

Debert Capacity Study Presented to Council

Capacity Study Review presented to council committee on June 13th, 2024 by Public Works Director, Michelle Boudreau, provided Council with information on the findings of the Capacity Studies for Brookfield Sewer System, Tatamagouche Sewer System, Tatamagouche Water System, Debert Water System, Bible Hill/Valley Sewer System and the Central Colchester Wastewater Treatment Facility/Trunk Line. The first segment of this report dealt with Brookfield and was published on Page 18 in the August 2024 issue. Tatamagouche report outline is published in the January 2025 issue. *(Due to the length and massive detail on the water and sewer systems publication is divided on a utility basis. This segment deals with situations in Debert)*

Debert Water
The Debert Water System was originally constructed in the 1940s by the Canadian military and expanded over time. The system was taken over by the County in 2008 with the transfer of the Debert Business Park lands from the Province. The utility has 205 water accounts, which translates to about 500 people.

The system includes 27 km of watermain, 113 hydrants, one steel water tower (built in 2017) and one concrete water storage tank (original to the park). The concrete water storage tank is used for fire protection supply only while the new steel tank feeds customers daily.

Source of water is two drilled wells, and treatment includes chlorination only. Like all water utilities, the system operates by supplying treated

water into the system and filling the tower. In peak usage times like morning and supper, the tower level drops, and the tower is replenished during lower demand times. This is called peak balancing storage.

Water Distribution System

Analysis of water data showed the system experiences 57% unaccounted for water, which is much higher than the recommended 10 to 20% range. Losses are partially due to continuously running bleeder lines at the dead ends of the system, which are used to stop water from stagnating. Other reasons for unaccounted for water include leaks, unauthorized hydrant usage and unmetered connections.

The distribution system analysis included potential for accommodating the future development of a residential community on Hudson Street, with a design population of 1,364 people. This would include 160 low density units and 368 high density units, based on the concept plan by Fathom from 2022.

System pressures for both current users and future development range from 26 to 96 psi with acceptable range being 40 to 70 psi. The lowest pressures occur on Dakota Road, which is at the highest elevation in the park. High pressures exist in the MacElmon Road area, which is the lowest elevation. Future development on Hudson Street would have adequate pressure, near the low range of 40 psi. Any apartments on this lot would require private booster pumps.

Fire flows for existing and

future conditions are inadequate due to small pipe sizes in areas such as Dakota and Ventura, however major improvements in fire flow can be achieved by upsizing pipes either on Hudson Street, or Ventura Drive.

The existing tower on Hudson cannot provide balancing storage for full future development on Hudson Street but has balancing storage for 200 to 280 units depending on type.

Water Supply

Based on current water demands it was found that the existing wells can accommodate another 180 to 200 units before extra supply is needed. A project is already underway whereby the use of a historic well on Fairchild Place is being investigated as a secondary supply. So far, volume and quality of water appear favourable.

Go Forward

Analysis shows the existing system is adequate to supply water for an additional 200 units. Recommended steps going forward include the following: Fire flow improvements will require upsizing of watermains. Given the two options of upgrading either the watermains on Hudson Street, or those on Ventura Drive, staff recommend focusing on Ventura Drive as these sections are old and generally in need of replacement already. This new piping could also be used to tie-in a future well on Fairchild Place. Estimated cost for new piping along Ventura Drive and Tracker Road is \$4M. Phased replacement to be added to capital budget in the next 3-5 years and it is also recommended other pipes within the system be upsized as they are replaced over time.

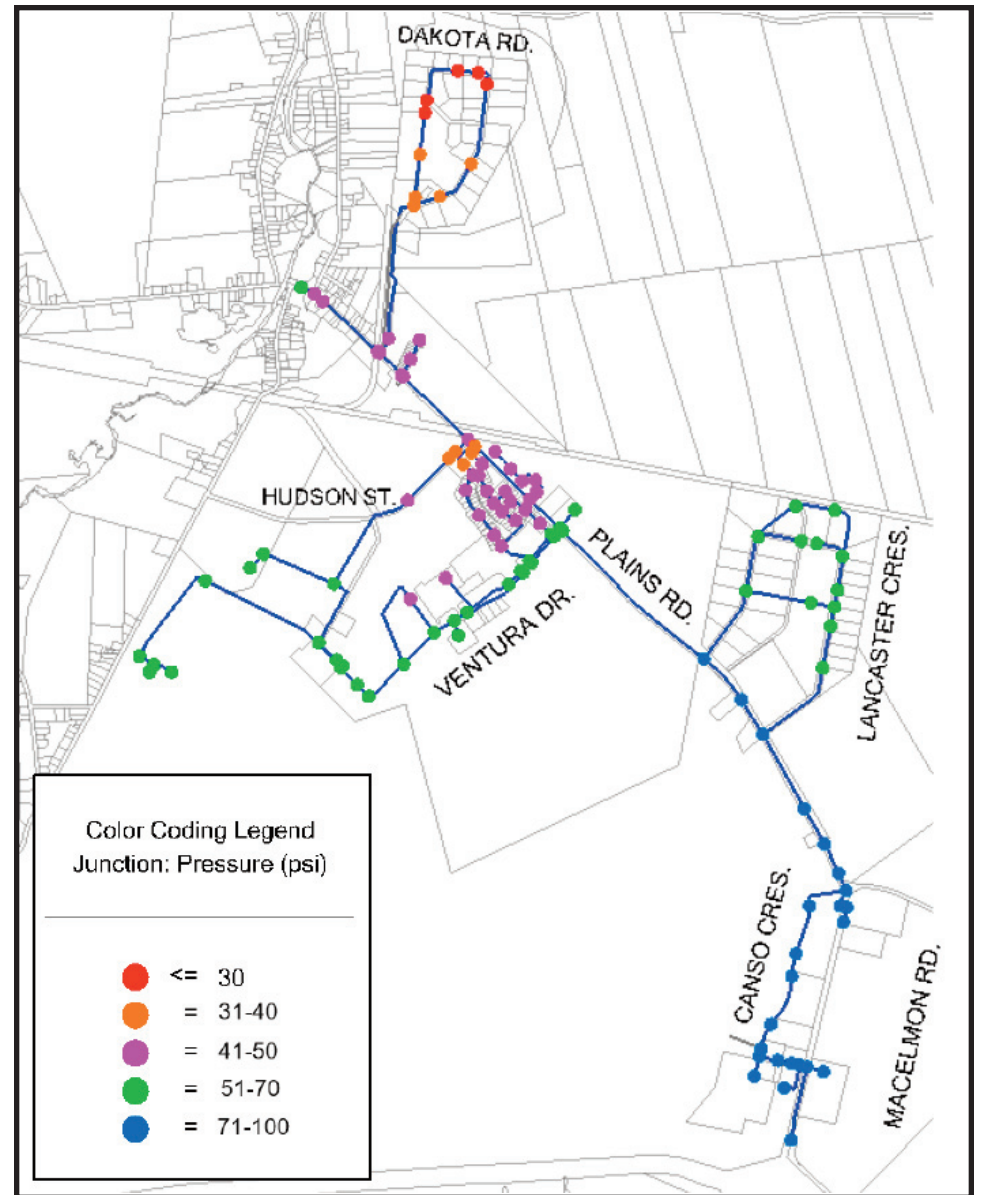
Extra balancing storage can be created by converting the concrete storage tank from a fire flow supply only, to a daily usage supply. Modifications to the tank operations are estimated at \$750K. This tank is being inspected in 2024 to

confirm long term viability. This option is preferred over construction of an entirely new water storage tank. Budget for operational changes to the tank in the next 3-5 years;

Any future development on Dakota Road will necessitate a pressure boosting station; Continue working towards adding

the secondary well on Fairchild Place to the distribution system. Work is estimated at \$500K and should be budgeted over the next 3-5 years;

Addressing unaccounted for water will also be an important tool in regaining capacity. Leak detection work is already budgeted for Debert in 2024.



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