



**Engineering Ltd.**

*Proud of Our Past... Building the Future*

# CENTRAL PEACE REGIONAL WATER SUPPLY SYSTEM

Project Overview  
June 27, 2022

# Overview Outline

- ❑ Background
- ❑ Design Criteria
- ❑ River Intake and Pumping Station Location
- ❑ Pipeline Alignment
- ❑ Regional Hub Locations

# Background

- The scope of the Central Peace Regional Water Supply System project is to provide a regional water system for the G5 Group of Municipalities consisting of:
  - Saddle Hills County
  - Town of Spirit River
  - Municipal District of Spirit River
  - Village of Rycroft
  - Birch Hills County

# Background - Continued

- The overall project is divided into six phases (Note: Project Scope and Order may vary):
  - Construct an intake on the Peace River close to the Dunvegan Bridge.
  - Construct Raw Water Lines to Town of Spirit River and Village of Rycroft
  - Extend Raw Water Lines from Town of Spirit River to water treatment plants at Ksituan, Savanna, and Bonanza.
  - Construct Regional Hub Water Treatment Plant
  - Convert Raw Water Lines from Regional Hub to communities to potable Water Lines.
  - Extend Potable Water Lines to Wanham and Woking. Upgrade pipeline from Wanham to Tangent.



# Background - Continued

- ❑ Saddle Hills County is the managing partner for the project.
- ❑ Project is funded through the Investing in Canada Infrastructure Program (ICIP). Total eligible costs are \$40 million, with \$16 million contribution from the Federal Government, \$20 million from the Provincial Government, and \$4 million from Saddle Hills County.

# Background - Continued

- Under the scope of work for the current project MPE is providing Engineering Services for the first two phases of the overall project:
  - Phase 1 – New Raw Water Intake on the Peace River and Raw Water Pumping Station.
  - Phase 2 – Raw Water Pipeline to Town of Spirit River and Village of Rycroft.

# Background - Continued

- Preliminary Design includes:
  - Projected Design Capacity of each Municipality and total capacity of the Regional Water System.
  - Location and concepts for River Intake and Raw Water Pumping Station.
  - Routing of pipeline alignments
  - Determine pipe size and material requirements through modeling
  - Review of potential locations for the future Regional Hub
  - Options for Future Capacity Expansion.



# Design Criteria

- Design Criteria from Regional Water System Strategy. Includes:
  - 25% of total rural communities are on piped water co-op systems;
  - 75% of total rural communities will continue to use truck fill service;
  - 360 L/capita/day consumption for urban piped distribution system;
  - 240 L/capita/day consumption for rural piped co-op system;
  - 120 L/capita/day consumption for rural truck fill;
  - 20% increase in total demand for industrial and farming activities;
  - Peak Day factor of 2.0 for communities with more than 1000 people;
  - Peak Day factor of 2.5 for communities with less than 1000 people.

# Design Criteria - Continued

- Design Treated Water Demand for Each Municipality (25 year Average Day flows)
  - Town of Spirit River – 464 m<sup>3</sup>/day
  - Saddle Hills County – 520 m<sup>3</sup>/day
  - Hamlet of Woking – 46 m<sup>3</sup>/day
  - MD of Spirit River – 170 m<sup>3</sup>/day
  - Village of Rycroft – 289 m<sup>3</sup>/day
  - Birch Hills County – 293 m<sup>3</sup>/day
  - Hamlet of Wanham – 60 m<sup>3</sup>/day
  - Hamlet of Eaglesham – 45 m<sup>3</sup>/day
  - Hamlet of Tangent - 23 m<sup>3</sup>/day
- Total Treated Average Day Demand – 1910 m<sup>3</sup>/day or 22.1 L/s

# Design Criteria - Continued

Corresponding Raw Water Demands (30% process waste allowance incorporated):

- 25 Year demand - 4,966 m<sup>3</sup>/day -> 57.4 L/s.
- 75-Year Demand - 8,170 m<sup>3</sup>/day -> 95.0 L/s.
- 60 L/s will be used for 25-Year pipeline design purpose - Six (6) months reservoirs fill.
- Minimum pipeline size -> 350 mm diameter Steel, and 400 mm HDPE.

# River Intake and Pumping Station

- Intake
  - Design Capacity of River Intake – 75 Year demand capacity
  - Intake Pipe Size – 400 mm diameter
  - Two Intake Pipes to Facilitate Maintenance
  - Inlet Louvres for Protection of Fish
- Raw Water Pumping Station
  - Depth of Wet Well – 27 m
  - Pumping Pressures Approaching 500 psi



- NOTES:
- FOR INFORMATION REGARDING GENERAL NOTES, UTILITIES, SYMBOLS AND ABBREVIATIONS REFER TO THE LEGEND AND ABBREVIATIONS DRAWING.
  - ALL ELEVATIONS, STATIONS, PIPE LENGTHS AND DIMENSIONS IN METRES AND PIPE SIZES IN MILLIMETRES UNLESS NOTED OTHERWISE.
  - ALL BOLD ITEMS INDICATE WORK TO BE DONE AND ALL LIGHT ITEMS INDICATE EXISTING CONDITIONS.
  - THE CONTRACTOR SHALL CALL ALBERTA ONE-CALL AT 1-800-242-3447 AT LEAST THREE (3) WORKING DAYS PRIOR TO BEGINNING ANY EXCAVATION OR REMOVALS.
  - THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR TO CONFIRM THE LOCATION AND ELEVATION OF ALL RELEVANT EXISTING UTILITIES PRIOR TO CONSTRUCTION.
  - THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY LINE CROSSING WITH UTILITY COMPANIES.
  - THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE BARRICADES, CONSTRUCTION SIGNAGE, TRAFFIC CONTROL, AND FLAG PERSONS.
  - THE CONTRACTOR IS RESPONSIBLE FOR MEETING OCCUPATIONAL HEALTH AND SAFETY REGULATIONS.
  - AIR PHOTO SHOWN MAY NOT BE COMPLETELY ACCURATE.
  - LINE ALL DITCHES WITH COMPOSITE TURF REINFORCEMENT MATTING.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 22"x34" FORMAT DRAWINGS

1	22-03-29	FOR PRELIMINARY APPROVAL
ISSUE	YY-MM-DD	REVISION



SADDLE HILLS COUNTY

CENTRAL PEACE REGIONAL WATER SUPPLY

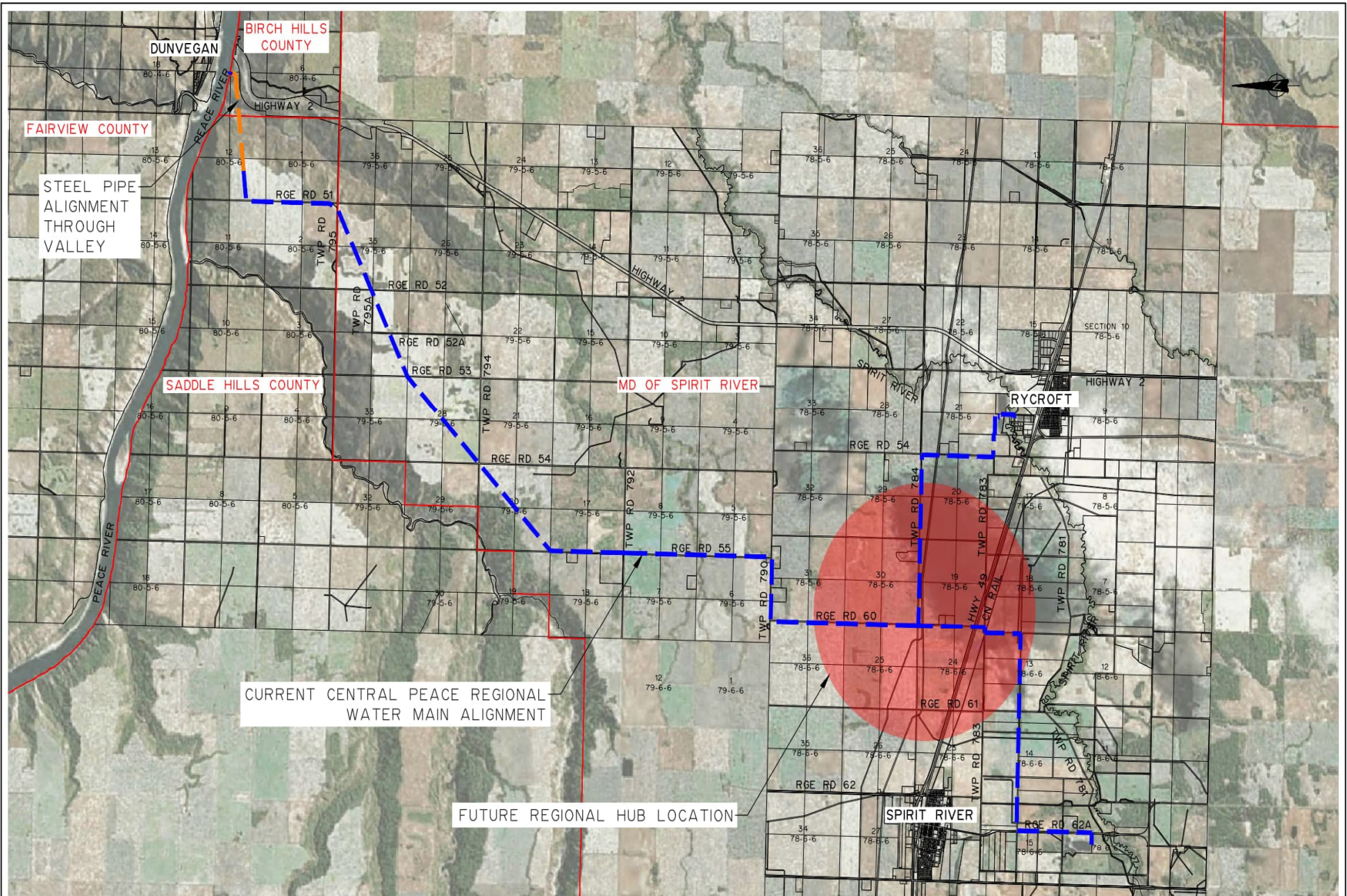
RIVER INTAKE AND PUMPING STATION CIVIL

PUMPING STATION SITE PLAN

DESIGNED	O.S., H.O., S.K.	JOB	5201-005-00
DRAWN	B.W.	SCALE	1:500
DATE	JUNE 2022	DRAWING	C1.4

# Pipeline Alignment

- ❑ Majority of alignment located on private land
- ❑ Waterline within a 20 m to 30 m easement.
- ❑ Alignment generally consists of four sections:
  - ❑ Peace River Valley – 350 mm diameter steel pipe
  - ❑ Top of Valley to Regional Hub – 450 mm diameter HDPE pipe
  - ❑ Regional Hub to Village of Rycroft – 300 mm diameter HDPE pipe
  - ❑ Regional Hub to Town of Spirit River – 300 mm diameter HDPE pipe



FAIRVIEW COUNTY

CURRENT CENTRAL PEACE REGIONAL  
WATER MAIN ALIGNMENT

FUTURE REGIONAL HUB LOCATION



SADDLE HILLS COUNTY  
CENTRAL PEACE REGIONAL WATER SUPPLY  
SYSTEM  
CURRENT OVERALL WATER ALIGNMENT

# Regional Hub Locations

- Future Regional Hub Facilities would include:
  - Raw Water Storage Reservoirs
  - Water Treatment Plant Facility
  - Treated Water Pumping



If you have any questions or concerns about the project please contact Ron Pelensky at 780-864-3760 or email [rpelensky@saddlehills.ab.ca](mailto:rpelensky@saddlehills.ab.ca)