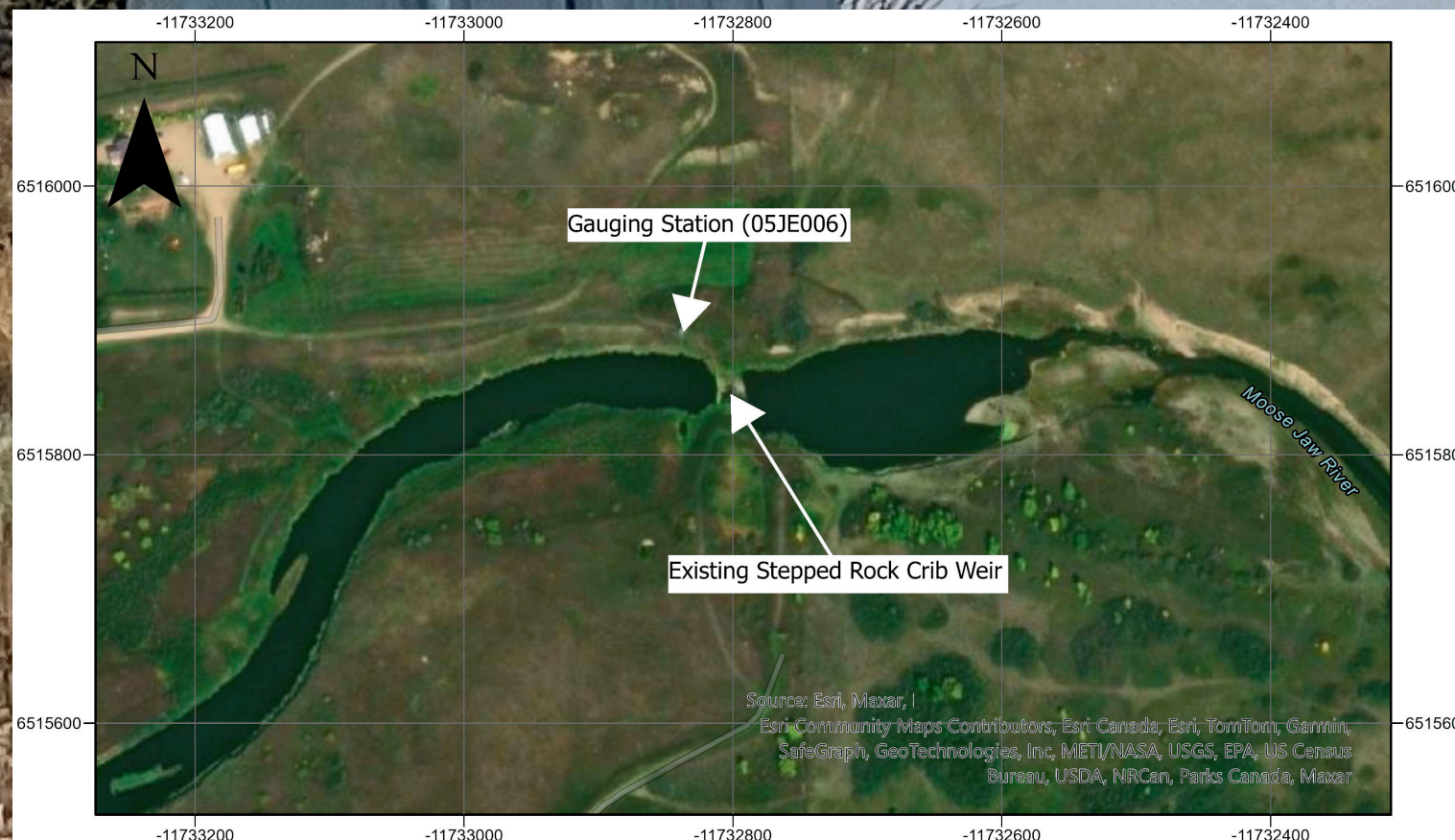


## PROJECT OBJECTIVES

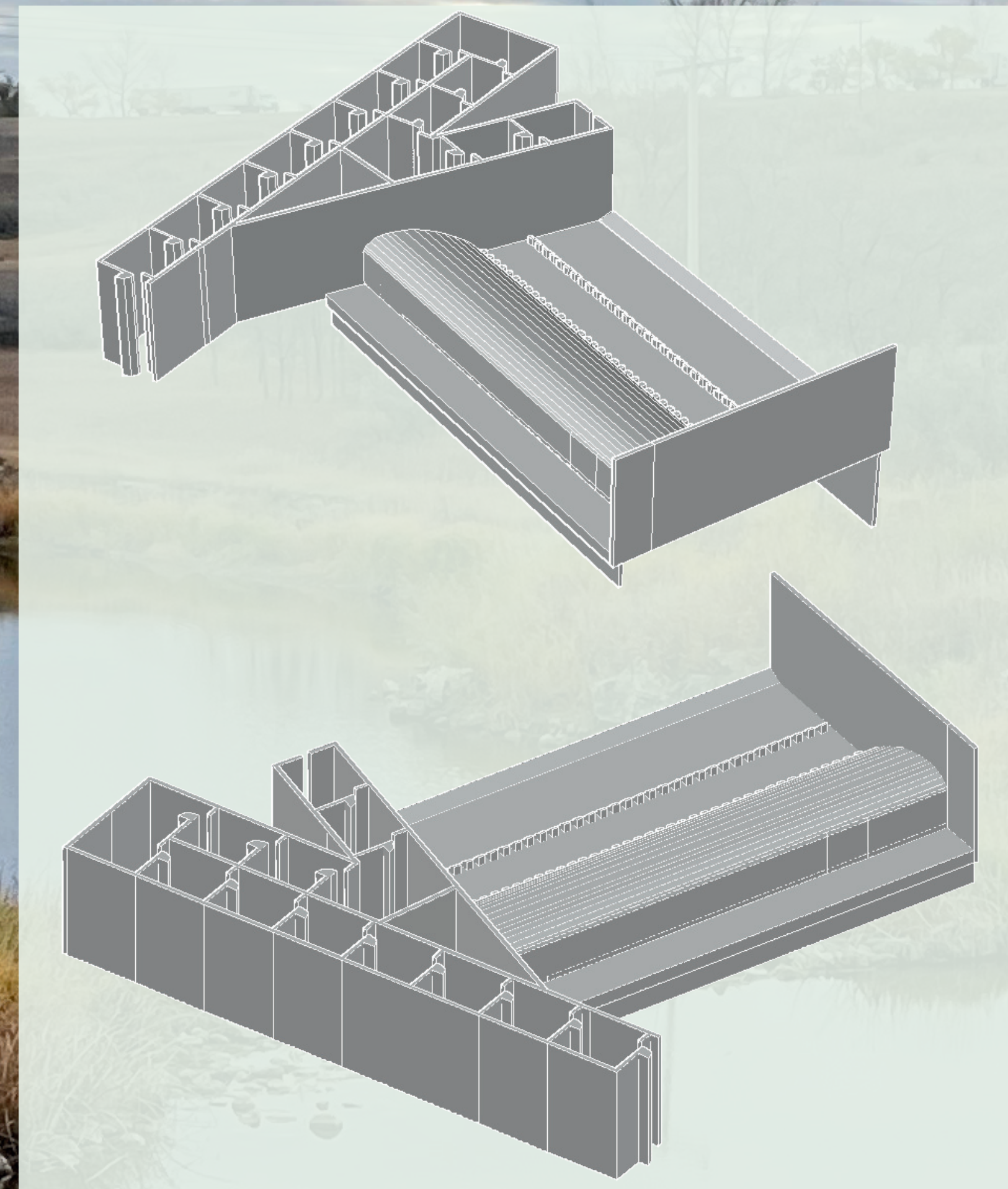
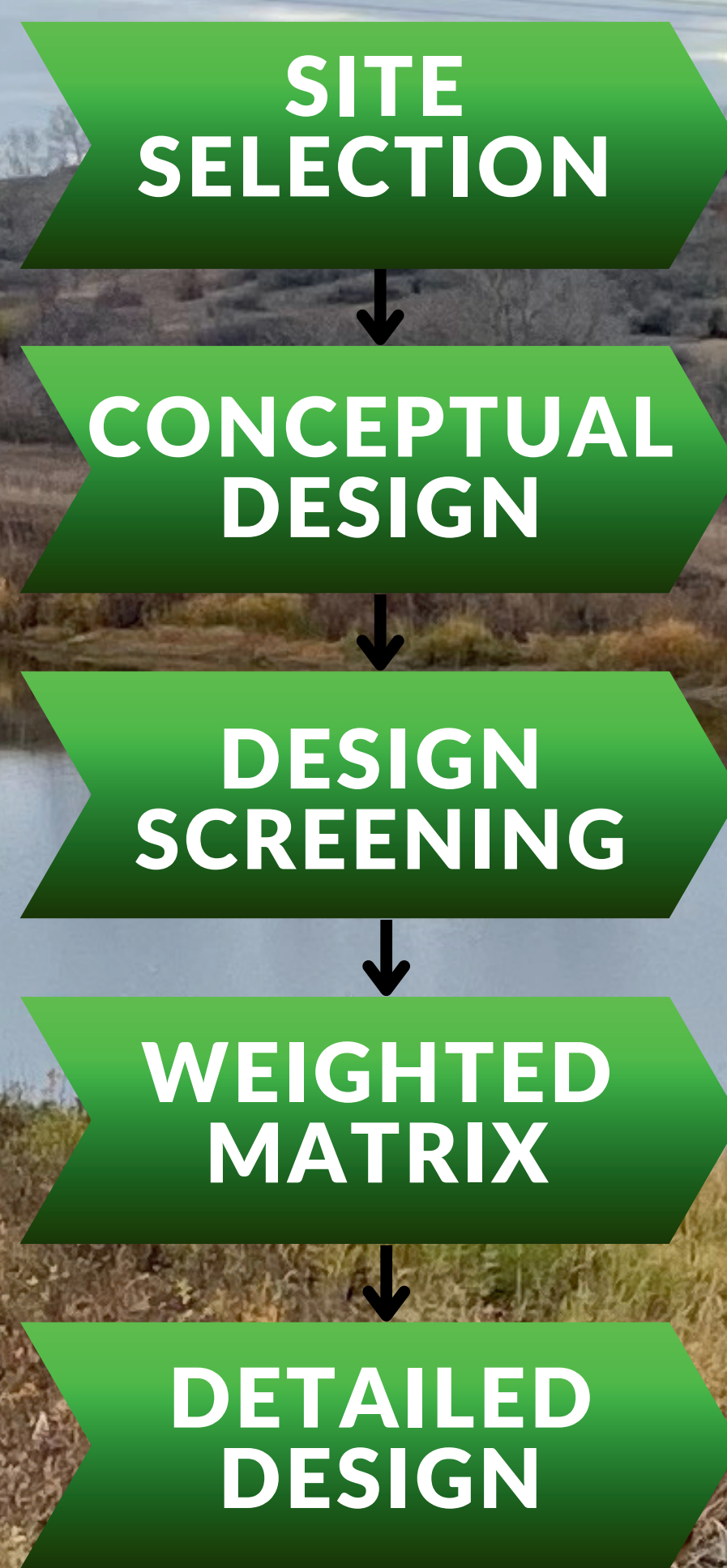
- Develop an effective weir design that does not change the current upstream and downstream water levels or the river's hydrology
- Develop an effective fishway passage design that allows fish to travel upstream for a wide range of flow rates
- Develop a design that has a net positive impact on the environment
- Develop a design that is cost-effective

## SITE INVESTIGATION

The first step in this project was conducting a site investigation. This involved collecting historical data, conducting a site survey, and receiving LIDAR data. This data aided our modelling phase and provided valuable insights into the project's location.



## DESIGN PROCESS



## ENVIRONMENTAL IMPACT ASSESSMENT

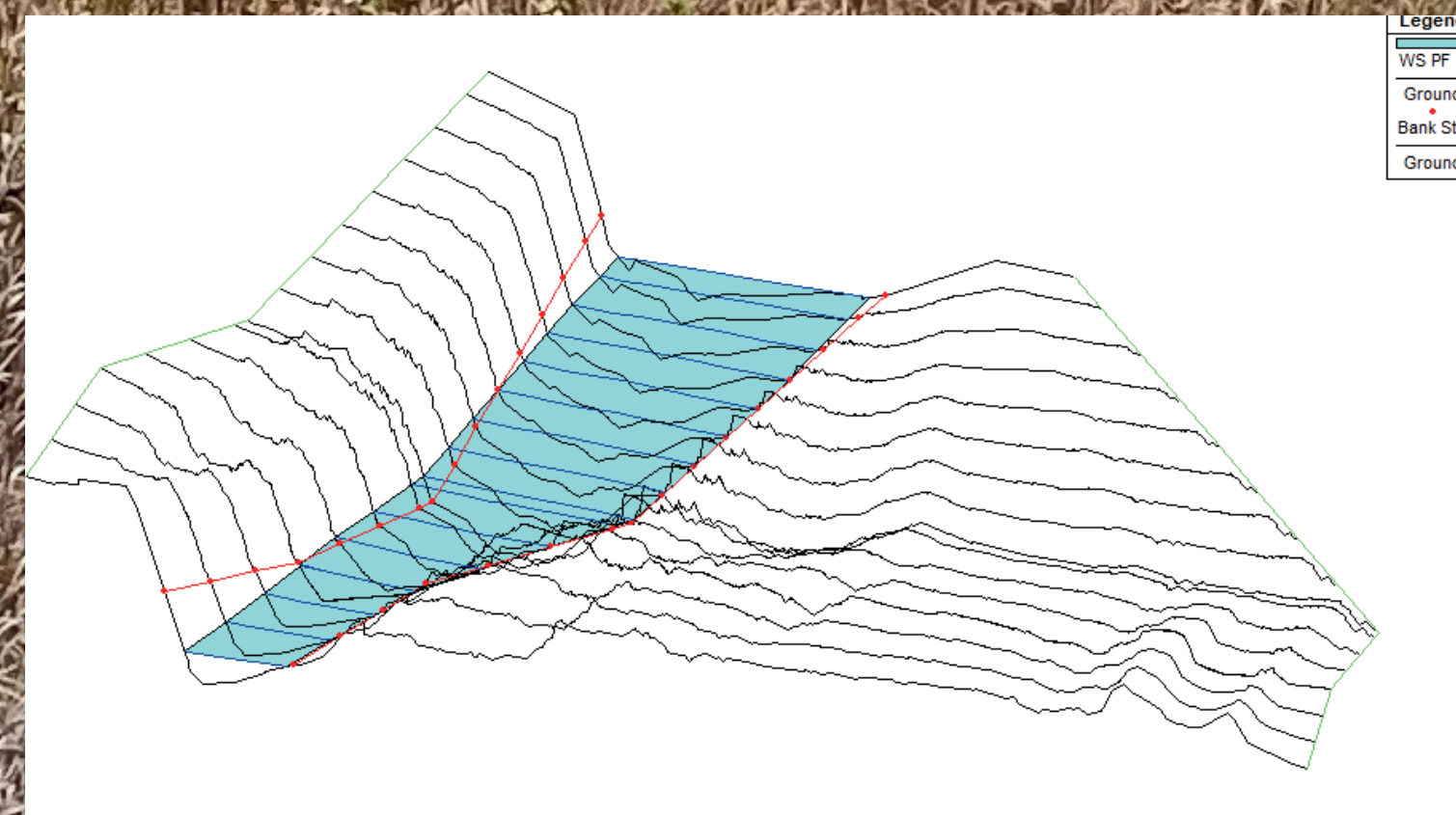
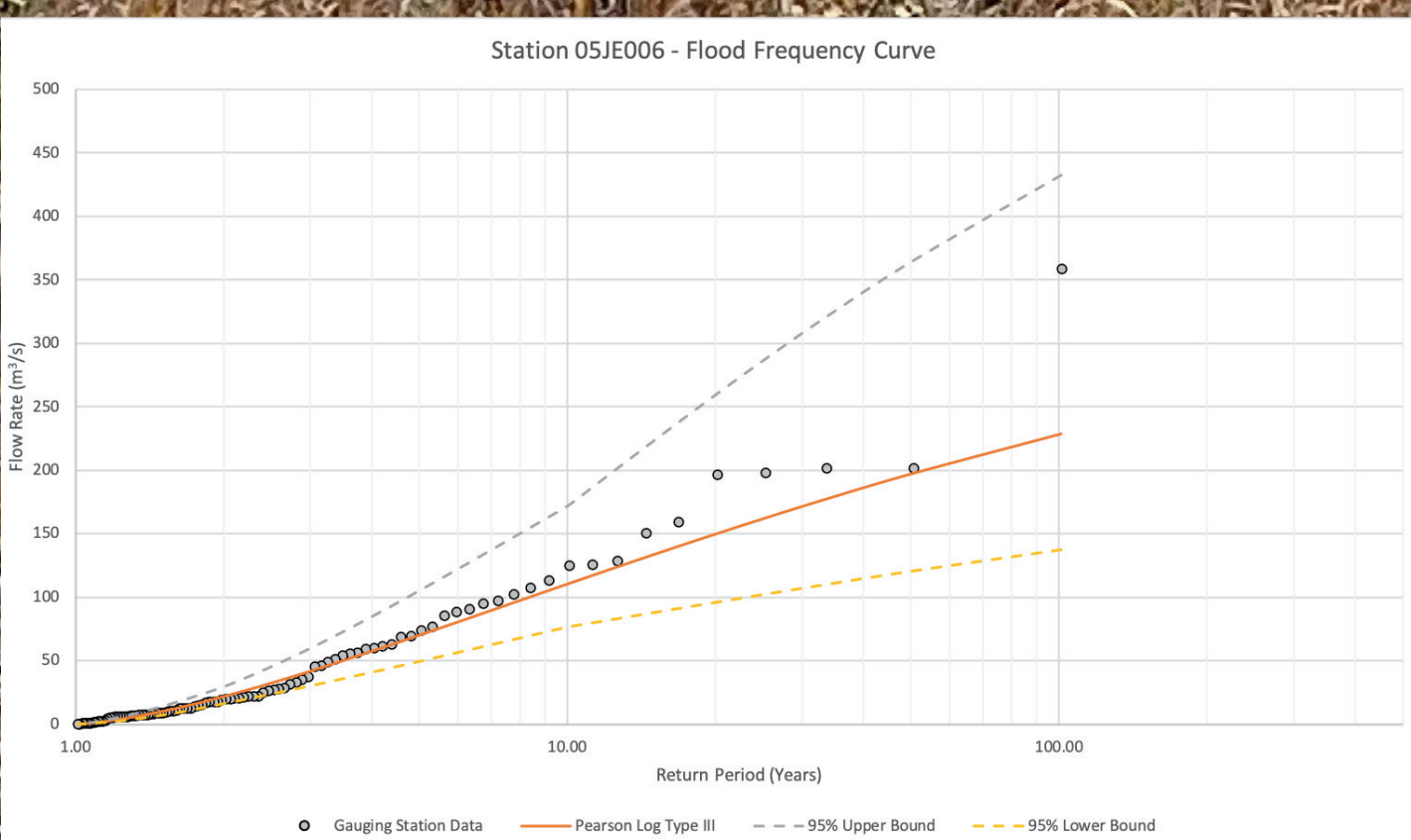


Is the proposed project a 'development'?	Yes	No	Regulated Through Permits & Approvals
1. Is the proposed project likely to influence any unique, rare or endangered feature of the environment?		X	
2. Is the proposed project likely to substantially utilize any provincial resource and, in so doing, pre-empt the use, or potential use, of that resource for any other purpose?	X		
3. Will the proposed project cause the emission of any pollutants or create by-products, residual or waste products, which will require handling and disposal in a manner that is not regulated under any other Act or regulation?		X	
4. Is the proposed project likely to cause widespread public concern about potential environmental changes?	X		
5. Is the proposed project likely to involve new technology that is concerned with resource utilization and that may induce significant environmental change?		X	
6. Is the proposed project likely to have a significant impact on the environment or necessitate a further development which is likely to have a significant impact on the environment?		X	

## RIVER FLOOD FREQUENCY ANALYSIS

A flood frequency analysis was completed to find the 1 in 100, 1 in 200, and 1 in 500 river flow rates.

The determined river flow rates were modelled and the resulting water elevations were found using HEC-RAS.



## COST ESTIMATE

DIRECT COSTS	
DESCRIPTION	COST
GENERAL REQUIREMENTS	\$ 295,285.12
WEIR DEMOLITION	\$ 25,000.00
EARTHWORK	\$ 141,253.90
SHEET PILING	\$ 93,600.00
ADDITIONAL FOUNDATION ALLOWANCE	\$ 70,000.00
UPSTREAM APRON SLAB	\$ 26,046.76
WEIR CONSTRUCTION	\$ 268,998.50
FISHWAY CONSTRUCTION	\$ 352,119.88
STILLING BASIN CONSTRUCTION	\$ 85,084.82
SOUTH WALL CONSTRUCTION	\$ 36,964.50
<b>TOTAL DIRECT COSTS</b>	<b>\$ 1,394,353.48</b>
GENERAL COSTS	
CONSULTANT COSTS	\$ 139,435.35
GENERAL CONTRACTOR COSTS	\$ 209,153.02
CONTINGENCY	\$ 69,717.67
<b>TOTAL GENERAL COSTS</b>	<b>\$ 418,306.04</b>
<b>TOTAL PROJECT COST</b>	<b>\$ 1,812,659.52</b>

Valued Component	Indicator	Monitoring Method
Water Quality	pH	Field Test Strips
	Dissolved Oxygen	Field Test Meter
	Aquatic Life/Habitat	Site Visit in Spring and Fall/Population Study
Land Quality	Vegetation	Site Visit in Spring and Fall
	Wildlife	Site Visit in Spring and Fall/Population Study
Socio-Economic Environment	Landowner Health	Semi-Annual visit and survey