



PHASE ONE MAPS - NOSE CREEK / WEST NOSE CREEK

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)

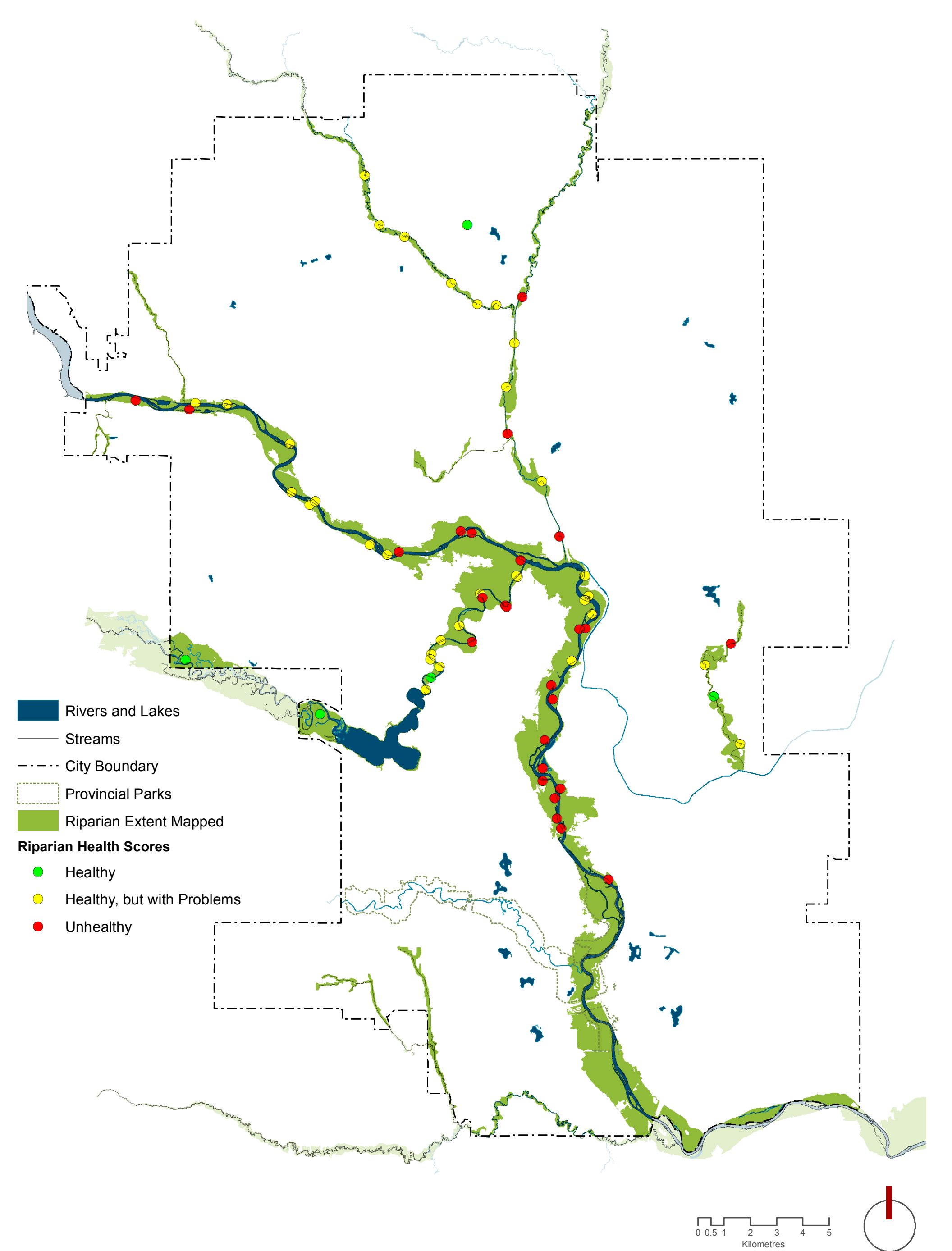
Submitted to: The City of Calgary Water Resources

October 19 | 2012



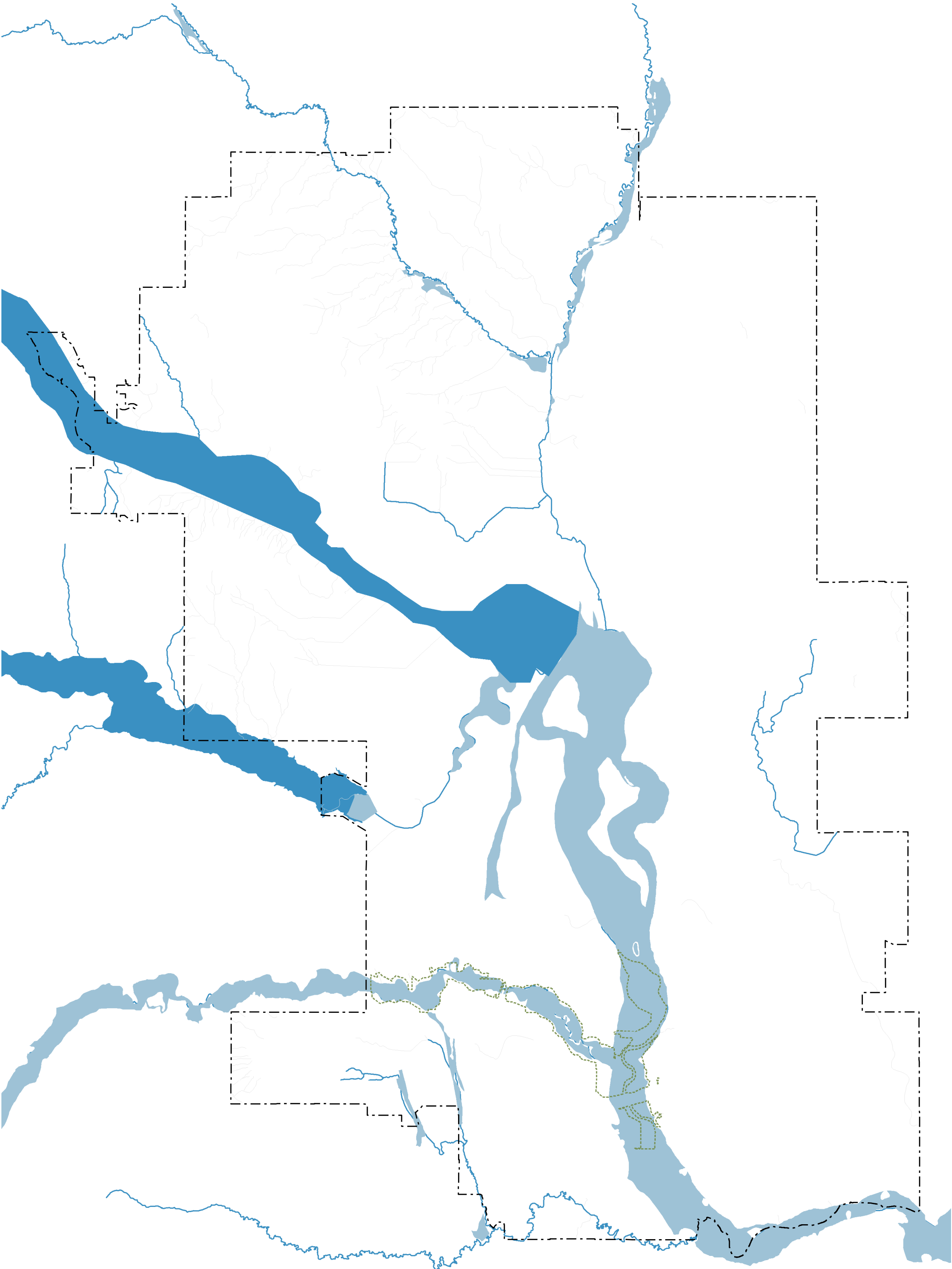
RIPARIAN AREAS MAP PROJECT

CITY WIDE MAP - RIPARIAN LOCATION AND FUNCTION

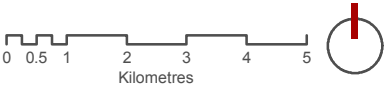


RIPARIAN AREAS MAP PROJECT

CITY WIDE MAP - ALLUVIAL AQUIFERS

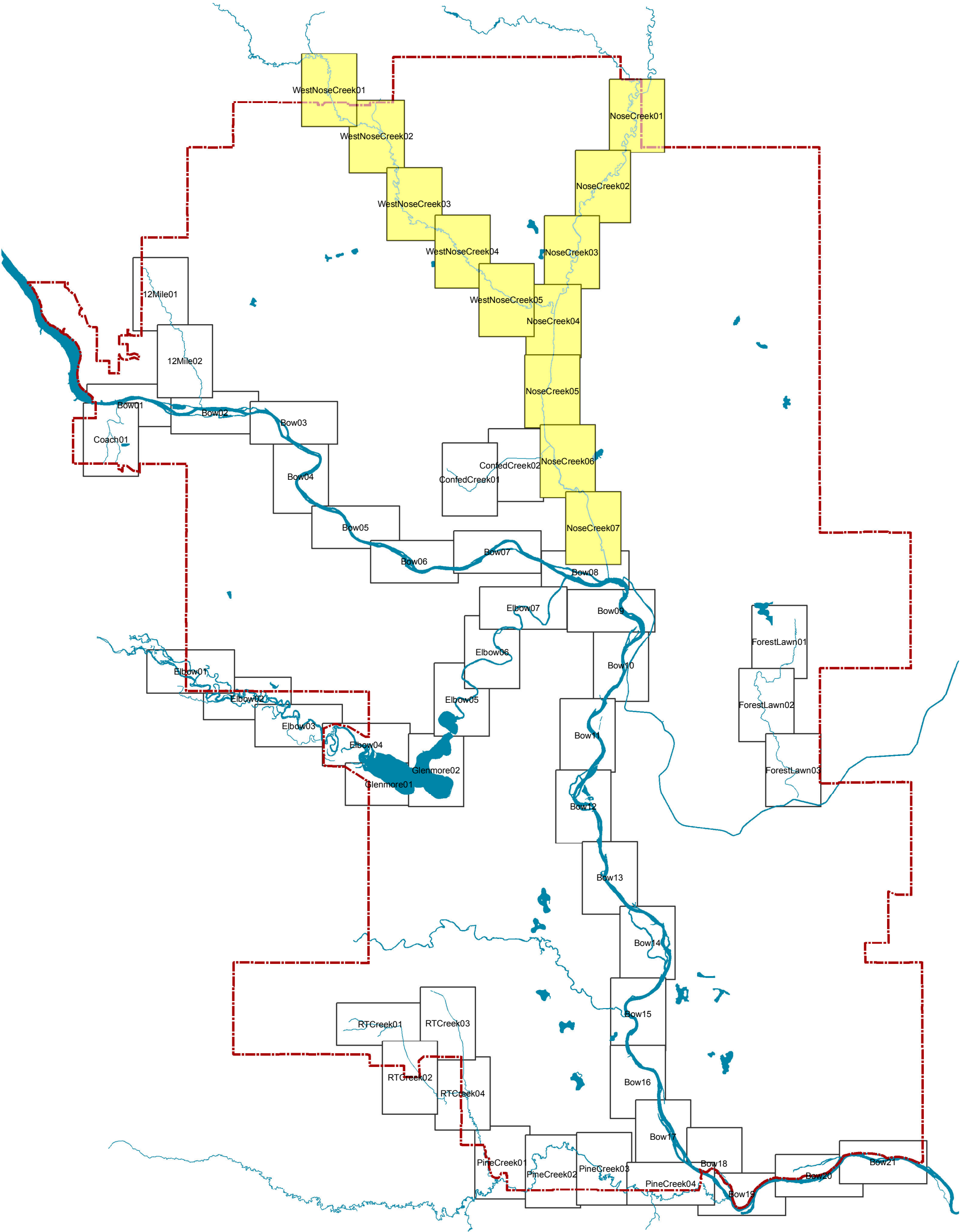


- City Boundary
- - - Fish Creek Provincial Park
- Mapped Alluvial Aquifer (ARC 2009)
- Potential Large Alluvial Aquifers in Coarse Sediments (Moran 1986)
- Streams / Rivers
- Lower Order Streams



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

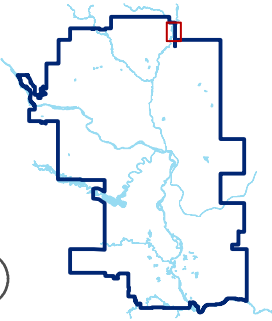
Bank Health***

- Good
- Moderate
- Poor

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

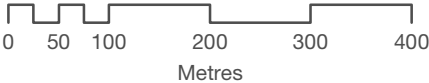
City Boundary
Major Roads
Rail
Streams
Fish Creek Provincial Park

THE CITY OF
CALGARY
O2
PLANNING + DESIGN



*Variable Width Riparian Model Outputs

**Based on field studies of sampled riparian polygons only





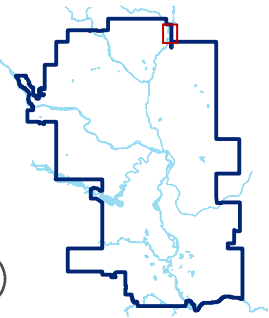
- Land Use Type**
- Commercial
 - Future Urban Development
 - Industrial
 - Institutional
 - Major Infrastructure
 - Mixed Use
 - Residential
 - Parks, Recreation and Public Education
 - Golf Course

- 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

- 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%





● 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)

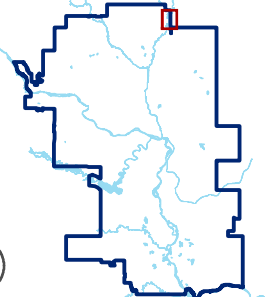
THE CITY OF
CALGARY

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***

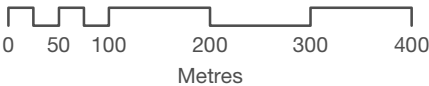
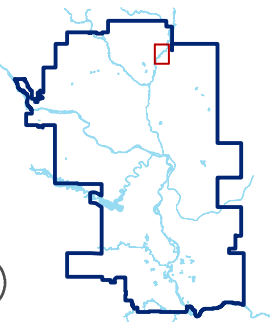
- Good
- Moderate
- Poor

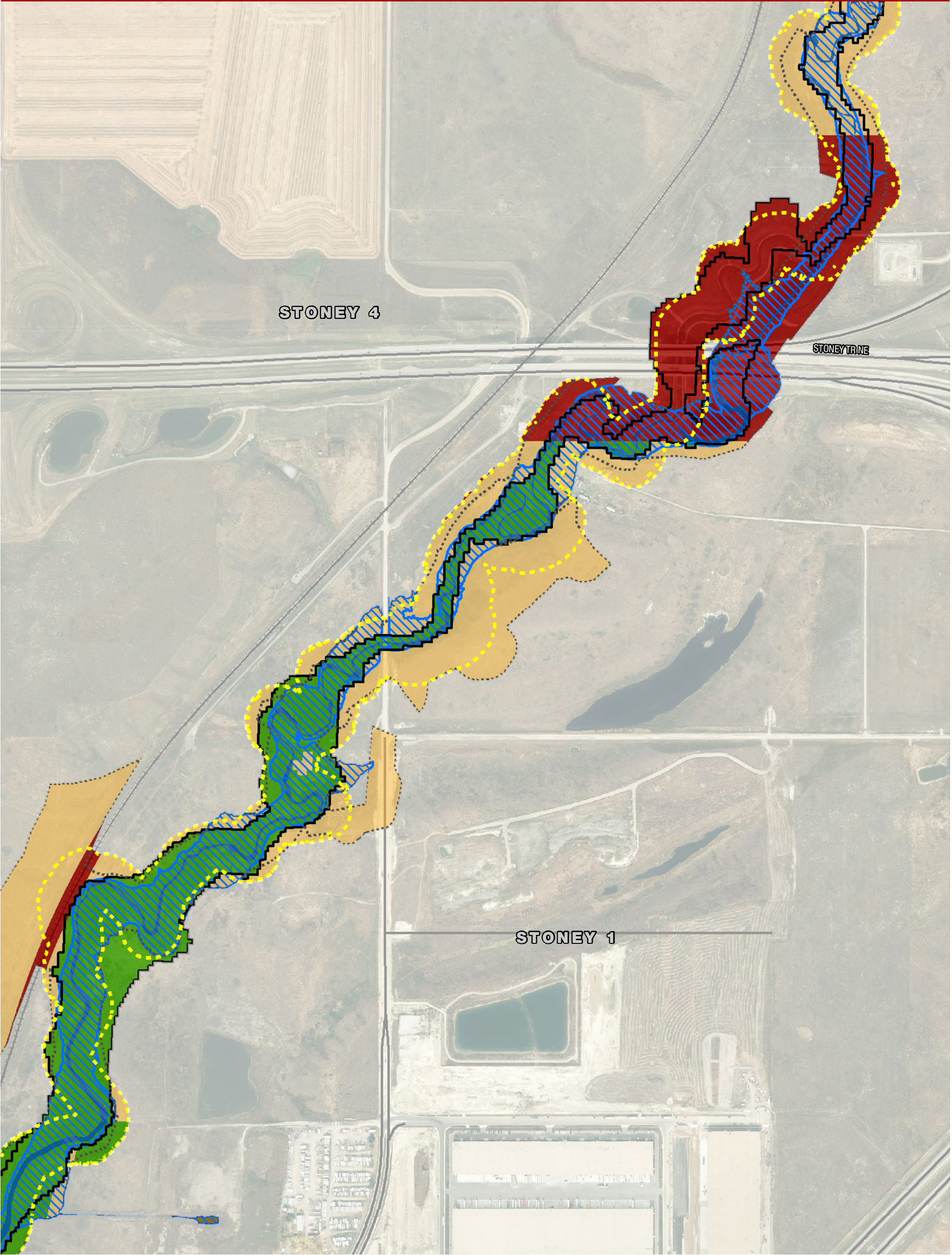
***Based on field studies of major rivers / creeks, excluding private residential riverfront lots or steep valley slopes with limited riparian habitat

**Based on field studies of sampled riparian polygons only

*Variable Width Riparian Model Outputs

City Boundary
Major Roads
Rail
Streams
Fish Creek Provincial Park





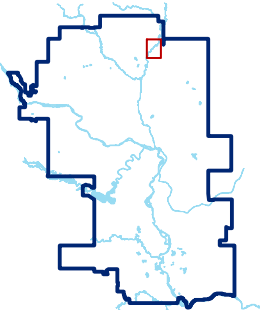
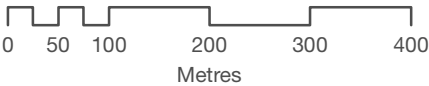
- Land Use Type**
- Commercial
 - Future Urban Development
 - Industrial
 - Institutional
 - Major Infrastructure
 - Mixed Use
 - Residential
 - Parks, Recreation and Public Education
 - Golf Course

- 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

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

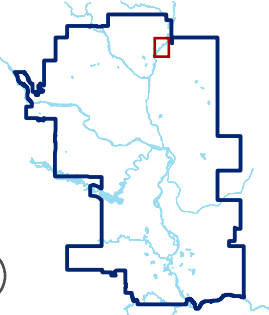
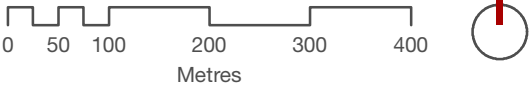
**Recommended setback boundary of Nose Creek Watershed Partnership including floodplain, meander belt width and adjacent escarpments >15%

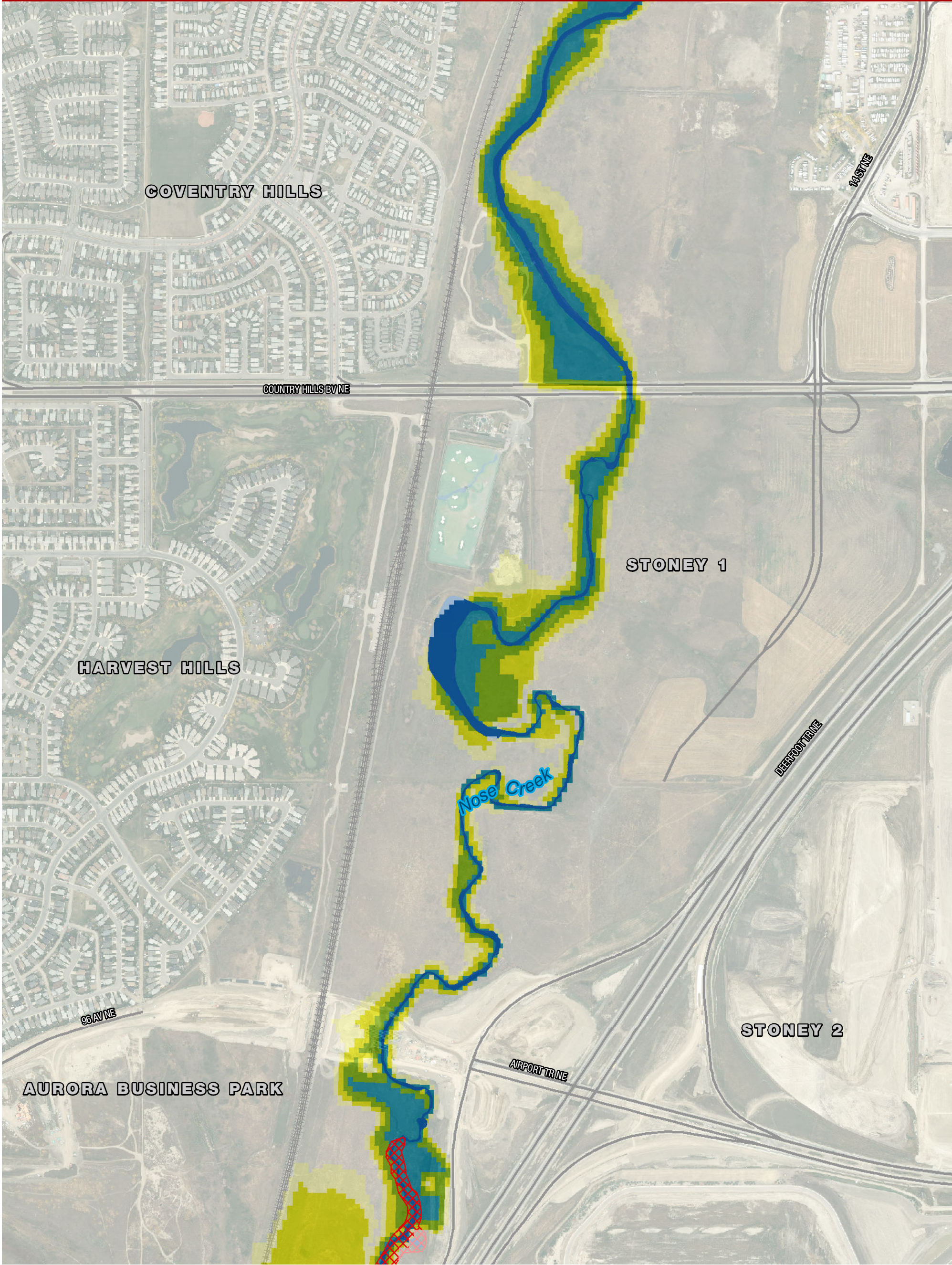




- Storm Outflow Location
- Stormwater Lift Station
- Storm Main (>900mm diameter)
- Sanitary Main (>600mm diameter)
- Water Main (>400mm diameter)
- - Siphon
- Pipeline River Crossing Locations
- ▲ Water / Waste Water Treatment Plants
- ▭ Existing Storm Retrofit Pond
- ▭ Possible Location of Storm Retrofit 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)





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

Legend

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

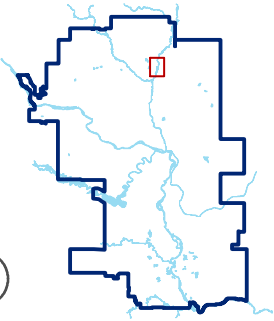
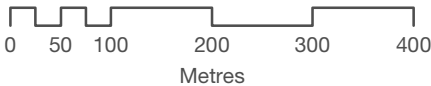
THE CITY OF CALGARY

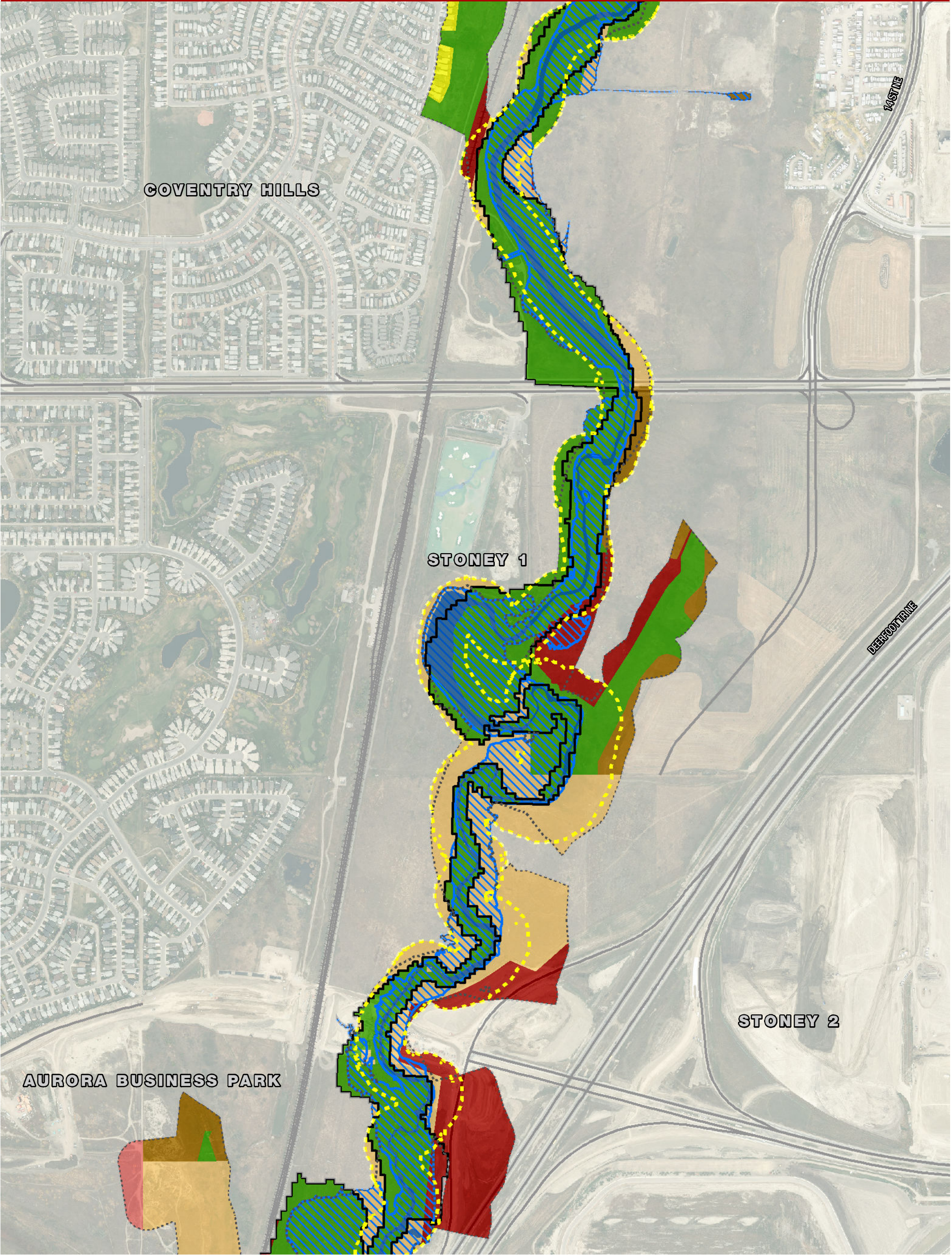
O2 PLANNING + DESIGN

*Variable Width Riparian Model Outputs

**Based on field studies of sampled riparian polygons only

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





Land Use Type

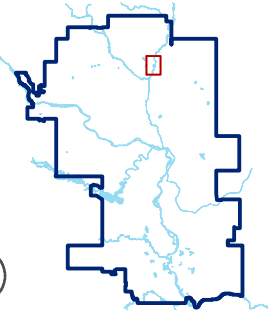
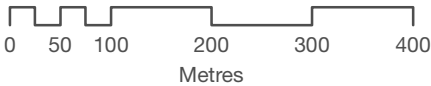
- Commercial
- Future Urban Development
- Industrial
- Institutional
- Major Infrastructure
- Mixed Use
- Residential
- Parks, Recreation and Public Education
- Golf Course

- 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

*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%





● 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)

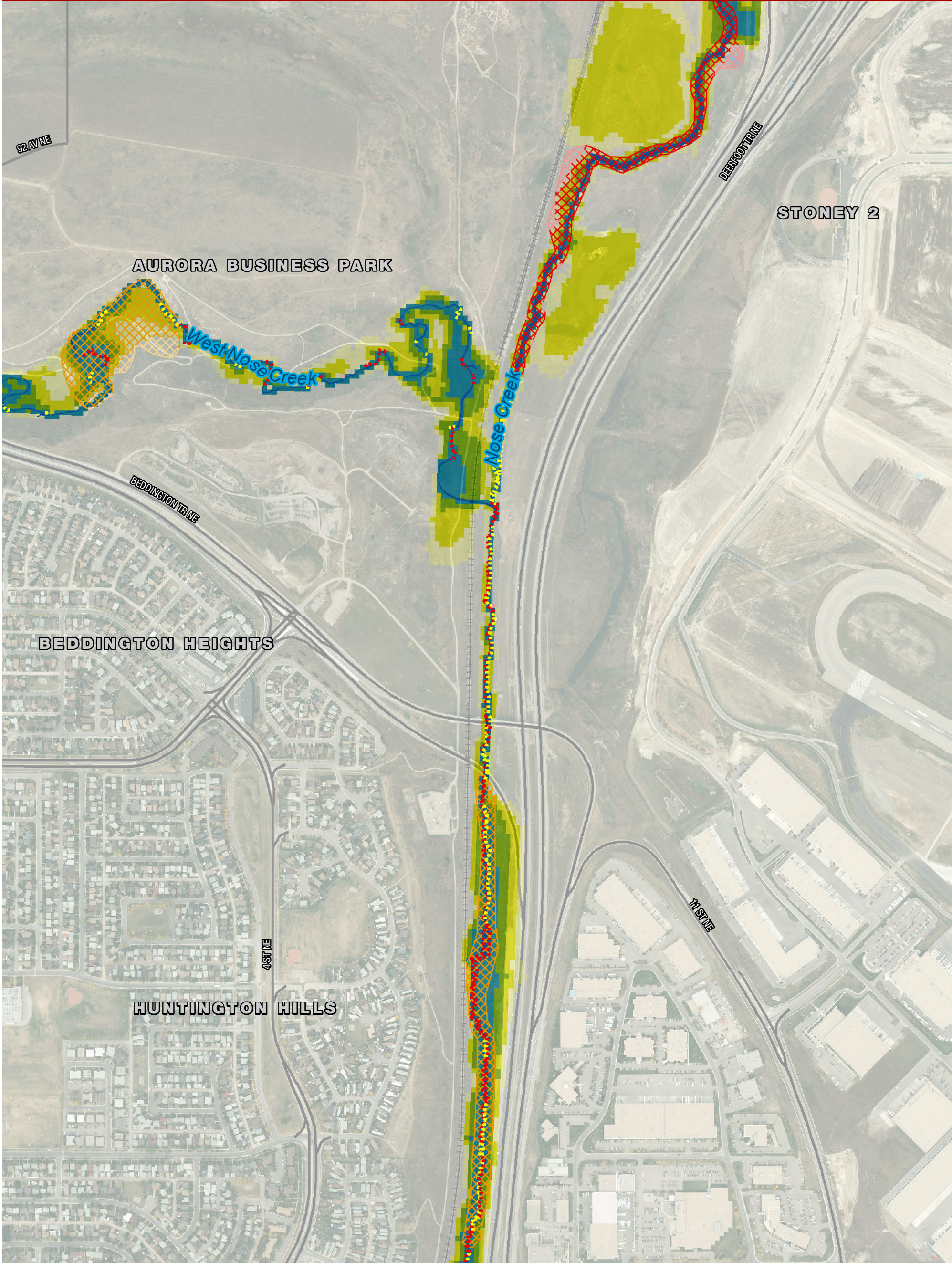
THE CITY OF
CALGARY

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

City Boundary

Major Roads

Rail

Streams

Fish Creek Provincial Park

THE CITY OF CALGARY

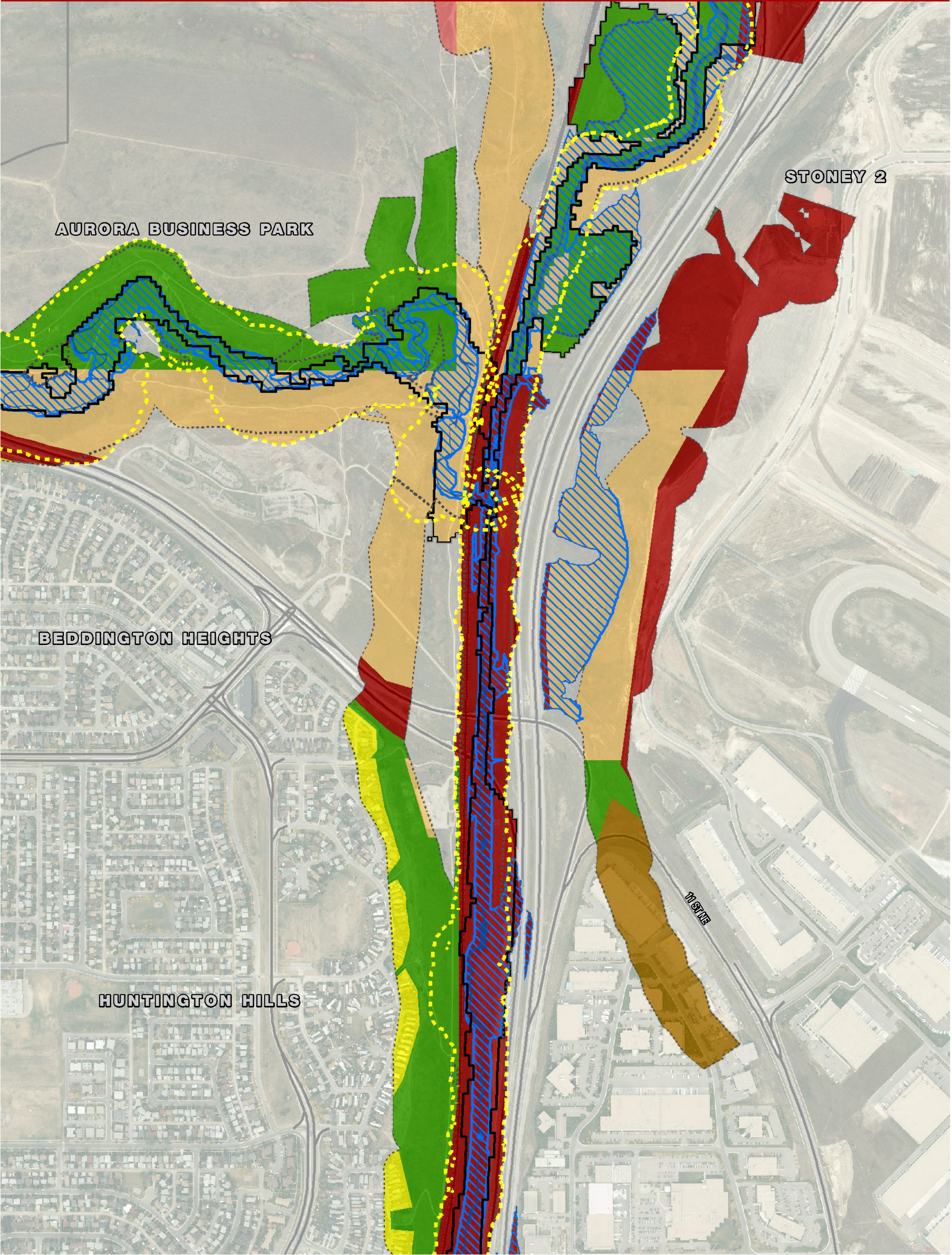
O2 PLANNING + DESIGN

*Variable Width Riparian Model Outputs

**Based on field studies of sampled riparian polygons only

0 50 100 200 300 400

Metres



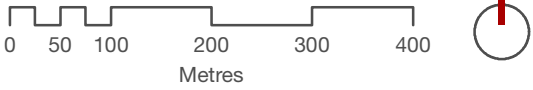
- Land Use Type**
- Commercial
 - Future Urban Development
 - Industrial
 - Institutional
 - Major Infrastructure
 - Mixed Use
 - Residential
 - Parks, Recreation and Public Education
 - Golf Course

- 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

*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%





- 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

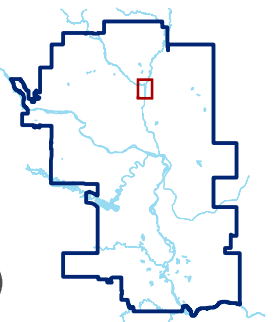
The non-masked area is based on the greater of:
(i) outer riparian zone of the variable width model,
(ii) City ER setback policy boundary,
(iii) Nose Creek Watershed Partnership recommended setback policy
(See Theme 2-Land and Regulatory Issues)

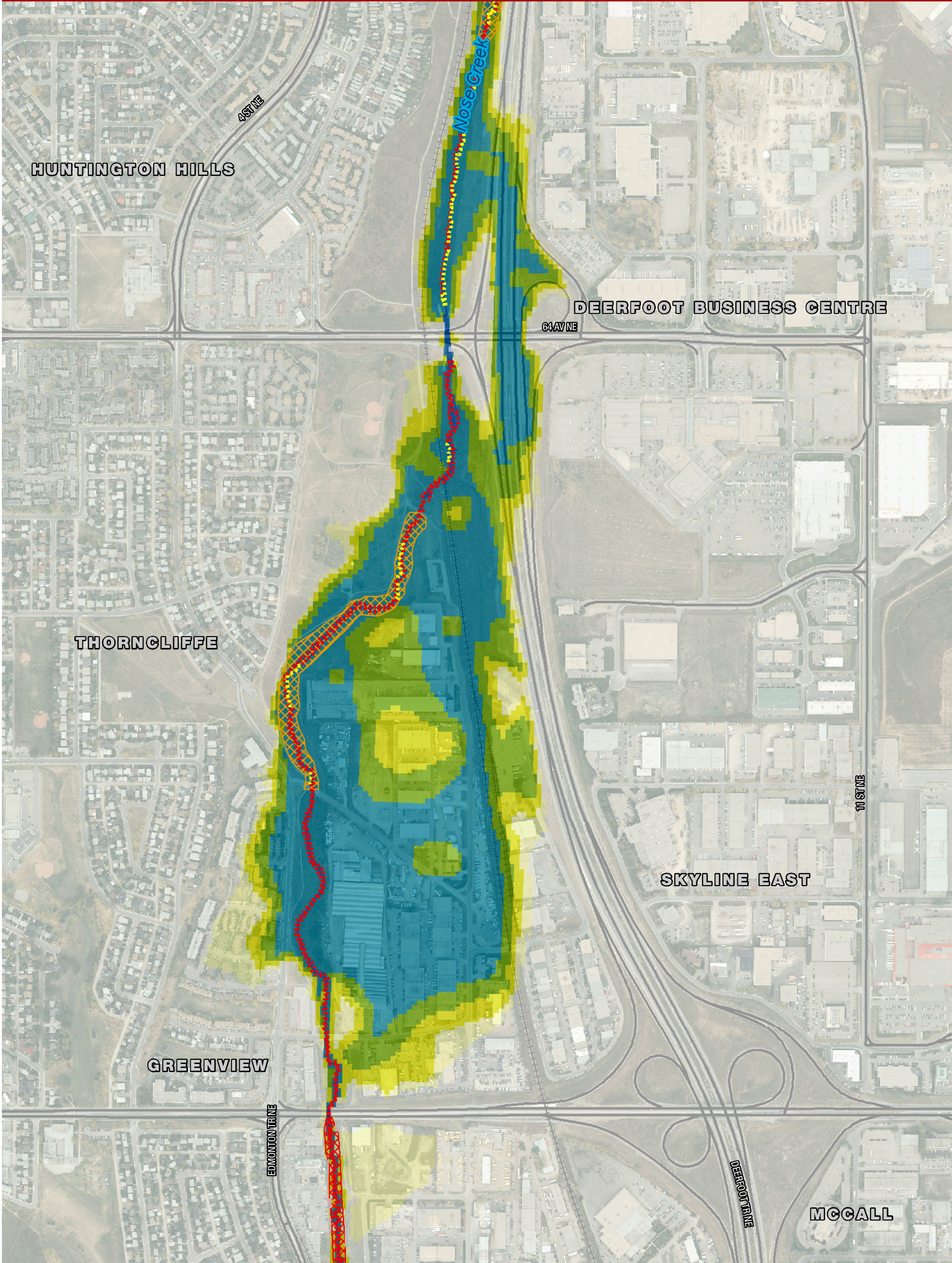


THE CITY OF
CALGARY

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

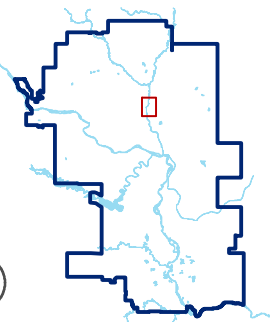
***Based on field studies of major rivers / creeks, excluding private residential riverfront lots or steep valley slopes with limited riparian habitat

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



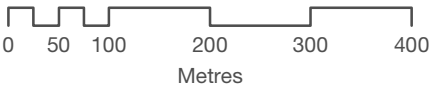
THE CITY OF
CALGARY

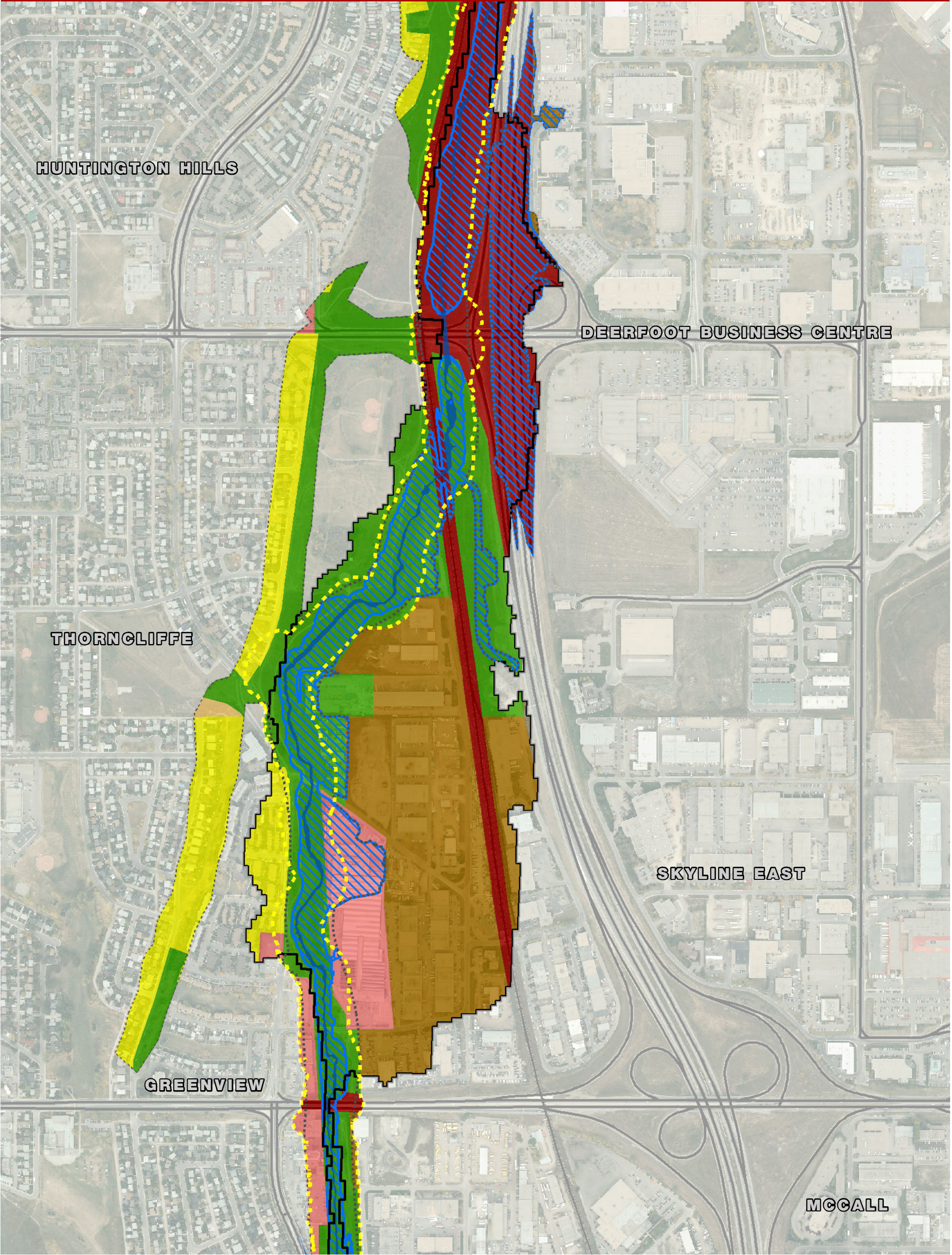
O2 PLANNING + DESIGN



*Variable Width Riparian Model Outputs

**Based on field studies of sampled riparian polygons only





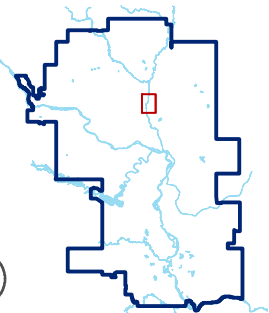
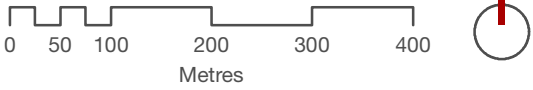
- Land Use Type**
- Commercial
 - Future Urban Development
 - Industrial
 - Institutional
 - Major Infrastructure
 - Mixed Use
 - Residential
 - Parks, Recreation and Public Education
 - Golf Course

- 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

- 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%





● 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)

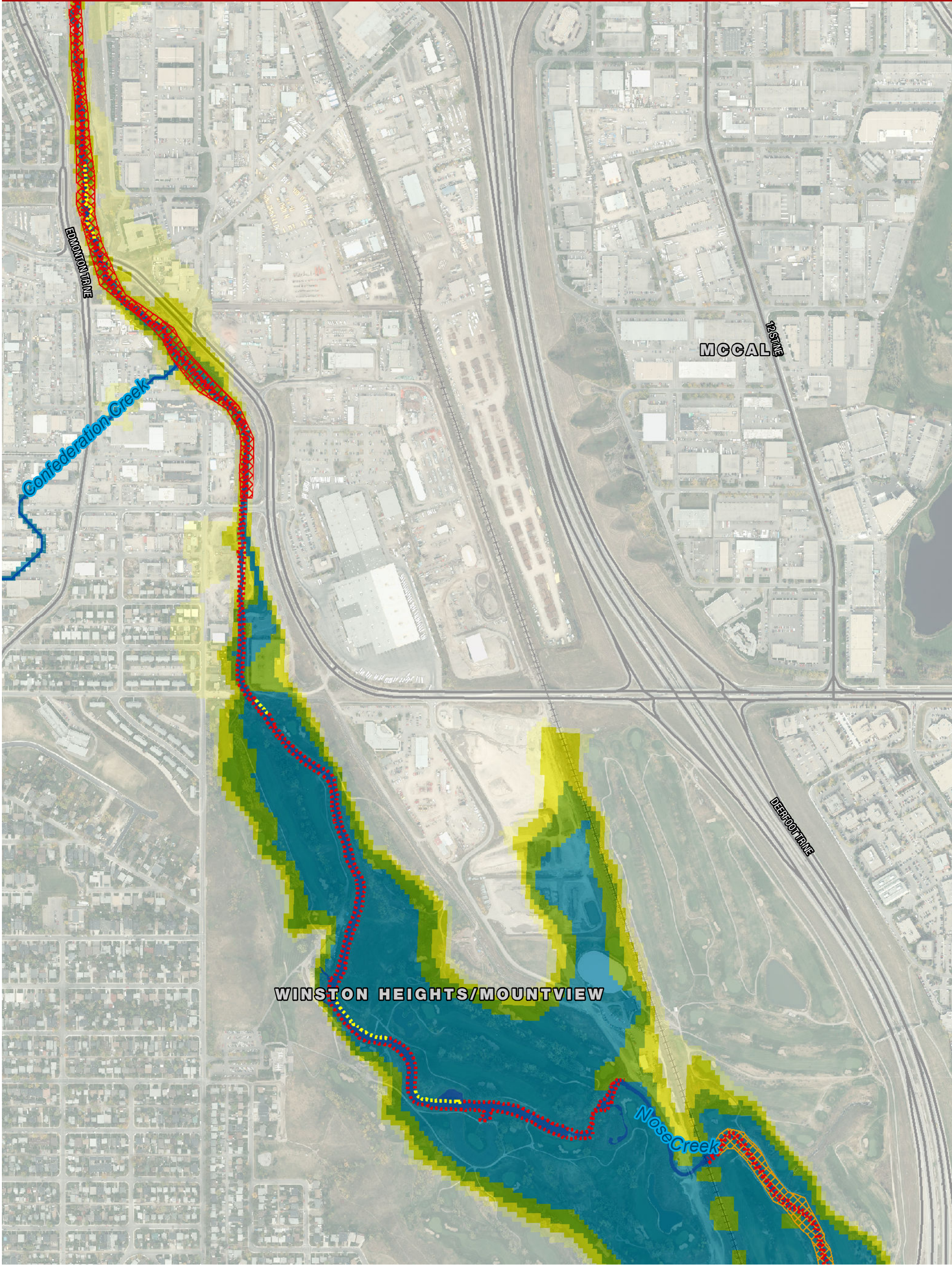
THE CITY OF
CALGARY

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


City Boundary


Major Roads

Rail

Streams

Fish Creek Provincial Park

THE CITY OF
CALGARY

O2  PLANNING + DESIGN

*Variable Width Riparian Model Outputs

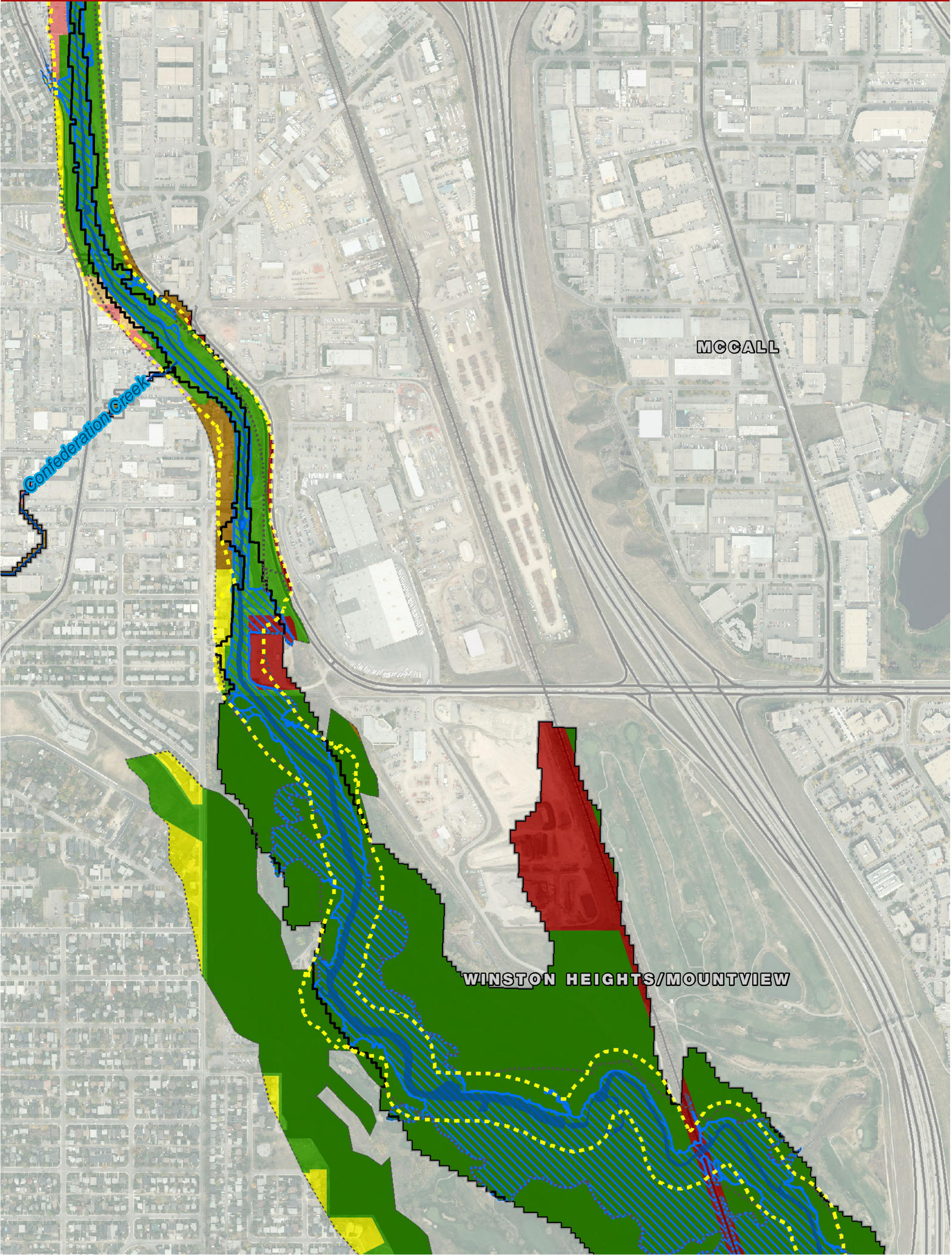
**Based on field studies of sampled riparian polygons only

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

A horizontal scale bar with markings at 0, 50, 100, 200, 300, and 400 metres.

A simple north arrow pointing upwards, with a small circle at the base.

A small inset map of the city of Calgary, showing the location of the study area in the southeast corner of the city.



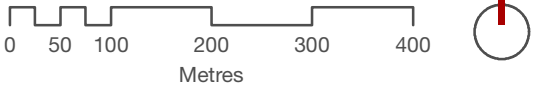
- Land Use Type**
- Commercial
 - Future Urban Development
 - Industrial
 - Institutional
 - Major Infrastructure
 - Mixed Use
 - Residential
 - Parks, Recreation and Public Education
 - Golf Course

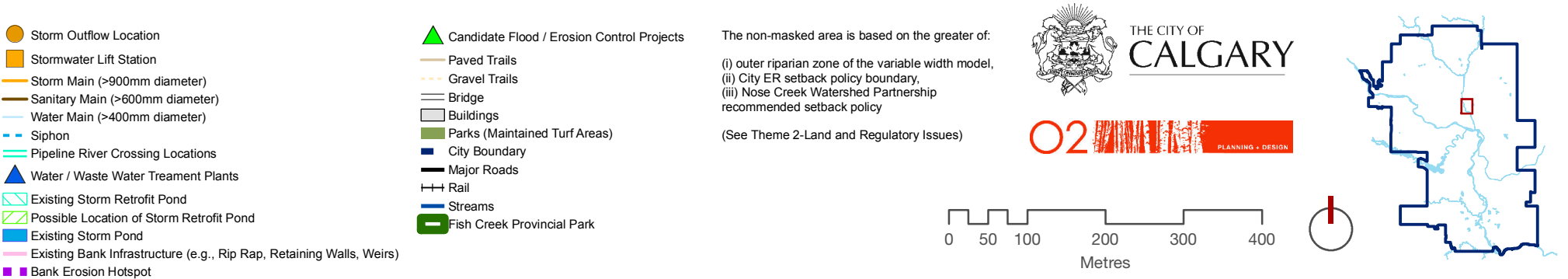
- City of Calgary ER Setback Policy*
- Nose Creek Watershed Partnership Setback**
- Floodway
- Flood Fringe
- Flood Extent - 100 Year (Nose Creek/West Nose Creek)
- Outer Riparian Zone Boundary
- Streams
- Major Roads
- Rail

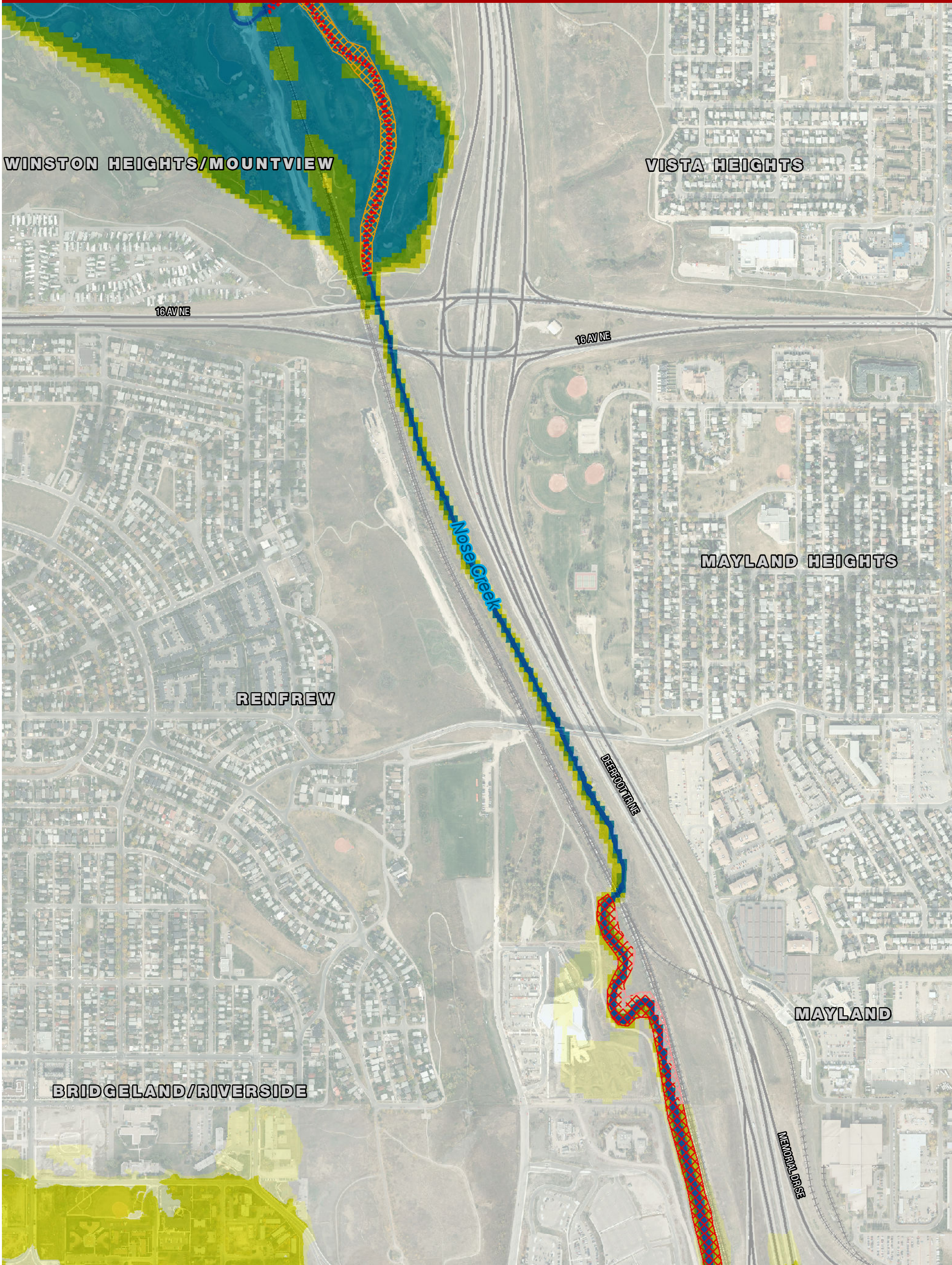
- City Boundary
- Fish Creek Provincial Park

*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 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**

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

0

50

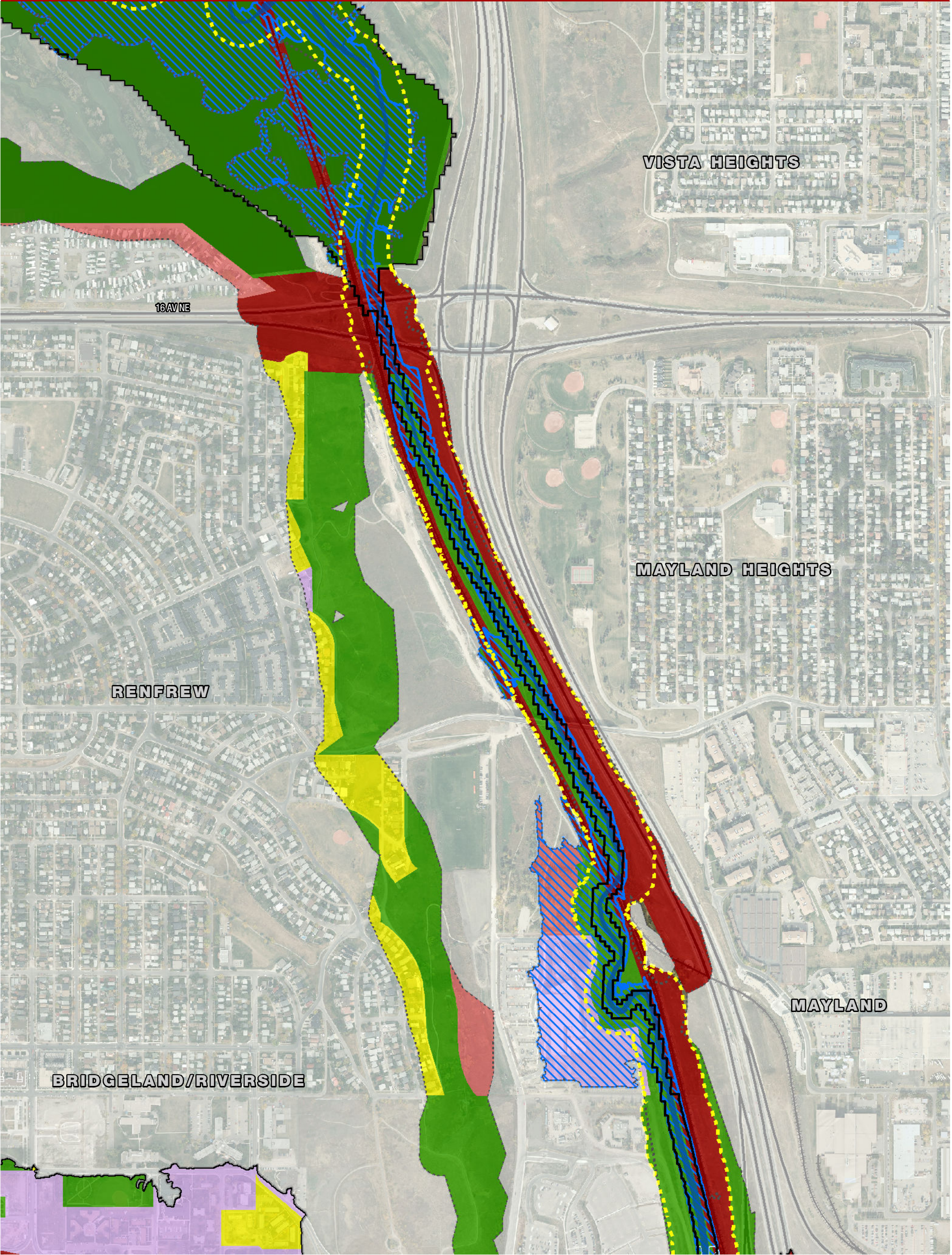
100

200

300

400

Metres



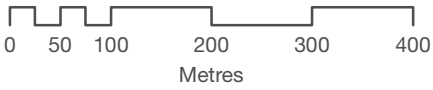
- Land Use Type**
- Commercial
 - Future Urban Development
 - Industrial
 - Institutional
 - Major Infrastructure
 - Mixed Use
 - Residential
 - Parks, Recreation and Public Education
 - Golf Course

- 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

*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%





- 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

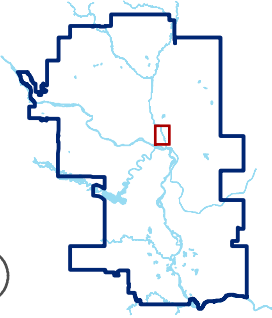
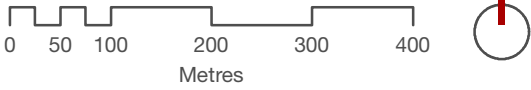
— Streams

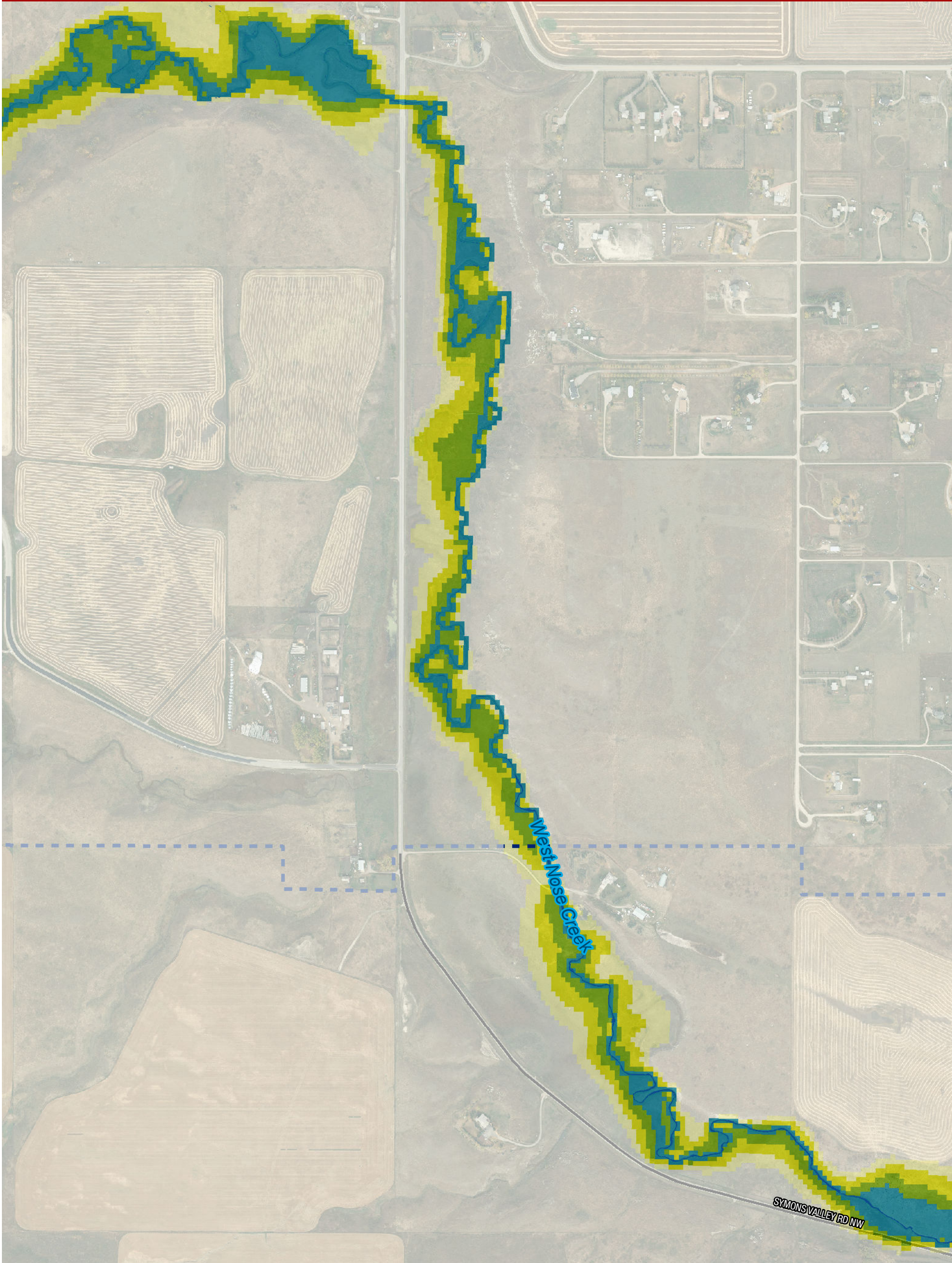
▭ Fish Creek Provincial Park

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)





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

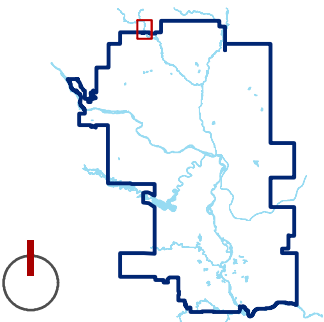
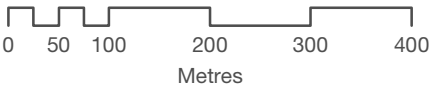
***Based on field studies of major rivers / creeks, excluding private residential riverfront lots or steep valley slopes with limited riparian habitat

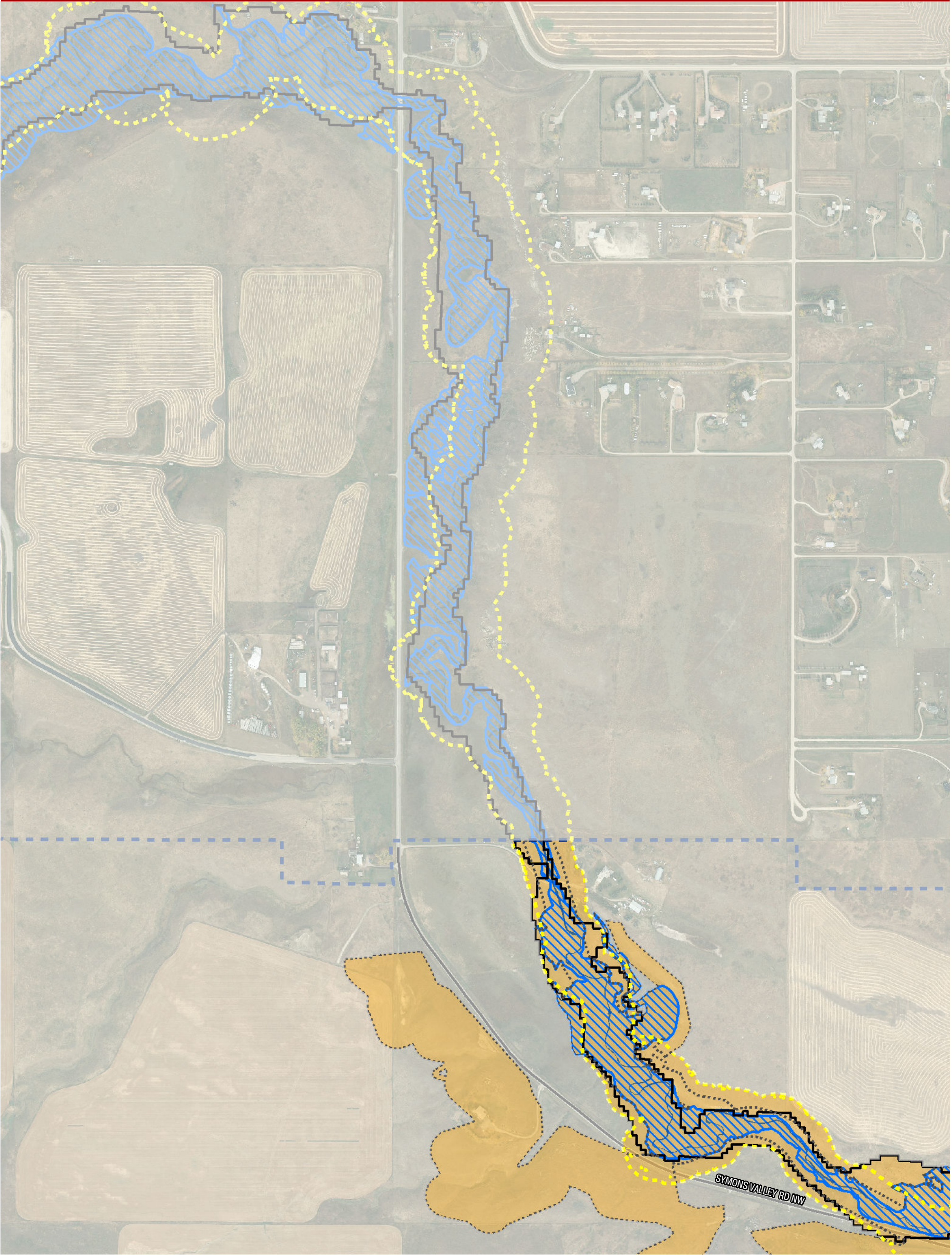
City Boundary
Major Roads
Rail
Streams
Fish Creek Provincial Park

THE CITY OF CALGARY
O2 PLANNING + DESIGN

**Based on field studies of sampled riparian polygons only

*Variable Width Riparian Model Outputs





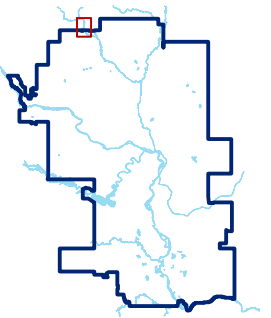
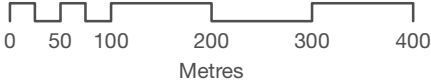
- Land Use Type**
- Commercial
 - Future Urban Development
 - Industrial
 - Institutional
 - Major Infrastructure
 - Mixed Use
 - Residential
 - Parks, Recreation and Public Education
 - Golf Course

- City of Calgary ER Setback Policy*
- Nose Creek 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

*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%



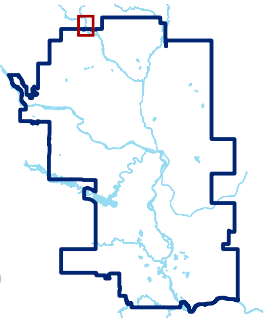
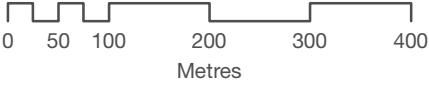


- Storm Outflow Location
- Stormwater Lift Station
- Storm Main (>900mm diameter)
- Sanitary Main (>600mm diameter)
- Water Main (>400mm diameter)
- - Siphon
- Pipeline River Crossing Locations
- ▲ Water / Waste Water Treatment Plants
- ▨ Existing Storm Retrofit Pond
- ▨ Possible Location of Storm Retrofit 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)



THE CITY OF
CALGARY





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

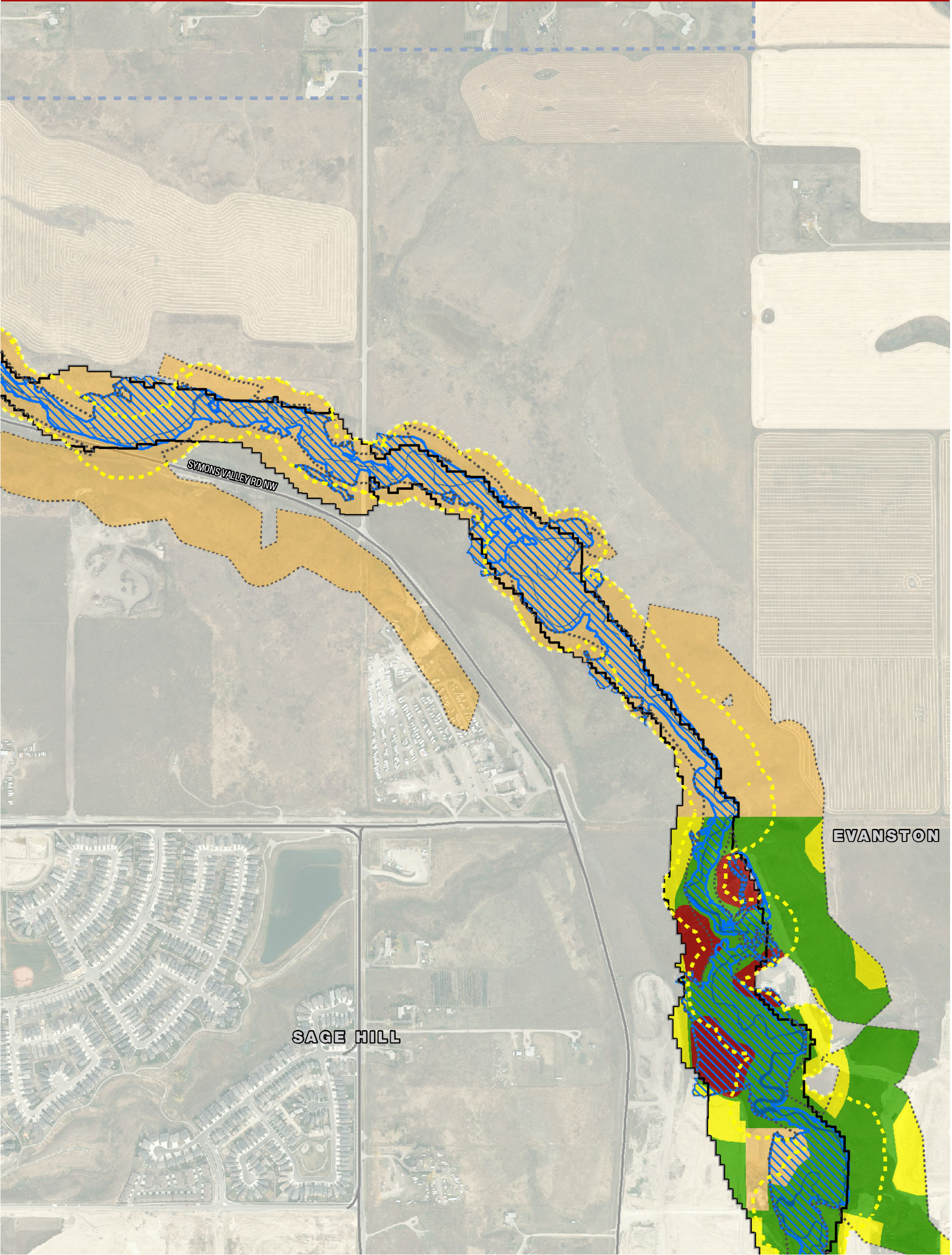
0 50 100 200 300 400 Metres

North arrow

Inset map of Calgary showing the location of the study area

*Variable Width Riparian Model Outputs

**Based on field studies of sampled riparian polygons only



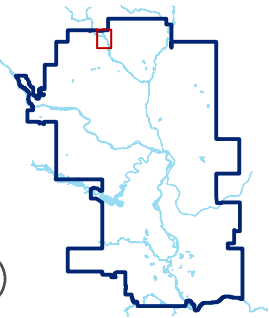
- Land Use Type**
- Commercial
 - Future Urban Development
 - Industrial
 - Institutional
 - Major Infrastructure
 - Mixed Use
 - Residential
 - Parks, Recreation and Public Education
 - Golf Course

- 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

- 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%





- 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:

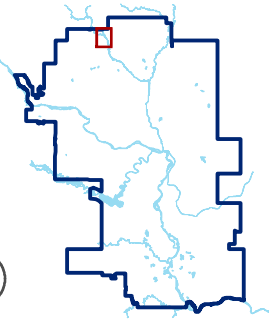
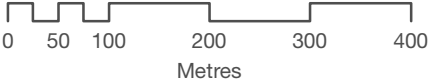
- (i) outer riparian zone of the variable width model,
- (ii) City ER setback policy boundary,
- (iii) Nose Creek Watershed Partnership recommended setback policy

(See Theme 2-Land and Regulatory Issues)



THE CITY OF
CALGARY

O2 **WATERSHED** **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

City Boundary

Major Roads

Rail

Streams

Fish Creek Provincial Park

THE CITY OF CALGARY

O2 PLANNING + DESIGN

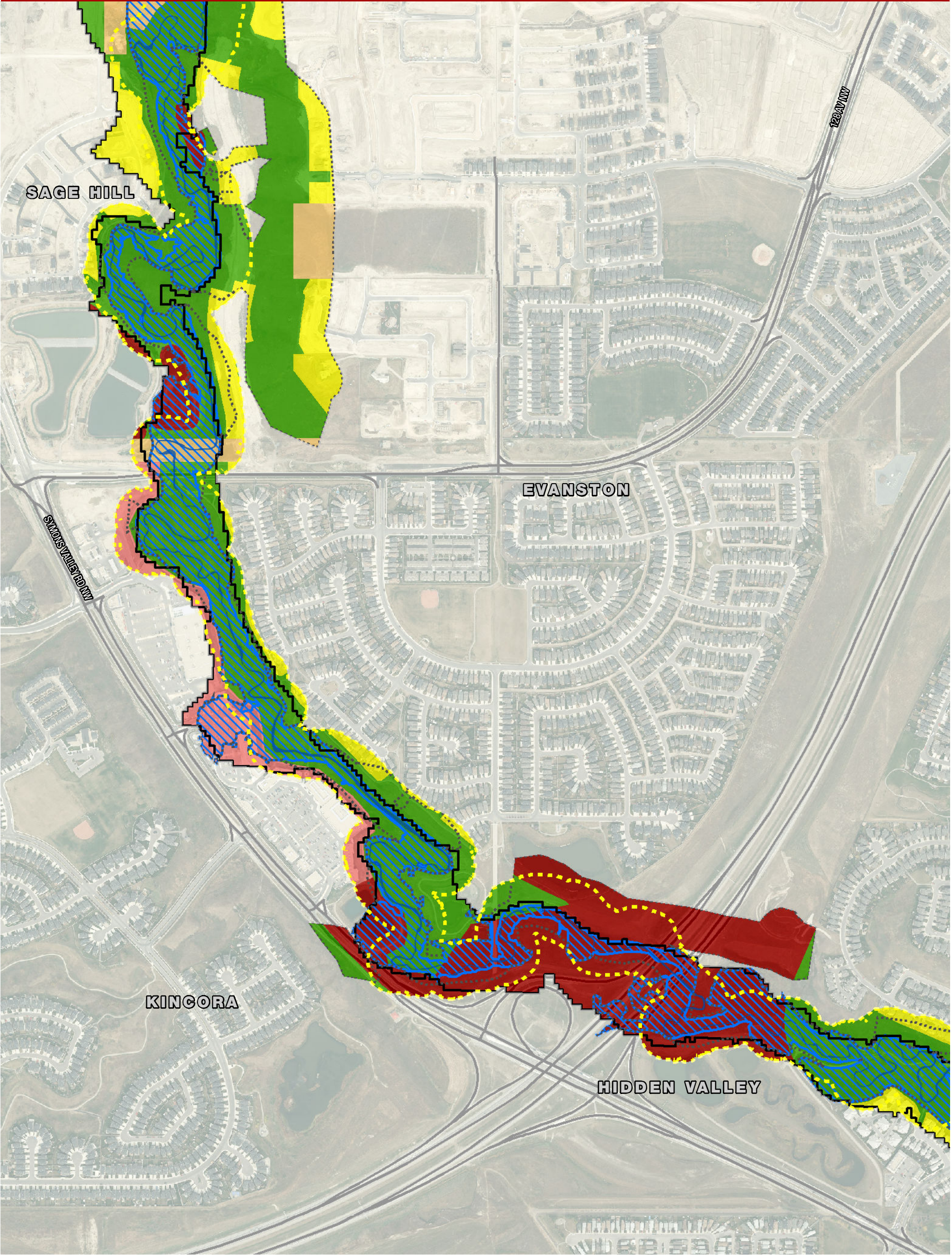
*Variable Width Riparian Model Outputs

**Based on field studies of sampled riparian polygons only

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

0 50 100 200 300 400

Metres



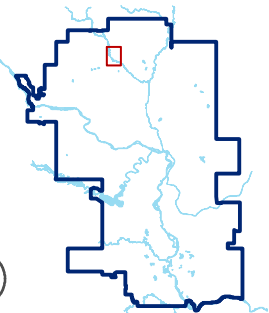
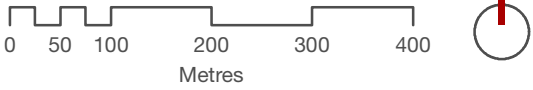
- Land Use Type**
- Commercial
 - Future Urban Development
 - Industrial
 - Institutional
 - Major Infrastructure
 - Mixed Use
 - Residential
 - Parks, Recreation and Public Education
 - Golf Course

- 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

*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%





● 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)

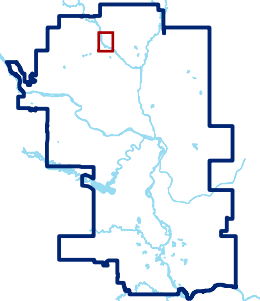
THE CITY OF
CALGARY

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

City Boundary

Major Roads

Rail

Streams

Fish Creek Provincial Park

THE CITY OF CALGARY

O2

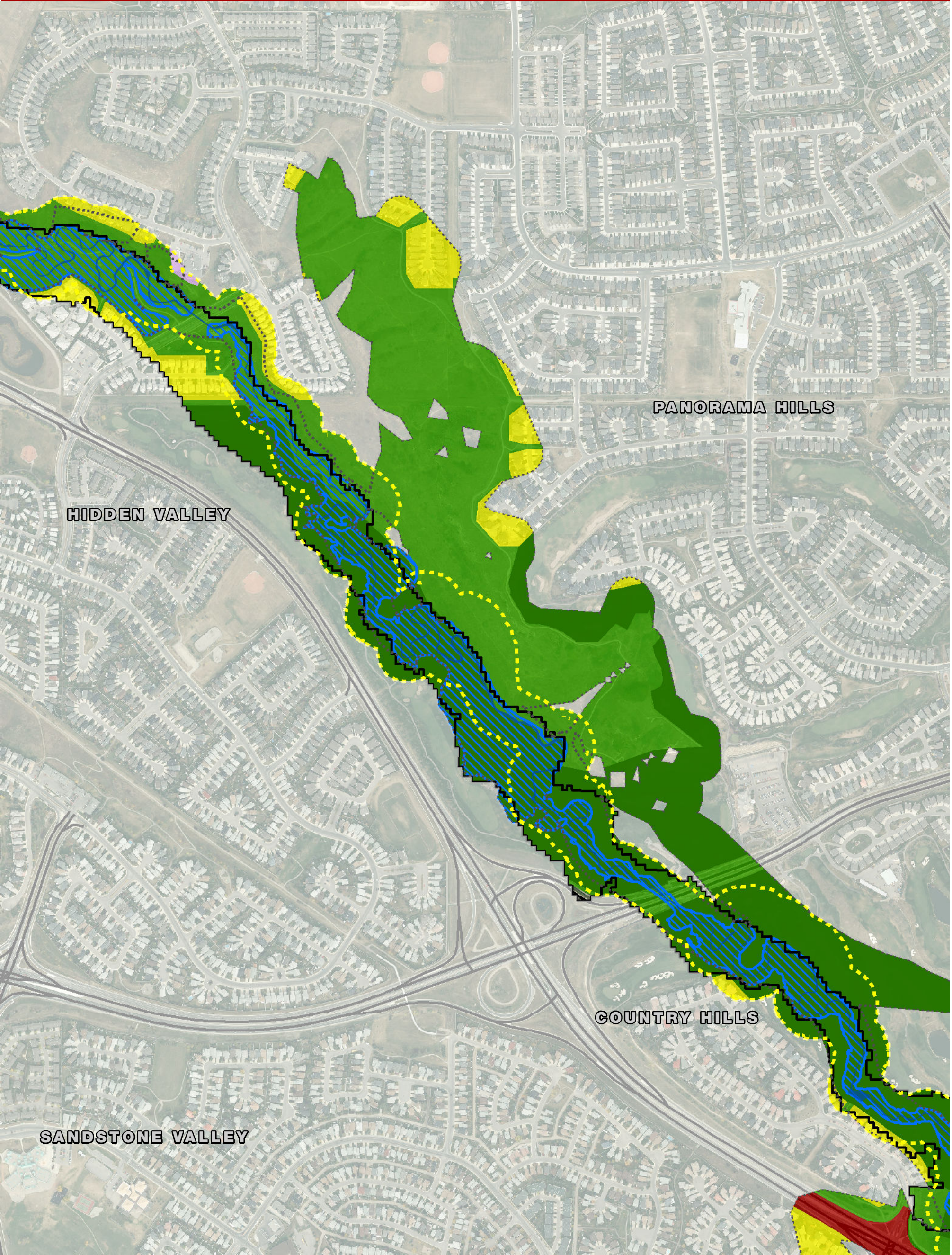
PLANNING + DESIGN

*Variable Width Riparian Model Outputs

**Based on field studies of sampled riparian polygons only

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


*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%




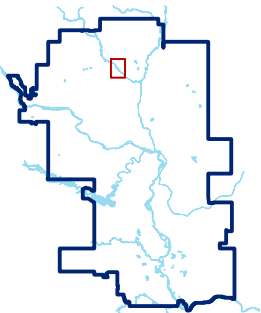
THE CITY OF
CALGARY

O2  **PLANNING + DESIGN**



0 50 100 200 300 400
Metres





RIPARIAN AREAS
MAP PROJECT

EXISTING INFRASTRUCTURE AND POSSIBLE IMPROVEMENTS
WEST NOSE CREEK 04



- 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

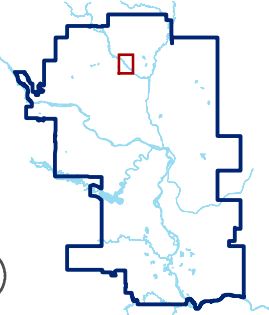
Streams

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)





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

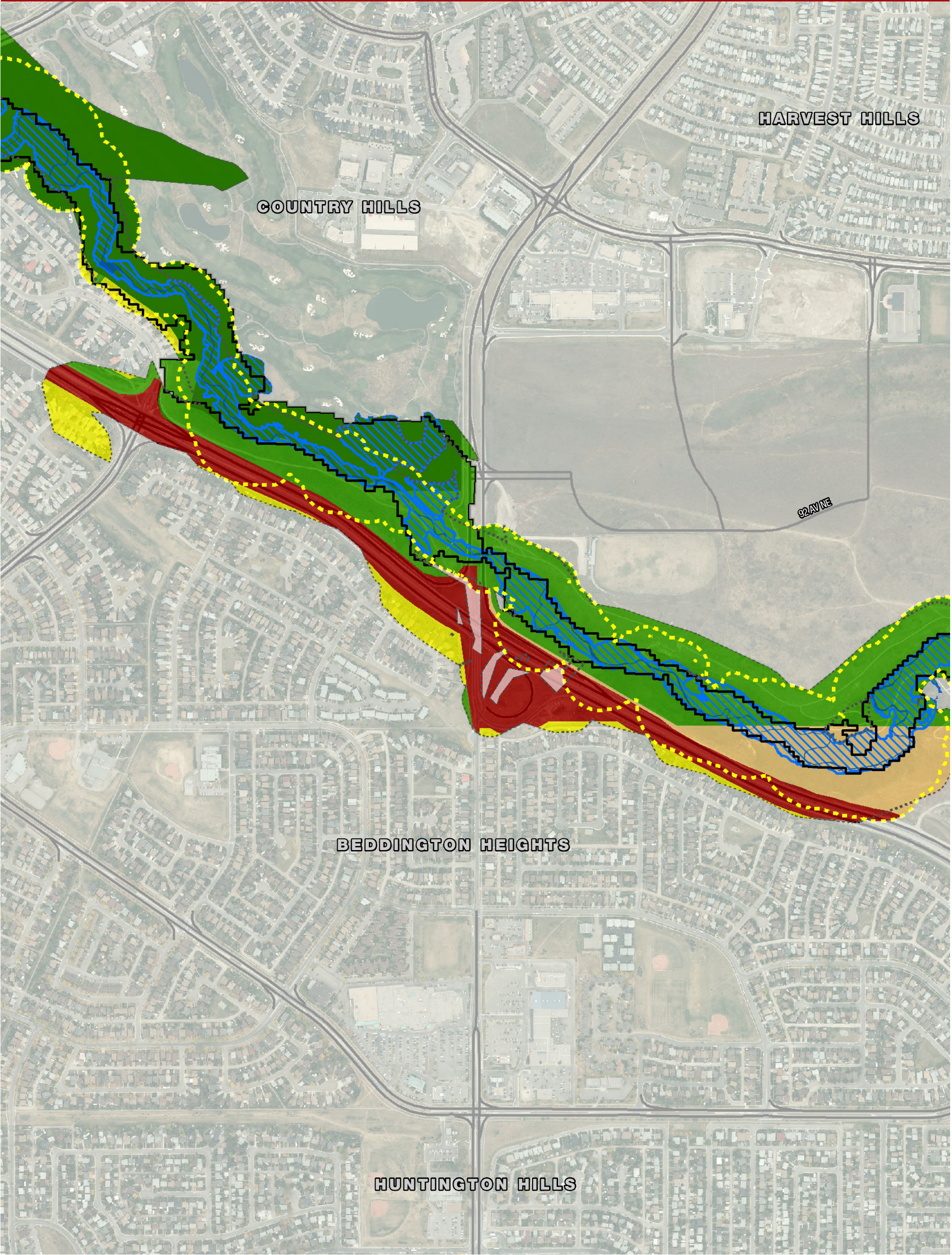
O2 **PLANNING + DESIGN**

Variable Width Riparian Model Outputs

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

0 50 100 200 300 400 Metres

North Arrow



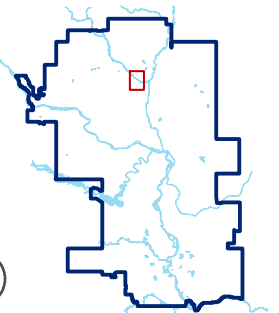
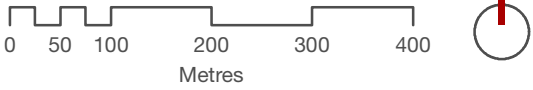
- Land Use Type**
- Commercial
 - Future Urban Development
 - Industrial
 - Institutional
 - Major Infrastructure
 - Mixed Use
 - Residential
 - Parks, Recreation and Public Education
 - Golf Course

- 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

*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%





- 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)



THE CITY OF
CALGARY

