



City of Prince Albert

RPT 2026-103

TITLE: Filters A and B - Underdrain System Refresh and Optimized Filter Media Design

DATE: March 25, 2026

TO: City Council

PUBLIC: X

INCAMERA:

RECOMMENDATION:

1. That the contract for refreshing the filter underdrain system and installing an optimized filter media design for Filters A and B at the Prince Albert Water Treatment Plant, as part of the City's phased filter renewal program, including any additional filter cleaning required, be awarded to Anthratech Western Inc. (AWI) in the amount of \$130,708.60, including PST; and
2. That the Mayor and City Clerk be authorized to execute any applicable documents on behalf of the City if required.

EXECUTIVE SUMMARY:

The City of Prince Albert's Water Treatment Plant (WTP) requires the installation of optimized filter media, along with a thorough inspection and maintenance of the underdrain system in Filters A and B. In 2025, the City completed similar work on Filters E and F as part of its phased filter refresh program. The current project represents the next stage of that program and continues the planned lifecycle renewal of the filtration system. AWI, the original supplier of the Phoenix Underdrain System and contractor for the 2025 filter refresh project, has proposed a detailed plan to inspect, clean, and upgrade these filters using optimized filter media. This proposed work aims to enhance the compatibility of the filter media with the existing Actiflo clarifiers, extend the lifespan of the underdrain system, and ensure reliable filter performance, ultimately increasing filter run volumes and improving effluent quality.

The project includes site services, specialized equipment, and supervision by AWI's experienced installation specialists. It also incorporates a comprehensive quality control process and is backed by a 12-month workmanship warranty.

BACKGROUND:

The Prince Albert Water Treatment Plant (WTP) operates eight open-top gravity filters, which were upgraded with the AWI Phoenix Underdrain System and new filter media in 1995 and 2001. Since these upgrades, Actiflo pretreatment has been added to the WTP process. Additionally, the typical

lifespan of filter media is 15–20 years, meaning the existing media has exceeded its expected service life and is due for replacement. The underdrain system and filter media are critical components of the granular media filtration system, and their proper maintenance is essential for optimal performance and longevity.

In 2018, AWI conducted a detailed process evaluation that recommended an optimized filter media design to improve compatibility with the Actiflo clarifiers. In 2025, the City completed the refresh of Filters E and F using this approach. The current proposal builds on these recommendations and includes refreshing the underdrain system, replacing air scour hoses, and installing new filter media. AWI has extensive experience in filter optimization, with a proven track record of successful projects across Canada, including major water treatment plants in Vancouver, Calgary, Edmonton, and Toronto.

PROPOSED APPROACH AND RATIONALE:

The proposed approach includes the following key steps:

1. **Supply and Delivery of Material:** AWI will provide and deliver new filter materials (anthracite and filter sand) that meet safety and quality standards. The design is based on AWI's 2018 evaluation to ensure optimal performance.
2. **Removal of Existing Media:** The City will remove and dispose of the existing filter media before AWI's arrival on-site.
3. **Underdrain System Refresh:** AWI will inspect, clean, and flush the existing underdrain system, replace air scour hoses and clamps, and install a new air scour hose support bracket. If necessary, underdrain laterals will be removed for additional cleaning.
4. **Installation of New Filter Media:** AWI will install the new filter media using proven standards and guidelines to ensure long-term performance and protection of the underdrain system.
5. **Testing and Recommissioning:** After cleaning and installation, AWI will conduct performance testing, including visual air scour testing and backwash observations, to ensure the system is functioning correctly.
6. **Project Completion Report:** AWI will provide a detailed project completion report, including baseline data, filter media sieve analysis, and backwash pressure data for future reference.

The rationale for this approach is to ensure the continued reliability and efficiency of the filtration system, extend the life of the underdrain system, and improve compatibility with the Actiflo clarifiers. AWI's expertise in filter optimization and their proprietary *Phoenix Underdrain System* make them uniquely qualified to perform this work. This project also builds on the successful completion of the Filters E and F refresh in 2025 and continues the City's phased approach to renewing all eight filters in a manageable and cost-effective manner.

CONSULTATIONS:

The project proposal has been developed by Anthratech Western Inc. (AWI) in consultation with the Public Works management group to ensure alignment with operational requirements. AWI has also incorporated recommendations from its 2018 Process Evaluation Report, which was previously prepared in collaboration with Water Treatment Plant staff to assess filter operations and identify opportunities for optimization.

The proposed work has not been issued through a broad competitive procurement process due to the specialized nature of filter media replacement, underdrain system inspection, and filter optimization at the Water Treatment Plant. In addition, AWI is the sole developer and patent holder of the Phoenix Underdrain System installed at the Prince Albert Water Treatment Plant and therefore has unique expertise and familiarity with the design, operation, and maintenance of the existing underdrain system.

AWI also has prior experience with the City's filtration system through its previous process evaluation work and the successful completion of the Filters E and F refresh project in 2025. Given the proprietary nature of the system, the limited number of qualified providers in this field, and the need for continuity in the City's phased filter renewal program, AWI has been identified as the most appropriate firm to complete this work. This recommendation, supported by the City's Fleet and Procurement Division Manager, helps ensure the use of specialized expertise and a proven track record for successful project delivery.

AWI has proposed a virtual project kick-off meeting with City representatives to review the scope, schedule, and sequencing of the work. They will also provide ongoing virtual project support and meetings, as required, throughout the project. The City will be responsible for providing two skilled labourers to assist AWI during site work and for ensuring that the necessary safety measures, equipment, and facilities are in place to support the project.

COMMUNICATION AND/OR ANNOUNCEMENT PLAN:

AWI will be provided a standing purchase order for the value as per quotation submitted.

BUDGET/FINANCIAL IMPLICATIONS:

The 2026 operating budget of \$138,000.00 has been allocated for the procurement and installation of new filter media, along with the inspection, cleaning, and recommissioning of the underdrain system. The base cost is \$108,390 plus taxes, with an additional allowance of \$7,460 per filter if further cleaning of the underdrain laterals is required.

OTHER CONSIDERATIONS/IMPLICATIONS:

There are no policy, privacy, legal, safety or environmental implications.

OPTIONS TO RECOMMENDATION:

There are no options to the recommendation.

STRATEGIC PLAN:

This report aligns with the City of Prince Albert Strategic Plan 2026–2029 and supports the following:

Strategic Direction: Professional and High-Quality Public Service

This project supports the delivery of reliable and high-quality municipal water treatment services through proactive infrastructure renewal.

Strategic Goal: Establish a regular, sustainable cycle for the review and continuous improvement of municipal services

The phased filter refresh program demonstrates a structured and sustainable approach to maintaining and improving critical water treatment infrastructure.

Key Initiative: Comprehensive Asset Renewal Strategy

The replacement of aging filter media and maintenance of the underdrain system aligns with the City's broader objective of renewing and optimizing key assets to ensure long-term service reliability.

In addition, this project supports the Strategic Plan's focus on maintaining and investing in essential water infrastructure systems, ensuring a safe and reliable drinking water supply.

In 2025, the City completed the refresh of Filters E and F, and the proposed 2026 work for Filters A and B represents the next phase of this program. The City plans to continue refreshing two filters per year until all eight filters have been upgraded and optimized for compatibility with the Actiflo clarifiers. This phased approach makes the project both financially feasible and operationally viable.

OFFICIAL COMMUNITY PLAN:

There are no Official Community Plan strategies or Plans to this report

PUBLIC NOTICE:

Public Notice pursuant to the Public Notice Bylaw No. 24 of 2015 is not required.

Written by: Rinkesh Patil, Water Treatment Plant Manager

Approved by: Director of Public Works & City Manager