

## Water Main Relocation Makes Way for the LRT Trillium Line South Extension Airport Link

Replacing reinforced concrete piping with Molecularly Oriented Polyvinyl Chloride (PVCO) results in considerable cost savings

**BIONAX®**

**Product:**

Bionax® PVCO Pipe  
600 mm (24") diameter

**Client:**

Ottawa, Ontario

**Engineering Firm:**

Novatech Engineering



Photo Credit: City of Ottawa

### The Challenge

Stage 2 of the Ottawa Light Rail Transit (LRT) project (also known as the O-Train network) is part of a \$2.1 billion investment in the capital's transportation infrastructure to build more than 44 kilometres of light rail and 24 new stations by 2025.

The project also aims to bring 77% of Ottawa residents within 5 km (3.1 mi) of rail access.

A crucial part of Stage 2 is the development of the Trillium Line South Extension, a four-kilometre airport link that connects the O-Train network to the Ottawa International Airport.

This amenity will provide an easy and affordable public transportation option

for Ottawa's residents, businesses, and visitors travelling to and from the airport

Before construction for this light metro transit system project could begin, considerable utility relocation was required.

Approximately 300 meters of water main piping located at the Ottawa Pump Station, just east of the Ottawa International Airport, needed to be moved out of the impact zone of the LRT corridor. The relocation project involved removing the old concrete pressure pipe and replacing it with a new, long-lasting piping system.

## The Solution

The City had concerns about water main materials it had used for large diameter projects in the past. It needed to source a larger pipe material that was long-lasting.

Having used Bionax at smaller diameters for previous projects, the City had familiarity, trust and comfortability with the product. They gradually approved PVC0 projects at increasingly larger diameters, reaching 600mm 235DPI for this project. The engineering team, Novatech Engineering, selected Bionax for this project for several reasons:



- **Flexibility, Strength & Toughness:** Bionax offers 2x the circumferential strength and 3x the toughness of PVC while providing exceptional pipe and joint flexibility.



- **Unsurpassed Resistance to Corrosion:** Unlike cast iron/ductile or concrete pressure pipes with pre-stressed steel wires that can degrade over time, Bionax is exceptionally corrosion-resistant, and much 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, which means it's 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.



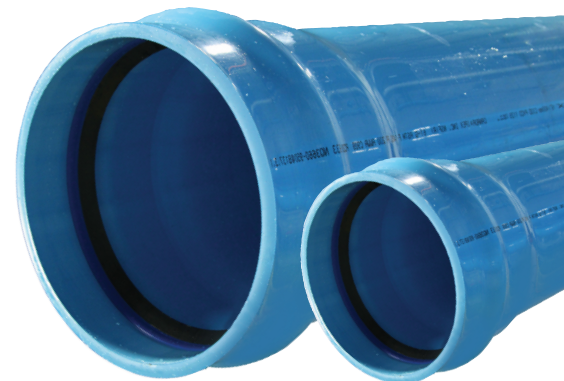
- **Simpler Joining Process:** The joining process for Bionax products offers more versatility in terms of troubleshooting and in-field adjustments, saving municipal designers both time and effort.



- **Ease of Installation:** Easy-to-assemble gasketed joints means there's no special training required to join lengths of Bionax together. The procedure is identical to that of standard PVC pipe.



- **Lowest Carbon Footprint:** From the amount of energy used in its manufacture to its delivery to your job site and its 100+ lifespan, Bionax PVC0 has the lowest carbon footprint of any municipal piping system.



“The Ottawa Utilities Pump Station project went very well. The PVCO pipe was installed close to the LRT rail bed. PVCO’s resistance to failure allowed it to replace reinforced concrete piping and saved the project a considerable amount of money. The installation went smoothly, and all parties are happy with the product.”

Carl Sciuk, Senior Project Manager  
Novatech Engineering

## The Results

IPEX is incredibly proud to have worked on a project to support the construction of cutting-edge transportation infrastructure in Canada’s capital.

This utility relocation project laid the groundwork for the construction of this critical extension of one of Ottawa’s light rail transit lines.

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

This City was pleased with the results of the project. Replacing concrete pressure piping with failure-resistant Bionax PVCO resulted in substantial cost savings for the municipality.

