

Bringing Municipal Drinking Water to the Village of Manotick

The largest 600mm Molecularly Oriented Polyvinyl Chloride (PVCO) project to date in North America

BIONAX®

Product:

Bionax® PVCO Pipe
600 mm (24") diameter

Client:

Manotick, Ontario

Engineering Firm:

JL Richards
& Associates



The Challenge

The community of Manotick is a waterfront village located on the south edge of Ottawa, on the banks of the Rideau River. As a growing suburb there was a critical need to bring a new water main delivering municipal drinking water to the area, as well as increasing the water capacity and reliability of service.

For years, the majority of residents relied on private wells as their source of drinking water. In 2001, Manotick became part of the City of Ottawa when the Canadian capital amalgamated. One of the key objectives of this consolidation was to bring municipal drinking water to Manotick.

Twenty years later, the project was ready to launch.

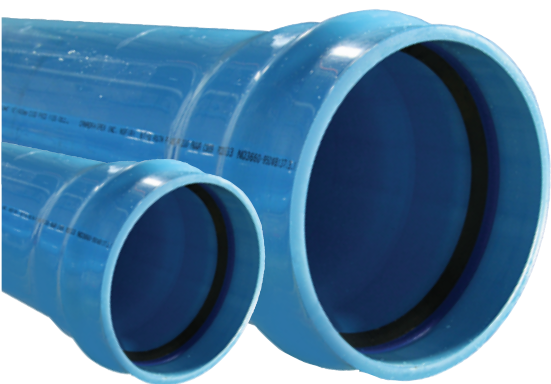
The Solution

The City had ongoing concerns with other water main materials they used previously for large diameters projects. They knew they needed to select a more long-lasting and durable pipe material option going forward.

The majority of the 600mm watermain was to be installed adjacent to an existing arterial roadway. Due to winter de-icing operations, high saline levels were expected in the roadside soils. This meant the material used for this new water main needed to be long-lasting, and able to resist corrosion and chemical attacks caused by high salinity.

The IPEX team began consulting with engineers, contractors and the City of Ottawa to help ensure the success of this large municipal project.

The success of Bionax at smaller diameters gave the City familiarity, trust and comfortability with the product. They gradually approved PVCO projects at increasingly larger diameters, adding 400mm and, eventually, for this project, 600mm. IPEX is proud to be the only manufacturer of 600mm PVCO in North America.



The engineering team, JL Richards & Associates, selected the 600mm Bionax 235DPI for this project for several reasons:



- **Strong, Tough & Flexible:** Bionax boasts 2x the circumferential strength of PVC and 3x the toughness of PVC while providing exceptional pipe and joint flexibility.



- **Unsurpassed Corrosion Resistance:** Bionax is exceptionally corrosion-resistant, unlike cast iron/ductile or concrete pressure pipes with pre-stressed steel wires that can degrade over time, leading to costly system failures. Like conventional PVC, Bionax is virtually corrosion-proof.



- **Low Maintenance & Pumping Costs:** Bionax's large interior diameters and smooth inner surface mean less friction, increased flow rates and lower pumping costs. Bionax retains its excellent hydraulic properties, keeping maintenance costs extremely low and saving energy throughout the system's life.



- **Lighter & Safer for installation:** Bionax is 75% lighter than 12" (300 mm) ductile iron, making it significantly easier and safer to handle. Installation requires less equipment and a lot less time. Bionax is so light that several joined lengths can be lifted as a single unit and installed in a trench, saving even more time.



- **Simpler Joining Process:** Bionax offers more versatility in terms of troubleshooting and in-field adjustments, saving municipal designers both time and trouble.



- **Ease of Installation:** Bionax uses easy-to-assemble gasketed joints, so no special training is required to join lengths together. The procedure is identical to that of standard PVC pipe.



- **Lowest Carbon Footprint:** Bionax PVCO has the lowest carbon footprint of any municipal piping system, from the amount of energy used in its manufacture to its delivery to your job site.

“The overall project went very smoothly. Installation of 600mm Bionax pipe was easier than the alternative products allowing for faster construction and smaller equipment required to lift and install the pipe sections. The smaller footprint required on a busy arterial road led to the selection of Bionax PVCO and allowed the contractor to maintain two lanes of traffic throughout the construction.”

Toby Racine, Civil Engineer
J.L. Richards & Associates

The Results

The Manotick project was both a comprehensive and challenging undertaking and the feedback from the contractor and the City has been overwhelmingly positive.

The major highlight of the project was the completion of over 2500m of 600mm PVC watermain, making it the largest 600mm PVCO project to date in North America. Using Bionax PVCO also allowed for continuity of material from the trenchless bores to the open cut construction.

The installation began in the spring of 2021, and the new water main became fully operational in January 2022. IPEX was onsite throughout the duration of the project to provide monitoring and on-site training when required to ensure things ran smoothly.

The launch of this new water main also provided additional benefits to the drinking water supply for the Barrhaven South and Riverside South communities located nearby.



JL Richards won an Ontario Engineering Project Award of Distinction for this project.