

January 17, 2017

File: 2482.0039.00

County of Vermilion River  
4912 – 50 Avenue  
Kitscoty, AB T0B 2P0

**Attention: Rhonda King – Chief Administrative Officer**

**RE: Potential County of Vermilion River - Potable Water Truck Fill**

As Phase 4 and 5 of the ACE Regional Water System is under design, the County of Vermilion River (County) is considering adding a potable water truck fill that could potentially be serviced from the ACE System. There are advantages to completing this with the design and construction of the ACE Watermain and facilities. There are different levels of advantage depending on the location and configuration of the truck fill. These advantages are outlined below.

If a truck fill is tendered and constructed along with the ACE System, it provides an opportunity for the County to expand upon the infrastructure that is being completed by ACE with Water for Life funding. The expanded infrastructure would not be eligible for Water for Life funding; however, if undertaken at the same time the County's costs for that infrastructure would be reduced compared to constructing the same work independently in the future. This cost reduction is achieved by avoiding potential rework related to connecting to an in-service main and power supply, and avoiding additional restoration. Constructing a truck fill in conjunction with the other Phase 4 and 5 facilities would likely increase construction efficiencies and reduce cost.

As ACE is a water transmission system, all services off of the main (including truck fills) require a reservoir sized for the demand. A truck fill could either be connected to an existing distribution system, which has a reservoir and pump, or a reservoir would have to be added below the truck fill building similar to the ones constructed as part of ACE Phase 1, 2 and 3.

The first consideration is location, and where within the County a potable would truck fill station would provide the greatest benefit. We have identified 5 potential locations on the attached plan of the ACE Phase 4 and 5 Pipe Alignment to help narrow down the options. As shown on the plan, the 5 potential locations include:

- West of Lloydminster in the vicinity of TWP 502 and RR 14 in conjunction with the **ACE WTS**.
- In close vicinity to **Blackfoot** where it can be connected to the distribution system.
- In close vicinity to **Kitscoty** where it can be connected to the distribution system.
- In the vicinity of the County Yard in conjunction with the **ACE PRV Station**.
- West of Streamstown in the vicinity of Hwy 897 and **TWP 514**.

Below we provide an overview of the main differences, highlights and ballpark (rough) costs of each site for the County's consideration. Once the options are narrowed down to 1 or 2 preferred locations we can review those potential locations in greater detail with refined recommendations and cost estimates.

#### **Option 1: ACE WTS – TWP 502 and RR 14**

ACE will be constructing a Water Transfer Station (WTS) which is a water receiving and pumping station to receive water from Lloydminster and then pump the water out to Blackfoot, Kitscoty and Marwayne.

If a truck fill is constructed as an integral part of the ACE WTS, it provides the advantage that the 2 functions can be combined into the same land, building, power supply, water main and potentially reservoir, subject to reaching agreement with ACE.

*Ballpark Cost to add a Truck Fill to the WTS = \$250,000*

#### **Option 2: Blackfoot – Connected to Distribution System**

As the County already has an existing reservoir and pump station in Blackfoot sized to support fire flow, additional pumps and an additional reservoir do not have to be added to support a truck fill; however, the issue would be finding a location with adequate watermain sizing and truck access so that increased traffic does not negatively affect the existing community. Road upgrades and land acquisition may be required.

*Ballpark cost to add a truck fill to Blackfoot if no road or watermain upgrades required = \$250,000*

*Ballpark cost to add a truck fill to Blackfoot if road and or watermain upgrades are required = \$400,000 +*

#### **Option 3: Kitscoty – Connected to Distribution System**

As the County already has an existing reservoir and pump station in Kitscoty sized to support fire flow, additional pumps and an additional reservoir do not have to be added to support a truck fill; however, the County would have to acquire land in the Village and purchase water from the Village. It is anticipated that truck access won't be as challenging as Blackfoot; however, watermain capacity will still need to be confirmed.

*Ballpark cost to add a truck fill to Kitscoty if no road or watermain upgrades required = \$250,000*

*Ballpark cost to add a truck fill to Kitscoty if road and or watermain upgrades are required = \$400,000 +*

#### **Option 4: ACE PRV – in the Vicinity of County Yard**

ACE needs to construct a Pressure Reducing Valve (PRV) Station on the watermain headed north along Highway 897. The PRV will enable the ACE WTS near Lloydminster to provide adequate flow and pressure in the main from Lloydminster to Kitscoty to meet the ACE East Community demands, while limiting the maximum pressures in the main in low points located north and west of Kitscoty on the routes to Islay and Marwayne. To achieve this, the PRV Station needs to be located adjacent to Highway 881

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between the North boundary of Kitscoty and TWP 510. As such, the County Yard has been identified as a potential location to construct the PRV Station.

If the PRV Station is located within the vicinity of the County Yard, it provides an opportunity for the County to potentially add the following associated infrastructure in conjunction with the PRV Station:

1. Addition of a Potable Water Truck Fill as part of the PRV Station
2. Addition of Potable Water Distribution/Service to the County Yard
3. Addition of Fire Protection Storage and Pumping to the County Yard

The advantage of constructing the truck fill with the PRV is that the 2 functions can be combined into the same building / power supply and utilize the same water main / service crossing Highway 897; however, a reservoir would have to be added below the building for a truck fill that would not be required for the PRV station. This is similar to the truck fill / PRV combination that was constructed near the Village of Minburn as part of ACE Phase 2 in 2012.

*Ballpark cost of to add a truck fill to the PRV station = \$650,000*

*If this location is desirable the other listed options could be priced as well.*

#### **Option 5: RR 14 near Highway 897 – West of Streamstown**

There is no ACE related infrastructure required in this area other than the watermain. As such, all related costs to extend a service, install power, construct a reservoir, pumps and truck fill would be included for this location, or any other location along the ACE Main.

*Ballpark cost to construct a standalone truck fill off the ACE Watermain = \$1,000,000*

#### **In Closing**

The above information is provided to enable the County to consider its options and if there is an interest in potentially constructing a potable water truck fill in conjunction with the construction of ACE Water System. All options could be constructed at a later time; however, there are cost efficiencies if related work is advanced at the same time.

Costs estimates are based on the expectation that Alberta Transportation would be agreeable with the additional County infrastructure being added into the ACE Contract with the agreement that the County will pay the additional costs for the County related infrastructure.

Please contact the undersigned should you have any questions or wish to discuss this in further detail.

Sincerely,  
**URBAN SYSTEMS LTD.**

Keith Fransson, CET  
Project Manager

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