



MAP SET (File 2)

River Valleys Groundwater Study

The City of Calgary

FINAL REPORT



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Annual High River Flow

Groundwater Depth and Building Risk Factors (P90)

Annual High River Flow

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1 in 10 Year Flood

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1 in 20 Year Flood

Groundwater Depth and Building Risk Factors (Calibrated Model)

1 in 50 Year Flood

Groundwater Depth and Building Risk Factors (Calibrated Model)

1 in 100 Year Flood

Groundwater Depth and Building Risk Factors (Calibrated Model)

1 in 200 Year Flood

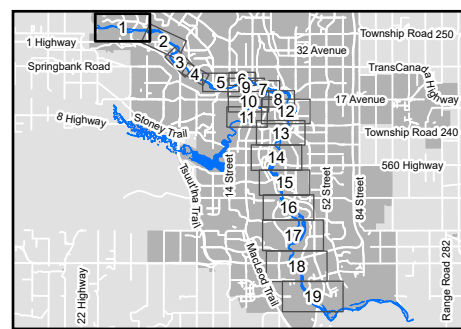
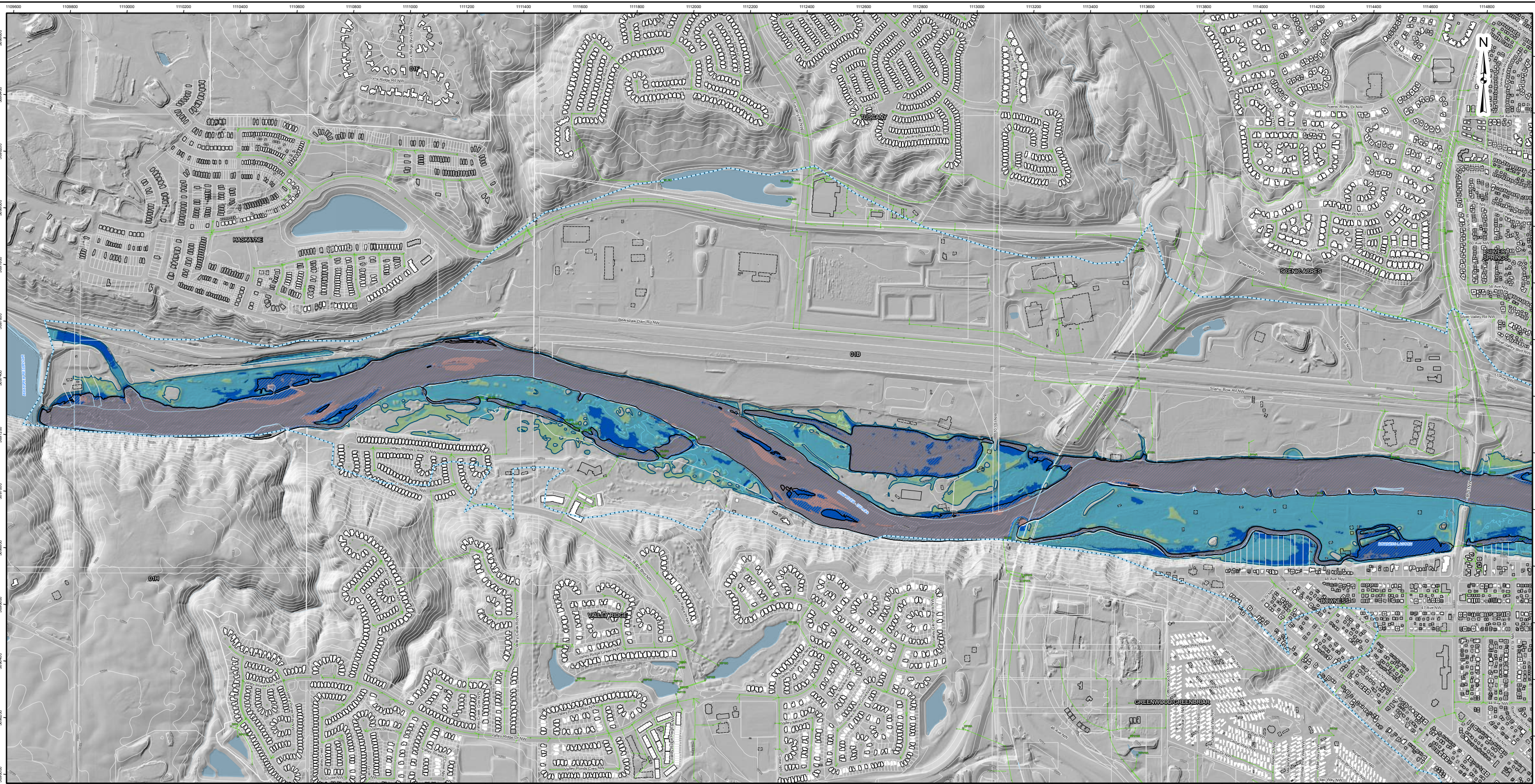
Groundwater Depth and Building Risk Factors (P90)

1 in 100 Year Flood

Groundwater Depth and Building Risk Factors (Calibrated Model)

Annual High River Flow

- | | | | |
|-----|----------------------------|-----|------------------------|
| 1. | Valley Ridge | 11. | Lower Elbow |
| 2. | Bowness | 12. | Inglewood – Bonnybrook |
| 3. | Montgomery | 13. | Bonnybrook |
| 4. | Point McKay | 14. | Deerfoot Meadows |
| 5. | Hillhurst / West Hillhurst | 15. | Riverbend/Quarry Park |
| 6. | Sunnyside | 16. | Douglasdale |
| 7. | East Village / Bridgeland | 17. | Fish Creek |
| 8. | Inglewood | 18. | South Stoney Trail |
| 9. | Downtown | 19. | Pine Creek/Cranston |
| 10. | Beltline | | |



LEGEND

- Building Footprint
- Pre-1990 Building Construction
- Below Grade Space
- Building Information Missing
- Non-Residential Building / Building Outside Scope
- Parcel
- Community District
- Alluvial Aquifer / Model Domain
- Waterbody

- Manhole
- Outfall
- Storm Network
- 3m Depth Threshold
- Flood Control Structure
- Sunnyside Seepage Collection
- Contours - 5m

Estimated Depth to Groundwater

- Below 3m
- 3m to 2.4m
- 2.4m to 1.2m
- 0m to 1.2m
- Above Ground Surface

Flood Inundation Area (2-Year)

- Directly Flooded

NOTES

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FIGURE 3.2 GROUNDWATER DEPTH & BUILDING RISK FACTORS (CALIBRATED MODEL) - ANNUAL HIGH FLOW 1 - VALLEY RIDGE

PROJECT

CALGARY RIVER VALLEYS GROUNDWATER STUDY

PROJECTION

NAD 1983 CSRS 3TM 114

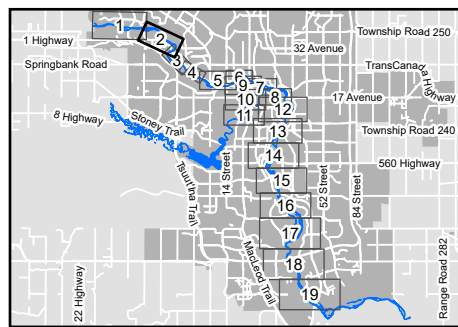
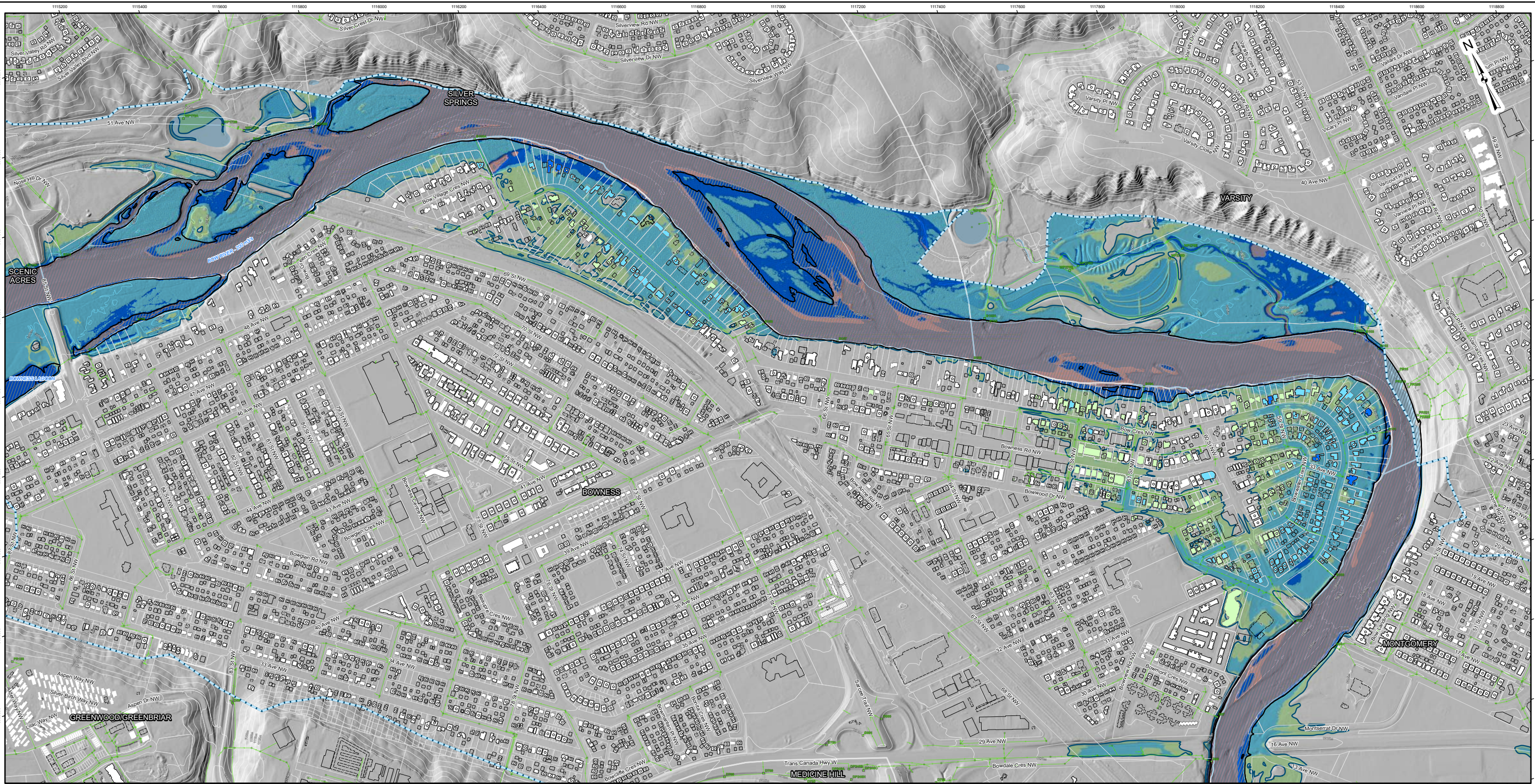
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Meters

SCALE 1:13,500

DATE 8/14/2026

AUTHOR TDaSilva





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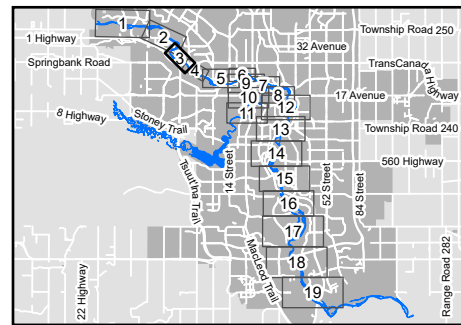
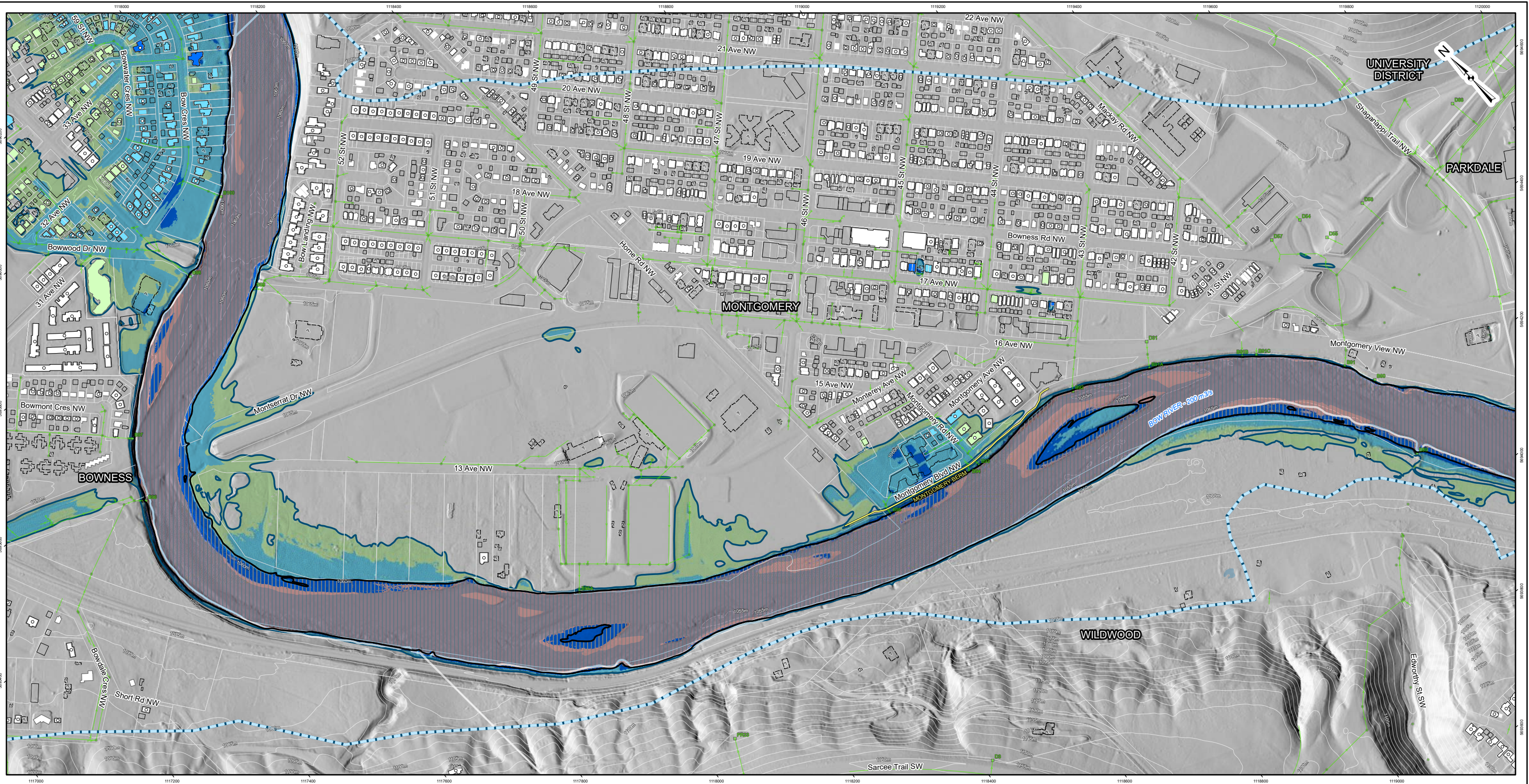
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GROUNDWATER DEPTH & BUILDING RISK FACTORS (CALIBRATED MODEL) - ANNUAL HIGH RIVER FLOW
2 - BOWNESS

PROJECT
CALGARY RIVER VALLEYS GROUNDWATER STUDY

PROJECTION
NAD 1983 CSRS 3TM 114
SCALE 1:10,000
DATE 8/14/2026
AUTHOR TDaSilva





LEGEND

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3 - MONTGOMERY

PROJECT

CALGARY RIVER VALLEYS GROUNDWATER STUDY

PROJECTION

NAD 1983 CSRS 3TM 114

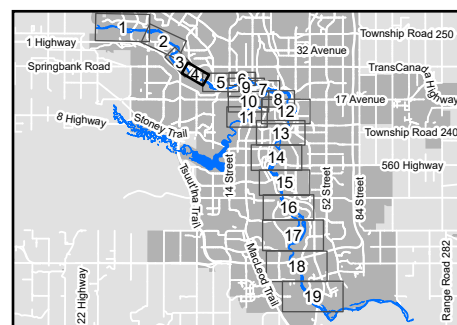
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SCALE 1:7,000

DATE 8/14/2026

AUTHOR TDaSilva





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PROJECT
CALGARY RIVER VALLEYS GROUNDWATER STUDY

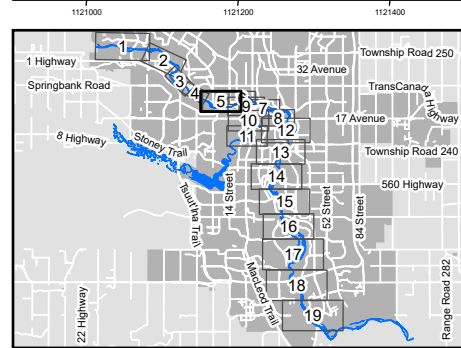
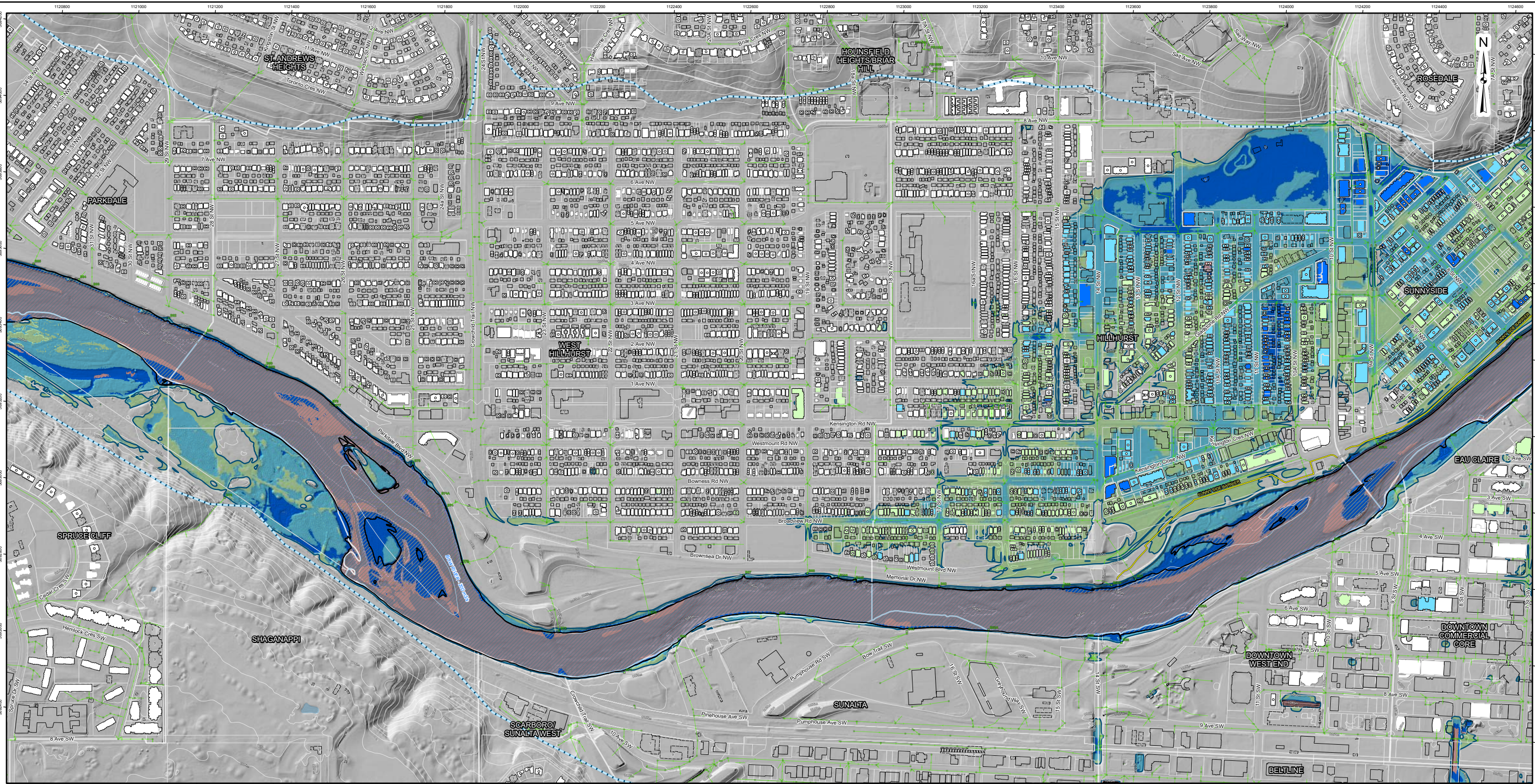
PROJECTION
NAD 1983 CSRS 3TM 114

SCALE 1:6,000

DATE 8/14/2026

AUTHOR TDaSilva





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FIGURE 3.2
GROUNDWATER DEPTH & BUILDING RISK FACTORS (CALIBRATED MODEL) - ANNUAL HIGH RIVER FLOW
5 - HILLHURST / WEST HILLHURST

PROJECT
CALGARY RIVER VALLEYS GROUNDWATER STUDY

PROJECTION
NAD 1983 CSRS 3TM 114

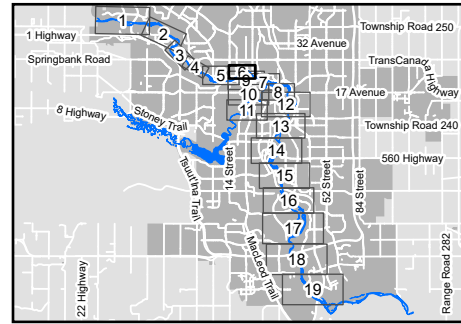
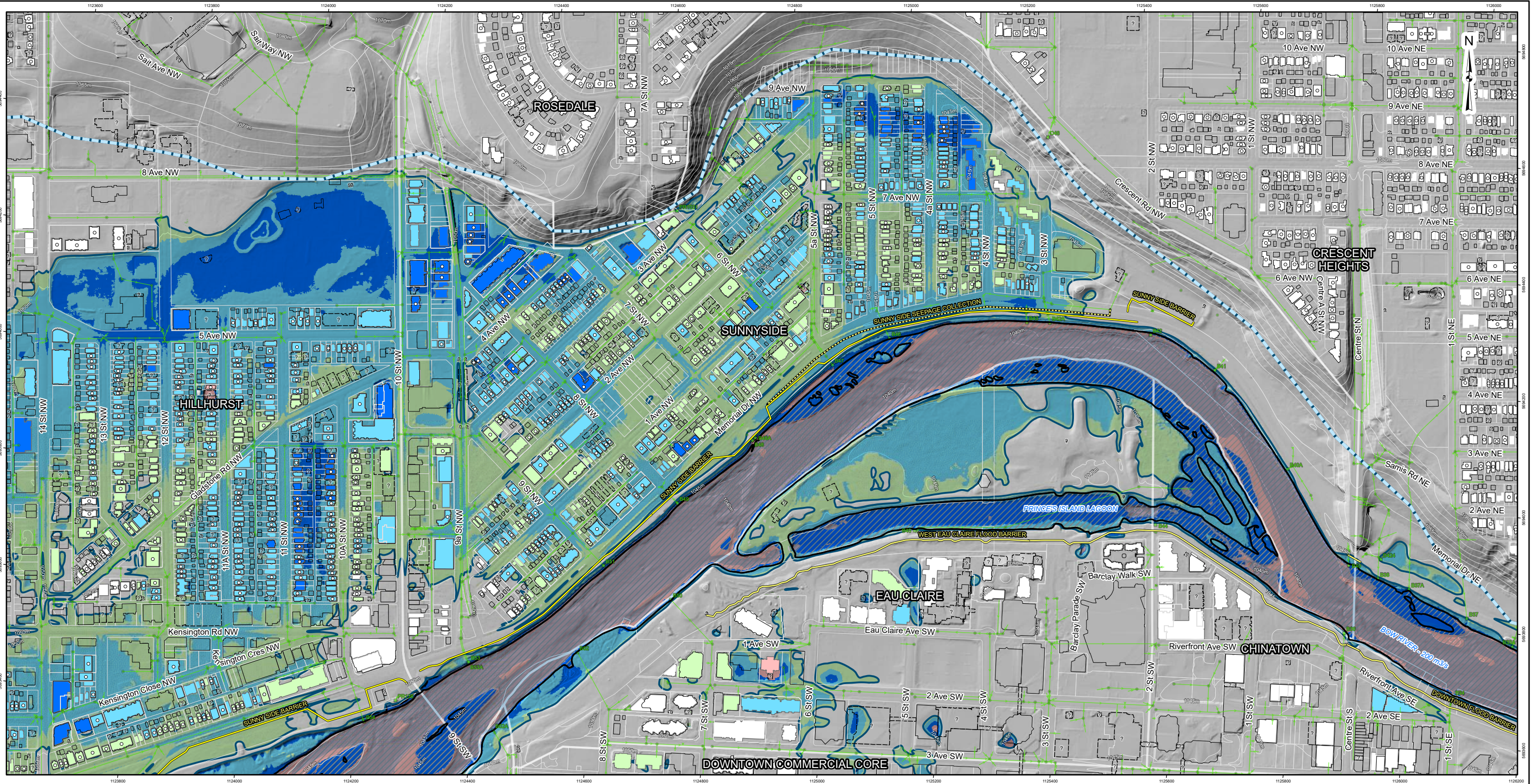
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SCALE 1:10,000

DATE 8/14/2026

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FIGURE 3.2
GROUNDWATER DEPTH & BUILDING RISK FACTORS (CALIBRATED MODEL) - ANNUAL HIGH RIVER FLOW
6 - SUNNYSIDE

PROJECT
CALGARY RIVER VALLEYS GROUNDWATER STUDY

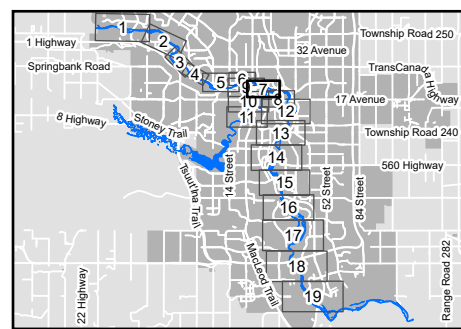
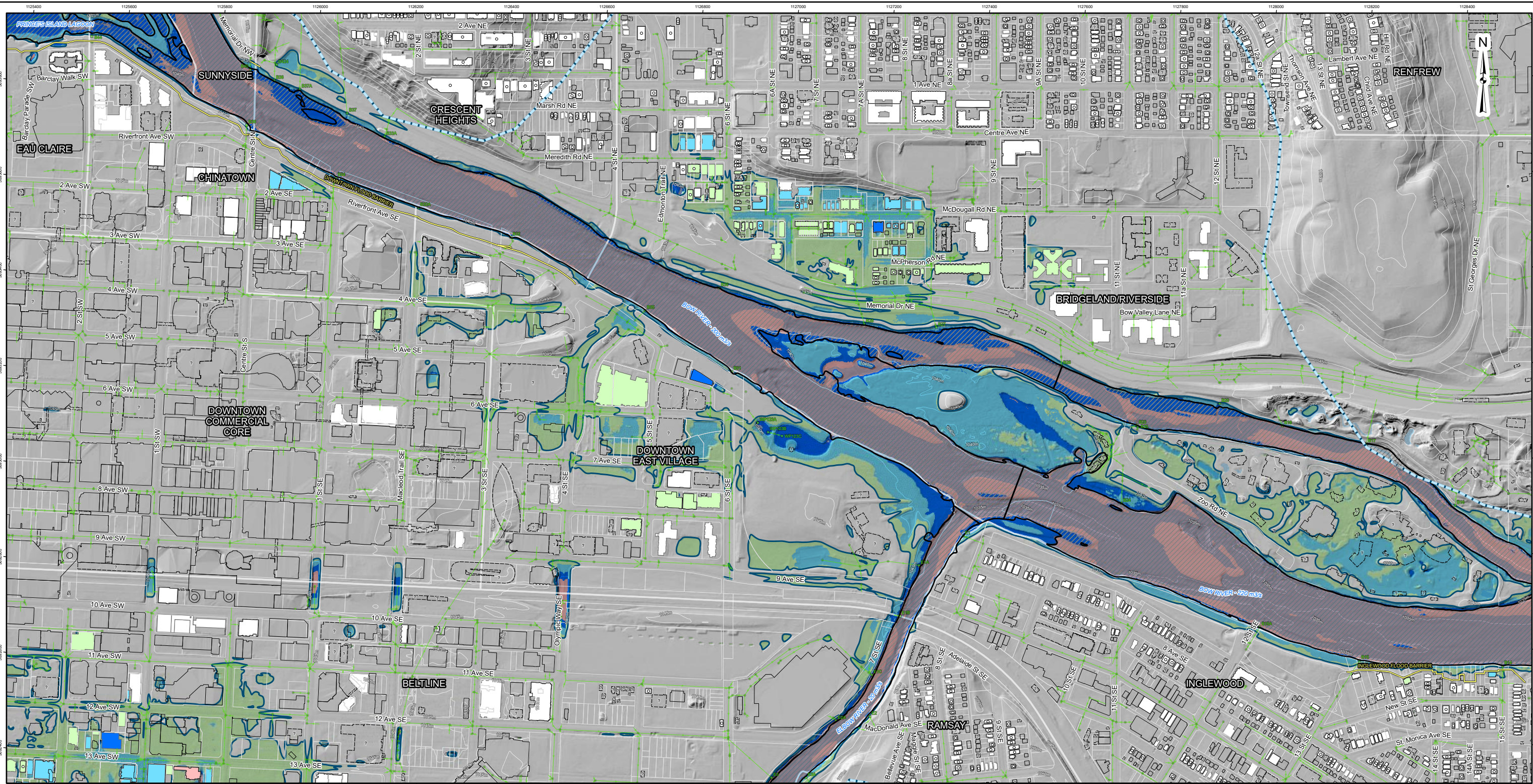
PROJECTION
NAD 1983 CSRS 3TM 114

SCALE 1:6,500

DATE 8/14/2026

AUTHOR TDaSilva





LEGEND

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7 - EAST VILLAGE / BRIDGELAND

PROJECT
CALGARY RIVER VALLEYS GROUNDWATER STUDY

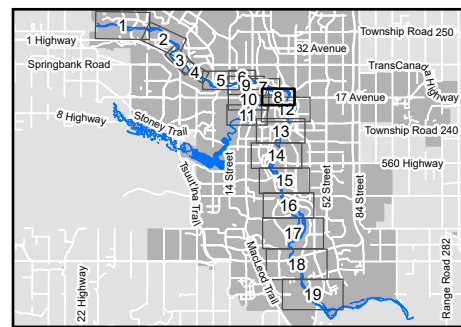
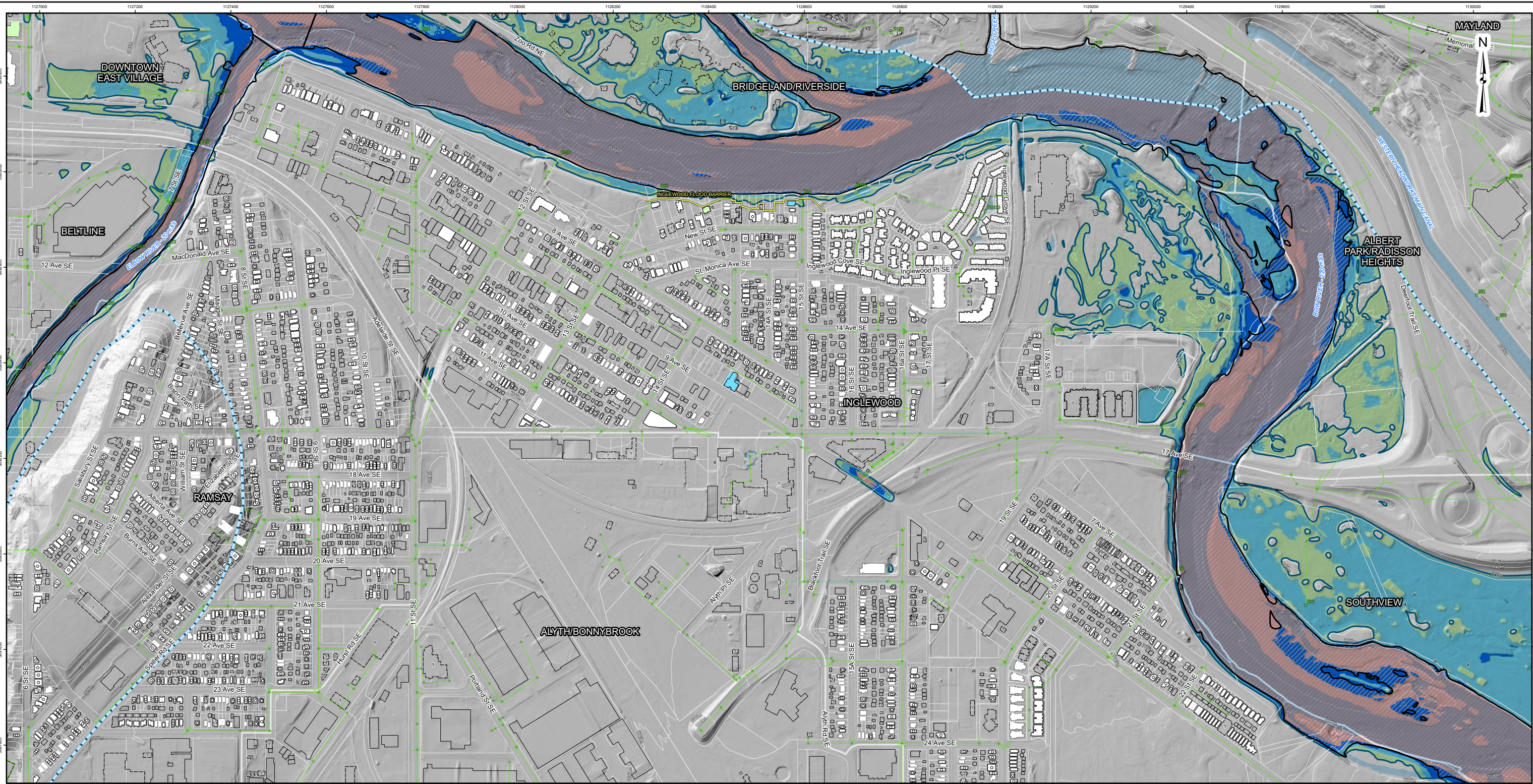
PROJECTION
NAD 1983 CSRS 3TM 114

SCALE 1:8,000

DATE 8/14/2026

AUTHOR TDaSilva





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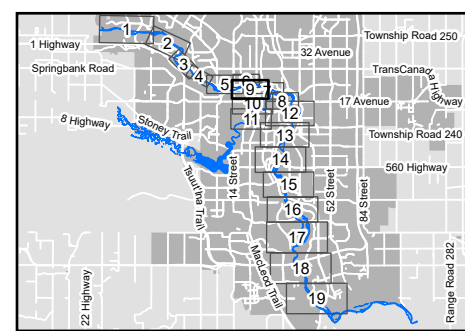
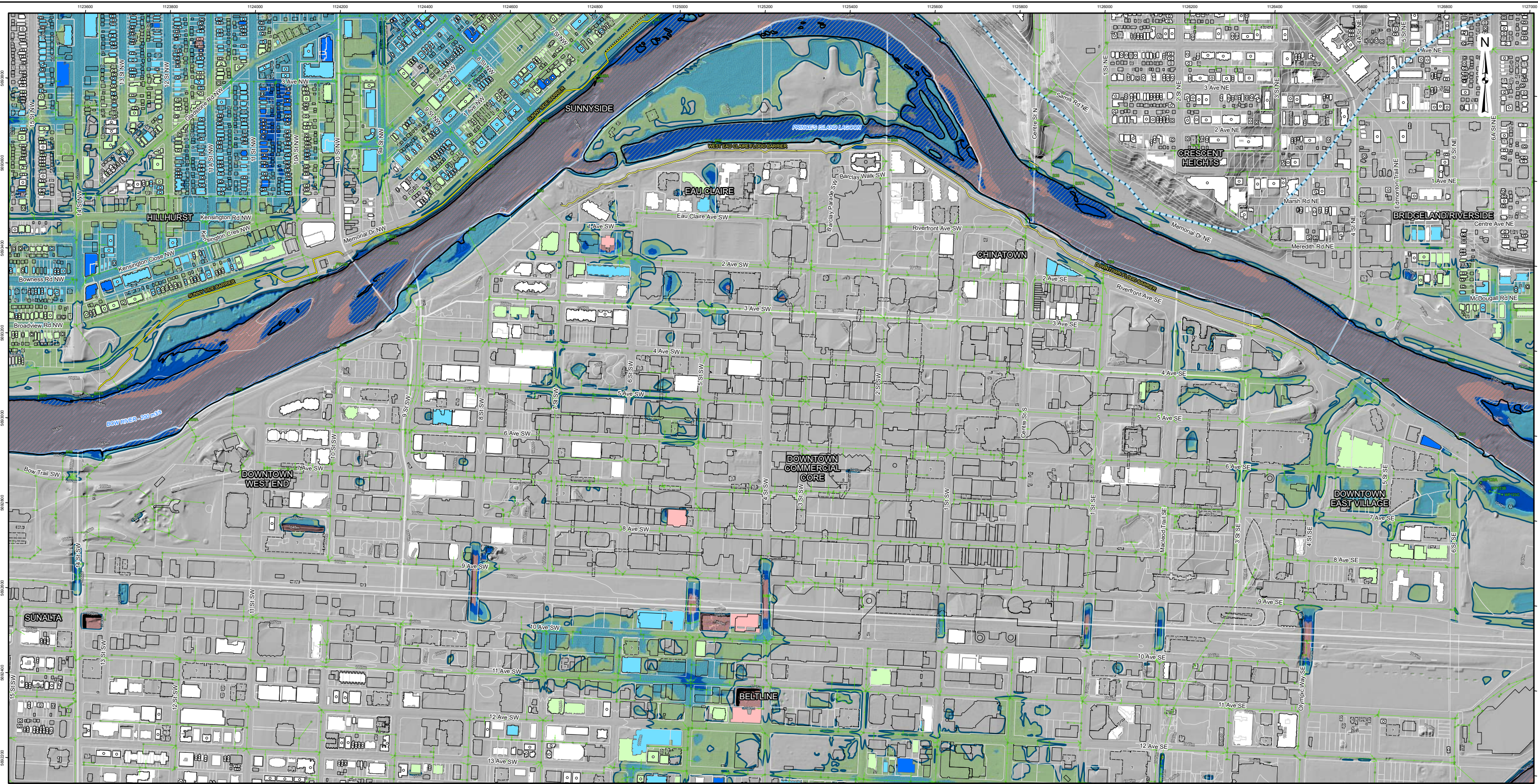
FIGURE 3.2
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8 - INGLEWOOD

PROJECT
CALGARY RIVER VALLEYS GROUNDWATER STUDY

PROJECTION
NAD 1983 CSRS 3TM 114

SCALE 1:8,000 DATE 8/14/2026 AUTHOR TDaSilva





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9 - DOWNTOWN

PROJECT
CALGARY RIVER VALLEYS GROUNDWATER STUDY

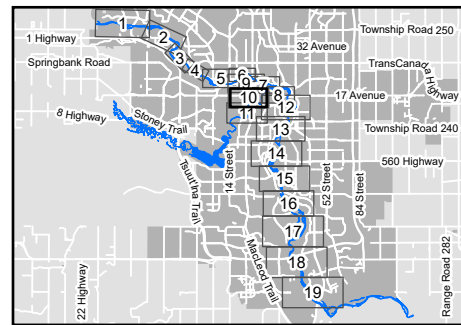
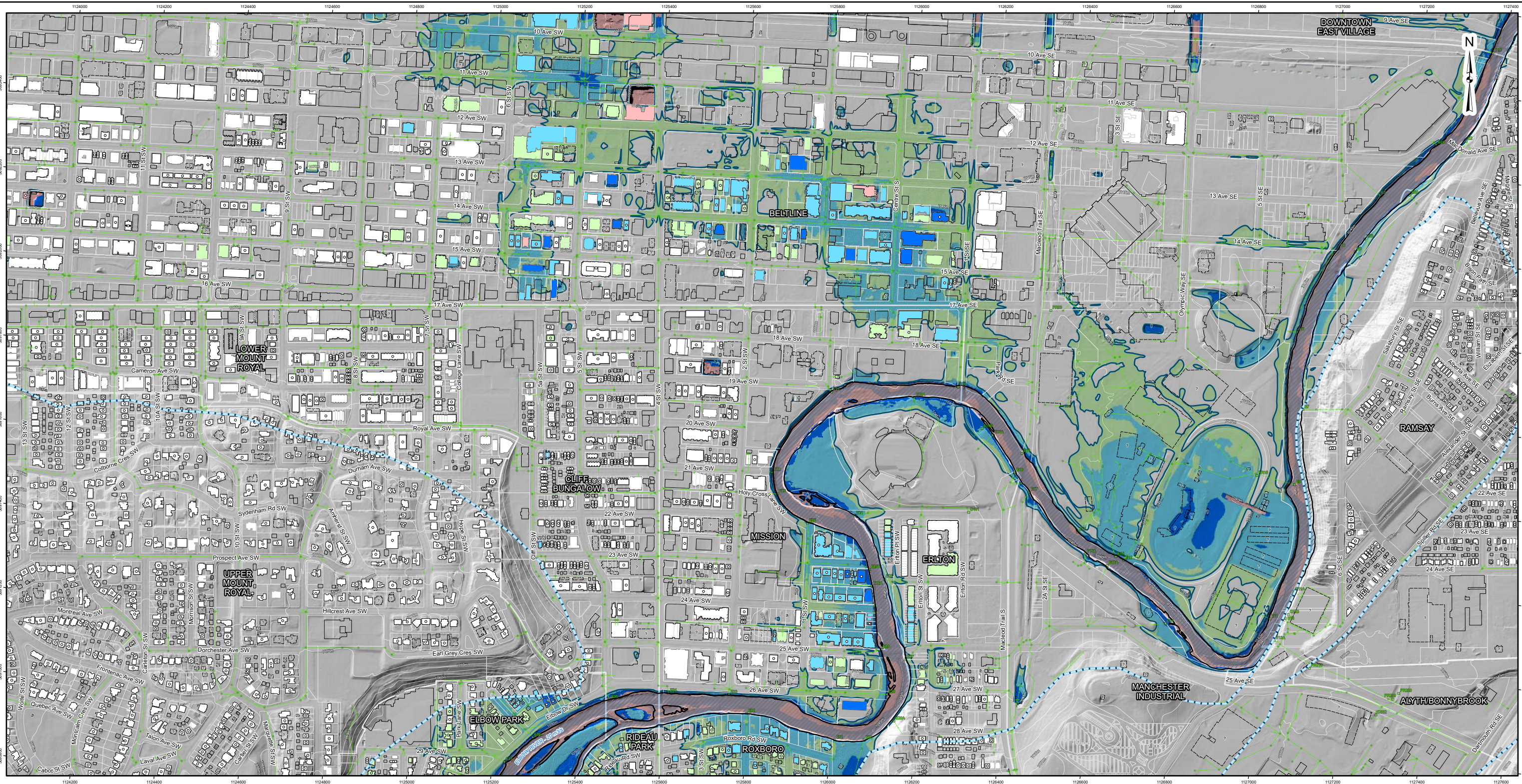
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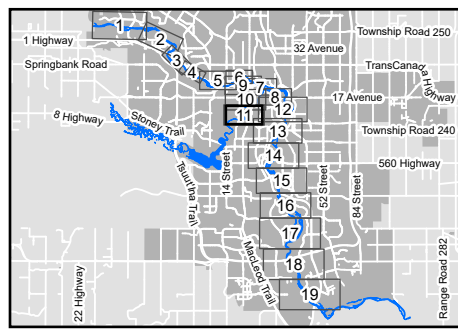
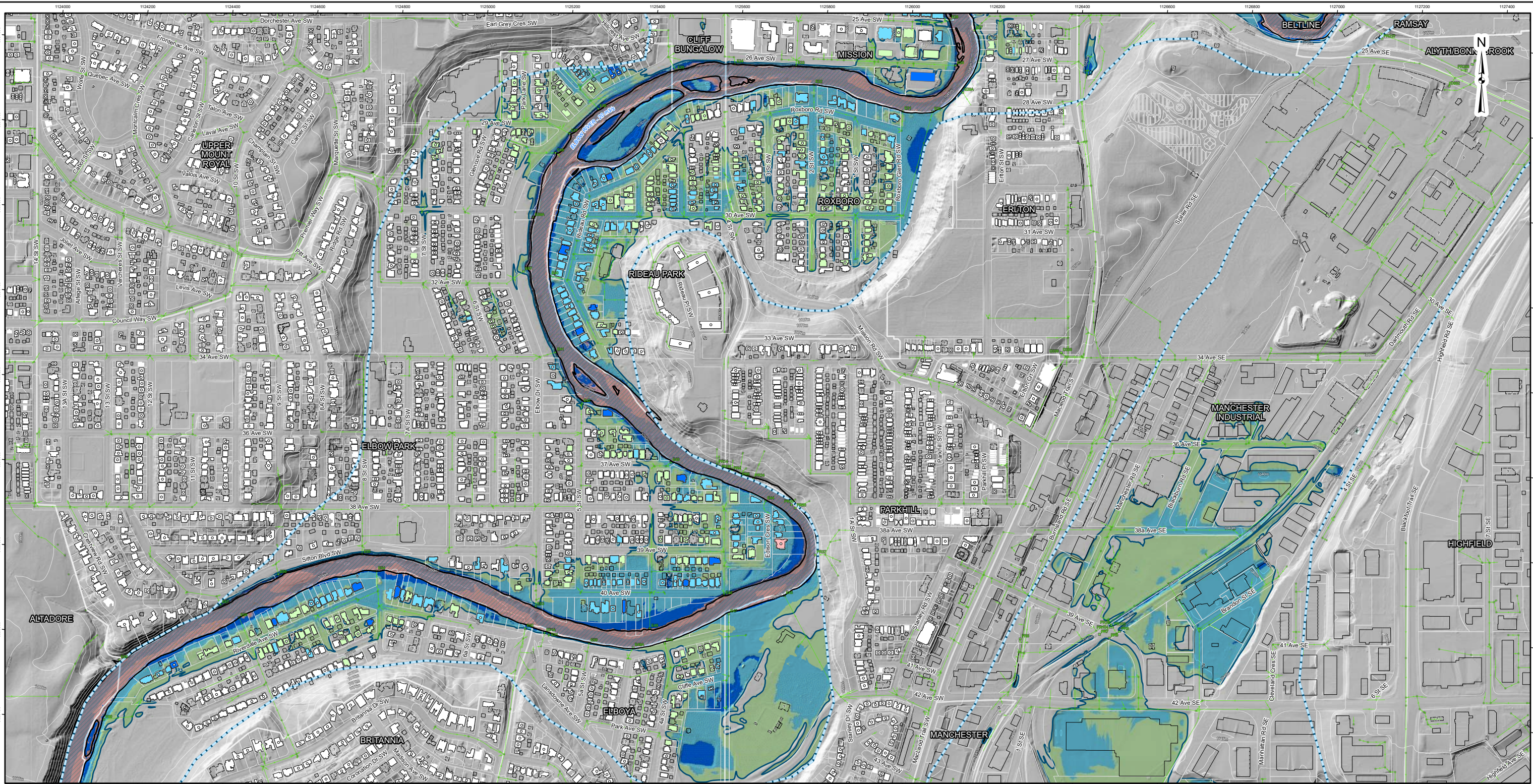
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GROUNDWATER DEPTH & BUILDING RISK FACTORS (CALIBRATED MODEL) - ANNUAL HIGH RIVER FLOW
11 - LOWER ELBOW

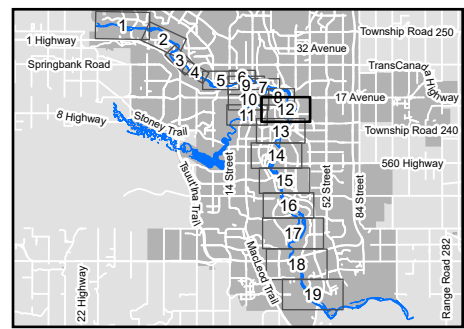
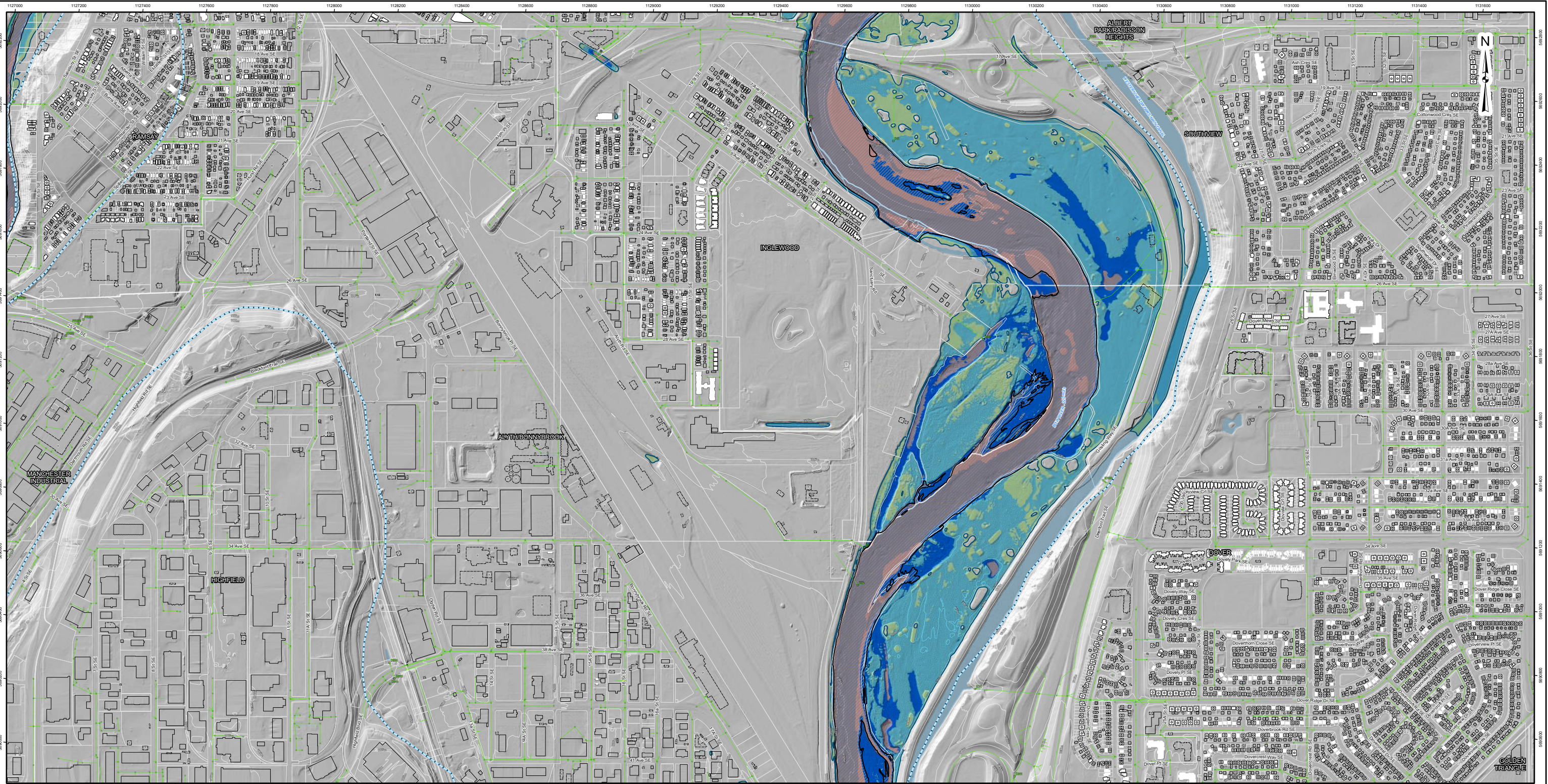
PROJECT
CALGARY RIVER VALLEYS GROUNDWATER STUDY

PROJECTION
NAD 1983 CSRS 3TM 114

SCALE 1:9,000 DATE 8/14/2026 AUTHOR TDaSilva

0 50 100 Meters





LEGEND

- Building Footprint
- Pre-1990 Building Construction
- Below Grade Space
- Building Information Missing
- Non-Residential Building / Building Outside Scope
- Parcel
- Community District
- Alluvial Aquifer / Model Domain
- Waterbody
- Manhole
- Outfall
- Storm Network
- 3m Depth Threshold
- Flood Control Structure
- Sunnyside Seepage Collection
- Contours - 5m

Estimated Depth to Groundwater

- Below 3m
- 3m to 2.4m
- 2.4m to 1.2m
- 0m to 1.2m
- Above Ground Surface
- Flood Inundation Area (2-Year)
- Directly Flooded

NOTES

- Pre-1990 buildings are more susceptible to groundwater due to lack of reinforcement requirements before 1990. Implementation of reinforcement basement structures may vary since inception of code requirements.
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- Groundwater depth is compared between the modelled water elevations and the LiDAR data elevation.

DATA SOURCES

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- Overland flood hazard area data provided from Golder Associates (WSP) Bow and Elbow River Hazard Study (2023)

FIGURE 3.2
GROUNDWATER DEPTH & BUILDING RISK FACTORS (CALIBRATED MODEL) - ANNUAL HIGH RIVER FLOW
12 - INGLEWOOD - BONNYBROOK

PROJECT
CALGARY RIVER VALLEYS GROUNDWATER STUDY
PROJECTION
NAD 1983 CSRS 3TM 114
SCALE 1:12,000
DATE 8/14/2026
AUTHOR TDaSilva





-  Building Footprint
-  Pre-1990 Building Construction
-  Below Grade Space
-  Building Information Missing
-  Non-Residential Building / Building Outside Scope
-  Parcel
-  Community District
-  Alluvial Aquifer / Model Domain
-  Waterbody

- Manhole
- Outfall
- Storm Network
- 3m Depth Threshold
- Flood Control Structure
- Sunnyside Seepage Collection
- Contours - 5m

Estimated Depth to Groundwater

- Below 3m
3m to 2.4m
2.4m to 1.2m
0m to 1.2m
Above Ground Surface

Flood Inundation Area (2-Year)

-
- Directly Flooded

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FIGURE 3.2
GROUNDWATER DEPTH & BUILDING RISK FACTORS (CALIBRATED
MODEL) - ANNUAL HIGH RIVER FLOW
13 - BONNYBROOK

PROJECT

CALGARY RIVER VALLEYS GROUNDWATER STUDY

PROJECTION

NAD 1983 CSRS 3TM 114

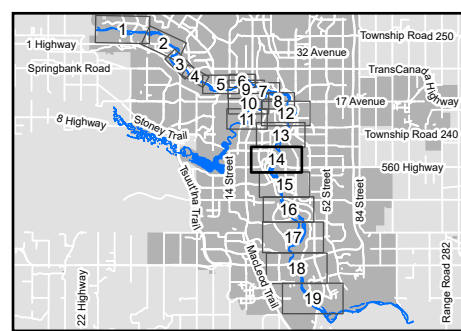
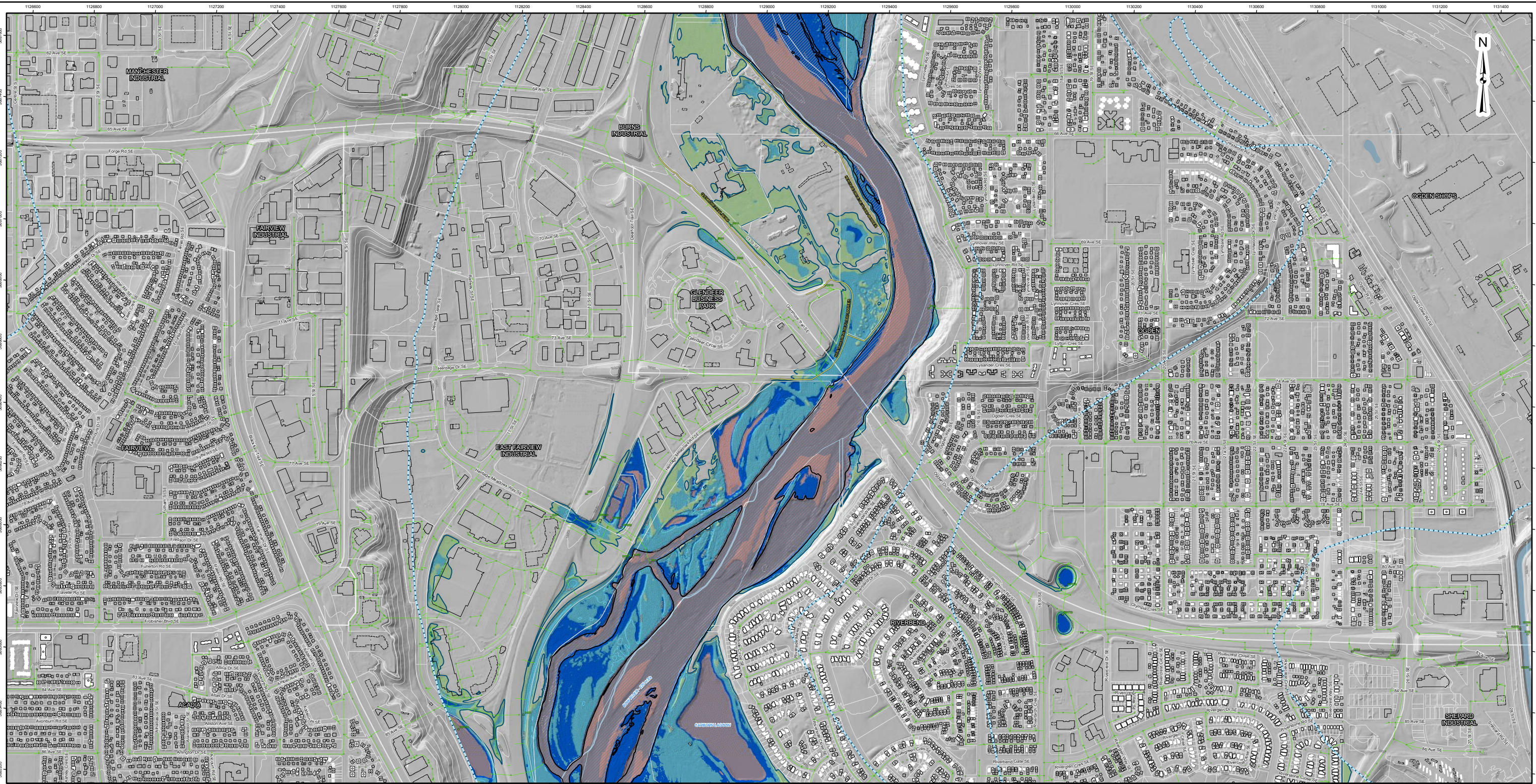
SCALE 1:12,000

DATE 8/14/2026

AUTHOR TDaSilva

70 140
Meters





LEGEND

- Building Footprint
- Pre-1990 Building Construction
- Below Grade Space
- Building Information Missing
- Non-Residential Building / Building Outside Scope
- Parcel
- Community District
- Alluvial Aquifer / Model Domain
- Waterbody
- Manhole
- Outfall
- Storm Network
- 3m Depth Threshold
- Flood Control Structure
- Sunnyside Seepage Collection
- Contours - 5m

Estimated Depth to Groundwater

- Below 3m
- 3m to 2.4m
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- Above Ground Surface

Flood Inundation Area (2-Year)

- Directly Flooded

NOTES

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FIGURE 3.2
GROUNDWATER DEPTH & BUILDING RISK FACTORS (CALIBRATED MODEL) - ANNUAL HIGH RIVER FLOW
14 - DEERFOOT MEADOWS

PROJECT
CALGARY RIVER VALLEYS GROUNDWATER STUDY

PROJECTION
NAD 1983 CSRS 3TM 114

SCALE 1:12,500 DATE 8/14/2026 AUTHOR TDaSilva





-  Building Footprint
-  Pre-1990 Building Construction
-  Below Grade Space
-  Building Information Missing
-  Non-Residential Building / Building Outside Scope
-  Parcel
-  Community District
-  Alluvial Aquifer / Model Domain
-  Waterbody

Estimated Depth to Groundwater

- Below 3m
3m to 2.4m
2.4m to 1.2m
0m to 1.2m
Above Ground Surface

Flood Inundation Area (2-Year)

- 
- Directly Flooded

NOTES

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DATA SOURCES

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FIGURE 3.2
GROUNDWATER DEPTH & BUILDING RISK FACTORS (CALIBRATED
MODEL) - ANNUAL HIGH RIVER FLOW
15 - RIVERBEND / QUARRY PARK

PROJECT

CANGARY RIVER VALLEYS GROUNDWATER STUDY

PROJECTION

NAD 1983 CSRS 3TM 114

SCALE 1:12,500

DATE 8/14/2026

AUTHOR TDaSilva

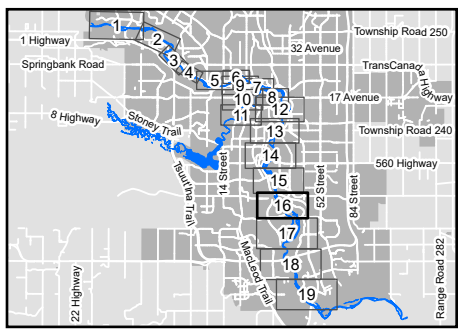
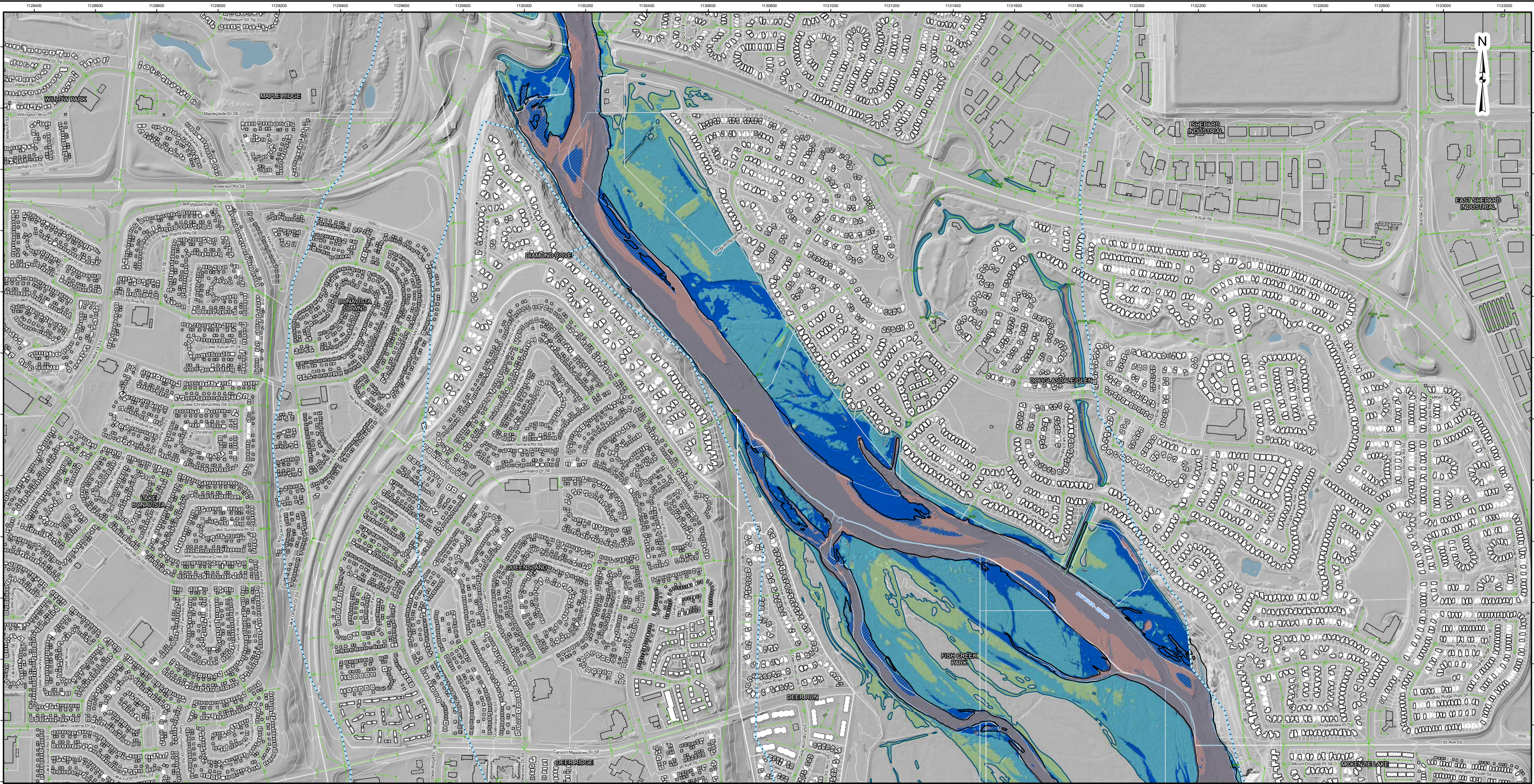
Page 10 of 10



Fluid Domains

Calgary





LEGEND

- Building Footprint
- Pre-1990 Building Construction
- Below Grade Space
- Building Information Missing
- Non-Residential Building / Building Outside Scope
- Parcel
- Community District
- Alluvial Aquifer / Model Domain
- Waterbody
- Manhole
- Outfall
- Storm Network
- 3m Depth Threshold
- Flood Control Structure
- Sunnyside Seepage Collection
- Contours - 5m

Estimated Depth to Groundwater

- Below 3m
- 3m to 2.4m
- 2.4m to 1.2m
- 0m to 1.2m
- Above Ground Surface

Flood Inundation Area (2-Year)

- Directly Flooded

NOTES

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DATA SOURCES

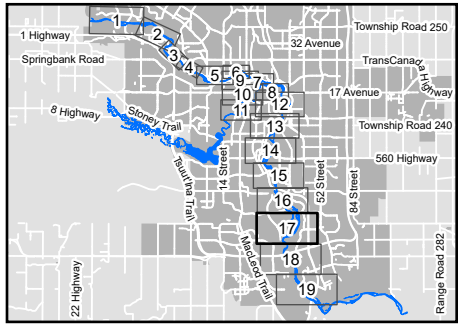
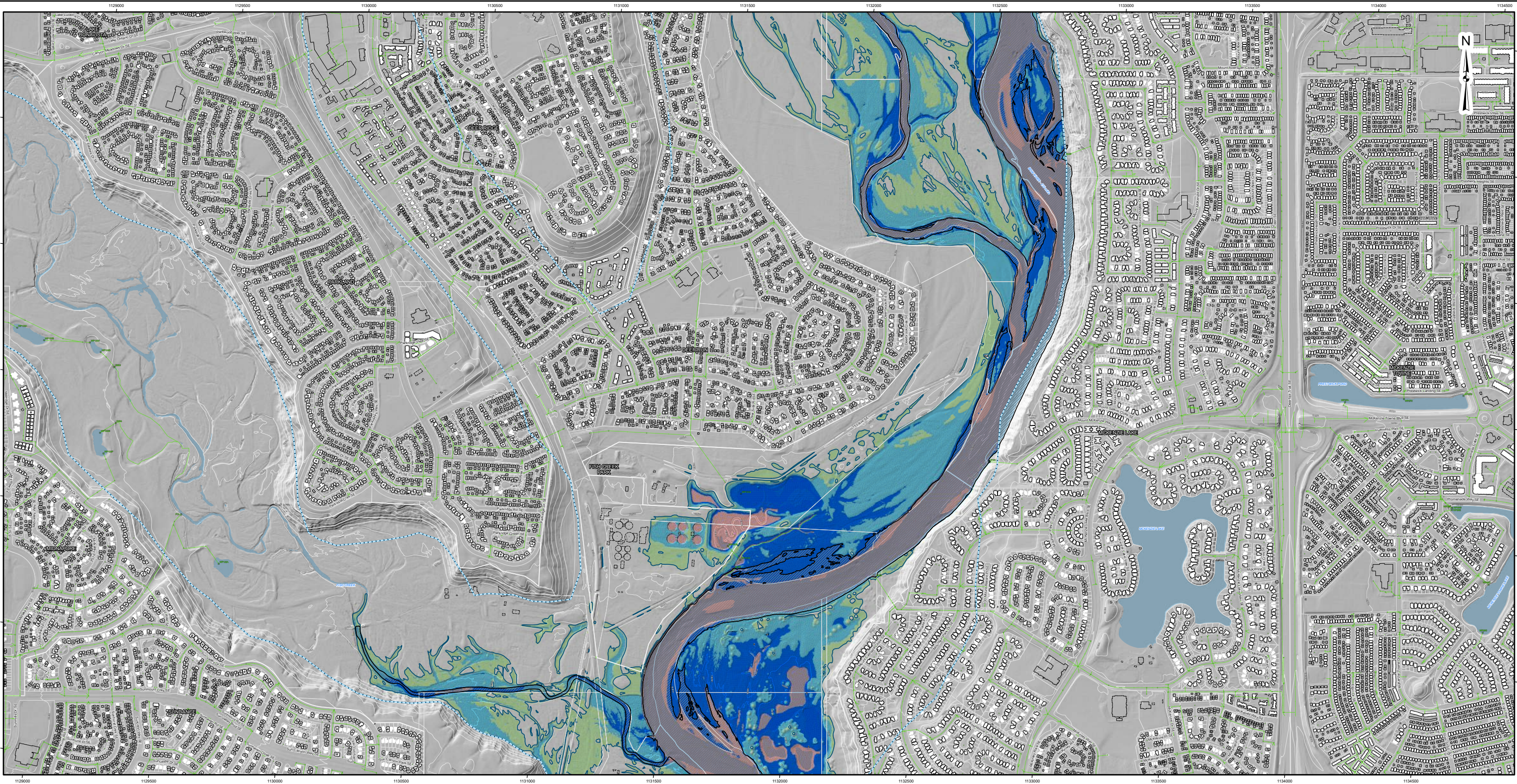
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FIGURE 3.2
GROUNDWATER DEPTH & BUILDING RISK FACTORS (CALIBRATED MODEL) - ANNUAL HIGH RIVER FLOW
16 - DOUGLASDALE

PROJECT
CALGARY RIVER VALLEYS GROUNDWATER STUDY

PROJECTION
NAD 1983 CSRS 3TM 114
SCALE 1:12,500
DATE 8/14/2026
AUTHOR TDaSilva





LEGEND

- Building Footprint
- Pre-1990 Building Construction
- Below Grade Space
- Building Information Missing
- Non-Residential Building / Building Outside Scope
- Parcel
- Community District
- Alluvial Aquifer / Model Domain
- Waterbody
- Manhole
- Outfall
- Storm Network
- 3m Depth Threshold
- Flood Control Structure
- Sunnyside Seepage Collection
- Contours - 5m

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- 3m to 2.4m
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Flood Inundation Area (2-Year)

- Directly Flooded

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DATA SOURCES

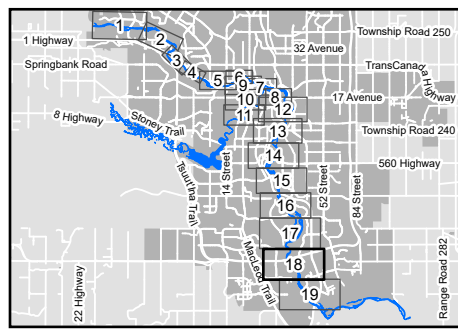
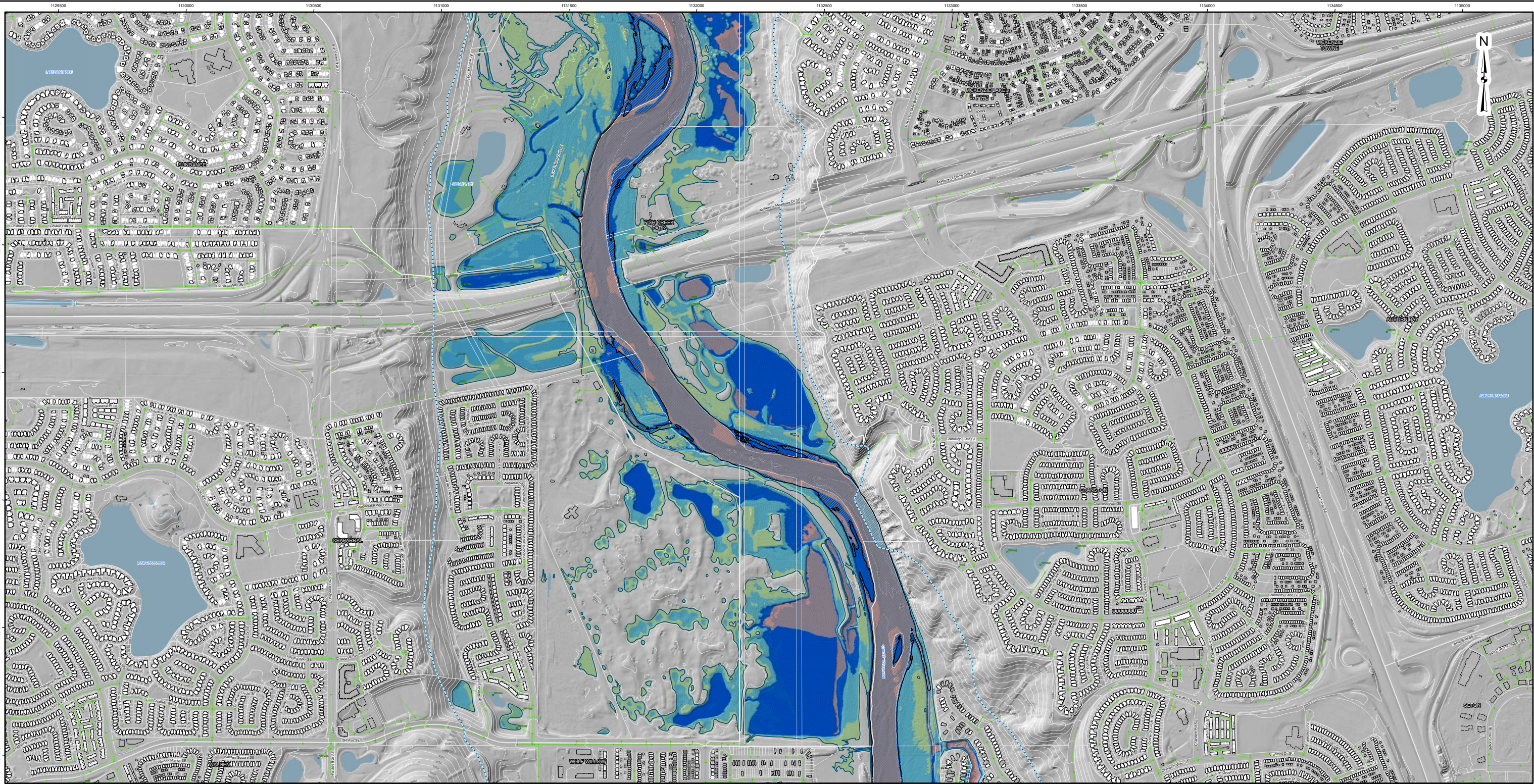
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FIGURE 3.2
GROUNDWATER DEPTH & BUILDING RISK FACTORS (CALIBRATED MODEL) - ANNUAL HIGH FLOW
17 - FISH CREEK

PROJECT
CALGARY RIVER VALLEYS GROUNDWATER STUDY

PROJECTION
NAD 1983 CSRS 3TM 114
SCALE 1:15,000
DATE 8/14/2026
AUTHOR TDaSilva





LEGEND

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- Below Grade Space
- Building Information Missing
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- Parcel
- Community District
- Alluvial Aquifer / Model Domain
- Waterbody
- Manhole
- Outfall
- Storm Network
- 3m Depth Threshold
- Flood Control Structure
- Sunnyside Seepage Collection
- Contours - 5m

Estimated Depth to Groundwater

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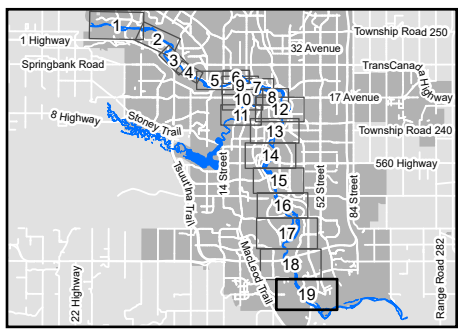
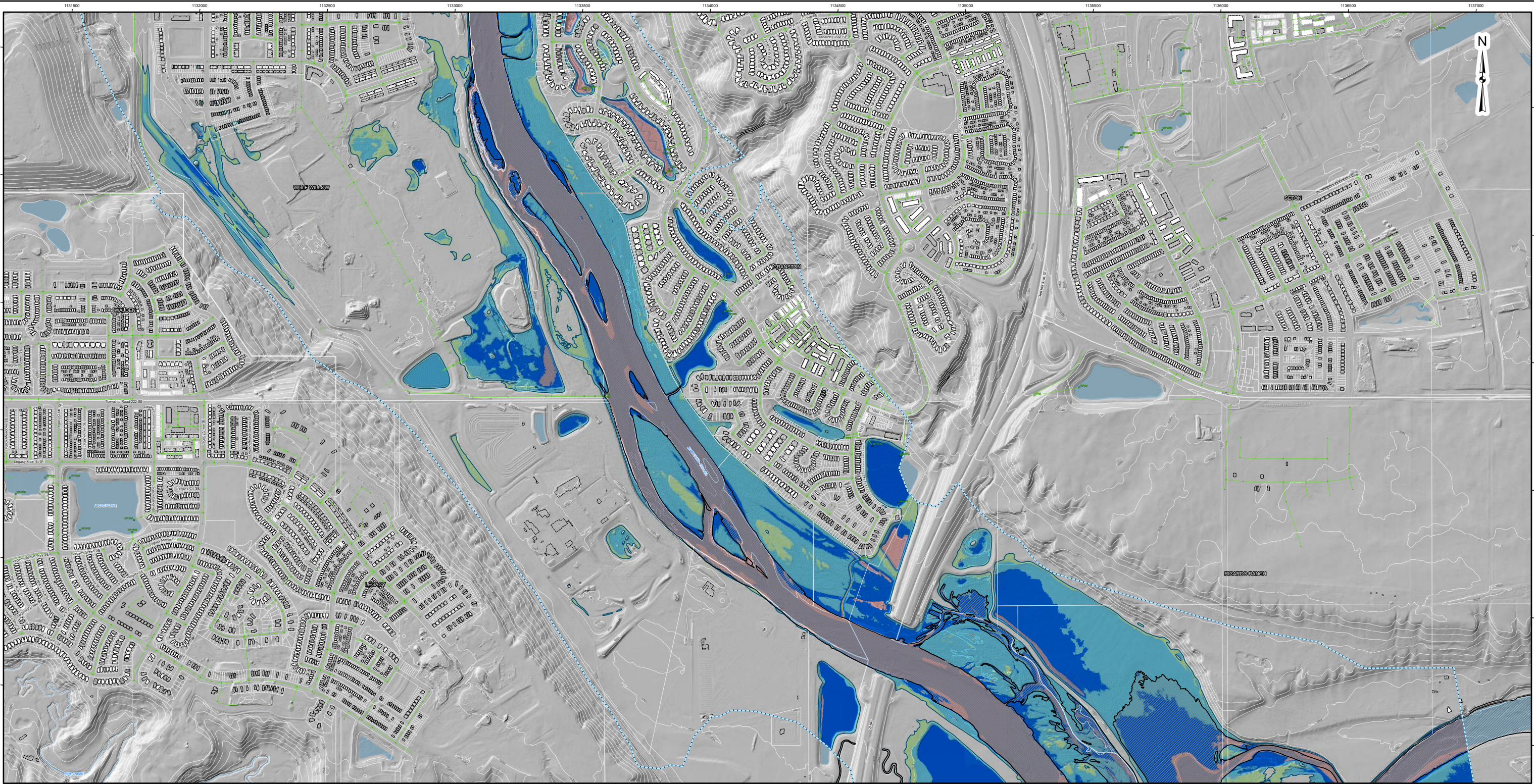
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FIGURE 3.2
GROUNDWATER DEPTH & BUILDING RISK FACTORS (CALIBRATED MODEL) - ANNUAL HIGH RIVER FLOW
18 - SOUTH STONEY TRAIL

PROJECT
CALGARY RIVER VALLEYS GROUNDWATER STUDY

PROJECTION
NAD 1983 CSRS 3TM 114
SCALE 1:15,000
DATE 8/14/2026
AUTHOR TDaSilva





LEGEND

- Building Footprint
- Pre-1990 Building Construction
- Below Grade Space
- Building Information Missing
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- Parcel
- Community District
- Alluvial Aquifer / Model Domain
- Waterbody
- Manhole
- Outfall
- Storm Network
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- Contours - 5m

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- Directly Flooded

Flood Inundation Area (2-Year)

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FIGURE 3.2
GROUNDWATER DEPTH & BUILDING RISK FACTORS (CALIBRATED MODEL) - ANNUAL HIGH RIVER FLOW
19 - PINE CREEK / CRANSTON

CALGARY RIVER VALLEYS GROUNDWATER STUDY

PROJECTION
NAD 1983 CSRS 3TM 114
SCALE 1:15,000
DATE 8/14/2026
AUTHOR TDaSilva

