District of Barriere

REPORT TO COUNCIL

Date: June 21, 2021	**File:** 530.20/Rpts
To: Council	**From:** C. Matthews Parks & Roads Manager
Re: River Water Irrigation of Downtown Parkland	

Background: At the June 7th, 2021 regular meeting, Council directed staff to provide more detailed cost estimate and work plan to utilize the Barriere River as a water source for park irrigation.

Discussion: As the District has an adequate water license on the Barriere River and now has obtained approval, using this source of **non-potable** water to irrigate Community, Fadear, Gray Place, Community Garden, and all four Ball Parks will aid in the protection of the District's potable community water system. The amended conditional water license #118074 allows for the District to divert a maximum of 248,898 cubic meters per year. We estimate that we would use up to 50,000 cubic metres annually (20% of annual quota) to irrigate the above-noted parks, as well as additional areas adjacent to Gray Place Park.

Any low flow and drought conditions encountered during the irrigation season would be communicated to the District by the Province and any restrictions imposed would be adhered to immediately.

Based on information we provided to Delta Irrigation they have specified a 10 Hp centrifugal pump system capable of pumping 450-litres per minute (100 GPM) at an adjustable end line pressure of 50-80 psi. This system is on demand with an adjustable output and would be capable of operating approximately 20 x 1" sprinkler heads concurrently. The removable suction line would be installed above the river bottom to reduce sediment and debris intake and equipped with an appropriately sized screen for the local fish species.

Below is an excerpt from an email received from Water Survey of Canada on Barriere River flows versus estimated consumption rate:

All flow rate values are in meters cubed per second (m3/s).

Pump rate 450 L/min = 0.0075 m3/s,

For July – (0.0075 / 19.6 m3/s x 100%) = 0.038% of the average flow rate would be used

For Aug – (0.0075 / 6.58 m3/s x 100%) = 0.11% of the average flow would be used

For Sept – (0.075 / 5.11 m3/s x 100%) = 0.15% of average flow would be used

Staff propose utilizing Defiance to excavate and backfill the required 240-metres (800 ft) long 75-mm (3") irrigation line from the pump house to the tie-in location on Airfield Road. Staff will work in conjunction with Delta Irrigation to install the proposed 75-mm (3") HDPE discharge line, which requires heat fusing the lengths of pipe. We would then tie-in to the existing 100-mm (4") irrigation water supply main installed during the sanitary sewer collection system project in 2015, as well as connecting to the existing irrigation systems.

Electrical power would be run from the Field House to the proposed pump house location. If required a 12,000 Watt (peak, 9500 Watts running) portable backup generator could be acquired to power the system for an additional cost of approximately $2,000.

Refer to the attached maps for the proposed discharge line, proposed electrical and the existing infrastructure.

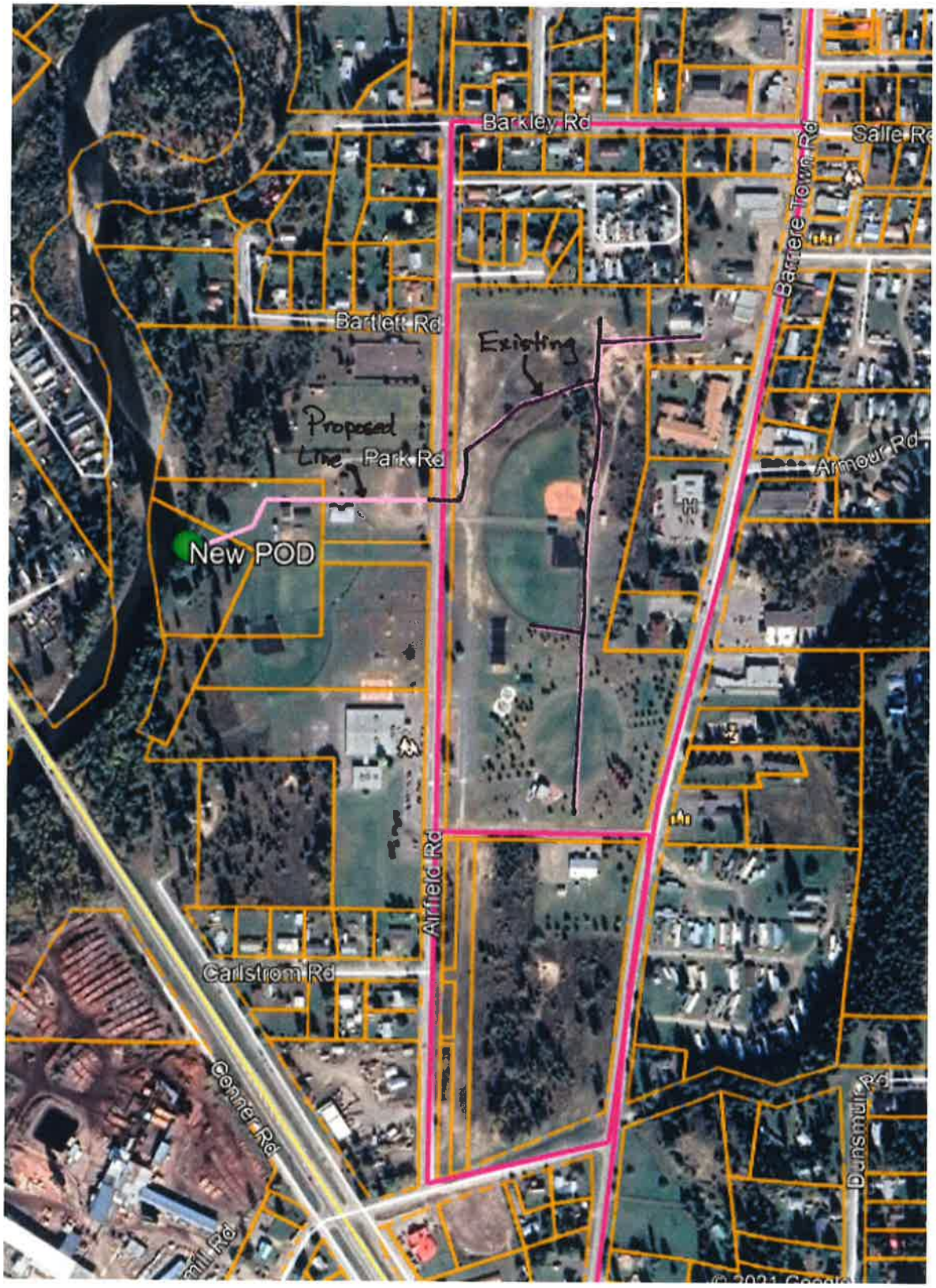
Since the proposed irrigation system would operate seasonally water cannot be pumped for fire protection or bulk water during the colder months when freezing occurs.

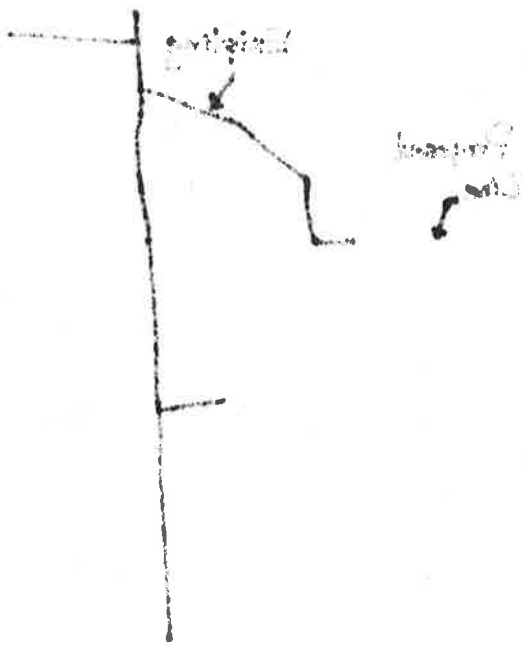
Potable water would still be required for Splash Pad operation, Field House, Concession, KP washrooms, and Caretaker Shack. Therefore, staff will need to disconnect and cap the existing irrigation connections to the potable water system. A proposal will be sent to Interior Health Authority on how we would resolve the cross-connection issue and any other potential risks.

The cost for the river irrigation system is estimated at approximately $41,000 and could be funded through the TMP Community Benefit. Refer to the attached cost estimate.

Recommendation: THAT staff be directed to complete the installation for the downtown park irrigation system utilizing the approved Water License C032392 Point of Diversion amendment at a cost of up to $40,000 with the funds coming from Trans Mountain Pipeline Community Benefit funds.

Prepared by: C. Matthews, Parks & Roads Manager
Reviewed by: B. Payette, CAO


Barkley Rd
Salle Rd
Barrere Town Rd
Bartlett Rd
Existing
Proposed Line
Park Rd
Armour Rd
New POD
Airfield Rd
Carlstrom Rd
Conner Rd
Durstine Rd



Legend

Library Services
- Library
- Mobile Library

Waste Disposal and Recycling
- Eco-Depot
- Recycle Depot
- Product Stewardship Depot
- Landfill
- Transfer Station
- Septage Pit

Emergency Services
- Police Station
- Ambulance Station
- Fire Station
- Hospital
- Local Authority Office

Facility
- Other
- Cemetery
- Community Hall
- Education
- Emergency Response
- Government Building

0.1 0 0.06 0.1

1: 2,257 Kilometers

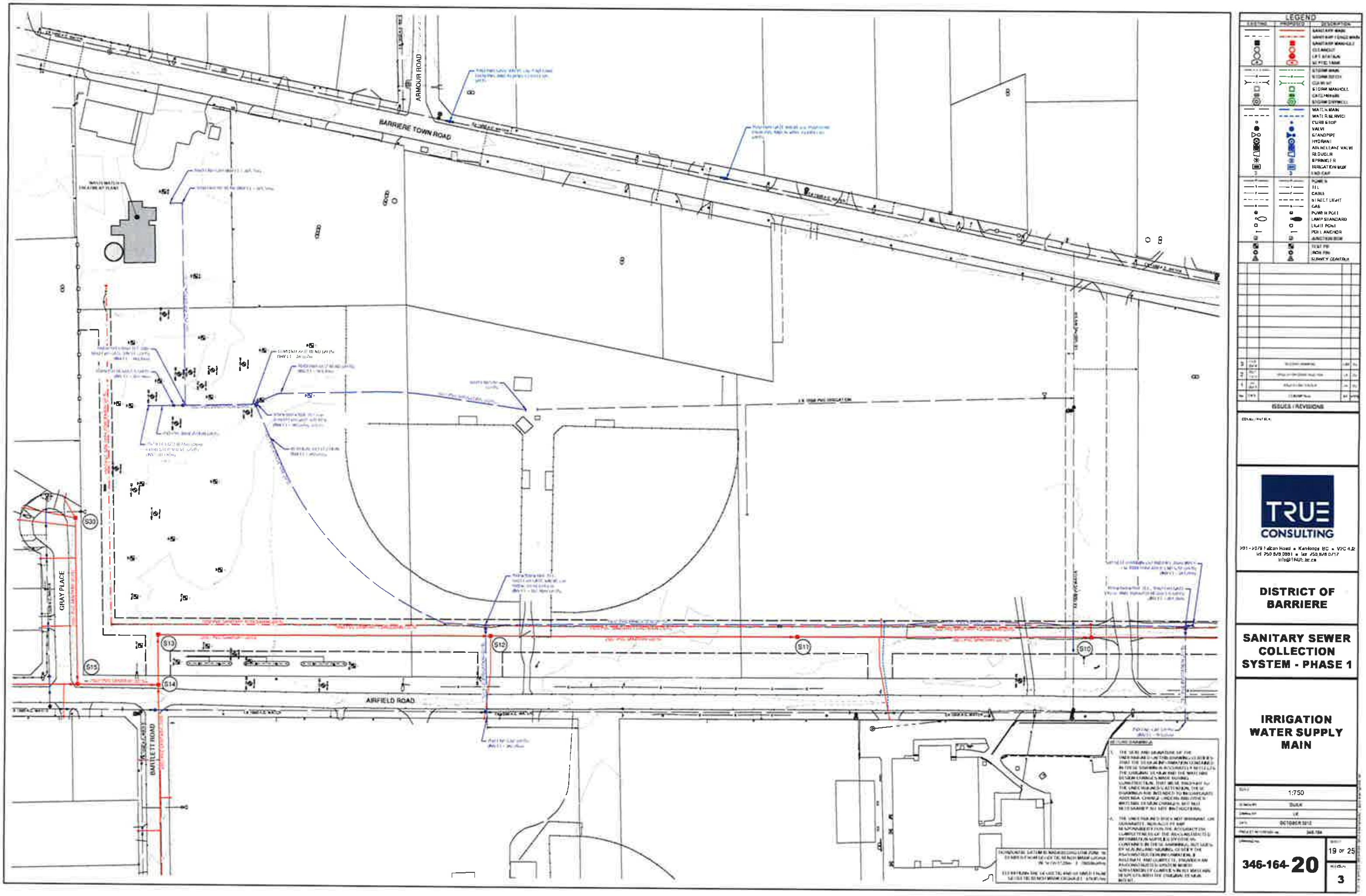
Projection: WGS_1984_Web_Mercator_Auxiliary_Sphere

February 25, 2021

THOMPSON-NICOLA REGIONAL DISTRICT TNRD

Proposed river water irrigation line

Author: Chris Matthews



TRUE CONSULTING

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DISTRICT OF BARRIERE

SANITARY SEWER COLLECTION SYSTEM - PHASE 1

IRRIGATION WATER SUPPLY MAIN

1:750

OCTOBER 2012

346-164-**20**

19 OF 25

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Barriere River Water Source Irrigation Installation

Description	Subtotal	GST	PST	Total
10 Hp centrigugal pump, VFD, suction, discharge & accessories	16433.4	821.67	1150.34	18405.41
Irrigation system components for Gray Place park	3000	150	210	3360
Electrical service - Spooner Electric	7443	372.15	521.01	8336.16
Welding service - local	600	30.00		630
Excavation & backfilling - Defiance	2500	125	175	2800
Bedding sand for electrical. Utilize recovered road sand.	0	0	0	0
Pump house - materials only	2880	144	201.6	3225.6
U/G locates	400	20	28	448
10% Contingency				3720.517
Estimated Total				**$ 40,925.69**