



WELCOME TO THE PRINCE ALBERT PULP MILL PUBLIC INFORMATION SESSION

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PRINCE ALBERT
PULP INCORPORATED
A PAPER EXCELLENCE COMPANY

WE GRATEFULLY
ACKNOWLEDGE THAT
WE OPERATE ON THE
TRADITIONAL LANDS
REFERRED TO AS TREATY
6 TERRITORY AND THE
HOMELAND OF CREE, DENE,
DAKOTA AND MÉTIS NATIONS



ABOUT PAPER EXCELLENCE

Paper Excellence is a diversified manufacturer of pulp and paper, including printing and writing, packaging, and specialty papers. We operate six facilities in Canada producing over 2.8 million tonnes annually with a workforce of more than 2,400.

PRODUCTS

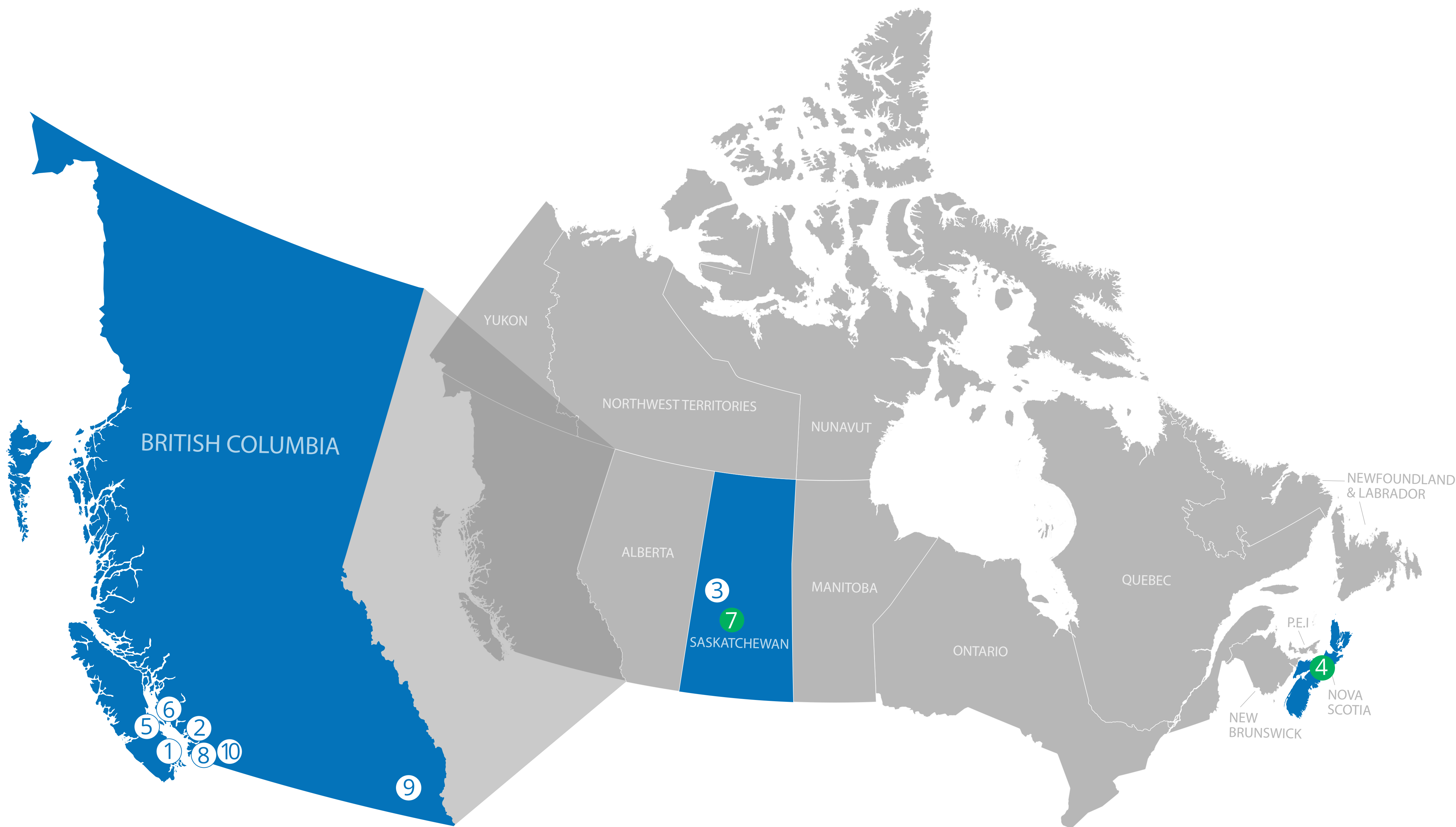
Our pulp mills manufacture high-quality softwood and hardwood Kraft chemical and mechanical pulps, that in turn are used to make packaging, papers, tissues, towels, and other specialty products. Our paper mills manufacture superior-quality specialty, printing and writing, and packaging papers for retailers, commercial printers, publishers, and customers who convert our products into their own.

ECONOMIC IMPACT

We have a significant economic impact in Canada, where our operations are important drivers of local and regional economies. We create approximately \$3.7 billion annually in economic activity through wages, tax payments, purchases of goods and services, and support of indirect employment.

LEADERSHIP

Paper Excellence was founded in 2006 and is a privately held company. The Vancouver-based management team has decades of experience in the pulp and paper industry.



CANADA

- 1

CROFTON / BRITISH COLUMBIA / 590 EMPLOYEES
Production - 334,000 T paper / 380,000 T Kraft pulp
Economic Contribution - \$1 billion annually
Local Taxation - \$4.6 million annually
- 2

HOWE SOUND / BRITISH COLUMBIA / 380 EMPLOYEES
Production - 455,000 T Kraft pulp
Economic Contribution - \$350 million annually
Local Taxation - \$1.5 million annually
- 3

MEADOW LAKE / SASKATCHEWAN / 190 EMPLOYEES
Production - 420,000 T BCTMP pulp
Economic Contribution - \$400 million annually
Local Taxation - \$1 million annually
- 4

NORTHERN PULP (Curtailed) / NOVA SCOTIA / 330 EMPLOYEES
Production - 280,000 T Kraft pulp
Economic Contribution - \$315,000 annually
Local Taxation - \$500,000 annually
- 5

PORT ALBERNI / BRITISH COLUMBIA / 310 EMPLOYEES
Production - 280,000 T paper
Economic Contribution - \$500 million annually
Local Taxation - \$4.3 million annually
- 6

POWELL RIVER / BRITISH COLUMBIA / 360 EMPLOYEES
Production - 334,000 T paper
Economic Contribution - \$500 million annually
Local Taxation - \$3.4 million annually
- 7

PRINCE ALBERT (Curtailed) / SASKATCHEWAN /
Production - 340,000 tonnes of NBSK (Northern Bleached Softwood Kraft) pulp
Economic Contribution - \$300 million annually
Local Taxation - \$1.3 million annually
- 8

RICHMOND HQ / BRITISH COLUMBIA / 160 EMPLOYEES
- 9

SKOOKUMCHUCK / BRITISH COLUMBIA / 280 EMPLOYEES
Production - 280,000 T Kraft pulp
Economic Contribution - \$400 million annually
Local Taxation - \$400,000 annually
- 10

SURREY DISTRIBUTION CENTRE / BRITISH COLUMBIA / 80 EMPLOYEES



PRINCE ALBERT MILL

WHERE IS THE PROJECT TODAY?

The original vision for the mill to produce dissolving pulp had to be abandoned after trade actions were imposed. In 2019, our team began actively developing a start-up business plan for Prince Albert based on producing Northern Bleached Softwood Kraft (NBSK) pulp. The study work has estimated the cost to rebuild and restart the mill is \$550 million.

This is the first major Kraft mill rebuild project in Canada since the early 1990s. Upon completion, it will be the most technologically advanced Kraft mill in Canada.

There are three distinct work streams in progress:

Engineering:

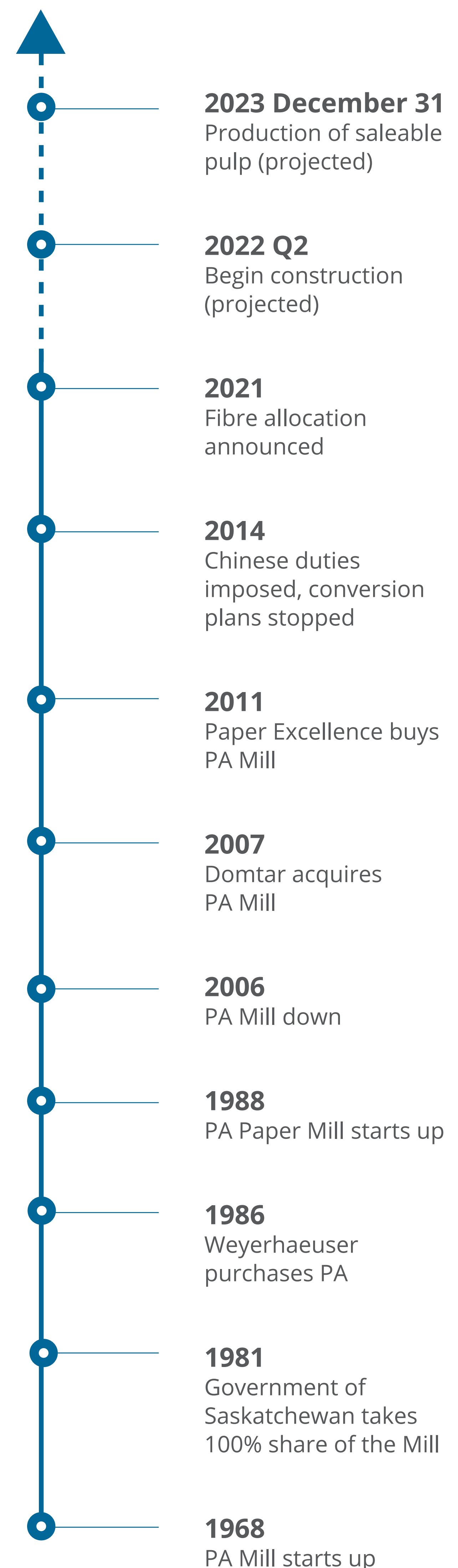
The engineering team is reviewing the technical aspects of the new equipment being proposed for the mill and developing the scope of work to confirm the condition of existing equipment.

Indigenous Partnership Development:

The Indigenous Relations team is engaging with 16 Saskatchewan First Nations and identifying their interests in participating in future operations from forest management/operations through to pulp production. In October 2021, Paper Excellence signed our first Letter of Intent with two Saskatchewan First Nations.

Regulatory and Policy:

This team is working through all the regulatory requirements to build and operate the mill. The Saskatchewan government is actively engaged through a Working Group reporting to Bronwyn Eyre, Minister of Energy and Resources, and Jeremy Harrison, Minister of Trade and Export Development.





INVESTING IN SASKATCHEWAN'S FOREST INDUSTRY INFRASTRUCTURE

Lumber is a renewable building material that can displace more carbon intensive materials like concrete and steel. Lumber production generates a great volume of chips, shavings and bark during sawmilling. In addition, during harvesting there is wood that cannot be turned into lumber including small diameter trees and treetops. This material is ideal feedstock for our processes and complements the sawmill industry by giving them an additional revenue stream. It also minimizes the amount of material that is left in the forest after harvesting. When the Prince Albert mill restarts, it will consume an estimated 1,849,000 m³ of fibre annually.

BUILDING ON OUR SUCCESS AT MEADOW LAKE

In 2007, Paper Excellence bought Meadow Lake Mechanical Pulp. At the time, the mill had never generated a return on the government's investment. Today, Meadow Lake is a leading producer of high quality Bleached Chemi Thermal Mechanical Pulp (BCTMP). It employs 192 full time employees, supports 740 indirect jobs in Saskatchewan, and makes an annual economic contribution of \$400 million.



HOW WILL SASKATCHEWAN BENEFIT FROM OUR INVESTMENT?

Working with the Ministry of Energy & Resources we estimate that the mill restart will create 1,650 full-time jobs including direct, indirect and induced employment in Prince Albert and the wood supply areas, primarily north of Prince Albert.

The new wood supply chain will create 500+ new jobs in Indigenous and rural communities including foresters, accountants, clerical staff, technicians, truck and equipment operators, chip plant operators, tradespeople and silviculture workers.

Our investment in Prince Albert will create an annual economic benefit of \$300 million for the province in addition to the \$1.3 million in property taxes paid to the City of Prince Albert.



STEWARDSHIP THROUGH INDIGENOUS PARTNERSHIPS

OUR EXPERIENCE

Paper Excellence has more than 10 years of positive experience working in partnership with the Meadow Lake Tribal Council through NorSask and Mistik Management Limited. In addition, as a shareholder in Sakâw Askiy Management Inc. and through conducting our forestry operations, we have had significant interaction with other tribal councils and individual First Nations. From that interaction we have developed a good understanding of both the successes and challenges facing Saskatchewan's Indigenous Peoples.

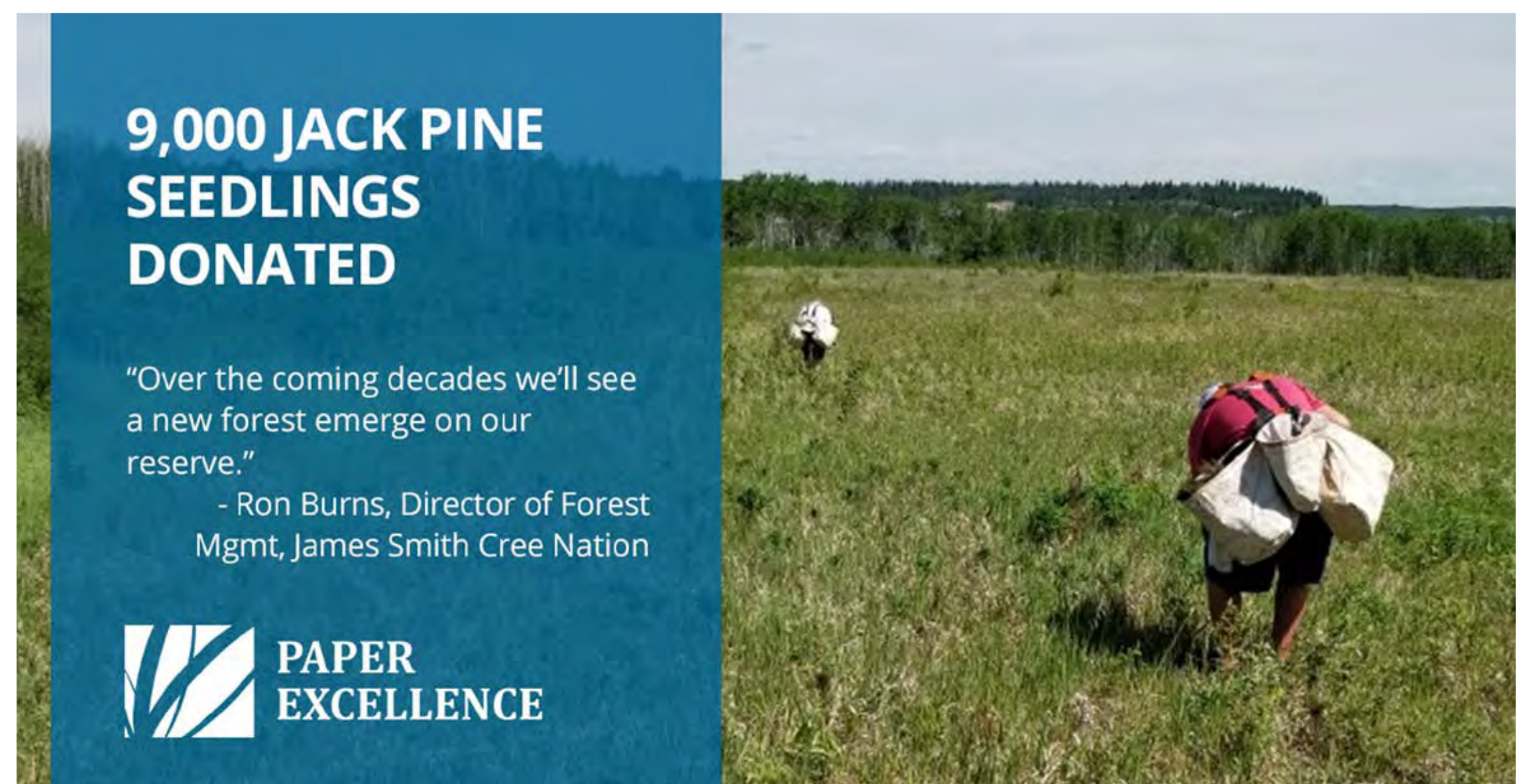
ECOSYSTEM MANAGEMENT

Paper Excellence respects the cultural and ecological value of the North Saskatchewan River Delta to Indigenous Peoples. Our Environmental Assessment process highlights only one part of a deeper long-term relationship building process with downstream Indigenous communities.

ECONOMIC OPPORTUNITIES

At least 15 Indigenous communities will see increased forestry activity on their traditional territories. They have or will hold Crown fibre allocations and will participate in forest management, harvesting and related supply chain activities.

This project will take Saskatchewan's leading Indigenous participation in the forest sector to an even higher level of integration and become the Canadian model for innovative partnerships in natural resource development.



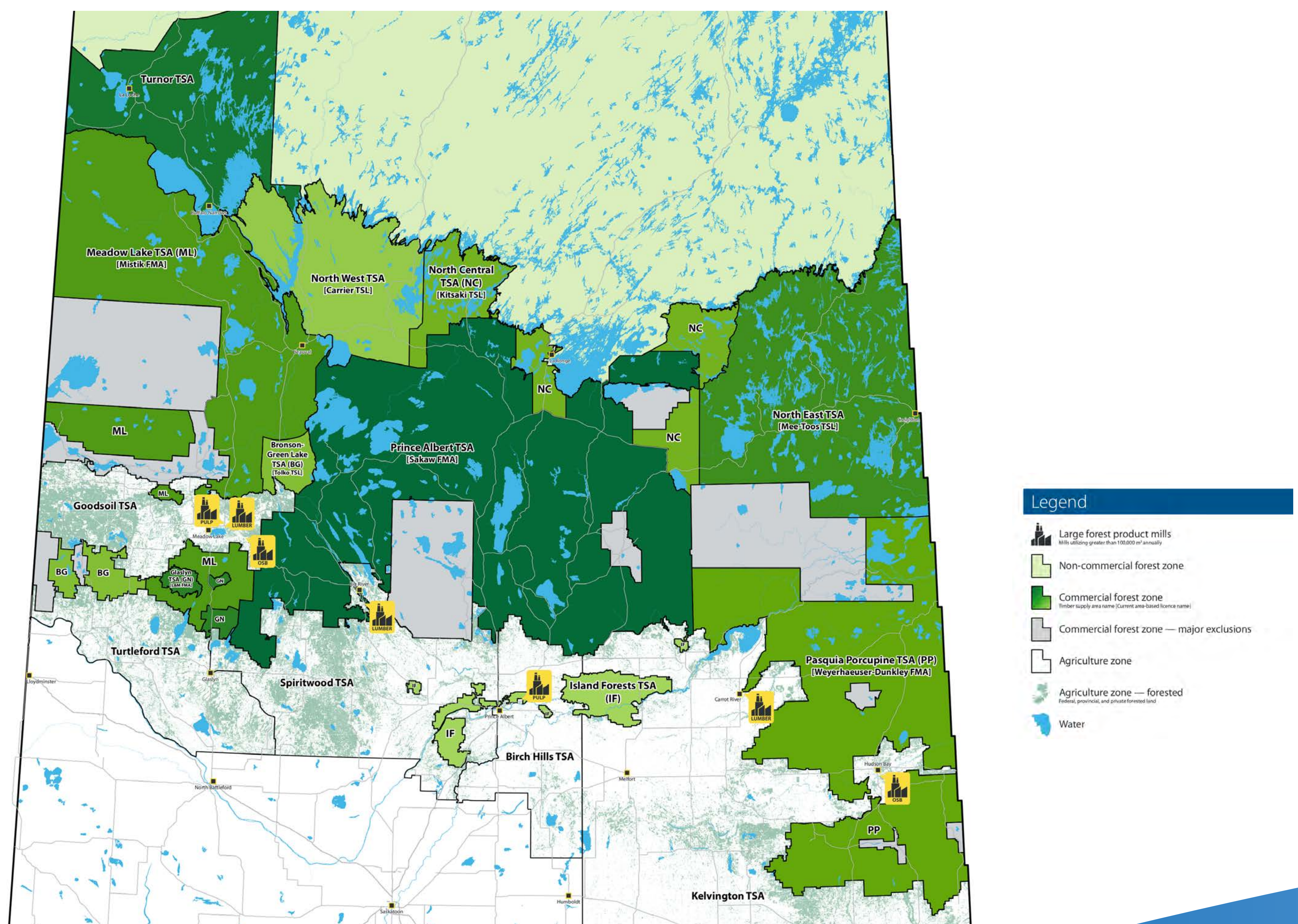
WOOD SUPPLY

Paper Excellence derives all our wood from well-managed, sustainable North American forests and all our mills have leading renewable energy and waste management practices. The approximately 1,800,000 m³ of wood required by the mill to produce 350,000 tonnes of Kraft pulp annually will be sourced in Saskatchewan.

PRINCE ALBERT MILL'S WOOD SUPPLY

- Direct timber volume allocations from the provincial government collectively total 1,033,564 m³, providing 57.4% of the pulp mill's total wood supply needs at capacity.
- Direct timber volume allocations to Paper Excellence include providing a Term Supply License (TSL) to Paper Excellence solely or with a partner forest harvesting group for volume or area based allocations. These direct timber allocations include the following areas: Prince Albert Forest Timber Supply Area (TSA), North Central TSA, North East TSA, North West TSA, and Crown Agriculture Lands.
- Additional wood in the form of wood chips will be provided through commercial agreements between Prince Albert Pulp Inc. and individual companies and landowners that own/manage the forest resource. Other sources are sawmill wood chips, other timber supply areas (i.e., saw log tops), and private landowners.

Considering the above allocations, the total volume of wood available for the Prince Albert pulp mill has been estimated to be 1,918,129 m³, which is 106.6% of the wood required at capacity (SK Govt 2021).



NEW FIBRELINE

The term “fibreline” describes the equipment that directly contacts the pulp from wood chip to a slurry of bright, white fibres. It is the heart of the mill and the most expensive portion of the project. It is designed to match the capacity of the existing recovery boiler and will produce 350,000 metric tonnes of bleached pulp annually.

The fibreline design maximizes the recycling process water and minimizes waste. This will reduce the mill’s water consumption by 40%, improve energy efficiency, reduce emissions and increase the product yield on wood.

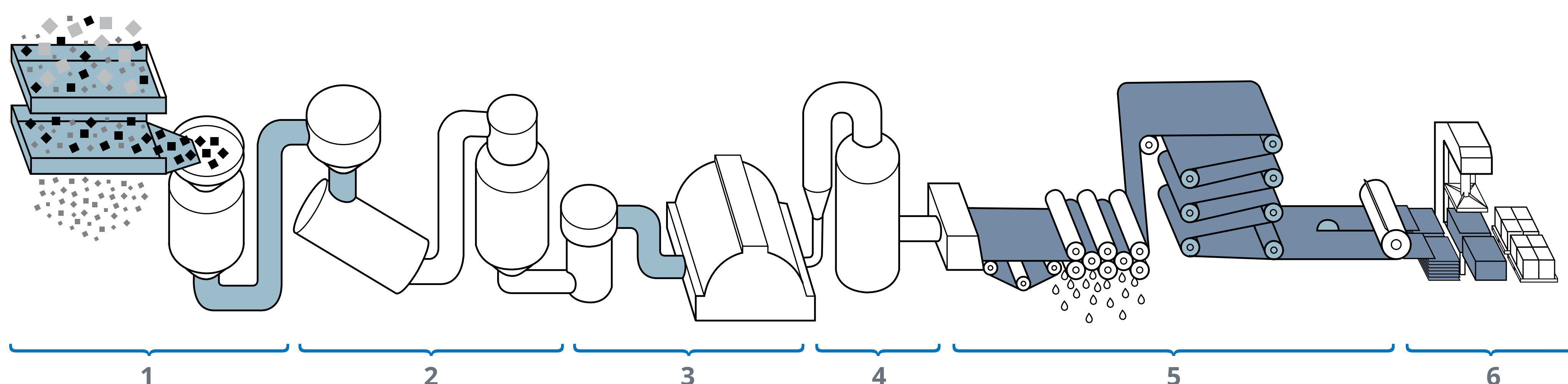
The state-of-the-art design incorporates the use of oxygen in an oxygen delignification stage which maximizes the amount of lignin removed while preserving the strength of the fibre before it enters the bleach process. This minimizes the amount of chemicals required to achieve the brightness demanded by the global market.

The photo to the right shows the six planned construction sites outside the legacy mill footprint, including the new fibreline building.



Photo above: Six construction sites outside the legacy mill footprint: **1.** Fibreline building; **2.** Wood chip stacker reclaimer; **3.** Secondary clarifier; **4.** Activated treatment basin; **5.** Diversion basin; **6.** Primary clarifier.

THE KRAFT PULP PROCESS



1 WOOD CHIPS

Kraft pulp (a type of chemical pulp) is made using raw wood (both soft wood and hard wood) chips which are pre-steamed in a steaming vessel. Steamed chips are then cooked inside a pressurized digester with a combination of chemicals and heat to dissolve the lignin glue which holds the wood fibres together.

2 DIGESTER AND BLOW TANK

The digester’s pressure is relieved into a blow tank which separates the chips into unbleached pulp fibre.

3 SCREEN AND WASHING

Residual chemicals are removed and recycled in the brown stock washing stage.

4 BLEACHING

The pulp is then bleached to its recognized bright white color in the bleach plant.

5 PRESSING AND DRYING

The bleached pulp is then diluted to a slurry where it is sprayed across a pulp machine screen to form the pulp mat and begin the dewatering process of pressing and drying in the dryer section.

6 PULP BALES

The dried pulp is then cut and baled into 400 kg bales on the baling line in preparation for transport around the world.

NEW EFFLUENT TREATMENT SYSTEM

There is an excess of water in the process which overflows to sewer, this stream is termed effluent and must be treated before it is discharged to the North Saskatchewan River. The treatment system is designed to meet the proposed Federal pulp and paper regulations for our industry.

This is achieved with a best available technology treatment system comprised of a series of equipment.

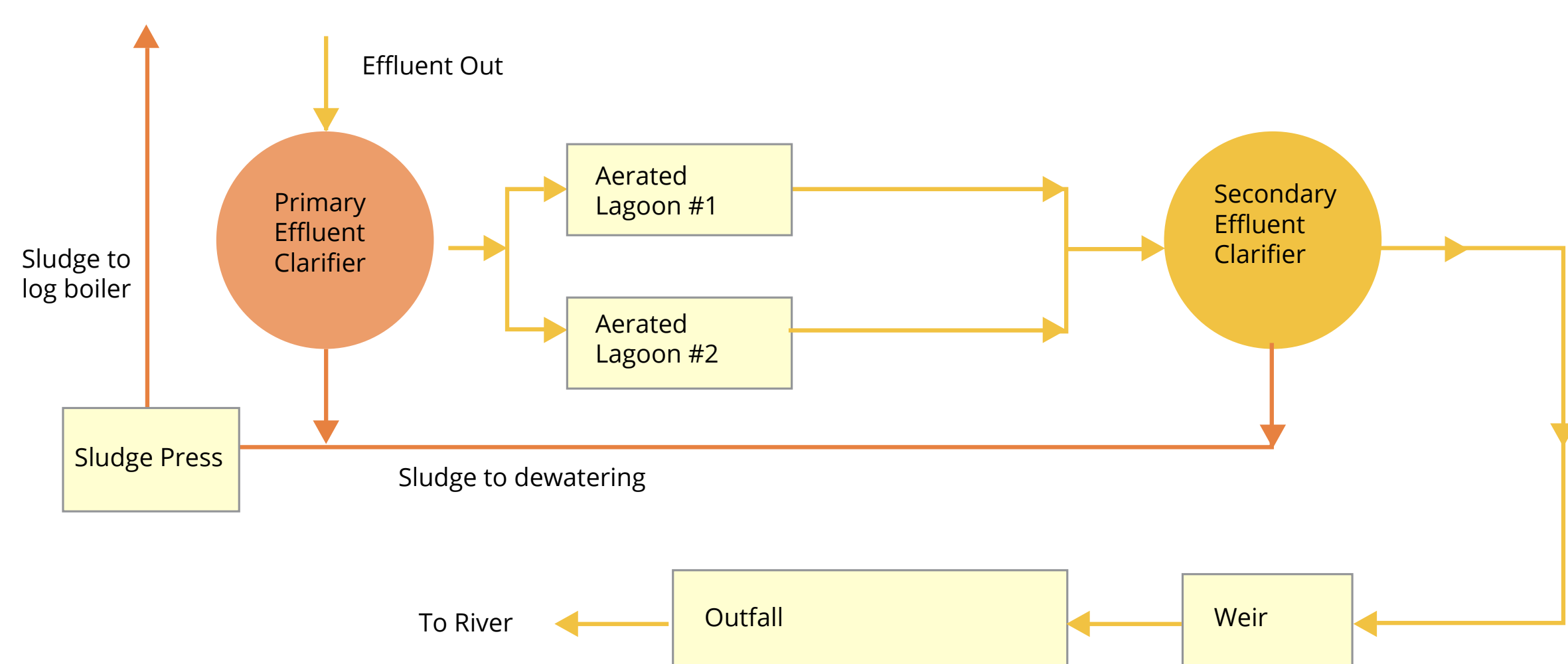
Primary Clarifier: this is a settling process to remove any solids in the effluent. The material that is removed is termed primary solids and is continuously removed.

Activated Sludge Basin: the effluent flows through a basin where it is mixed with microorganisms ("sludge") that feed on the effluent to remove any components that could impact the river.

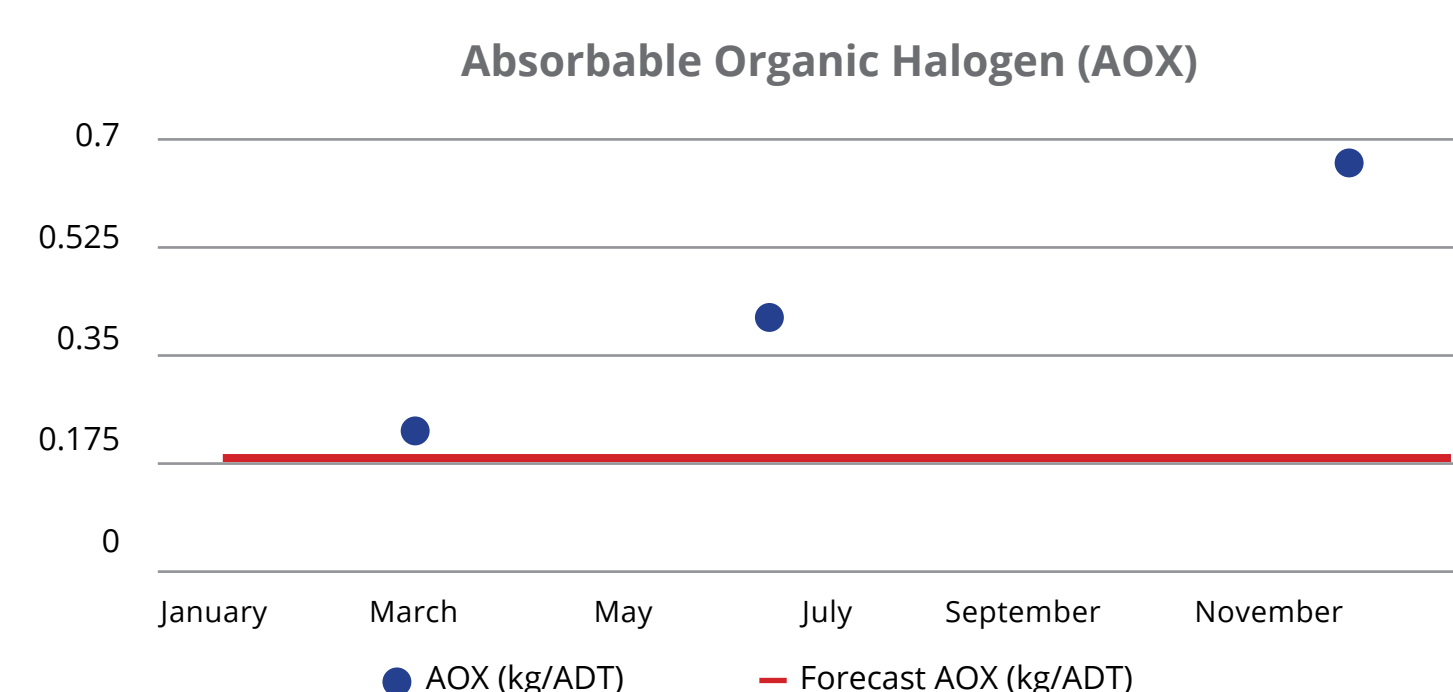
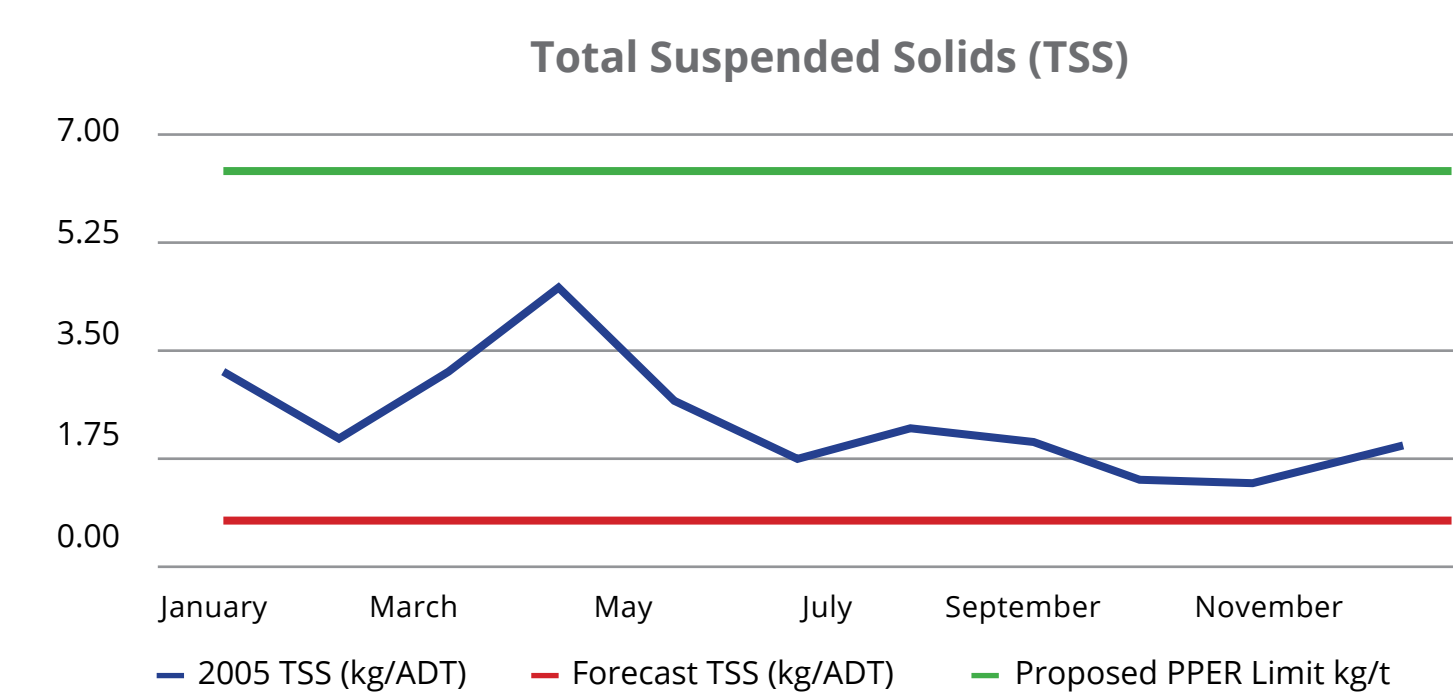
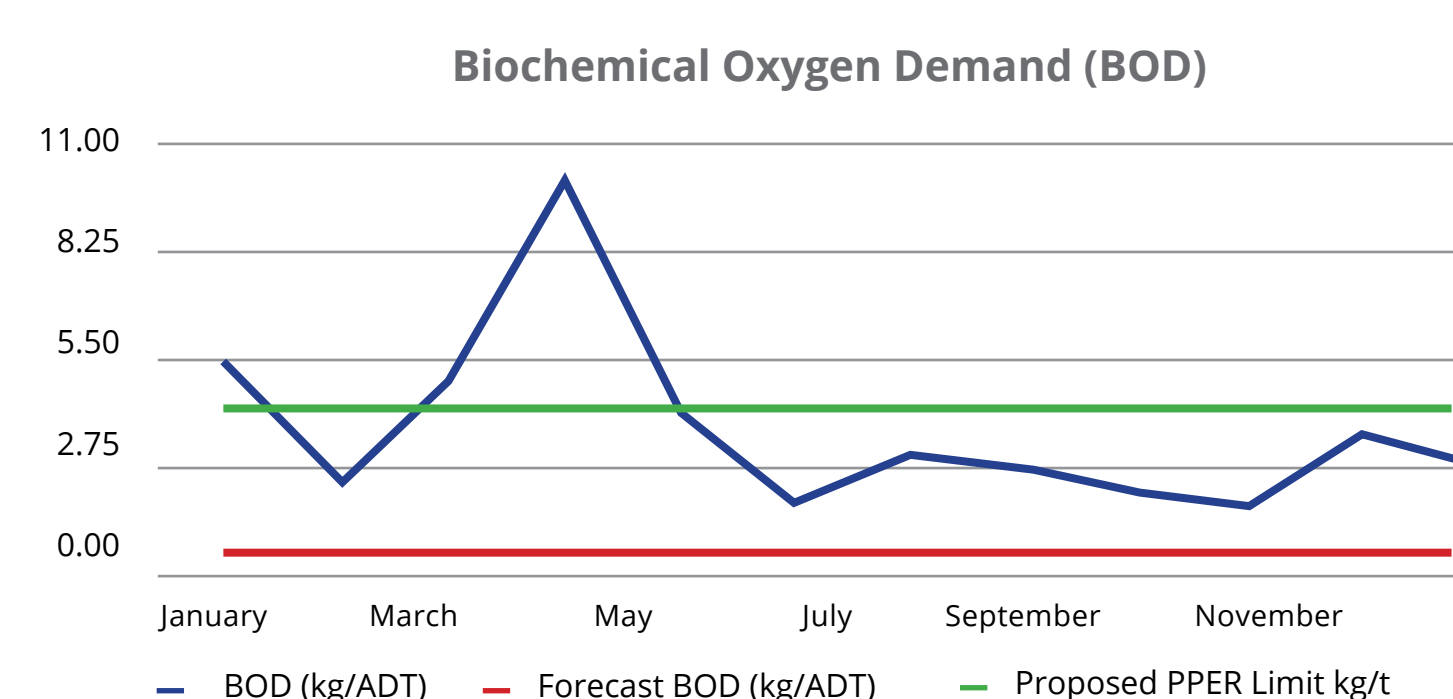
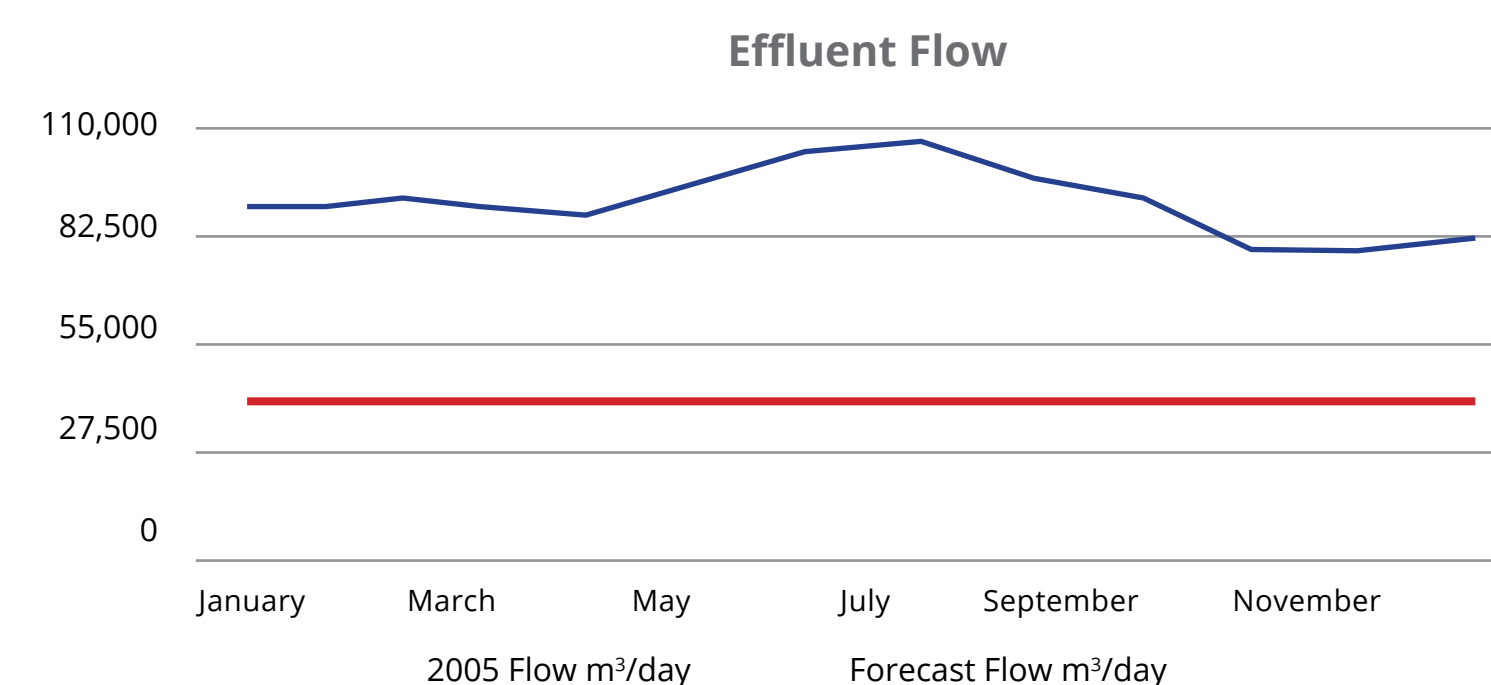
Secondary Clarifier: this is another settling process and works exactly like the primary clarifier however it is removing the "sludge" from the treated effluent to keep it free of solids.

Diffuser: the final step is to discharge the treated effluent to the River in a way that ensures it is mixed as quickly as possible to minimize the disruption to the temperature profile of the river. This is accomplished with an engineered diffuser.

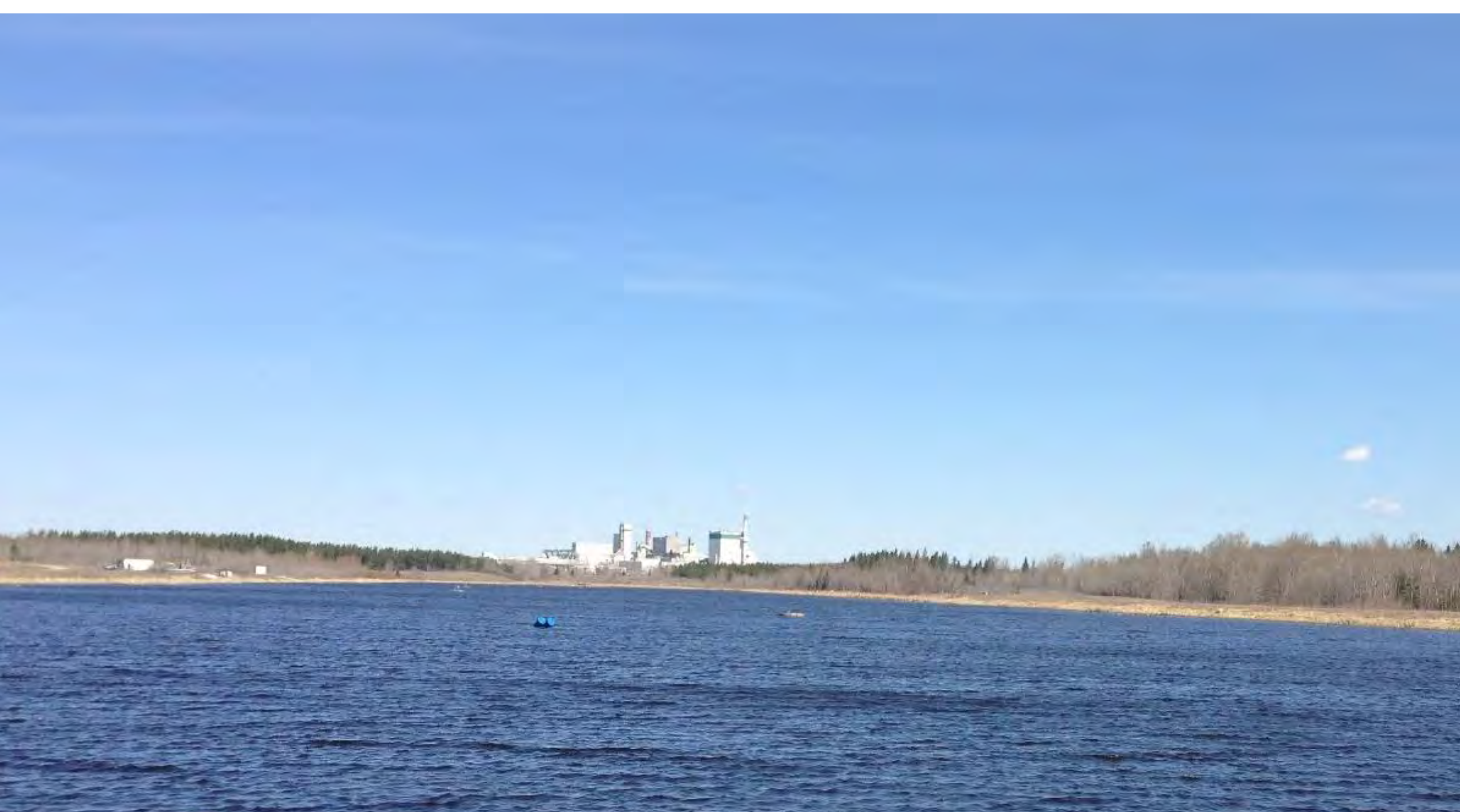
Drawing of a generic proposed system:



The improved technology is forecast to reduce the contaminants in the effluent to below those with the legacy treatment system.



The team recognizes that there is fog on the section of highway adjacent to the mill created by the North Saskatchewan River that may be intensified by the effluent treatment plant since it will operate at 30-40 C throughout the year to support the biology that is treating the effluent. This will be a consideration as we perform our detailed engineering.



Our investment in the fibreline greatly reduces the volume of effluent that we must treat. This allows us to fit the entire treatment system north of Highway 55 and therefore no longer use the Aerated Stabilization Basin (ASB) (see photo left). The ASB will be decommissioned over time and a new outfall will be constructed along the north bank of the river.



REFURBISHMENT OF EXISTING EQUIPMENT

There is lots of existing equipment at the site that will be refurbished to improve performance, reliability, and increase automation. For example, the Prince Albert mill has a best in class Recovery Boiler.

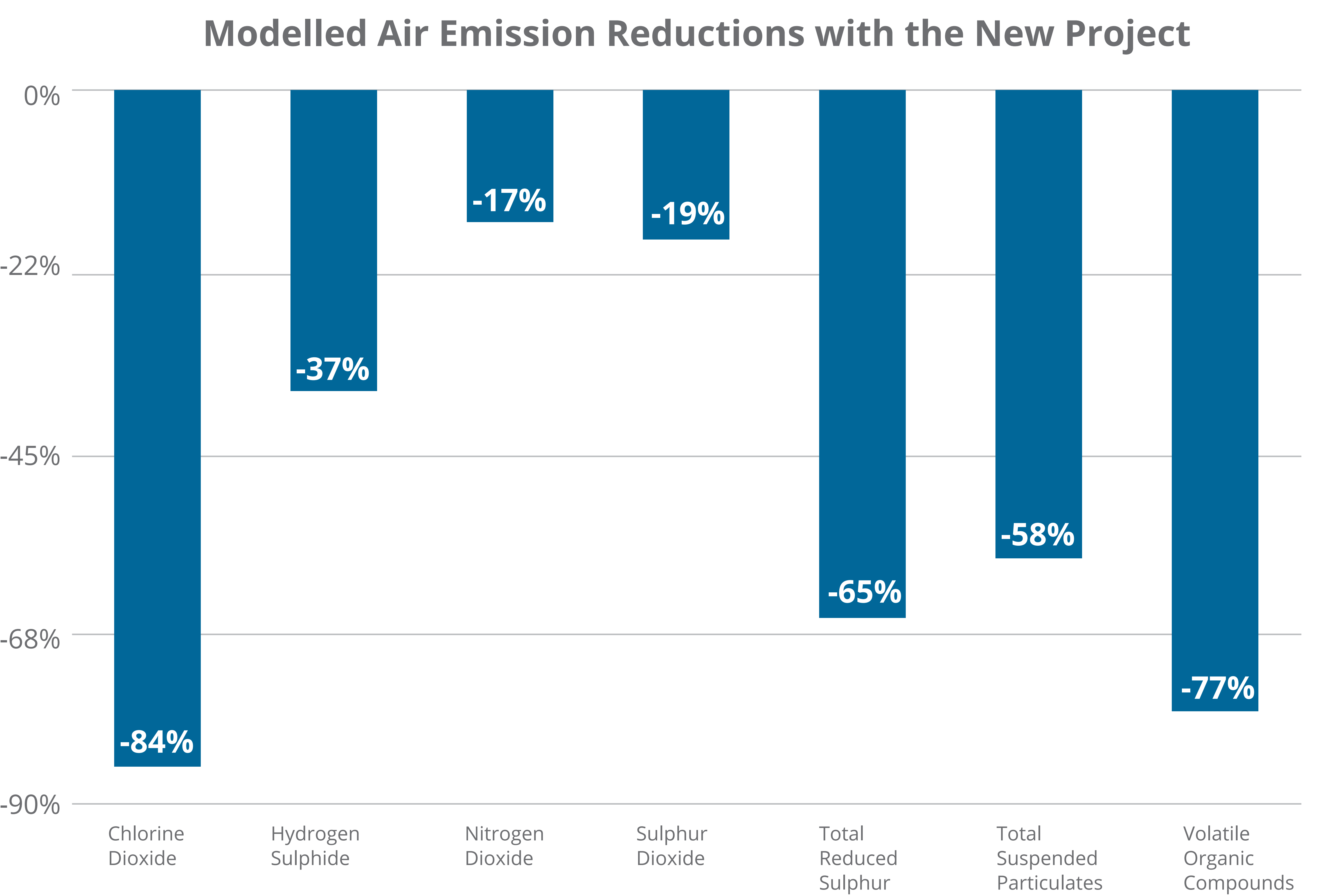
Other areas that we will refurbish include:

- Water systems (River water supply, potable water, and firewater)
- Evaporators/concentrators
- Bubbling fluidized bed biomass boiler
- Bark handling system
- Woodroom, including log infeed, slasher deck, all conveyors, chutes, turntables, debarking drum and chipper
- Chip thickness screening
- Chlorine Dioxide generator
- Air systems (instrument and mill)
- Feedwater, steam and condensate systems
- Turbine generator #1
- Turbine generator #2
- Electrical and natural gas supply infrastructure
- Recausticizing plant/lime kiln
- Offices, shops, warehouses, labs and control rooms
- Pulp storage
- Sewers and drains

REDUCED AIR EMISSIONS

The new technology incorporates the collection of any vents that contain pollutants of concern. We will also increase the collection of these streams in areas of the mill being refurbished. These streams are either scrubbed to remove pollutants as in the case of Chlorine Dioxide or returned to the process to be incinerated and the elements recovered and returned to the process in the case of any streams containing sulfur compounds.

Air dispersion modelling has been performed and has shown that with the technological upgrades we will meet the new provincial ambient air standards and there will be a significant reduction in emissions compared to when the mill was previously operated as shown in the table below.



SOLID WASTE MANAGEMENT

When the mill was operational in the past, the residuals from the settling ponds were removed at regular intervals and deposited in the site landfill along with ash produced by burning bark in the boiler.

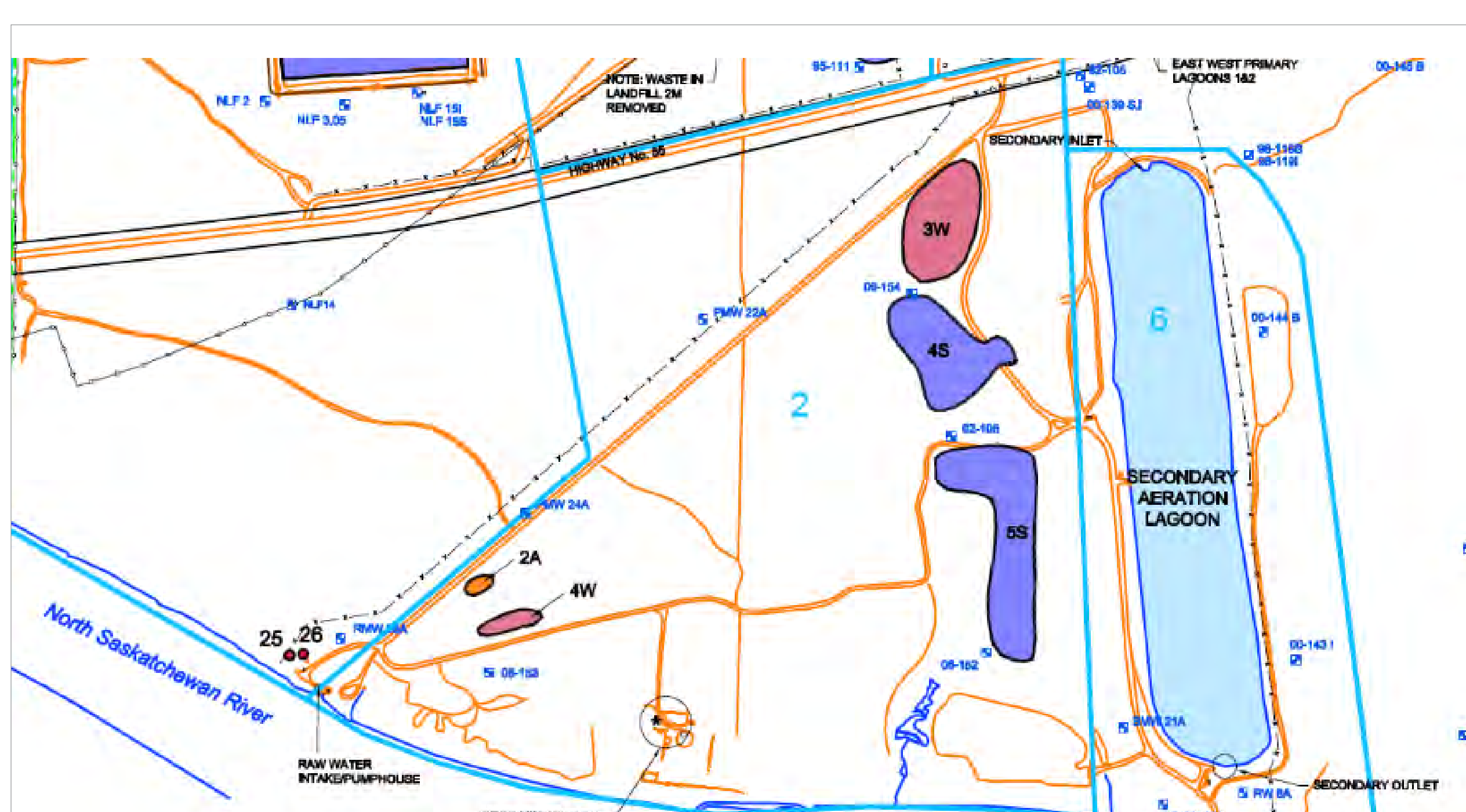
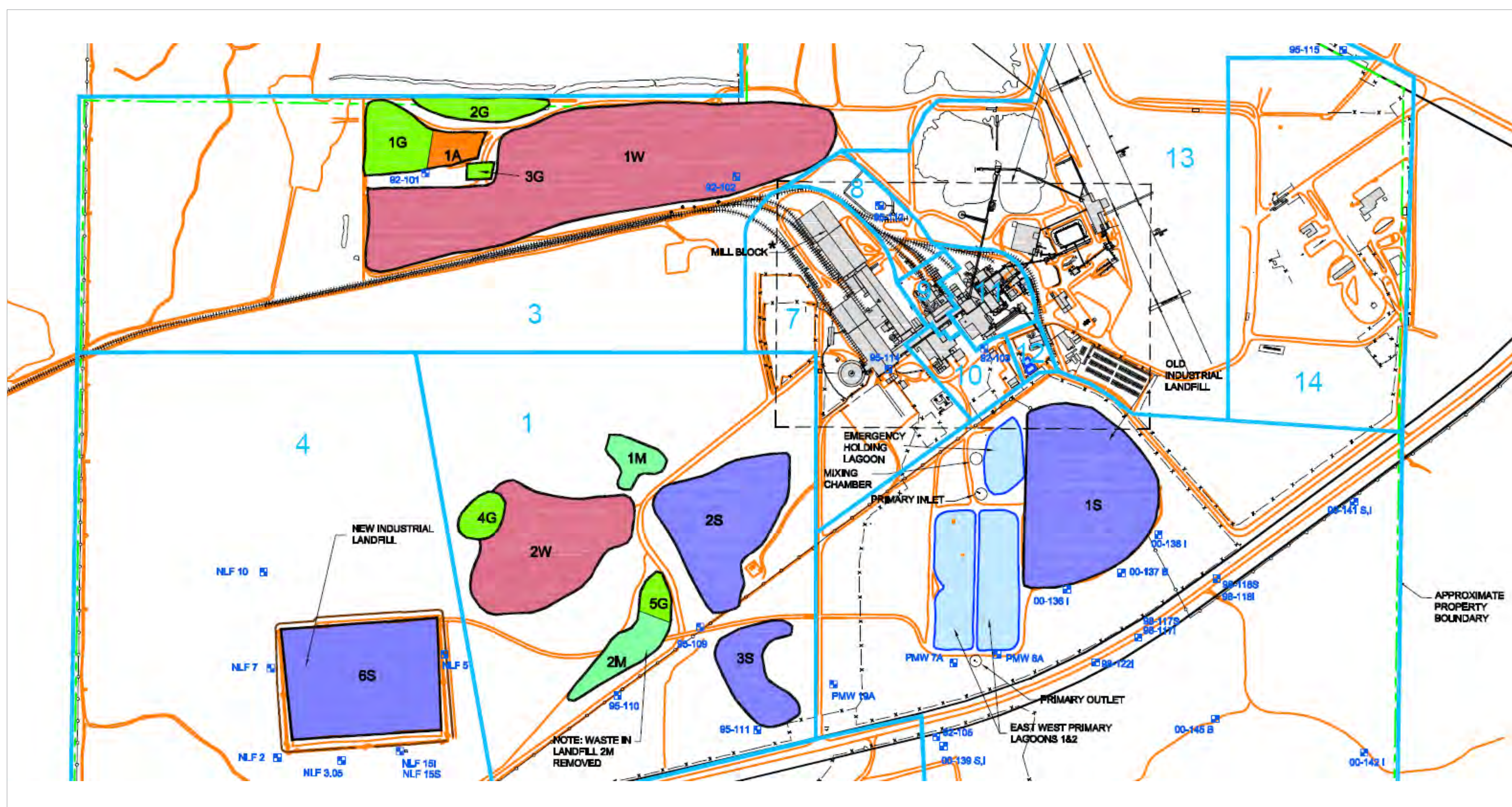
With the new effluent treatment system, the residuals will be collected, dried, and mixed with the bark to burn in the boiler.

The boiler ash has potential to be used for things such as soil amendment or as an additive for road base. There has been much research done on diverting the ash away from landfills.






Other solid wastes that will be generated during construction and operation are recyclable materials, inert industrial construction waste, and domestic waste. These will be kept separate and sent to the appropriate location for recycling or landfilling. Hazardous material waste will be collected by an approved hazardous waste contractor and disposed at an approved off-site facility.








Boiler ash being used as a soil amendment.



Legend

-  MW08-148 Active Groundwater Monitor Wells
-  AST Location
-  Property Boundary
-  Roads
-  Railway

Waste Disposal Sites	Number
	Asbestos 1A & 2A (2)
	General Refuse 1G-5G (5)
	Wood Debris 1W - 4W (4)
	Sludge 1S - 5S (5)
	Mixed Wastes 1M & 2M (2)

This map shows the current landfills on the mill site.

GREEN ENERGY, CARBON & SUSTAINABILITY

Our process is energy intensive, extracting the fibres out of wood takes energy and even more energy is required to dry the pulp for shipping. Paper Excellence does an incredible job of reusing and recovering energy, but we still need a great deal to operate the system. This energy has three sources: biomass, fossil fuel, and electricity (see chart right).

EFFICIENT WATER USE

With its improved technology, Prince Albert Pulp will dramatically reduce water consumption, improve energy efficiency and increase the product yield on wood. The fibre line design will prioritize energy recovery by recycling process water streams wherever possible and minimizing waste.

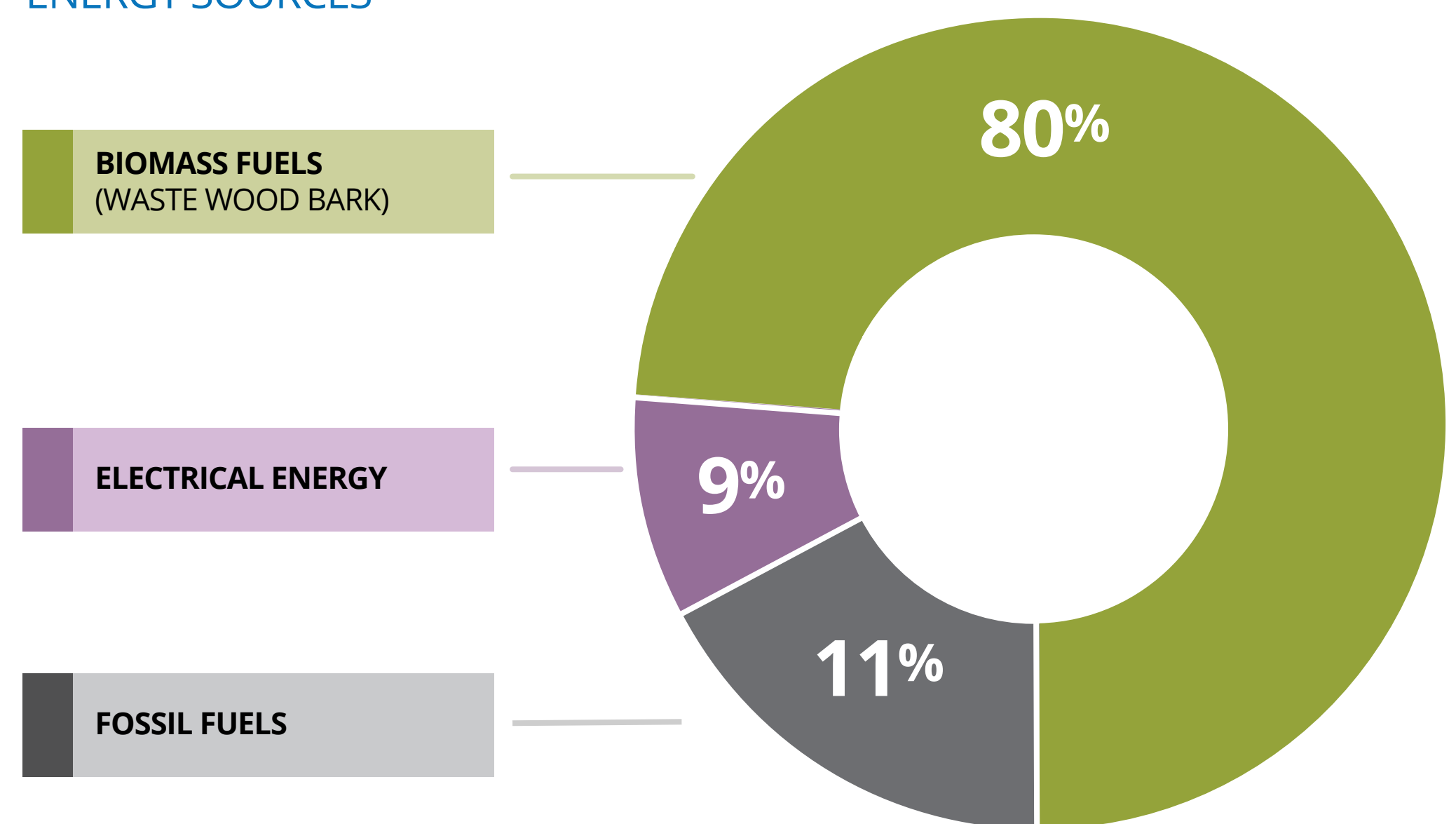
EXPORTING GREEN ENERGY

Our process generates high pressure steam in the chemical recovery process as well as the combustion of the bark generated by our chip supply. This high-pressure steam drives our turbine generators which will create electricity as well as lower pressure steam that is used in our process. We will have the ability to generate more electricity than the mill will need and anticipate exporting up to 20 MW of green energy to the grid which will reduce the carbon intensity of the SaskPower system.

REDUCED GREENHOUSE GAS EMISSIONS

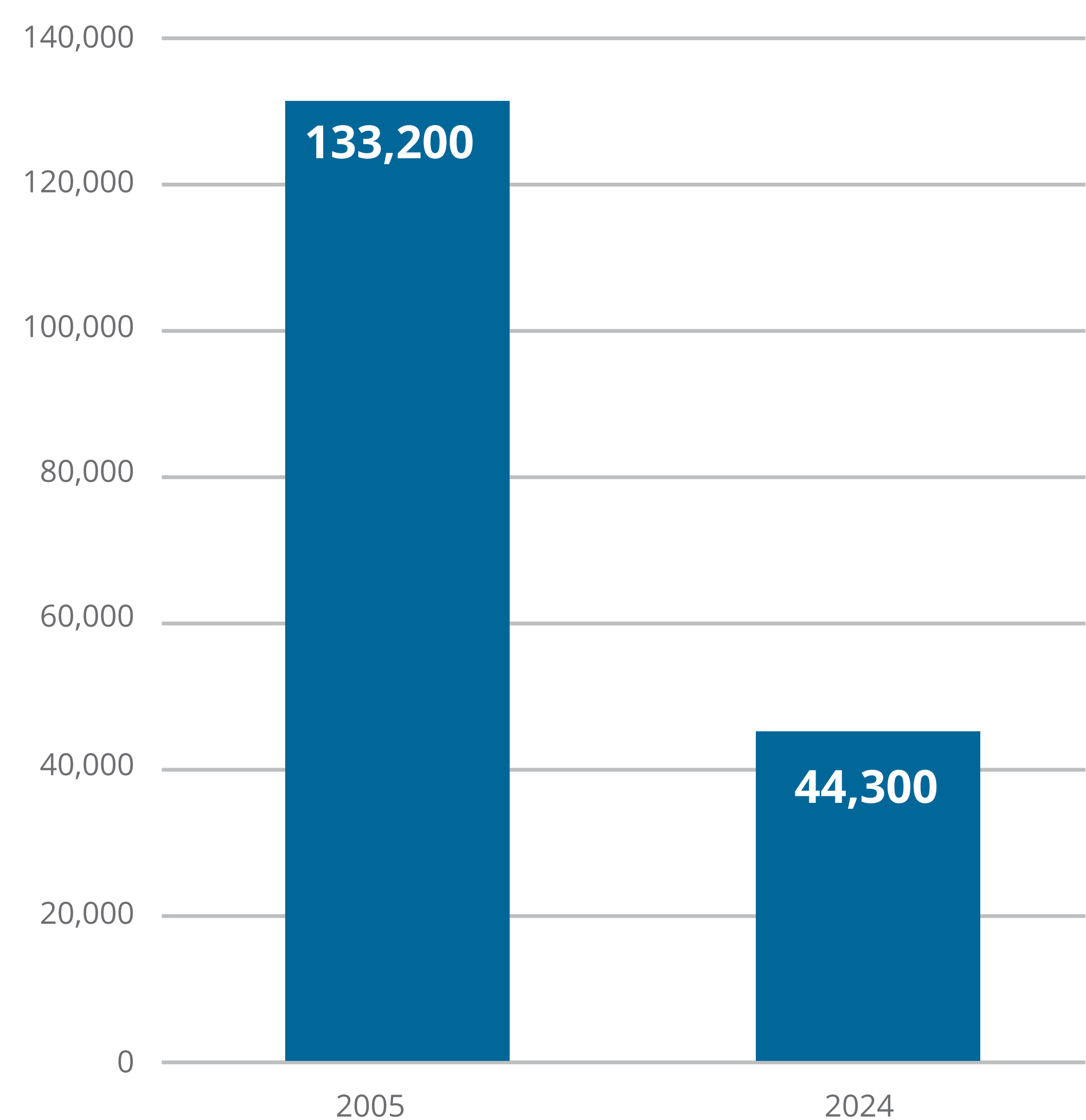
The rebuilt mill will materially change the site's total greenhouse gas (GHG) emissions footprint compared to the previous operation that curtailed in 2006 (see chart right). This is primarily due to efficient steam generation and streamlined process technology. Overall, we estimate the Scope 1 direct GHG emissions will drop by 66% through a reduction in the use of fossil fuels.

ENERGY SOURCES



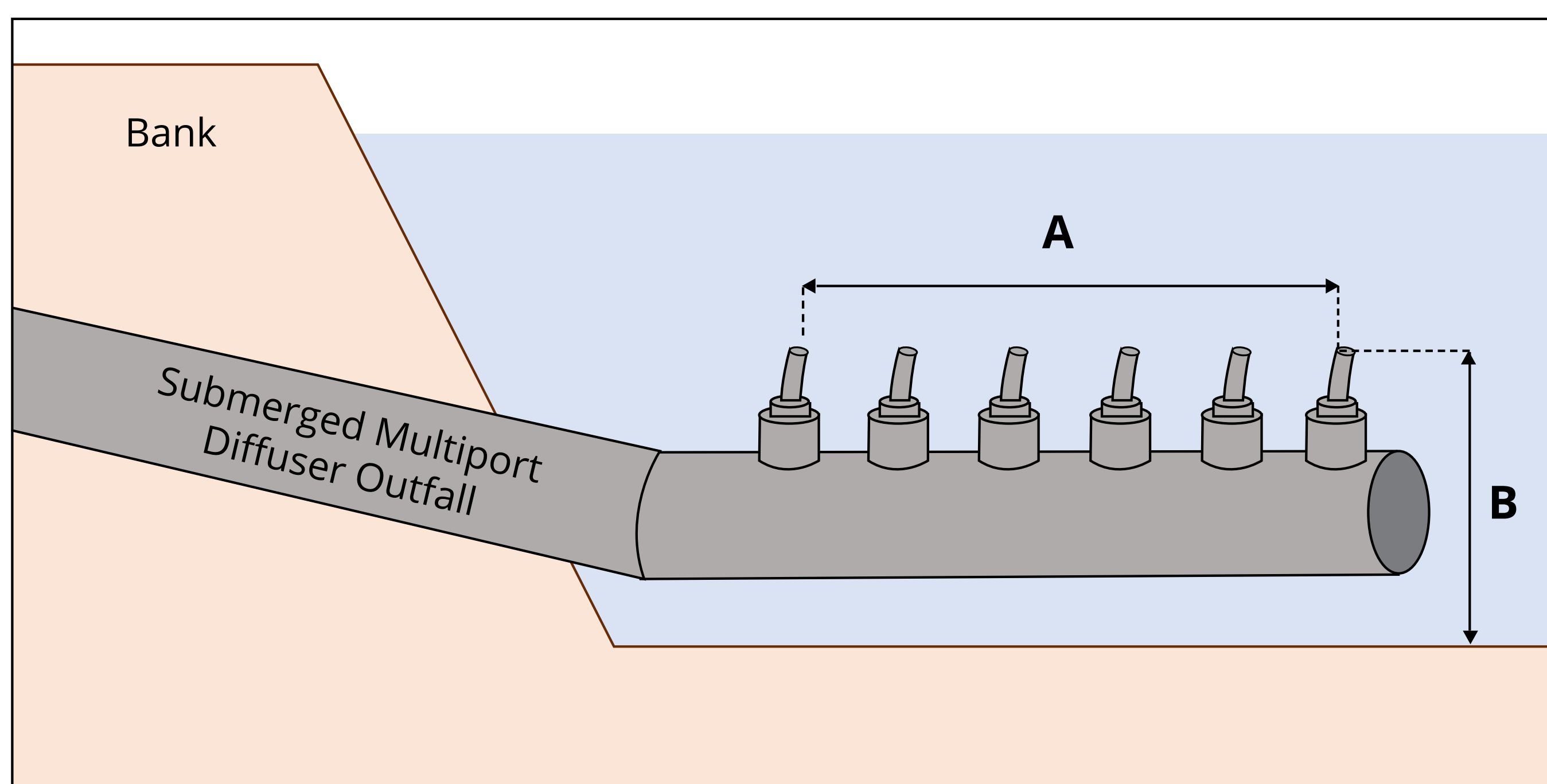
88% OF ENERGY CONSUMED BY PAPER EXCELLENCE COMES FROM RENEWABLE RESOURCES

GHG Emissions Will Be Reduced By 88,900 MT CO_{2e} Annually

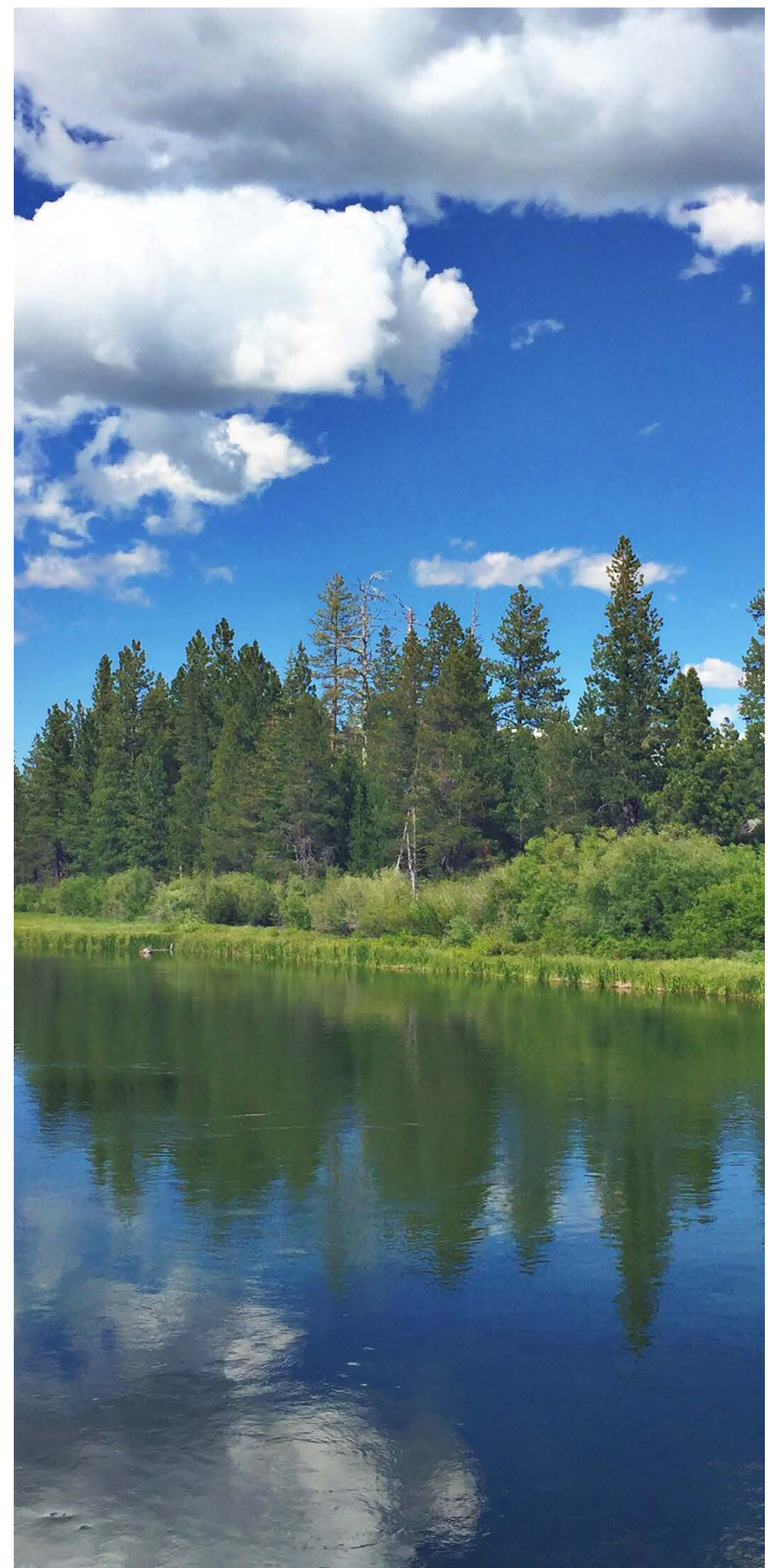


IMPACTS TO RIVER AND DOWNSTREAM USERS

The mill completed Environmental Effects Monitoring during its operation before 2006 that demonstrated water quality downstream of the mill was not negatively impacted by the operation. Our project will reduce effluent flow and meet the more stringent regulations that are in place now, therefore we do not expect any impacts. **However, as part of the mill restart plan, a Downstream User Impact Study will be completed.**



This is an example of one type of diffuser that has been designed to replace open pipe outfalls previously used in pulp mills. It provides better diffusion of the effluent than dams or open pipes.





NEXT STEPS

- Complete Environmental Impact Statement
- Complete a Downstream User Impact Study
- Respond to questions or concerns raised by the public
- Finalize the design based on the input received
- Secure approval from the owner to proceed
- Obtain the required permits to construct and operate from the City of Prince Albert, Saskatchewan and Canada
- Initiate construction in May 2022
- Build the forestry supply chain for the restarted mill
- Continue to grow the mill team

