Drilling down... Background

1967	Council commissioned a preliminary engineering study by Paul Wendt Ltd. to look at the possibility of providing central sanitary sewer and central water supply services to the Chester Village and Western Shore areas. The proposed system was generally outlined to include a surface water source from Spectacle lake, since wells in area were not found to be satisfactory, and ground water from Middle River would come at an excessive cost. The preliminary cost of the proposed system was estimated at $1.1 Million.
1982	Lunenburg County District Planning Commission engaged Interprovincial Engineering Ltd. to study the potential supply of groundwater in the Western Shore and Chester Village areas. The study did not locate any site suitable for a central water supply from drilled wells and acknowledged that some parts of the study area, such as the core of Chester Village, suffer from inadequate quantities of water. The report concluded that the Chester Village watershed was the smallest of the five noted in the broad study area, but theoretically there is lots of water (1642 imp. gallons/min or 10750 m3/day) of ground-water available. While there appears to be a significant amount of ground water available, it was determined that wells within the Village would not provide the long-term yield to sustain a water system.
1987	At Council's request, Interprovincial Engineering reviewed the 1967 study and prepared an estimate of costs for a central water system. The proposed service area was described as being the "Village Core" or peninsula area, not including what we commonly refer to as the Peninsula today. The system would serve approximately 300 connections. The water source was based on surface water being in close proximity to the Village, and is in support of the 1967 study. Stanford Lake was eliminated as a source due to development and poor characteristics (i.e. shallow, warmer temperatures). Spectacle Lake was the pre-ferred choice since it is deep, spring fed, good quality water and the ability of increasing water capacity. Preliminary costs ranged from $2.4 million - $3.4 million.
1990	Council requested the Dept. of Health survey wells in the Chester Village Planning Area. 19% of the dug wells ran dry at times, 63% of the dug wells showed bacterial contamina-tion, 40% of the drilled and 30% of the dug wells showed salt contamination, most wells yielded very corrosive water, and most had elevated levels of iron, manganese or nitrates.
1992	The Spectacle Lake Watershed was added to the Chester Village Planning Area and pro-tected from commercial, industrial and small lot residential development. Also in 1992, a preliminary feasibility study for a central water supply system was conducted by Beasy Nicoll Engineering Ltd. in anticipation of possible consulting work. The study included estimated costs per household needed to pay for the system.
1993	Council conducted a survey to determine the level of public interest in a system. Only 41% of the respondents were in favour of a central water system and only 5% were will-ing to pay the annual charges necessary to support the system.

THE MUNICIPALITY OF CHESTER

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1994/95	Council applied for Provincial funding for a feasibility study for a central water supply, but the application was refused due to the lack of public support for such a system.
2001	Council purchased two parcels of land abutting Spectacle Lake.
2009	A study of water quality and quantity of Spectacle Lake was completed by Earth Water Concepts. The study showed the Lake as a suitable water source for Chester Village. The preliminary assessment showed a service population of 1525-1905 people. Water quality sampling revealed the water meets the Guidelines for Canadian Drinking Water Quality for all parameters except for pH, iron, and manganese. Water colour and trihalomethane (TMH) formation potential is high. Treatment would be required to address these items.
2011	Council continued to acquire land abutting Spectacle Lake, as well as the key lands required for locating a water treatment plant and a water reservoir, as identified in an updated engineering plan by KVM Consultants. That plan established the infrastructure requirements and identified potential sites for major components, such as a treatment plant, booster station and reservoir. It was assumed that the Village Core had the greatest need for central water; therefore, this area was the focus for water service delivery. The 25 year (2036) projected design population was assumed to be 1500 persons. Spectacle Lake was the selected water source due to its superior water quality and relatively undeveloped lakeshore. Estimated cost was $13,000,000.
2012	SNC Lavalin was requested to review the KVM report. Generally, they found the concept feasible, while there was variances in cost estimates for individual components, the overall cost would remain within the estimate, save for inflation and increases in material costs.
2014	SNC Lavalin investigated the feasibility of a potable water supply to serve the business district of Chester, since MODC recognized that a number of residents and businesses are faced with high costs of providing water and the low water yields of individual well supplies. The location of the water supply was identified as Lordly Park, with the distribution system (~700 m in length) extending the area commonly referred to as the Village T, which includes Queen and Pleasant Streets. The flow required to service this area was estimated to be 122 m3/day , which would require a single well to yield 90 L/min. There are wells in the area that have a very low yield (1.5 L/min) while others within 300 m of the study area report yields of 136 L/min. The study included a review of the Regulatory requirements, which highlighted the fact the based on the serviced population, the system would have to be classified and registered with Nova Scotia Environment. It was assumed the system would not be a classified as a municipal system, but instead be a registered system maintained by the end users. An opinion of probable cost was estimated between $430,000 and $450,000 plus HST.



BACKGROUND QUESTIONS?

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*these reports and summaries are online at www.voicesandchoices.ca/chester-water in greater detail