Regulatory Issues)



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O2

PLANNING + DESIGN

0

50

100

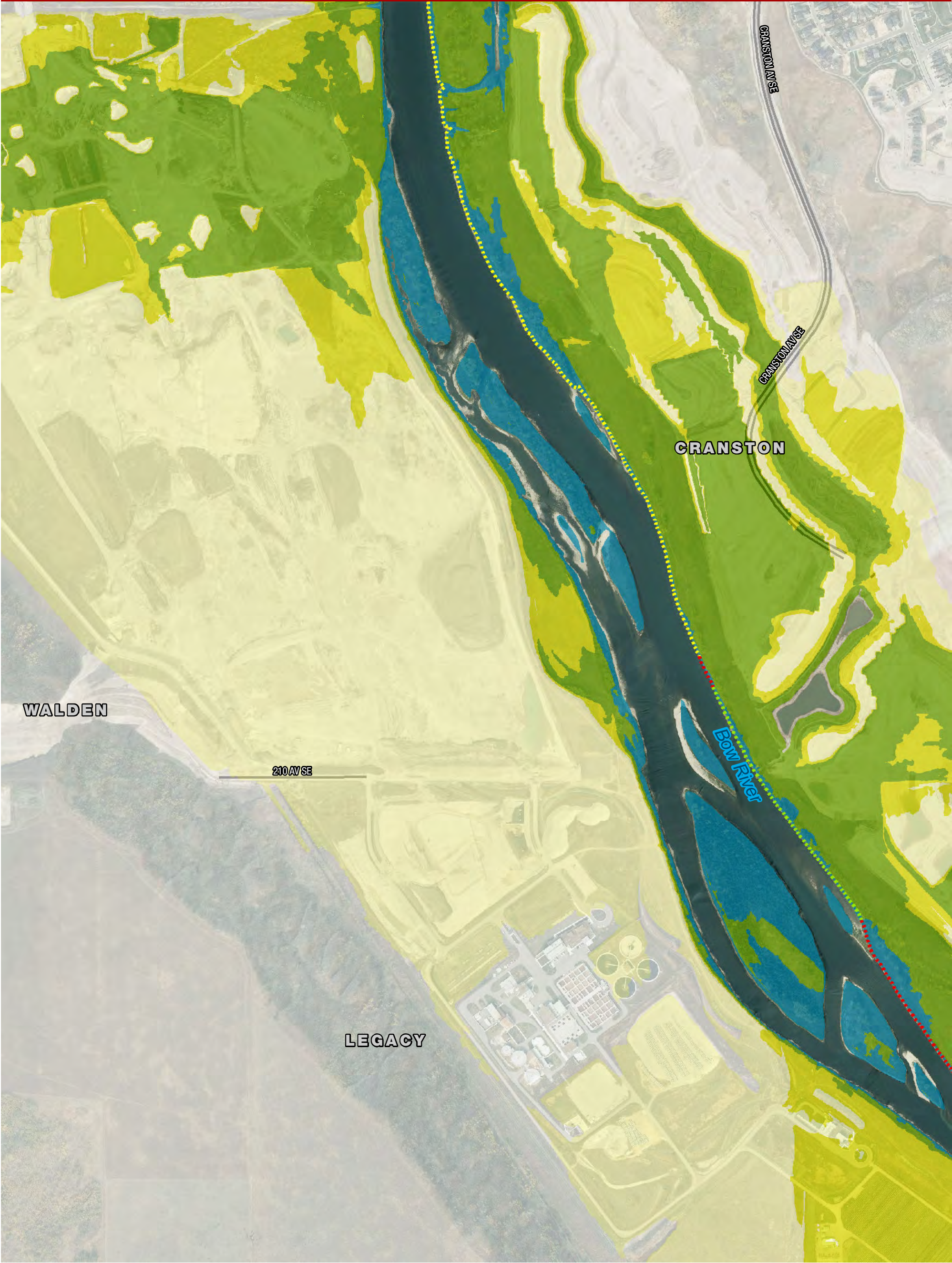
200

300

400

Metres





**Riparian Zone\***

- Inner Riparian Zone
- Middle Riparian Zone
- Outer Riparian Zone
- Potential Outermost Riparian Zone

**Riparian Health\*\***

- Healthy
- Healthy, but with Problems
- Unhealthy

**Bank Health\*\*\***

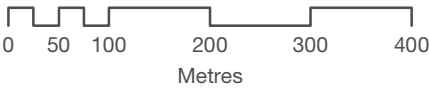
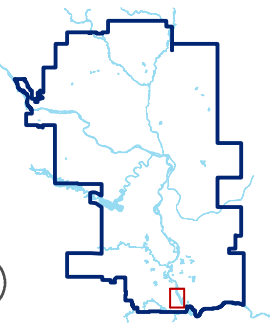
- Good
- Moderate
- Poor

\*\*\*Based on field studies of major rivers / creeks, excluding private residential riverfront lots or steep valley slopes with limited riparian habitat

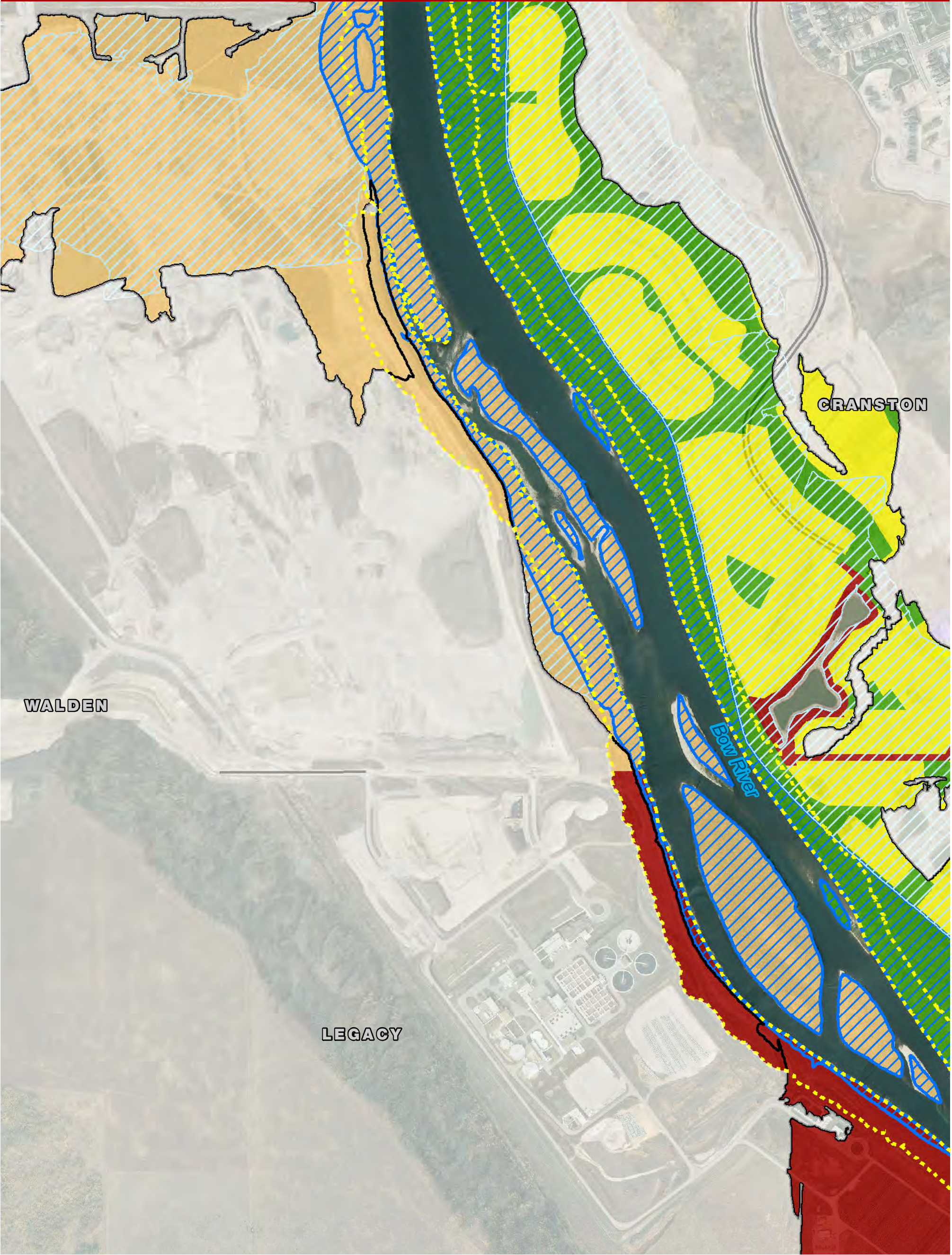
\*\*Based on field studies of sampled riparian polygons only

\*Variable Width Riparian Model Outputs

City Boundary  
Major Roads  
Rail  
Streams  
Fish Creek Provincial Park








- Land Use Type**
- Commercial
  - Future Urban Development
  - Industrial
  - Institutional
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- Rail

- City Boundary
- Fish Creek Provincial Park

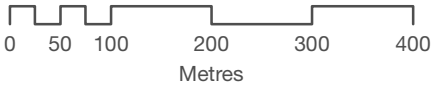
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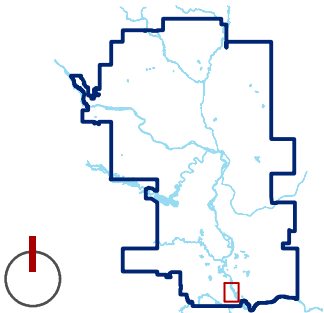


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**O2** **WATERSHED PARTNERSHIP** **PLANNING + DESIGN**



0 50 100 200 300 400  
Metres

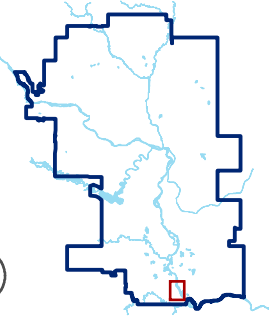
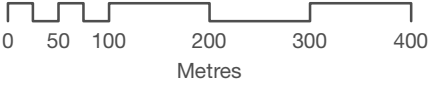






- Storm Outflow Location
- Stormwater Lift Station
- Storm Main (>900mm diameter)
- Sanitary Main (>600mm diameter)
- Water Main (>400mm diameter)
- - Siphon
- Pipeline River Crossing Locations
- ▲ Water / Waste Water Treatment Plants
- ▭ Existing Storm Retrofit Pond
- ▭ Possible Location of Storm Retrofit Pond
- ▭ Existing Storm Pond
- Existing Bank Infrastructure (e.g., Rip Rap, Retaining Walls, Weirs)
- Bank Erosion Hotspot
- ▲ Candidate Flood / Erosion Control Projects
- Paved Trails
- Gravel Trails
- Bridge
- ▭ Buildings
- ▭ Parks (Maintained Turf Areas)
- City Boundary
- Major Roads
- Rail
- Streams
- ▭ Fish Creek Provincial Park

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(See Theme 2-Land and Regulatory Issues)







**Riparian Zone\***

Inner Riparian Zone

Middle Riparian Zone

Outer Riparian Zone

Potential Outermost Riparian Zone

**Riparian Health\*\***

Healthy

Healthy, but with Problems

Unhealthy

**Bank Health\*\*\***

Good

Moderate

Poor

\*\*\*Based on field studies of major rivers / creeks, excluding private residential riverfront lots or steep valley slopes with limited riparian habitat

City Boundary

Major Roads

Rail

Streams

Fish Creek Provincial Park

THE CITY OF CALGARY

O2 PLANNING + DESIGN

0

50

100

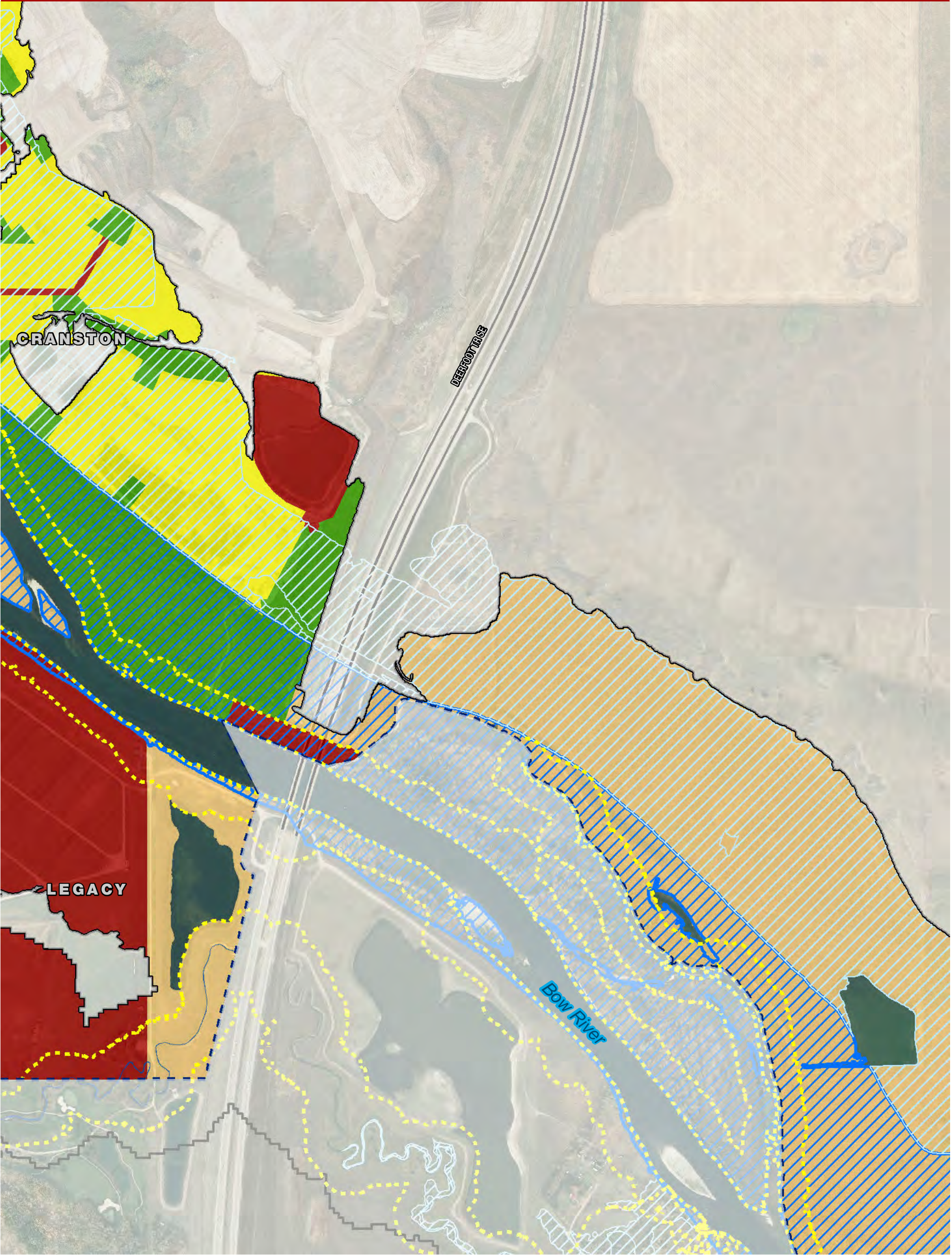
200

300

400

Metres





Land Use Type

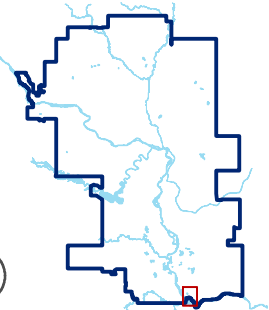
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- Industrial
- Institutional
- Major Infrastructure
- Mixed Use
- Residential
- Parks, Recreation and Public Education
- Golf Course

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- Outer Riparian Zone Boundary
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- Major Roads
- Rail

- City Boundary
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- Candidate Flood / Erosion Control Projects

Paved Trails

Gravel Trails

Bridge

Buildings

Parks (Maintained Turf Areas)

City Boundary

Major Roads

Rail

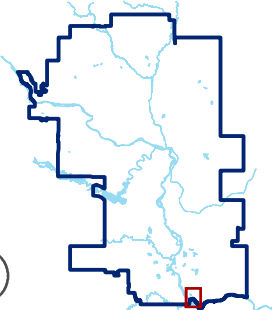
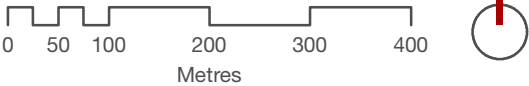
Streams

Fish Creek Provincial Park

The non-masked area is based on the greater of:

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(See Theme 2-Land and Regulatory Issues)







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- Healthy
- Healthy, but with Problems
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**Bank Health\*\*\***

- Good
- Moderate
- Poor

\*\*\*Based on field studies of major rivers / creeks, excluding private residential riverfront lots or steep valley slopes with limited riparian habitat

- City Boundary
- Major Roads
- Rail
- Streams
- Fish Creek Provincial Park



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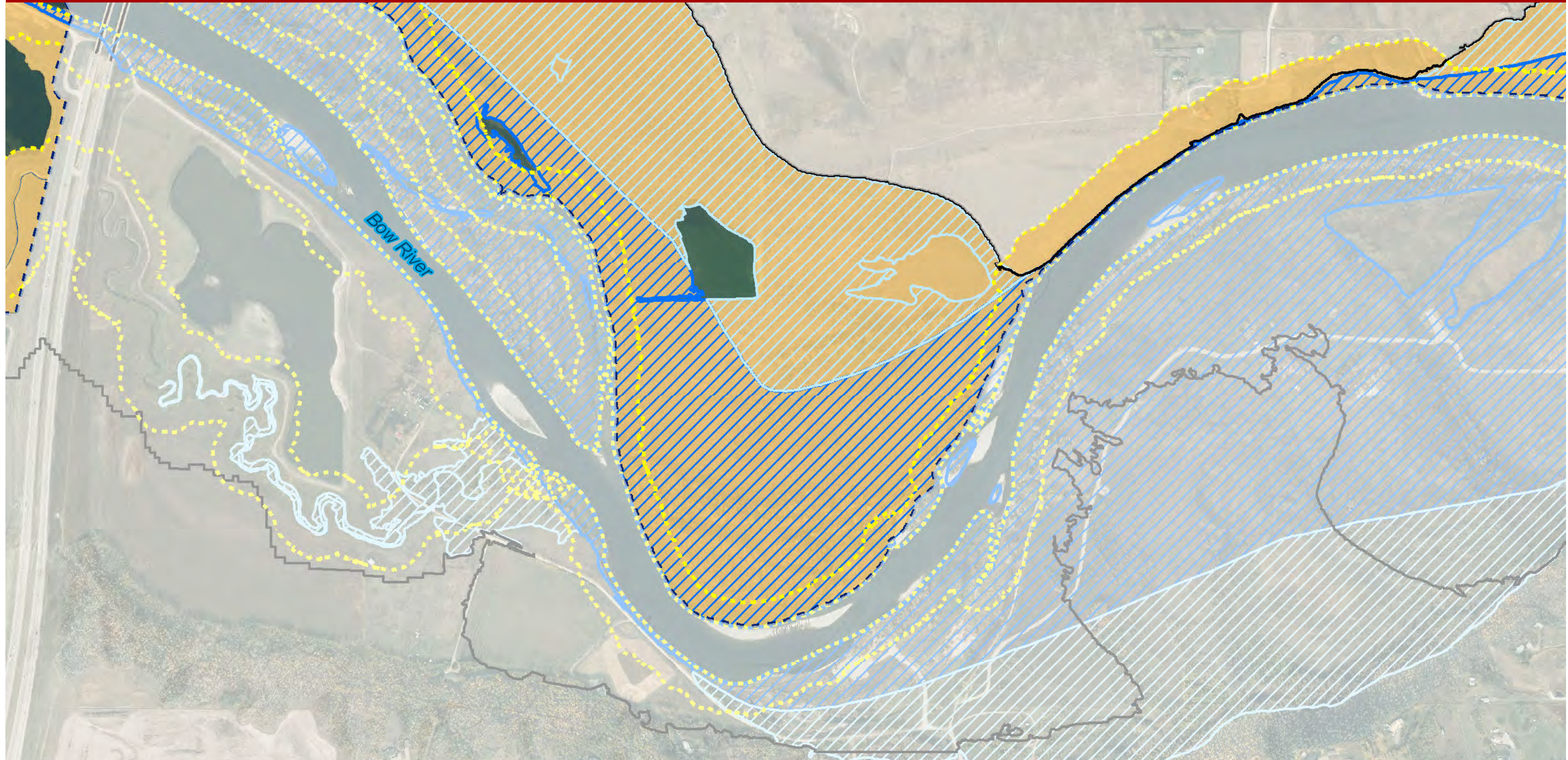




\*Variable Width Riparian Model Outputs

\*\*Based on field studies of sampled riparian polygons only





### Land Use Type

	Commercial
	Future Urban Development
	Industrial
	Institutional
	Major Infrastructure
	Mixed Use
	Residential
	Parks, Recreation and Public Education
	Golf Course

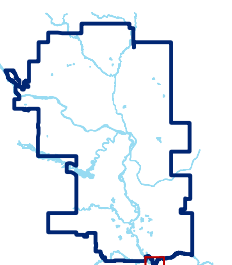
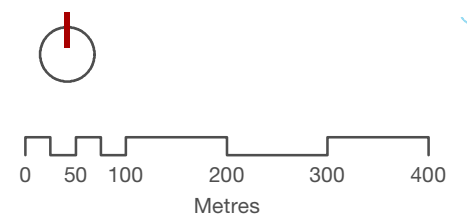
	City of Calgary ER Setback Policy*
	Nose Creek Water Management Plan Setback **
	Floodway
	Flood Fringe
	Flood Extent - 100 Year (Nose Creek/West Nose Creek)
	Outer Riparian Zone Boundary
	Fish Creek Provincial Park
	Streams
	Major Roads
	Rail
	City Boundary

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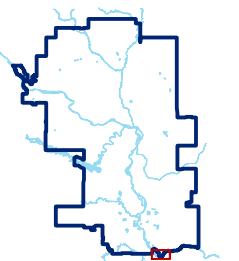
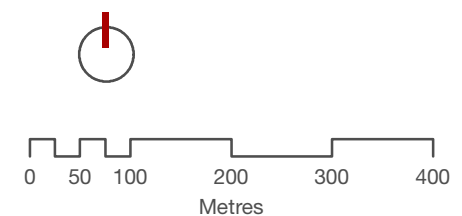


# RIPARIAN AREAS MAP PROJECT

EXISTING INFRASTRUCTURE AND POSSIBLE IMPROVEMENTS  
BOW RIVER 19



- |  |  |  |
|--|--|--|
|  Storm Outflow Location                   |  Existing Storm Pond  |  City Boundary              |
|  Stormwater Lift Station                  |  Existing Bank Infrastructure (e.g., Rip Rap, Retaining Walls, Weirs) |  Major Roads                |
|  Storm Main (> 900mm diameter)            |  Bank Erosion Hotspot   |  Rail                       |
|  Sanitary Main (>600mm diameter)          |  Candidate Flood / Erosion Control Projects                           |  Streams                    |
|  Water Main (>400mm diameter)             |  Paved Trails   |  Fish Creek Provincial Park |
|  Siphon                                   |  Gravel Trails  |  |
|  Pipeline River Crossing Locations        |  Bridge   |  |
|  Water / Waste Water Treatment Plants     |  Buildings  |  |
|  Existing Storm Retrofit Pond             |  Parks (Maintained Turf Areas)  |  |
|  Possible Location of Storm Retrofit Pond |  |  |
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- Rail
- Streams
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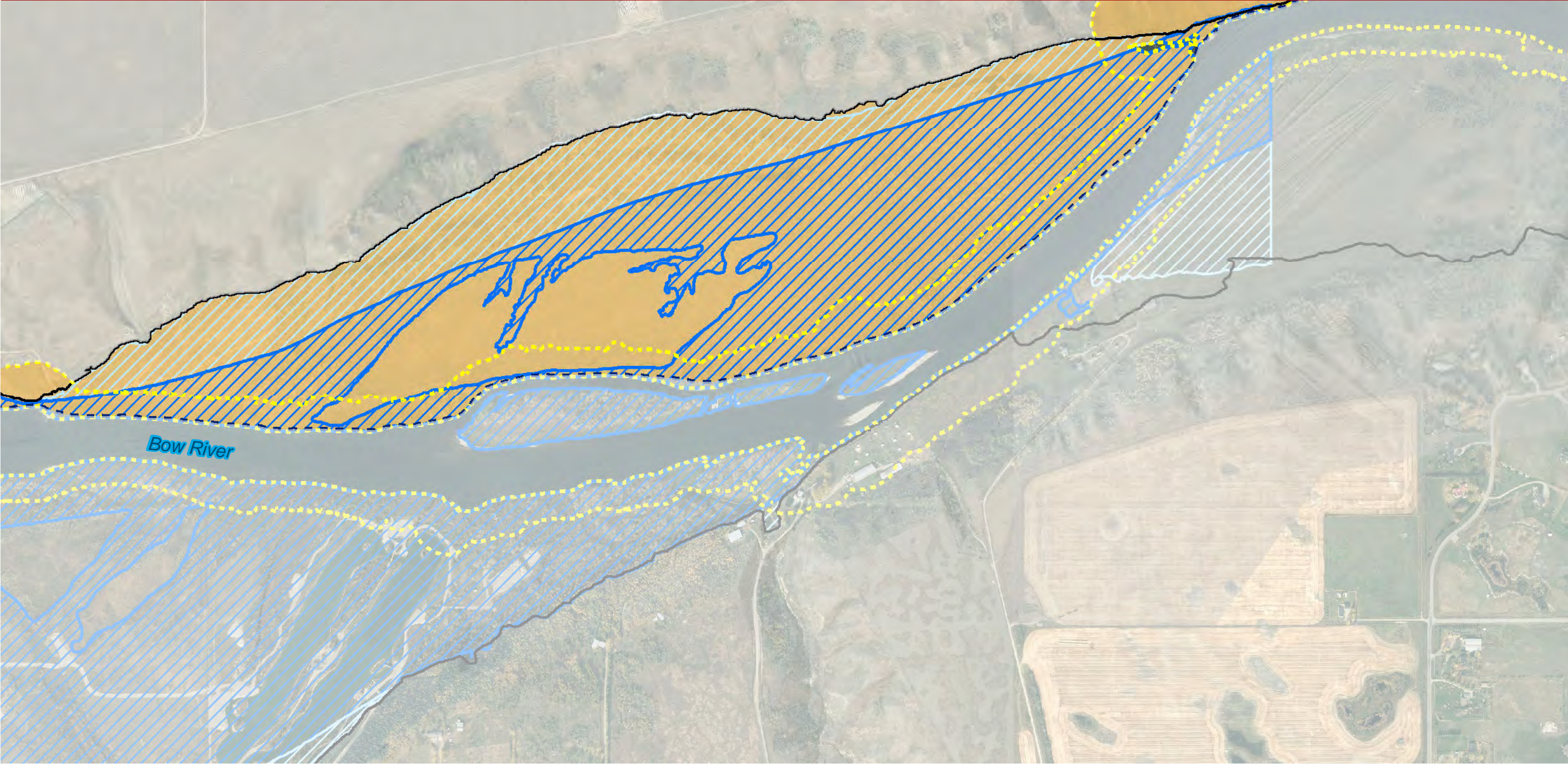




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Future Urban Development

Industrial

Institutional

Major Infrastructure

Mixed Use

Residential

Parks, Recreation and Public Education

Golf Course

City of Calgary ER Setback Policy\*

Nose Creek Water Management Plan Setback \*\*

Floodway

Flood Fringe

Flood Extent - 100 Year (Nose Creek/West Nose Creek)

Outer Riparian Zone Boundary

Streams


Major Roads

Rail


City Boundary

Fish Creek Provincial Park

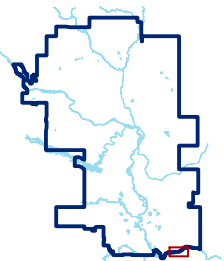
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0 50 100 200 300 400  
Metres



O2

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● Storm Outflow Location

■ Stormwater Lift Station

— Storm Main (> 900mm diameter)

— Sanitary Main (>600mm diameter)

— Water Main (>400mm diameter)

--- Siphon

— Pipeline River Crossing Locations

▲ Water / Waste Water Treatment Plants

▨ Existing Storm Retrofit Pond

▨ Possible Location of Storm Retrofit Pond

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■ Bank Erosion Hotspot

▲ Candidate Flood / Erosion Control Projects

— Paved Trails

— Gravel Trails

— Bridge

■ Buildings

■ Parks (Maintained Turf Areas)

— City Boundary

— Major Roads

+++ Rail

— Streams

■ Fish Creek Provincial Park

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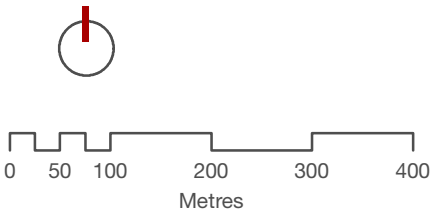
(See Theme 2-Land and Regulatory Issues)



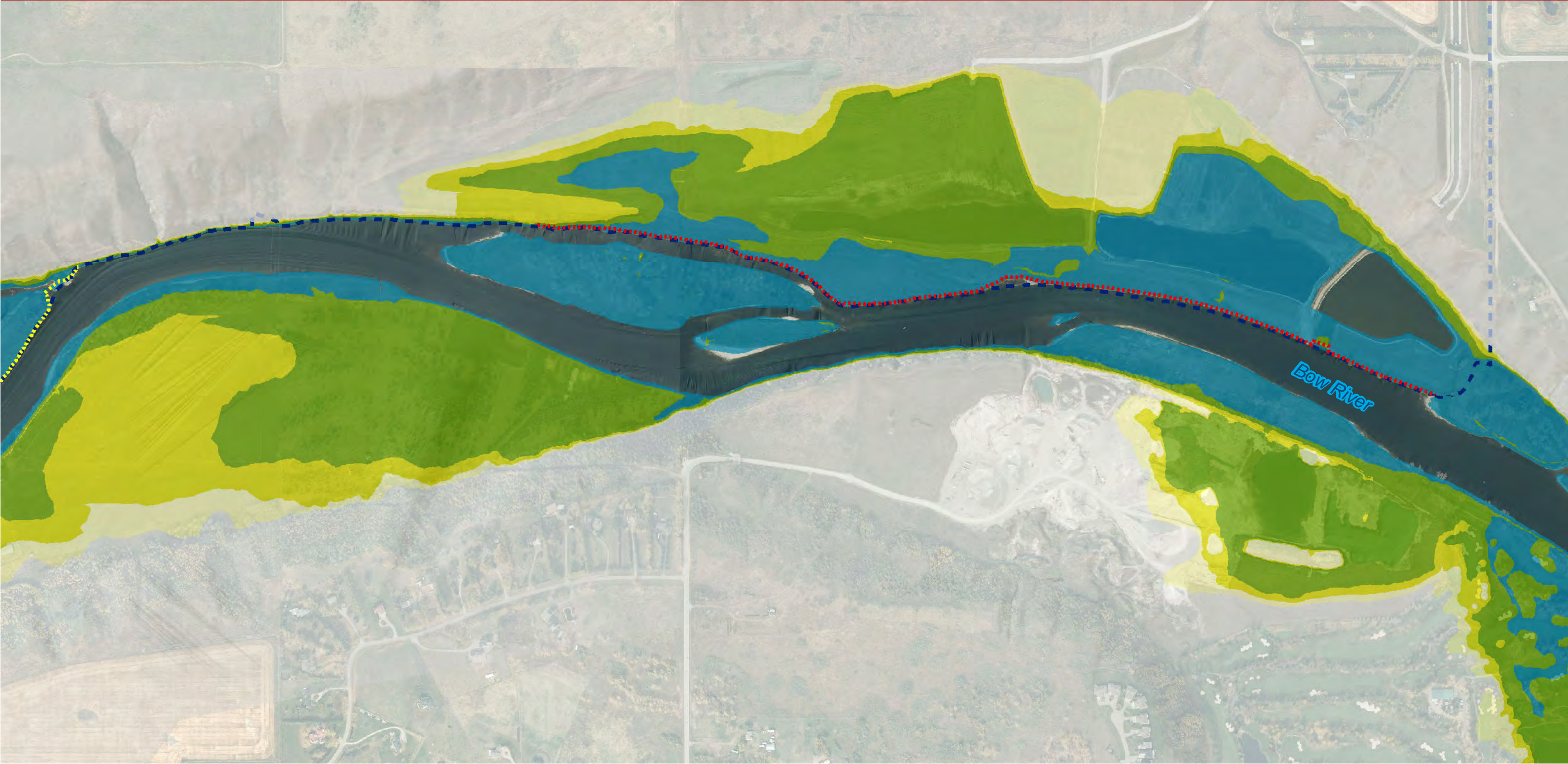
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**Riparian Zone\***

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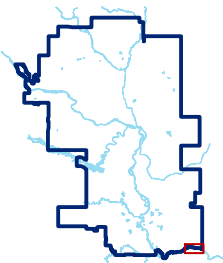
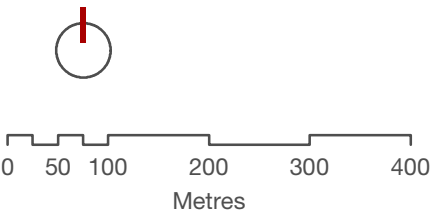
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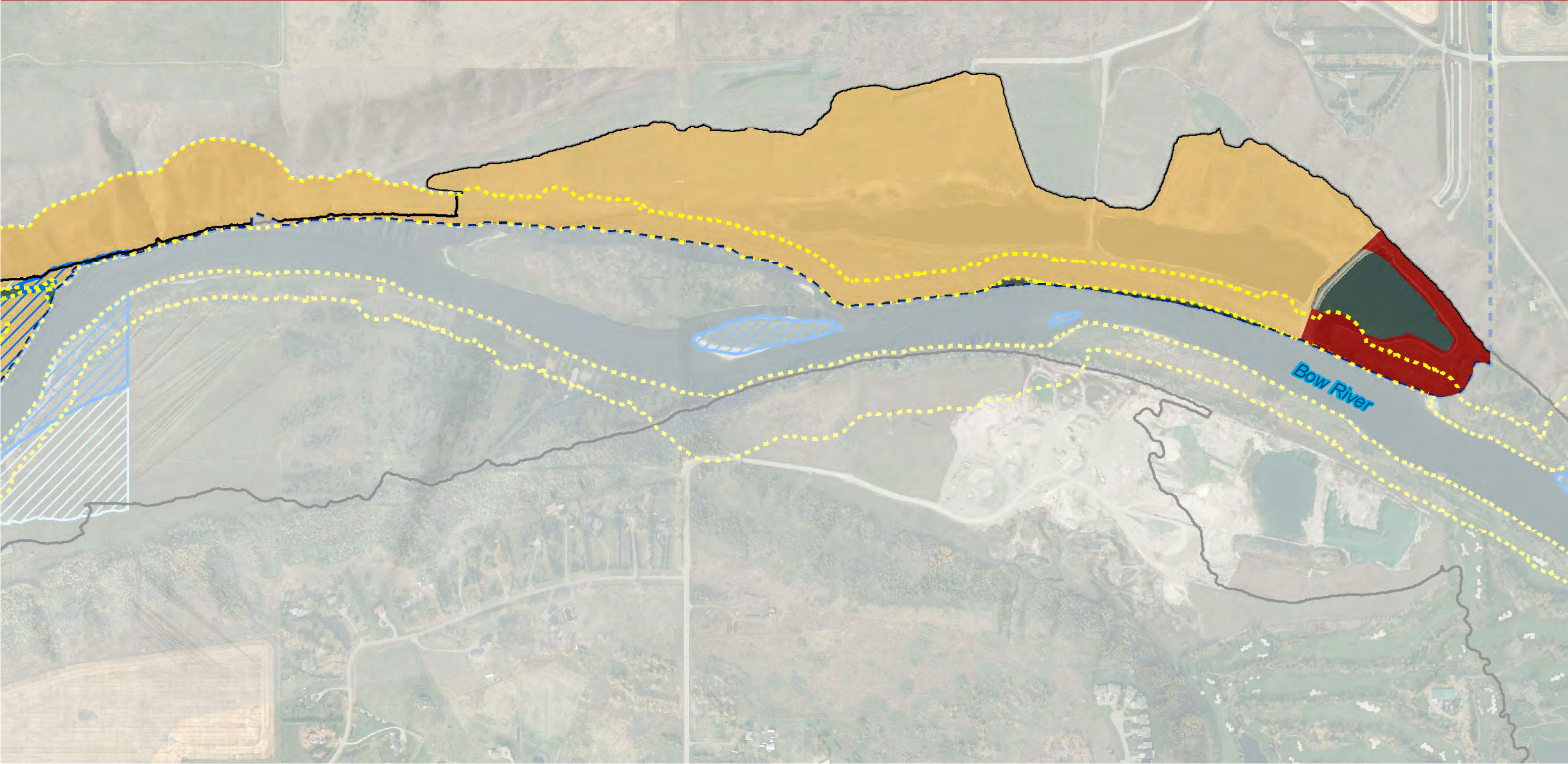
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Major Roads

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
City Boundary

Fish Creek Provincial Park

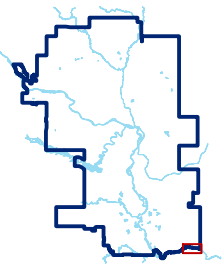
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0 50 100 200 300 400  
Metres



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Storm Outflow Location

Stormwater Lift Station

Storm Main (> 900mm diameter)

Sanitary Main (>600mm diameter)

Water Main (>400mm diameter)

Siphon

Pipeline River Crossing Locations

Water / Waste Water Treatment Plants

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O2

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0 50 100 200 300 400  
Metres