



Gold Bar WWTP Backgrounder

Recent & Upcoming Projects

November 15, 2018

On November 16, 2018, the Utility Committee of Edmonton City Council will receive information on initiatives relating to EPCOR's Gold Bar Wastewater Treatment Plant (Gold Bar WWTP). These are:

- **The Sanitary Servicing Strategy Fund (SSSF), South Edmonton Sanitary Sewer (SESS).** The City will report on the governance of the SSSF Management Committee and the work done on long-term planning, including trunk linking. EPCOR will participate in the presentation.
- **Gold Bar WWTP recent projects,** including odour management, the Gold Bar lift station, structural rehabilitation of a diversion structure near 50th Street, and the 2009 Land Swap Agreement.
- **Gold Bar WWTP future projects,** including the proposed Operations Centre, Integrated Resource Plan and biogas ("green gas") opportunities.

SSSF and SESS

In 2016, the City of Edmonton retained an external consultant, with funding from the Sanitary Servicing Strategy Fund (SSSF) Management Committee, to conduct an Integrated Planning Report on how best to manage wastewater flows in Edmonton. This report found that:

- Treating sanitary flows from south Edmonton (including potential annexed lands) at Gold Bar WWTP is a more cost effective option than treating flows at the Alberta Capital Region Wastewater Commission (ACRWWTP), which is northeast of the City.
- Treating sanitary flows at Gold Bar WWTP reduces capital costs by \$160 M due to the reduced length of the final segments of the South Edmonton Sanitary Sewer (SESS).
- Directing flows to Gold Bar WWTP was rated higher (better) for all criteria evaluated, including cost, constructability, environmental impact, operability and flexibility.

Given these findings, in 2017 the City made a regional optimization decision about where to best treat flows in the long term after 2038. It decided to replace the previously planned 18 km of trunk sewer line to the ACRWWTP with 7 km of trunk sewer that could convey south Edmonton flows to Gold Bar WWTP. Flows from the north would be directed to the Alberta Capital Region WWTP. Flows from the south would be directed towards Gold Bar. With EPCOR's continued investment in advanced technology, Gold Bar would have the capacity to handle increased flows.

Under the City's original 1999 SSSF Plan, Gold Bar WWTP was expected to increase its processing capacity over time to handle increased wastewater flows from population growth. This does not change today. New and better technology has improved performance across our plant operations through the years, and this will continue. Looking ahead, Gold Bar WWTP will be able to treat increased flows from South Edmonton.

Recent projects at Gold Bar

Odour management

In 2016, odour concerns were raised by local residents and since then, EPCOR has made significant efforts to quantify, reduce and improve odour control at Gold Bar WWTP.

These improvements include rebalancing odour ducting, adding redundancy in the chemical scrubbers and adding new covers on the tanks inside the Enhanced Primary Treatment facility.

Overall, EPCOR has spent \$10 million in odour management at Gold Bar WWTP, and so far in 2018, 72% of spot samples show H₂S levels at 0 ppb.

We have also tested new chemical treatment, new ionization air treatment and are planning to add a continuous odour monitoring system to continue improving our odour management. These improvements have been made in coordination with Alberta Environment and Parks.

Gold Bar lift station

As part of the Gold Bar WWTP rehabilitation initiatives funded in the 2017-2021 Performance Based Regulation Capital Plan, approved by City Council, a sanitary sewer line coming into the plant from 21 homes near the plant is being redirected to a new lift station, which is being constructed inside the fence line of the plant.

The redirection will take place along the utility corridor just outside the south fence line of the plant and is expected to be completed between November 2018 and February 2019.

The current multi-use trail will remain open, and this project should have minimal impact on the community besides some construction activity and limited tree removal in the construction area. EPCOR has engaged the community on this project.

Diversion structure structural rehabilitation near 50th Street

On 50th street near the entrance to Gold Bar WWTP, there is a diversion structure that transports raw wastewater from the drainage system to Gold Bar WWTP's influent channels.

EPCOR will be rehabilitating and upgrading the concrete structural components of this structure. The construction area will extend towards 50th Street outside Gold Bar WWTP's current fence line. Capilano Park access will be maintained. Construction will be completed from September-May over the next two to three years.

2009 land swap agreement

The 2009 Gold Bar Transfer Agreement between the City and EPCOR recognized and provided for the re-location of non-processing buildings to the land outside of the fence line at the south edge of the plant. A land swap agreement was agreed to and remains in effect today.

Under all planning scenarios for future operations at Gold Bar WWTP, there will be a need to relocate non-processing buildings from the center of the plant to make room for increased processing capacity and to improve the on-site safety of staff.

Future Projects at Gold Bar

Operations Centre

As part of the EPCOR Water Services 2017–2021 Performance Based Regulation (PBR), Edmonton City Council approved \$19 million for an operations centre and associated parking.

- This project includes the development of a new non-processing building to house the control room and lockers needed to improve hygiene within the facility, and ensure the safety of staff. Re-locating these functions – inside the south fence line – also frees up space at the center of the plant.
- The project also included funding to relocate staff parking to the land between Gold Bar Park Road and the paved multi-use trail on the parcel of land that is to be transferred to EPCOR. Currently, parking is extremely congested at the Gold Bar site, which at any time, has a number of construction activities taking place.
- Development on this land parcel requires re-zoning approval from City Council. As part of the development process, EPCOR has been engaging the surrounding community through a mail out notification, an open house, a pop-up open house, stakeholder emails and phone calls, and one-to-one stakeholder meetings. Given public feedback, we are

presently developing additional options to address issues that have been raised. We will be bring forward alternatives and seek community feedback on these in 2019.

- As part of the re-zoning process, EPCOR will confirm that no wastewater processing infrastructure will be located on the parcel of land being transferred to EPCOR by the City.

Gold Bar WWTP has been a part of the community since it was put into service in 1956. We make it a priority to be a good neighbor – today and into the future, as we handle increasing flows from South Edmonton. We will continue working with the surrounding community to minimize potential impacts from our operations.

Gold Bar Integrated Resource Plan (IRP) – 2019 update

EPCOR is in the process of updating the Gold Bar WWTP IRP, and we plan to table this with Utility Committee for feedback in March or April of 2019. The IRP is a comprehensive road map for future capital planning at Gold Bar WWTP. It will inform capital plans for the 2022-2026 PBR and the next PBR cycle after that.

Biogas (“green gas”)

Large wastewater treatment facilities use biological anaerobic treatment processes to break down solids in the wastewater stream. Methane, a byproduct of this process, is considered a renewable source of natural gas or “green gas”.

At Gold Bar WWTP, we capture this biogas and use it for process heating year round and plant heating in the winter. Currently, the balance of biogas produced in the digestion process that is not used for plant heating, is released into the atmosphere through a flare stack.

We view this biogas as an environmentally friendly source of renewable energy and have been looking for ways to use it rather than flare it. With reduced flaring, the community benefits from a darker night sky, less noise and less odour in the atmosphere. We are currently pursuing opportunities to remove impurities from the biogas to fire an electric turbine (co-generation) or re-injecting the renewable green gas into the network.

If a commercial business case for this project is viable, we will be looking to move forward with this project in 2019. As we proceed through development and permitting process, we will engage the surrounding community to share information and obtain feedback.

Like the Ostara phosphorus and nitrogen removal facility that was officially opened at EPCOR's Clover Bar facility on September 12, 2018, a green gas capture and cleaning facility would demonstrate what can be done to capture valuable and renewable products from the waste stream.