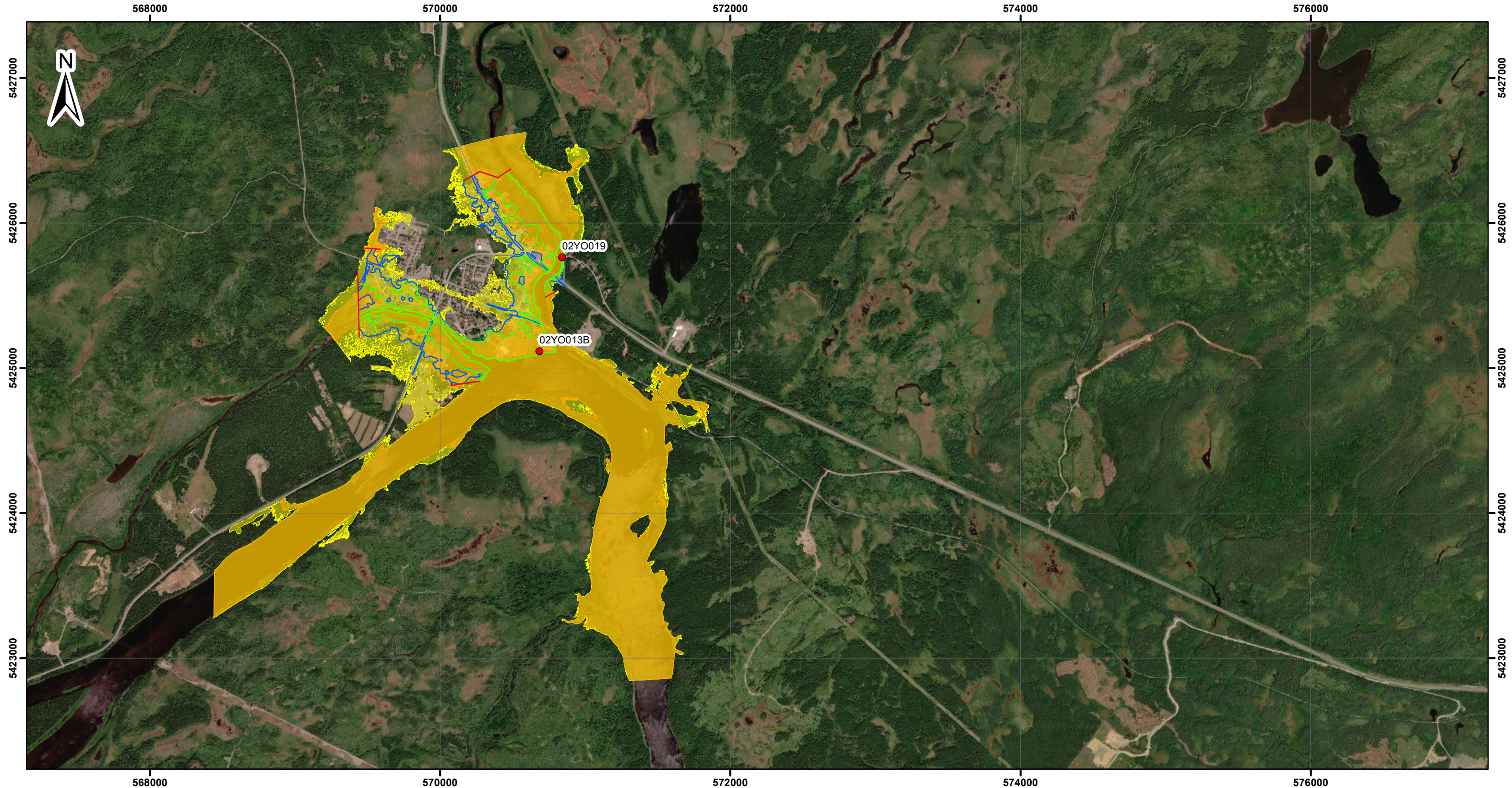
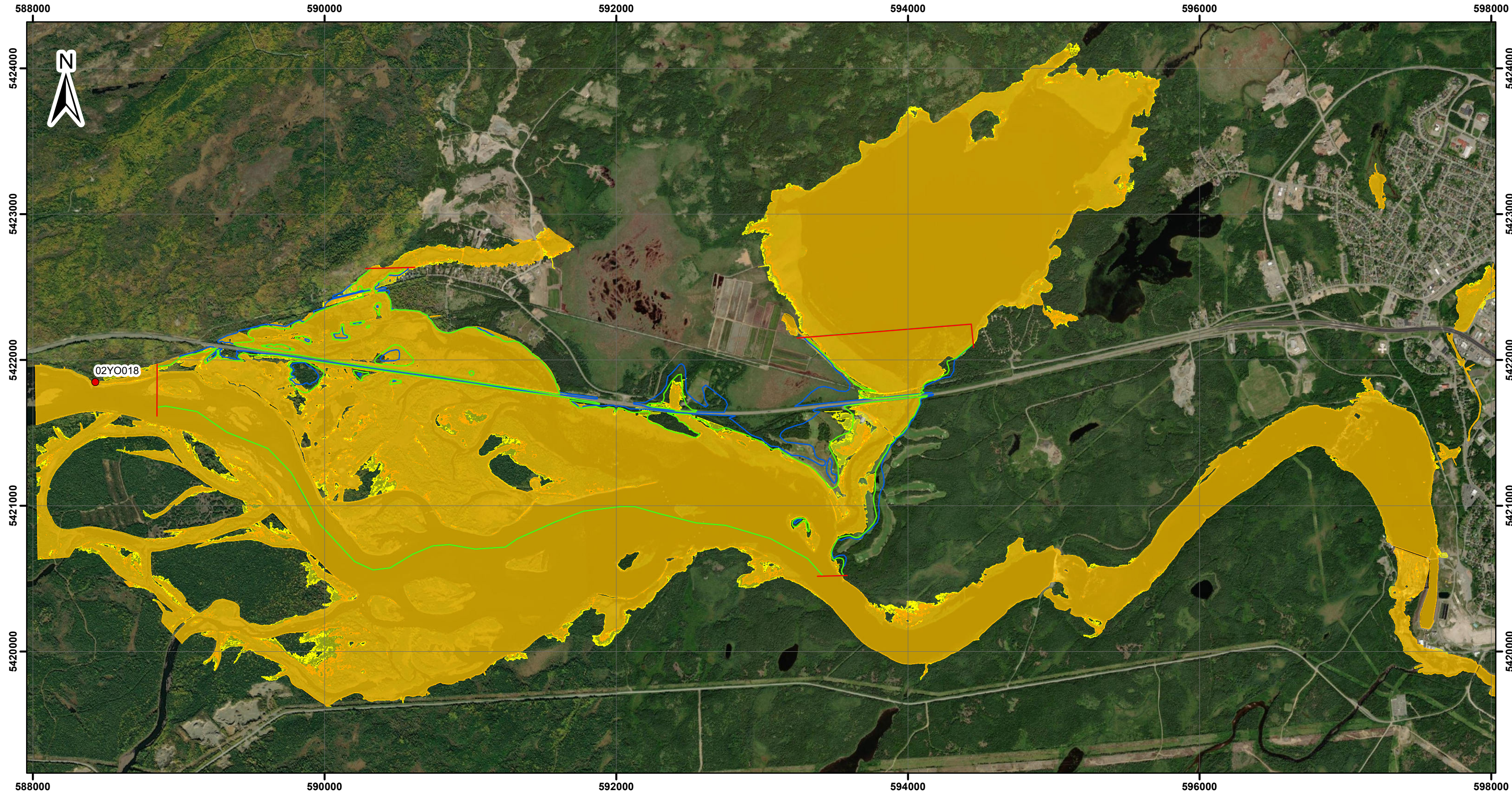


Appendix F.4: Map Set 4 – Comparison of Flood Extent – Composite Ice and Open Water with Historical Flood Extent – Current Climate



Legend 1:20 AEP Flood Zone Current Conditions 1:100 AEP Flood Zone Current Conditions - Historical Flood Mapping Limits - Historical 1:100 Inundation Limits - Historical 1:20 Inundation Limits - Historical Maximum Inundation Limits (Bishop's Falls Area) - Hydrometric Station	NOTES: - Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013. - Aerial imagery and topographic map by ESRI. 0 250 500 1,000 1,500 2,000 Meters Scale 1:25,000 for 11"x17" paper size	KEY MAP:	 WATER RESOURCES MANAGEMENT DIVISION EXPLOITS RIVER FLOOD RISK MAPPING STUDY MAP SET #4 FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE WITH HISTORICAL FLOOD ZONES CURRENT CLIMATE OVERVIEW MAP DATE: 05/17/2021 PROJECT #: H-358566 Page 1 of 4
---	--	------------------------	--

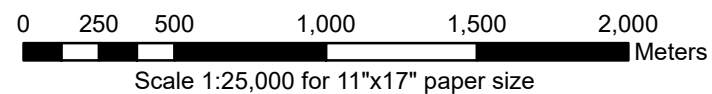


Legend

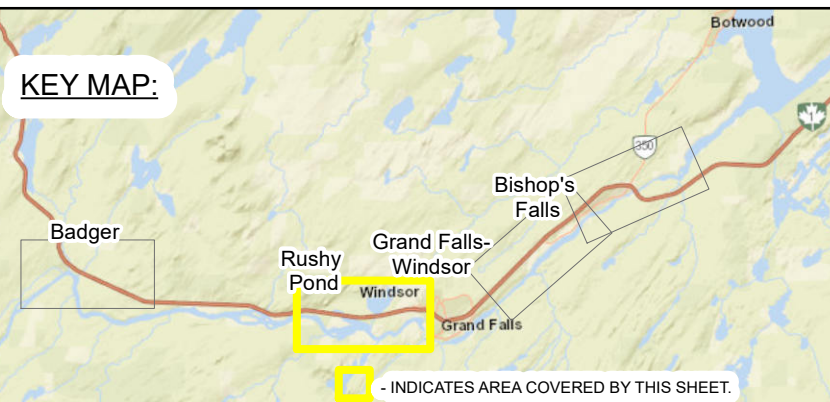
- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- Hydrometric Station

NOTES:

1. Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
2. Aerial imagery and topographic map by ESRI.



KEY MAP:



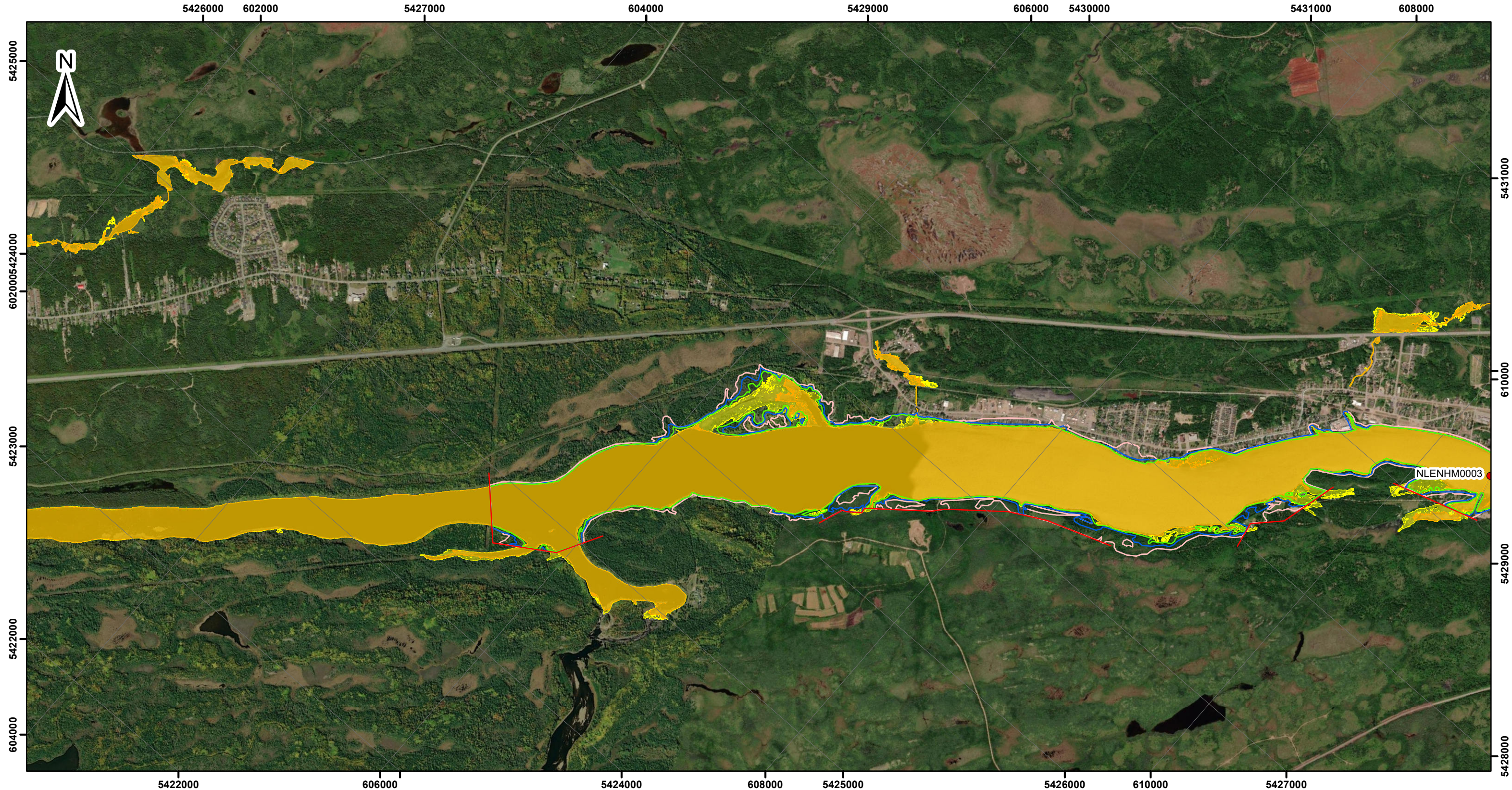
WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
OVERVIEW MAP

DATE: 05/17/2021

PROJECT #: H-358566



Legend

- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- Hydrometric Station

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Aerial imagery and topographic map by ESRI.

02505001,0001,5002,000

Meters

Scale 1:25,000 for 11"x17" paper size

KEY MAP:

HATCH

Newfoundland
Labrador

WATER RESOURCES MANAGEMENT DIVISION

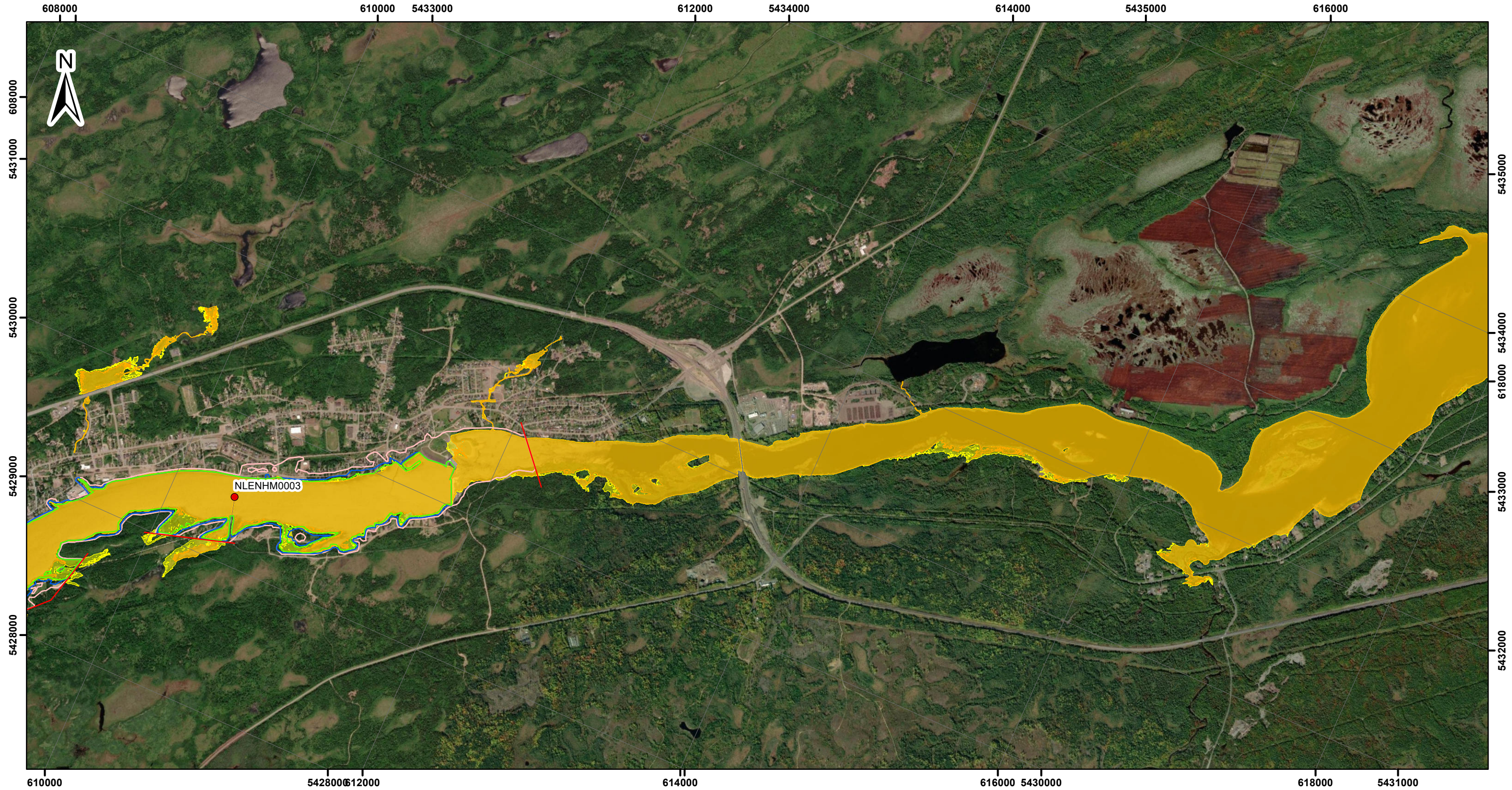
EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
OVERVIEW MAP

DATE: 05/17/2021

PROJECT #: H-358566

Page 3 of 4



Legend

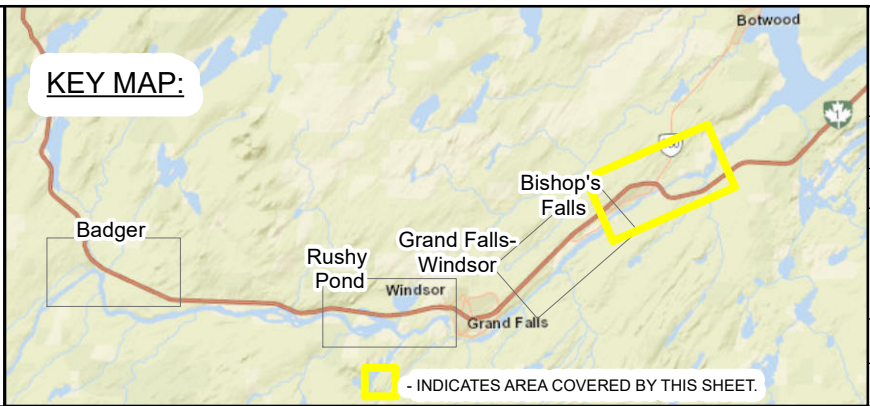
- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- Hydrometric Station

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Aerial imagery and topographic map by ESRI.

0 250 500 1,000 1,500 2,000 Meters

Scale 1:25,000 for 11"x17" paper size



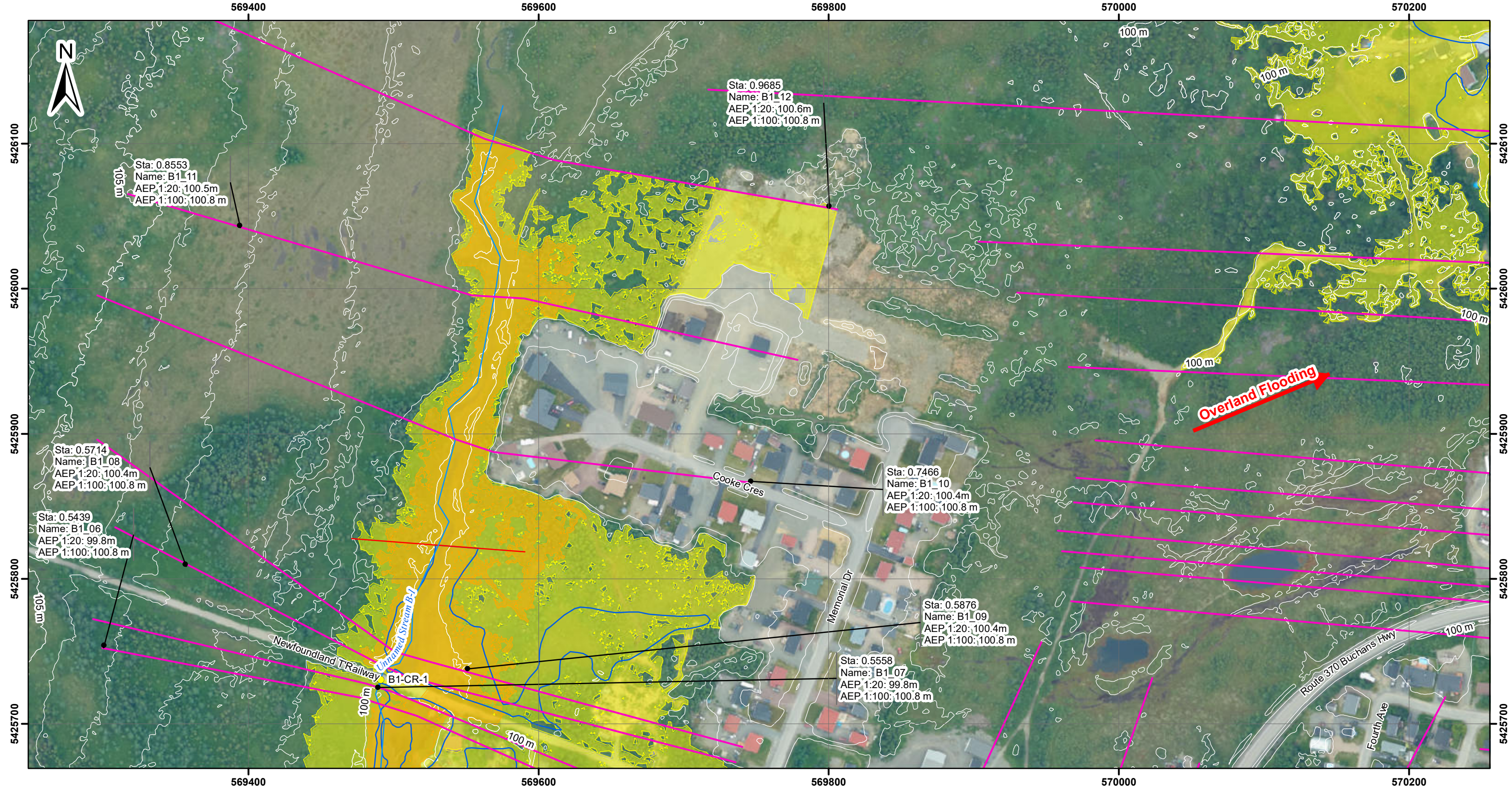


WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
OVERVIEW MAP

DATE: 05/17/2021	Page 4 of 4
PROJECT #: H-358566	



Legend

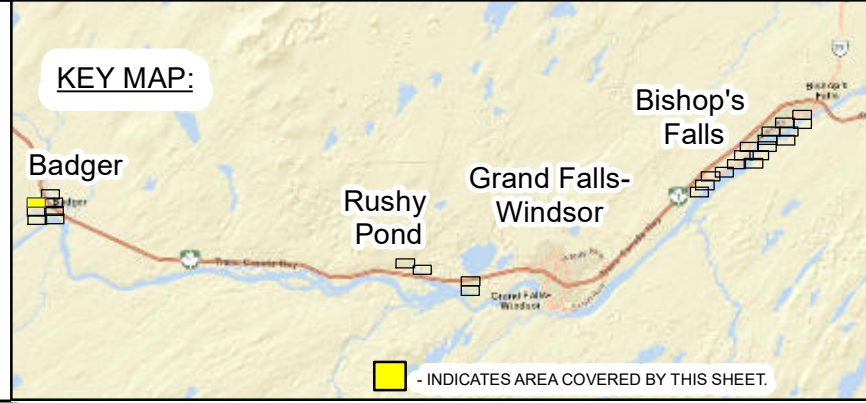
	1:20 AEP Flood Zone Current Conditions
	1:100 AEP Flood Zone Current Conditions
	Overland Flooding
	Watercourse Centerline
	Historical Flood Mapping Limits
	Historical 1:100 Inundation Limits
	Historical 1:20 Inundation Limits
	Historical Maximum Inundation Limits (Bishop's Falls Area)
	1 m Contours
	Bridge
	Culvert
	Hydrometric Station
	Cross Sections

NOTES:

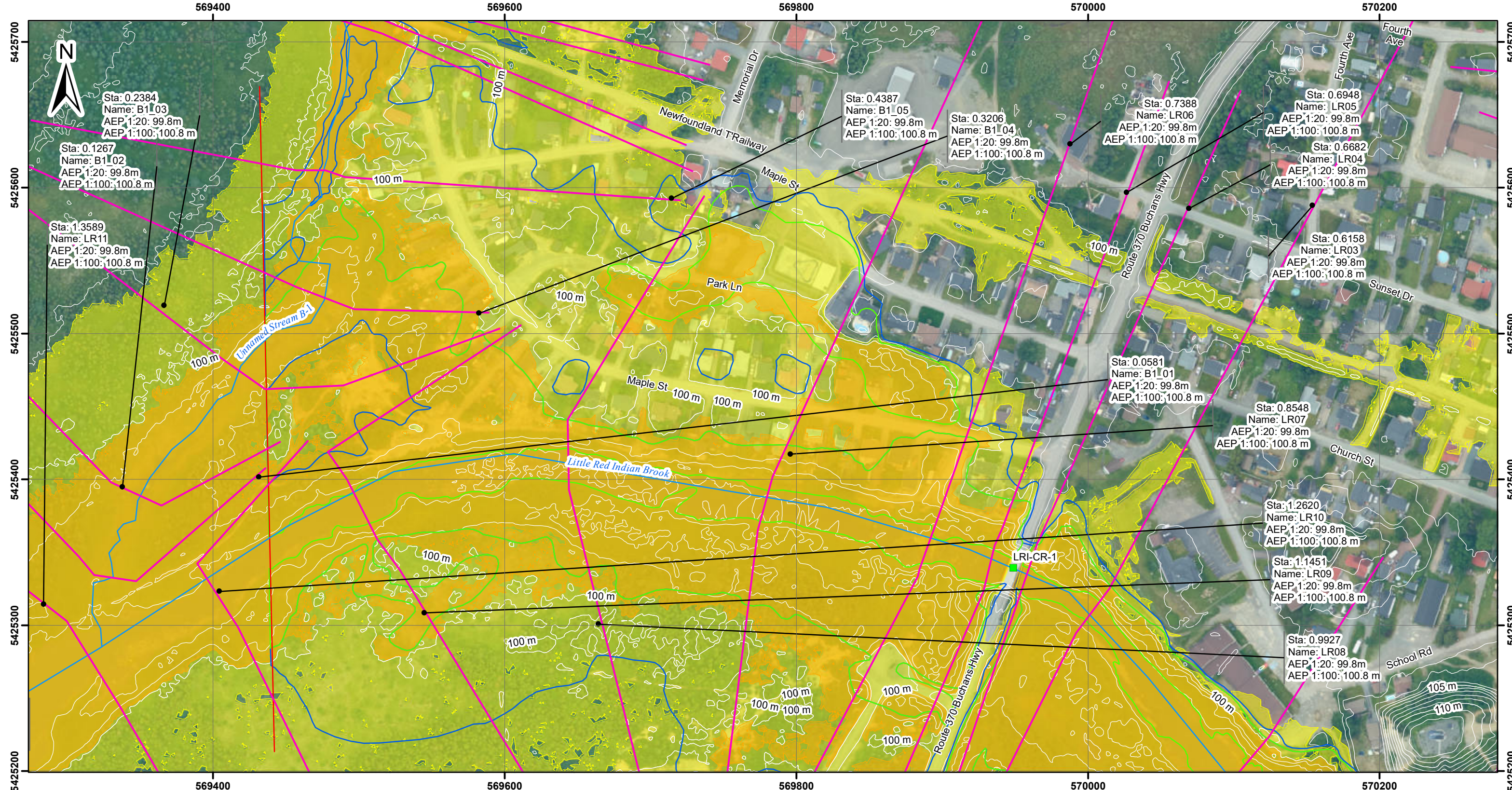
- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

0 12.5 25 50 75 100 Meters
Scale 1:2,500 for 11"x17" paper size



WATER RESOURCES MANAGEMENT DIVISION			
EXPLOITS RIVER FLOOD RISK MAPPING STUDY			
MAP SET #4 FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE WITH HISTORICAL FLOOD ZONES CURRENT CLIMATE DETAIL MAP			
DATE: 05/17/2021		Page 1 of 28	
PROJECT #: H-358566			



Legend

- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Overland Flooding
- Watercourse Centerline
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- 1 m Contours
- Bridge
- Culvert
- Hydrometric Station

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

0 12.525 50 75 100 Meters
Scale 1:2,500 for 11"x17" paper size

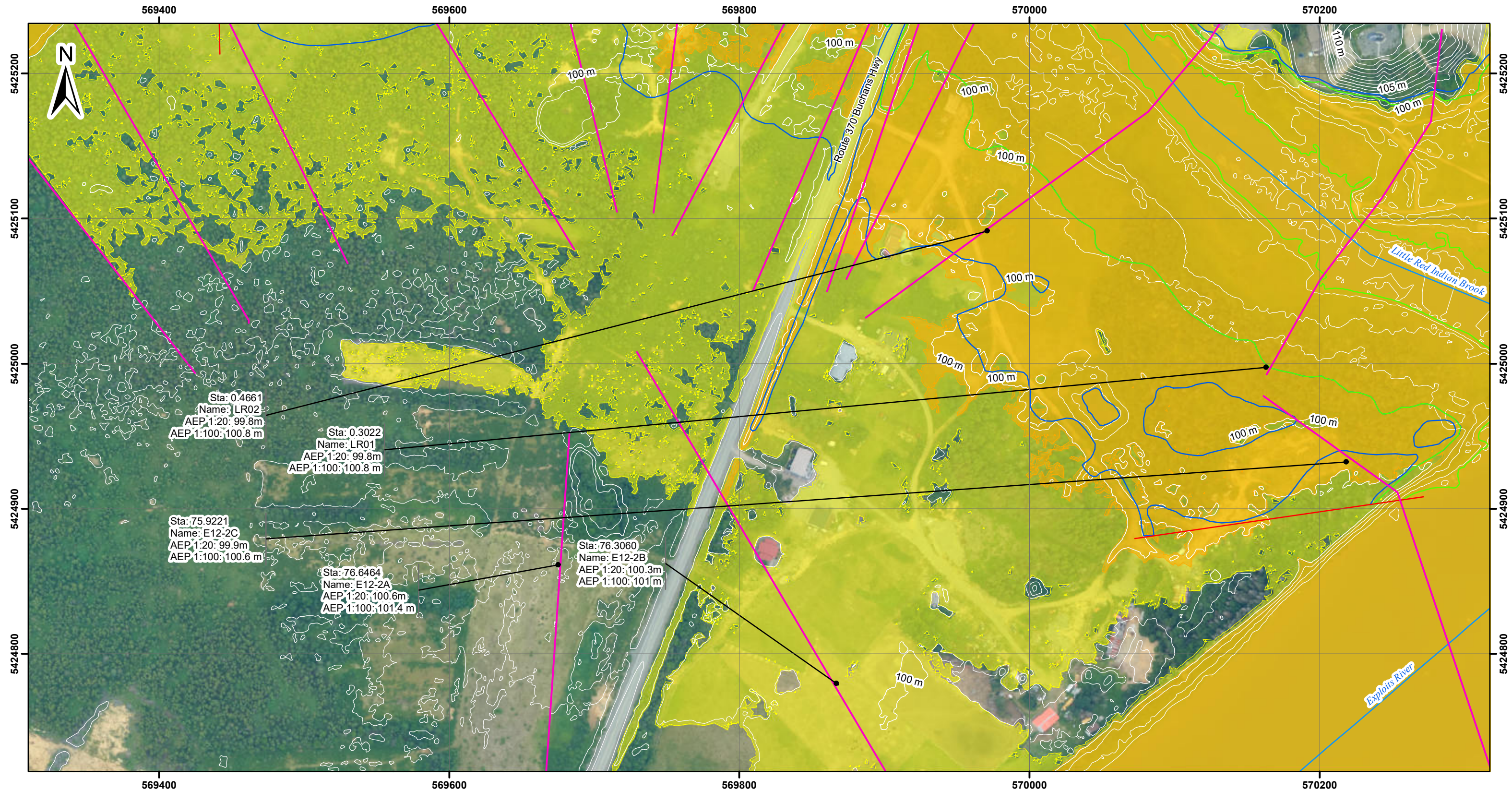


WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021	Page 2 of 28
PROJECT #: H-358566	



Legend

- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Overland Flooding
- Watercourse Centerline
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- 1 m Contours
- Bridge
- Culvert
- Hydrometric Station

Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

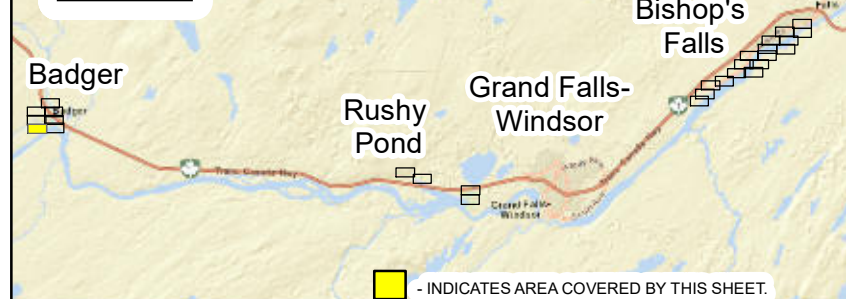
NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

0 12.525 50 75 100
Meters

Scale 1:2,500 for 11"x17" paper size

KEY MAP:



HATCH

Newfoundland
Labrador

WATER RESOURCES MANAGEMENT DIVISION

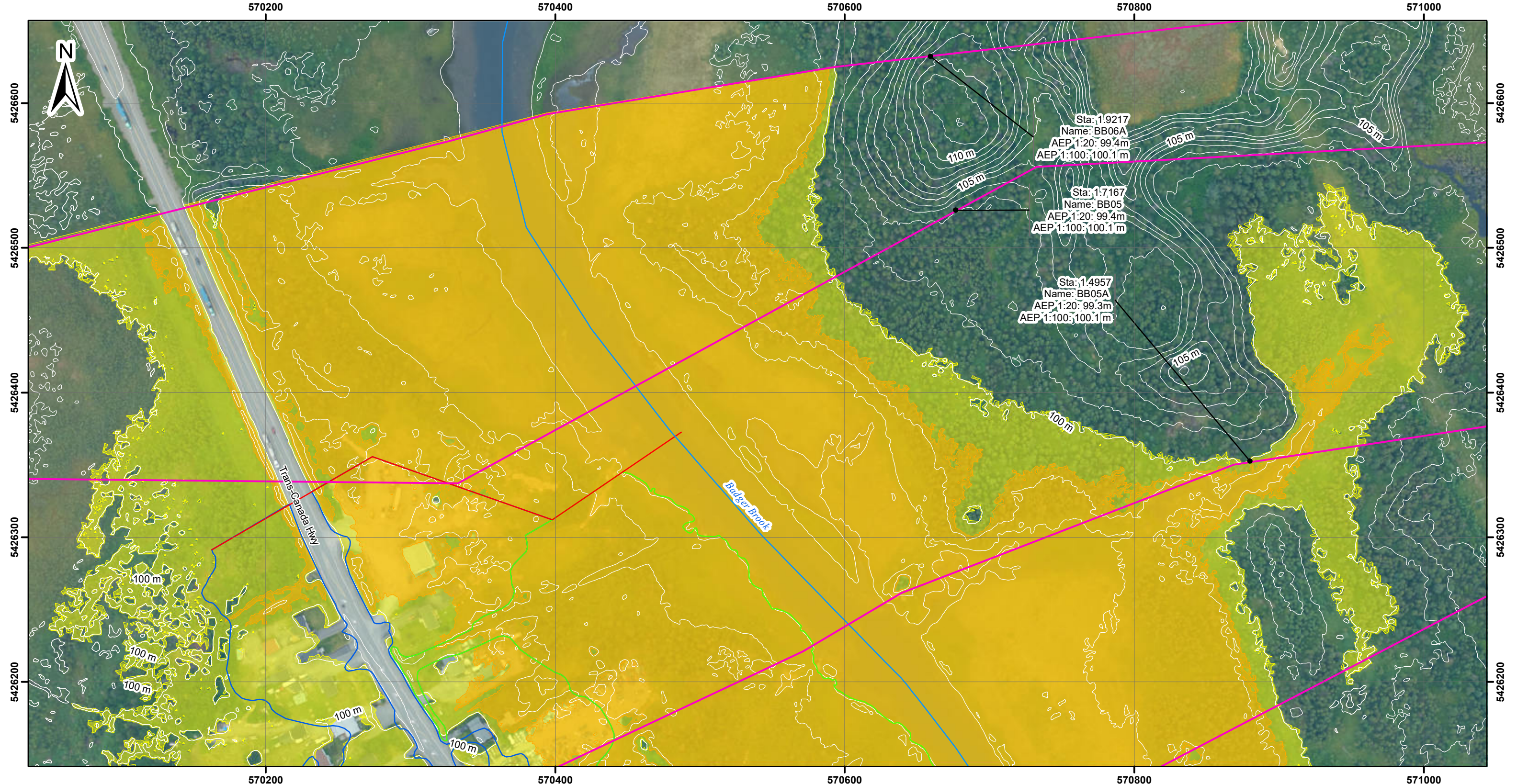
EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021

PROJECT #: H-358566

Page 3 of 28



- Legend**
- 1:20 AEP Flood Zone Current Conditions
 - 1:100 AEP Flood Zone Current Conditions
 - Overland Flooding
 - Watercourse Centerline
 - Historical Flood Mapping Limits
 - Historical 1:100 Inundation Limits
 - Historical 1:20 Inundation Limits
 - Historical Maximum Inundation Limits (Bishop's Falls Area)
 - 1 m Contours
 - Bridge
 - Culvert
 - Hydrometric Station

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

0 12.525 50 75 100 Meters
Scale 1:2,500 for 11"x17" paper size





WATER RESOURCES MANAGEMENT DIVISION

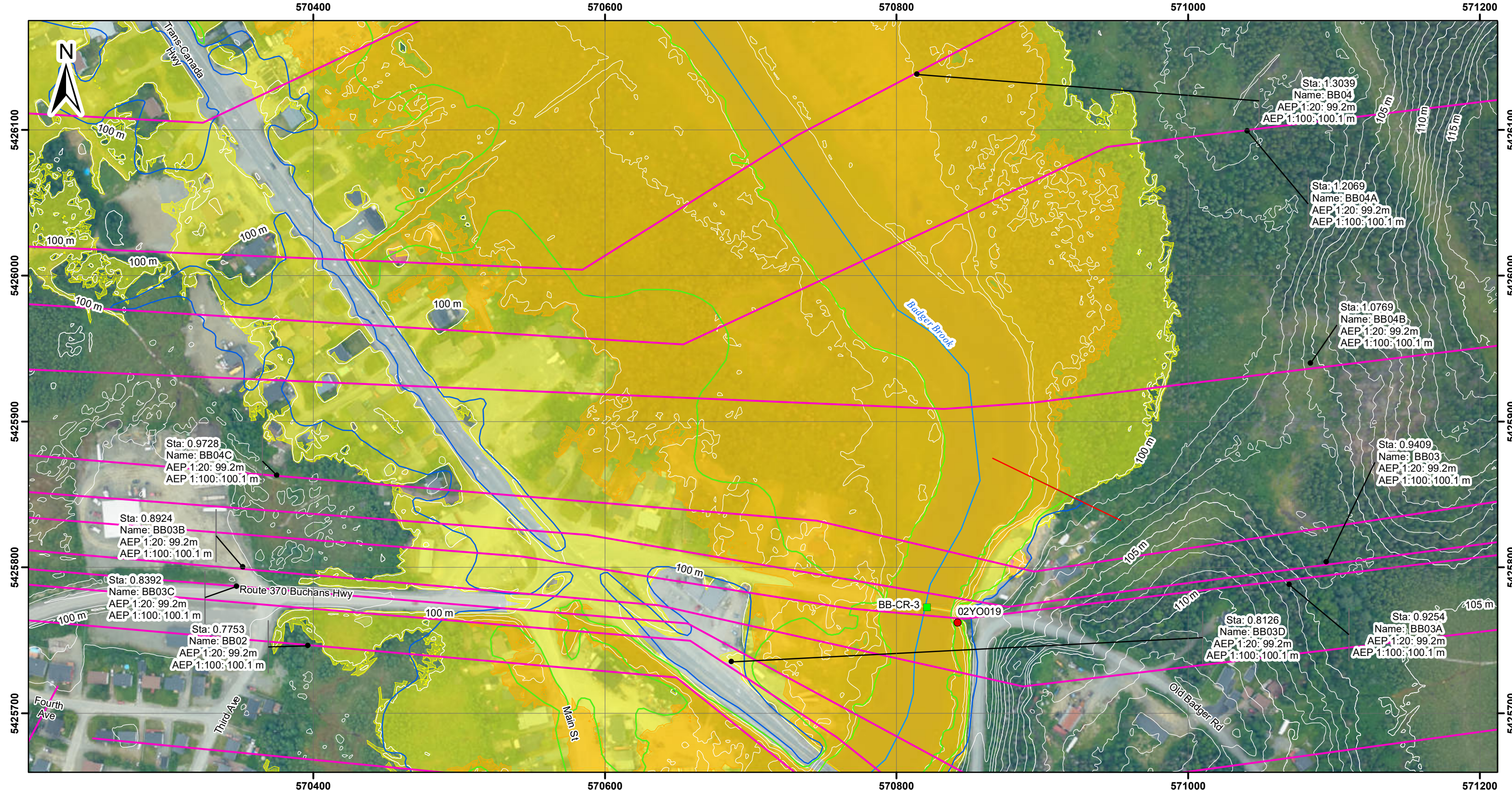
EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021

PROJECT #: H-358566

Page 4 of 28



Legend

1:20 AEP Flood Zone Current Conditions	1 m Contours
1:100 AEP Flood Zone Current Conditions	Bridge
Overland Flooding	Culvert
Watercourse Centerline	Hydrometric Station
Historical Flood Mapping Limits	
Historical 1:100 Inundation Limits	
Historical 1:20 Inundation Limits	
Historical Maximum Inundation Limits (Bishop's Falls Area)	

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

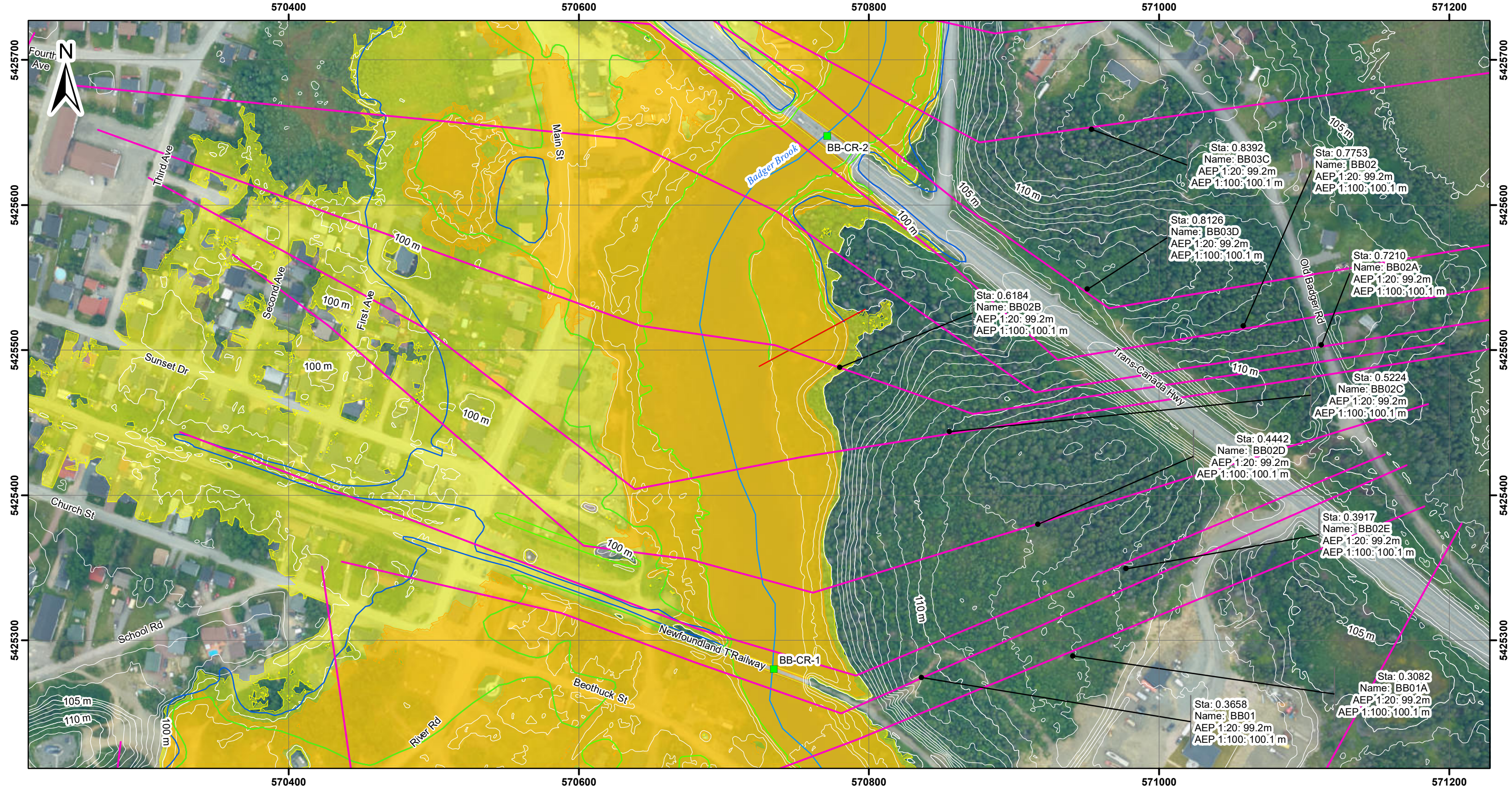
Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

Cross Sections

0 12.525 50 75 100
Meters
Scale 1:2,500 for 11"x17" paper size



WATER RESOURCES MANAGEMENT DIVISION	
EXPLOITS RIVER FLOOD RISK MAPPING STUDY	
MAP SET #4	
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE WITH HISTORICAL FLOOD ZONES	
CURRENT CLIMATE	
DETAIL MAP	
DATE: 05/17/2021	Page 5 of 28
PROJECT #: H-358566	



Legend

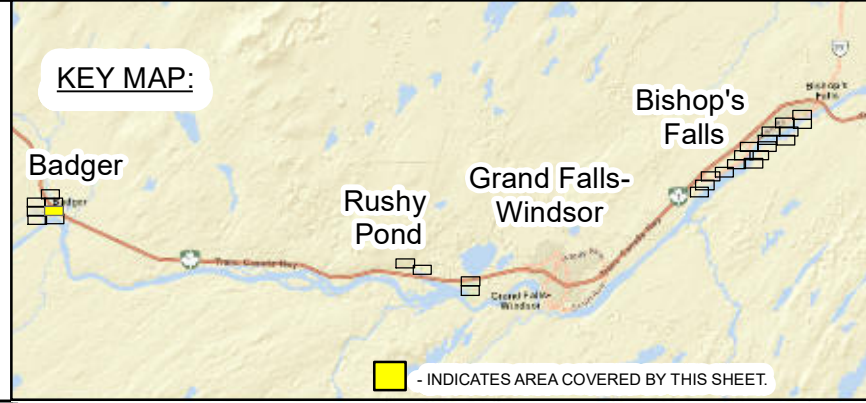
- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Overland Flooding
- Watercourse Centerline
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- 1 m Contours
- Bridge
- Culvert
- Hydrometric Station

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

0 12.525 50 75 100 Meters
Scale 1:2,500 for 11"x17" paper size



HATCH Newfoundland Labrador

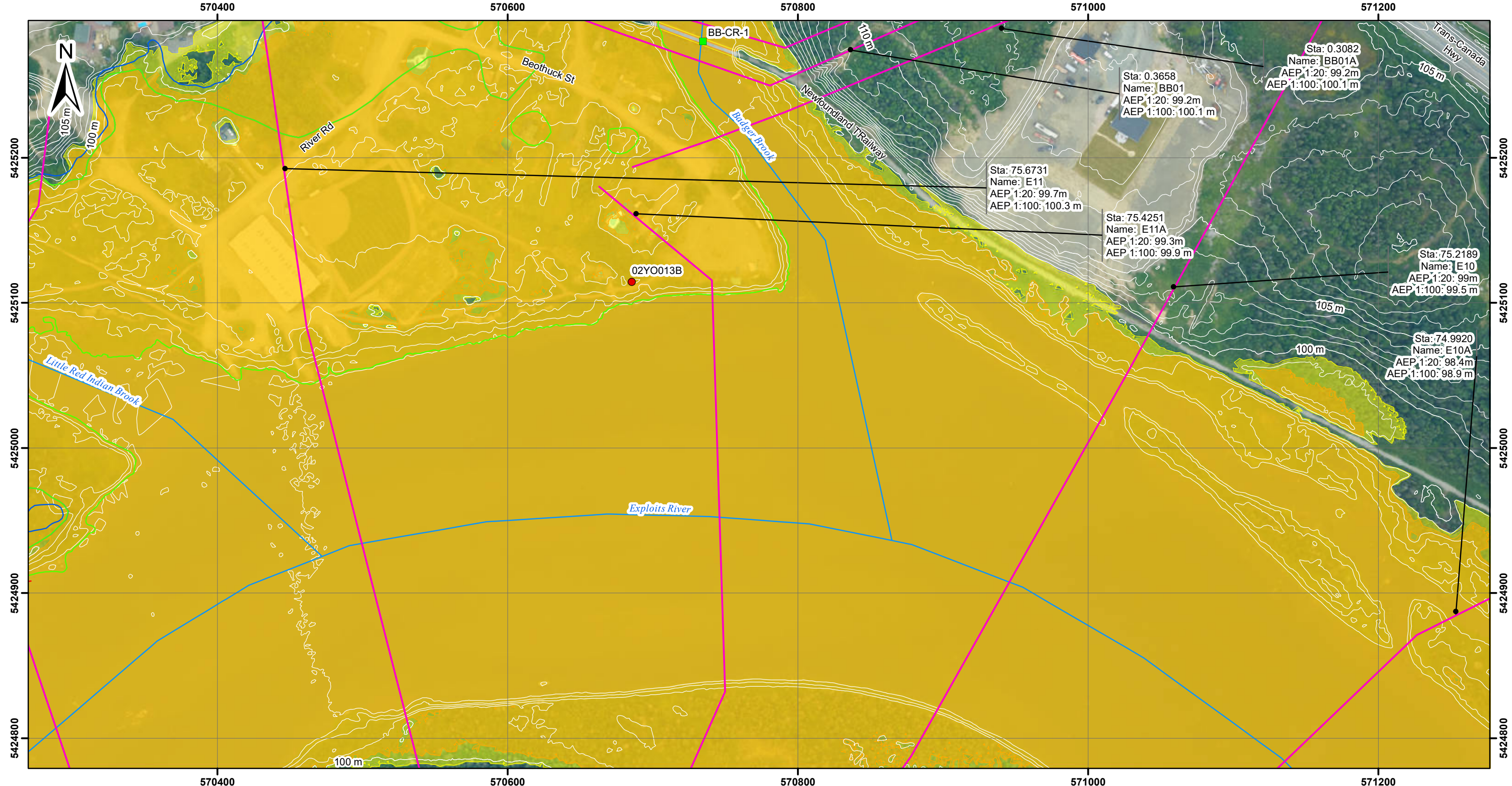
WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021
PROJECT #: H-358566

Page 6 of 28



Legend

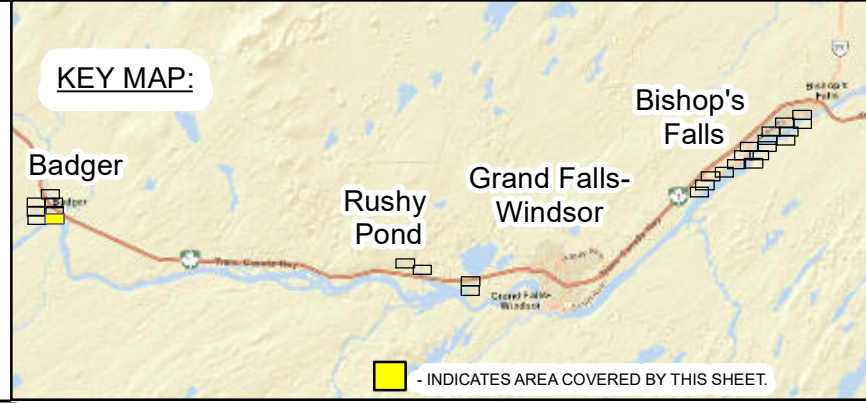
	1:20 AEP Flood Zone Current Conditions
	1:100 AEP Flood Zone Current Conditions
	Overland Flooding
	Watercourse Centerline
	Historical Flood Mapping Limits
	Historical 1:100 Inundation Limits
	Historical 1:20 Inundation Limits
	Historical Maximum Inundation Limits (Bishop's Falls Area)
	1 m Contours
	Bridge
	Culvert
	Hydrometric Station
	Sta: Station
	Name: Survey ID (n/a if not surveyed)
	AEP 1:20: 1:20 Water Surface El.
	AEP 1:100: 1:100 Water Surface El.

NOTES:

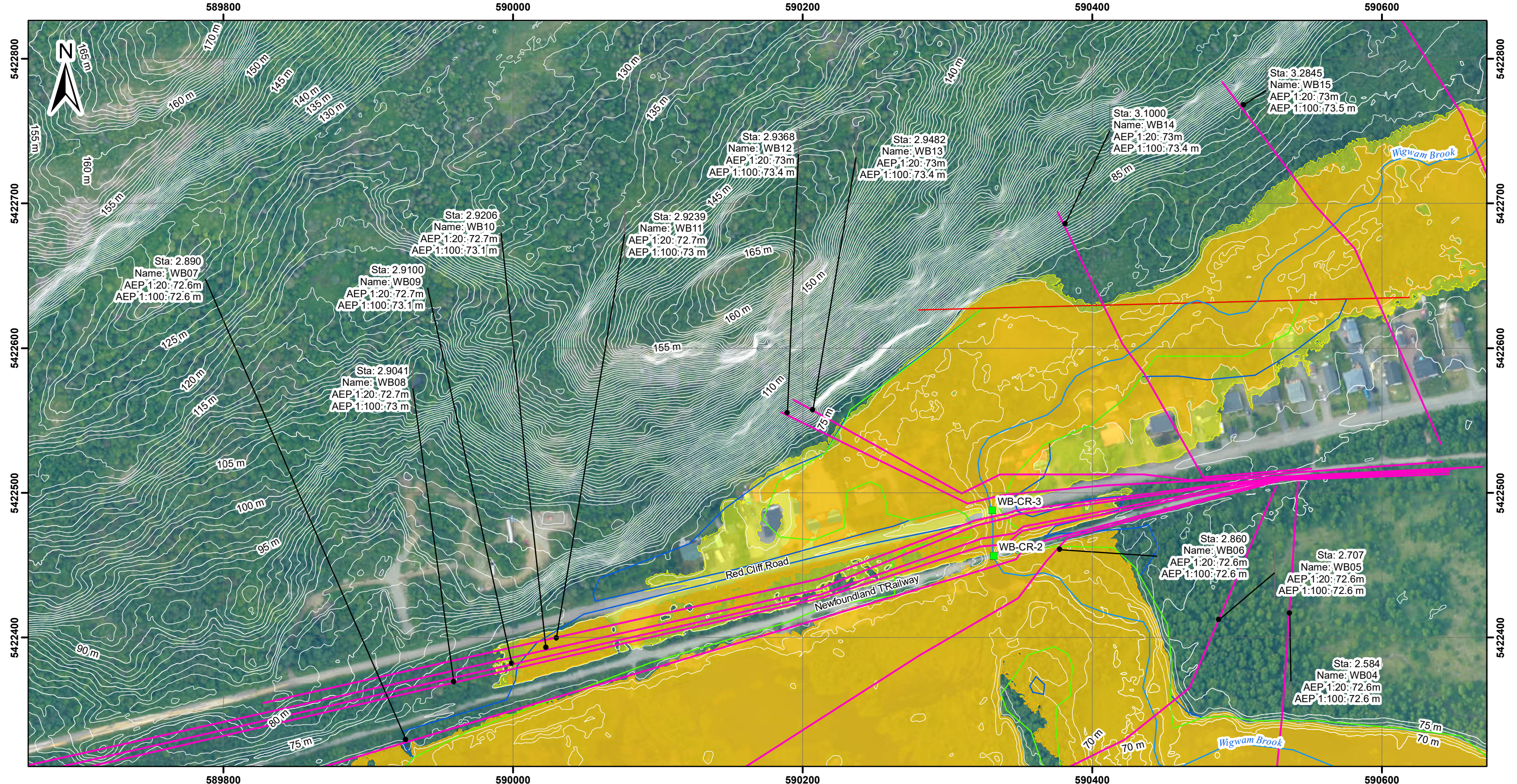
- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

0 12.525 50 75 100 Meters
Scale 1:2,500 for 11"x17" paper size

Cross Sections



WATER RESOURCES MANAGEMENT DIVISION			
EXPLOITS RIVER FLOOD RISK MAPPING STUDY			
MAP SET #4			
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE WITH HISTORICAL FLOOD ZONES			
CURRENT CLIMATE			
DETAIL MAP			
DATE: 05/17/2021		Page 7 of 28	
PROJECT #: H-358566			



Legend

1:20 AEP Flood Zone Current Conditions	1 m Contours
1:100 AEP Flood Zone Current Conditions	Bridge
Overland Flooding	Culvert
Watercourse Centerline	Hydrometric Station
Historical Flood Mapping Limits	
Historical 1:100 Inundation Limits	
Historical 1:20 Inundation Limits	
Historical Maximum Inundation Limits (Bishop's Falls Area)	

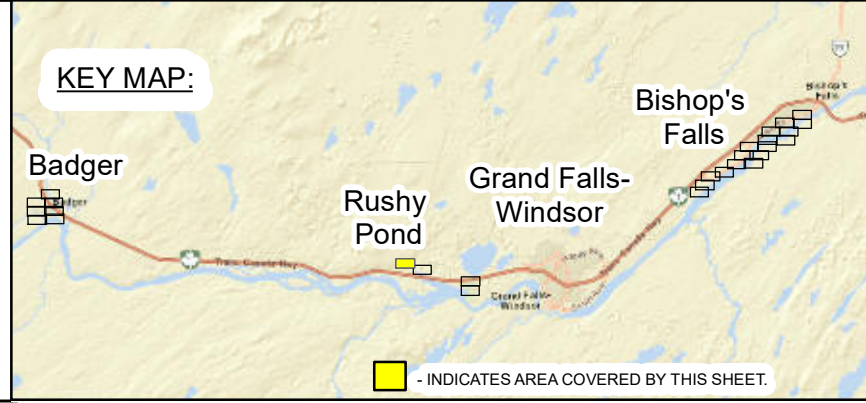
NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

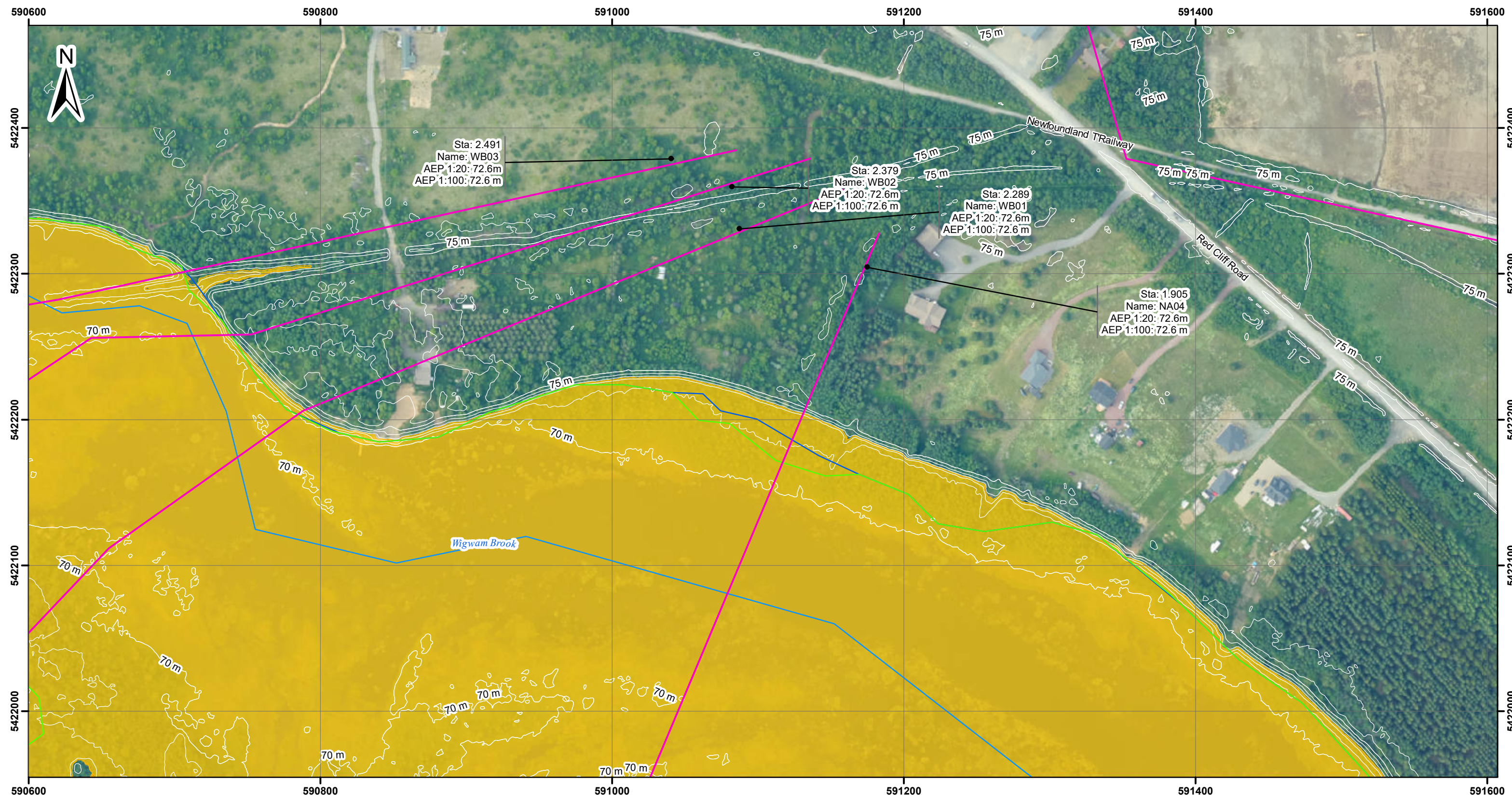
Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

Cross Sections

0 12.525 50 75 100
Meters
Scale 1:2,500 for 11"x17" paper size



WATER RESOURCES MANAGEMENT DIVISION	
EXPLOITS RIVER FLOOD RISK MAPPING STUDY	
MAP SET #4	
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE WITH HISTORICAL FLOOD ZONES	
CURRENT CLIMATE	
DETAIL MAP	
DATE: 05/17/2021	Page 8 of 28
PROJECT #: H-358566	



Legend

	1:20 AEP Flood Zone Current Conditions
	1:100 AEP Flood Zone Current Conditions
	Overland Flooding
	Watercourse Centerline
	Historical Flood Mapping Limits
	Historical 1:100 Inundation Limits
	Historical 1:20 Inundation Limits
	Historical Maximum Inundation Limits (Bishop's Falls Area)
	1 m Contours
	Bridge
	Culvert
	Hydrometric Station

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

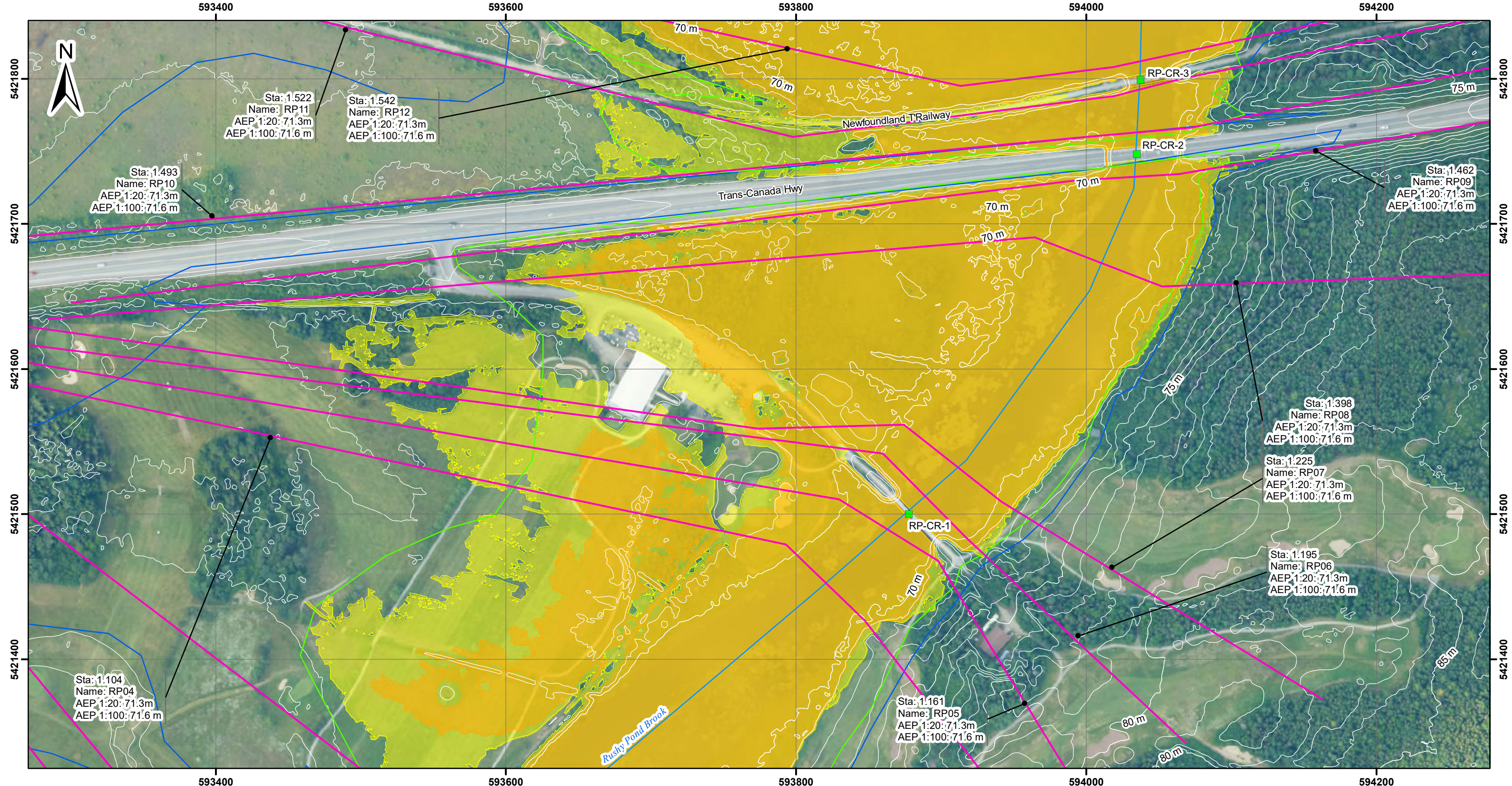
Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

Cross Sections

0 12.525 50 75 100
Meters
Scale 1:2,500 for 11"x17" paper size



WATER RESOURCES MANAGEMENT DIVISION		
EXPLOITS RIVER FLOOD RISK MAPPING STUDY		
MAP SET #4 FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE WITH HISTORICAL FLOOD ZONES CURRENT CLIMATE DETAIL MAP		
DATE: 05/17/2021	Page 9 of 28	
PROJECT #: H-358566		



Legend

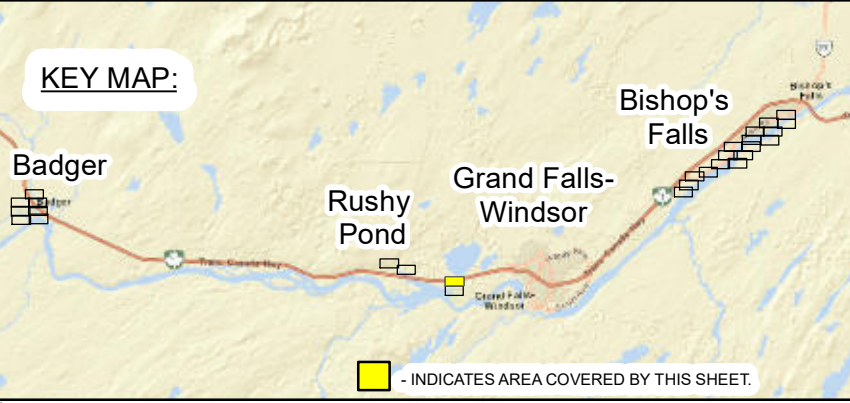
- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Overland Flooding
- Watercourse Centerline
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- 1 m Contours
- Bridge
- Culvert
- Hydrometric Station

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

0 12.525 50 75 100 Meters
Scale 1:2,500 for 11"x17" paper size



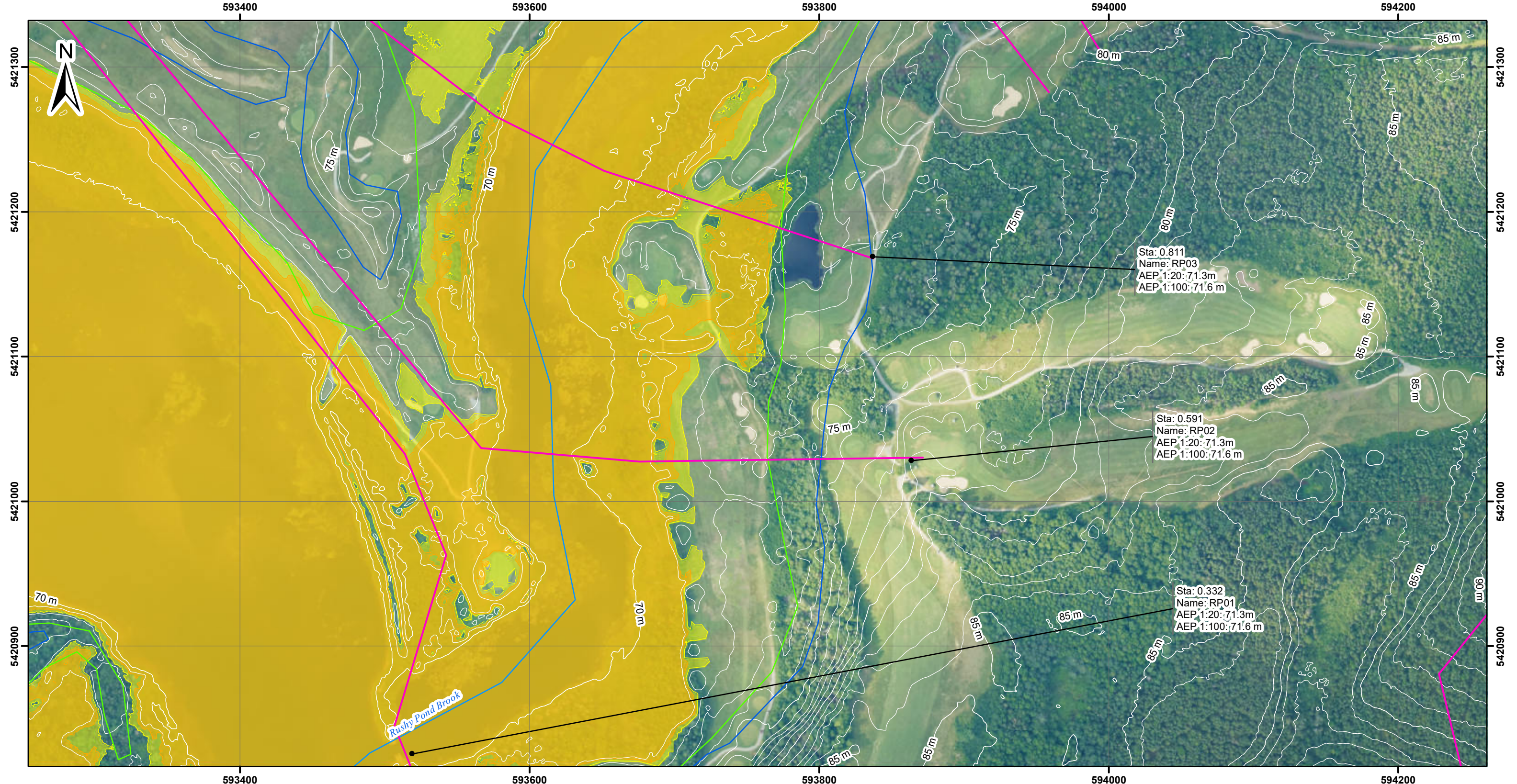
WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021
PROJECT #: H-358566

Page 10 of 28



Legend

	1:20 AEP Flood Zone Current Conditions
	1:100 AEP Flood Zone Current Conditions
	Overland Flooding
	Watercourse Centerline
	Historical Flood Mapping Limits
	Historical 1:100 Inundation Limits
	Historical 1:20 Inundation Limits
	Historical Maximum Inundation Limits (Bishop's Falls Area)
	1 m Contours
	Bridge
	Culvert
	Hydrometric Station
	Sta: Station
	Cross Sections

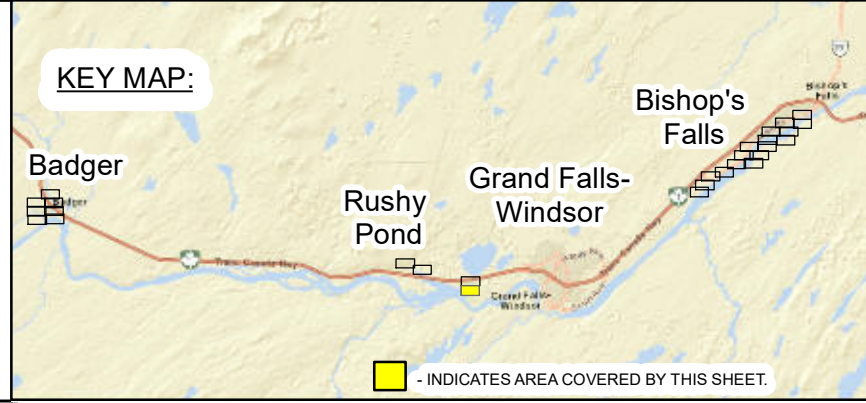
NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

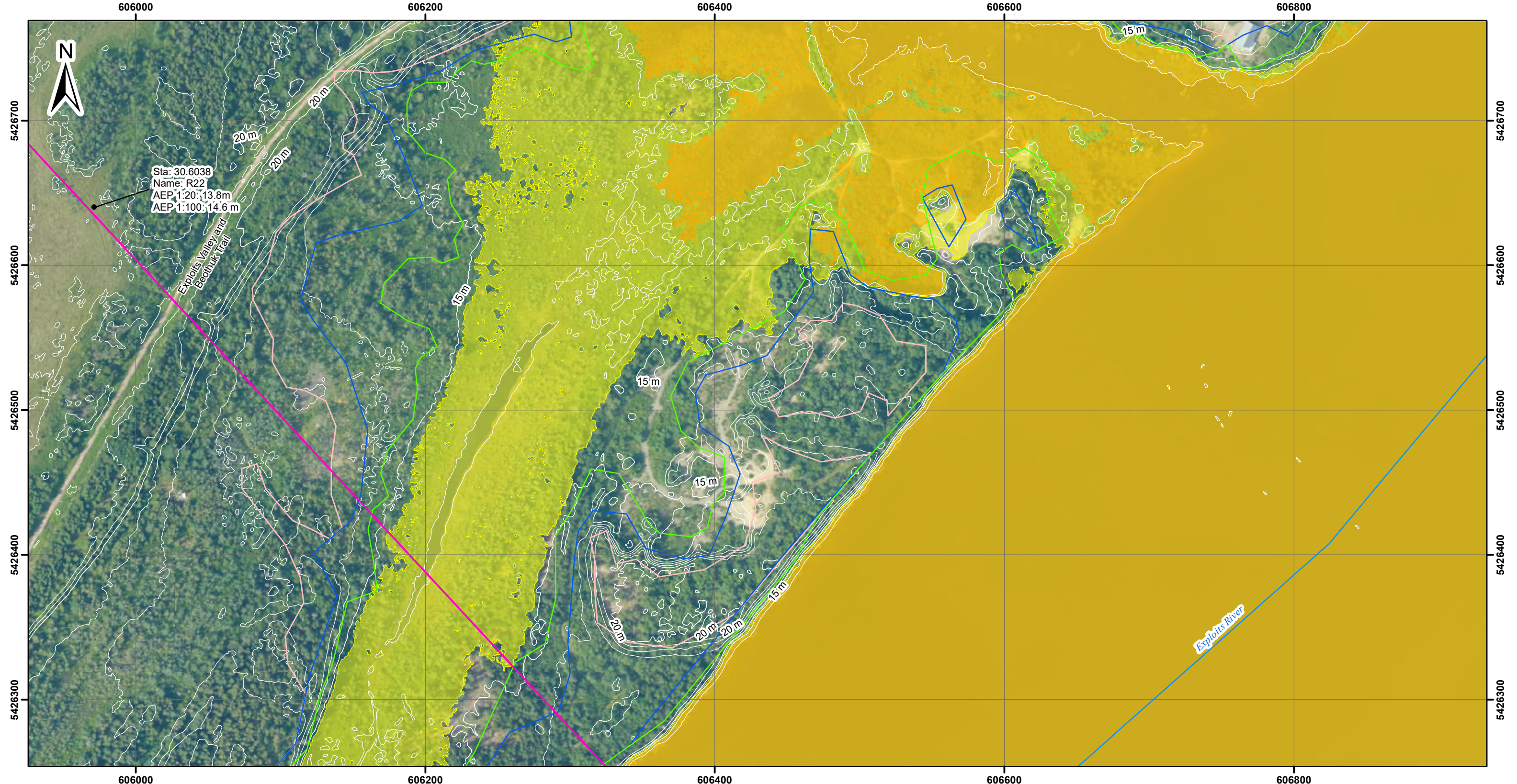
Scale 1:2,500 for 11"x17" paper size

0 12.525 50 75 100 Meters

Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

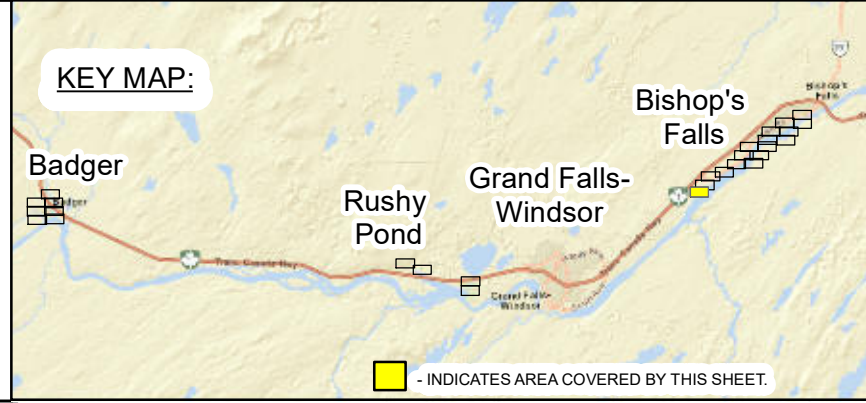


WATER RESOURCES MANAGEMENT DIVISION			
EXPLOITS RIVER FLOOD RISK MAPPING STUDY			
MAP SET #4			
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE WITH HISTORICAL FLOOD ZONES			
CURRENT CLIMATE			
DETAIL MAP			
DATE: 05/17/2021		Page 11 of 28	
PROJECT #: H-358566			



- Legend**
- 1:20 AEP Flood Zone Current Conditions
 - 1:100 AEP Flood Zone Current Conditions
 - Overland Flooding
 - Watercourse Centerline
 - Historical Flood Mapping Limits
 - Historical 1:100 Inundation Limits
 - Historical 1:20 Inundation Limits
 - Historical Maximum Inundation Limits (Bishop's Falls Area)
 - 1 m Contours
 - Bridge
 - Culvert
 - Hydrometric Station

- NOTES:**
- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
 - Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
 - Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
 - Topographic map and world imagery outside project area by ESRI.
- Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.
- 0 12.525 50 75 100 Meters
Scale 1:2,500 for 11"x17" paper size
- Cross Sections





WATER RESOURCES MANAGEMENT DIVISION

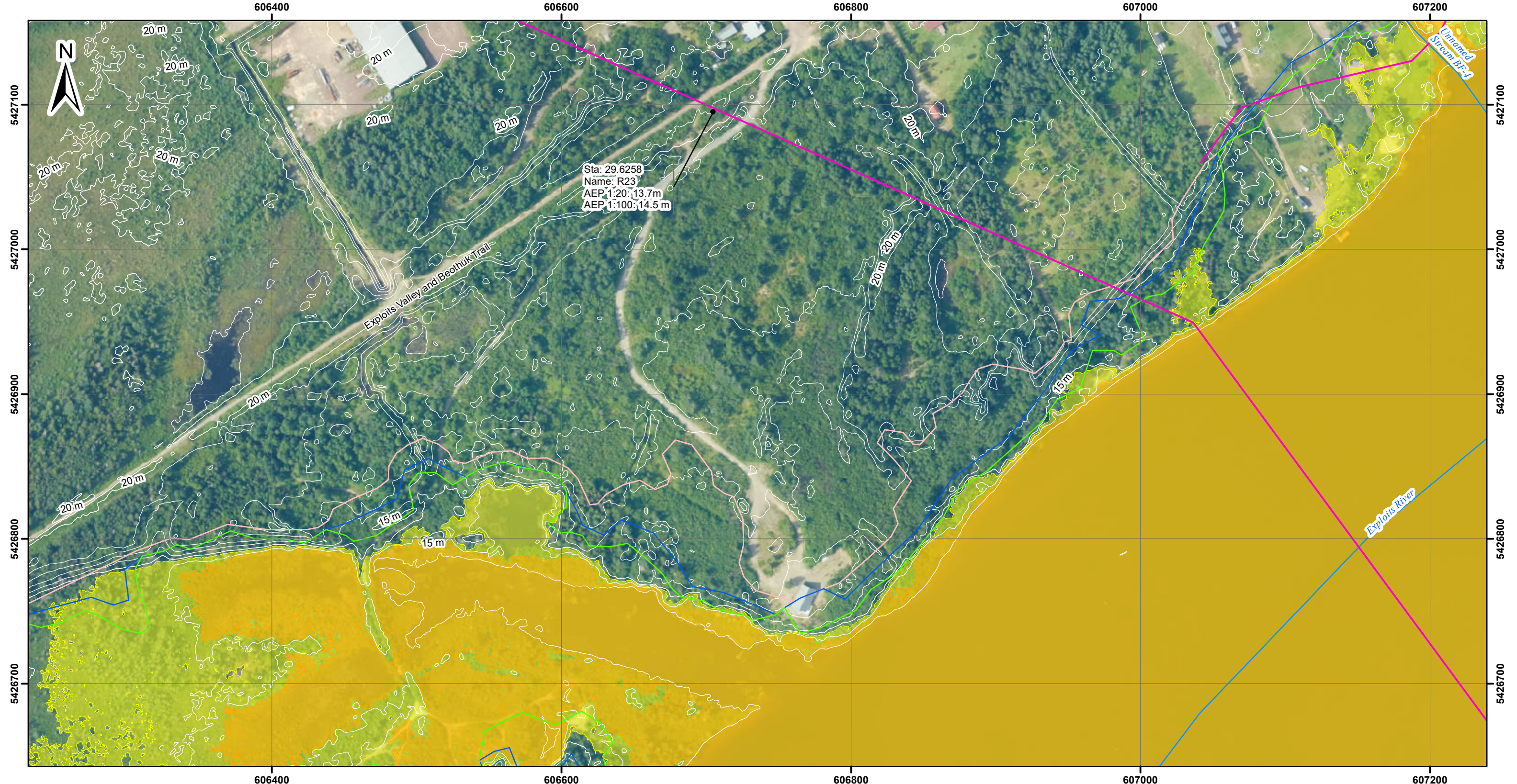
EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021

PROJECT #: H-358566

Page 12 of 28



Legend

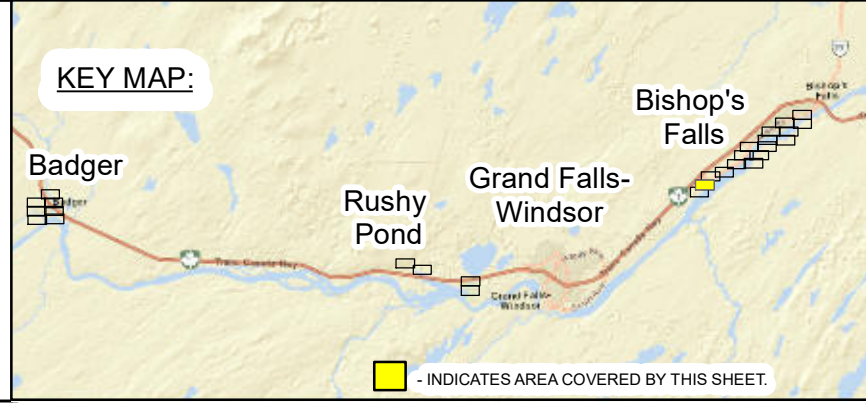
- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Overland Flooding
- Watercourse Centerline
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- 1 m Contours
- Bridge
- Culvert
- Hydrometric Station

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

Sta: Station
 Name: Survey ID (n/a if not surveyed)
 AEP 1:20: 1:20 Water Surface El.
 AEP 1:100: 1:100 Water Surface El.

0 12.525 50 75 100 Meters
 Scale 1:2,500 for 11"x17" paper size



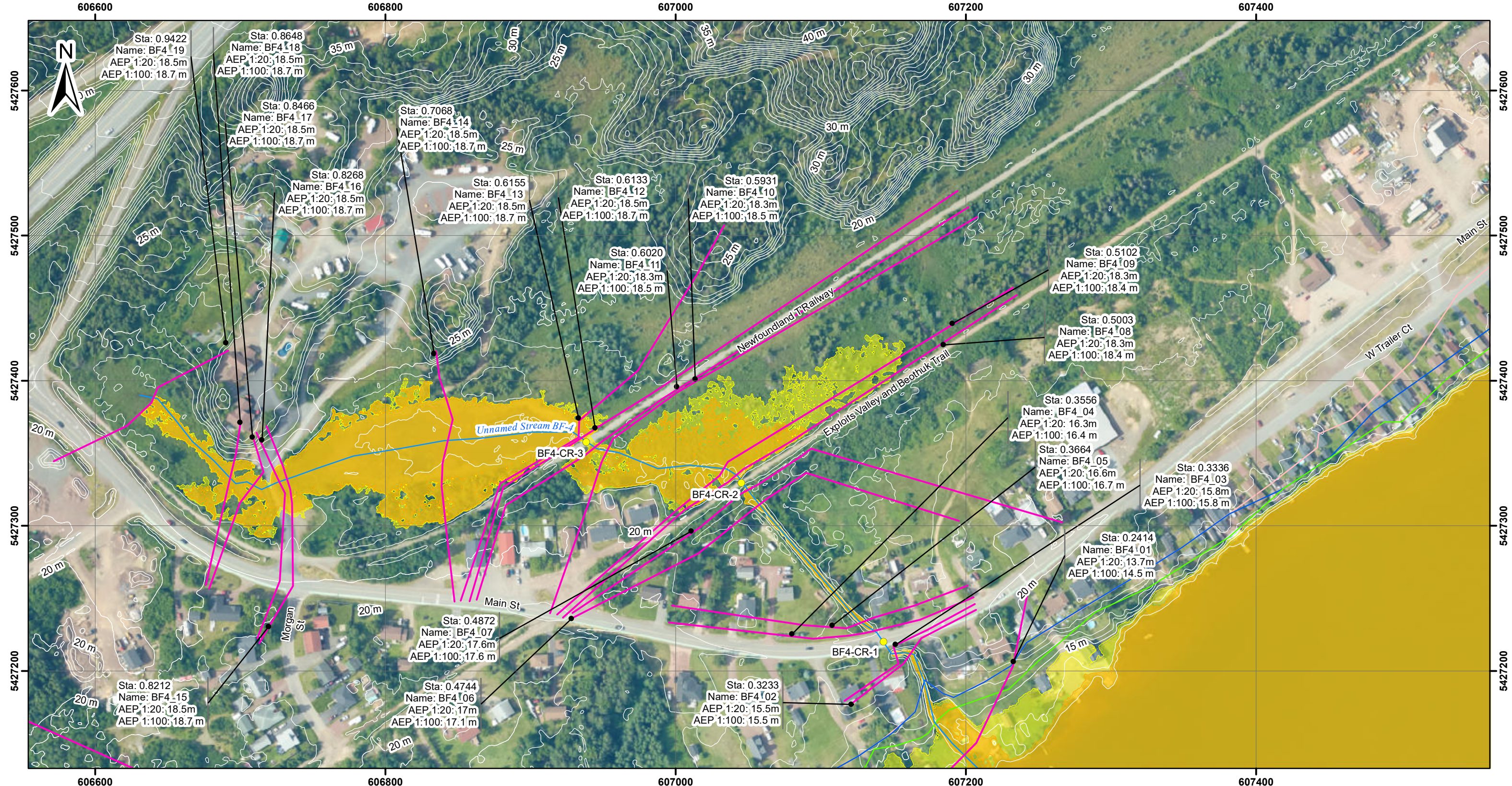
WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
 FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
 WITH HISTORICAL FLOOD ZONES
 CURRENT CLIMATE
 DETAIL MAP

DATE: 05/17/2021
 PROJECT #: H-358566

Page 13 of 28



Legend

- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Overland Flooding
- Watercourse Centerline
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- 1 m Contours
- Bridge
- Culvert
- Hydrometric Station

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

0 12.525 50 75 100 Meters
Scale 1:2,500 for 11"x17" paper size

Cross Sections

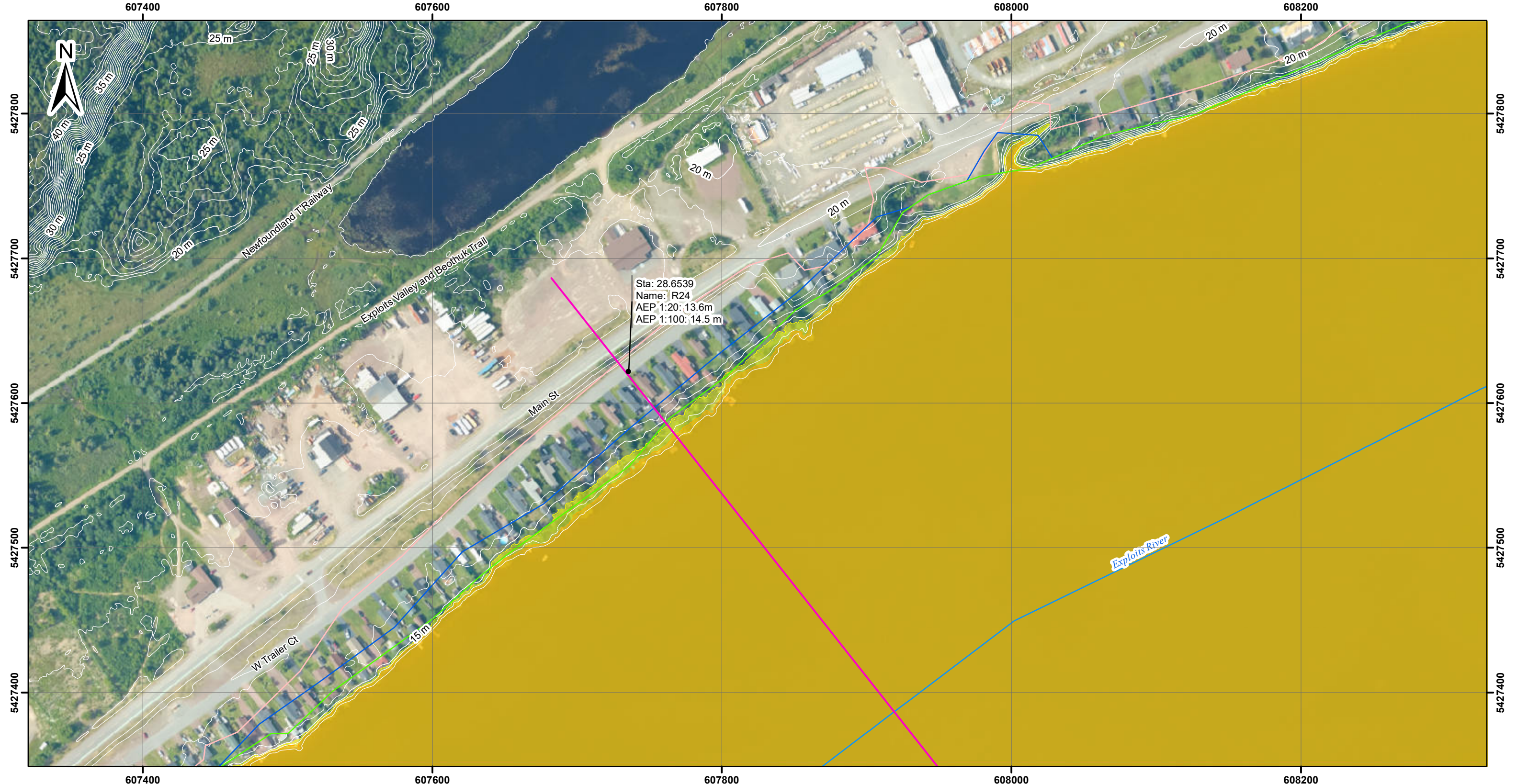


WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021	Page 14 of 28
PROJECT #: H-358566	



- Legend**
- 1:20 AEP Flood Zone Current Conditions
 - 1:100 AEP Flood Zone Current Conditions
 - Overland Flooding
 - Watercourse Centerline
 - Historical Flood Mapping Limits
 - Historical 1:100 Inundation Limits
 - Historical 1:20 Inundation Limits
 - Historical Maximum Inundation Limits (Bishop's Falls Area)
 - 1 m Contours
 - Bridge
 - Culvert
 - Hydrometric Station

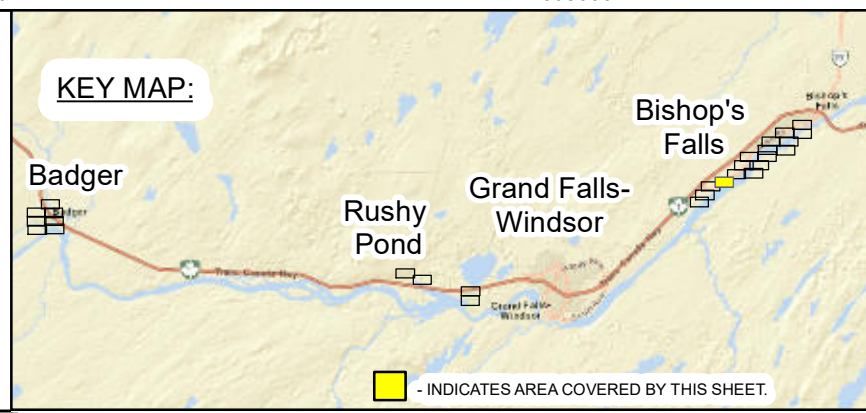
NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

0 12.525 50 75 100 Meters
Scale 1:2,500 for 11"x17" paper size

Cross Sections





WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4

FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE WITH HISTORICAL FLOOD ZONES

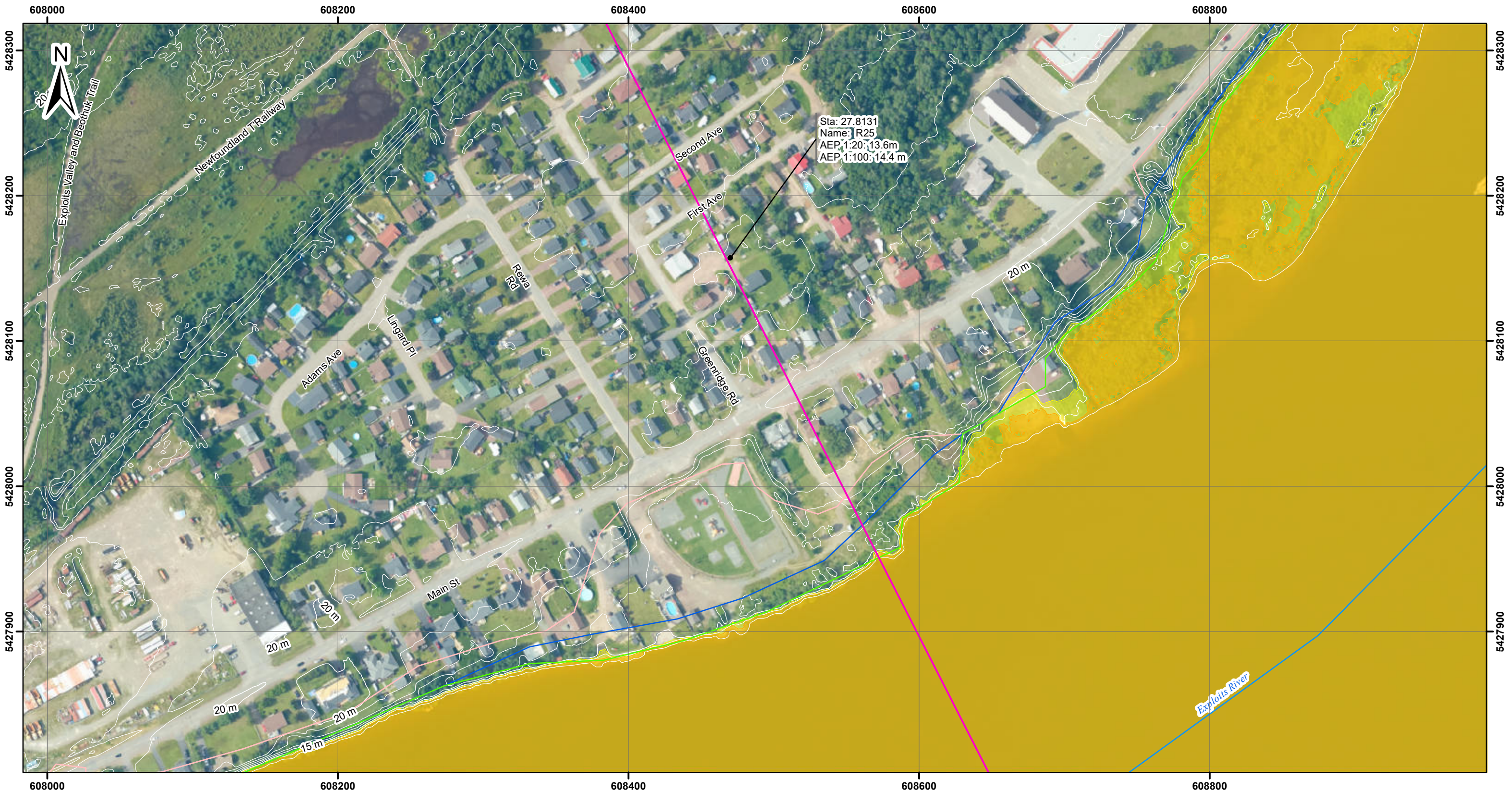
CURRENT CLIMATE

DETAIL MAP

DATE: 05/17/2021

PROJECT #: H-358566

Page 15 of 28



Legend

- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Overland Flooding
- Watercourse Centerline
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- 1 m Contours
- Bridge
- Culvert
- Hydrometric Station

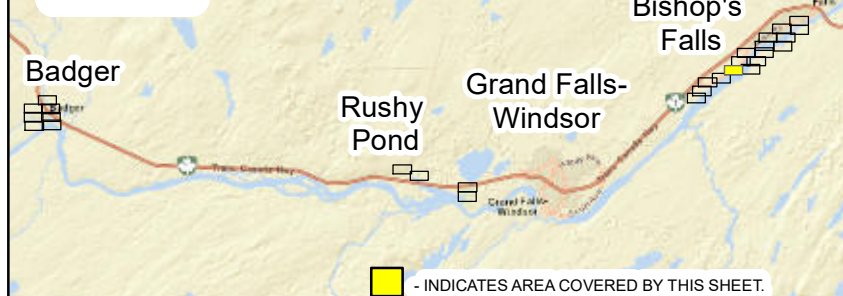
Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

0 12.525 50 75 100
Meters
Scale 1:2,500 for 11"x17" paper size

KEY MAP:



HATCH
Newfoundland
Labrador

WATER RESOURCES MANAGEMENT DIVISION

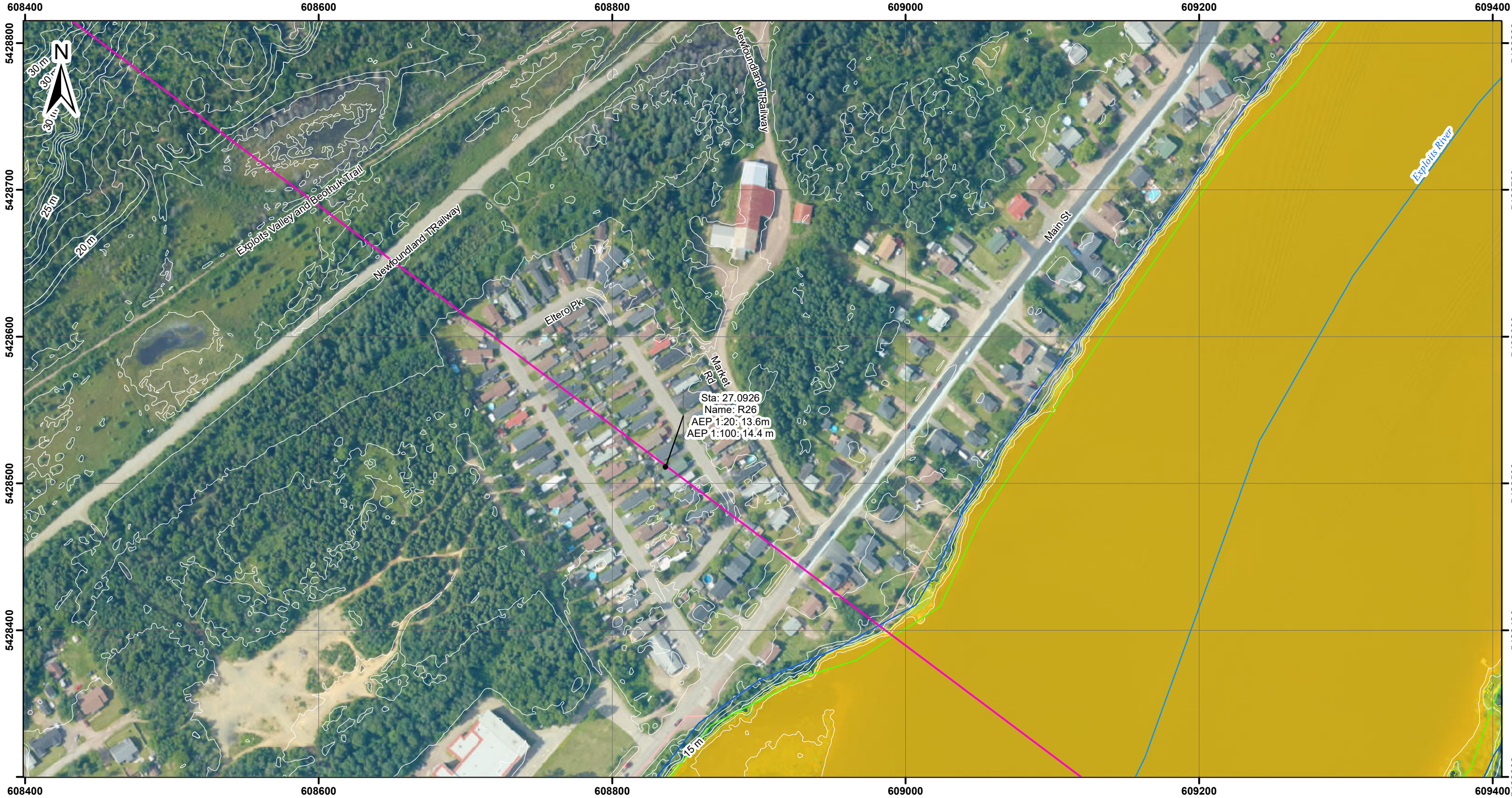
EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021

PROJECT #: H-358566

Page 16 of 28



Legend

- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Overland Flooding
- Watercourse Centerline
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- 1 m Contours
- Bridge
- Culvert
- Hydrometric Station

Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

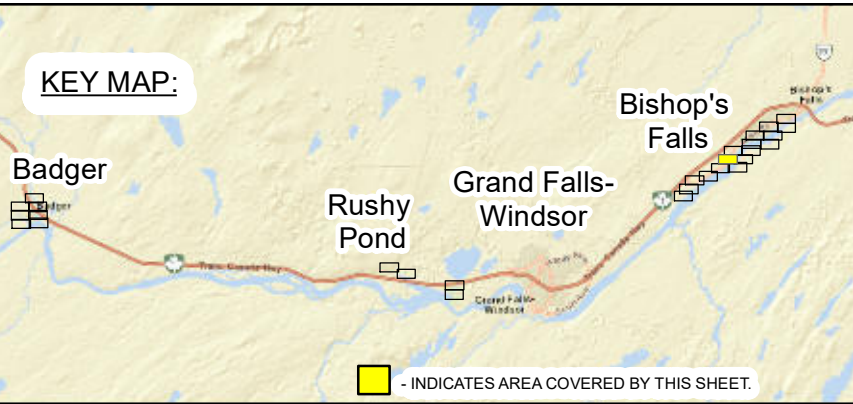
NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

0 12.525 50 75 100
Meters
Scale 1:2,500 for 11"x17" paper size

Cross Sections

KEY MAP:



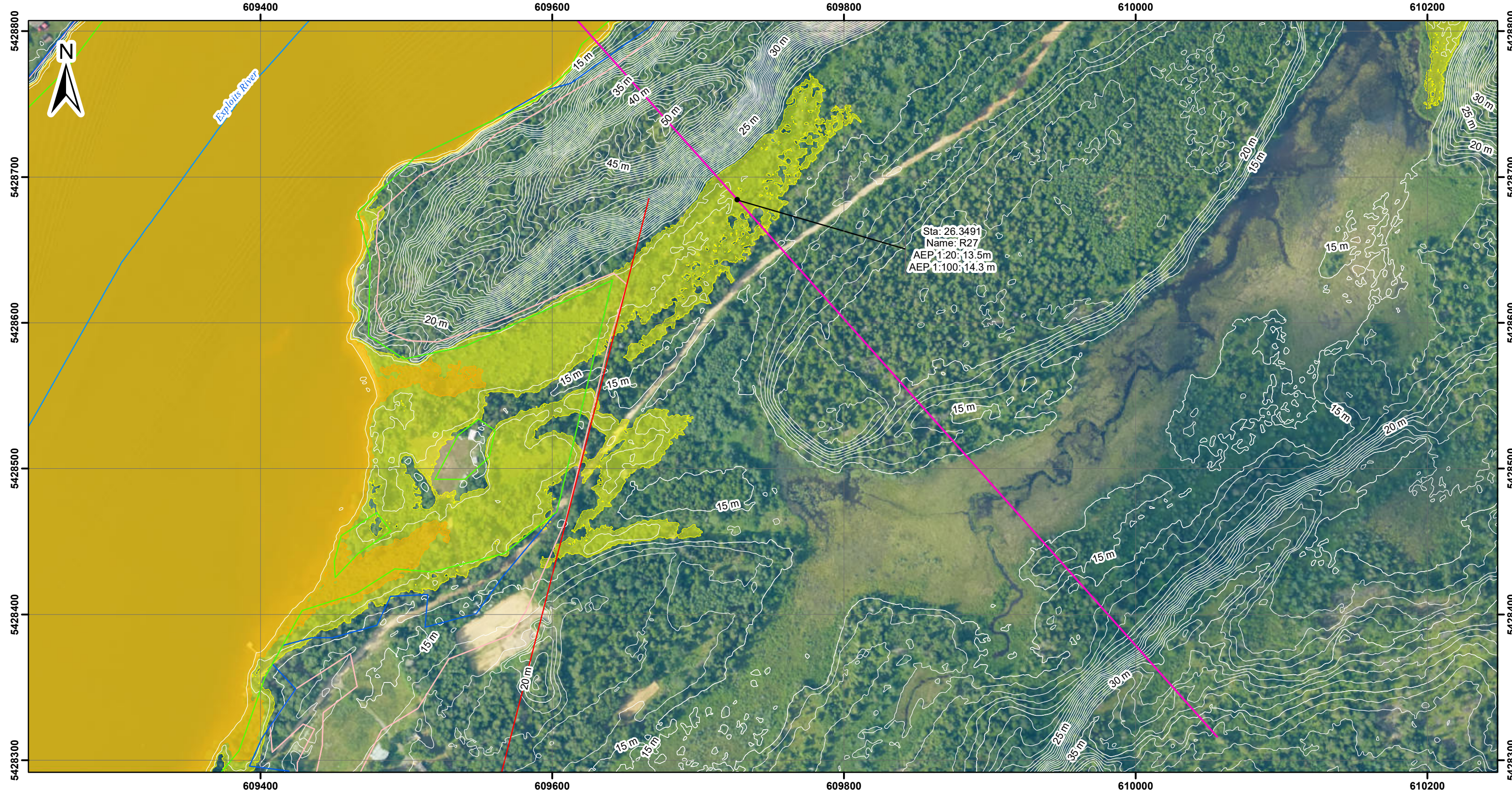
WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021

PROJECT #: H-358566



- Legend**
- 1:20 AEP Flood Zone Current Conditions
 - 1:100 AEP Flood Zone Current Conditions
 - Overland Flooding
 - Watercourse Centerline
 - Historical Flood Mapping Limits
 - Historical 1:100 Inundation Limits
 - Historical 1:20 Inundation Limits
 - Historical Maximum Inundation Limits (Bishop's Falls Area)
 - 1 m Contours
 - Bridge
 - Culvert
 - Hydrometric Station

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

0 12.525 50 75 100
Meters
Scale 1:2,500 for 11"x17" paper size

Cross Sections





WATER RESOURCES MANAGEMENT DIVISION

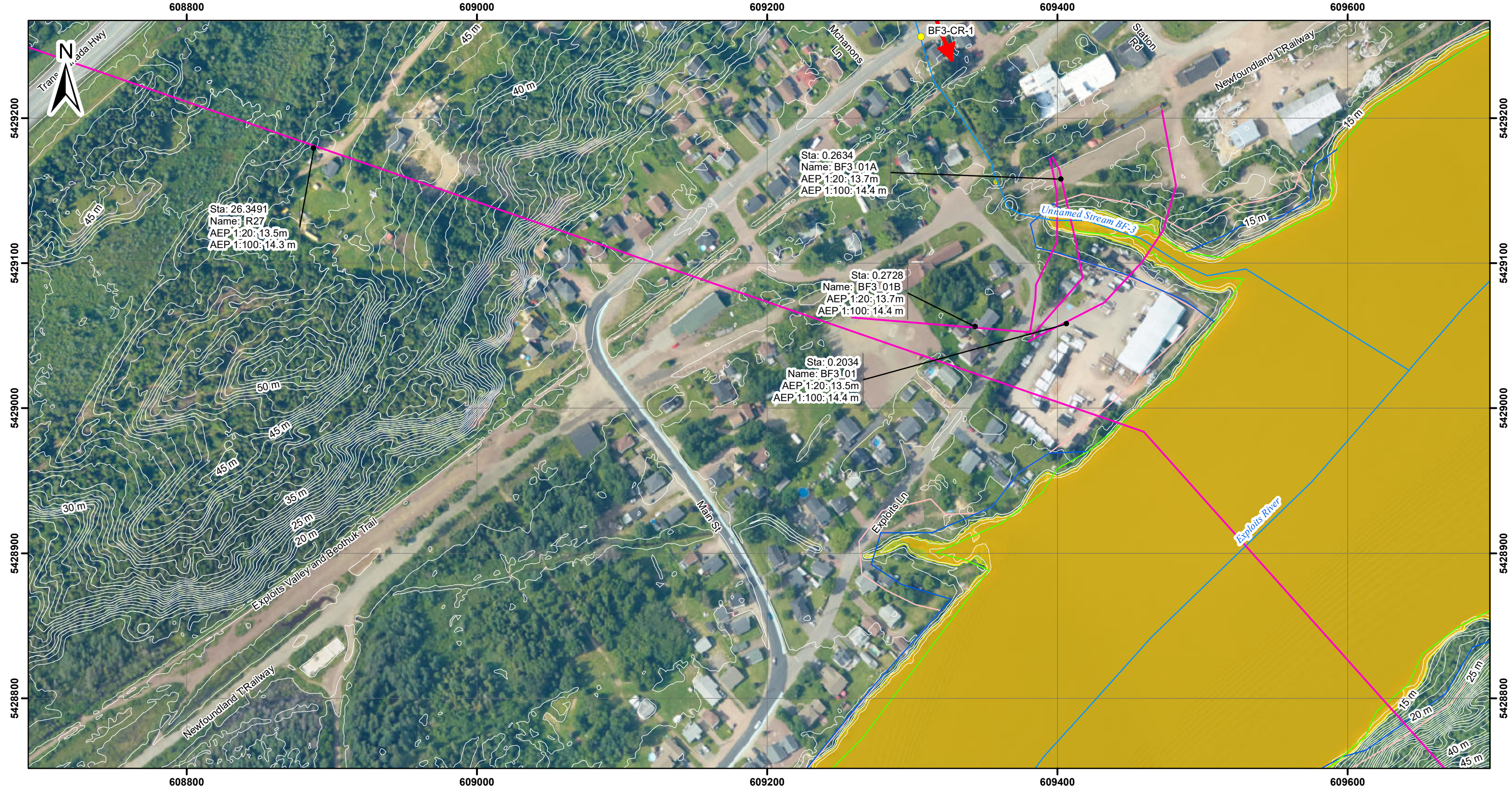
EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021

PROJECT #: H-358566

Page 19 of 28



Legend

	1:20 AEP Flood Zone Current Conditions
	1:100 AEP Flood Zone Current Conditions
	Overland Flooding
	Watercourse Centerline
	Historical Flood Mapping Limits
	Historical 1:100 Inundation Limits
	Historical 1:20 Inundation Limits
	Historical Maximum Inundation Limits (Bishop's Falls Area)
	1 m Contours
	Bridge
	Culvert
	Hydrometric Station

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

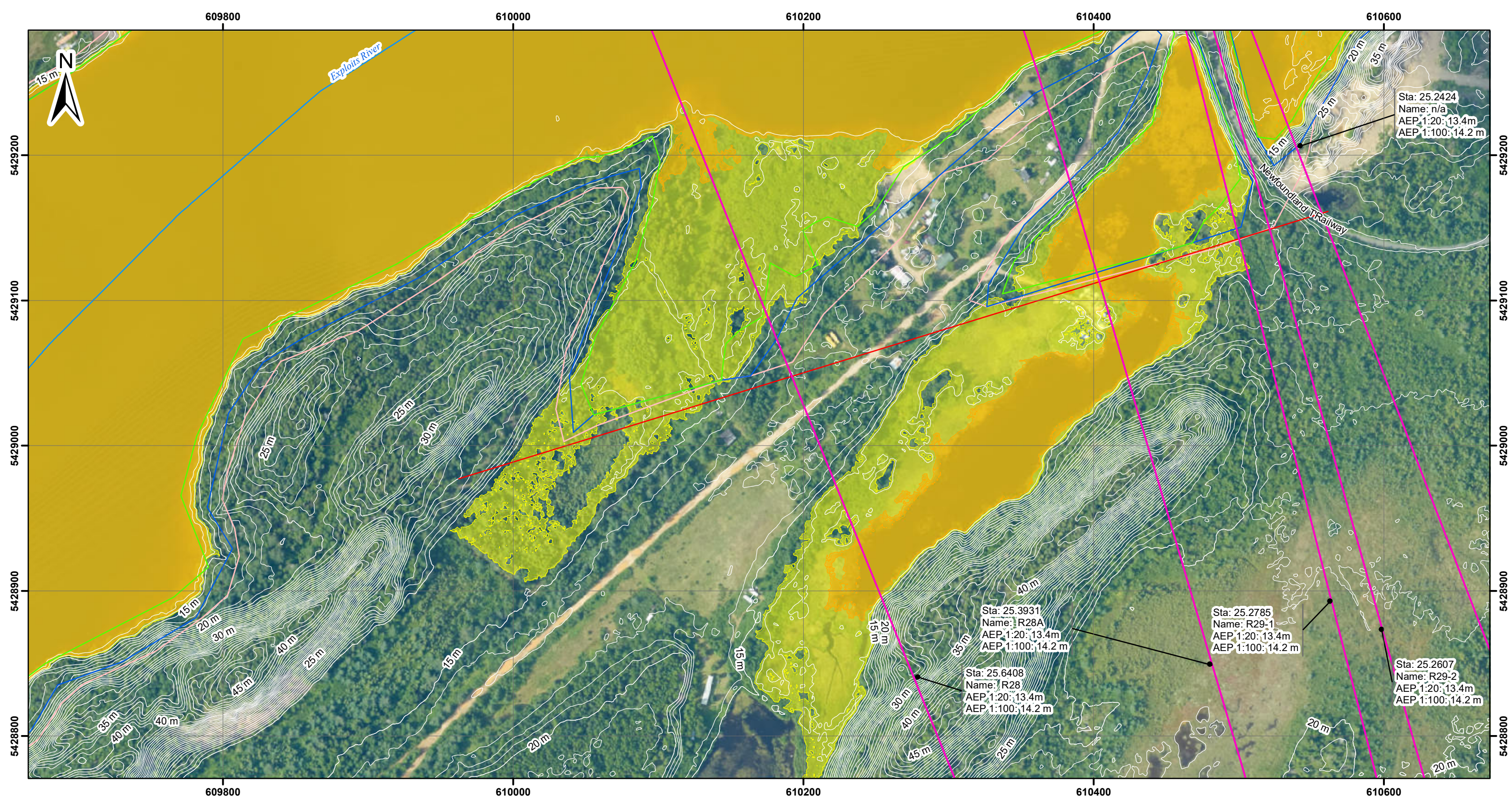
Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

Cross Sections

0 12.525 50 75 100 Meters
Scale 1:2,500 for 11"x17" paper size



WATER RESOURCES MANAGEMENT DIVISION			
EXPLOITS RIVER FLOOD RISK MAPPING STUDY			
MAP SET #4 FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE WITH HISTORICAL FLOOD ZONES CURRENT CLIMATE DETAIL MAP			
DATE: 05/17/2021		Page 20 of 28	
PROJECT #: H-358566			



Legend

- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Overland Flooding
- Watercourse Centerline
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- 1 m Contours
- Bridge
- Culvert
- Hydrometric Station

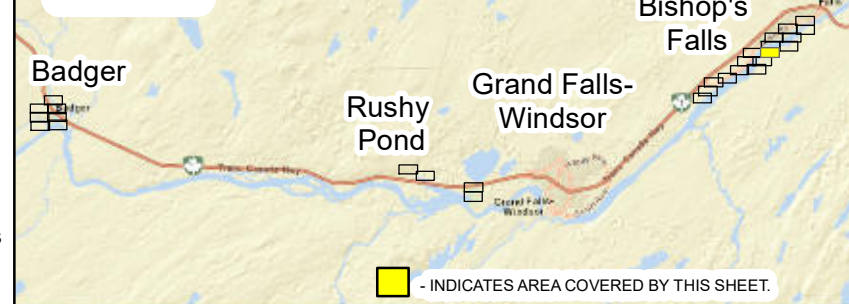
NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

0 12.525 50 75 100
Meters
Scale 1:2,500 for 11"x17" paper size

KEY MAP:

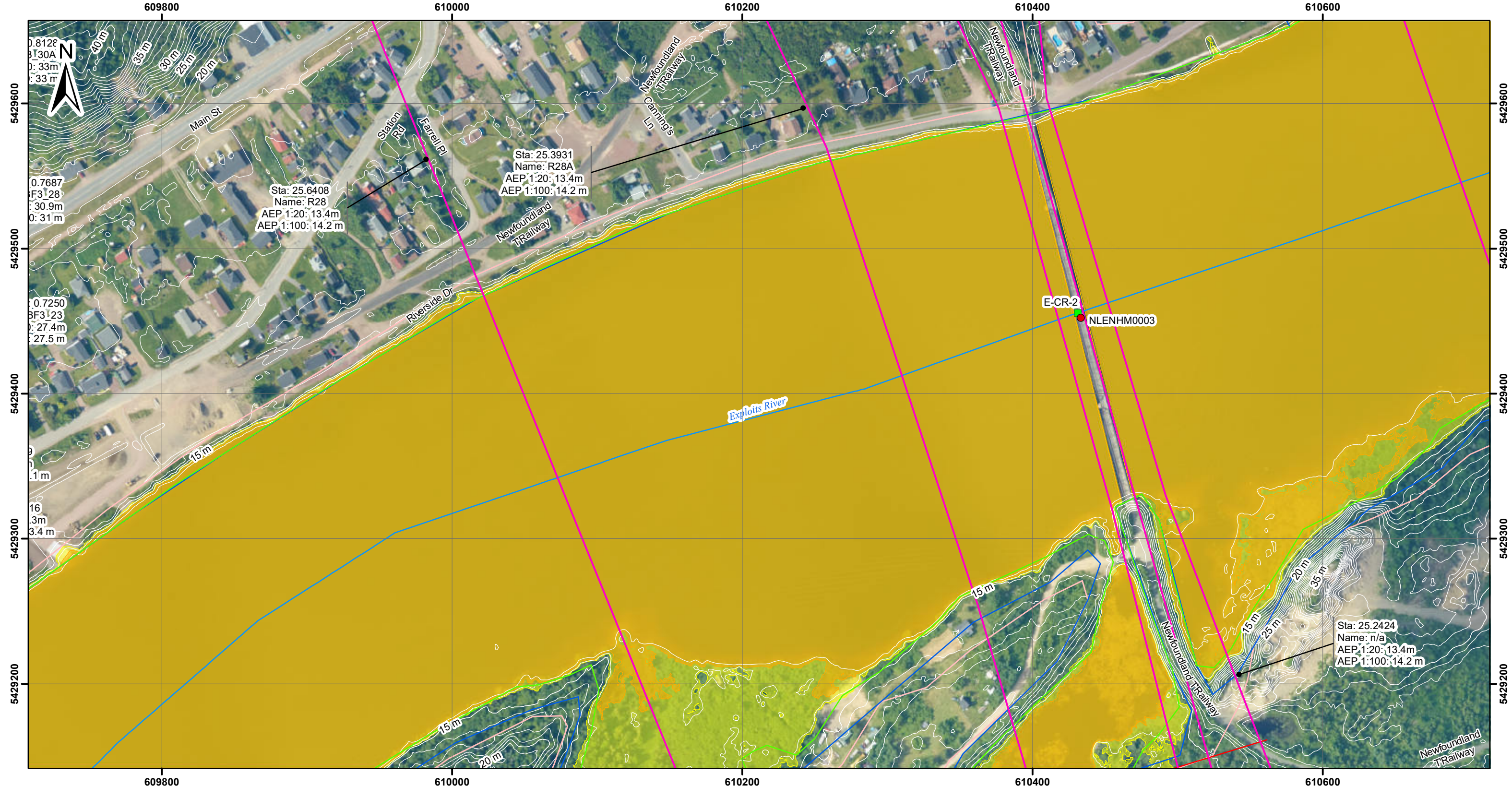


HATCH
Newfoundland
Labrador

WATER RESOURCES MANAGEMENT DIVISION
EXPLOITS RIVER FLOOD RISK MAPPING STUDY
MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021
PROJECT #: H-358566

Page 21 of 28



Legend

1:20 AEP Flood Zone Current Conditions

1:100 AEP Flood Zone Current Conditions

Overland Flooding

Watercourse Centerline

Historical Flood Mapping Limits

Historical 1:100 Inundation Limits

Historical 1:20 Inundation Limits

Historical Maximum Inundation Limits (Bishop's Falls Area)

1 m Contours

Bridge

Culvert

Hydrometric Station

Sta: Station

Name: Survey ID (n/a if not surveyed)

AEP 1:20: 1:20 Water Surface El.

AEP 1:100: 1:100 Water Surface El.

Cross Sections

NOTES:

1. Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.

2. Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.

3. Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.

4. Topographic map and world imagery outside project area by ESRI.

0 12.525 50 75 100

Meters

Scale 1:2,500 for 11"x17" paper size

KEY MAP:

- INDICATES AREA COVERED BY THIS SHEET.

HATCH

Newfoundland
Labrador

WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

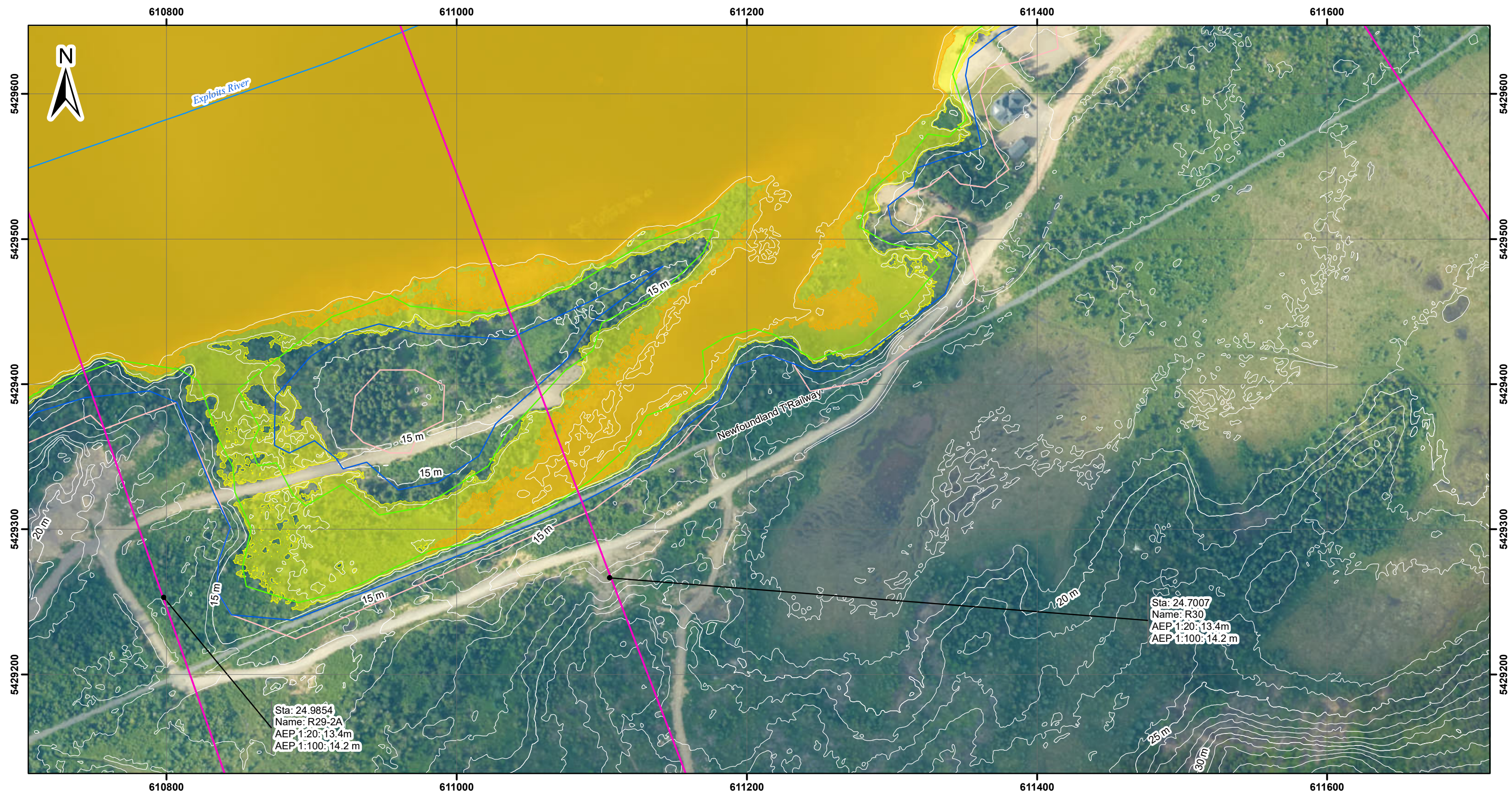
MAP SET #4

FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021

PROJECT #: H-358566

Page 22 of 28



Legend

- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Overland Flooding
- Watercourse Centerline
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- 1 m Contours
- Bridge
- Culvert
- Hydrometric Station

Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

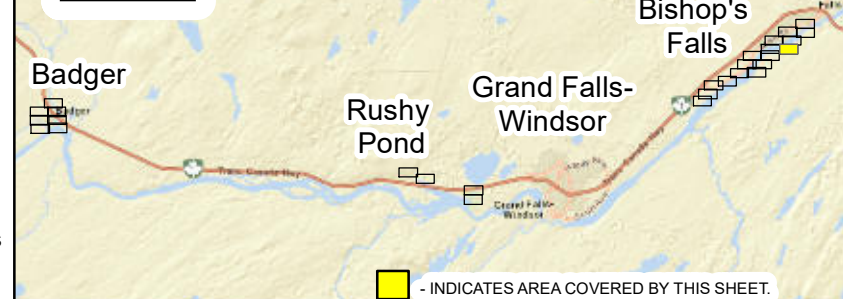
NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

0 12.525 50 75 100
Meters
Scale 1:2,500 for 11"x17" paper size

Cross Sections

KEY MAP:



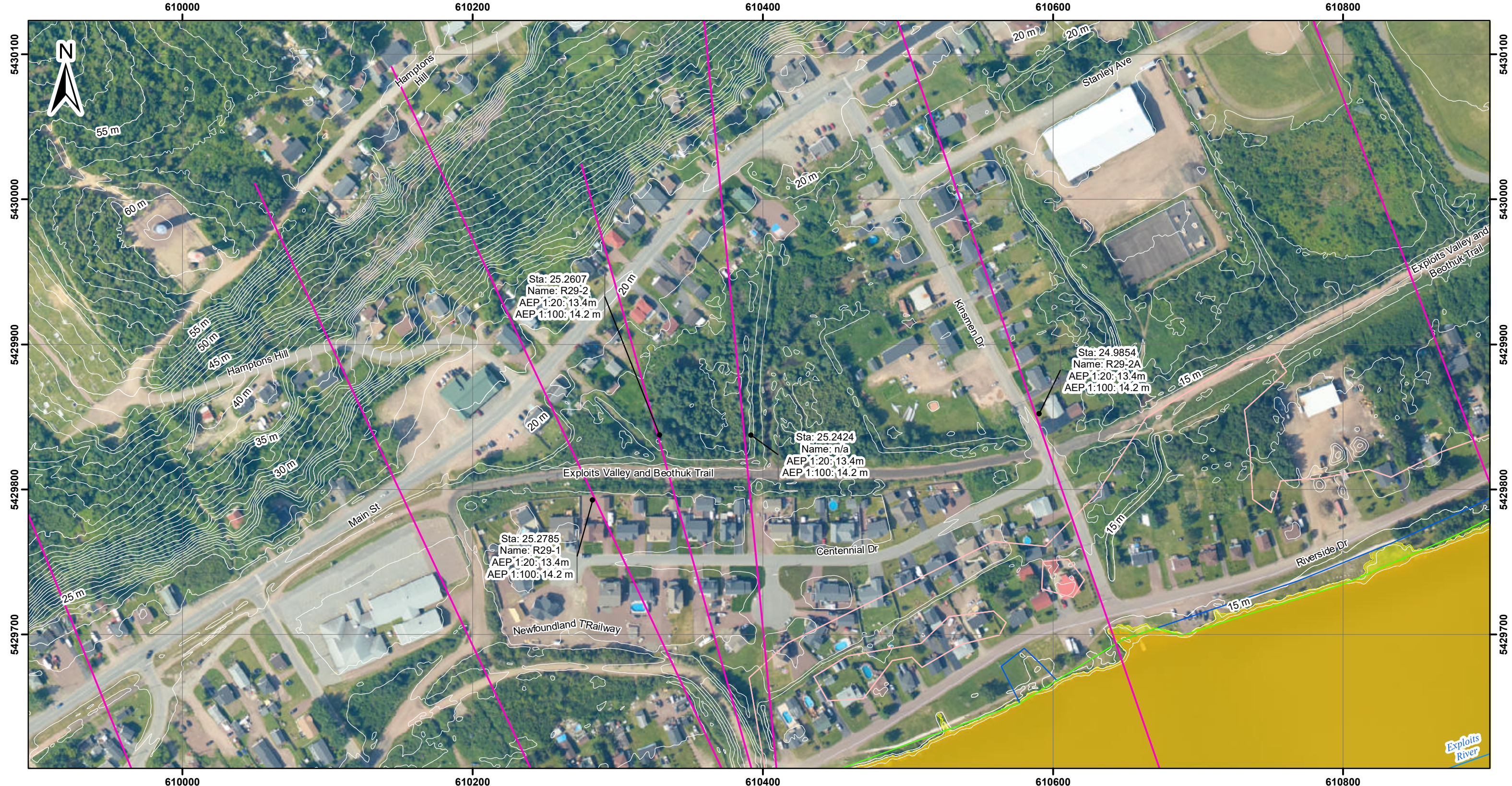
WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021

PROJECT #: H-358566



Legend

- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Overland Flooding
- Watercourse Centerline
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- 1 m Contours
- Bridge
- Culvert
- Hydrometric Station

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

Sta: Station
 Name: Survey ID (n/a if not surveyed)
 AEP 1:20: 1:20 Water Surface El.
 AEP 1:100: 1:100 Water Surface El.

0 12.525 50 75 100 Meters
 Scale 1:2,500 for 11"x17" paper size



HATCH Newfoundland Labrador

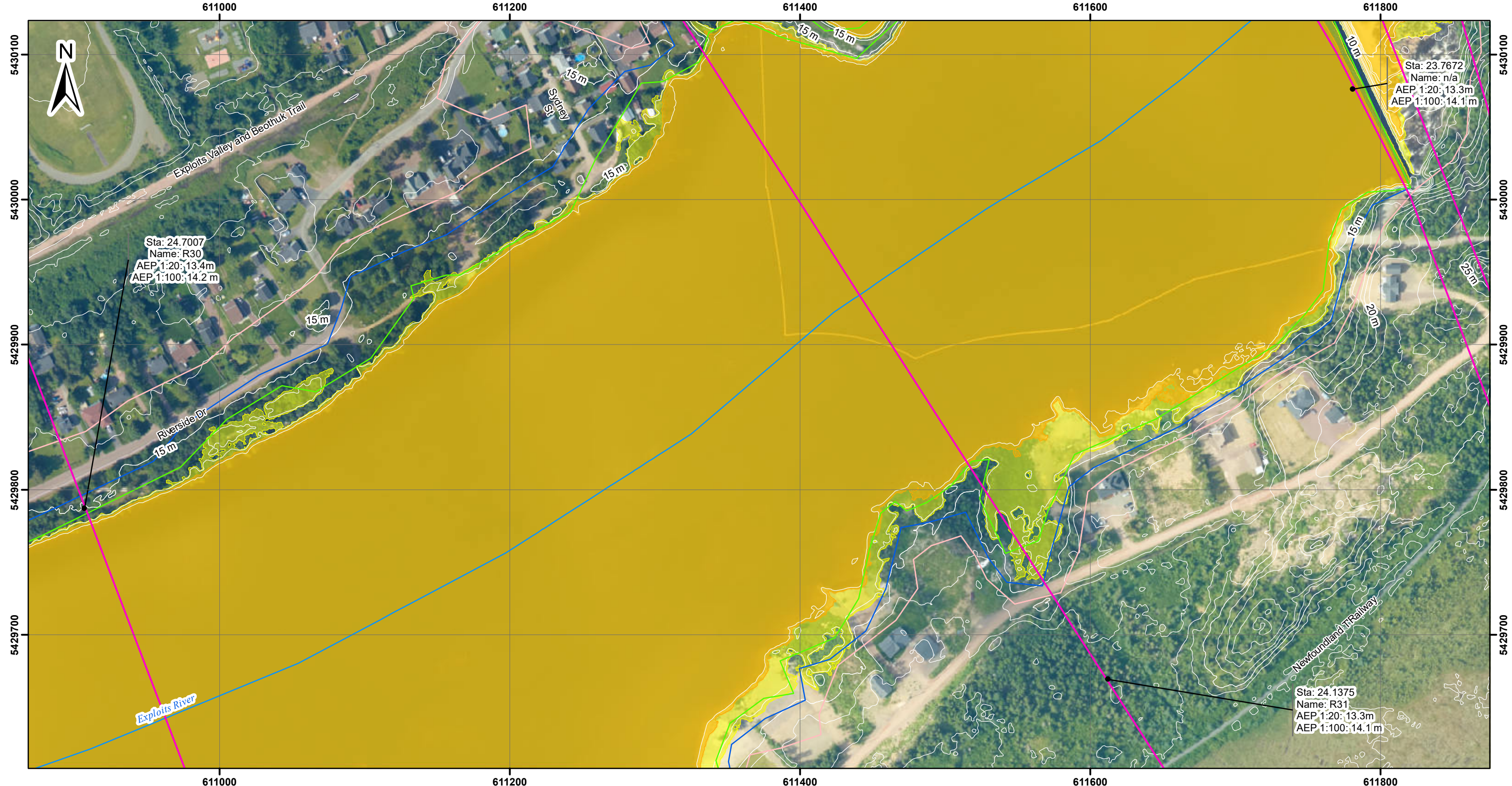
WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
 FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE WITH HISTORICAL FLOOD ZONES
 CURRENT CLIMATE
 DETAIL MAP

DATE: 05/17/2021
 PROJECT #: H-358566

Page 24 of 28

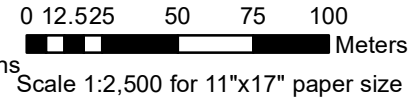


Legend

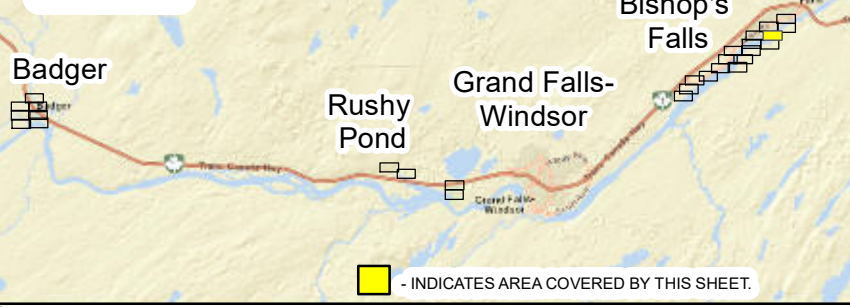
- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Overland Flooding
- Watercourse Centerline
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- 1 m Contours
- Bridge
- Culvert
- Hydrometric Station
- Sta: Station
- Name: Survey ID (n/a if not surveyed)
- AEP 1:20: 1:20 Water Surface El.
- AEP 1:100: 1:100 Water Surface El.

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.



KEY MAP:



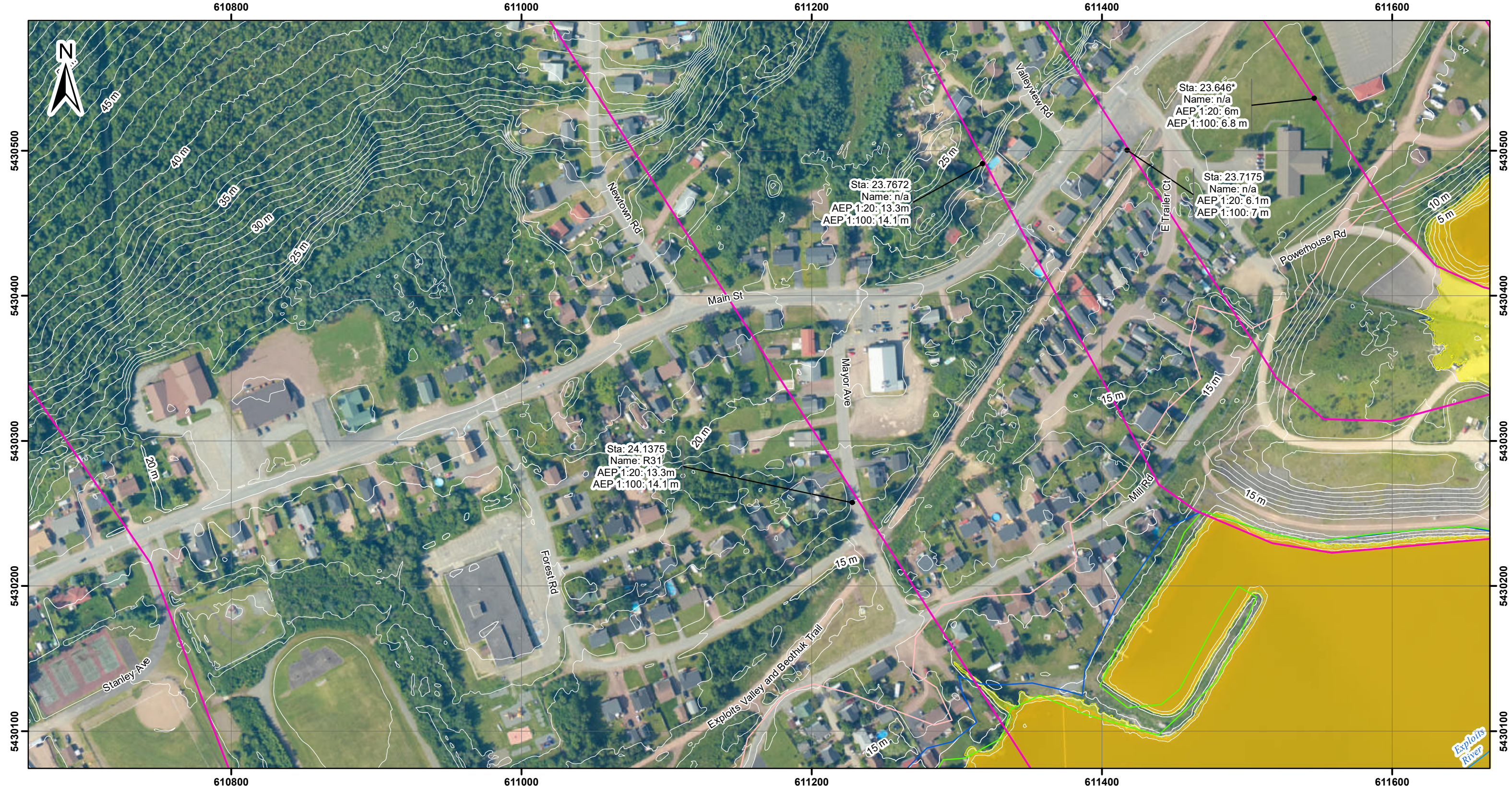
WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021

PROJECT #: H-358566



Legend

1:20 AEP Flood Zone Current Conditions

1:100 AEP Flood Zone Current Conditions

Overland Flooding

Watercourse Centerline

Historical Flood Mapping Limits

Historical 1:100 Inundation Limits

Historical 1:20 Inundation Limits

Historical Maximum Inundation Limits (Bishop's Falls Area)

1 m Contours

Bridge

Culvert

Hydrometric Station

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

Sta: Station

Name: Survey ID (n/a if not surveyed)

AEP 1:20: 1:20 Water Surface El.

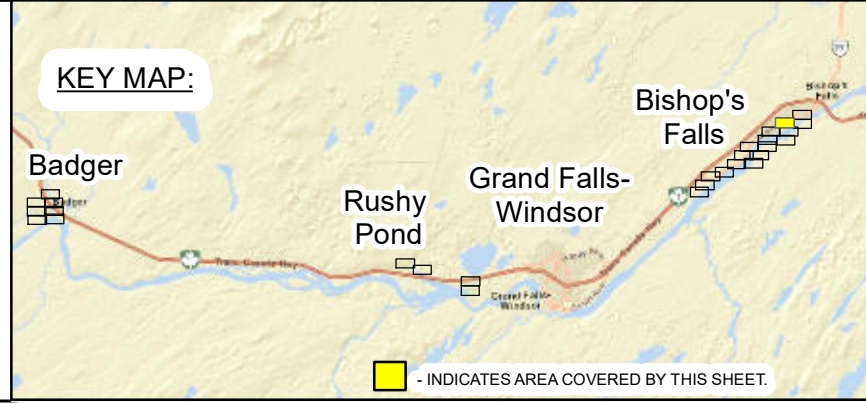
AEP 1:100: 1:100 Water Surface El.

Cross Sections

0 12.525 50 75 100

Meters

Scale 1:2,500 for 11"x17" paper size



HATCH

Newfoundland
Labrador

WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

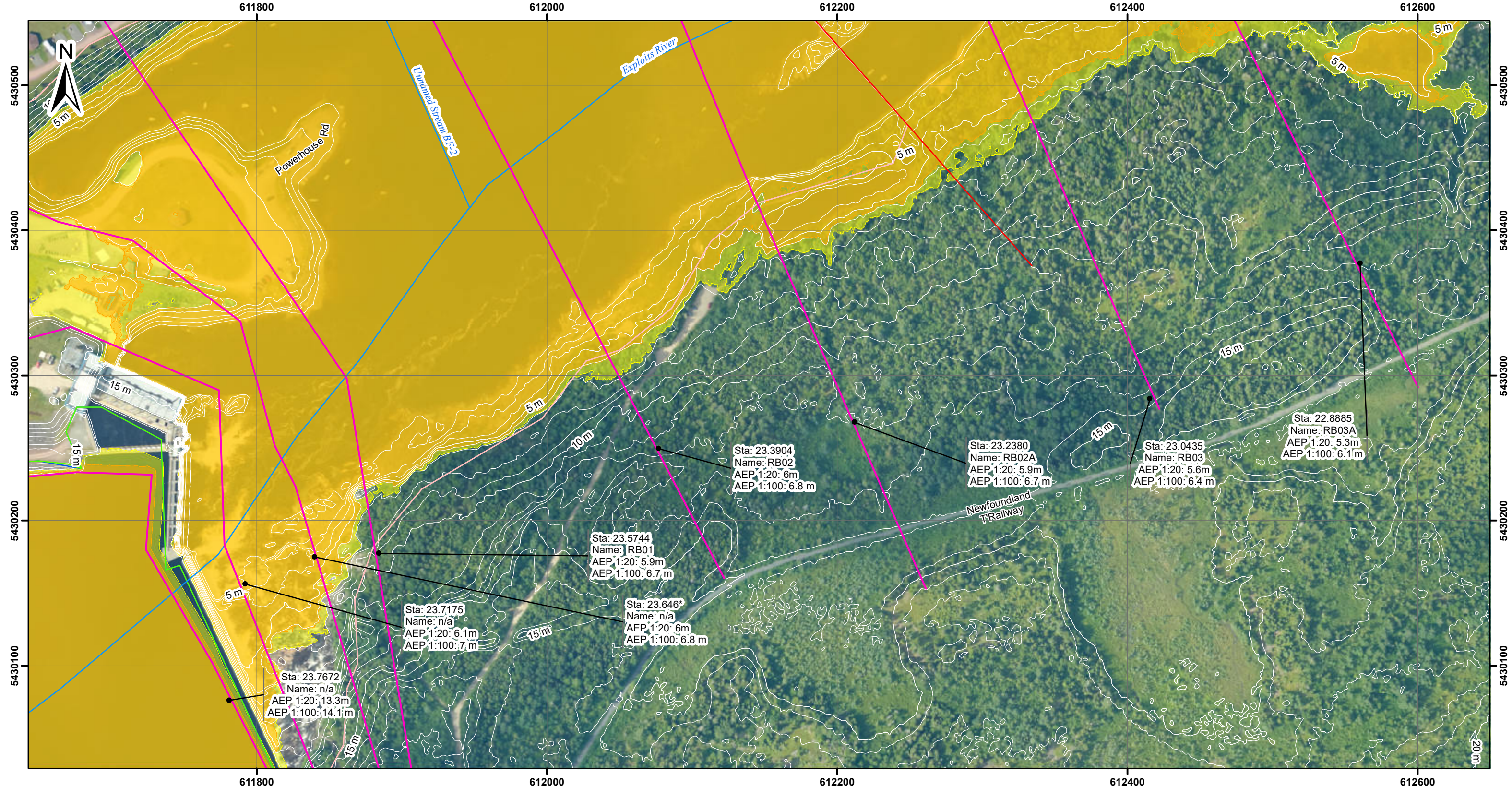
MAP SET #4

FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021

PROJECT #: H-358566

Page 26 of 28



Legend

1:20 AEP Flood Zone Current Conditions	1 m Contours
1:100 AEP Flood Zone Current Conditions	Bridge
Overland Flooding	Culvert
Watercourse Centerline	Hydrometric Station
Historical Flood Mapping Limits	
Historical 1:100 Inundation Limits	
Historical 1:20 Inundation Limits	
Historical Maximum Inundation Limits (Bishop's Falls Area)	

NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

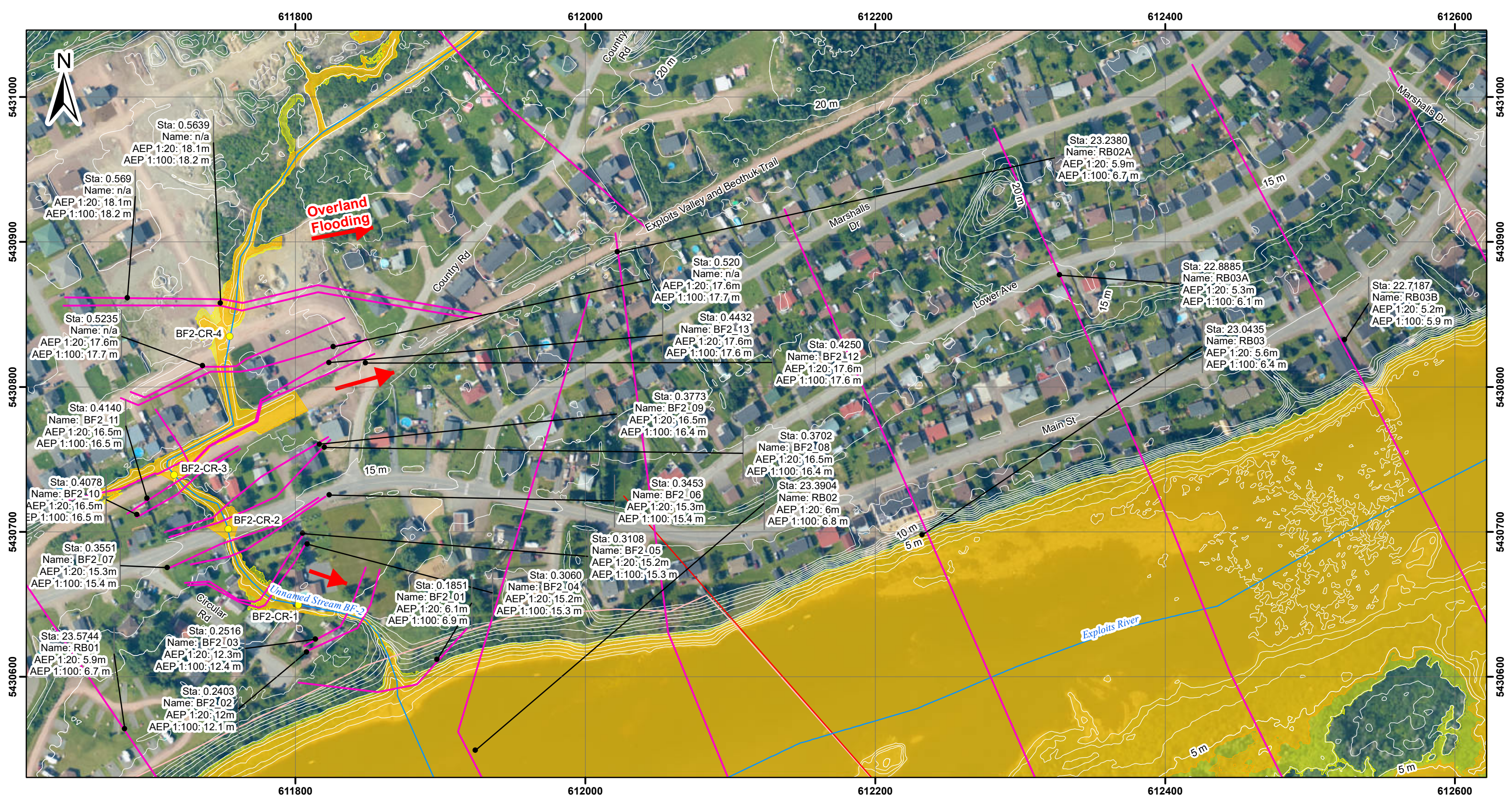
Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

Cross Sections

0 12.525 50 75 100
Meters
Scale 1:2,500 for 11"x17" paper size



WATER RESOURCES MANAGEMENT DIVISION	
EXPLOITS RIVER FLOOD RISK MAPPING STUDY	
MAP SET #4	
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE WITH HISTORICAL FLOOD ZONES	
CURRENT CLIMATE	
DETAIL MAP	
DATE: 05/17/2021	Page 27 of 28
PROJECT #: H-358566	



Legend

- 1:20 AEP Flood Zone Current Conditions
- 1:100 AEP Flood Zone Current Conditions
- Overland Flooding
- Watercourse Centerline
- Historical Flood Mapping Limits
- Historical 1:100 Inundation Limits
- Historical 1:20 Inundation Limits
- Historical Maximum Inundation Limits (Bishop's Falls Area)
- 1 m Contours
- Bridge
- Culvert
- Hydrometric Station

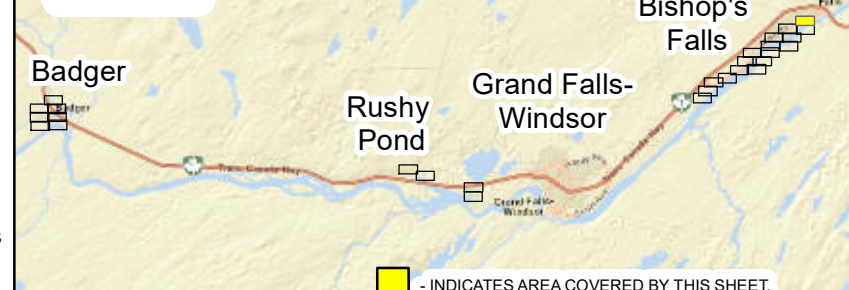
NOTES:

- Coordinates are based on the Universal Transverse Mercator Projection, North American Datum 1983, Zone 21N. Elevation data is based on the Canadian Geodetic Vertical Datum (CGVD) 2013.
- Lidar data by Leading Edge Geomatics Aug. 15-16, 2019.
- Aerial imagery in project area by Leading Edge Geomatics Jul. 25-26, 2019.
- Topographic map and world imagery outside project area by ESRI.

Sta: Station
Name: Survey ID (n/a if not surveyed)
AEP 1:20: 1:20 Water Surface El.
AEP 1:100: 1:100 Water Surface El.

0 12.525 50 75 100
Meters
Scale 1:2,500 for 11"x17" paper size

KEY MAP:



WATER RESOURCES MANAGEMENT DIVISION

EXPLOITS RIVER FLOOD RISK MAPPING STUDY

MAP SET #4
FLOOD EXTENT MAP - ICE AND OPEN WATER COMPOSITE
WITH HISTORICAL FLOOD ZONES
CURRENT CLIMATE
DETAIL MAP

DATE: 05/17/2021

PROJECT #: H-358566