

Fredericton's proactive water storage plans prepare for future growth

The realm of municipal water has undergone many changes over the last decade and a half. Regulations and requirements for municipal water treatment and storage have become more stringent, forcing the upgrade or replacement of many water infrastructure systems in the Maritime regions. As a result, the City of Fredericton, New Brunswick has recently begun the refurbishing of a large portion of their water and sewer infrastructure, including water storage tanks, waste treatment plants, and many kilometers of sewer lines.

The first, and most extensive, segment of this overhaul came with the design and construction of a new \$8 million water treatment facility. The John E. Bliss Water Treatment Plant is one of two treatment plants servicing the city. Prior to the construction of the Bliss Water Treatment Plant, the William L. Barrett Water Treatment Plant was serving approximately 90% of the local population, processing nearly double the amount of water it was designed to handle. The addition of the second water treatment centre to Fredericton's water infrastructure was the first of many moves to prepare the city for future growth, as well as maintain current standards for the existing population.

In 2010 the City of Fredericton received \$1.4 million through a joint funding program with the Province of New Brunswick and the federal government. With this new funding, as well as the new capacity the Bliss Water Treatment Plant added to Fredericton's water and sewer system, the city began to evaluate its existing water storage solutions, considering which structures required replacement as well as whether new zones of potential development required added water storage. From this evaluation, three zones were earmarked for immediate replacement or construction.

The first project, titled Rosewood for its close proximity to Rosewood Ave, was the replacement of an aging gunite reservoir in the area. While this area consists mostly of established neighbourhoods, it has recently been opened to new residential development. Working closely with exp Services Inc. of Fredericton and the Water and Sewer Division of the City of Fredericton, Greatario Engineered Storage Systems designed and constructed a new potable water storage structure that could account for the increased capacity requirement and would not age-out as the old gunite structure had. The city determined a glass-fused-to-steel bolted tank design, provided by Greatario Engineered Storage Systems, was the best option for their needs. This tank design utilizes latest technology manufacturing and construction methods, and was desirable to the city because of its low life-cycle costing, customizable design, and turn-key build capabilities. Glass-fused-to-steel tanks also never require repainting, greatly reducing maintenance costs for the city.

The summer of 2012 brought with it two more tank erection projects for the City of Fredericton. The first, a new standpipe at the Northbrook site, was a project necessitated by new residential development the area had been earmarked for. This second glass-fused-to-steel bolted tank allocated 380,209 USG to the North-East end of the city. While the Northbrook standpipe provided added capacity required by the city in general, it also enabled the residential expansion the city aspired to achieve.

The second project was the replacement of two decaying gunite tanks at the Longwood site. The mechanics of the Longwood water storage facility call for a staggered reconstruction of the reservoirs, and in August 2012, construction of the first replacement tank began. The capacity provided by both reservoirs is required to provide a sufficient water supply to the area, and thus a minimum of two tanks must be in commission at all times. Upon the completion of the 70' x 25' reservoir a second, identical tank is scheduled to be engineered and erected.

The growing importance of water treatment and storage has become a central element in the City of Fredericton's infrastructure update plans. Having already replaced 1,464,881 USG of potable water storage with storage solutions that not only adhere to, but often exceed the growing regulations, and with more projects on the table, the city has proven itself highly proactive when it comes to safe and clean drinking water for its residents.

