



Protecting the E.L. Smith Water Treatment Plant from Flooding

Project Newsletter & Opportunities for Input

MAY 2021

We are working to protect the E.L. Smith Water Treatment Plant from the impacts of a one in 500 year flood. In the event of a major flood, we want to ensure we limit potential damage to the facility and can resume water treatment to the community as quickly as possible afterwards. **You are receiving this information as you are located near the plant and we would like your input on what we should consider as we plan and design this work.**

In this project newsletter, you will find information about:

- **why this work is needed;**
- **the early design options at E.L. Smith;**
- **how you can get involved and provide input into the project design; and**
- **next steps for the project.**

A one in 500 year flood is a way to talk about probability. It's tempting to think this means a flood this big should only occur once every 500 years. However, a 500 year flood could happen any time, even twice in a row! The biggest flood on record since Edmonton has been keeping official records is from 1915, a one in 200 year flood.

WATER TREATMENT PLANTS

Both of Edmonton's water treatment plants (E.L. Smith and Rossdale) are located in the river floodplain where they bring untreated water out of the North Saskatchewan River, treat it, and pump safe clean drinking water out to homes and businesses located in Edmonton and surrounding communities. As these river valley locations present an increased chance of flooding, we have a long-term plan in place to protect the source of Edmonton's drinking water supply.

By taking action now, we can manage the risk associated with changing weather patterns and ensure that customers continue to receive the same clean, safe and reliable water service for years to come.

DID YOU KNOW?

Together, the Rossdale and E.L. Smith Water Treatment Plants provide safe, clean drinking water to almost a third of Alberta's population.

WHY IS THIS NEEDED?

We're planning for the future at our E.L. Smith Water Treatment Plant. Part of that planning involves looking at changes in weather trends. Over the next 30 years, climate change modelling predicts that extreme weather will be more frequent and air temperatures will increase. For the North Saskatchewan River, this is expected to lead to higher flows in the winter and spring, with earlier or multiple spring runoff periods, and lower flows during the summer and fall.

While river water quality and river flow is expected to change due to increased extreme weather events and climate change, we have a long-term plan in place to ensure we can successfully manage these changes.

This project is part of that plan and will ensure we are prepared for a major flood event by:

- 1. Limiting potential damage to the E.L. Smith Water Treatment Plant; and**
- 2. Ensuring we can resume treating Edmonton's drinking water as quickly as possible after a flood.**

WHAT WE ARE PLANNING

To help protect the E.L. Smith Water Treatment Plant in the event of a major flood, we have a long-term plan in place to build the plant's resiliency. This work is being supported by more than \$21 million in federal and provincial grant funding. We have received funding through the Alberta Community Resilience Program and the federal Disaster Mitigation & Adaptation Fund.

Preparing the water treatment plant for a major flood event will include three kinds of work:

1. Increasing protection to critical assets, or relocating them.
2. Preventing river water from backing up into the water treatment plant through drainage pipes that discharge to the river.
3. Developing barriers to protect equipment and water reservoirs if the river overtops its banks.

The first two categories of work will all take place within existing buildings on the site and within our fence line. The third category of work (installing flood barriers) will be visible to those living near and recreating around the E.L. Smith plant. We want your feedback on this work so that we can ensure we incorporate your ideas into what these flood barriers look like and how you experience them in your community.

Protecting critical assets

Some critical assets at our E.L. Smith site include transformers that supply power to the water treatment plant, underground potable water reservoirs, and underground tanks that contain additives used in the water treatment process. Others include pumps, sensors and valves that could fail if they were to get wet. We're working on a comprehensive risk assessment and a review of flooding pathways to ensure that equipment that is critical to the operation of the plant is protected in case of a major flooding event. This work may involve installing barriers, moving equipment up higher, or making equipment submersible.

Preventing backflow from waste stream outfalls

Our water treatment plants have piping systems that collect rainwater and process water to be returned to the river. Today, those are open outfalls that could allow river water to flow in the opposite direction during a flood. If that were to happen, we would see surcharging from manholes that could allow water to reach sensitive equipment. We would also see untreated river water backing up into the treatment plant, contaminating the process with dirty water and the harmful microorganisms we are trying to remove. We plan to install valves in the piping systems that we can close in the event of an elevated river level to prevent this from happening.

Building flood barriers in key locations

We are early in the planning and design process to determine how to protect the E.L. Smith plant in a situation where the North Saskatchewan River overtops its banks. The results of our preliminary engineering and design studies show that permanent flood barriers will be needed in key locations around the E.L. Smith Water Treatment Plant to ensure that Edmonton's water supply is protected in the event of a major flood.

Using a combination of earthen embankments and flood walls can help minimize impacts to existing treed areas. Design concepts for discussion are being coordinated with other initiatives such as the City's Ribbon of Green master plan to ensure that the location and design of these barriers coordinate with other plans in the area.



Looking south west from the recreational trail located across the river from the E.L. Smith Water Treatment Plant. The yellow shaded area shows the approximate height of the flood barrier required to protect the plant. See Section A on the next page for more details.



LEGEND

-  Flood wall
-  Earthen embankment
-  Existing facilities

Low Lift
Pumphouse

A



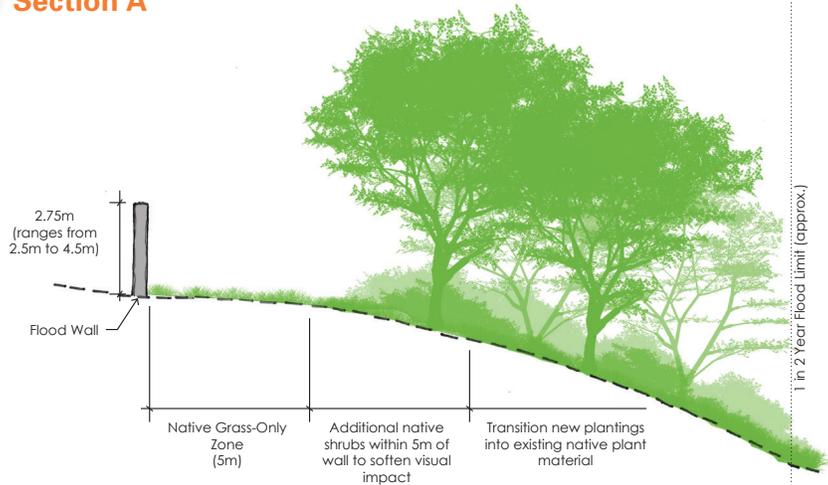
The locations where flood barriers are needed are shown here.

Two different types of flood barriers at E.L. Smith can be used to meet the requirements of planning for a major flood event. These could include:

- landscaped embankments; and
- flood walls.

A cross section is included below. Please note that we are early in the planning process and these details may change as our plans progress.

Section A



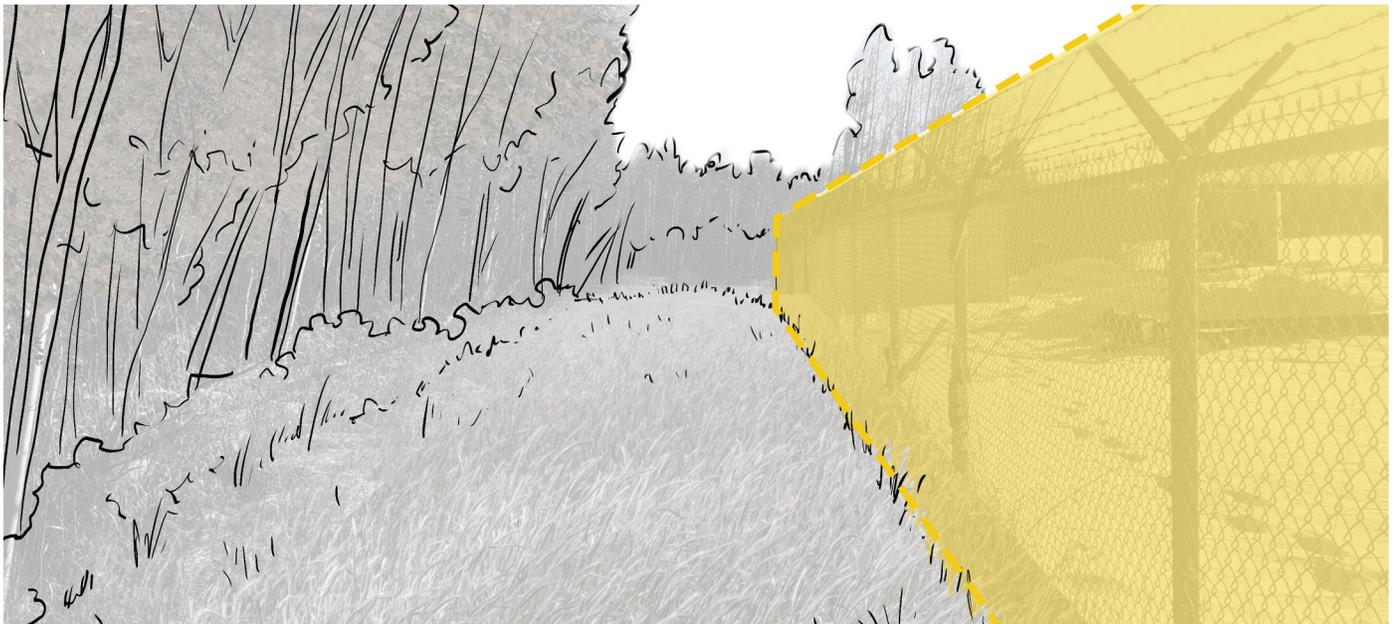
A flood wall is the proposed solution for Section A. A wall here would protect the critical river water intake infrastructure. The space between the flood wall and the existing trees could be planted with native grasses. Additional native shrubs could be planted near the existing trees to soften the visual impact.

WE WANT TO HEAR FROM YOU

We want to know more about how you use the space around the E.L. Smith Water Treatment Plant – and what you would like us to consider as we plan how these flood barriers will look and be experienced by those who live, work and recreate in the areas around our plant.

This public engagement process is being done to the "Refine" level in our public engagement framework - meaning that we are seeking your input to help us improve the quality of the project design.

Do you have any amenities you would like to see incorporated into the design of the flood barriers? Examples could include seating, murals or interpretive signage. If so, send us an email with your ideas (waterprojects@epcor.com) or join us at one of our workshops.



Looking southeast along the existing fence line. The yellow shaded area shows the approximate height of the flood barrier required to protect the E.L. Smith Water Treatment Plant. See Section A on the previous page for more details.

YOU ARE INVITED TO A VIRTUAL WORKSHOP

Please join us to discuss how we can ensure our plans to protect the E.L. Smith Water Treatment Plant meet the needs of your community. This will be a collaborative session – we want to work with you to determine what our flood barriers around the E.L. Smith plant should look and feel like.

We will cover the same material in both sessions, so please choose the time that works the best for you. You can register at epcor.com/elsmith or by using your smart phone to scan the QR code for the session you are interested in attending.



June 10, 2021
9:30 – 11:30 a.m.



June 15, 2021
6:30 – 8:30 p.m.

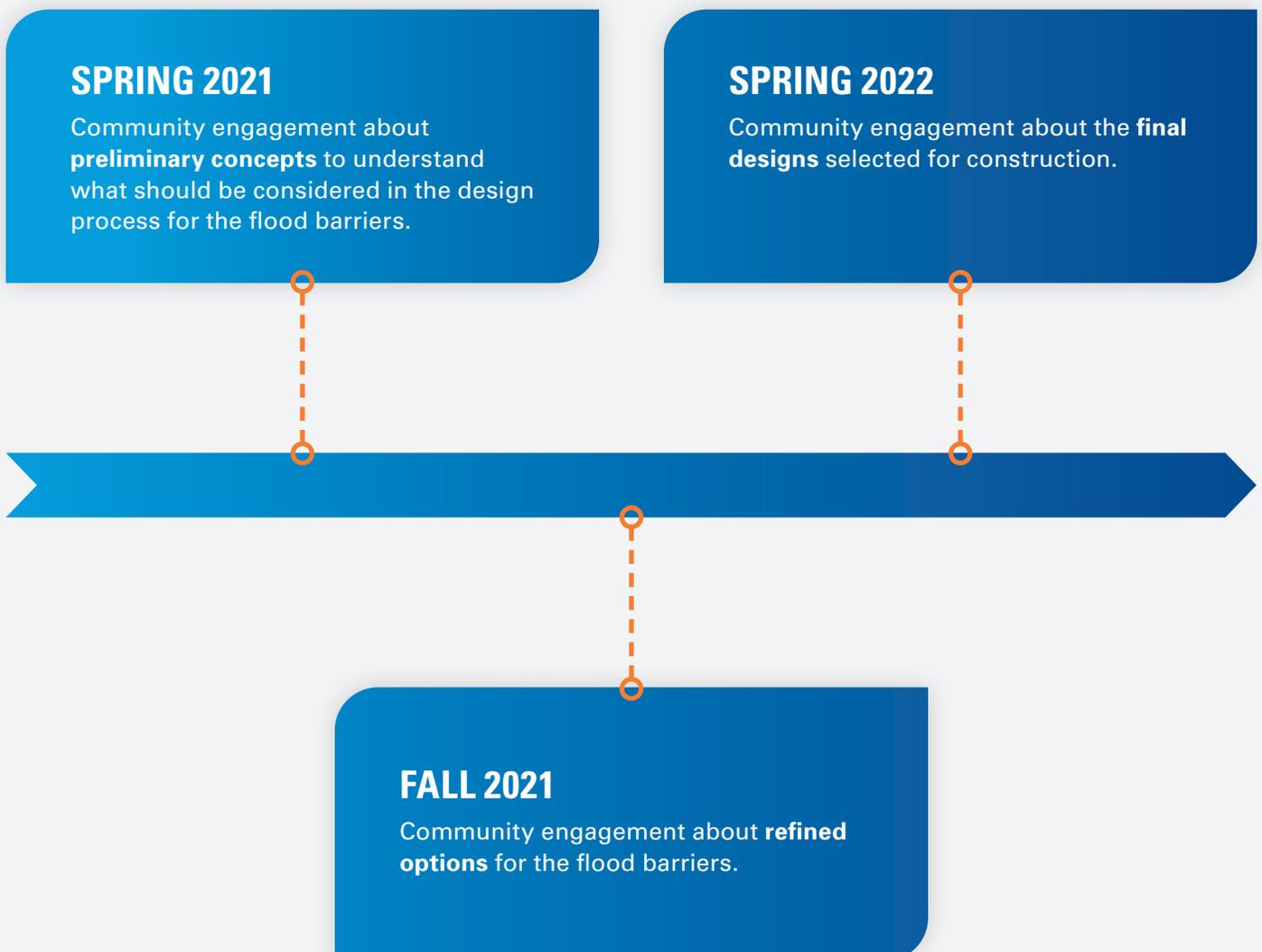
INDIGENOUS ENGAGEMENT

The banks of the North Saskatchewan River, where both Edmonton’s water treatment plants are located, have been gathering places since time immemorial. E.L. Smith is located on the former reserve lands of Enoch Cree Nation within the traditional territory of the Blackfoot, the Cree, the Dene, the Nakota Sioux, the Saulteaux and later the Métis. EPCOR acknowledges this history and values the perspectives of those with traditional ties to these lands.

We are committed to respecting and protecting archaeological resources throughout our project design and construction processes. All ground disturbance work at the plant will undergo review and approval by Alberta Culture, Multiculturalism and Status of Women. We are committed to ensuring that Indigenous Nations and communities are involved in monitoring any archaeological work required during this project. In addition to our conversations with those who live near and recreate around the E.L. Smith Water Treatment Plant, we will engage Indigenous Nations and communities with an interest in these lands throughout the life of this project.

PLANNING TIMELINE

Over the upcoming months, we want to work with you to understand how we can best integrate these flood barriers into your community. We are still in the early planning stages for the flood mitigation work at our water treatment plants. At this time we anticipate construction to begin in 2024. While we will ask you for specific input at the stages noted on the timeline, we are committed to working with you throughout the planning process. Your input will be used alongside technical requirements for the project to create designs that are aligned with community values, are suitable for the E.L. Smith site, and are mindful of costs to water ratepayers.



WHAT DOES THE E.L. SMITH WATER TREATMENT PLANT DO?

E.L. Smith is one of Edmonton's two water treatment plants, and has been providing water to the city since 1976. Water from the North Saskatchewan River is treated, tested and stored onsite in reservoirs until it is needed. Clean drinking water is then pumped out through the transmission and distribution system to homes and businesses throughout the city.



GET INVOLVED!

Your questions, feedback and input are important to us. We want to hear from you so that we can design

flood barriers to protect the E.L. Smith Water Treatment Plant that integrate into your community as much as possible while being mindful of costs. Please contact us:

Phone: (780) 412-3599

Email: waterprojects@epcor.com

Visit: epcor.com/elsmith

Due to COVID, much of our community engagement has moved online. Please contact us if these digital methods do not work for you - we would be happy to discuss the project with you over the phone at your convenience.