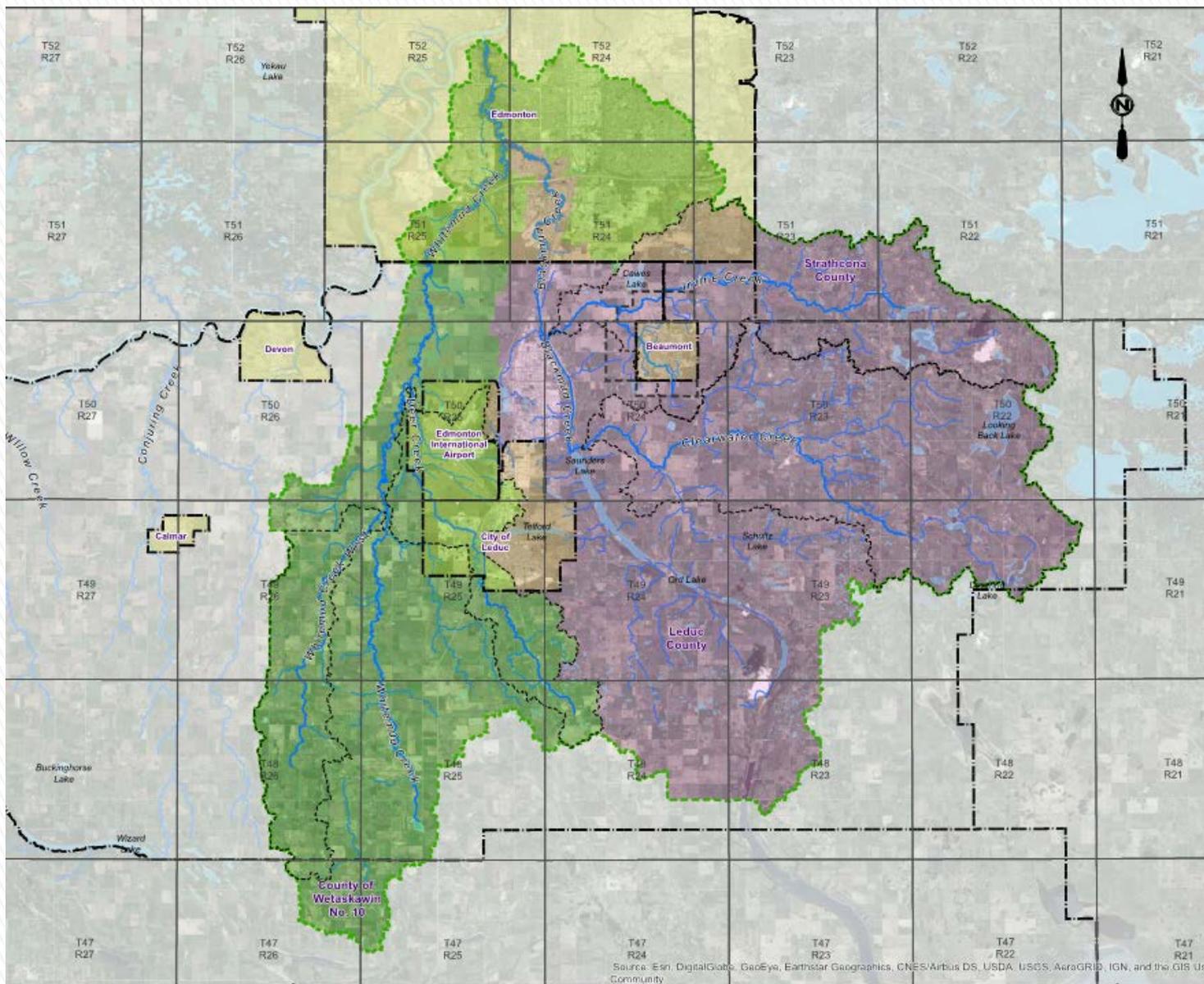


# Cooperative Stormwater Planning by Municipalities in the Blackmud/Whitemud Creek Watersheds





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

# Study Area



# Why did this Group Form:



- There has been significant development within the drainage basin
- In 2010 & 2011 Leduc County experienced higher than normal localized flooding events
- In 2011 Statements of Concern were filed, this involved Alberta Environment & Parks (AEP)
- 2011 /2012 – Flood Plain Studies were completed
- 2012/2013 – AEP pushed to have a group formed, and brought in NSWA to facilitate
- Fast forward to 2015 and progress was being made



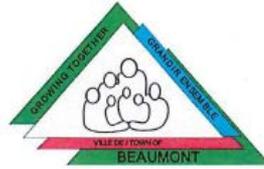
# Why did this Group Form:



- Decision was made to apply for the Alberta Community Partnership Grant
- Involved Associated Engineering to create a Terms of Reference for the grant
- Got Council/Senior Management Resolutions to move forward with the project.

**THIS WAS PIVOTAL**

# Who we are:



Kathy Lewin, CET  
Director, Infrastructure

A handwritten signature in blue ink that reads "K. Lewin".



Shawn Olson, P.Eng.  
Director, Engineering

A handwritten signature in blue ink that reads "Shawn Olson".



Gord Thompson, P.Eng.  
Technical Coordinator

A handwritten signature in blue ink that reads "Gord Thompson".



Garett Broadbent, CLGM  
Director of Agricultural Services

A handwritten signature in blue ink that reads "Garett Broadbent".



James Patterson, CET, CISEC  
Senior Stormwater Management Technologist  
Utilities, Engineering

A handwritten signature in blue ink that reads "James Patterson".



Dave Curran, P.Eng.  
Senior Engineer, Utility Engineering

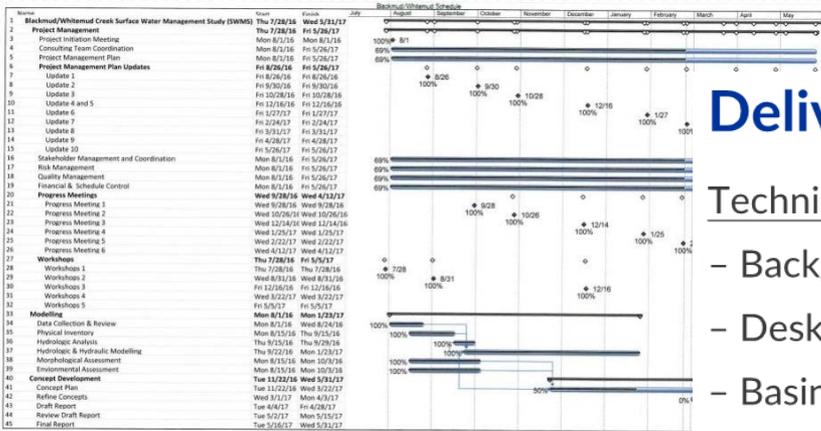
A handwritten signature in blue ink that reads "Dave Curran".



# The Next Steps:

- Finding a Consultant
  - Request for Qualifications (RFQ)
  - Request for Proposals (RFP)
- Started Project

**AWARDED THE FULL GRANT**

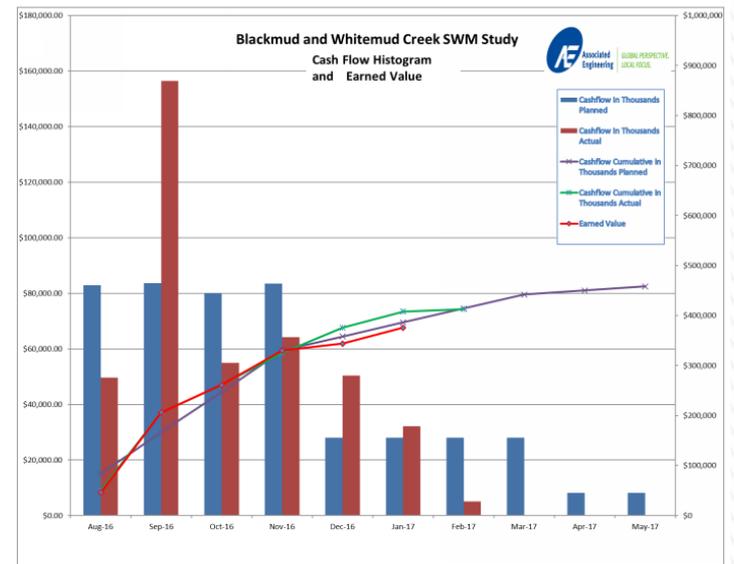


# Deliverables

## Technical Memos

- Background Data
- Desktop Hydro
- Basin Hydrology
- Morphological Analysis

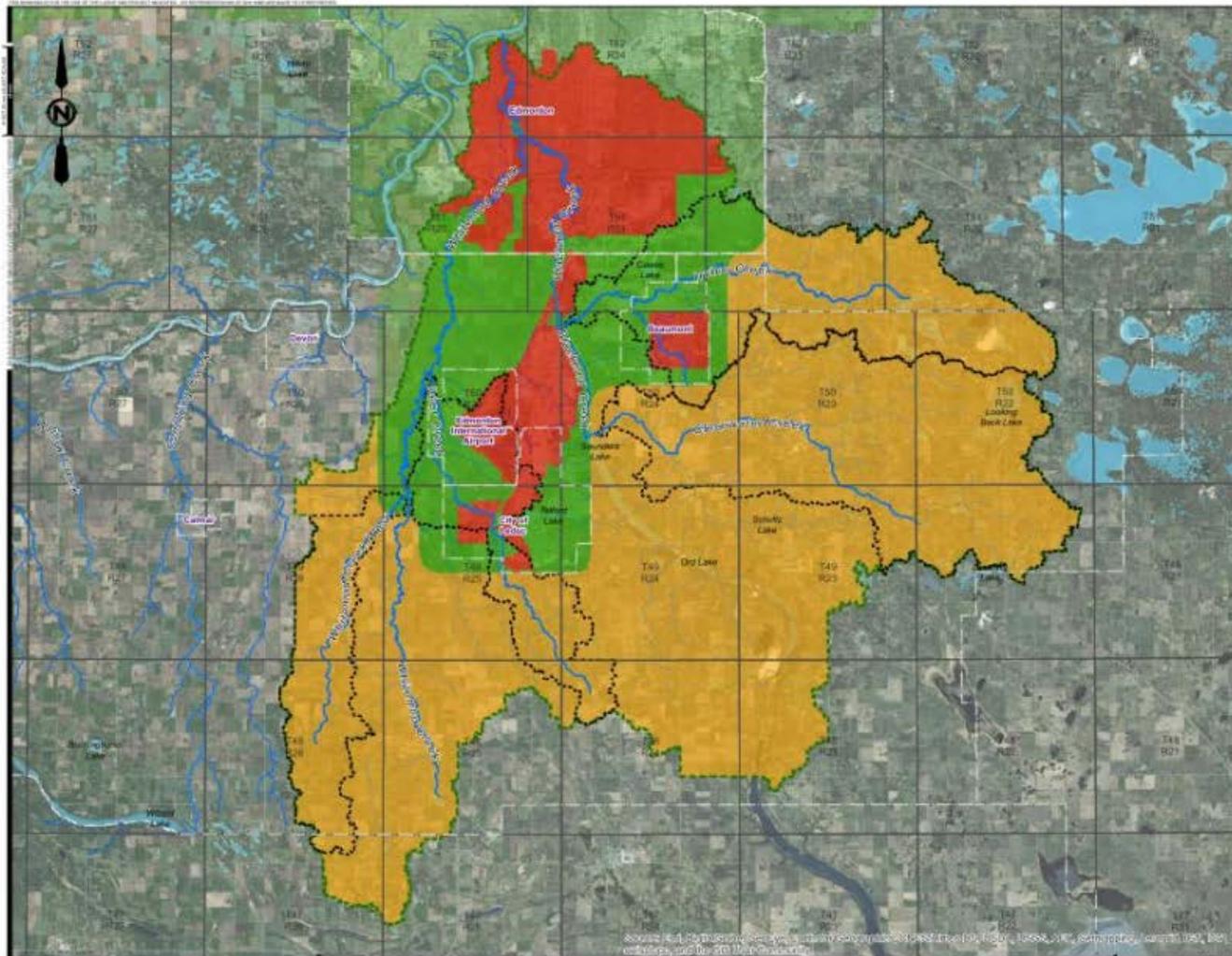
## Budget



# Summary of Schedule Update

Task	Baseline Completion	% Complete
Data Collection	Ongoing	100
Physical Inventory (Topo Survey)	September 15, 2016	100
Hydrologic Analysis	September 29, 2016	100
Environmental Assessment	October 3, 2016	100
Morphological Assessment	October 3, 2016	100
Hydrologic and Hydraulic Modelling	January 23, 2017	100
Concept Plan	March 22, 2017	50
Draft Report		
Final Report		
Overall Progress (Feb 24 2017)		86

# Associated Engineering's Plan



- Legend:**
-  Catchment
  - Classification**
  -  Existing Development
  -  Future Development
  -  Rural
  -  Creek Centreline
  -  Municipal Boundary

# Projected Development Impacts



Location	Basin Condition				
	Predevelopment Flows (L/s/ha)	Existing Flow (m3/s)	Future Development Flow (m3/s)		
			1.5 L/s/ha	3.0 L/s/ha	5.0 L/s/ha
Clearwater Creek at the mouth	1.1	23	23	23	23
Irvine Creek at the mouth	1.1	16	17 (+6%)	24 (+50%)	32 (+100%)
Blackmud Creek WSC Gauge	1.1	92	95 (+3%)	110 (+20%)	131 (+42%)
Whitemud Creek WSC Gauge	2.9	99	86 (-13%)	100 (+1%)	119 (+20%)
Deer Creek at the mouth	2.9	25	22 (-12%)	26 (+4%)	31 (+24%)
Whitemud Creek at NSR		229	215 (-6%)	244 (+7%)	284 (+24%)

## Creek Flows at Key Locations

# SWMF Parameters

	1.5 L/s/ha	3.0 L/s/ha	5.0 L/s/ha
Storage Volume	937 m <sup>3</sup> /ha	872 m <sup>3</sup> /ha	785 m <sup>3</sup> /ha
Construction Cost	\$5,914 /lot	\$5,553 /lot	\$5,073 /lot
Time to Drain	15 days	7 days	4 days

\* COE Design Standards



# The Consensus Decision:



The Group made an informed decision and agreed that the maximum future release rate would be –

3 L/s/ha



# Finalizing the Report –

- Associated Engineering finished the draft report
- Associated Engineering did a final workshop to go over the full report and what it consisted of
- The Group reviewed the draft, suggested some changes
- Associated Engineering did presentations to various senior management and Council groups for the Municipalities that requested it
- The Group accepted the final report as complete.



**Now What?!?**







# What does the Future Hold?

