

## Appendix A - Model Inputs

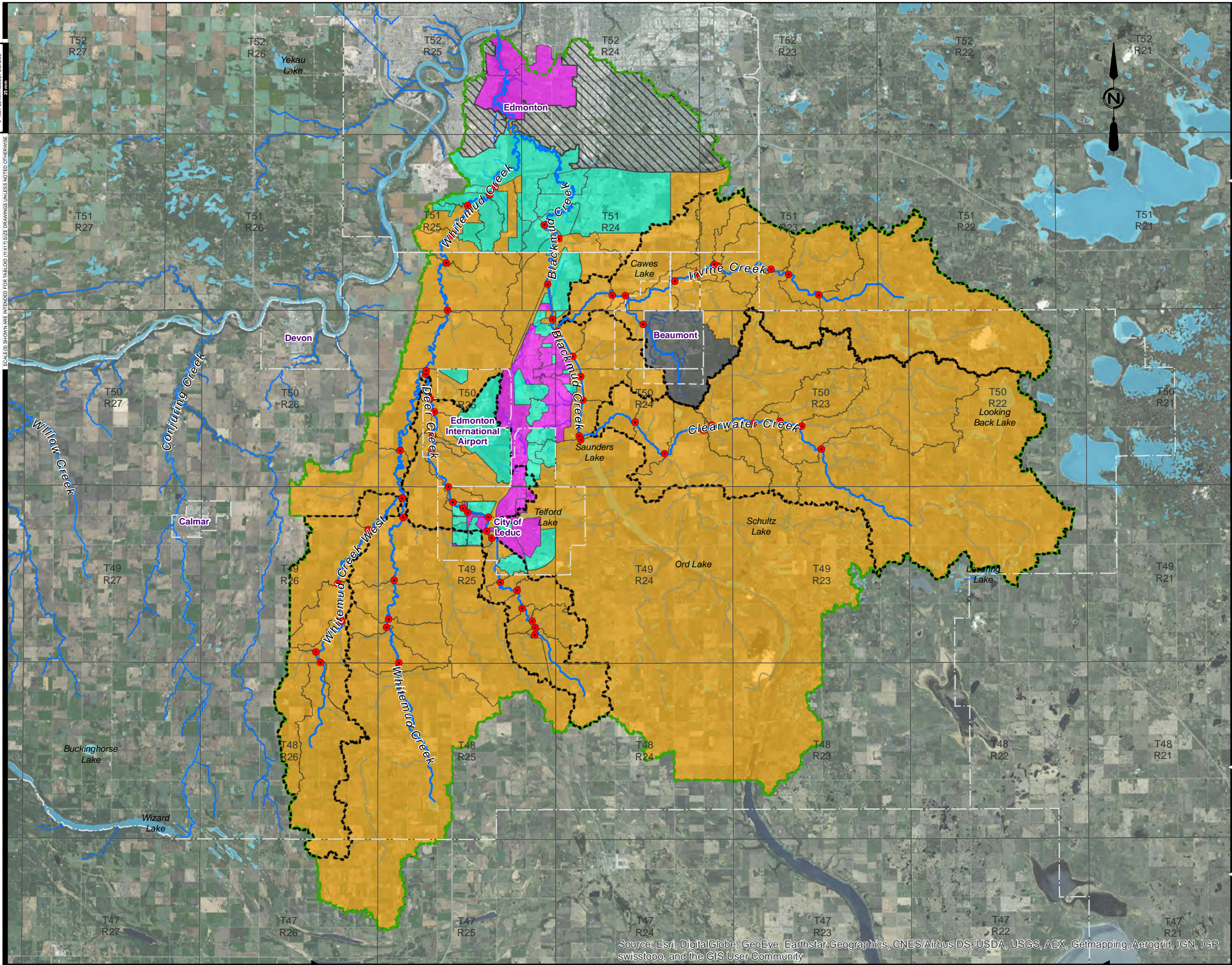




IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

P:\2017\6375500\_Blackmud\_Whitemud\Working\_Dvgs\010\_GIS\Act\Map\02\_WaterResources\Map02\_CatchmentSubcatchmentBoundaries.mxd  
DATE: 5/11/2017



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Legend:

- Mike11 Inflow Boundary Location
- Catchment
- Subcatchment Classification
  - Urban Controlled
  - Urban Direct
  - Rural
  - Town of Beaumont
  - Draining to Trunk
- Creek Centreline
- Municipal Boundary



FIGURE No. A-1

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

AE PROJECT No.	2016-3785
SCALE	1:200,000
APPROVED	
DATE	2017 MAY
REV	
DESCRIPTION	ISSUED FOR REPORT



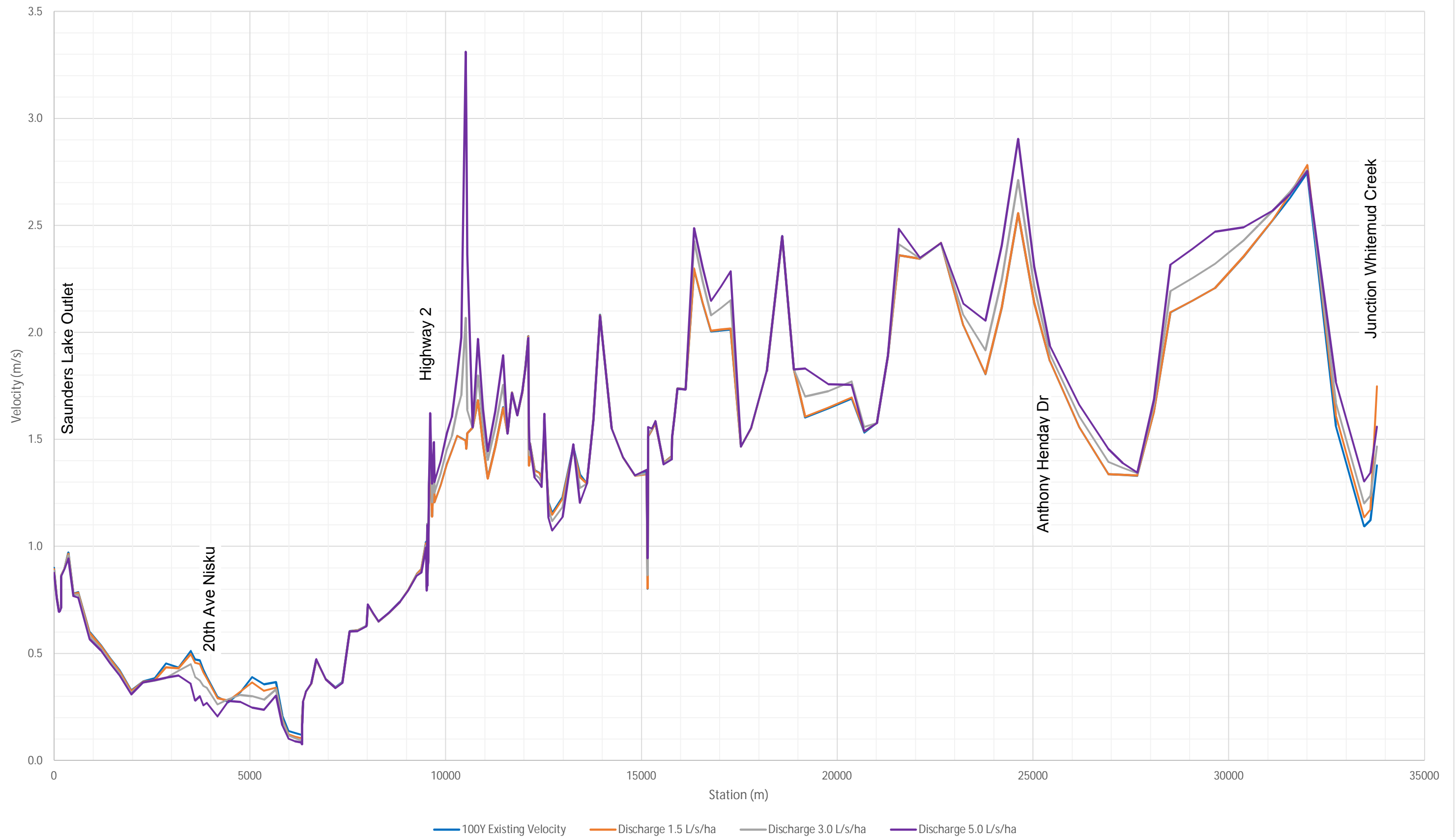
Appendix A: Model Inputs - Future Development Flows

				RATE (L/s/ha)			COMPONENT FLOW (L/s)			TOTAL FLOWS FOR MODEL (m3/s)			BOUNDARY INFLOW (m3/s)			
	INFLOW POINT	AREA (HA)	AREA TYPE	1.5 L/s/ha	3.0 L/s/ha	5.0 L/s/ha	1.5 L/s/ha	3.0 L/s/ha	5.0 L/s/ha	1.5 L/s/ha	3.0 L/s/ha	5.0 L/s/ha	1.5 L/s/ha	3.0 L/s/ha	5.0 L/s/ha	
WEST WHITEMUD CREEK	P1_WW	2394.57	UD	2.88	2.88	2.88	6896.36	6896.36	6896.36	6.90	6.90	6.90	6.90	6.90	6.90	
	P2_WW	996.92	UD	2.88	2.88	2.88	2871.13	2871.13	2871.13	2.87	2.87	2.87	2.87	2.87	2.87	
	P3_WW	629.36	UD	2.88	2.88	2.88	1812.56	1812.56	1812.56	1.81	1.81	1.81	1.81	1.81	1.81	
	P4_WW	682.97	UD	2.88	2.88	2.88	1966.95	1966.95	1966.95	1.97	1.97	1.97	1.97	1.97	1.97	
	P5_WW	1476.01	UD	2.88	2.88	2.88	4250.91	4250.91	4250.91	4.25	4.25	4.25	4.25	4.25	4.25	
DEER CREEK	P1_DC	407.09	UD	2.88	2.88	2.88	1172.42	1172.42	1172.42	1.17	1.17	1.17	1.17	1.17	1.17	
	P2_DC	1037.41	UD	2.88	2.88	2.88	2987.74	2987.74	2987.74	2.99	2.99	2.99	2.99	2.99	2.99	
	P3_DC	476.28	UD	2.88	2.88	2.88	1371.69	1371.69	1371.69	1.37	1.37	1.37	1.37	1.37	1.37	
	P4_DC	156.69	UD	2.88	2.88	2.88	451.27	451.27	451.27	0.45	0.45	0.45	0.45	0.45	0.45	
	P5_DC	511.00	UD	2.88	2.88	2.88	1471.68	1471.68	1471.68	1.47	1.47	1.47	1.47	1.47	1.47	
	P6_DC	197.16	UD	2.88	2.88	2.88	567.82	567.82	567.82	0.57	0.57	0.57	0.59	0.60	0.63	
		11.90	FD	1.50	3.00	5.00	17.85	35.70	59.50	0.02	0.04	0.06				
	P7_DC	129.35	DC to Reservoir	2.88	2.88	2.88	372.53	372.53	372.53	0.37	0.37	0.37	0.95	1.26	1.67	
		94.23		UD	2.88	2.88	2.88	271.38	271.38	271.38	0.27	0.27				0.27
		206.00		FD	1.50	3.00	5.00	309.00	618.00	1030.00	0.31	0.62				1.03
	P8_DC	52.54	UD	2.88	2.88	2.88	151.32	151.32	151.32	0.15	0.15	0.15	0.15	0.15	0.15	
	P9_DC	130.30	DC_Duc to Reservoir	2.88	2.88	2.88	375.26	375.26	375.26	0.38	0.38	0.38	0.46	0.46	0.46	
		28.75		UD	2.88	2.88	2.88	82.80	82.80	82.80	0.08	0.08				0.08
	P10_DC	127.40	DC	7.50	7.50	7.50	955.50	955.50	955.50	0.96	0.96	0.96	1.71	1.71	1.71	
		10.84	UD	2.88	2.88	2.88	31.22	31.22	31.22	0.03	0.03	0.03				
		71.26	Duc	10.10	10.10	10.10	719.73	719.73	719.73	0.72	0.72	0.72				
	P11_DC	63.10	DC	7.50	7.50	7.50	473.25	473.25	473.25	0.47	0.47	0.47	0.53	0.54	0.56	
		4.14	Duc	10.10	10.10	10.10	41.81	41.81	41.81	0.04	0.04	0.04				
		8.37	FD	1.50	3.00	5.00	12.56	25.11	41.85	0.01	0.03	0.04				
	P12_DC	35.79	DC	7.50	7.50	7.50	268.43	268.43	268.43	0.27	0.27	0.27	0.29	0.31	0.34	
	P13_DC	13.74	FD	1.50	3.00	5.00	20.61	41.22	68.70	0.02	0.04	0.07	0.19	0.39	0.64	
		128.79	FD	1.50	3.00	5.00	193.19	386.37	643.95	0.19	0.39	0.64				
	P14_DC	823.70	FD	1.50	3.00	5.00	1235.55	2471.10	4118.50	1.24	2.47	4.12	3.43	4.67	6.32	
		186.01	Duc	10.10	10.10	10.10	1878.70	1878.70	1878.70	1.88	1.88	1.88				
		42.47	DC	7.50	7.50	7.50	318.53	318.53	318.53	0.32	0.32	0.32				
	P15_DC	924.42	FD	1.50	3.00	5.00	1386.63	2773.26	4622.10	1.39	2.77	4.62	1.39	2.77	4.62	
	P16_DC	198.20	FD	1.50	3.00	5.00	297.30	594.60	991.00	0.30	0.59	0.99	3.24	3.54	3.94	
		1022.95	AIRPORT	2.88	2.88	2.88	2946.10	2946.10	2946.10	2.95	2.95	2.95				
	P17_DC	281.99	FD	1.50	3.00	5.00	422.99	845.97	1409.95	0.42	0.85	1.41	0.42	0.85	1.41	
	WHITEMUD CREEK	P1_WC	7904.07	UD	2.88	2.88	2.88	22763.72	22763.72	22763.72	22.76	22.76	22.76	22.76	22.76	22.76
P2_WC		730.55	UD	2.88	2.88	2.88	2103.98	2103.98	2103.98	2.10	2.10	2.10	2.10	2.10	2.10	
P3_WC		757.71	UD	2.88	2.88	2.88	2182.20	2182.20	2182.20	2.18	2.18	2.18	2.18	2.18	2.18	
P4_WC		965.66	UD	2.88	2.88	2.88	2781.10	2781.10	2781.10	2.78	2.78	2.78	2.78	2.78	2.78	
P5_WC		4479.79	UD	2.88	2.88	2.88	12901.80	12901.80	12901.80	12.90	12.90	12.90	13.91	13.91	13.91	
		115.95	DC	7.50	7.50	7.50	869.63	869.63	869.63	0.87	0.87	0.87				
		13.34	Duc	10.10	10.10	10.10	134.73	134.73	134.73	0.13	0.13	0.13				
P6_WC		186.55	FD	1.50	3.00	5.00	279.83	559.65	932.75	0.28	0.56	0.93	0.91	1.19	1.56	
		217.55	UD	2.88	2.88	2.88	626.54	626.54	626.54	0.63	0.63	0.63				
P7_WC		479.64	FD	1.50	3.00	5.00	719.46	1438.92	2398.20	0.72	1.44	2.40	4.07	4.79	5.75	
		1164.71	UD	2.88	2.88	2.88	3354.36	3354.36	3354.36	3.35	3.35	3.35				
P8_WC		942.95	FD	1.50	3.00	5.00	1414.43	2828.85	4714.75	1.41	2.83	4.71	1.54	2.95	4.84	
		43.43	UD	2.88	2.88	2.88	125.08	125.08	125.08	0.13	0.13	0.13				
P9_WC		575.30	FD	1.50	3.00	5.00	862.95	1725.90	2876.50	0.86	1.73	2.88	0.86	1.73	2.88	
P10_WC		1510.47	FD	1.50	3.00	5.00	2265.71	4531.41	7552.35	2.27	4.53	7.55	2.27	4.53	7.55	
P11_WC		1674.47	FD	1.50	3.00	5.00	2511.71	5023.41	8372.35	2.51	5.02	8.37	2.51	5.02	8.37	
P12_WC		503.73	FD	1.50	3.00	5.00	755.60	1511.19	2518.65	0.76	1.51	2.52	0.76	1.51	2.52	
P13_WC		351.57	FD	1.50	3.00	5.00	527.36	1054.71	1757.85	0.53	1.05	1.76	1.39	1.92	2.62	
		172.41	DC	5.00	5.00	5.00	862.05	862.05	862.05	0.86	0.86	0.86				
P14_WC		461.16	DC	5.00	5.00	5.00	2305.80	2305.80	2305.80	2.31	2.31	2.31	2.31	2.31	2.31	
P15_WC		313.29	DC	5.00	5.00	5.00	1566.45	1566.45	1566.45	1.57	1.57	1.57	2.02	2.47	3.08	
		302.64	FD	1.50	3.00	5.00	453.96	907.92	1513.20	0.45	0.91	1.51				
P16_WC		1505.65	DC	5.00	5.00	5.00	7528.25	7528.25	7528.25	7.53	7.53	7.53	7.58	7.63	7.70	
		34.78	FD	1.50	3.00	5.00	52.17	104.34	173.90	0.05	0.10	0.17				
		37.96	UD	2.88	2.88	2.88	109.32	109.32	109.32	0.11	0.11	0.11				
P17_WC		1283.04	Duc	5.94	5.94	5.94	7621.26	7621.26	7621.26	7.62	7.62	7.62	7.73	7.73	7.73	
P18_WC		335.15	Duc	5.94	5.94	5.94	1990.79	1990.79	1990.79	1.99	1.99	1.99	1.99	1.99	1.99	
CLEARWATER CREEK	P1_CW	9600.08	UD	1.11	1.11	1.11	10656.09	10656.09	10656.09	10.66	10.66	10.66	10.66	10.66	10.66	
	P2_CW	3327.89	UD	1.11	1.11	1.11	3693.96	3693.96	3693.96	3.69	3.69	3.69	3.69	3.69	3.69	
	P3_CW	997.40	UD	1.11	1.11	1.11	1107.11	1107.11	1107.11	1.11	1.11	1.11	1.11	1.11	1.11	
	P4_CW	707.24	UD	1.11	1.11	1.11	785.04	785.04	785.04	0.79	0.79	0.79	0.79	0.79	0.79	
	P5_CW	2606.85	UD	1.11	1.11	1.11	2893.60	2893.60	2893.60	2.89	2.89	2.89	2.92	2.95	2.98	
		17.57	FD	1.50	3.00	5.00	26.36	52.71	87.85	0.03	0.05	0.09				
	P6_CW	489.40	UD	1.11	1.11	1.11	543.23	543.23	543.23	0.54	0.54	0.54	0.54	0.54	0.54	
	P7_CW	1806.77	UD	1.11	1.11	1.11	2005.51	2005.51	2005.51	2.01	2.01	2.01	2.01	2.01	2.01	
P8_CW	654.48	UD	1.11	1.11	1.11	726.47	726.47	726.47	0.73	0.73	0.73	0.73	0.73	0.73		
LEBLANC CANAL	P1_IC	213.62	FD	1.50	3.00	5.00	320.43	640.86	1068.10	0.32	0.64	1.07	2.14	2.46	2.88	
	N/A	Town of Beaumont	3.00	3.00	3.00	1816.00	1816.00	1816.00	1.82	1.82	1.82					
IRVINE CREEK	P1_IC	6060.83	UD	1.11	1.11	1.11	6727.52	6727.52	6727.52	6.73	6.73	6.73	6.73	6.73	6.73	
	P2_IC	1361.40	UD	1.11	1.11	1.11	1511.15	1511.15	1511.15	1.51	1.51	1.51	1.51	1.51	1.51	

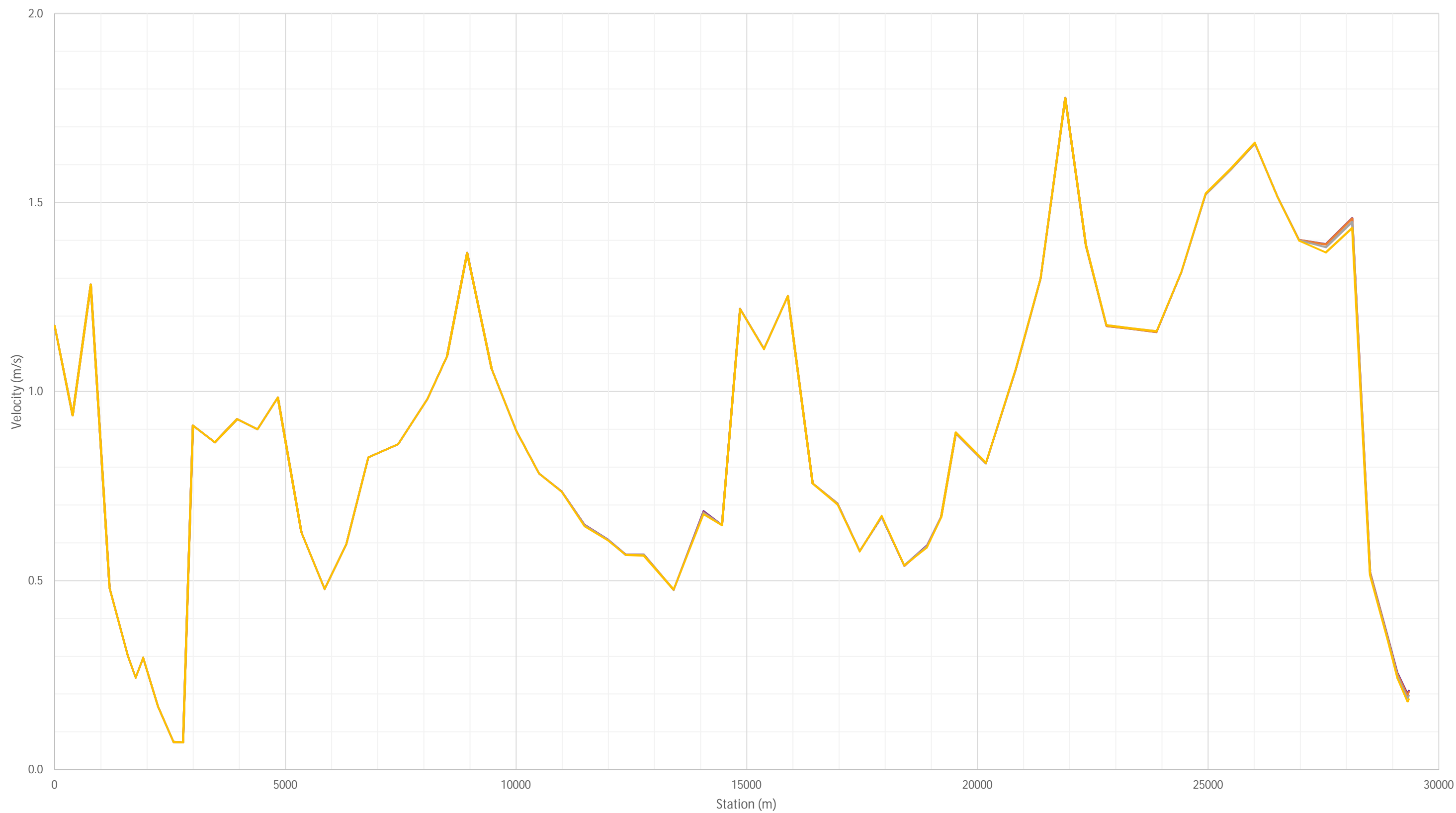
## Appendix B - 1D Velocity Profiles Simulated With the 1D Model

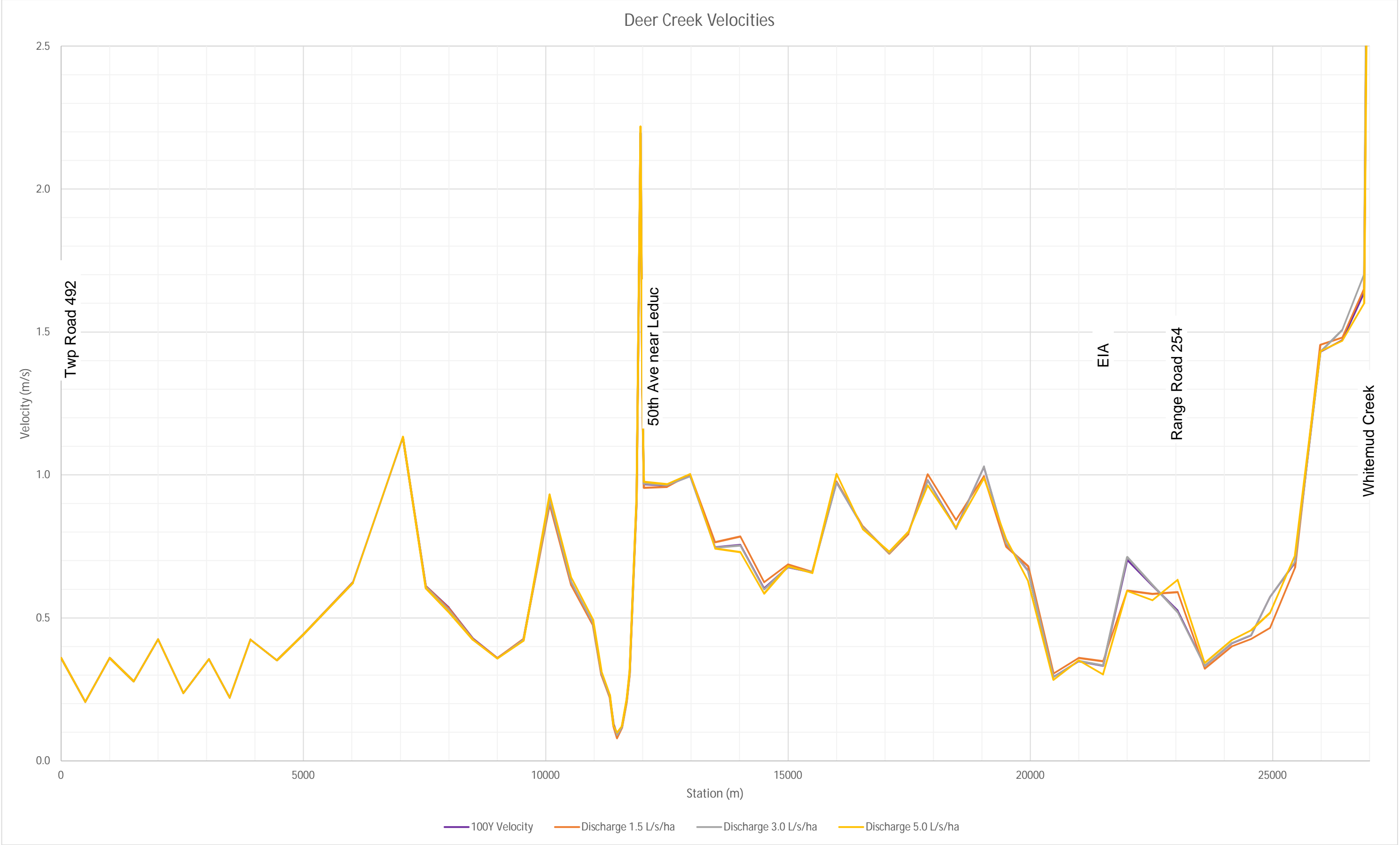


Blackmud Creek Velocities

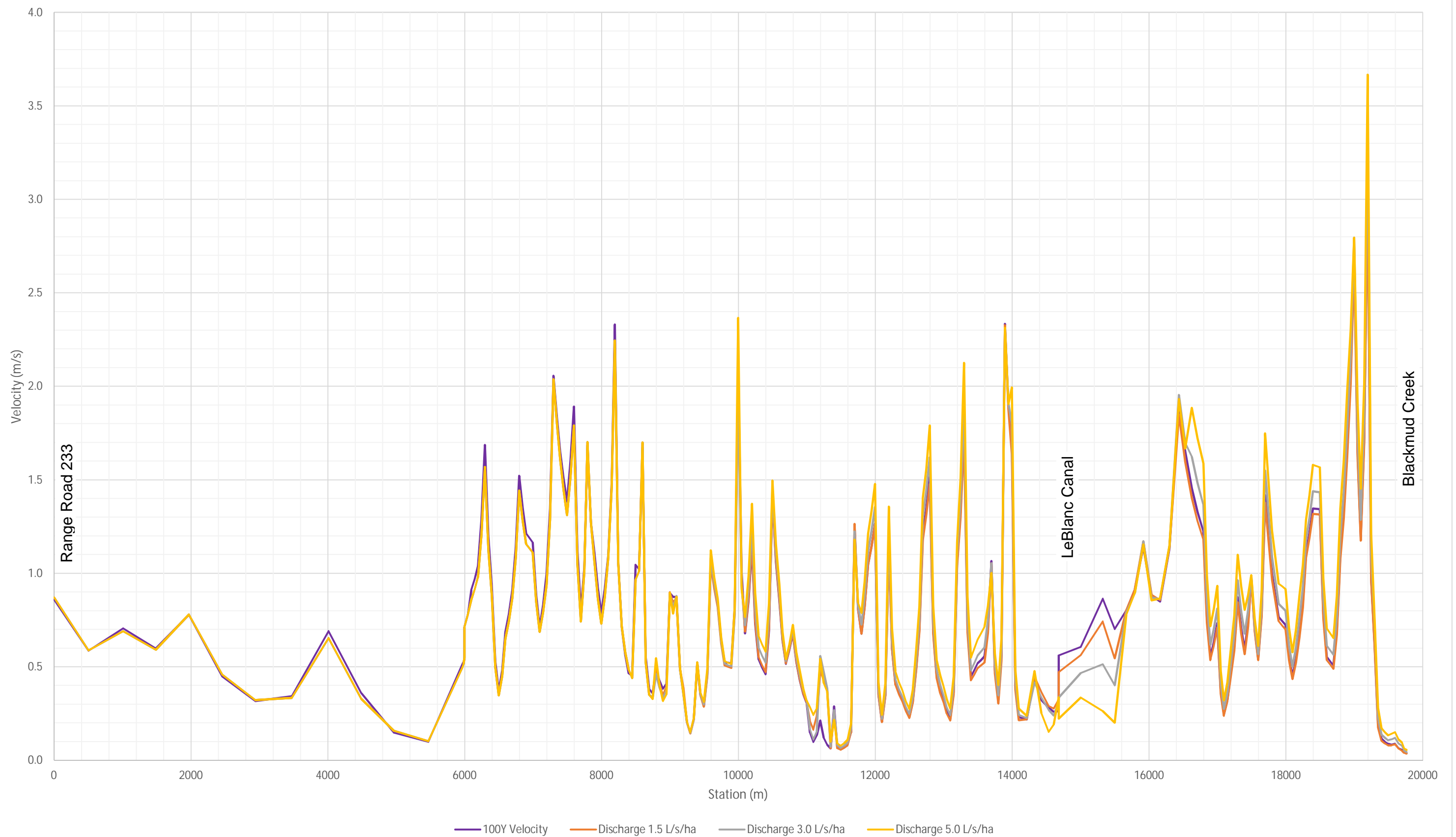


Clearwater Creek Velocities



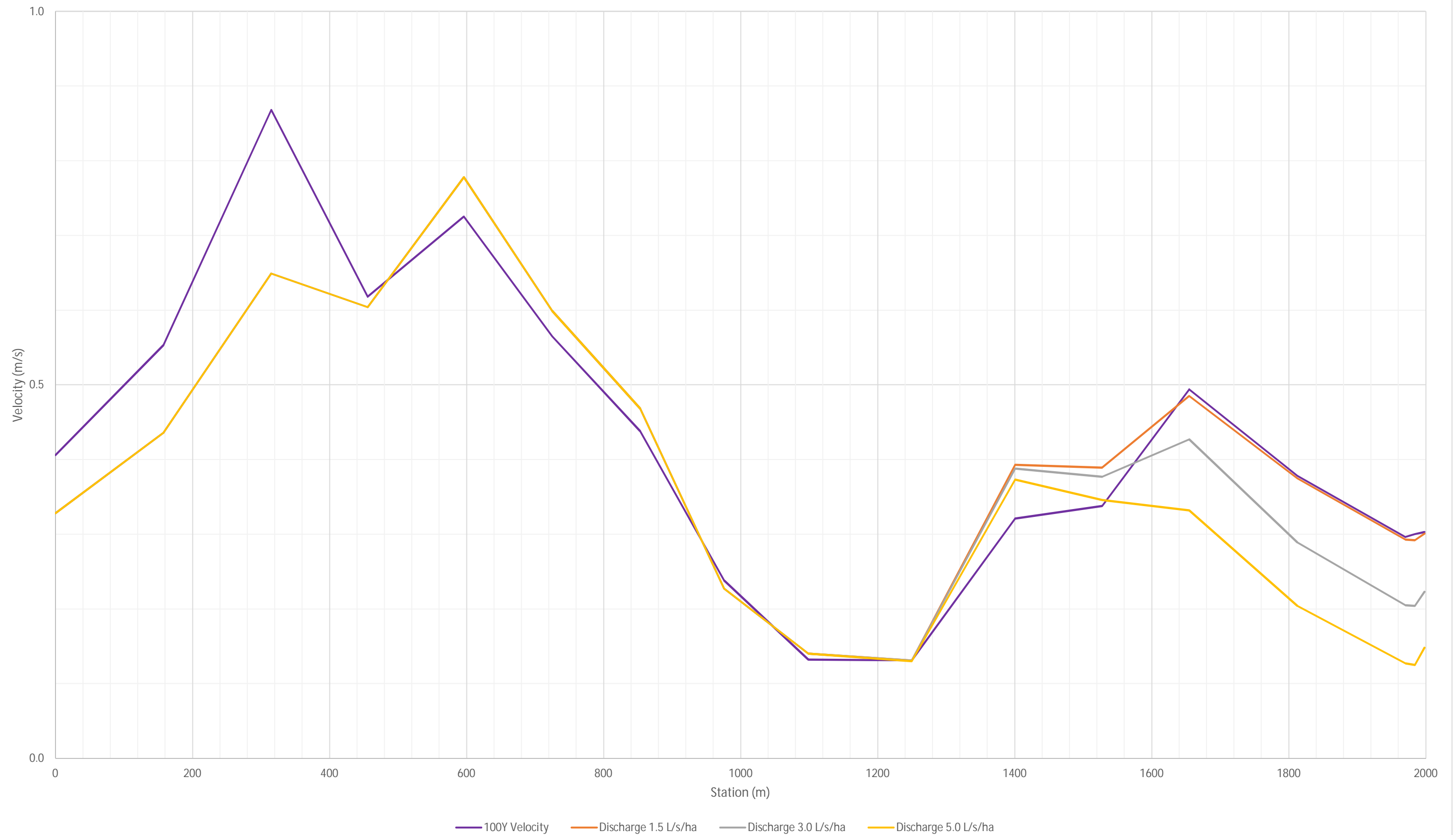


Irvine Creek Velocities

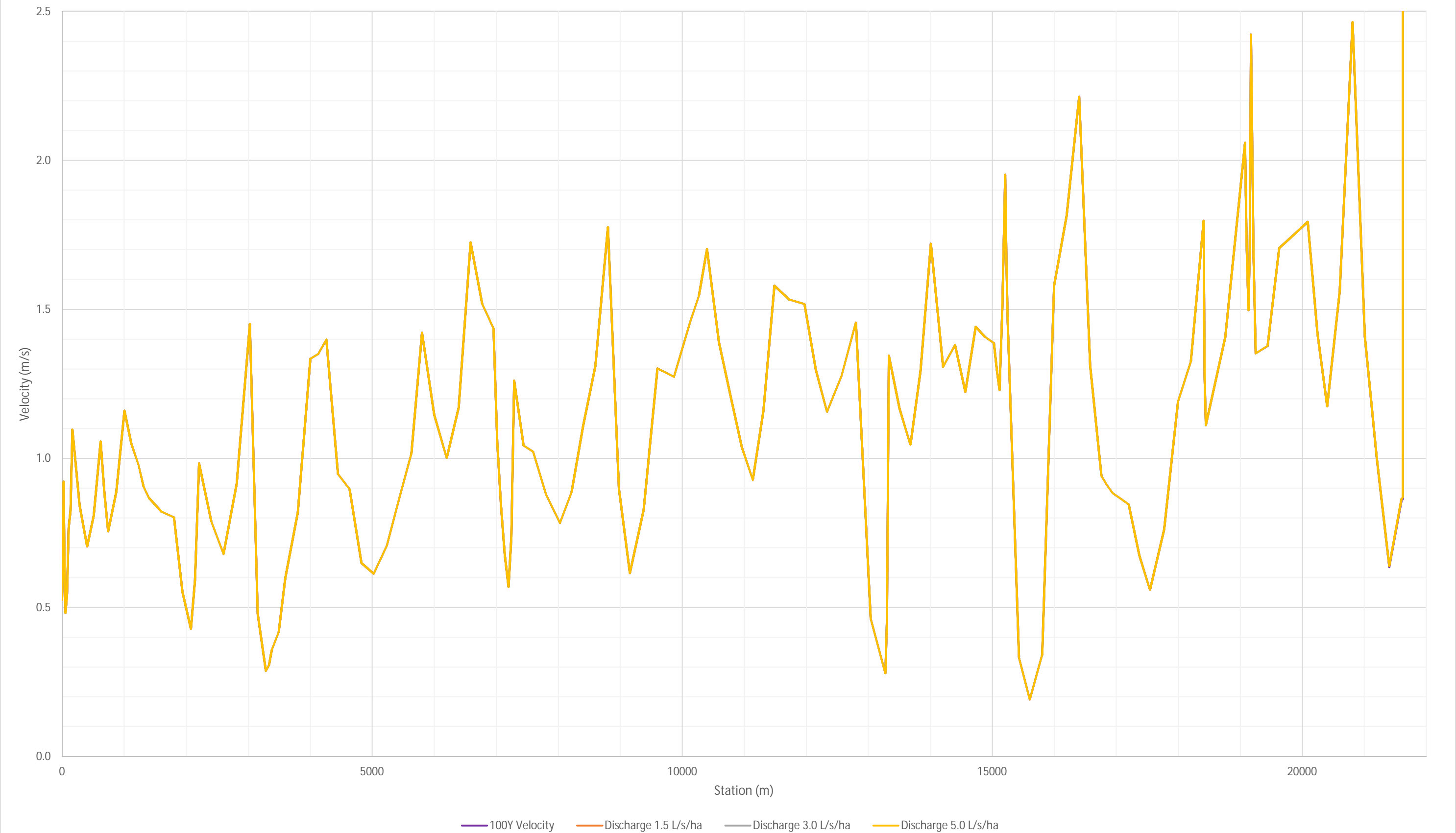


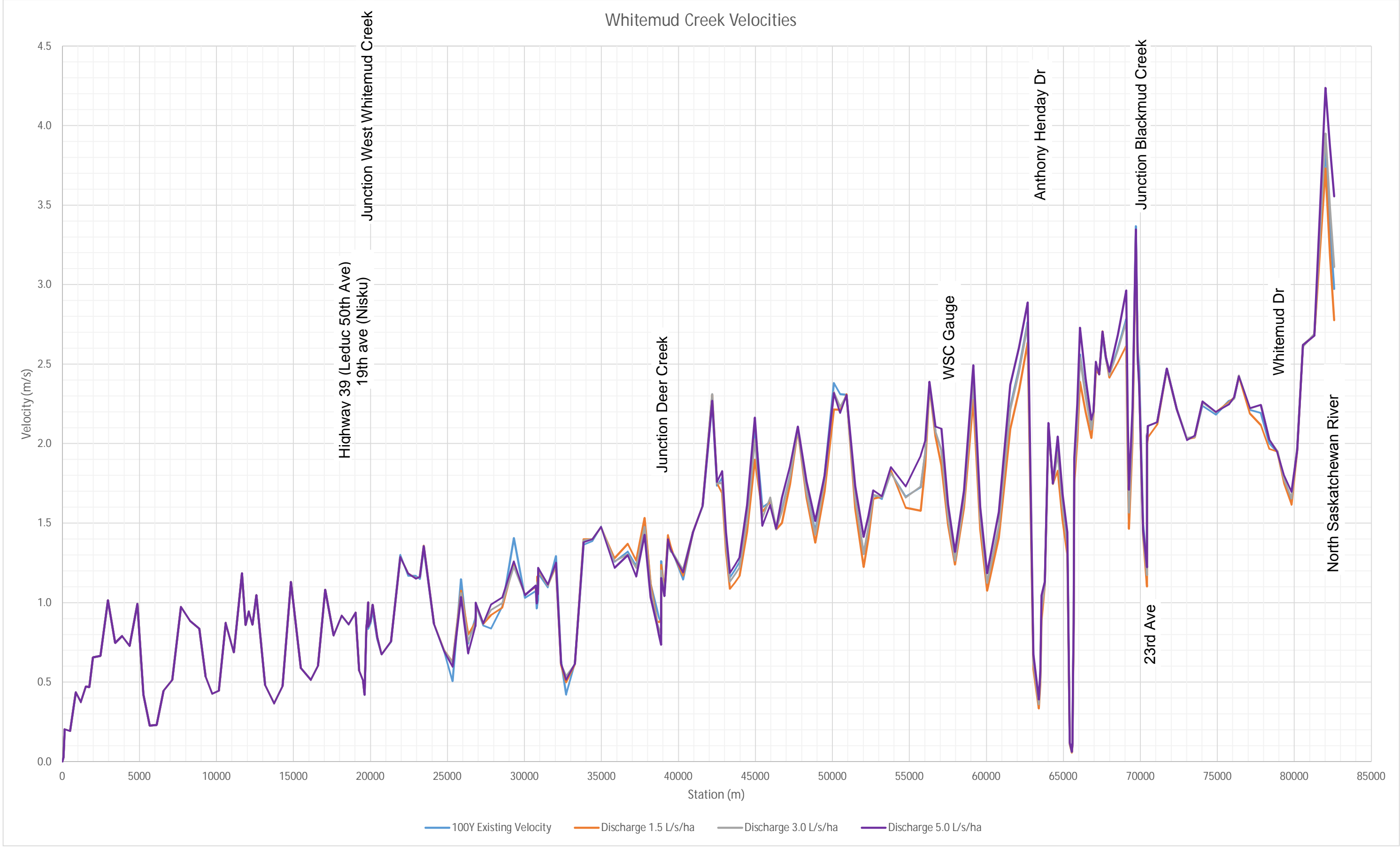


LeBlanc Canal Velocities



West Whitemud Creek Velocities





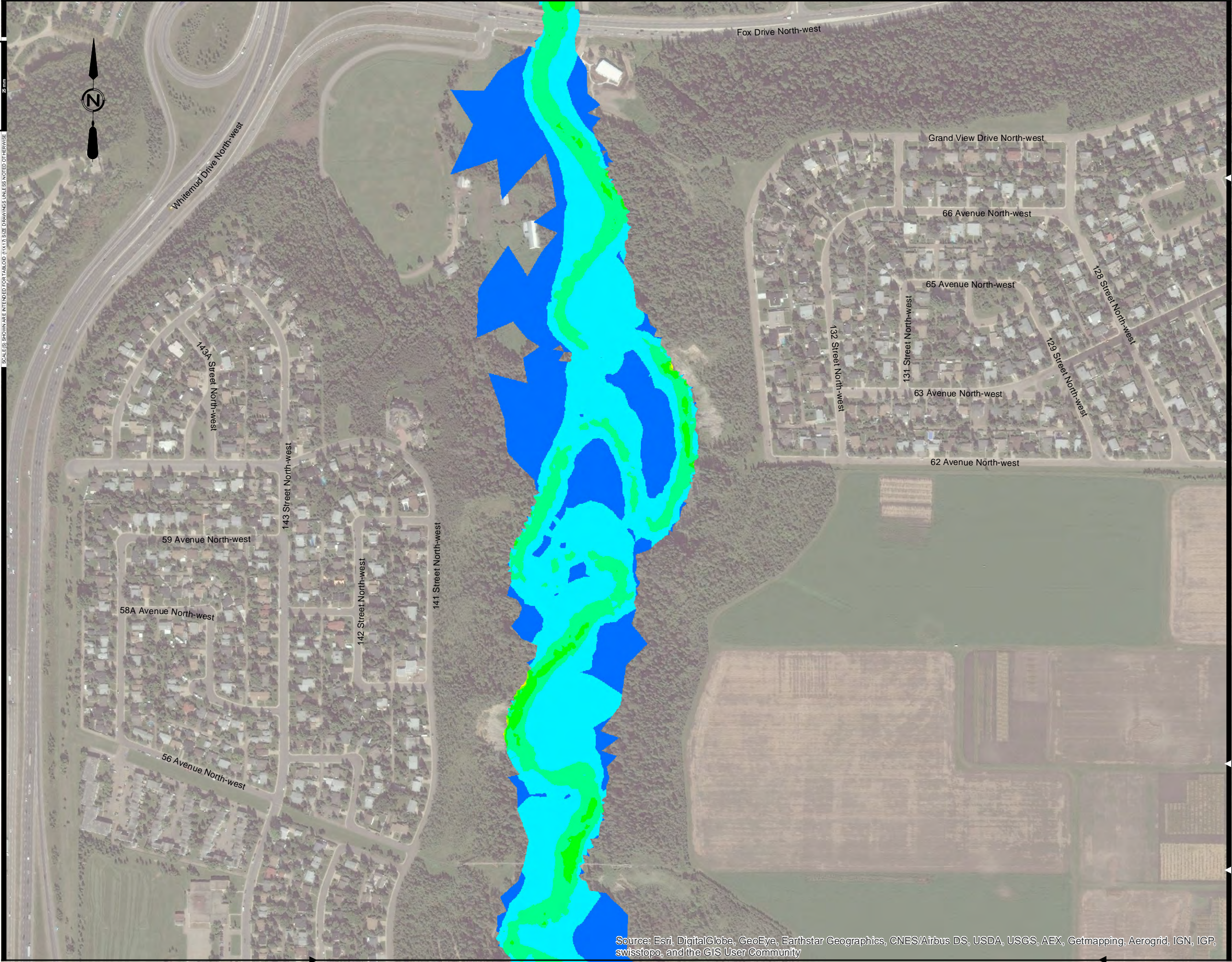
## Appendix C - 2D Velocities





IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- Velocity (1.5 L/s/ha)**
- >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

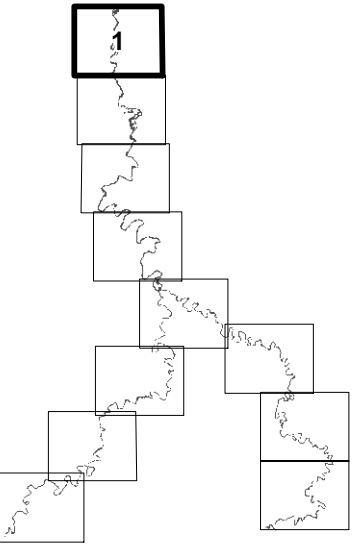
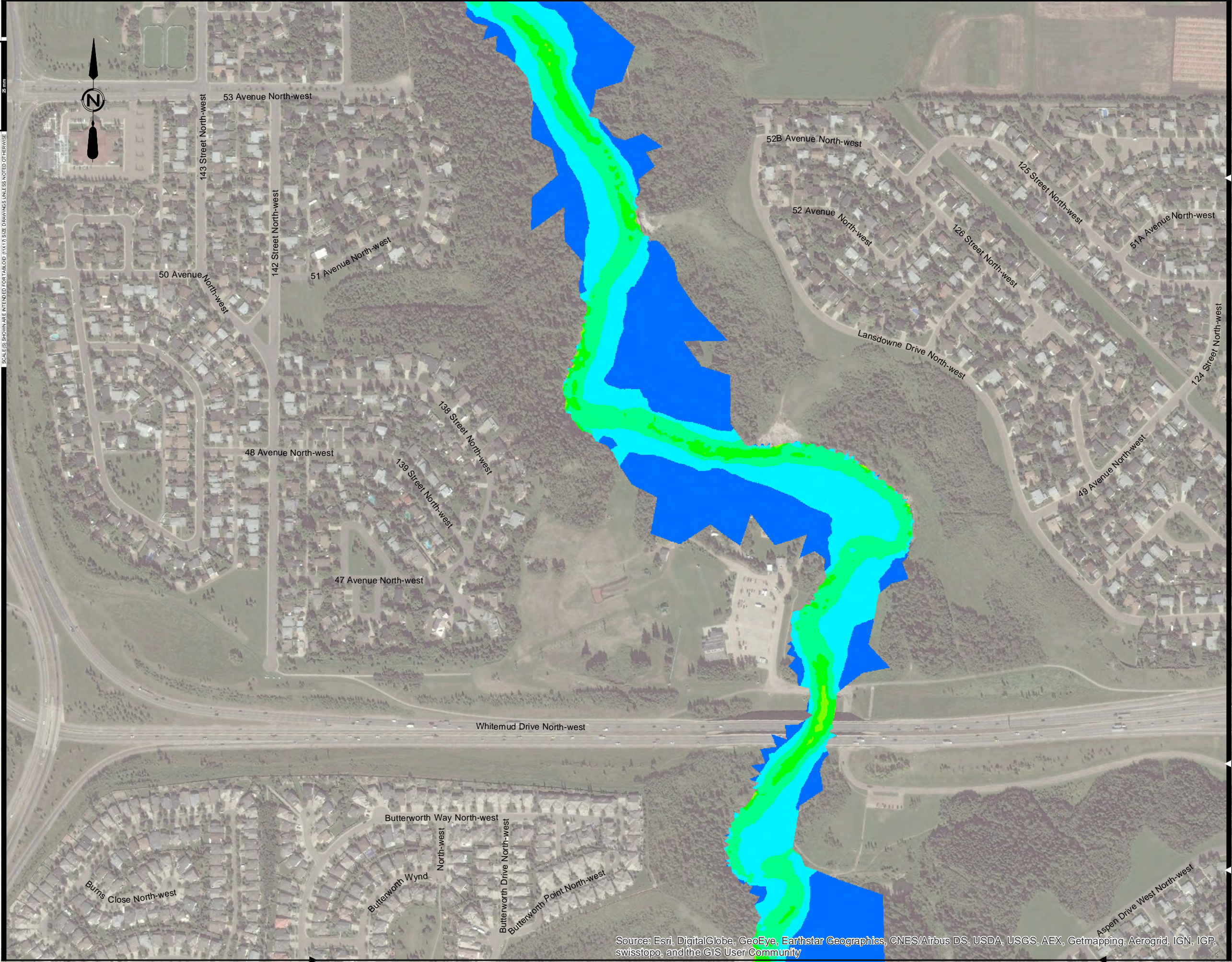


FIGURE No. C-1	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 1.5 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



Legend:

**Velocity (1.5 L/s/ha)**

- >3.5 - 4.0
- >3.0 - 3.5
- >2.5 - 3.0
- >2.0 - 2.5
- >1.5 - 2.0
- >1.0 - 1.5
- >0.5 - 1.0
- >0.0 - 0.5

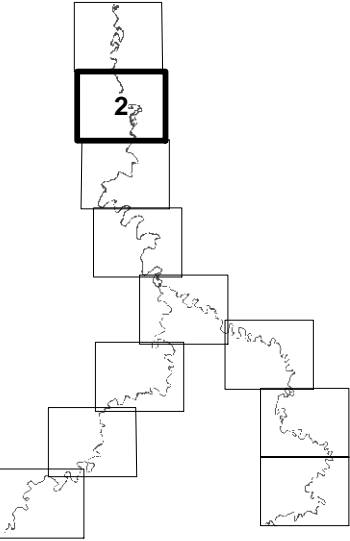
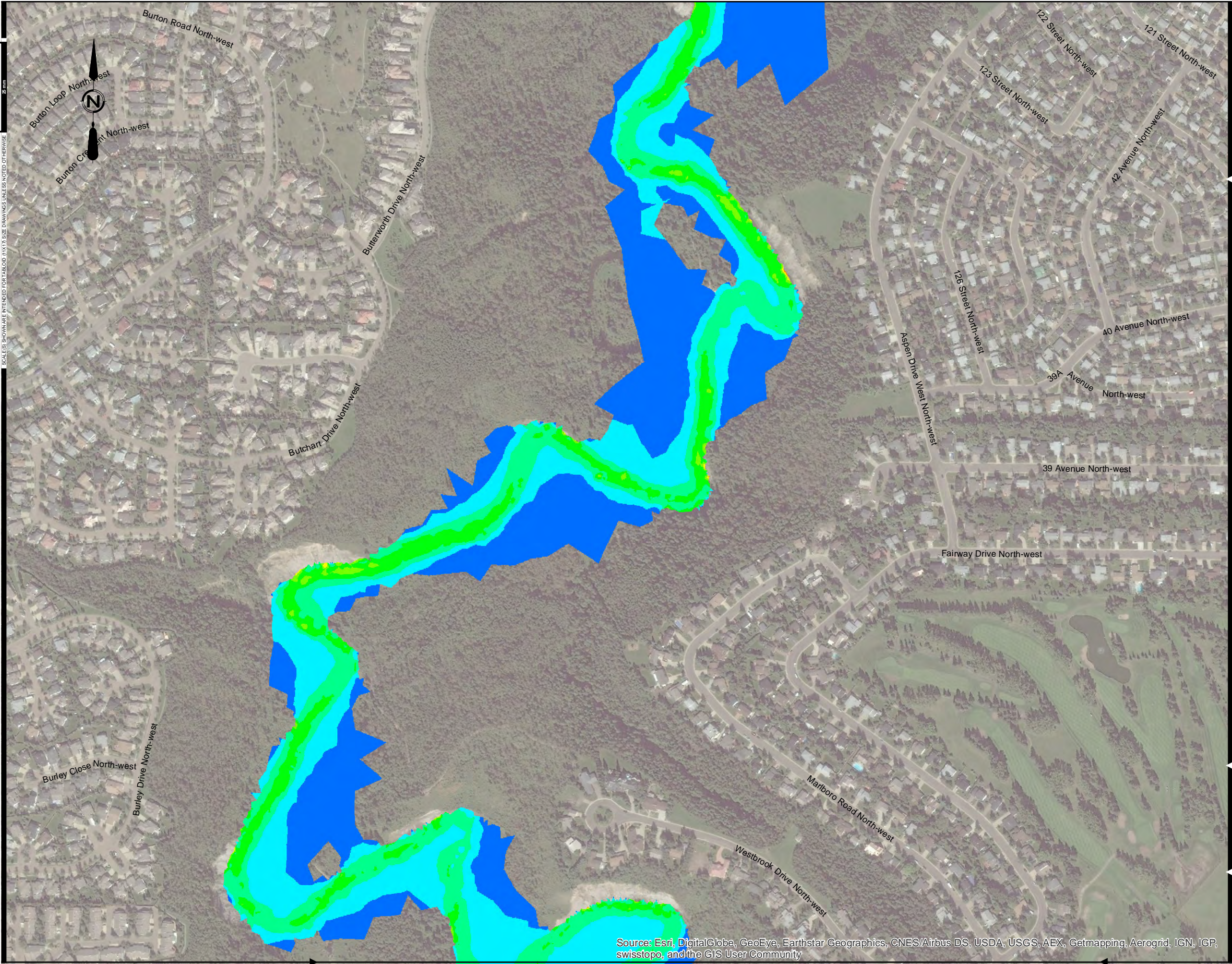


FIGURE No. C-2	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 1.5 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Legend:

Velocity (1.5 L/s/ha)

- >3.5 - 4.0
- >3.0 - 3.5
- >2.5 - 3.0
- >2.0 - 2.5
- >1.5 - 2.0
- >1.0 - 1.5
- >0.5 - 1.0
- >0.0 - 0.5

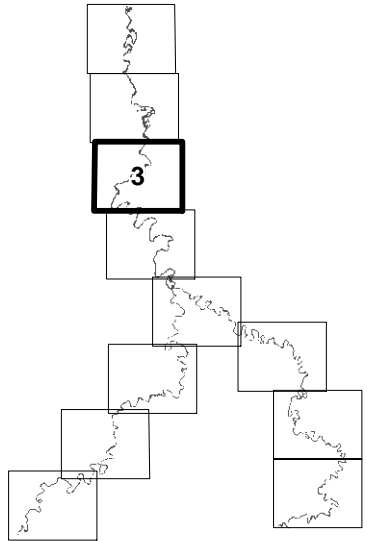


FIGURE No. C-3

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

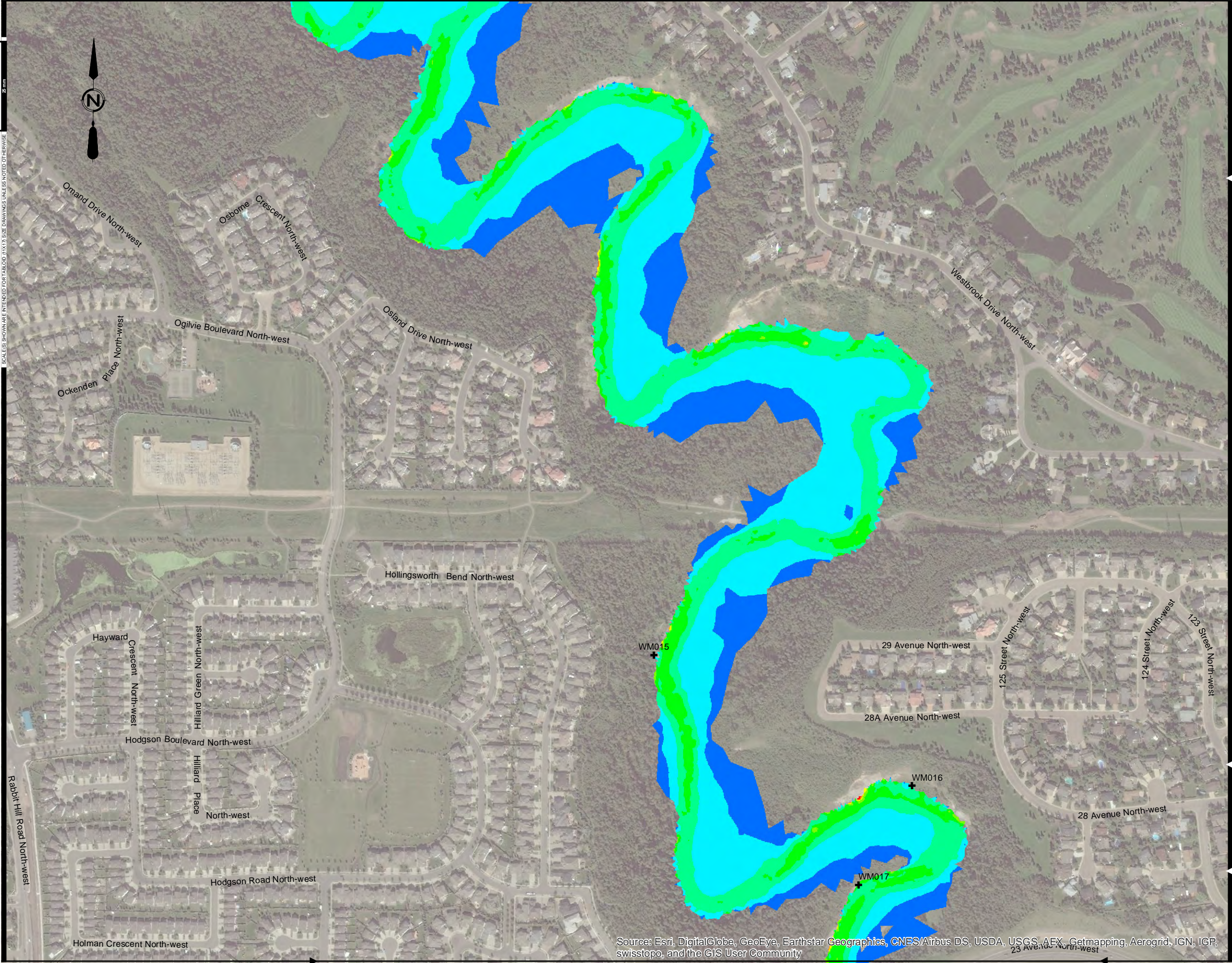
FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha - 100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm AS SHOWN ON SCALE

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
  - Velocity (1.5 L/s/ha)
    - >3.5 - 4.0
    - >3.0 - 3.5
    - >2.5 - 3.0
    - >2.0 - 2.5
    - >1.5 - 2.0
    - >1.0 - 1.5
    - >0.5 - 1.0
    - >0.0 - 0.5

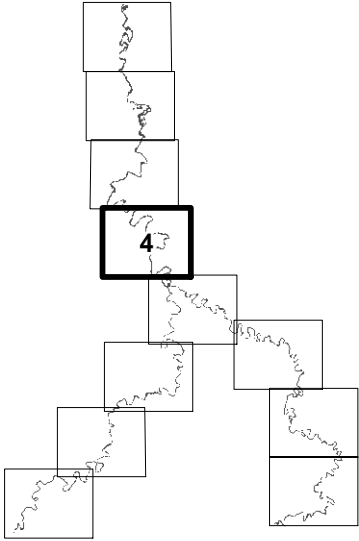


FIGURE No. C-4

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha - 100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT

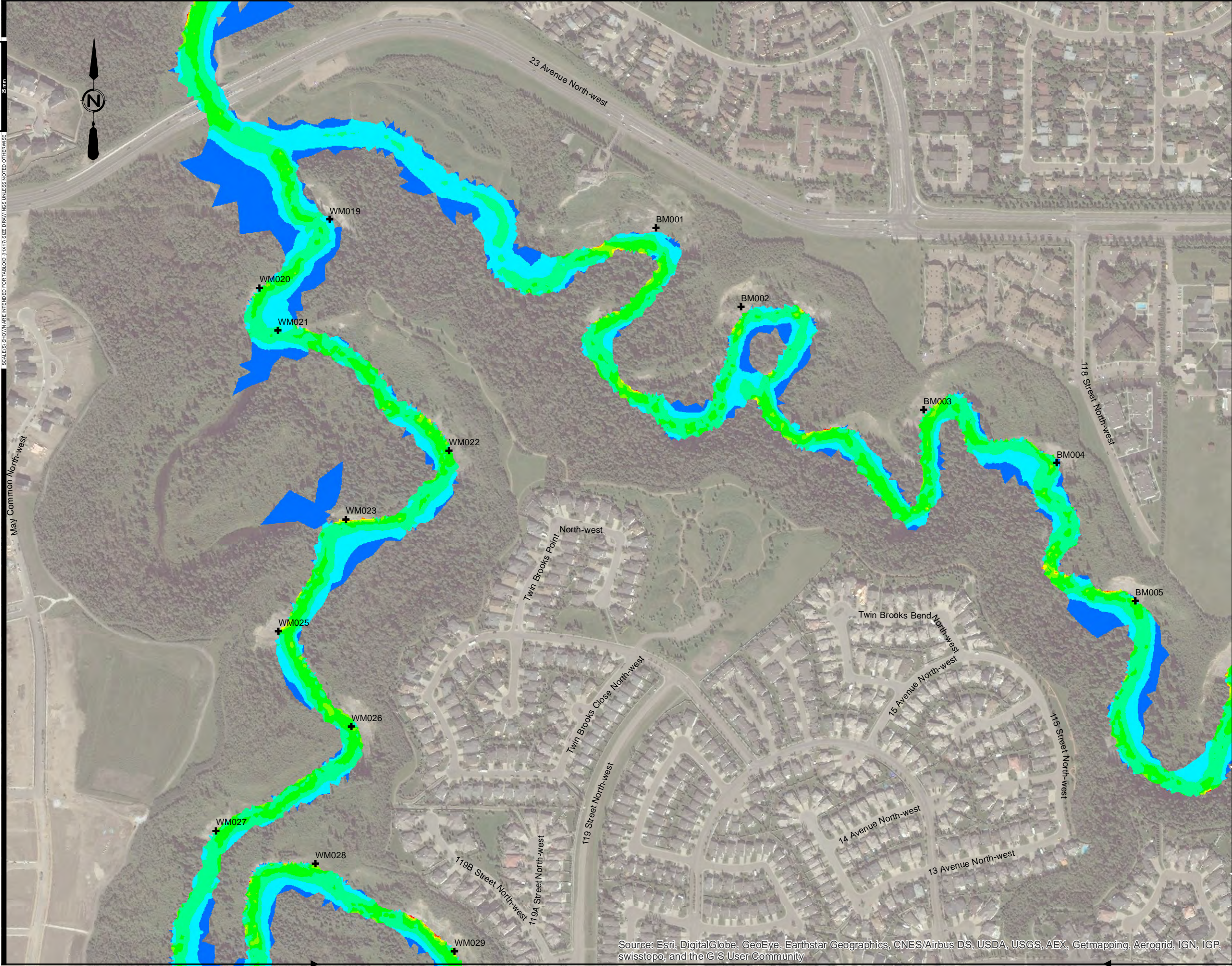


IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLED (1:1X1.7) SIZE DRAWINGS UNLESS NOTED OTHERWISE

May Common North-west

P:\2016\3785\00\_Blackmud\_Whitemud\Working\_Dwgs\010\_GIS\Act\Map\02\_WaterResources\xxx\_FutureDevelopment\_Velocity.mxd  
DATE: 3/21/2017



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
  - Velocity (1.5 L/s/ha)
    - >3.5 - 4.0
    - >3.0 - 3.5
    - >2.5 - 3.0
    - >2.0 - 2.5
    - >1.5 - 2.0
    - >1.0 - 1.5
    - >0.5 - 1.0
    - >0.0 - 0.5

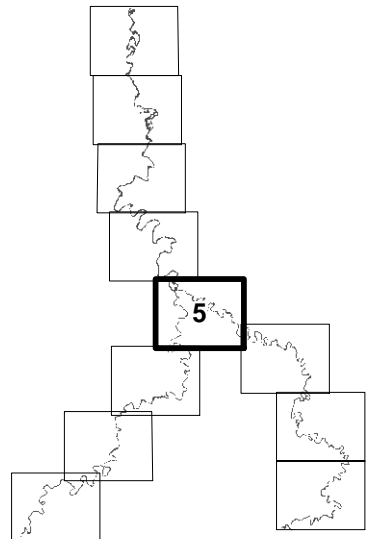
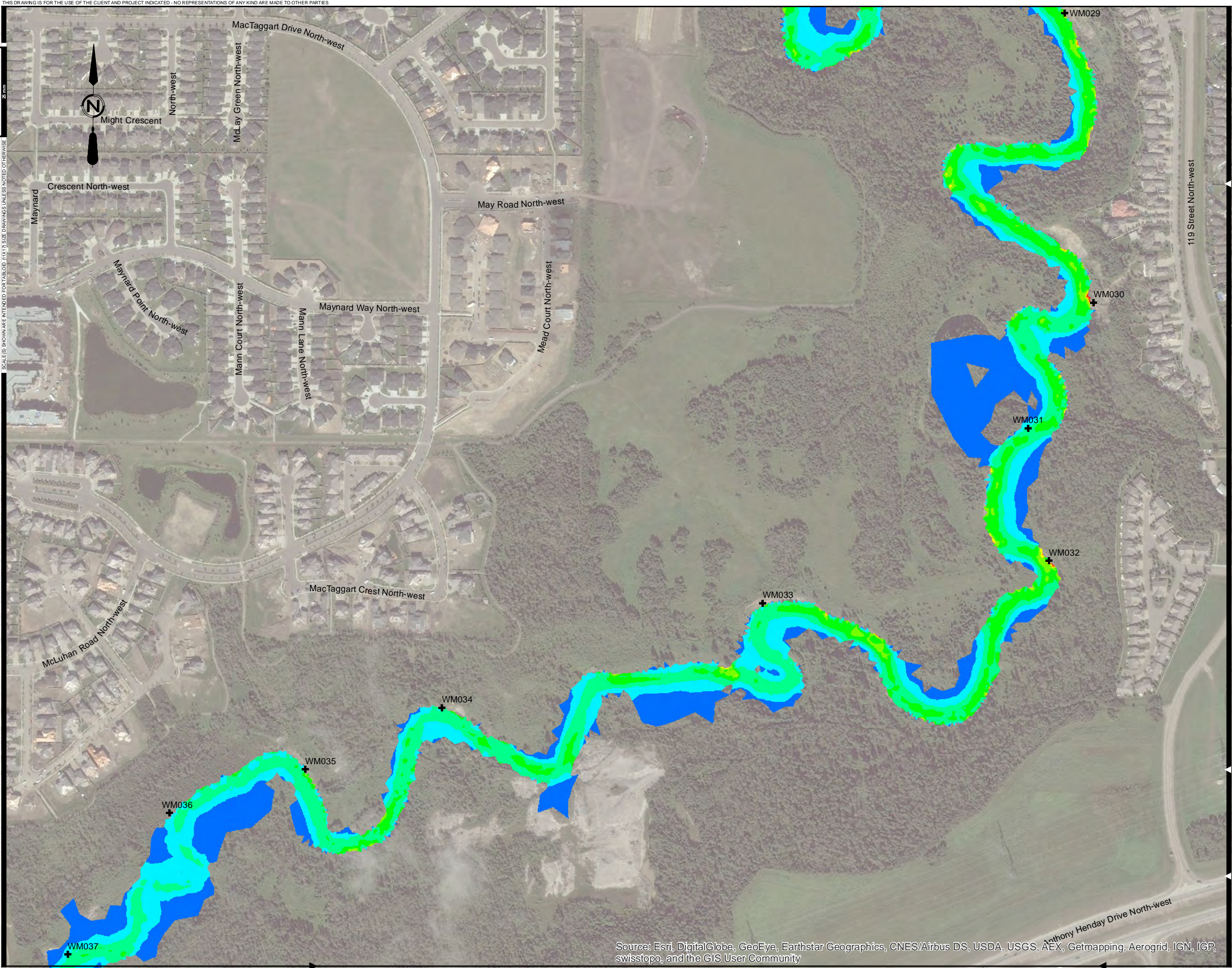


FIGURE No. C-5	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 1.5 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
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SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



- Legend:
- + Erosion Site
- Velocity (1.5 L/s/ha)**
- >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

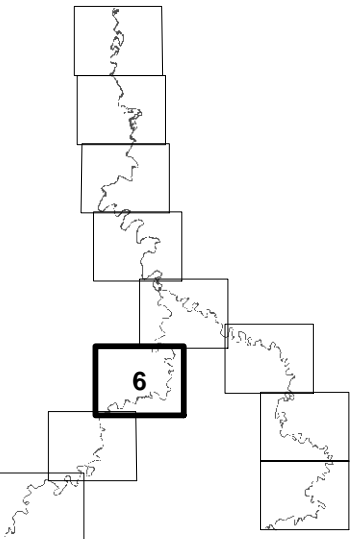
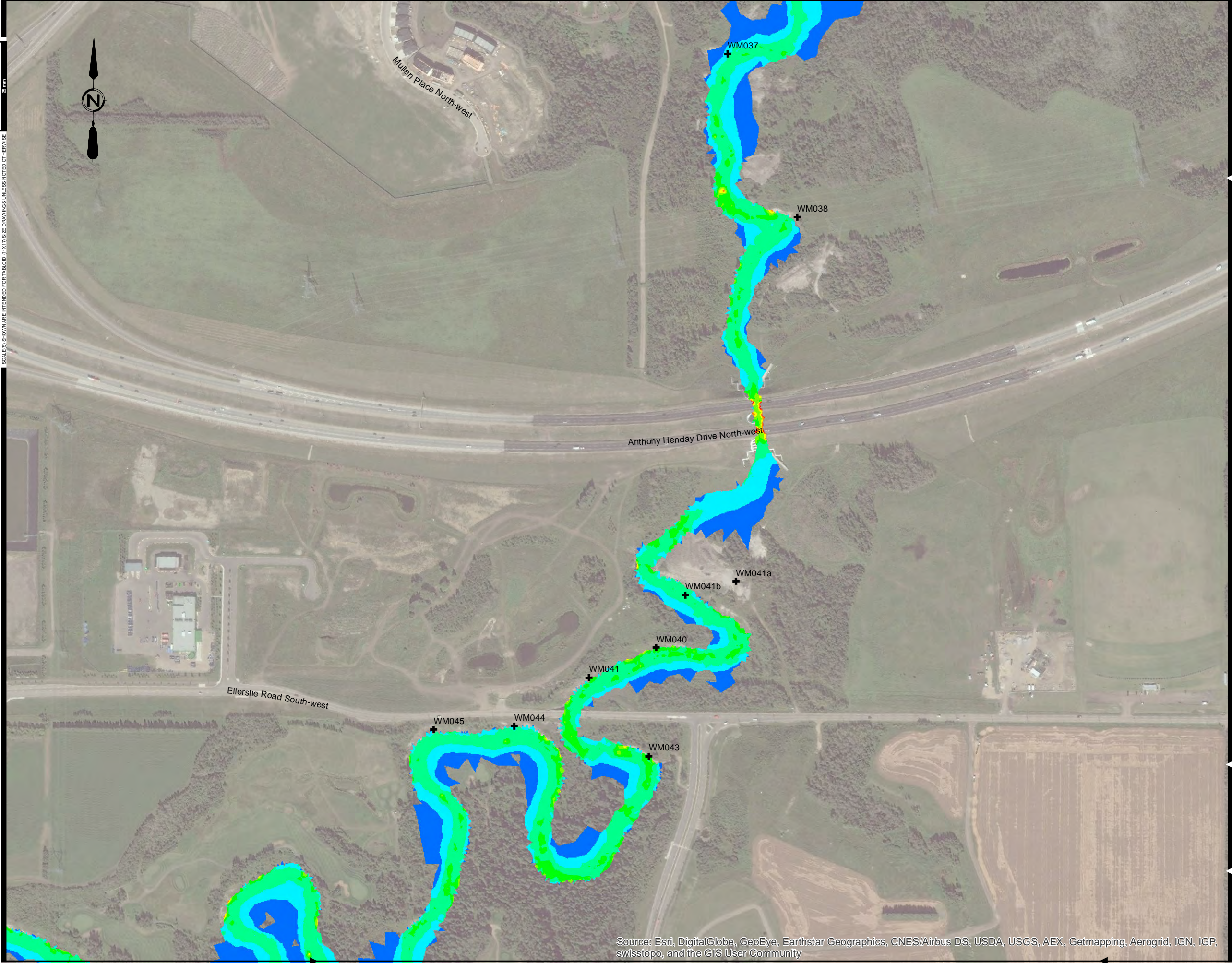


FIGURE No. C-6	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 1.5 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
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DATE	2017 MARCH
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IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



- Legend:
- + Erosion Site
- Velocity (1.5 L/s/ha)**
- >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

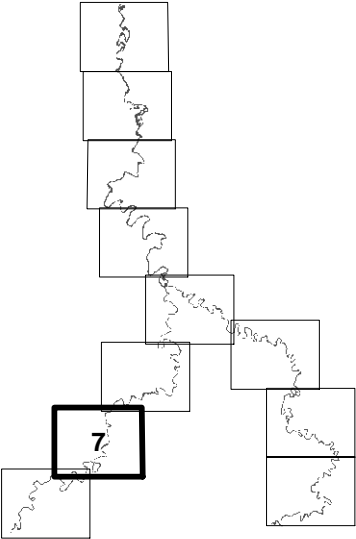


FIGURE No. C-7

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha - 100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
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DESCRIPTION	ISSUED FOR REPORT

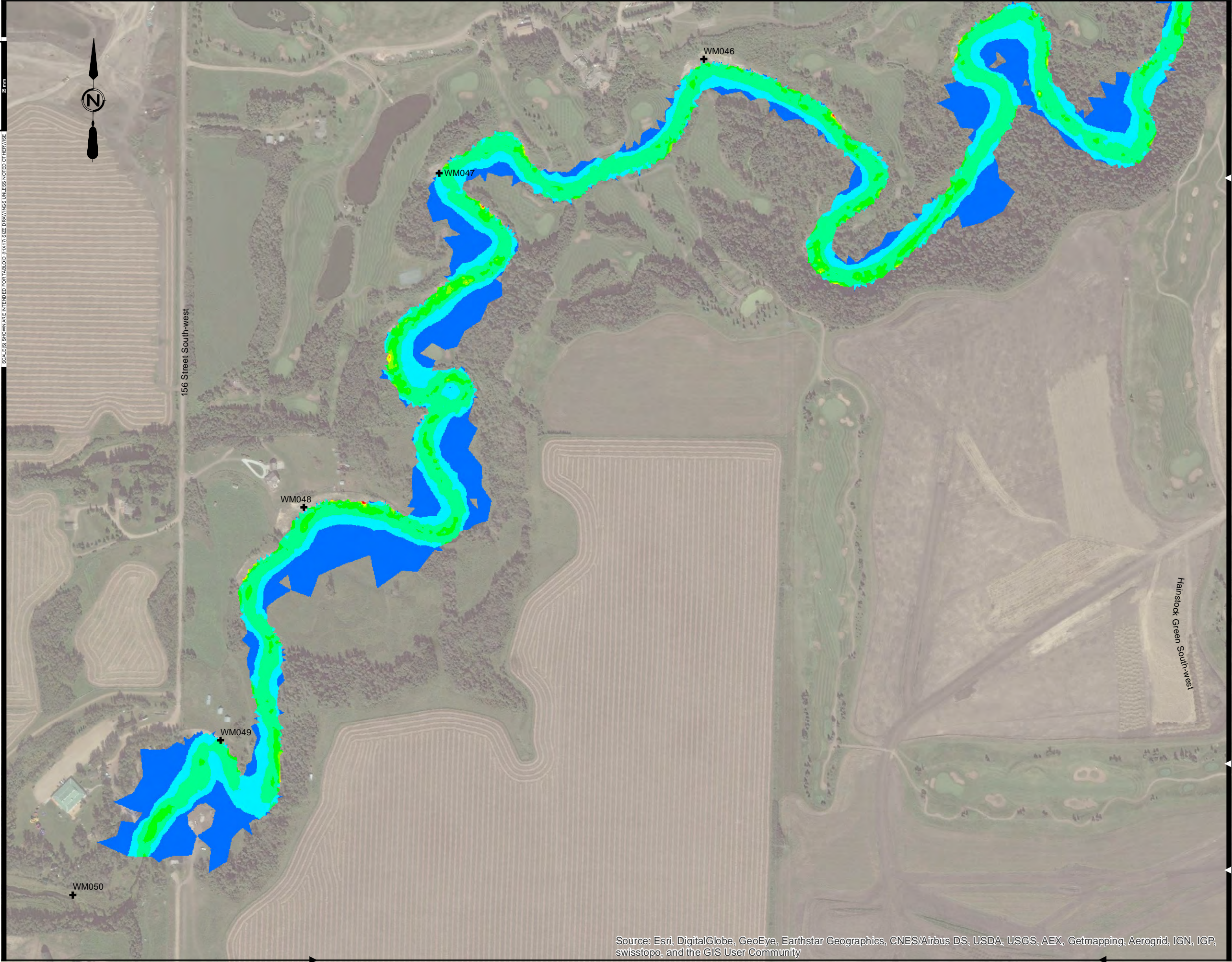
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

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- Legend:
- + Erosion Site
  - Velocity (1.5 L/s/ha)
    - >3.5 - 4.0
    - >3.0 - 3.5
    - >2.5 - 3.0
    - >2.0 - 2.5
    - >1.5 - 2.0
    - >1.0 - 1.5
    - >0.5 - 1.0
    - >0.0 - 0.5

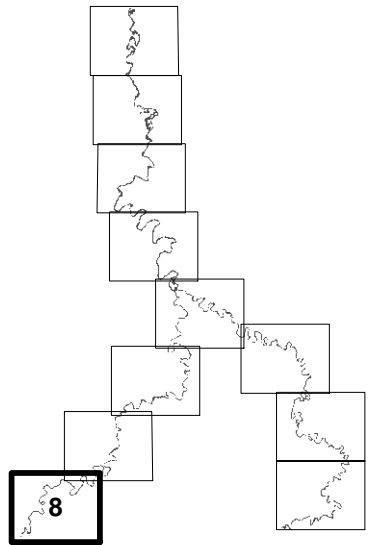


FIGURE No. C-8	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 1.5 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
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DATE	2017 MARCH
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DESCRIPTION	ISSUED FOR REPORT



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SCALE(S) SHOWN ARE INTENDED FOR TABLET (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



- Legend:
- + Erosion Site
  - Velocity (1.5 L/s/ha)
  - >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

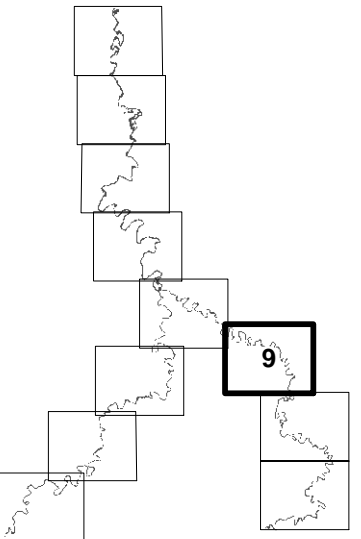


FIGURE No. C-9	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 1.5 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
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DATE	2017 MARCH
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DESCRIPTION	ISSUED FOR REPORT

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





Legend:

+ Erosion Site

Velocity (1.5 L/s/ha)

- >3.5 - 4.0
- >3.0 - 3.5
- >2.5 - 3.0
- >2.0 - 2.5
- >1.5 - 2.0
- >1.0 - 1.5
- >0.5 - 1.0
- >0.0 - 0.5

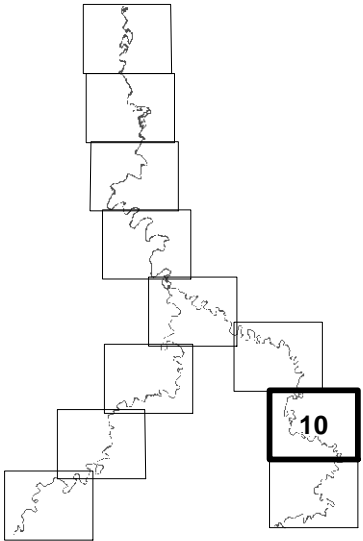


FIGURE No. C-10

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha - 100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
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DATE	2017 MARCH
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SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
- Velocity (1.5 L/s/ha)**
- >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

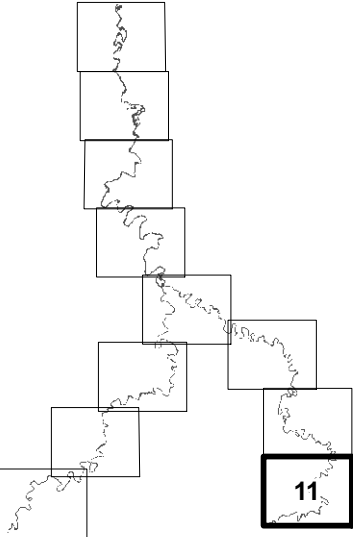


FIGURE No. C-11

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

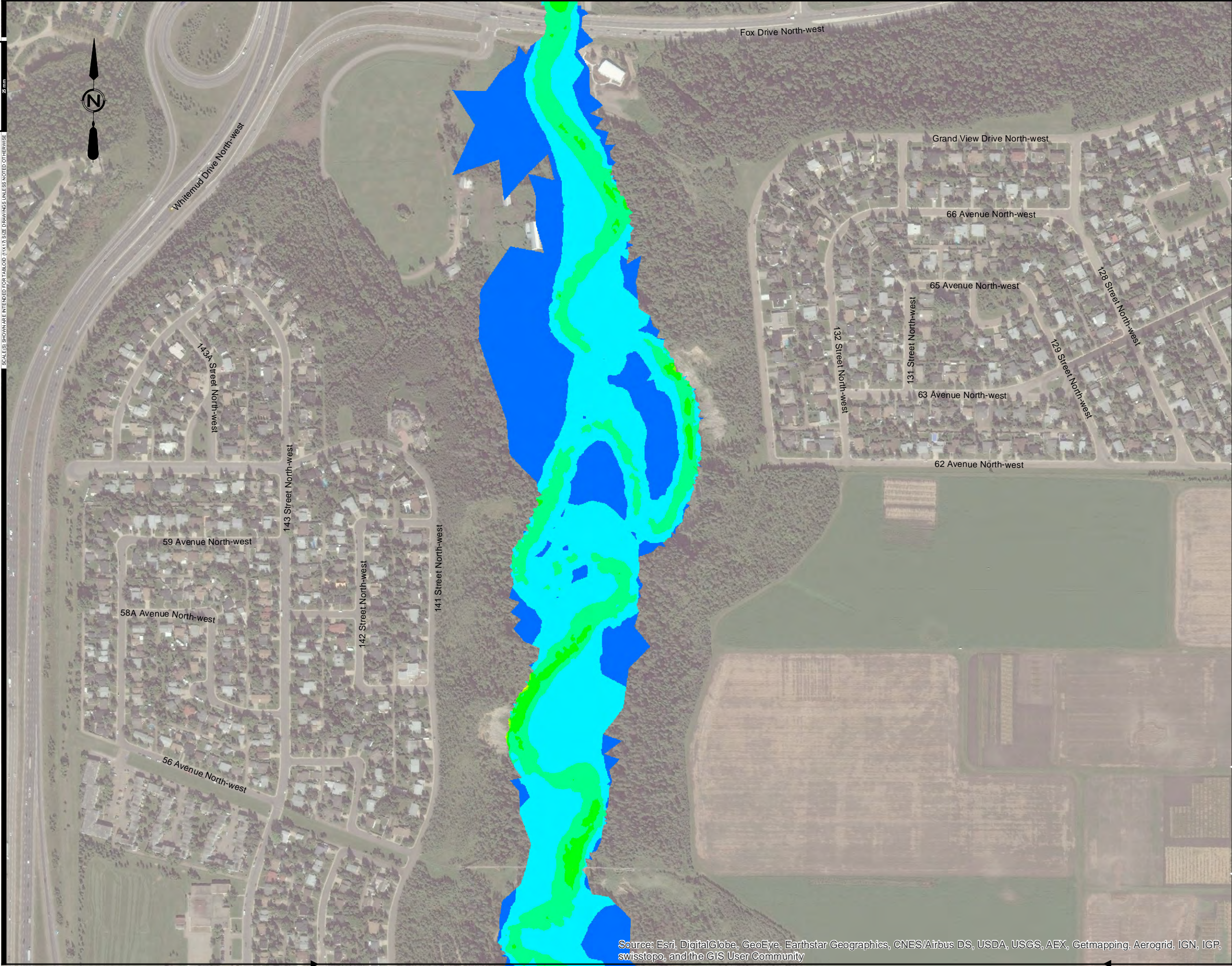
FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha - 100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
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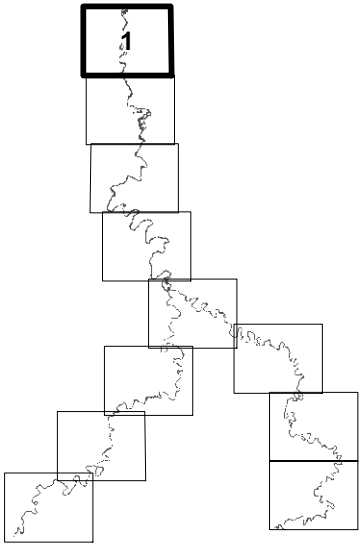
SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



Legend:

**Velocity (3.0 L/s/ha)**

- >3.5 - 4.0
- >3.0 - 3.5
- >2.5 - 3.0
- >2.0 - 2.5
- >1.5 - 2.0
- >1.0 - 1.5
- >0.5 - 1.0
- >0.0 - 0.5



**FIGURE No. C-12**

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha - 100 YEAR FLOOD VELOCITY

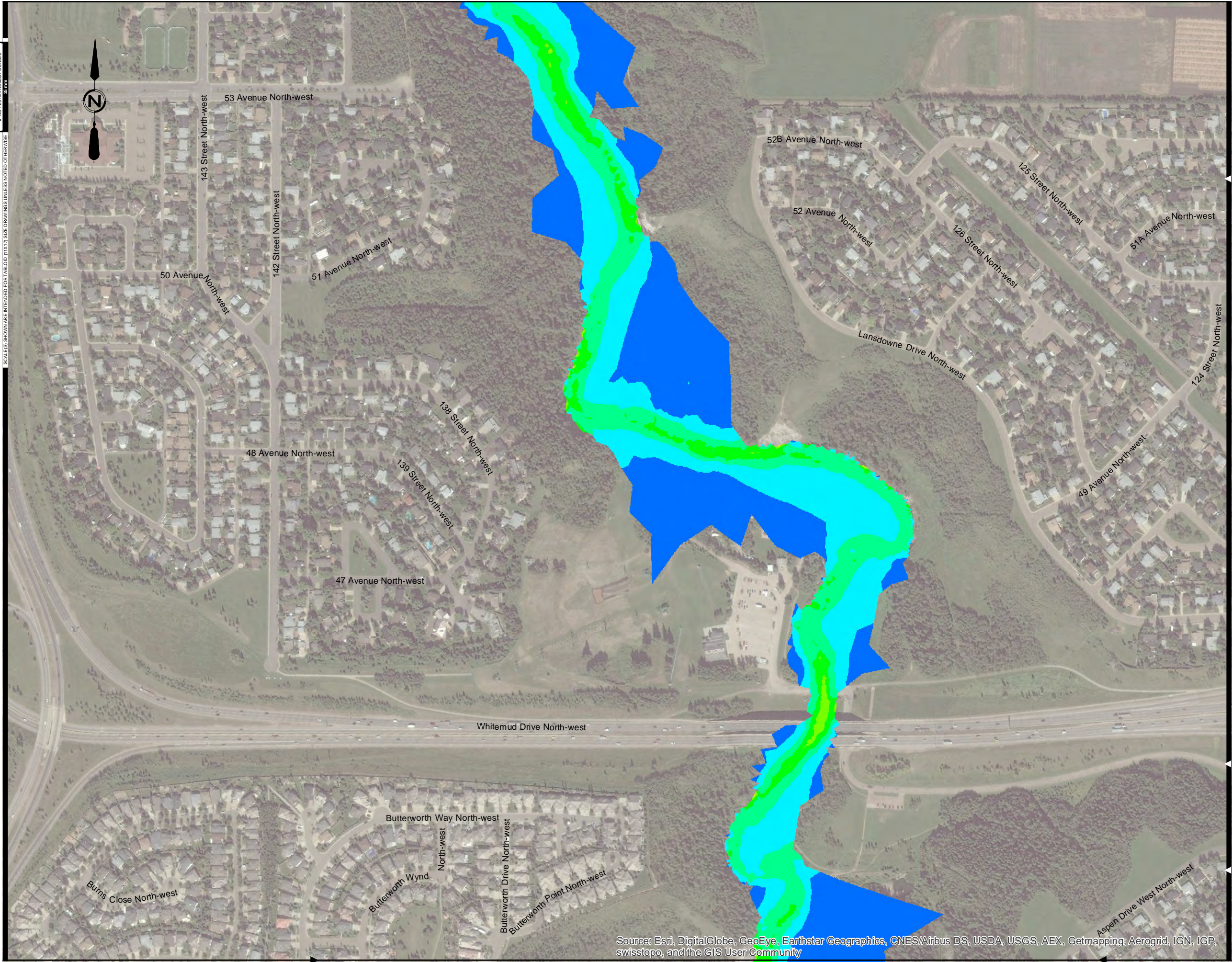
AE PROJECT No.	2016-3785
SCALE	1:5,000
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DATE	2017 MARCH
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DESCRIPTION	ISSUED FOR REPORT



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Legend:

**Velocity (3.0 L/s/ha)**

- >3.5 - 4.0
- >3.0 - 3.5
- >2.5 - 3.0
- >2.0 - 2.5
- >1.5 - 2.0
- >1.0 - 1.5
- >0.5 - 1.0
- >0.0 - 0.5

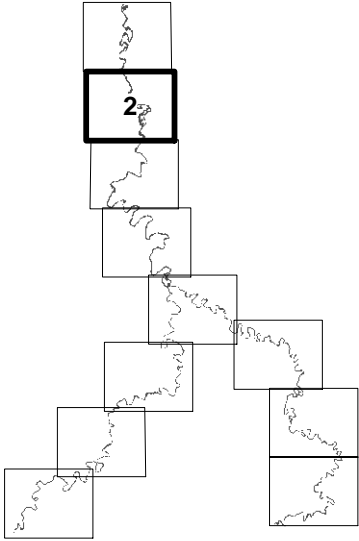
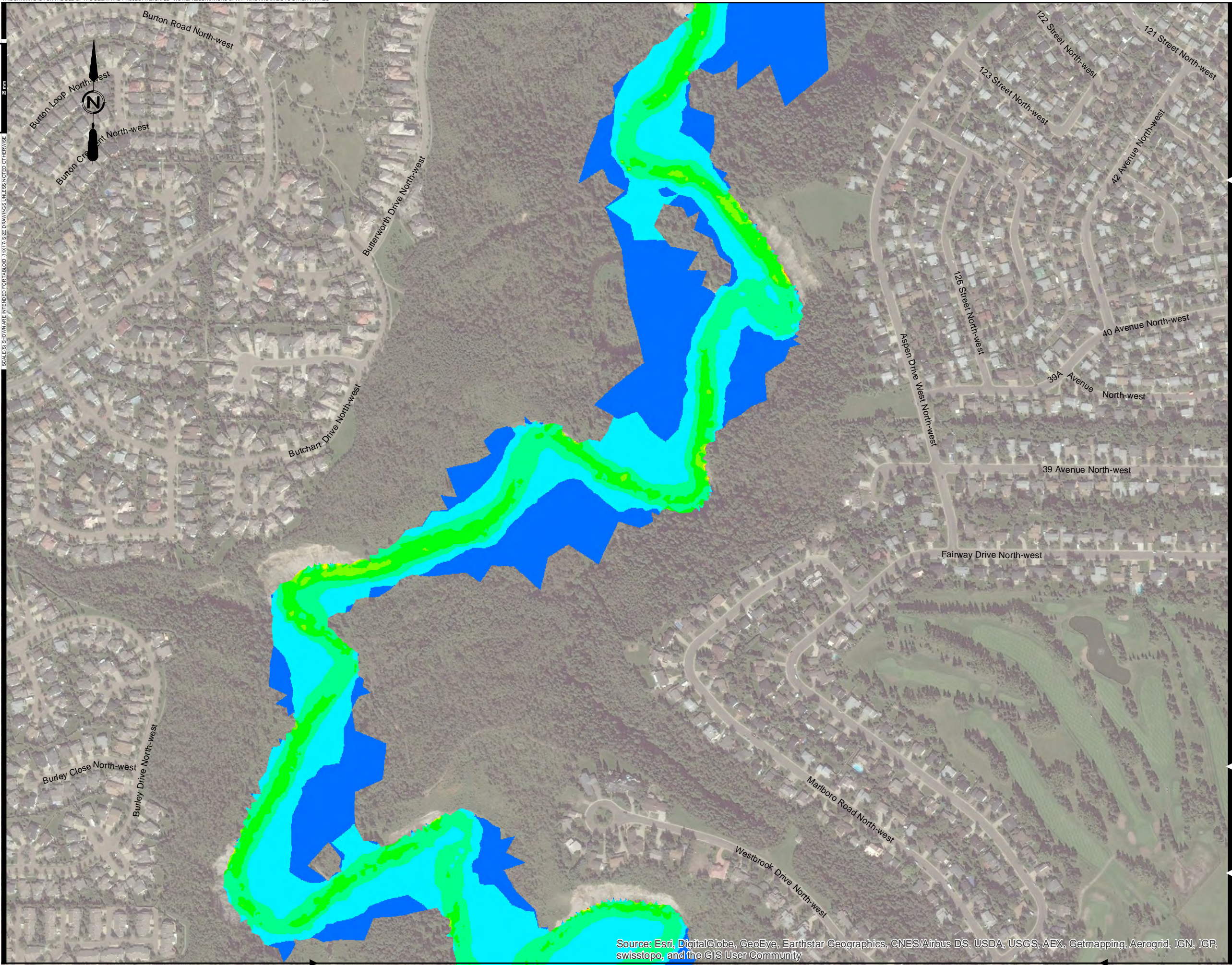


FIGURE No. C-13	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 3.0 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
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DATE	2017 MARCH
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Legend:

Velocity (3.0 L/s/ha)

- >3.5 - 4.0
- >3.0 - 3.5
- >2.5 - 3.0
- >2.0 - 2.5
- >1.5 - 2.0
- >1.0 - 1.5
- >0.5 - 1.0
- >0.0 - 0.5

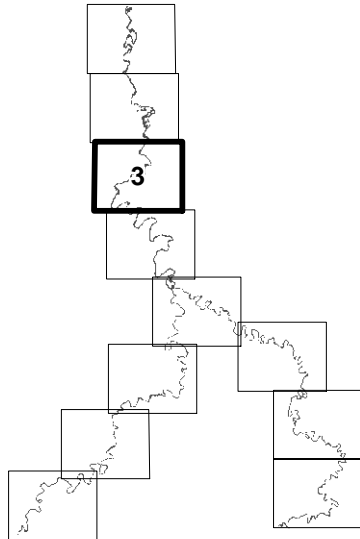


FIGURE No. C-14

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha - 100 YEAR FLOOD VELOCITY

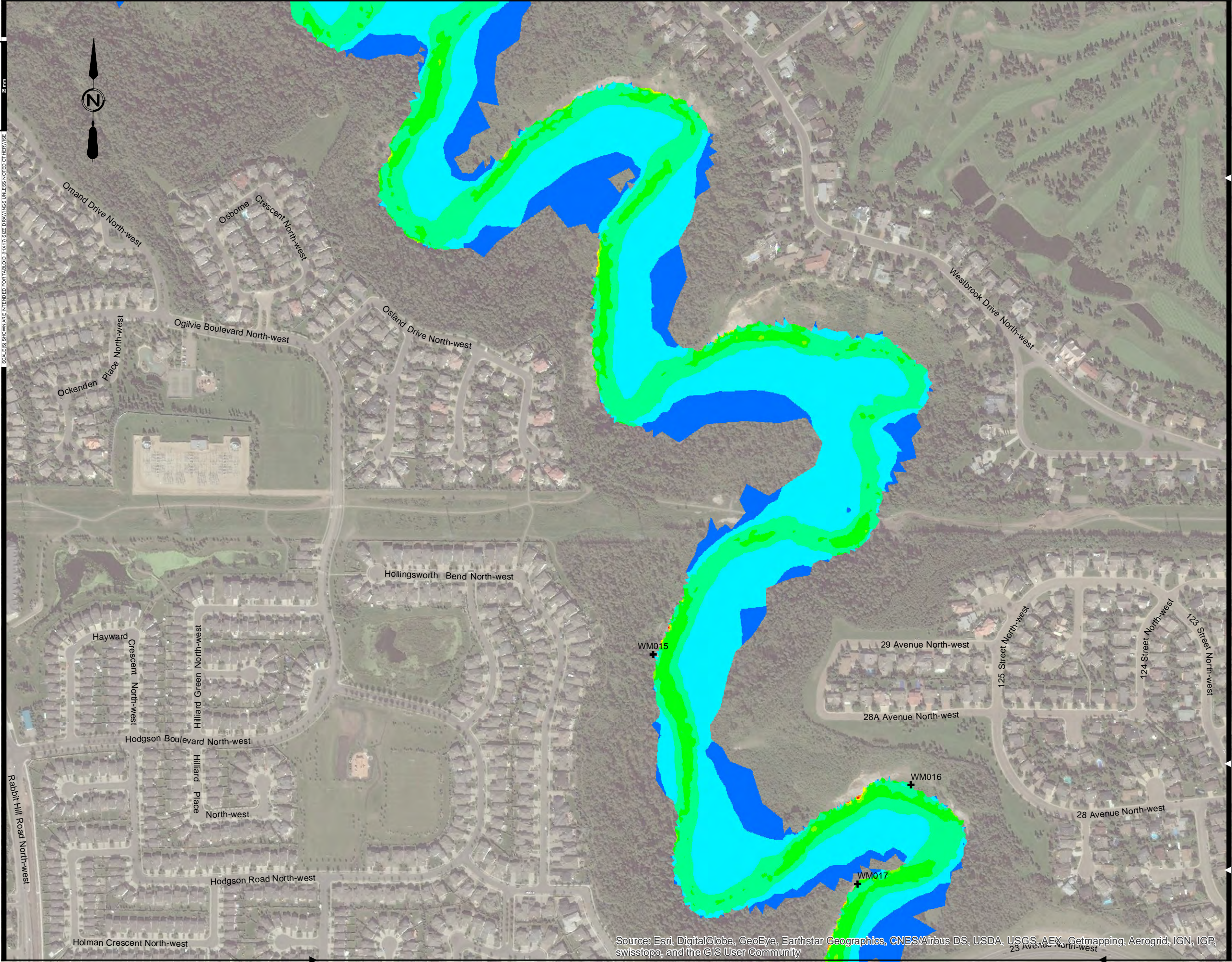
AE PROJECT No.	2016-3785
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- Legend:
- + Erosion Site
  - Velocity (3.0 L/s/ha)**
  - >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

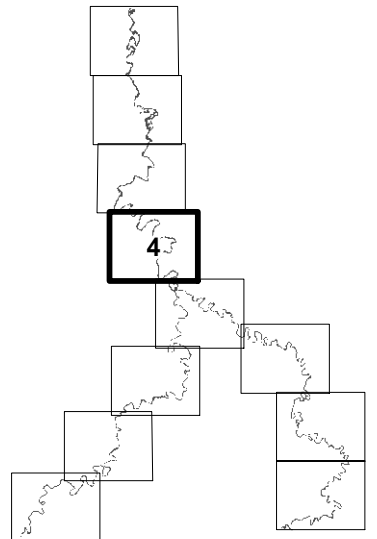


FIGURE No. C-15	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 3.0 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
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May Common North-west

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- Legend:
- + Erosion Site
- Velocity (3.0 L/s/ha)**
- >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

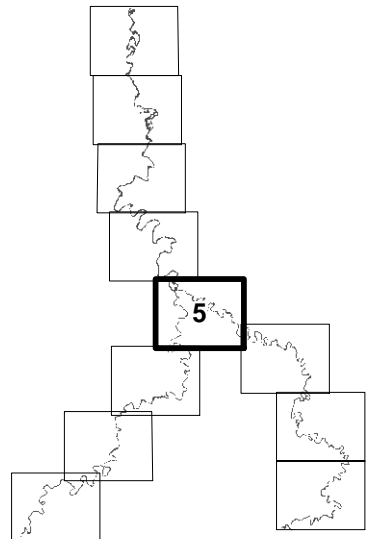


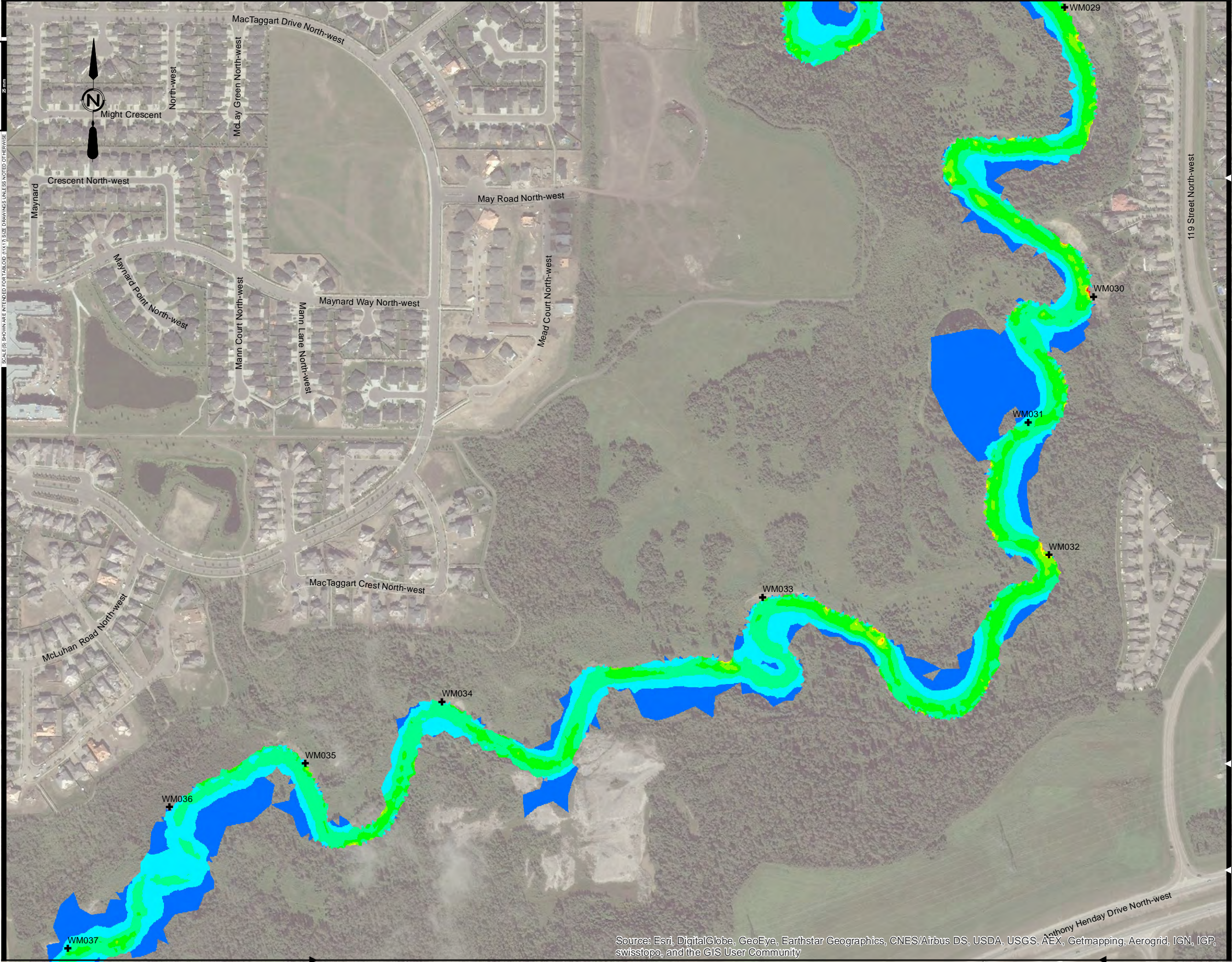
FIGURE No. C-16	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 3.0 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
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SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
- Velocity (3.0 L/s/ha)**
- >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

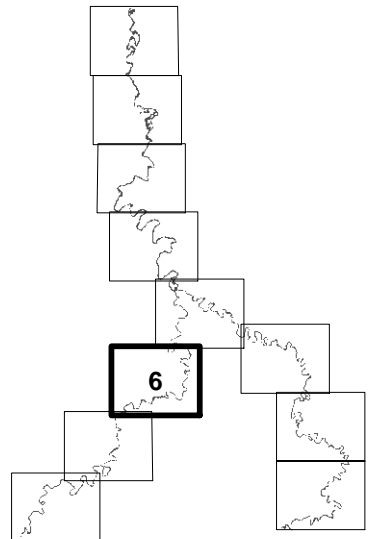
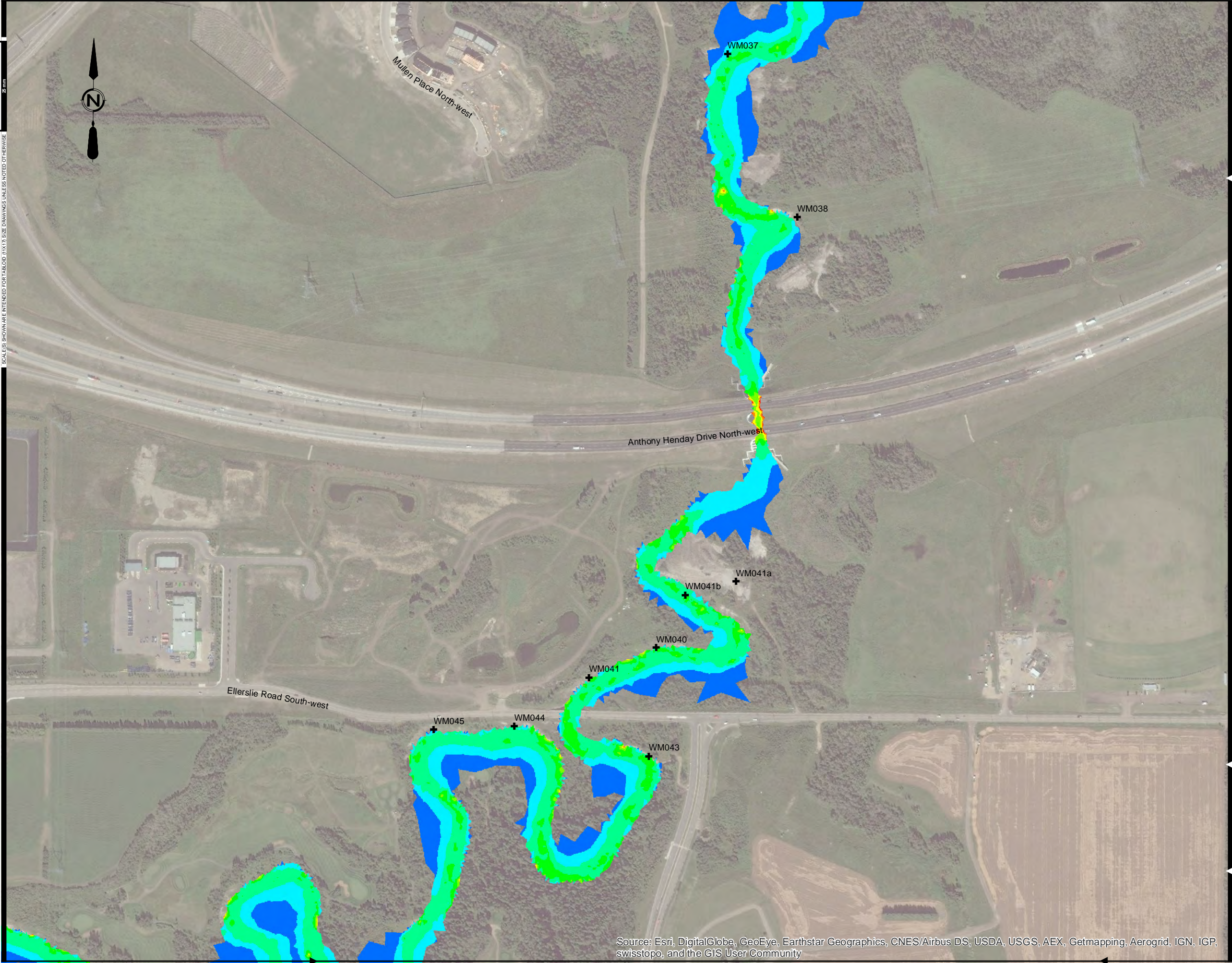


FIGURE No. C-17	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 3.0 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
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DATE	2017 MARCH
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DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



- Legend:
- + Erosion Site
  - Velocity (3.0 L/s/ha)
  - >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

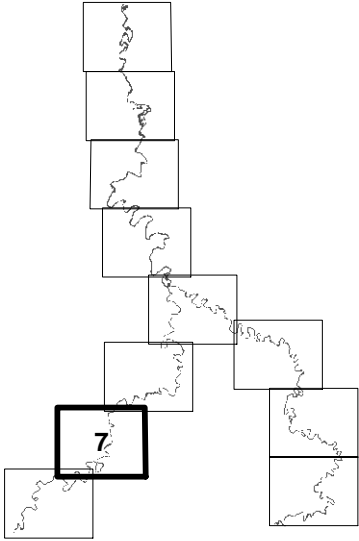


FIGURE No. C-18

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha - 100 YEAR FLOOD VELOCITY

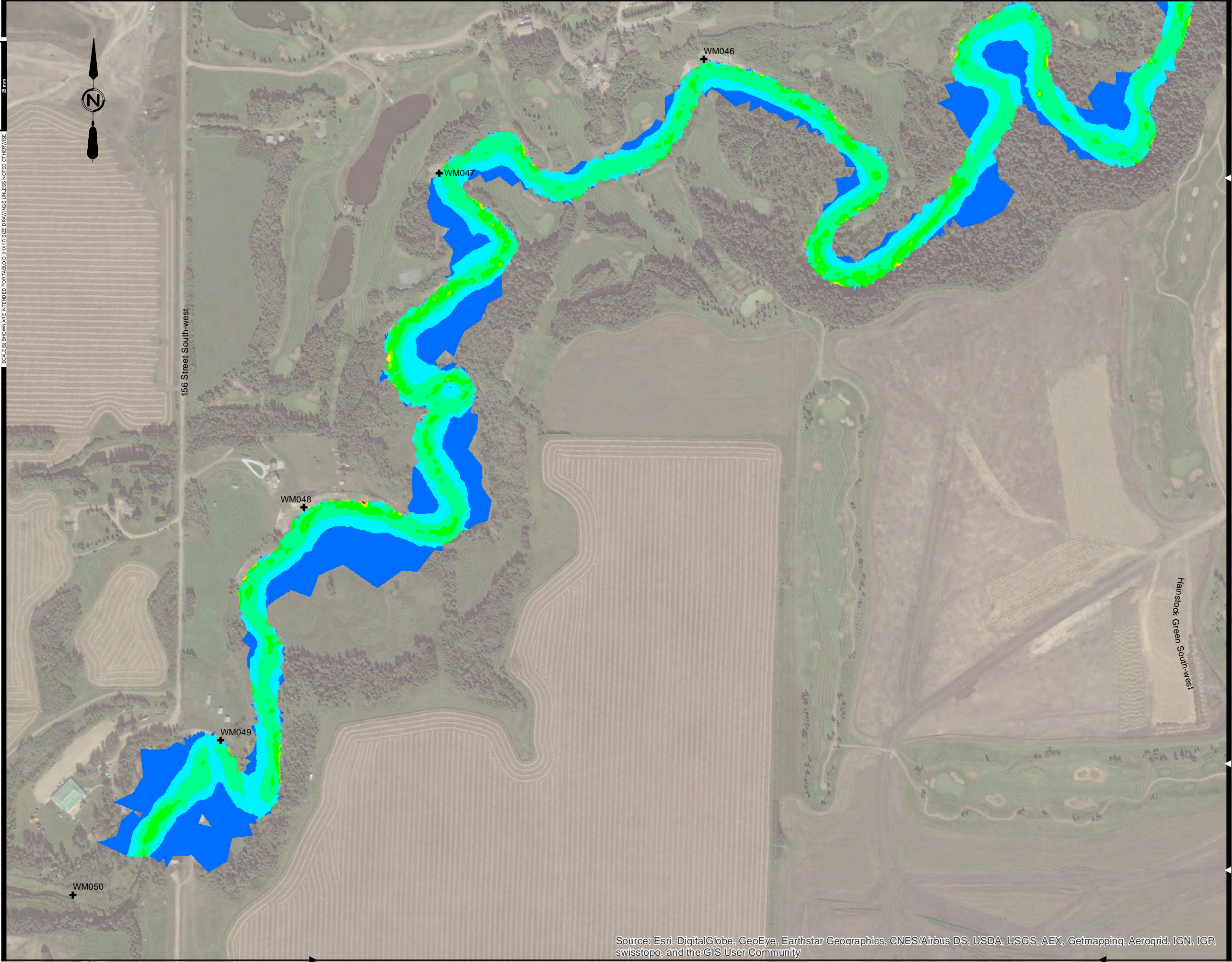
AE PROJECT No.	2016-3785
SCALE	1:5,000
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- Legend:
- + Erosion Site
- Velocity (3.0 L/s/ha)**
- >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

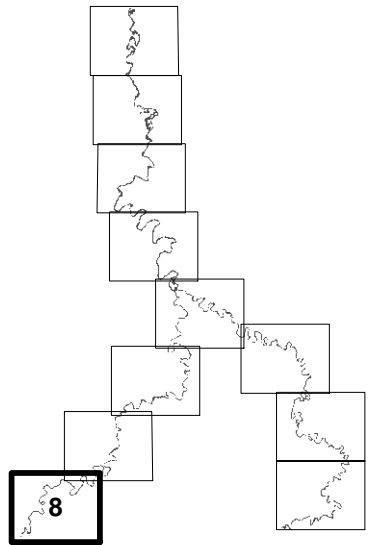


FIGURE No. C-19

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha - 100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
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SCALE(S) SHOWN ARE INTENDED FOR TABLED 11X17 SIZE DRAWINGS UNLESS NOTED OTHERWISE



- Legend:
- + Erosion Site
- Velocity (3.0 L/s/ha)**
- >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

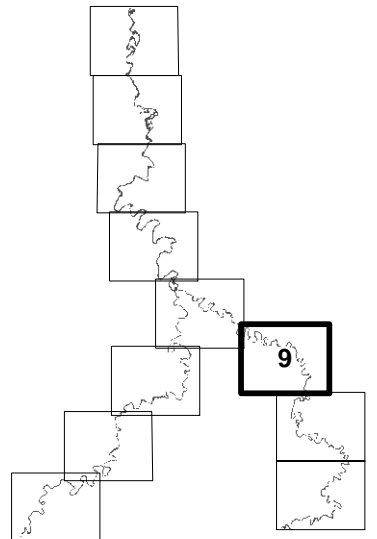


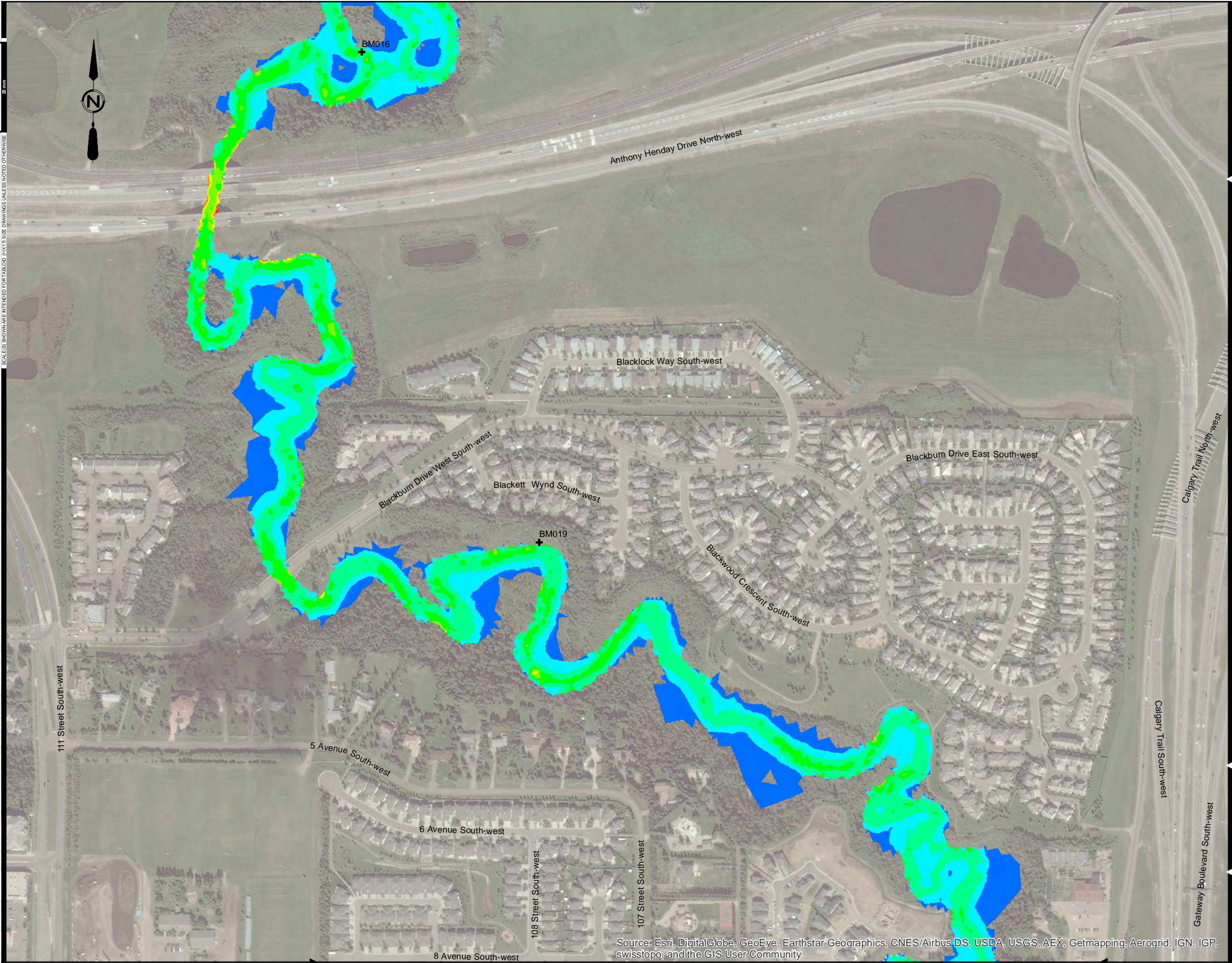
FIGURE No. C-20

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha - 100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
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- Legend:
- + Erosion Site
  - Velocity (3.0 L/s/ha)
  - >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

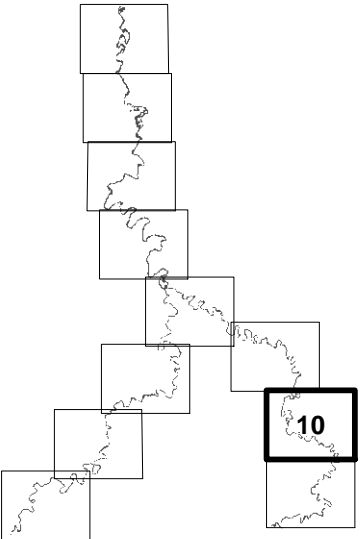


FIGURE No. C-21

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha - 100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
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- Legend:
- + Erosion Site
- Velocity (3.0 L/s/ha)**
- >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

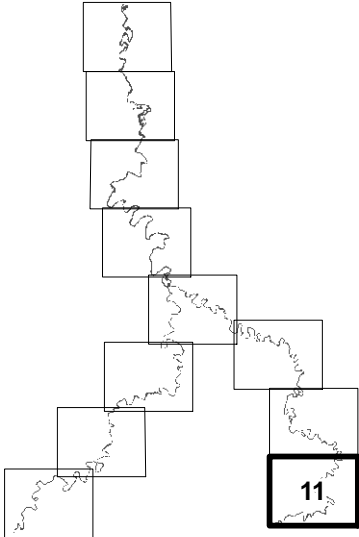


FIGURE No. C-22

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

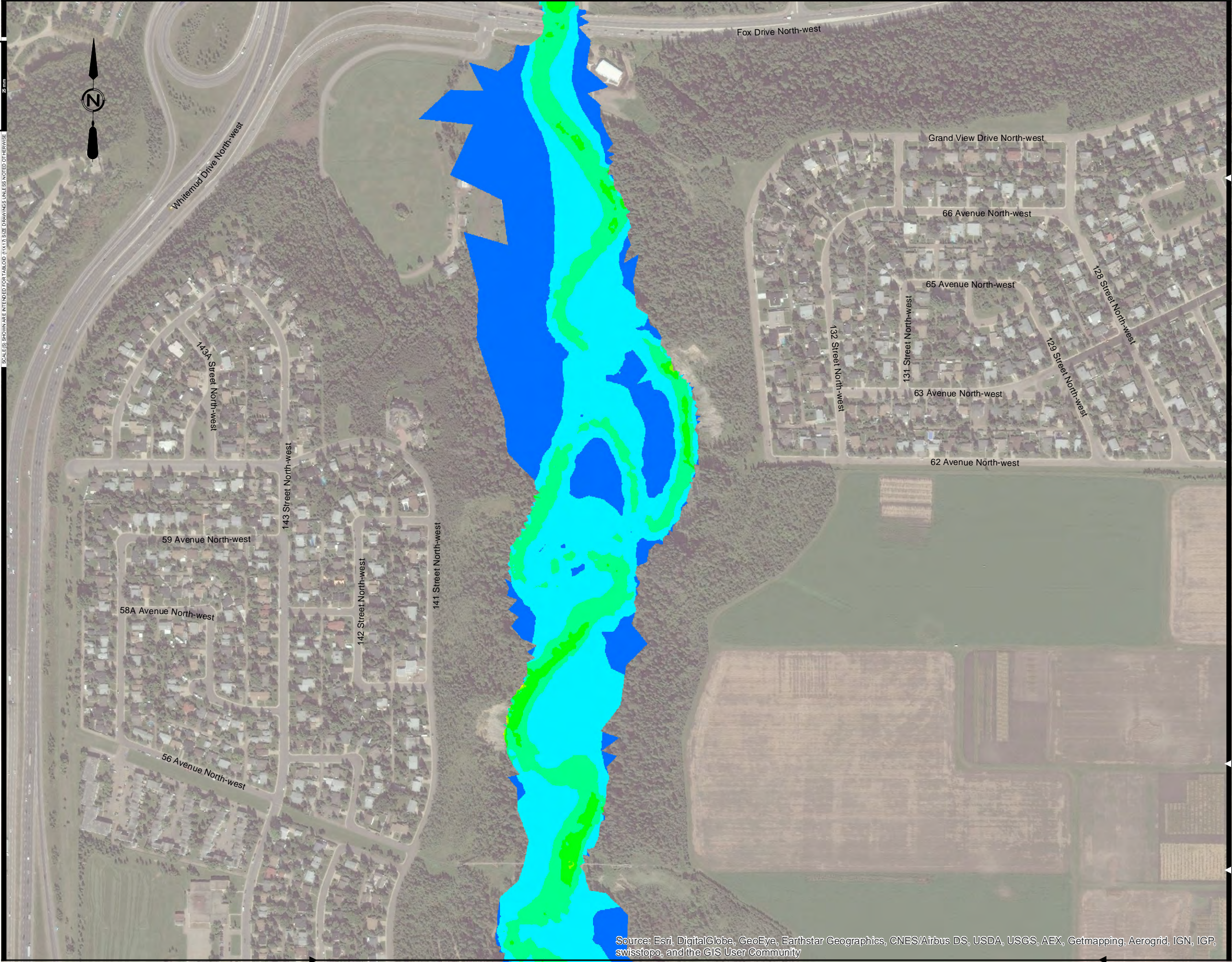
FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha - 100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Legend:

**Velocity (5.0 L/s/ha)**

- >3.5 - 4.0
- >3.0 - 3.5
- >2.5 - 3.0
- >2.0 - 2.5
- >1.5 - 2.0
- >1.0 - 1.5
- >0.5 - 1.0
- >0.0 - 0.5

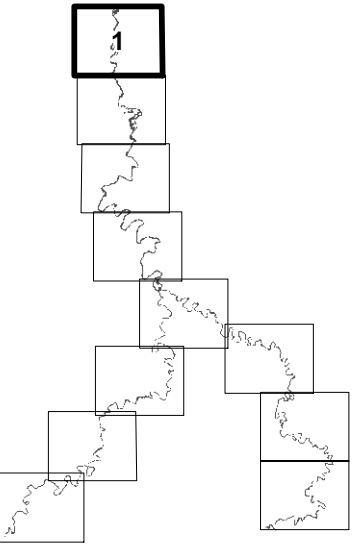
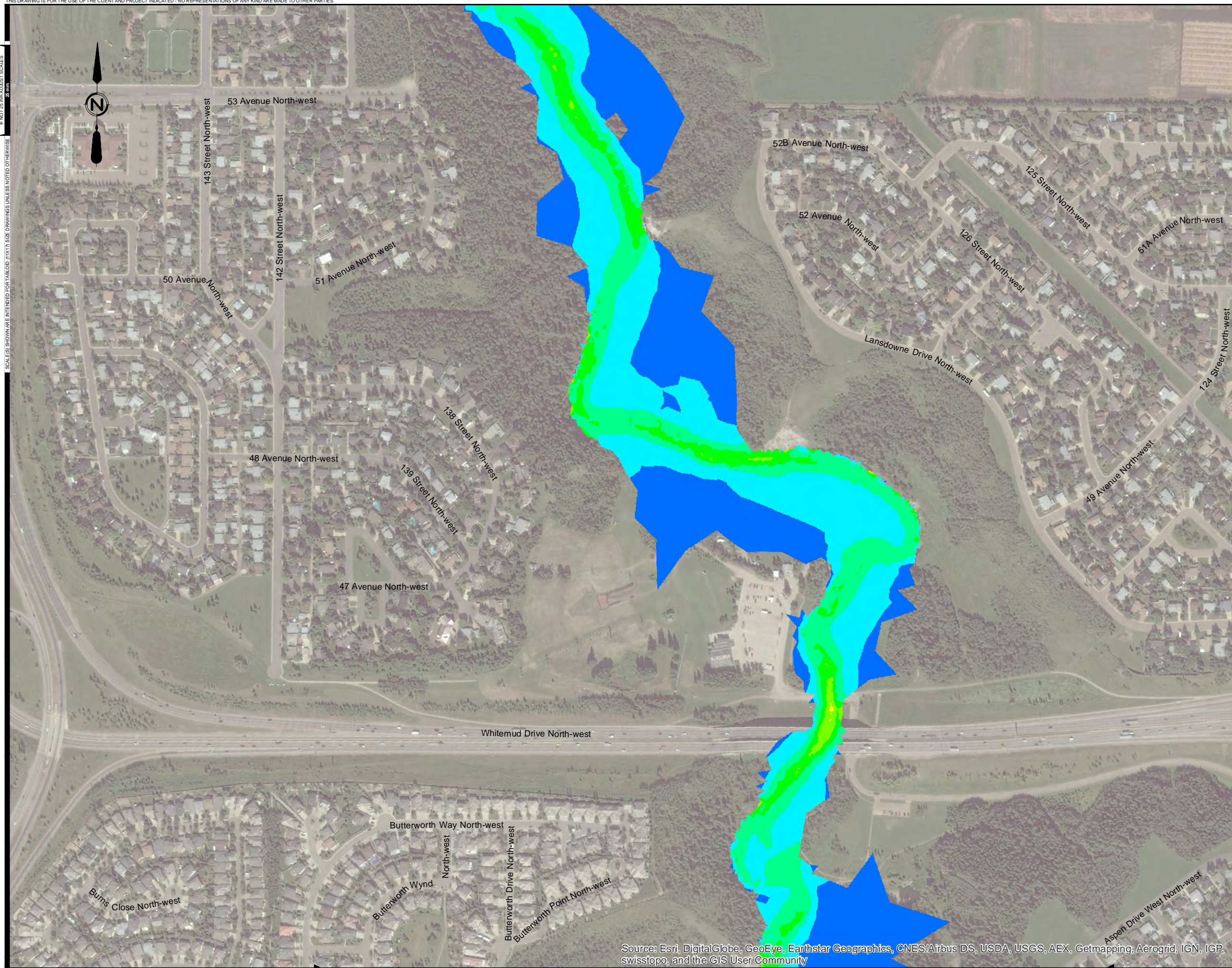


FIGURE No. C-23	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 5.0 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
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DATE	2017 MARCH
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DESCRIPTION	ISSUED FOR REPORT





Legend:

### Velocity (5.0 L/s/ha)

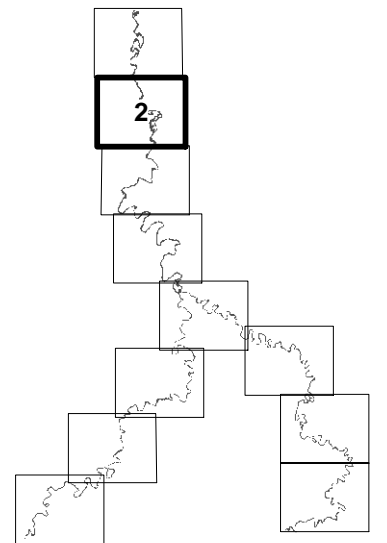
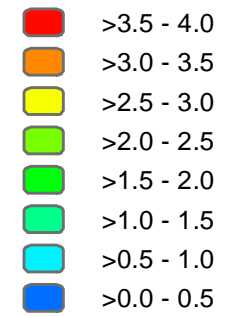


FIGURE No. C-24

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha - 100 YEAR FLOOD VELOCITY

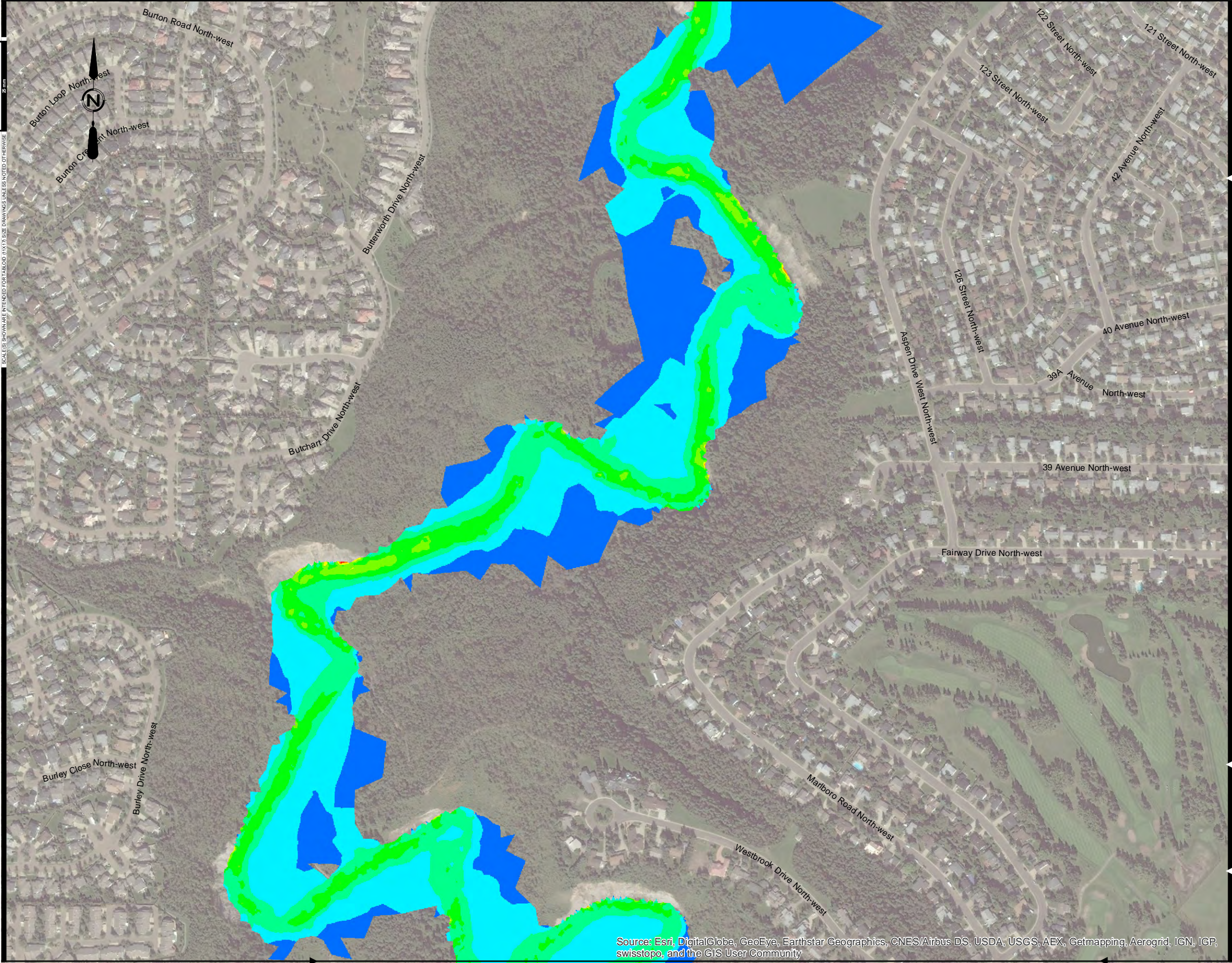
AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



THIS DRAWING IS FOR THE USE OF THE CLIENT AND PROJECT INDICATED - NO REPRESENTATIONS OF ANY KIND ARE MADE TO OTHER PARTIES

IF NOT 25 mm AS SHOWN ON SCALE

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



Legend:

Velocity (5.0 L/s/ha)

- >3.5 - 4.0
- >3.0 - 3.5
- >2.5 - 3.0
- >2.0 - 2.5
- >1.5 - 2.0
- >1.0 - 1.5
- >0.5 - 1.0
- >0.0 - 0.5

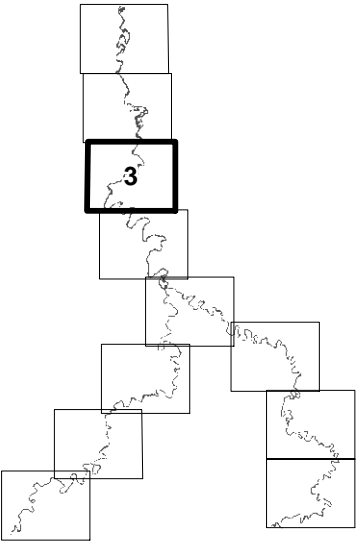


FIGURE No. C-25

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha - 100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT

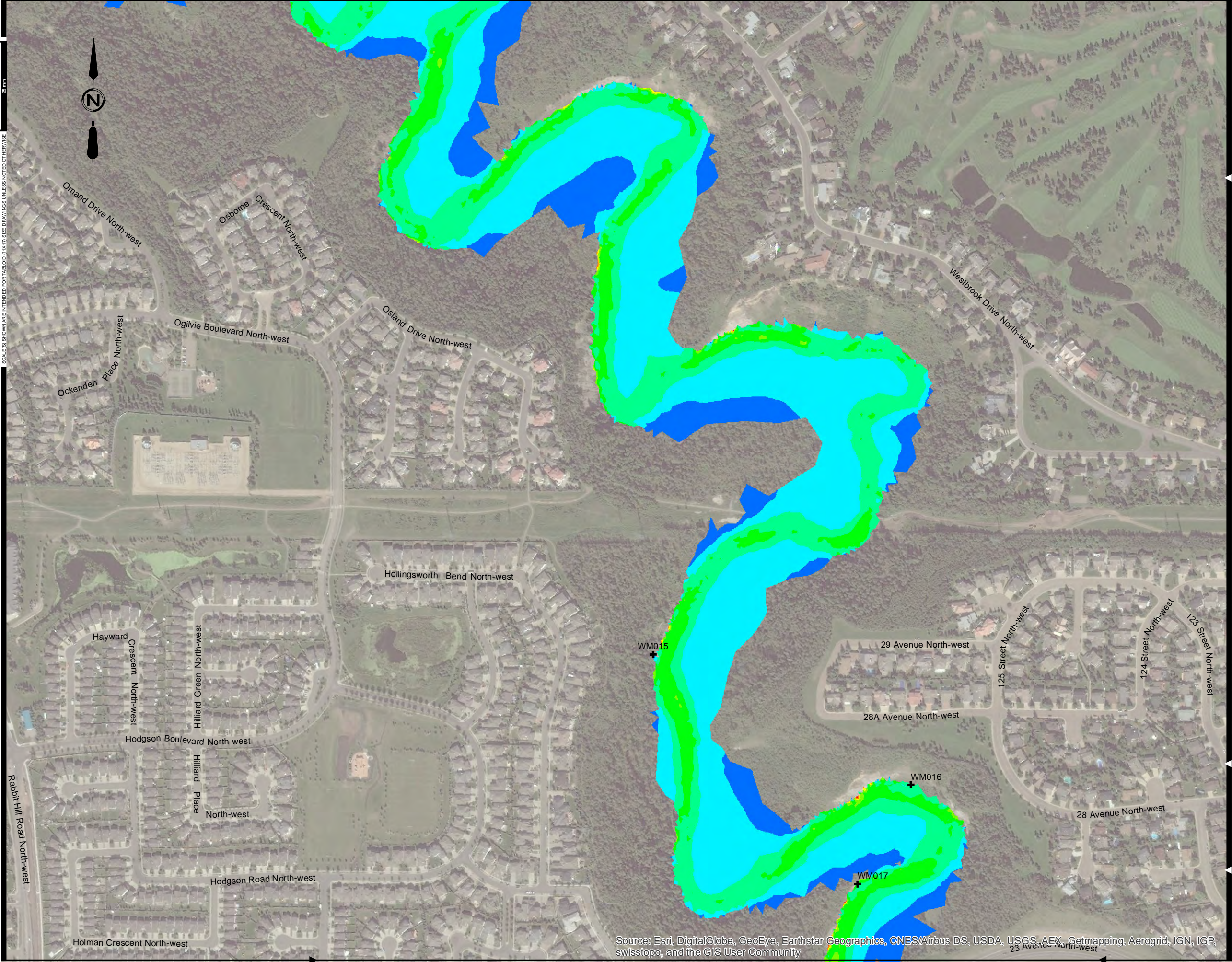
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

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DATE: 3/21/2017



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
  - Velocity (5.0 L/s/ha)
    - >3.5 - 4.0
    - >3.0 - 3.5
    - >2.5 - 3.0
    - >2.0 - 2.5
    - >1.5 - 2.0
    - >1.0 - 1.5
    - >0.5 - 1.0
    - >0.0 - 0.5

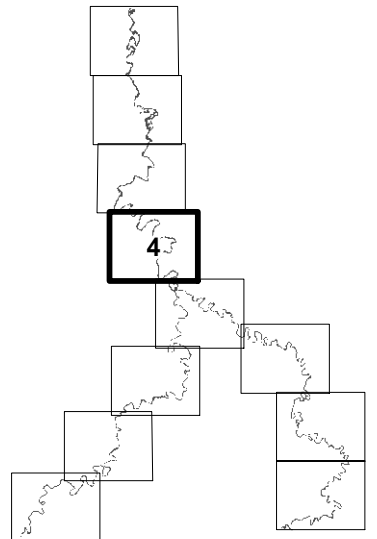


FIGURE No. C-26	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 5.0 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT

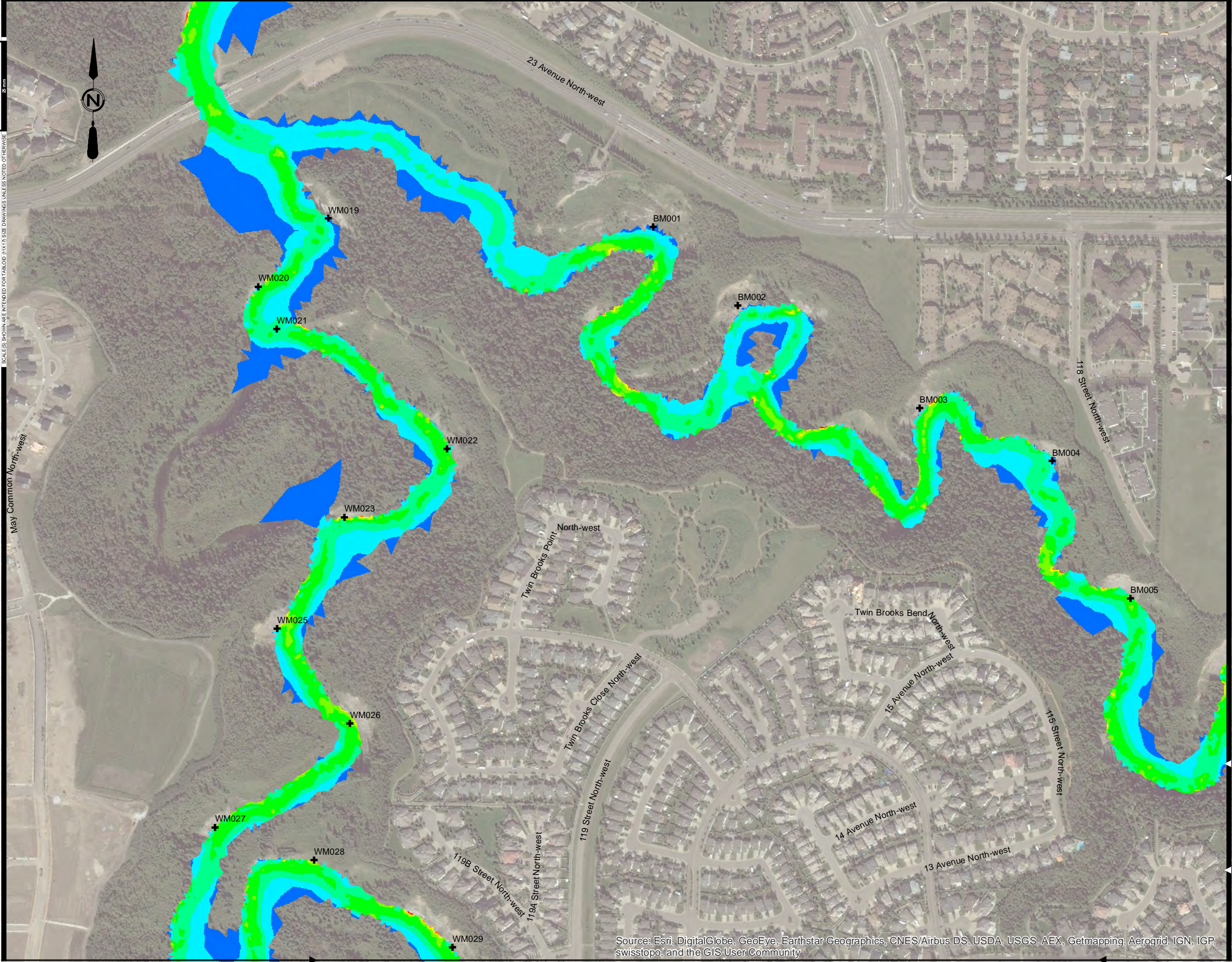


IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLED (1:1X1.7) SIZE DRAWINGS UNLESS NOTED OTHERWISE

May Common North-west

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DATE: 3/21/2017



- Legend:
- + Erosion Site
  - Velocity (5.0 L/s/ha)
    - >3.5 - 4.0
    - >3.0 - 3.5
    - >2.5 - 3.0
    - >2.0 - 2.5
    - >1.5 - 2.0
    - >1.0 - 1.5
    - >0.5 - 1.0
    - >0.0 - 0.5

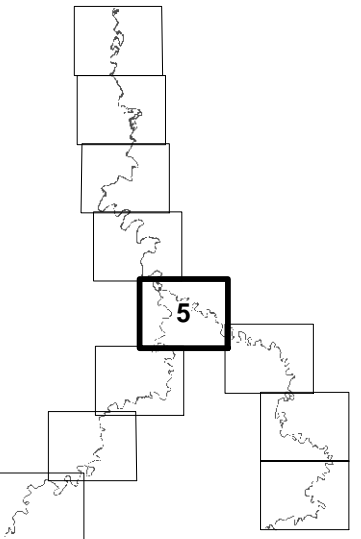


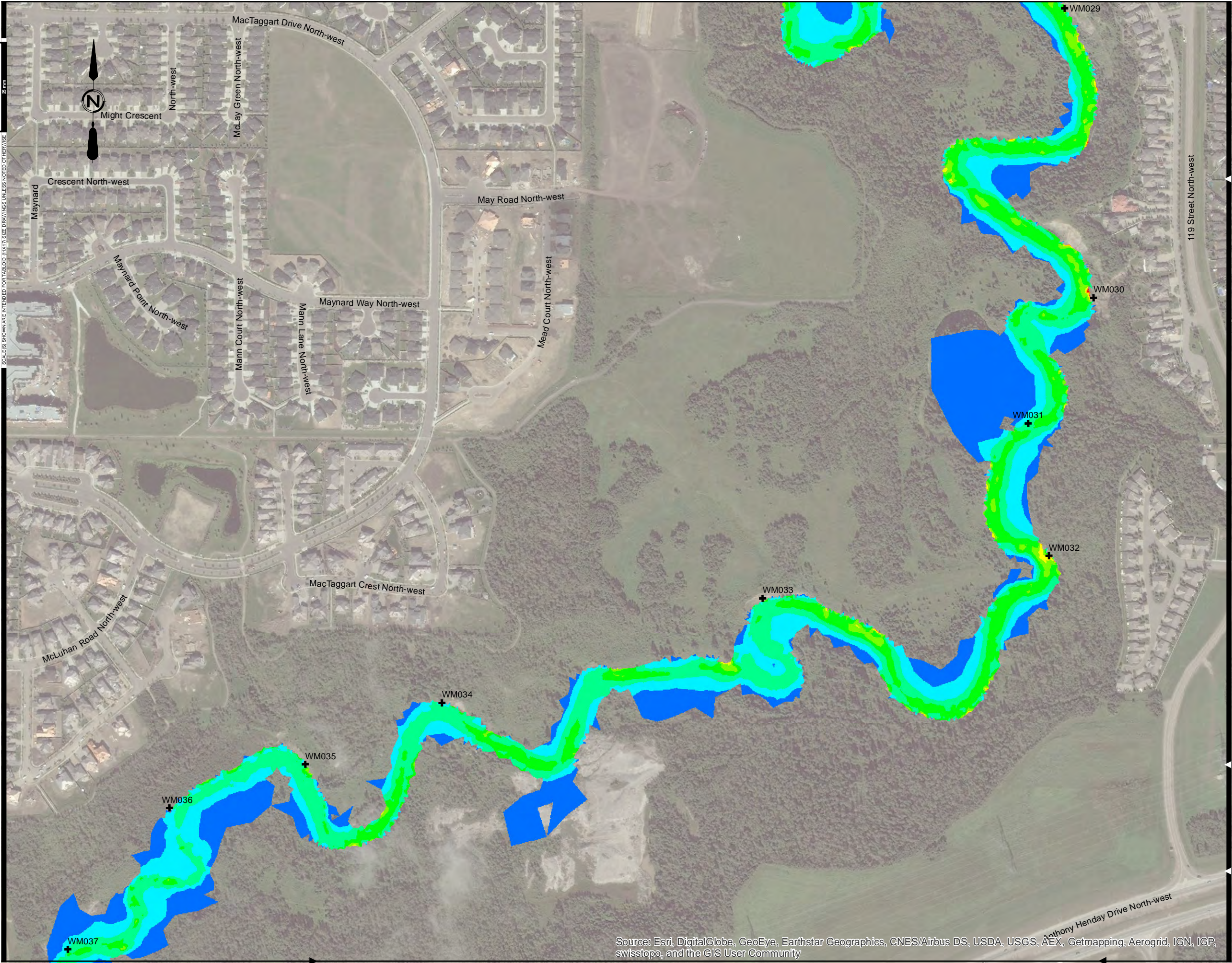
FIGURE No. C-27	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 5.0 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

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DATE: 3/21/2017



- Legend:
- + Erosion Site
  - Velocity (5.0 L/s/ha)
    - >3.5 - 4.0
    - >3.0 - 3.5
    - >2.5 - 3.0
    - >2.0 - 2.5
    - >1.5 - 2.0
    - >1.0 - 1.5
    - >0.5 - 1.0
    - >0.0 - 0.5

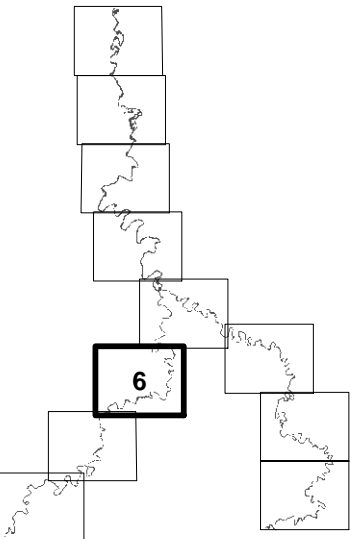
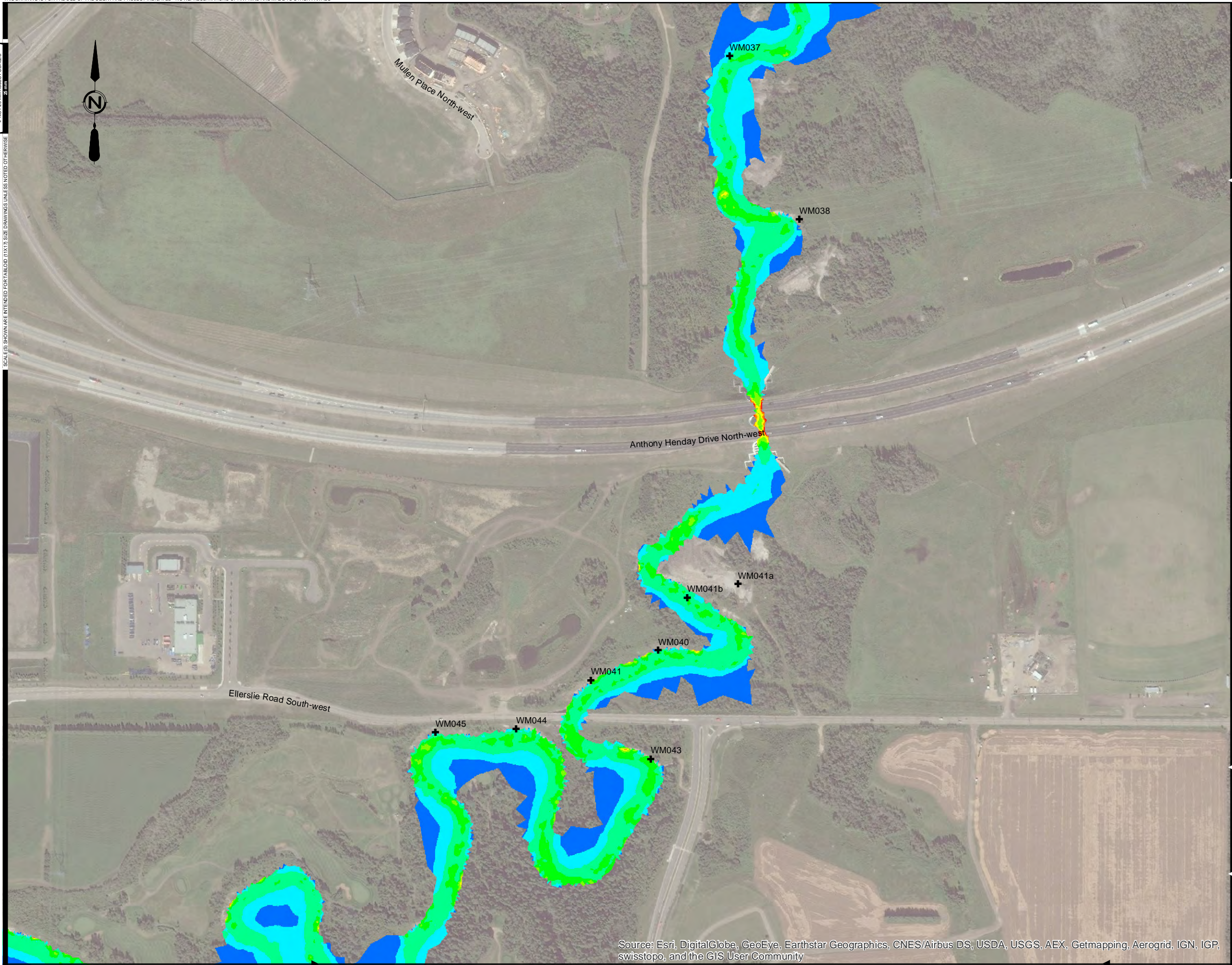


FIGURE No. C-28	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 5.0 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
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DESCRIPTION	ISSUED FOR REPORT





Legend:

+ Erosion Site

Velocity (5.0 L/s/ha)

- >3.5 - 4.0
- >3.0 - 3.5
- >2.5 - 3.0
- >2.0 - 2.5
- >1.5 - 2.0
- >1.0 - 1.5
- >0.5 - 1.0
- >0.0 - 0.5

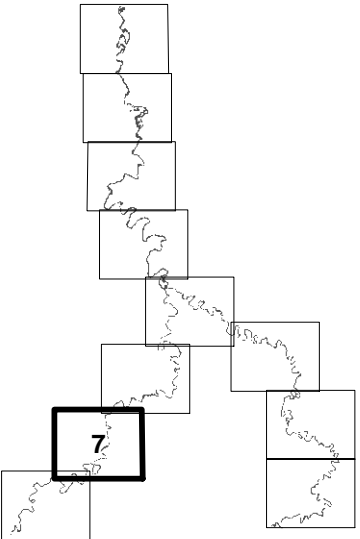


FIGURE No. C-29

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha - 100 YEAR FLOOD VELOCITY

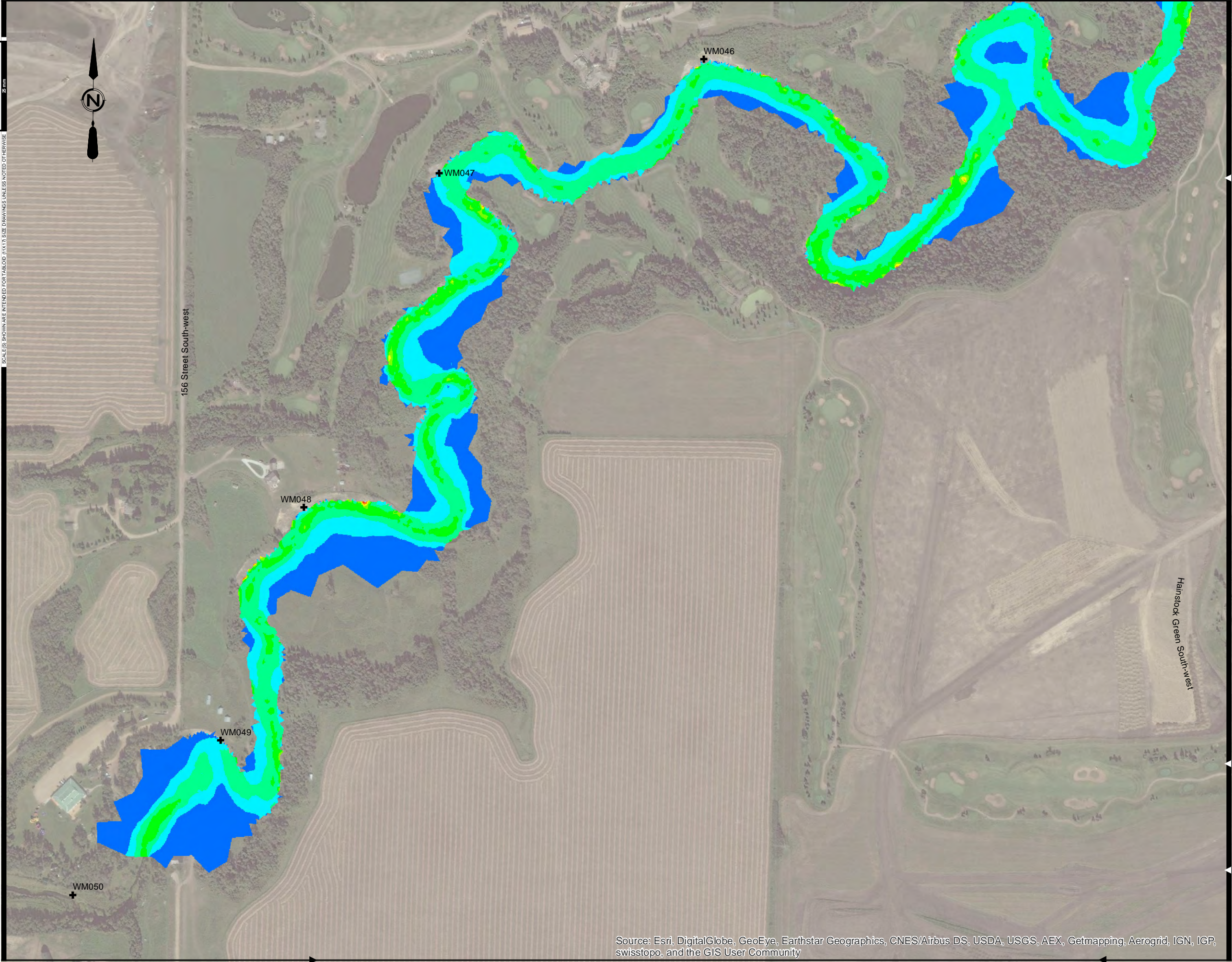
AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

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DATE: 3/21/2017



- Legend:
- + Erosion Site
  - Velocity (5.0 L/s/ha)
    - >3.5 - 4.0
    - >3.0 - 3.5
    - >2.5 - 3.0
    - >2.0 - 2.5
    - >1.5 - 2.0
    - >1.0 - 1.5
    - >0.5 - 1.0
    - >0.0 - 0.5

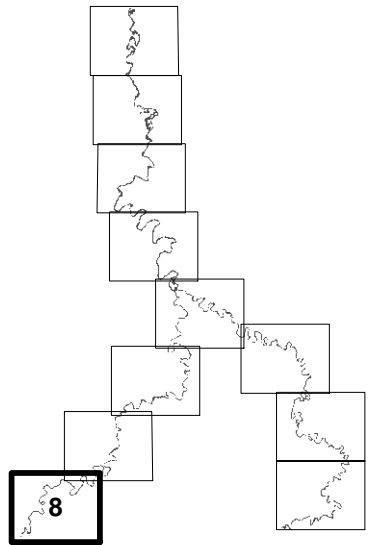










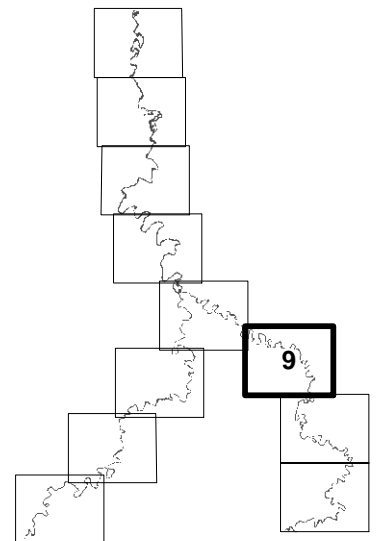
FIGURE No. C-30	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 5.0 L/s/ha - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
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**+** Erosion Site

**Velocity (5.0 L/s/ha)**

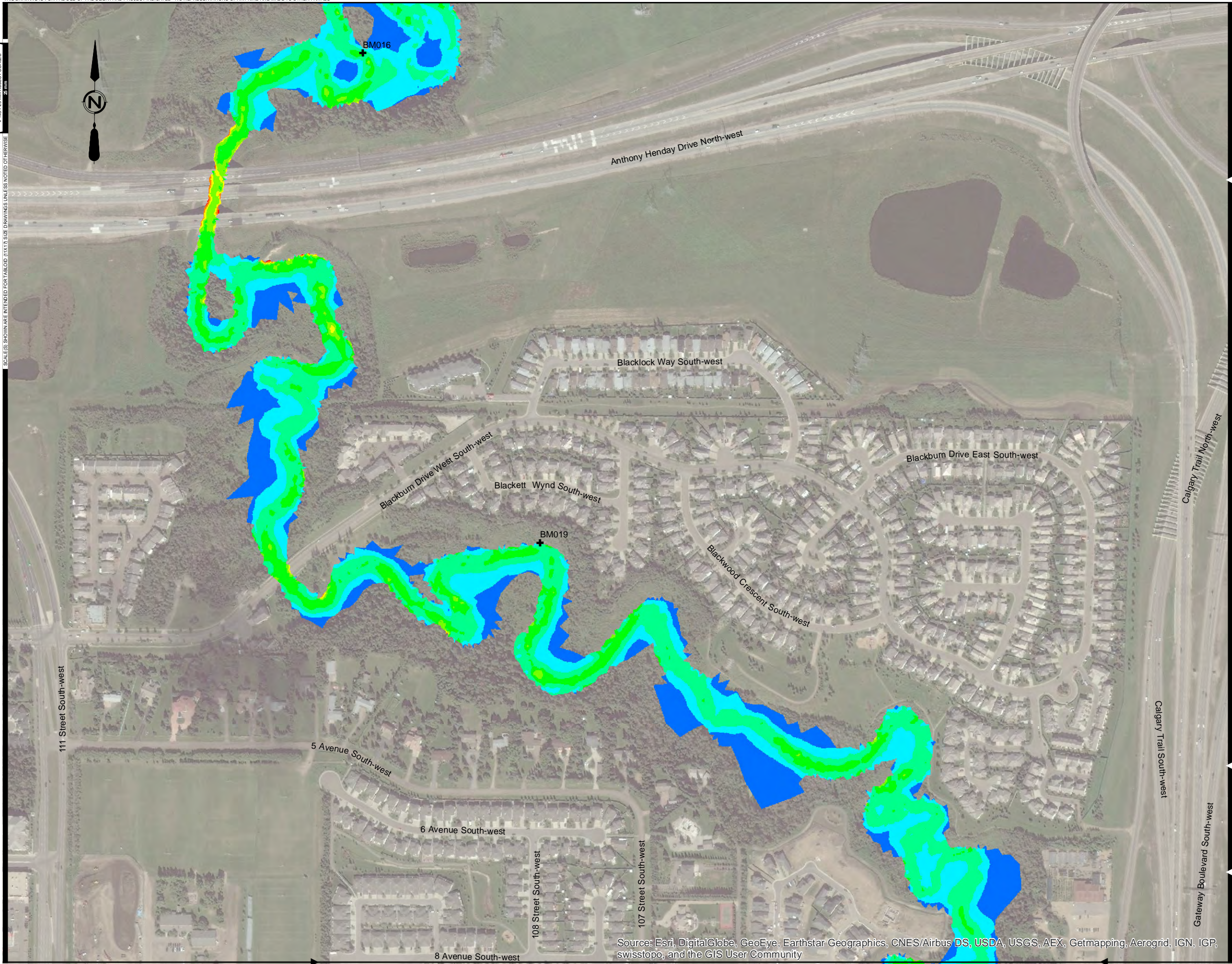
	>3.5 - 4.0
	>3.0 - 3.5
	>2.5 - 3.0
	>2.0 - 2.5
	>1.5 - 2.0
	>1.0 - 1.5
	>0.5 - 1.0
	>0.0 - 0.5



AE PROJECT No.	2016-3785
SCALE	1:5,000
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





- Legend:
- + Erosion Site
  - Velocity (5.0 L/s/ha)
    - >3.5 - 4.0
    - >3.0 - 3.5
    - >2.5 - 3.0
    - >2.0 - 2.5
    - >1.5 - 2.0
    - >1.0 - 1.5
    - >0.5 - 1.0
    - >0.0 - 0.5

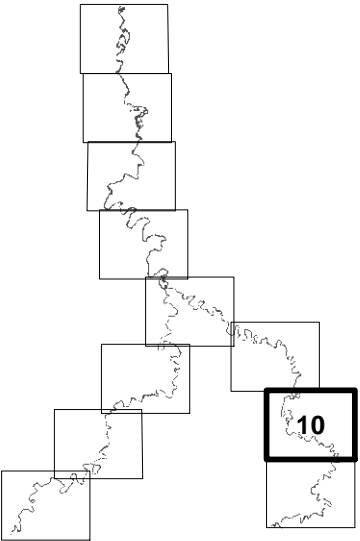


FIGURE No. C-32

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha - 100 YEAR FLOOD VELOCITY

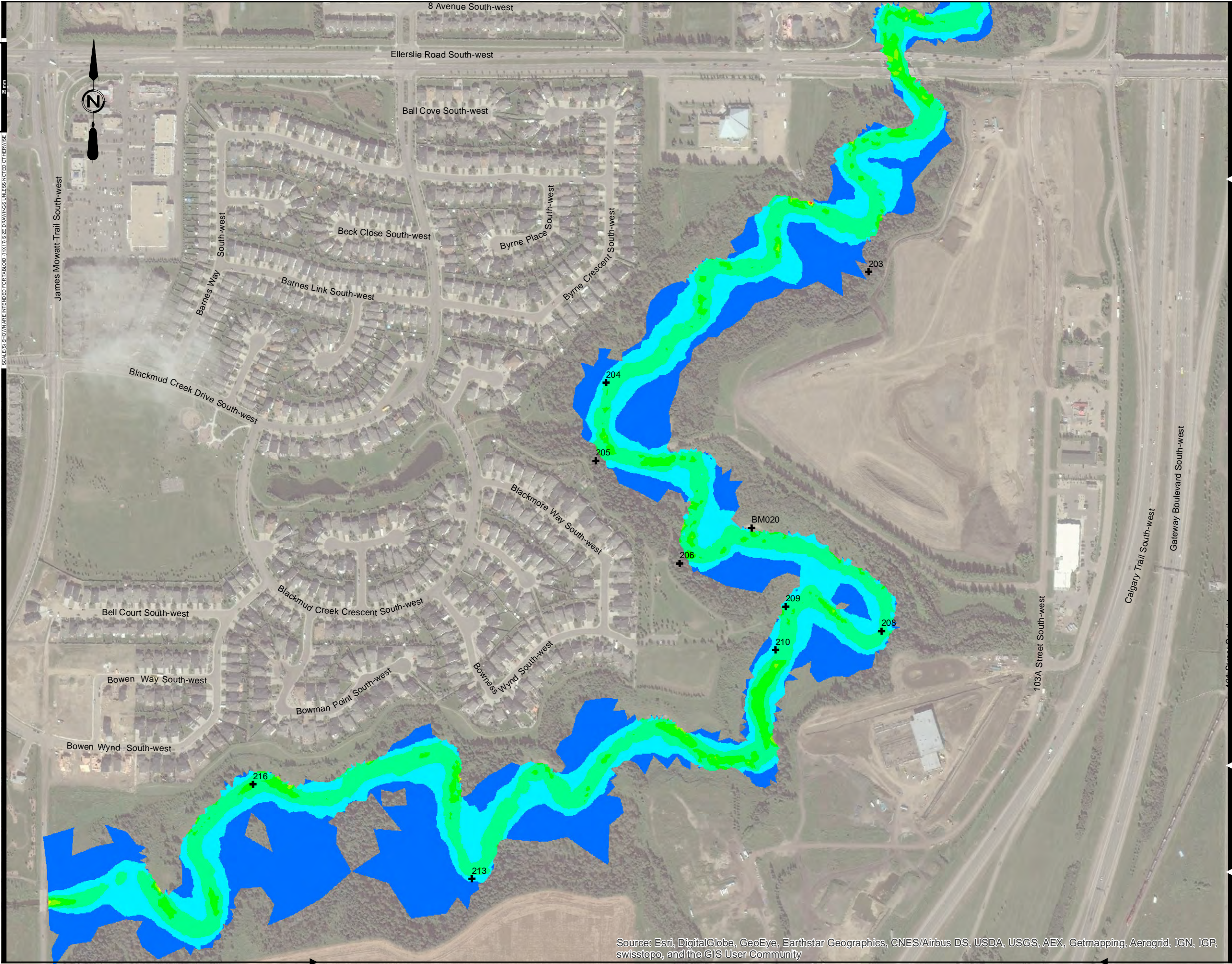
AE PROJECT No.	2016-3785
SCALE	1:5,000
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DATE	2017 MARCH
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DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm AS SHOWN ON SCALE

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

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DATE: 3/21/2017



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
- Velocity (5.0 L/s/ha)**
- >3.5 - 4.0
  - >3.0 - 3.5
  - >2.5 - 3.0
  - >2.0 - 2.5
  - >1.5 - 2.0
  - >1.0 - 1.5
  - >0.5 - 1.0
  - >0.0 - 0.5

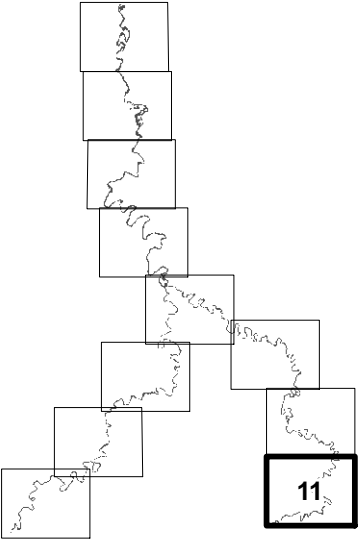


FIGURE No. C-33

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha - 100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
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DATE	2017 MARCH
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## Appendix D - 2D Velocity Variation from Existing Conditions



IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- 1.5 L/s/ha Ratio to Existing**
- ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

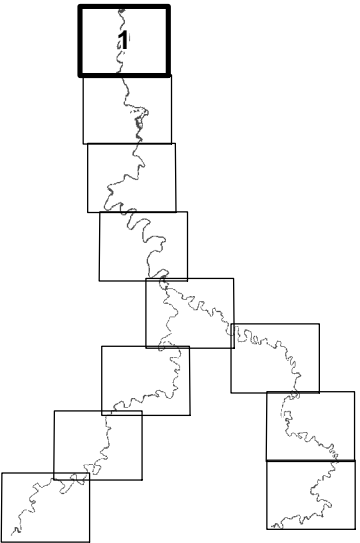


FIGURE No. D-1

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- 1.5 L/s/ha Ratio to Existing**
- ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

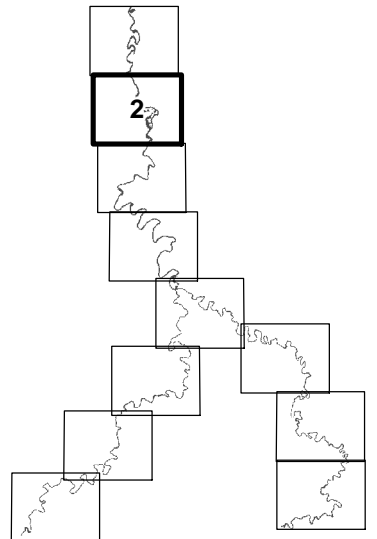
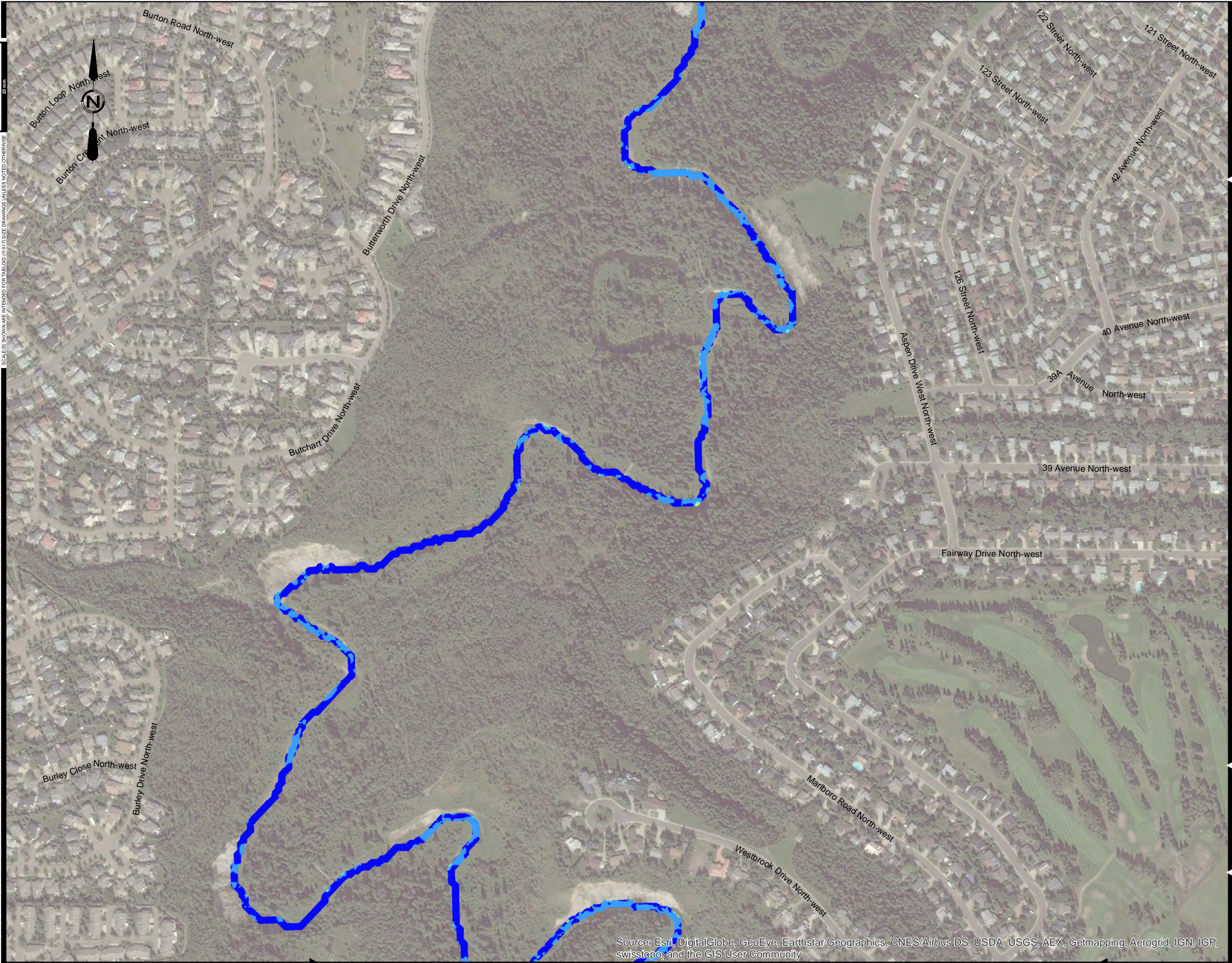


FIGURE No. D-2	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 1.5 L/s/ha RATIO TO EXISTING - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT





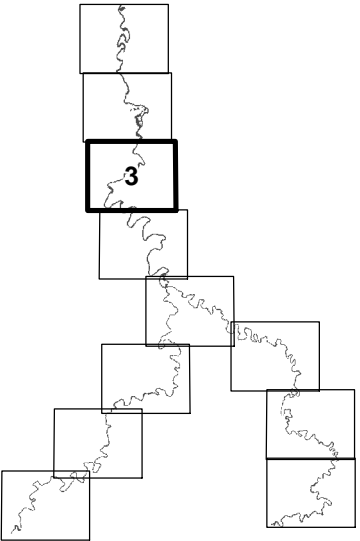
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Legend:

**1.5 L/s/ha Ratio to Existing**

- ≥ 1.4
- > 1.3 - 1.4
- > 1.2 - 1.3
- > 1.1 - 1.2
- > 1.0 - 1.1
- ≤ 1.0



**FIGURE No. D-3**

**BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY**

**FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY**

<b>AE PROJECT No.</b>	2016-3785
<b>SCALE</b>	1:5,000
<b>APPROVED</b>	
<b>DATE</b>	2017 MARCH
<b>REV</b>	
<b>DESCRIPTION</b>	ISSUED FOR REPORT





- Legend:
- + Erosion Site
  - 1.5 L/s/ha Ratio to Existing
    - ≥ 1.4
    - > 1.3 - 1.4
    - > 1.2 - 1.3
    - > 1.1 - 1.2
    - > 1.0 - 1.1
    - ≤ 1.0

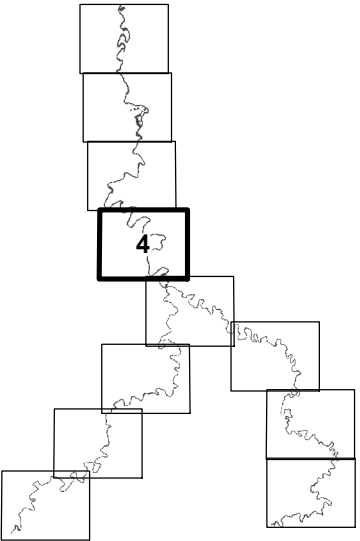


FIGURE No. D-4

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
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DATE	2017 MARCH
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DESCRIPTION	ISSUED FOR REPORT





- Legend:
- + Erosion Site
  - 1.5 L/s/ha Ratio to Existing
    - ≥ 1.4
    - > 1.3 - 1.4
    - > 1.2 - 1.3
    - > 1.1 - 1.2
    - > 1.0 - 1.1
    - ≤ 1.0

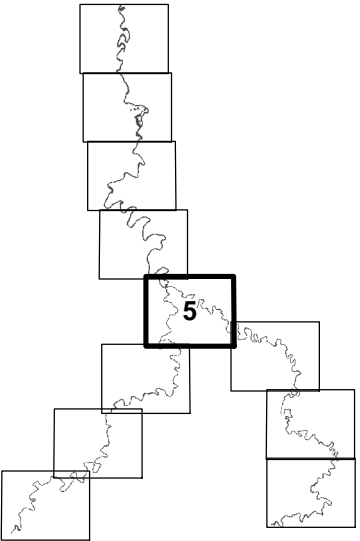
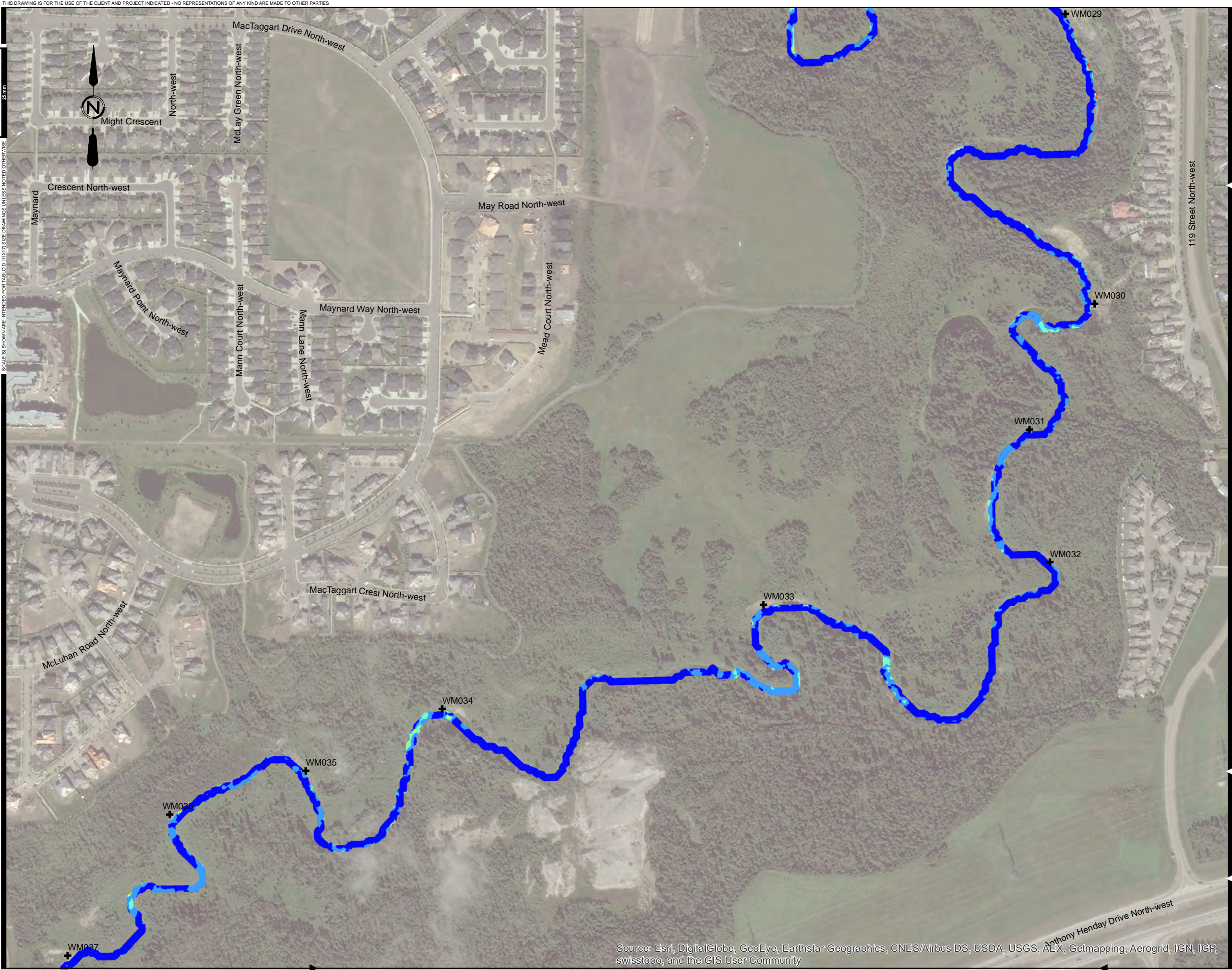


FIGURE No. D-5	
BLACKMUD/WHITEMUD CREEK WATERSHED MANAGEMENT STUDY	
FUTURE DEVELOPMENT DISCHARGE RATE 1.5 L/s/ha RATIO TO EXISTING - 100 YEAR FLOOD VELOCITY	
AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



Legend:

+ Erosion Site

**1.5 L/s/ha Ratio to Existing**

- ≥ 1.4
- > 1.3 - 1.4
- > 1.2 - 1.3
- > 1.1 - 1.2
- > 1.0 - 1.1
- ≤ 1.0

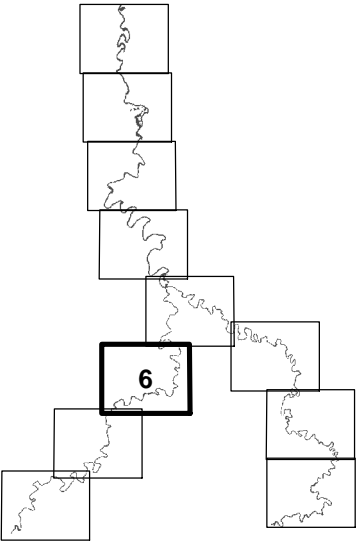


FIGURE No. D-6

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
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DATE	2017 MARCH
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DESCRIPTION	ISSUED FOR REPORT





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
  - 1.5 L/s/ha Ratio to Existing**
  - ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

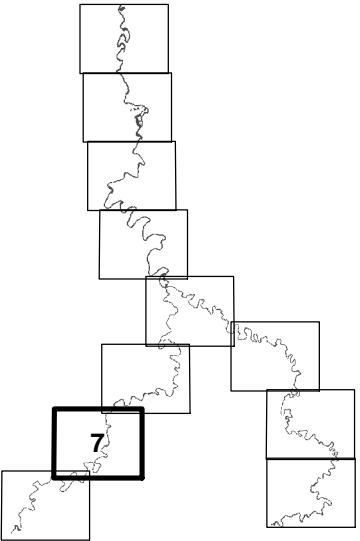


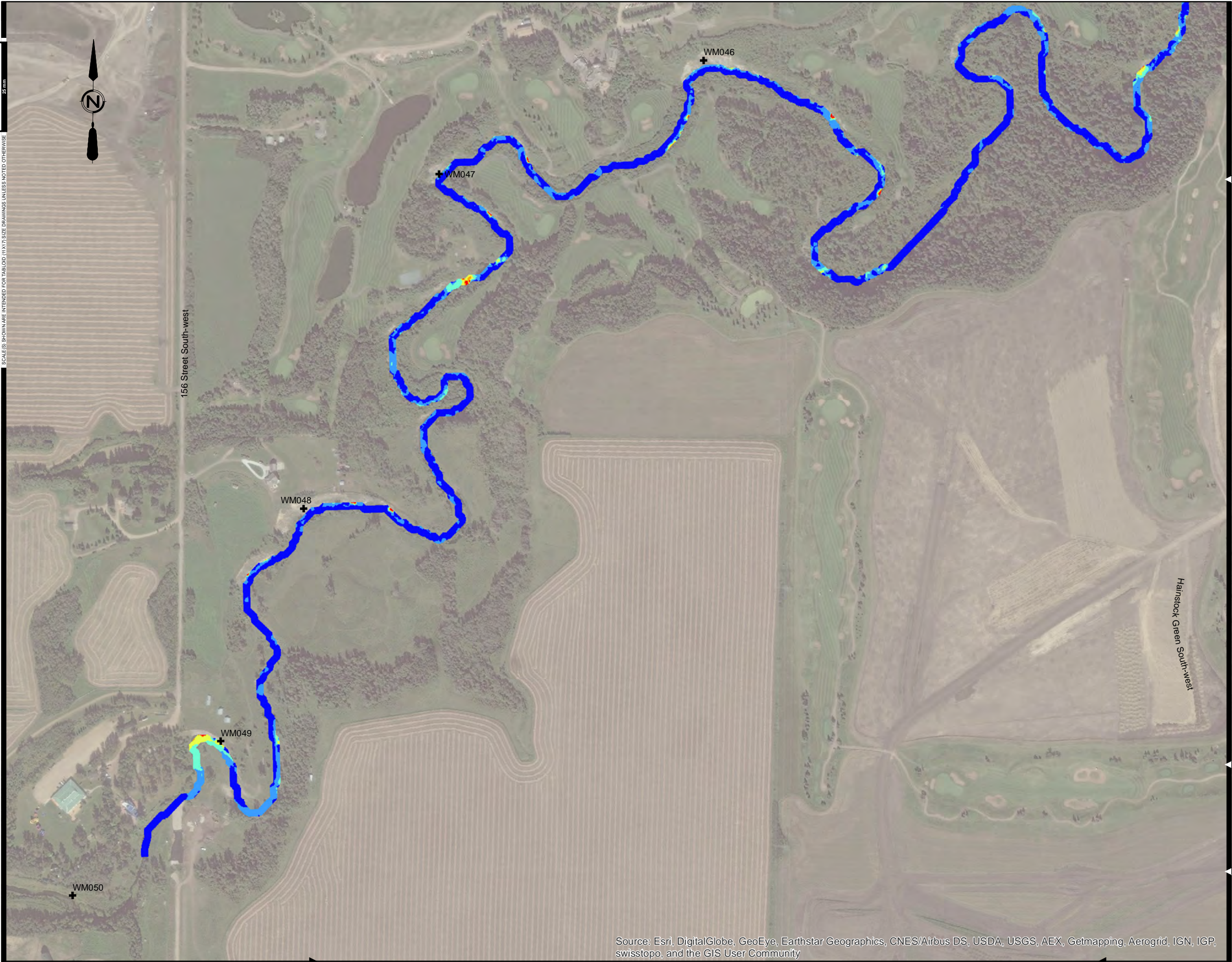
FIGURE No. D-7

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT





- Legend:
- + Erosion Site
  - 1.5 L/s/ha Ratio to Existing
    - ≥ 1.4
    - > 1.3 - 1.4
    - > 1.2 - 1.3
    - > 1.1 - 1.2
    - > 1.0 - 1.1
    - ≤ 1.0

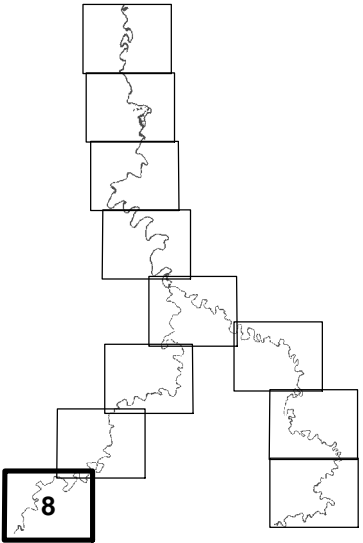


FIGURE No. D-8

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
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DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT





Legend:

**+ Erosion Site**

### 1.5 L/s/ha Ratio to Existing

  $\geq 1.4$   
  $> 1.3 - 1.4$   
  $> 1.2 - 1.3$   
  $> 1.1 - 1.2$   
  $> 1.0 - 1.1$   
  $\leq 1.0$

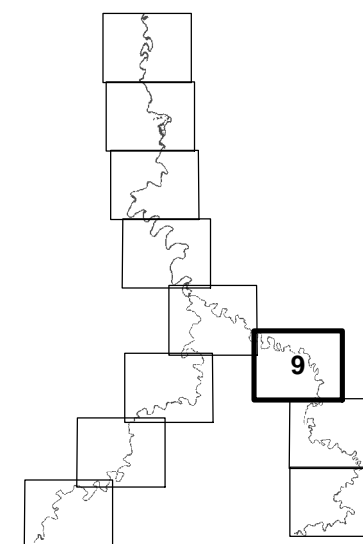


FIGURE No. D-9

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
  - 1.5 L/s/ha Ratio to Existing
  - ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

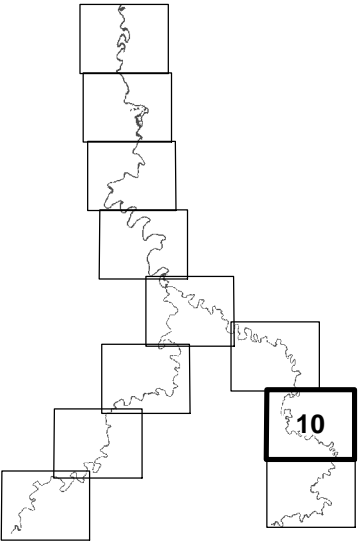


FIGURE No. D-10

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm AS SHOWN ON THIS SCALE

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

P:\2017\6376500\_Blackmud\_Whitemud\Working\_Dwgs\010\_GIS\Act\Map\02\_WaterResources\xxxx\_FutureDevelopment\_Velocity.mxd  
DATE: 3/24/2017



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
  - 1.5 L/s/ha Ratio to Existing
  - ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

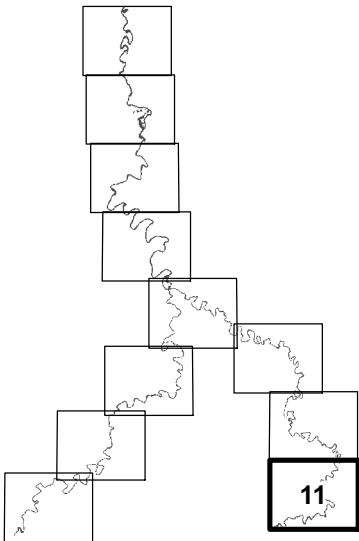


FIGURE No. D-11

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

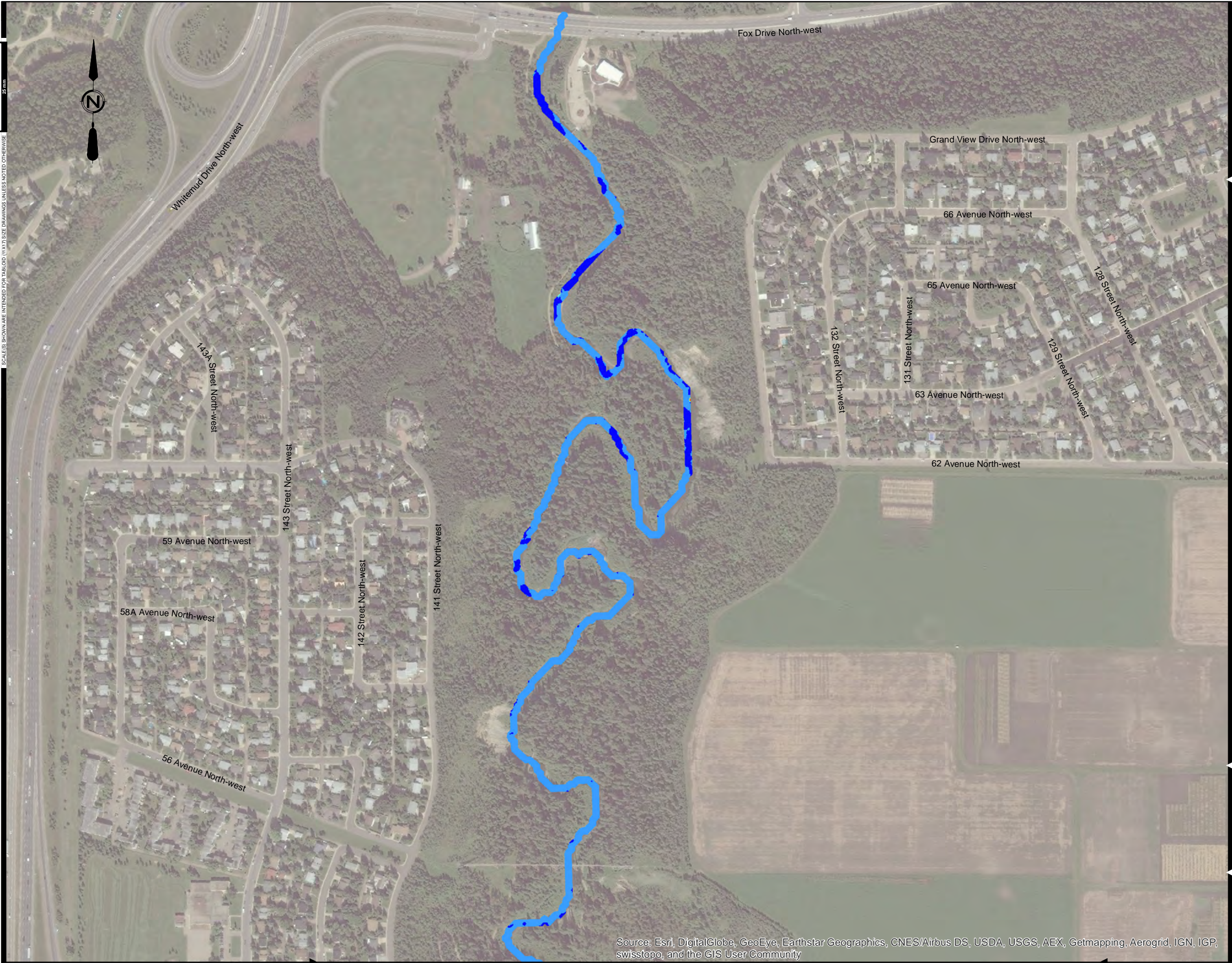
FUTURE DEVELOPMENT DISCHARGE RATE  
1.5 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- 3.0 L/s/ha Ratio to Existing**
- ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

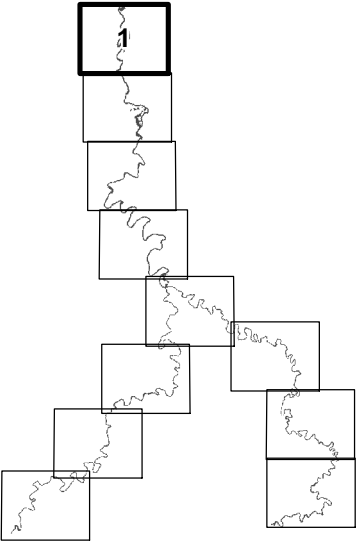


FIGURE No. D-12

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT





Legend:

### 3.0 L/s/ha Ratio to Existing

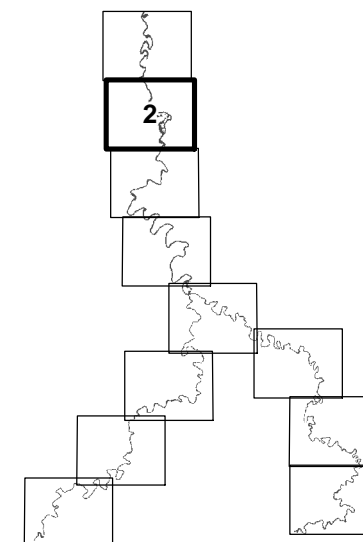


FIGURE No. D-13

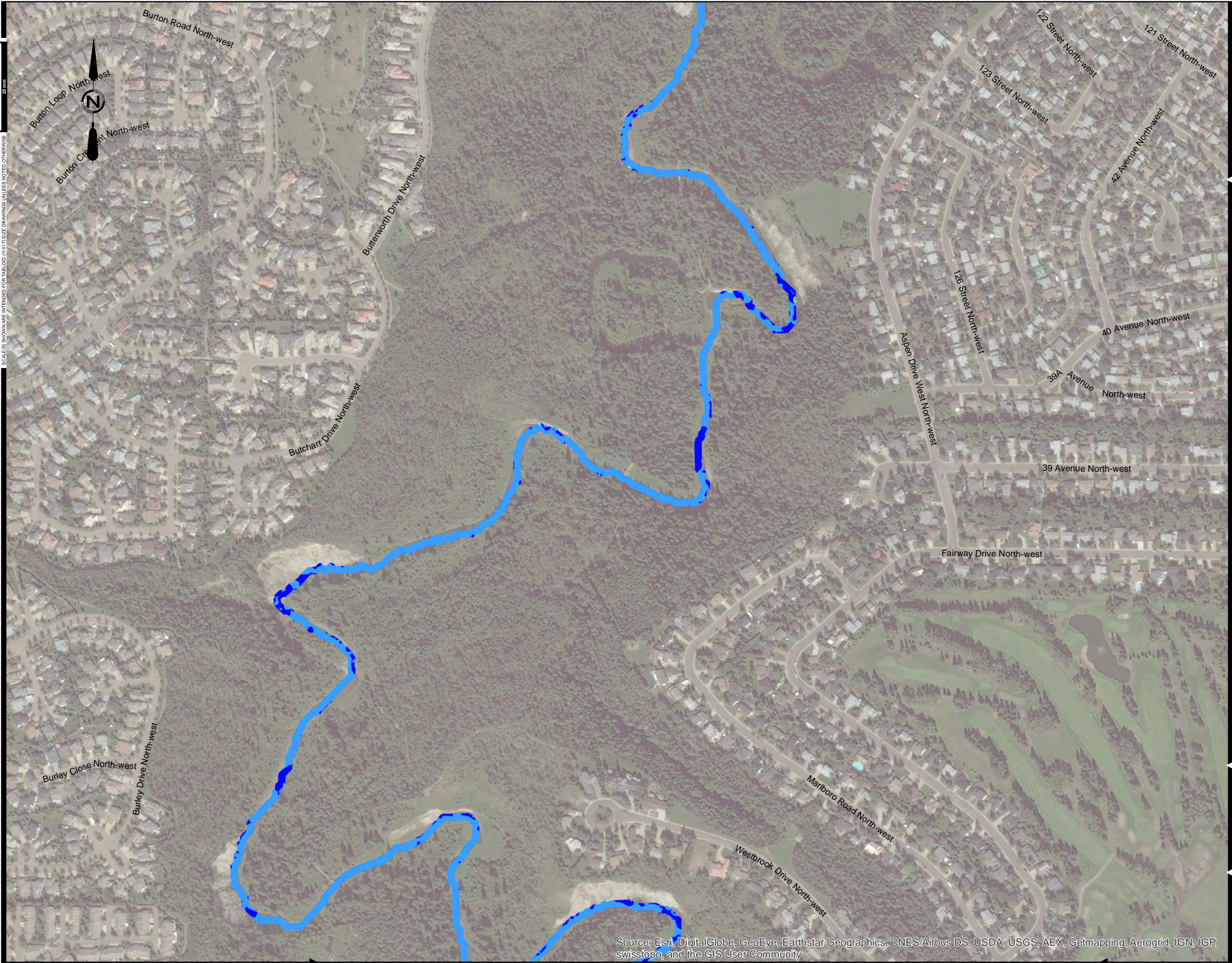
BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Legend:

**3.0 L/s/ha Ratio to Existing**

	≥ 1.4
	> 1.3 - 1.4
	> 1.2 - 1.3
	> 1.1 - 1.2
	> 1.0 - 1.1
	≤ 1.0

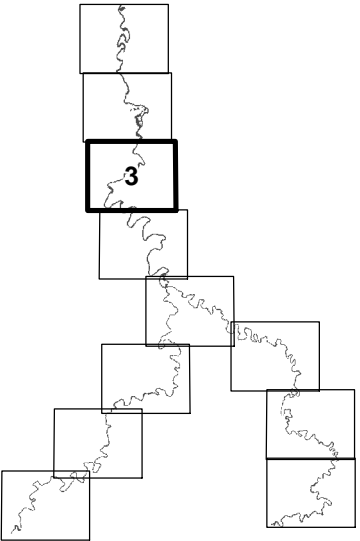


FIGURE No. D-14

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
  - 3.0 L/s/ha Ratio to Existing**
  - ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

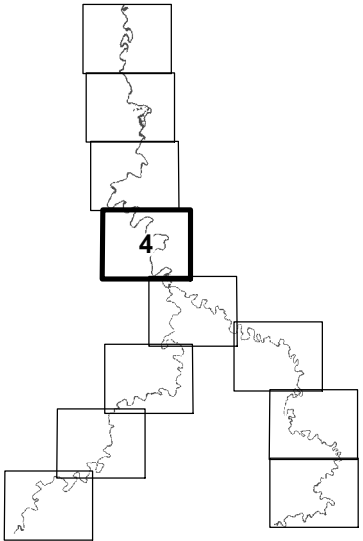


FIGURE No. D-15

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



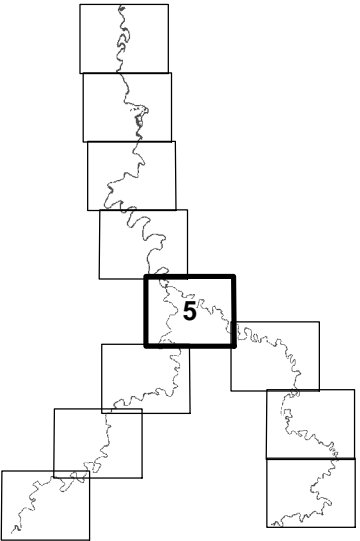


Legend:

+ Erosion Site

**3.0 L/s/ha Ratio to Existing**

Red	≥ 1.4
Orange	> 1.3 - 1.4
Yellow	> 1.2 - 1.3
Light Green	> 1.1 - 1.2
Blue	> 1.0 - 1.1
Dark Blue	≤ 1.0



**FIGURE No. D-16**

**BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY**

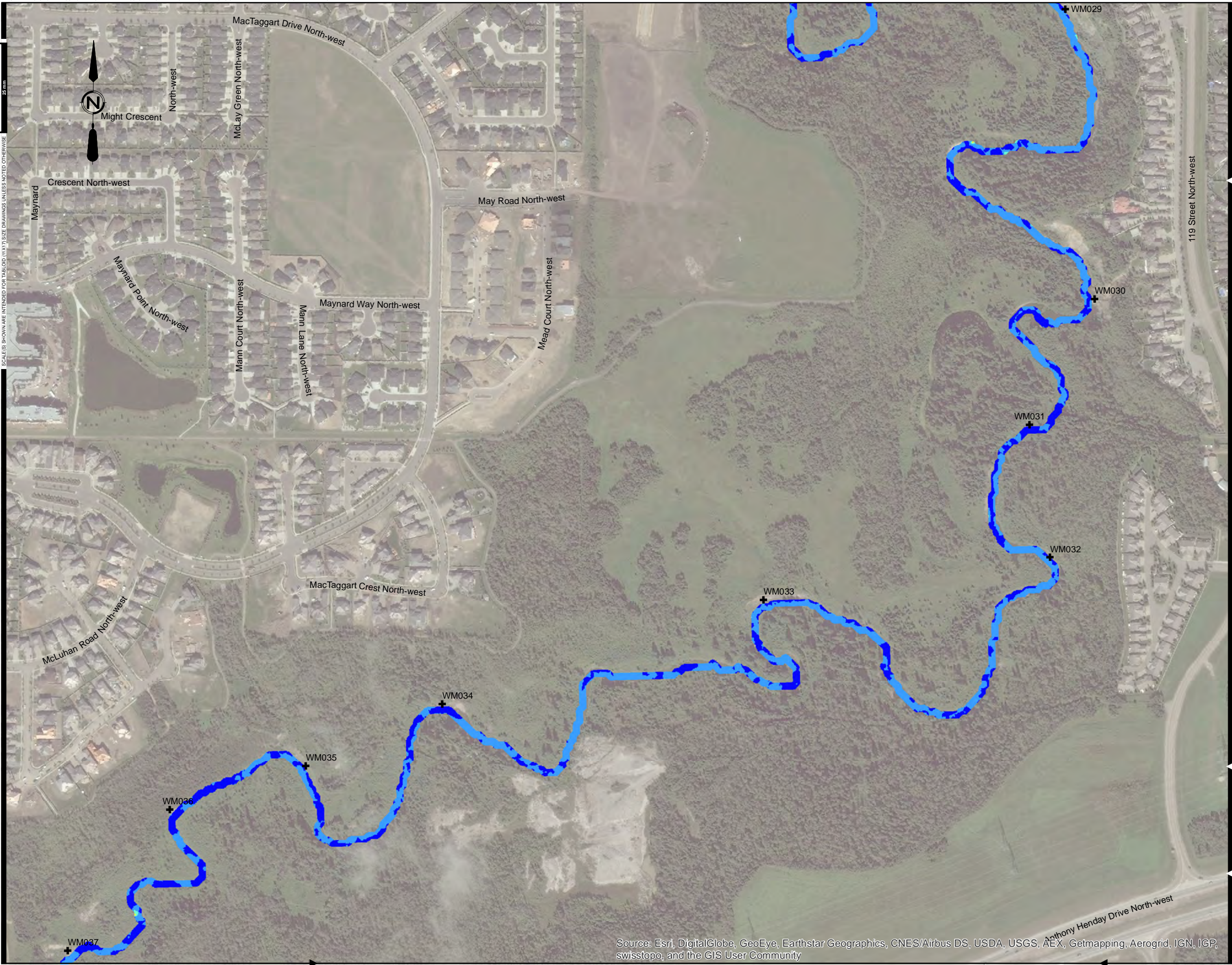
**FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY**

<b>AE PROJECT No.</b>	2016-3785
<b>SCALE</b>	1:5,000
<b>APPROVED</b>	
<b>DATE</b>	2017 MARCH
<b>REV</b>	
<b>DESCRIPTION</b>	ISSUED FOR REPORT



IF NOT 25 mm AS NOTED OTHERWISE

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
  - 3.0 L/s/ha Ratio to Existing**
  - ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

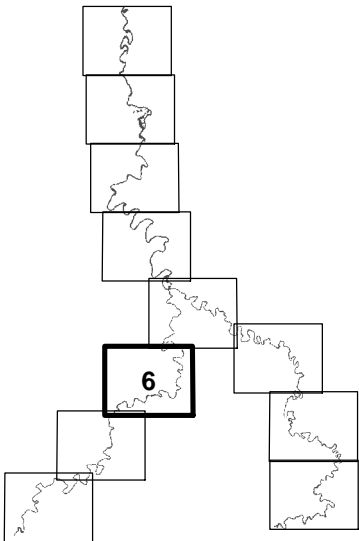


FIGURE No. D-17

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT





- Legend:
- + Erosion Site
  - 3.0 L/s/ha Ratio to Existing**
  - ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

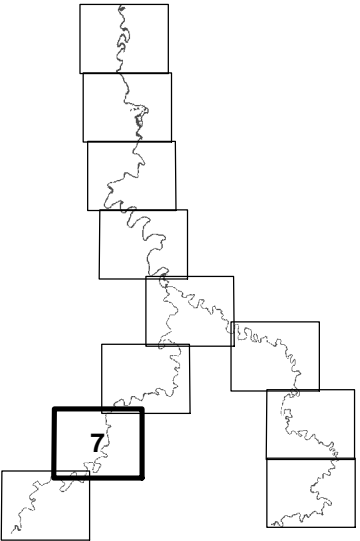


FIGURE No. D-18

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm ASJUST SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

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DATE: 3/24/2017

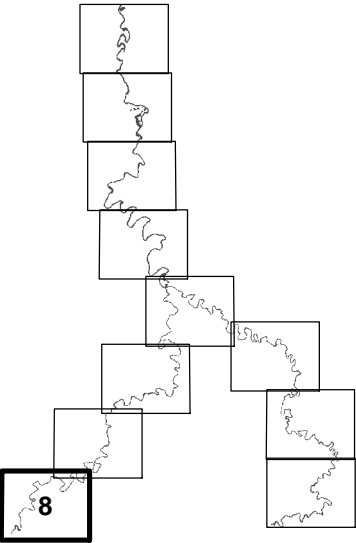


Legend:

+ Erosion Site

**3.0 L/s/ha Ratio to Existing**

Red	≥ 1.4
Orange	> 1.3 - 1.4
Yellow	> 1.2 - 1.3
Light Green	> 1.1 - 1.2
Blue	> 1.0 - 1.1
Dark Blue	≤ 1.0



**FIGURE No. D-19**

**BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY**

**FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY**

<b>AE PROJECT No.</b>	2016-3785
<b>SCALE</b>	1:5,000
<b>APPROVED</b>	
<b>DATE</b>	2017 MARCH
<b>REV</b>	
<b>DESCRIPTION</b>	ISSUED FOR REPORT








Legend:


**+ Erosion Site**


### 3.0 L/s/ha Ratio to Existing

  $\geq 1.4$

 > 1.3 - 1.4

 > 1.2 - 1.3

 > 1.1 - 1.2

  $\geq 1.0 - 1.1$

$\leq 1.0$

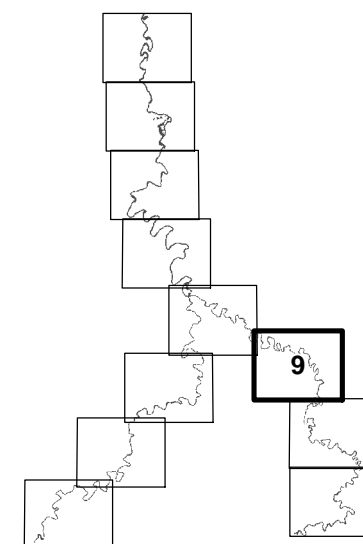


FIGURE No. D-20

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





Legend:

+ Erosion Site

3.0 L/s/ha Ratio to Existing

- ≥ 1.4
- > 1.3 - 1.4
- > 1.2 - 1.3
- > 1.1 - 1.2
- > 1.0 - 1.1
- ≤ 1.0

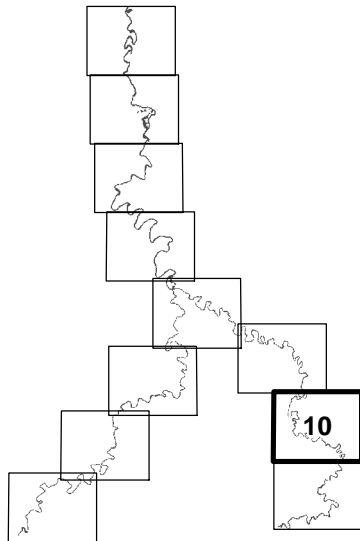


FIGURE No. D-21

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

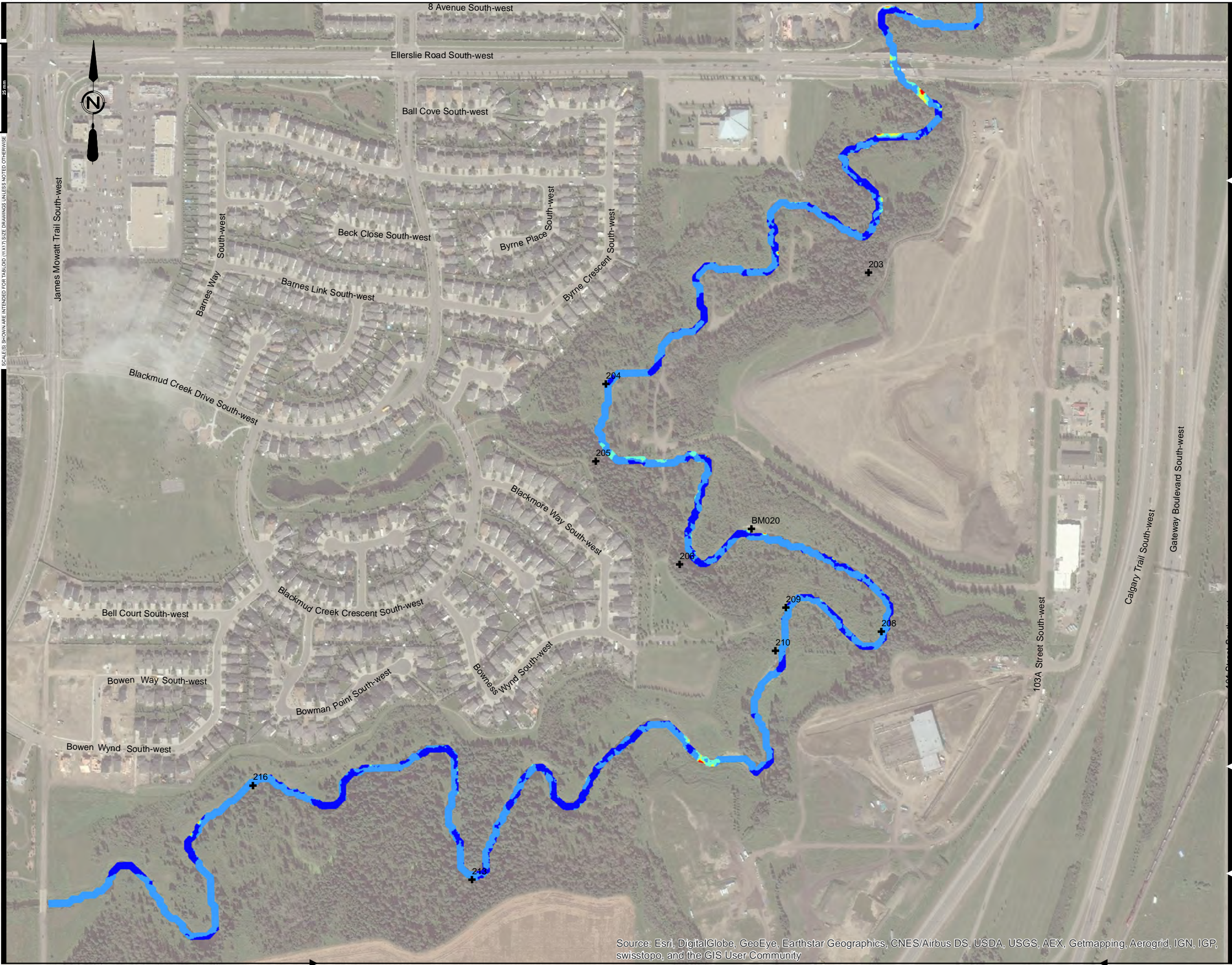
AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm AS NOTED OTHERWISE

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

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DATE: 3/24/2017



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
  - 3.0 L/s/ha Ratio to Existing**
  - ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

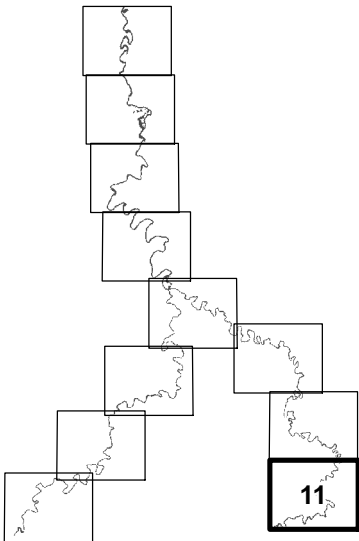


FIGURE No. D-22

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
3.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- 5.0 L/s/ha Ratio to Existing**
- $\geq 1.4$
  - $> 1.3 - 1.4$
  - $> 1.2 - 1.3$
  - $> 1.1 - 1.2$
  - $> 1.0 - 1.1$
  - $\leq 1.0$

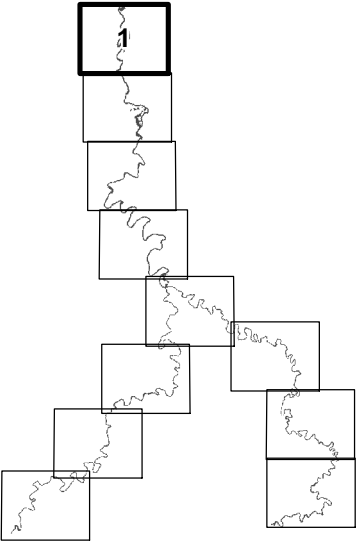


FIGURE No. D-23

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT





Legend:

### 5.0 L/s/ha Ratio to Existing

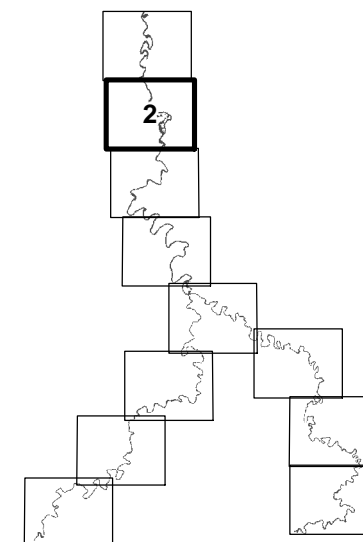


FIGURE No. D-24

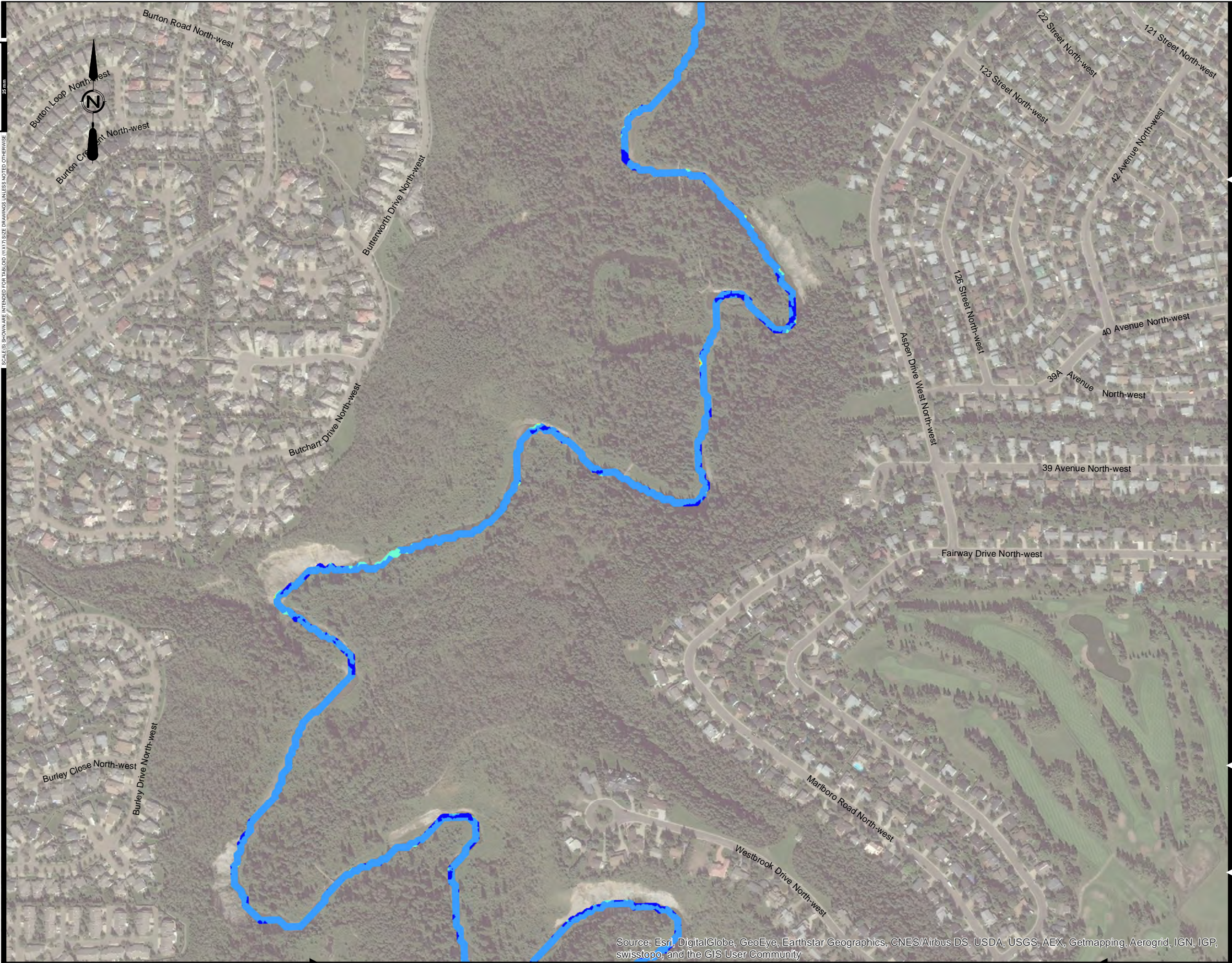
BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- 5.0 L/s/ha Ratio to Existing**
- ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

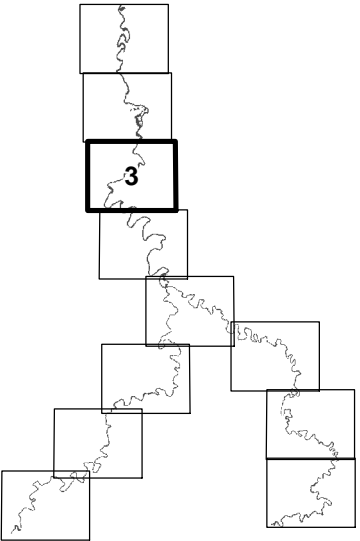


FIGURE No. D-25

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

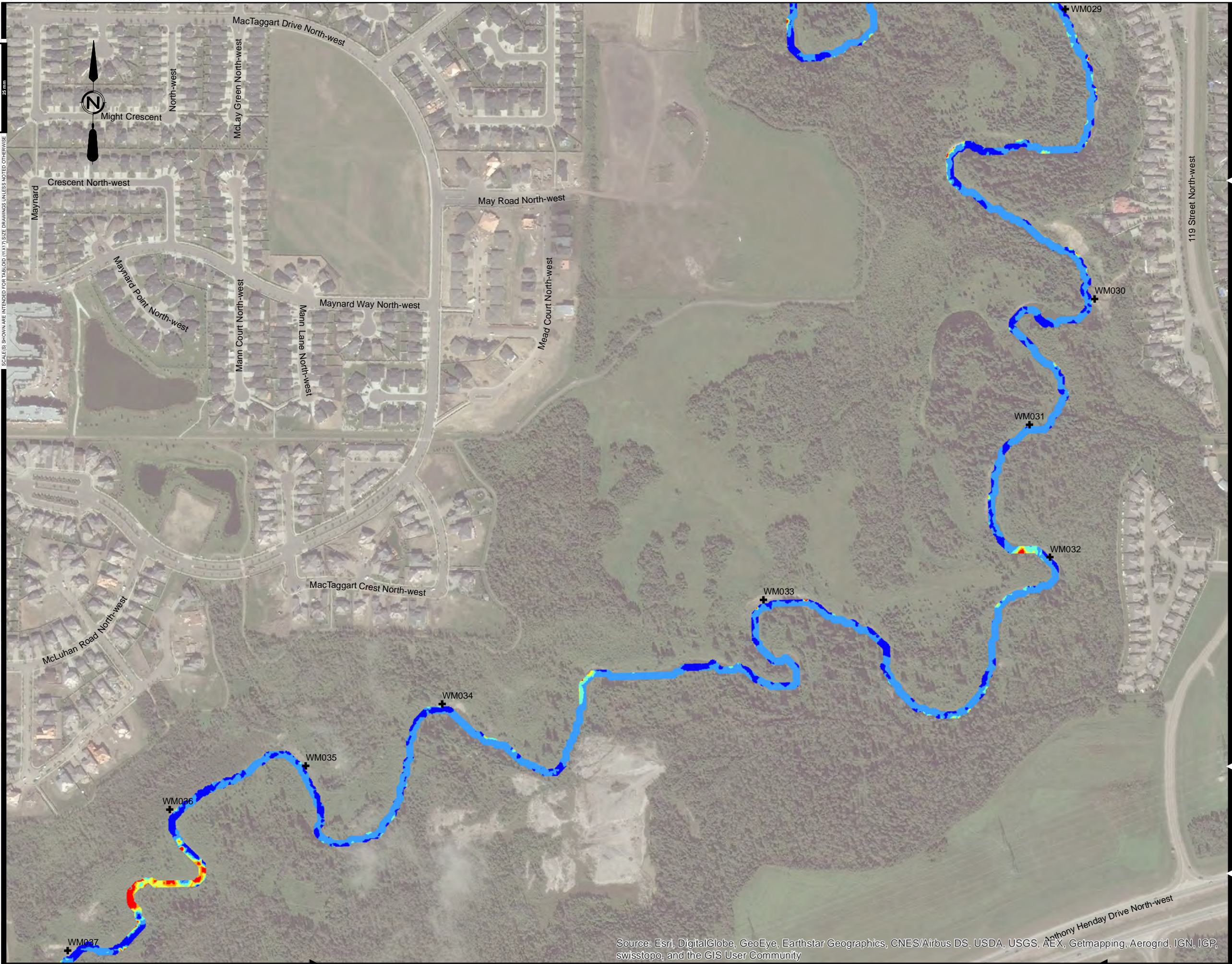
AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm AS NOTED OTHERWISE

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

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DATE: 3/24/2017



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
  - 5.0 L/s/ha Ratio to Existing**
  - ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

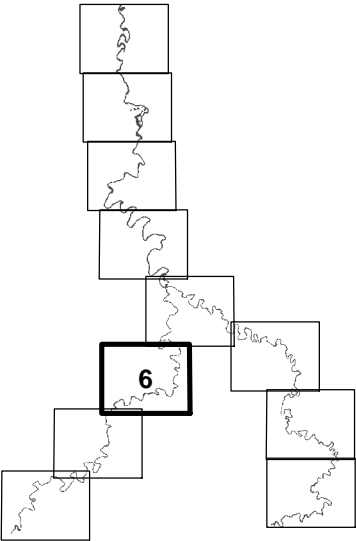


FIGURE No. D-28

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
  - 5.0 L/s/ha Ratio to Existing**
  - ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

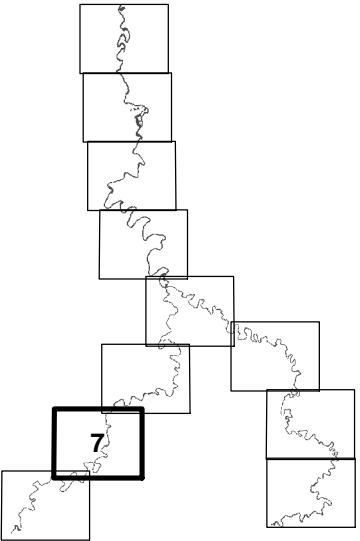


FIGURE No. D-29

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT





- Legend:
- + Erosion Site
  - 5.0 L/s/ha Ratio to Existing
  - ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

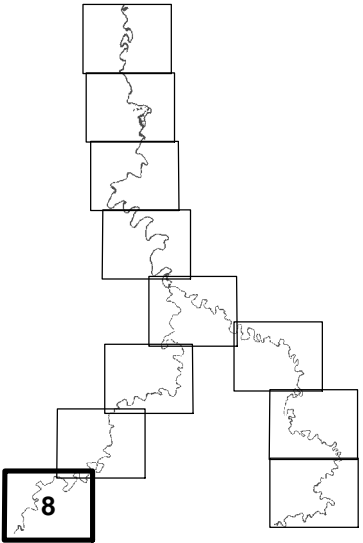


FIGURE No. D-30

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT



IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABLOID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE



- Legend:
- + Erosion Site
  - 5.0 L/s/ha Ratio to Existing**
  - ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

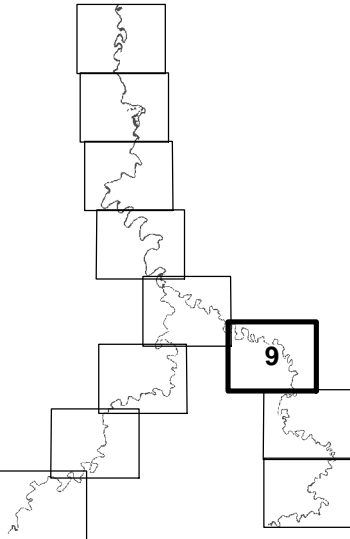


FIGURE No. D-31

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
DATE	2017 MARCH
REV	
DESCRIPTION	ISSUED FOR REPORT





Legend:

+ Erosion Site

5.0 L/s/ha Ratio to Existing

- ≥ 1.4
- > 1.3 - 1.4
- > 1.2 - 1.3
- > 1.1 - 1.2
- > 1.0 - 1.1
- ≤ 1.0

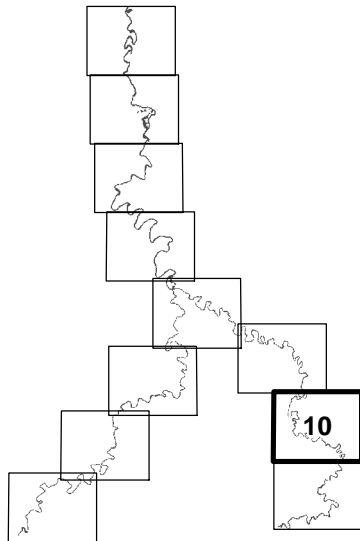


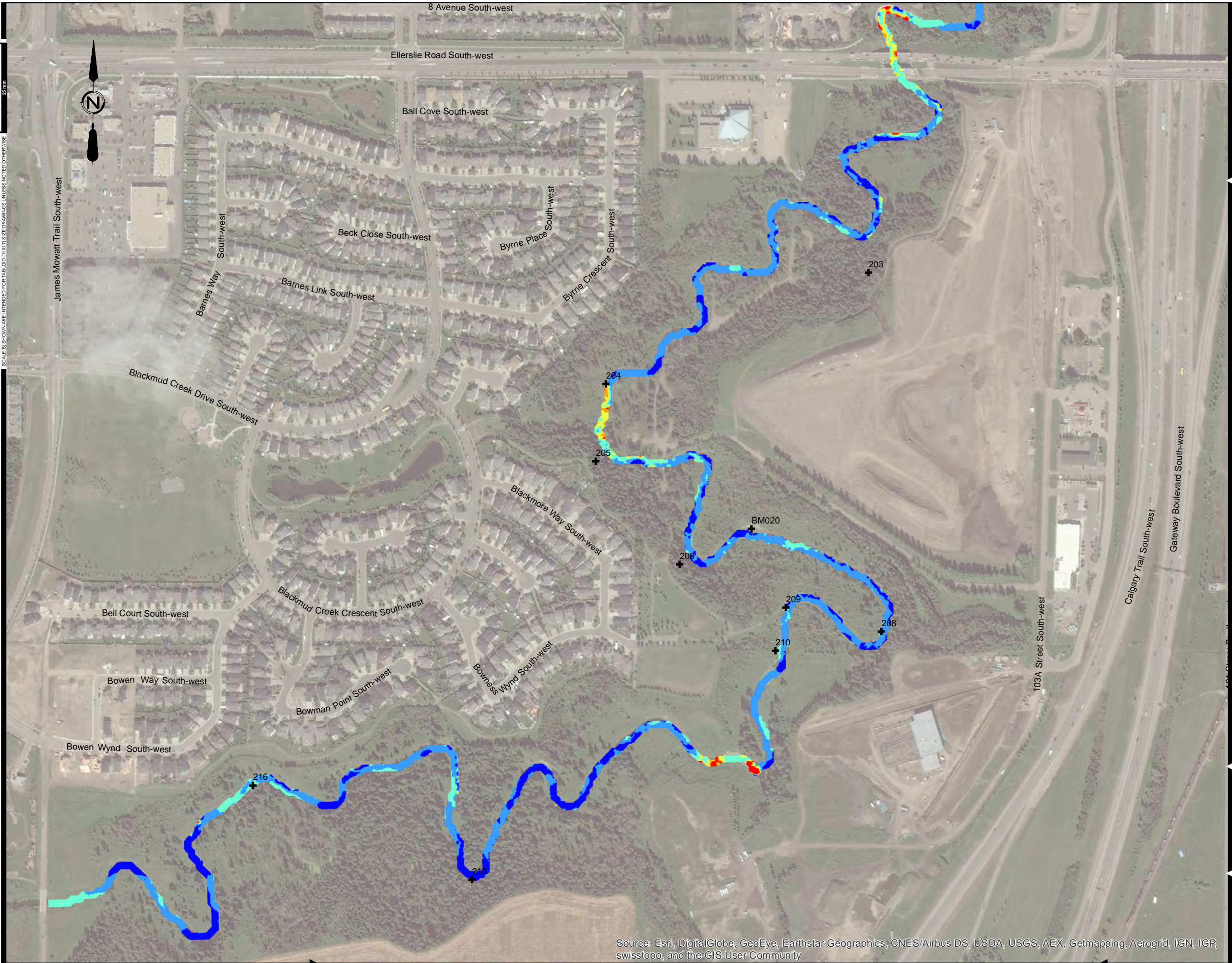
FIGURE No. D-32

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

AE PROJECT No.	2016-3785
SCALE	1:5,000
APPROVED	
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



- Legend:
- + Erosion Site
  - 5.0 L/s/ha Ratio to Existing**
  - ≥ 1.4
  - > 1.3 - 1.4
  - > 1.2 - 1.3
  - > 1.1 - 1.2
  - > 1.0 - 1.1
  - ≤ 1.0

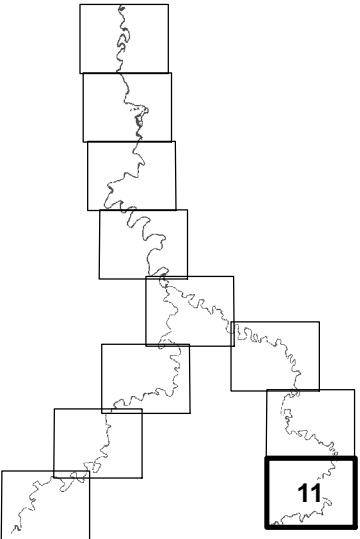


FIGURE No. D-33

BLACKMUD/WHITEMUD CREEK  
WATERSHED MANAGEMENT STUDY

FUTURE DEVELOPMENT DISCHARGE RATE  
5.0 L/s/ha RATIO TO EXISTING -  
100 YEAR FLOOD VELOCITY

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