

PRINCE RUPERT MBWS PILOT

- CITY OF PRINCE RUPERT (2020 - PRESENT)
- PRINCE RUPERT, BC

“The City of Prince Rupert is excited to test a new system for wastewater treatment for our community. This model will save us major capital costs and could be an innovative approach to serve as a model form of treatment for other coastal communities.”

Herb Pond,
Mayor, City of Prince Rupert

PROJECT CONTEXT

The City of Prince Rupert accommodates approximately 12,000 residents and relies on a network of sanitary sewer pipes without a dedicated wastewater treatment facility. Updates to wastewater regulations require the City to integrate wastewater treatment prior to discharge into the Pacific Ocean. They engaged MAGNA to develop a conceptual design for a pilot wastewater treatment solution to fit their context.

MAGNA’S SOLUTION

The City opted for the MAGNA Biofilter Wetland System (MBWS) to address their wastewater challenges. The MBWS is an innovative, nature-based, passive treatment solution that leverages subsurface-engineered wetlands to treat municipal wastewater efficiently. The biofiltration system relies on natural processes to break down pollutants through marshland vegetation and soil. Solids and sediment are filtered out before the water is pumped underneath the wetlands, where the natural treatment process takes over.

MBWS PILOT

The original site location was the Omenica lift station but has since been relocated to the Moresby Park area. The pilot will determine the financial and regulatory viability of this treatment method as a solution for City-wide wastewater treatment. The Moresby site, formerly used by the Department of Defense for fuel storage, was selected for its ease of access and environmentally friendly characteristics. The MBWS pilot can be easily integrated with the surrounding nature and ultimately support the site’s preservation for recreational activities nearby.

COMMUNITY OUTCOME

The MBWS ponds will resemble planting beds within the existing green space and positively contribute to environmental preservation. The Pilot Project aims to set the direction for future City projects to prevent untreated wastewater from entering the ocean. The collaboration between the City of Prince Rupert and MAGNA is an opportunity to address infrastructure challenges affordably, innovatively, and in alignment with natural environmental processes.

