

STAFF REPORT: ENGINEERING AND PUBLIC WORKS DEPARTMENT



REPORT TO: Infrastructure & Recreation Committee
MEETING DATE: April 27, 2010
REPORT NO.: EPW.10.022 REVISED
SUBJECT: Lora Bay Service Area Fire Flows
PREPARED BY: John Caswell, Manager of Water & Wastewater Services/Asst. Director

A. Recommendation

THAT Council receives Report EPW.10.022 REVISED entitled “Lora Bay Service Area Fire Flows” for their information.

B. Background

In March 2002 an Environmental Assessment, Phase 2 Report was finalized for Schedule B projects in the Camperdown, Thornbury, Clarksburg and Lora Bay services areas. The Report laid out the groundwork for future required water and wastewater infrastructure in these service areas. The Town completed the above mentioned Comprehensive EA in 2002.

Subsequent to the Phase II Report the Town retained Hatch Mott Macdonald (formerly AWS Engineers and Planners) to complete the engineering design for the required water and wastewater projects to service Phase 1 of Lora Bay (see Figure #1- Lora Bay Service Area). These projects included water servicing with a booster pumping station and reservoir located at the 10th Line on Highway 26. Wastewater servicing would be provided by the Beaver River siphon, upgrades to The Mill Street Pumping station and wastewater collection from the 10th line to the intersection of Huron and Victoria Streets in Thornbury.

Figure #1- Lora Bay Service Area



All the above mentioned projects were constructed in 2005 and 2006 except the reservoir which was designed to be constructed later as an extension to the rear wall of the 10th Line Booster Station (WBS). The Developer had approached the Town and requested the construction of the reservoir be deferred until 2011. The reason for this request was due to the phasing of the Lora Bay's Corporation developments. The Town agreed to the deferral of the reservoir.

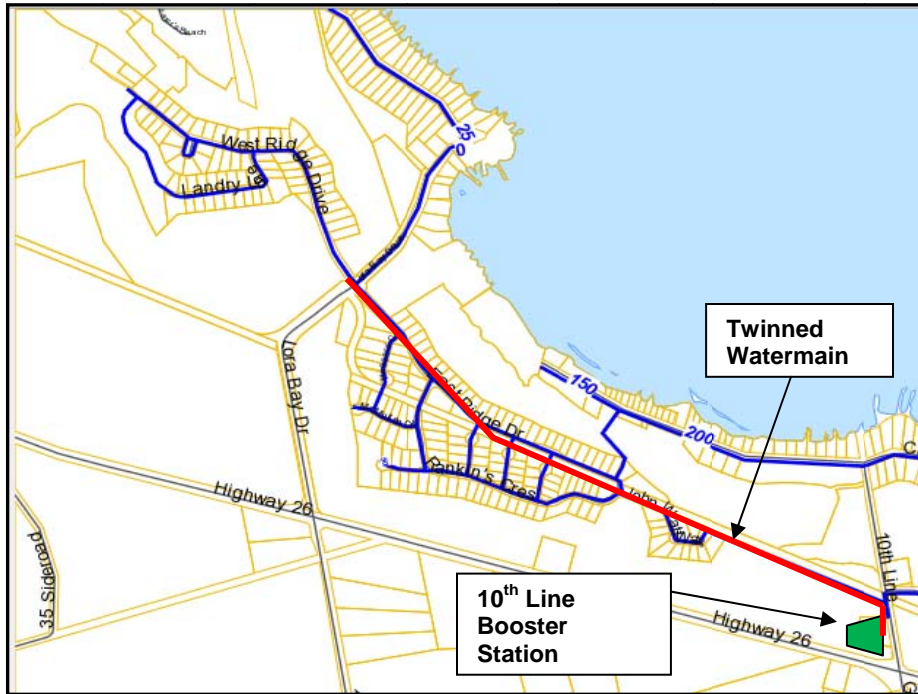
The Town has required Fire Underwriter' Survey (FUS) fire flows for new works within the March 2005 Engineering Standards. The FUS standards have always been included in the Ministry of Environment (MOE) guidelines but not explicitly in Town Engineering Standards. FUS is an enhanced level of fire protection and substantially increases the amount of water required for fire protection. The WBS was tendered and constructed after the new standards came into effect.

The design of the WBS, completed prior to 2005, provided for 85 l/s of fire flow which is less than FUS standards. This fire flow was utilized because it met the Building Code requirements for the proposed Lora Bay Club House. The Town's Engineering Division recognized a problem during their review of fire flows for subdivision development. The WBS and associated distribution system to the Lora Bay Service Area one not capable of delivering FUS level of fire protection to the entire service area, particularly larger buildings.

The Town retained Genivar, who was involved in the design of the distribution system, to assess the existing water system infrastructure design. Part of that assignment was to also consider a conceptual design of a water system that may ultimately service the needs of the Lora Bay Service Area west of the 10th Line with FUS levels of fire protection.

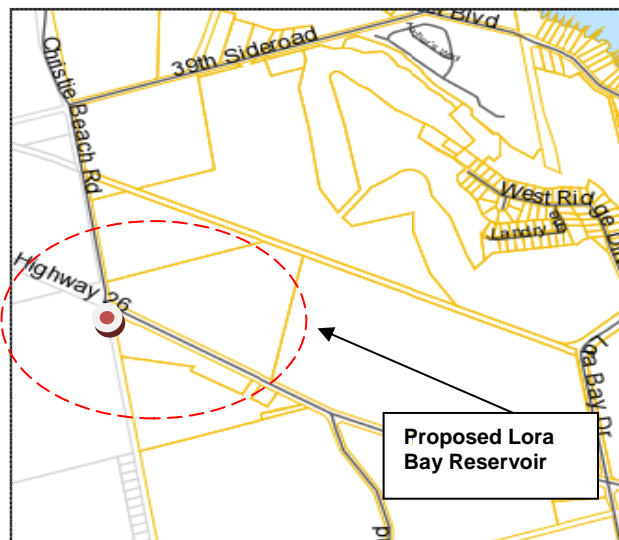
The existing system was modeled to assess its adequacy with the recommended FUS fire flow during the maximum day demand. The existing system clearly will not deliver the required fire flows. There are two basic options available to the Town to ensure that suitable fire flows are available to the Lora Bay Service Area when full build out occurs. The first option (see Figure# 2- Option #1) would see the WBS upgraded with new pumps and the reservoir constructed adjacent to the WBS as per the design developed during the EA. In order to provide the necessary fire flow, the existing watermain will be twinned from the 10th Line to at least the intersection of Lora Bay Drive and Eastgate Drive.

Figure # 2-Option # 1



The second option is that the storage reservoir be relocated to another area of the Service Area. One location considered for the reservoir was near the intersection of Highway No. 26 and Christie Beach Road (see Figure #3- Option #2). The reservoir itself could be constructed on the hillside of the extension of the Christie Beach road south of Highway 26 or as an elevated tank at the northeast corner of the intersection of Highway 26 and Christie Beach Road. The final location and type of storage facility will need to be the subject of a Schedule 'B' Class Environmental Assessment.

Figure # 3-Option # 2



With the storage reservoir located in the southwestern extreme of the Service Area, the recommended fire flows can be met throughout and there would also be the benefit of providing redundancy to be able to feed water from two sides of the Service Area.

As part of the 2010 Capital Budget the five year water and wastewater capital plan was presented for information. It anticipates that an EA would be completed in 2011, engineering of this facility would be completed in 2012 and construction would be undertaken in 2013.

C. The Blue Mountains' Strategic Plan

These works will assist in the Town's Strategic Plan Goal #2 "Addressing the Town's Municipal Infrastructure needs".

D. Environmental Impacts

The Class Environmental Assessment that will be done will determine the impact on the environment and mitigating measures.

E. Budget Impact

The five year capital plan within the 2010 Budget provides \$3,345,000 for the overall project funded from Development Charges for the Lora Bay Service Area. Of that cost \$75,000 is allocated in 2011 to undertake the Class Environmental Assessment to determine the preferred solution to the fire flow deficiency. The design and construction is anticipated over 2012 and 2013 however the timing is somewhat dependent on development activities and coordination with the Lora Bay Developer.

F. Attached

None

Respectfully submitted

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