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# **Clifton was founded in 1978 by three venturesome engineers**

- sitting around a kitchen table in  
Regina**
- Regina is still our head office**

200+



Scientists,  
Engineers, and  
Technologists

6



Offices in  
Alberta and  
Saskatchewan

6



CCIL Certified  
Materials Testing  
Laboratories



**Earth  
Sciences**



**Environmental  
Services**



**Civil  
Engineering**



**Materials  
Engineering**

**Core Technologies**



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Earth Sciences Projects



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Environmental Services Projects



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Civil Engineering Projects



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**Materials Engineering Projects**



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# Exciting work continues

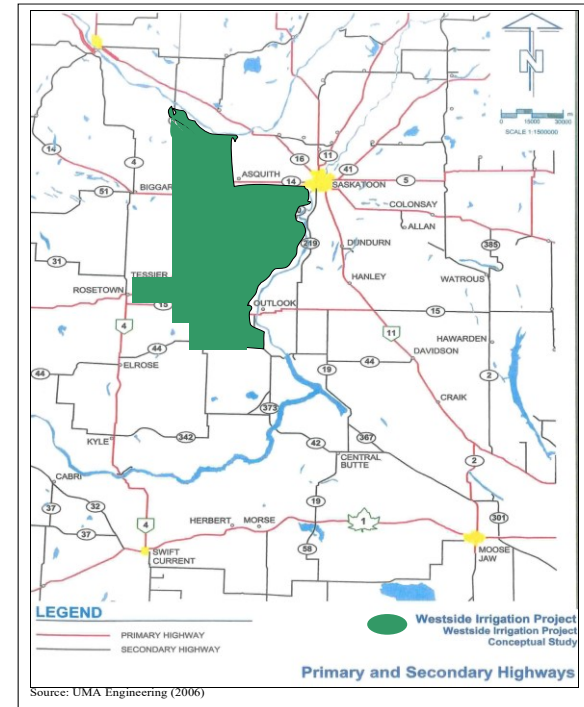


Westside Irrigation Project

# So, What is the Westside Irrigation Project??

- A project that would convert a large area of central Saskatchewan to irrigated agriculture
  - Along with associated value adding industries
- Bounded by the South and North Saskatchewan Rivers
- A staged, long-term plan to bring sustainable benefits and climate adaptation to central Saskatchewan
- It fulfills an initiative that began in the last century

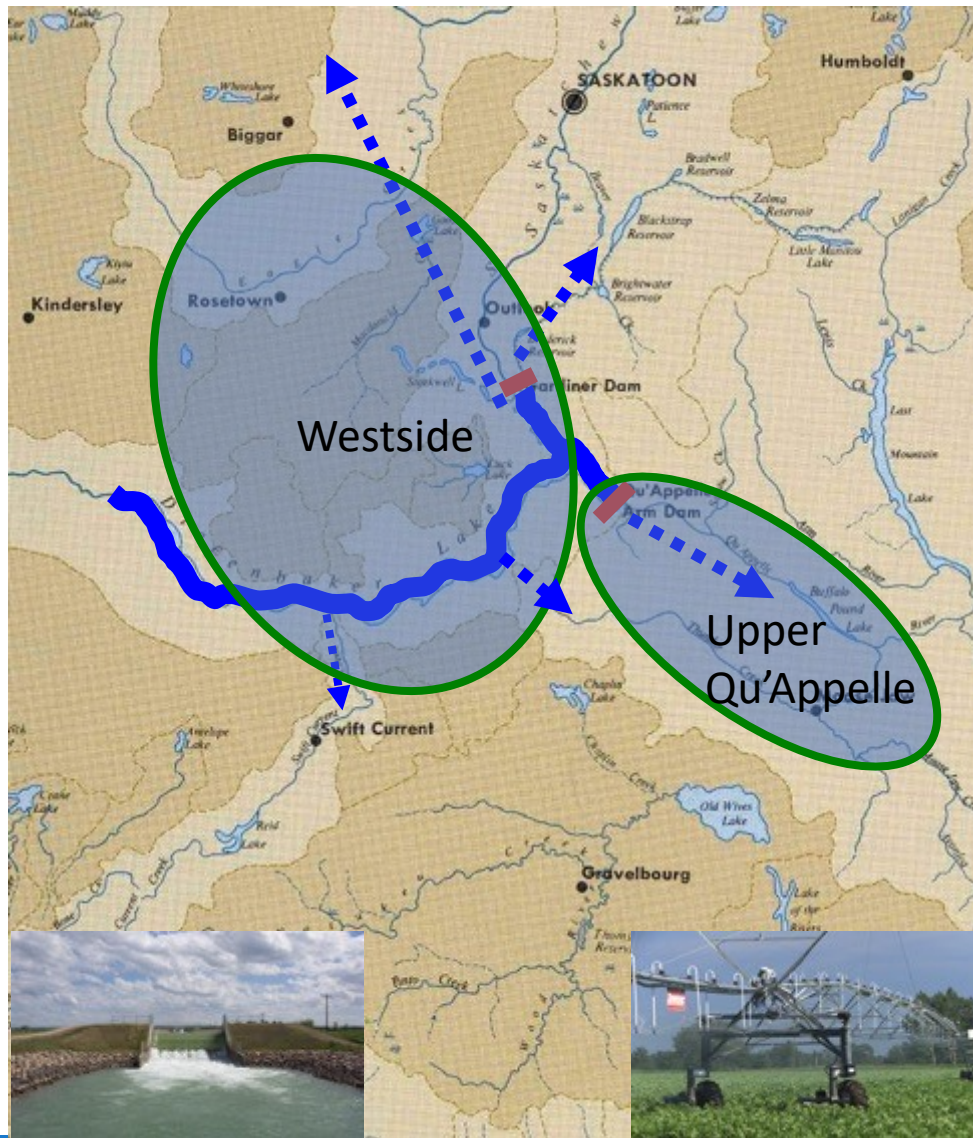
Map 16 – Regional Location of Proposed Westside Project





# An Environmental & Human Disaster



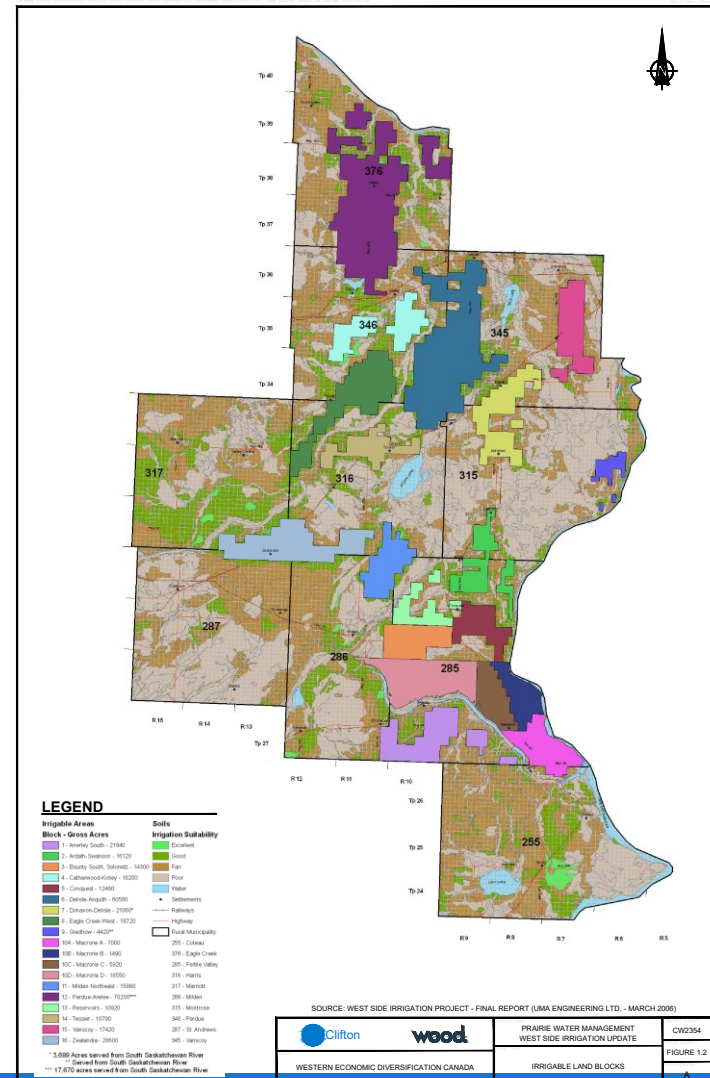


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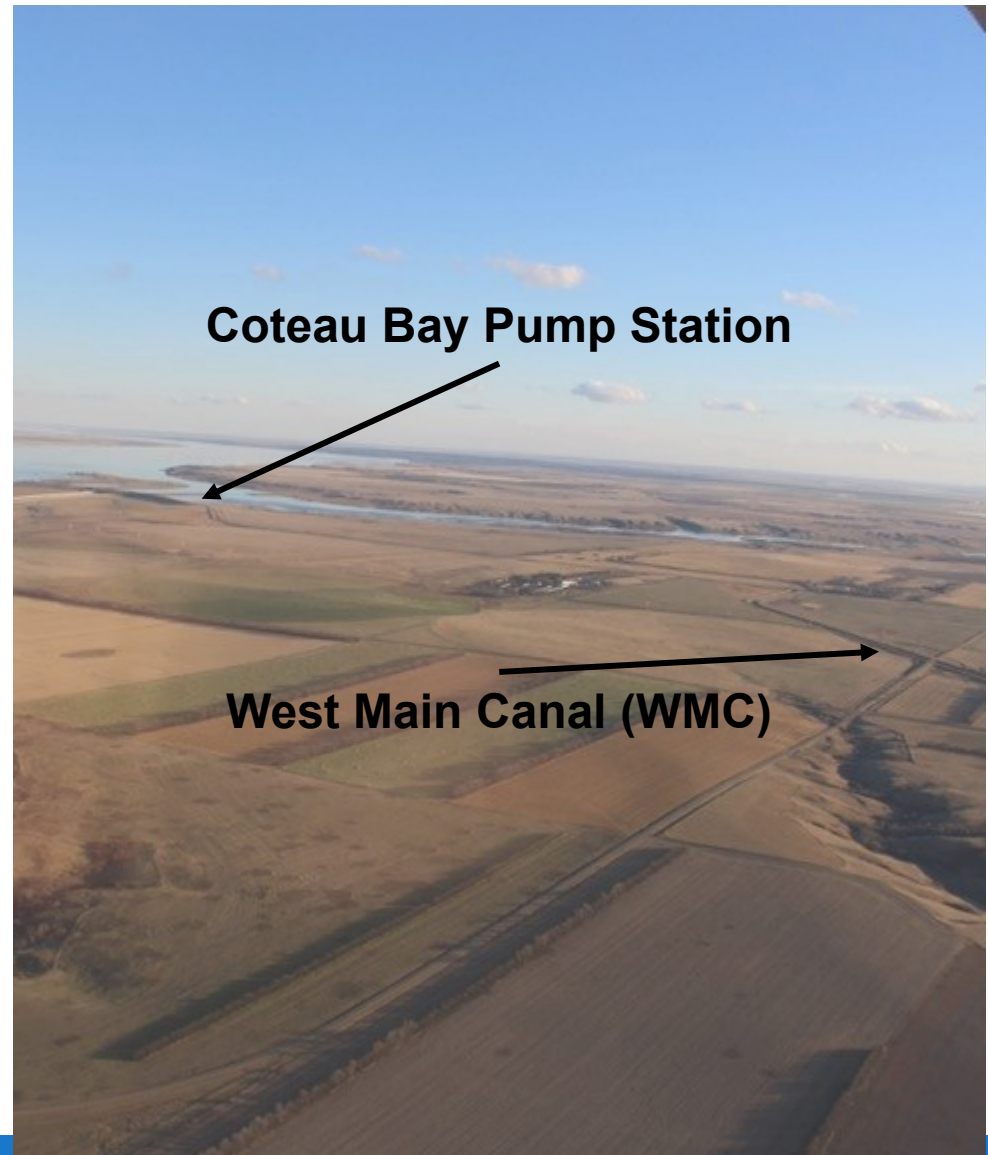
# Soil Conditions Were Very Favorable

- Large blocks of irrigable soils
- Favorable growing climate
  - Highest heat units in province
- Abundant water available
  - 95% of inflow passes into MB without contributing to economy



# Stage 1: A False Start

- Stage 1 construction started in 1969
- Work completed included:
  - Land purchase
  - Pump station substructure
  - 42.2 kms of Main Canal (WMC)
  - One of three embankments required for Conquest reservoir
- All Stage 1 work terminated in 1972

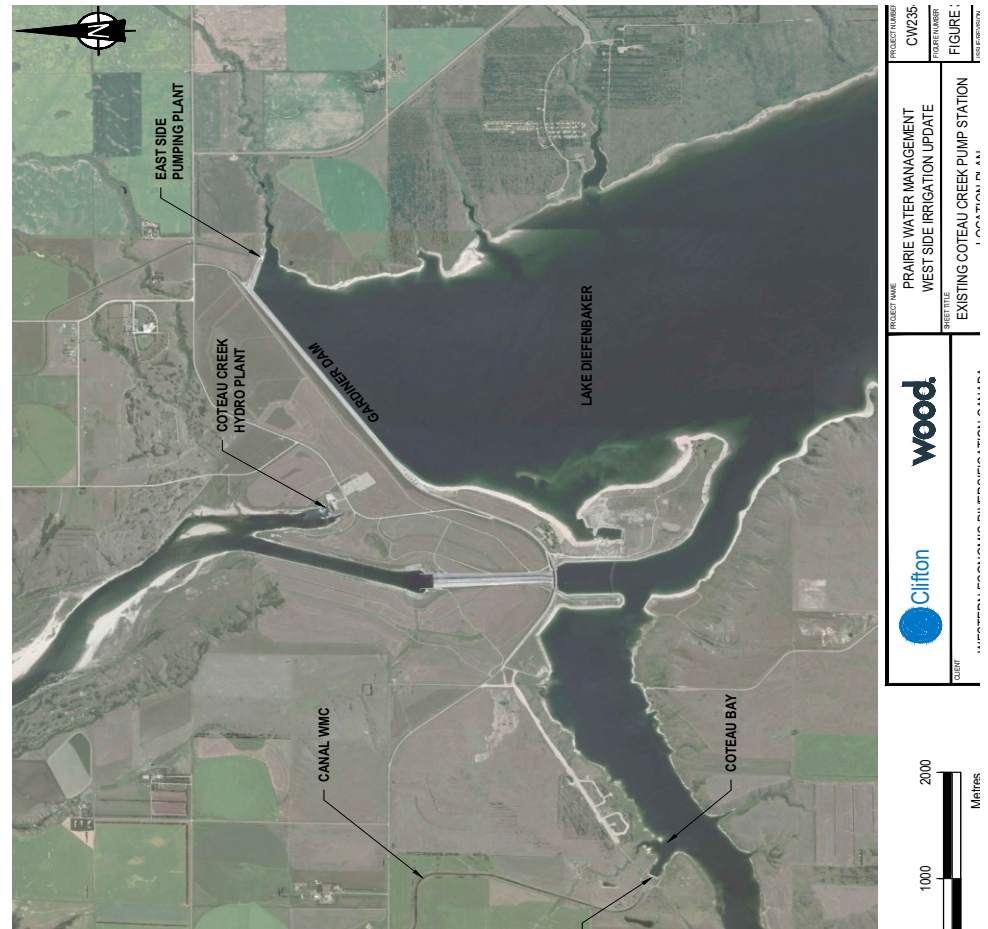


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# Some Assets Remain

- Partially completed Coteau Bay Pump Station
- 42.2 kms of Main Canal (WMC)
- Partially completed Conquest Reservoir
- Land for Stage 1 canals and access roads
- Some assets used by Macrorie Irrigation District



# Westside Main Canal Today



- The abandoned Westside Main Canal as it is today

# Present Condition of Existing WMC

- Now about 50 years old
- Approaching end of design life
  - Does not meet current standards
- Some deterioration of structures



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# Coteau Bay Pump Station

- Only substructure completed in 1972
  - No building, equipment or control systems
- Some structural deterioration
- Rehabilitation and completion to modern engineering and environmental standards required



# Coteau Bay Pump Station Upgrades

- Existing intake adequate to service Option 1
  - Upgrades probably needed to meet current DFO stds
- Capacity upgrades needed for either options 2 or 3



# WMC Upgrades Required



- WMC now 50 years old
  - Little maintenance in interim
  - Flooded portion exhibits significant leakage
  - Has evolved into valued environmental habitat
- Inadequate capacity to service full WIP
  - Current capacity 21.2  $\text{m}^3/\text{s}$  vs  $\text{m}^3/\text{s}$  ultimately 106 required
- Needs to be enlarged and rehabilitated



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# Distribution and Control Systems

- Buried pipeline system to deliver water to users
- Automated control and data acquisition systems to control water flow
  - And support system efficiency and sustainability



# Just getting started

- In early stages of pre-design and licensing
- EA yet to come
- > \$1.5 B CAPEX
  - Abundant opportunities to come
  - Every conceivable vendor and trade
  - From ICC to earthwork
  - Precast to transportation
  - Probably > a decade of continuous demand on WIP only



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# That is the background - now the fun part begins!!





**Questions???**

**-Comments??**