



Flow Estimates & Metering (& Sampling) for WSER Compliance



Agenda

1 ■ Introduction

2 ■ Monitoring Effluent Volume

3 ■ Effluent Sampling & Reporting

4 ■ Summary



Introduction

Part 1

Introduction

- ▶ Purpose of Training
- ▶ Small Systems
- ▶ Monitoring Requirements

Purpose of Training

01

Support small wastewater systems in NL with Transitional Authorization (TA) (or applying for TA)

02

Discuss estimation option and demonstrate Flow Estimation spreadsheet tool

03

Provide practical guidance to collect data required for WSER reporting

Small Wastewater Systems

Systems with average daily effluent volume $\leq 2,500 \text{ m}^3/\text{day}$



Mechanical Plants



Continuous Lagoons

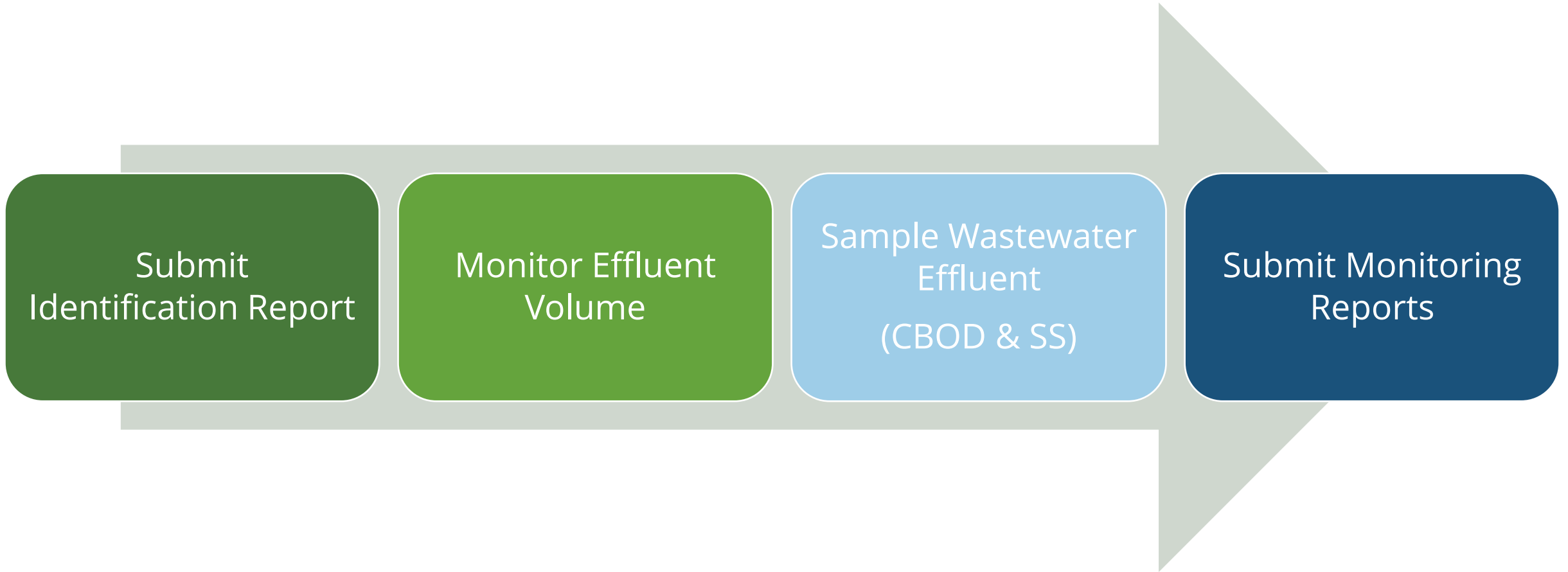


**Outfalls
(No Treatment)**



Intermittent Lagoons

Small Wastewater Systems: Monitoring Requirements





Monitoring Effluent Volumes

Part 2

Monitoring Effluent Volumes

- ▶ WSER Flow Monitoring Requirements
- ▶ Understanding Your System
- ▶ Flow Meter Considerations
- ▶ Monitoring & Estimation Methods
- ▶ Historical Wastewater & Population
- ▶ Pump Station Run Time
- ▶ Estimation Methods - Demo



WSER Flow Monitoring Requirements

System Type	Flow Monitoring	Reporting
Mechanical plant or outfall (no TA)	Flow meter	Quarterly
Mechanical plant or outfall (with TA)	Flow meter or method of estimation	Annually
Lagoon (Continuous) (no TA)	Flow meter	Annually
Lagoon (Continuous) (with TA)	Flow meter or method of estimation	Annually
Lagoon (Intermittent)	Flow meter or method of estimation	Annually



Wabush, NL



Shubenacadie, NS



Deer Lake, NL

Flow Meter Considerations

- Preferred method for flow monitoring
- Need for flow meter and data for feasibility study or design of upgrades



Flow Meter Considerations

Common issues with flow meter:



Unsure how to access data



Flow meter maintenance



Subscription fees for web services

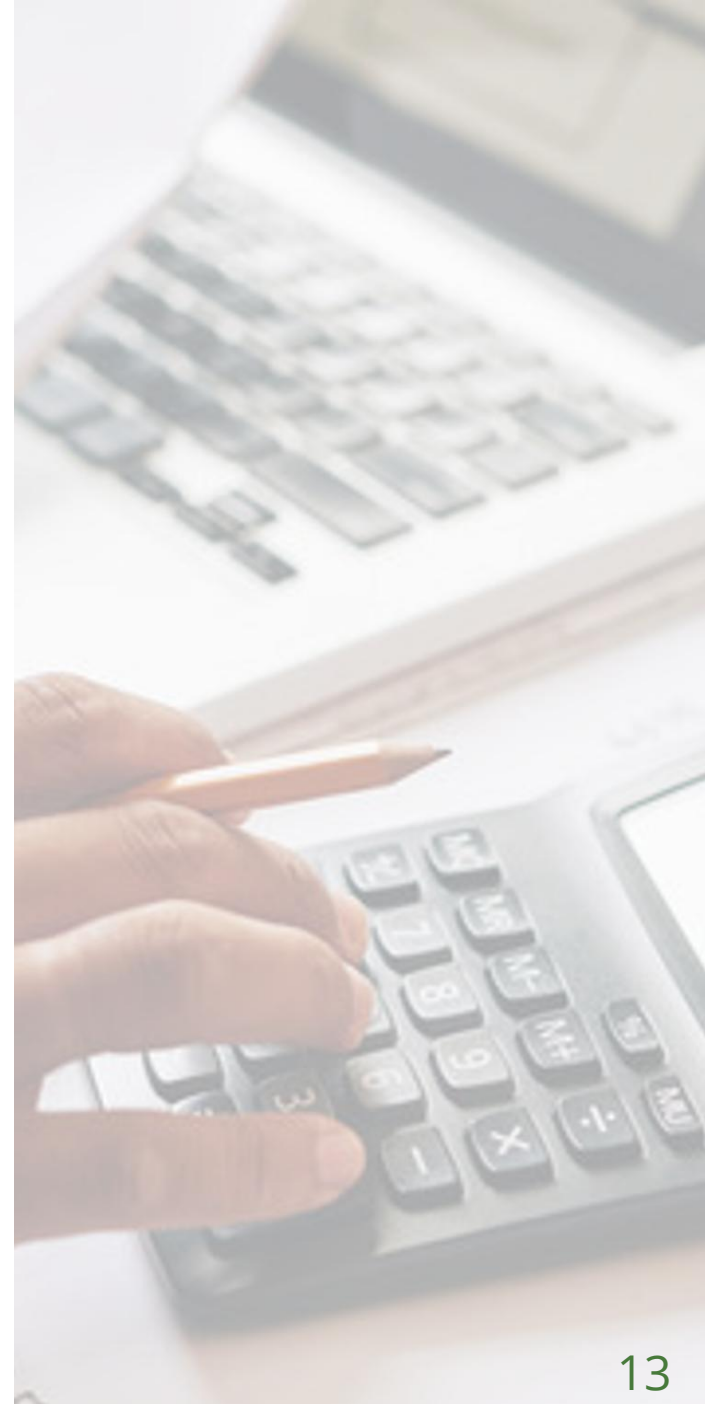


Reporting flow data



Monitoring & Estimation Methods

- Preferred method for flow monitoring is with a flow meter
- Small systems with a TA have option to estimate flow as part of WSER
- Acceptable estimation methods include:
 - Historical Wastewater Flow & Population Data
 - Pump Station Run Time Method
 - Other methods
- Spreadsheet tool for estimating



Estimation Methods - Historical Wastewater & Population Data

What you Need

Historical wastewater data for the system

AND

System population data (Census or tax-based)

Method

The historical wastewater data is used to see how much wastewater is produced per person

The amount of wastewater per person is then multiplied by the current population

When to Use

You have historical wastewater data that was measured with a flow meter

AND

Town population stays relatively constant throughout the year

When Not to Use

Community population varies throughout the year due to tourism or seasonal workers

OR

The system has a large industrial user that was added to the system since the historical flow data was collected.

Estimation Methods – Pump Station Run Time

What you Need	Method	When to Use	When Not to Use
Wastewater pump station that captures >85% of flow to outfall	The average daily flow is estimated using the pump rate of the pumps and the amount of time the pumps run each day	Collection system has pump station near the outfall that takes >85% of flow	Pump station collects flow for <85% of flow for outfall
AND		AND	OR
Daily pump run time for pump station	If the pump rate is not known, it can be estimated with a pump draw down test	You can measure pump run times	Pump run times are not available
AND		AND	OR
		You can determine pump flow rate for pump station	Pump flow rate cannot be determined

Estimation Methods – Demo

Small Wastewater Systems with a Transitional Authorization

Average Flow Estimation Tool

For small systems (average daily effluent volumes <2500 m³/d) with a transitional authorization (TA), communities are required to report average daily flows either using monitoring equipment or a method of estimation:

Using monitoring equipment

- A continuous measure of the volume of influent or effluent deposited at the final discharge point, or
- A measure of the rate of flow of influent or effluent deposited at the final discharge point upon which the daily volume can be estimated
- The rate of flow has to be measured every day

Method of estimation

- Must be generally accepted engineering practice with margin of error of ±15%

For small systems that currently have a transitional authorization and wish to estimate flows, acceptable estimation methods may include but are not limited to:

- Historical wastewater and population method
- Wastewater pump station run time

The purpose of this tool is to assist communities (where applicable) in determining which flow estimation method is appropriate to use for a system and to assist in the calculation of the estimated flow for reporting in the Effluent Regulatory Reporting Information System (ERRIS) to comply with the *Wastewater Systems Effluent Regulations* (WSER) requirements.

If a community is seeking more guidance or confirmation that an estimation method is acceptable, they can reach out to Environment and Climate Change Canada (ECCC) at eu-ww@ec.gc.ca.

[Proceed to ii\) Instructions](#)

Disclaimer

This information does not in any way supersede or modify the *Wastewater Systems Effluent Regulations* or the *Fisheries Act*, or offer any legal interpretation of those Regulations or Act. Where there are any inconsistencies between this information and the Regulations or Act, the Regulations or Act take precedence, respectively.



Effluent Sampling & Reporting

Part 3

Effluent Sampling

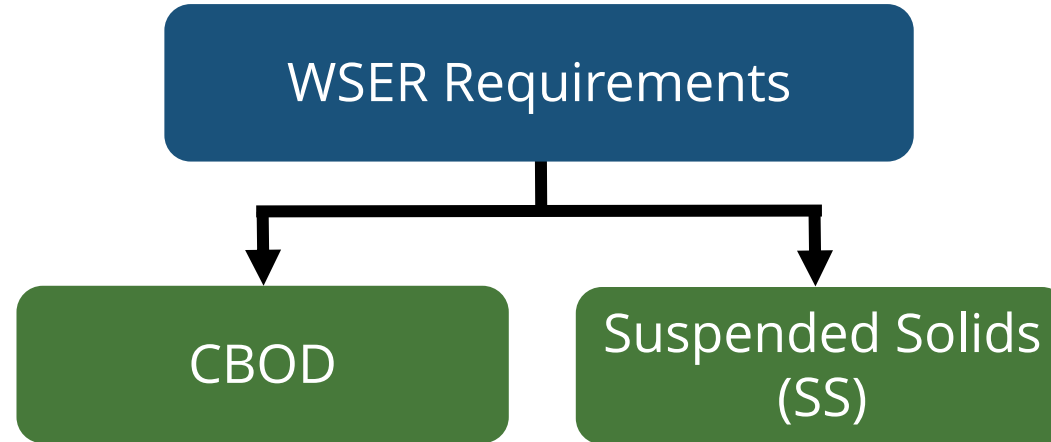


WSER Sampling Requirements –
Small Systems



Steps for Sampling

WSER Sampling Requirements – Small Systems



Plant Type	Sampling Schedule	Reporting Schedule
Mechanical Plant or Outfall (no TA)	Monthly, at least 10 days between samples	Quarterly
Mechanical Plant or Outfall (with TA)	Quarterly, at least 60 days between samples	Annually
Lagoon (Continuous)	Quarterly, at least 60 days between samples	Annually
Lagoon (Intermittent)	Once at discharge if it lasts less than 30 days, or every two weeks if more than 30 days	Annually

Steps for Sampling



- 1 Before Sampling – Contact Accredited Laboratory
- 2 Safe Access to Sampling Location
- 3 Collect the Sample
- 4 Chain of Custody & Shipping
- 5 Review Lab Certificate
- 6 Entering Data into ERRIS

Step 1

Before Sampling - Contact Accredited Laboratory



Request:

- CBOD bottles
- SS bottles
- Chain of Custody (COC) form
- Cooler / ice packs (if needed)



In Newfoundland & Labrador:

- AGAT Laboratories
- Bureau Veritas
- Other accredited

The image shows two Chain of Custody Record (COC) forms. The top form is a general template with sections for Report Information, Client Special Instructions, and a table for Laboratory Use. The bottom form is a specific 'ENV COC - 0001a' form for water sampling, including sections for Regulatory Context, Sample Identification, and a detailed table for Laboratory Use with columns for parameters like pH, DO, and Temperature.

Step

2

Safe Access to Sampling Location

- Assess your safety situation.
- Wear PPE.
- Control traffic.
- Use proper lifting tool.
- Do NOT enter the manhole. Use sampling stick.
- Ensure stable footing.
- Avoid moving equipment.



Step

3

Collect the Sample



Sample free-flowing wastewater:

- Avoid sludge and debris
- Fill bottle to marked line



Label immediately:







- Location
- Date
- Time
- Sampler name



Step
4

Chain of Custody & Shipping



-  Complete COC form
-  Keep samples refrigerated (do not freeze)
-  Ensure samples reach lab within hold time (typically within 48 hours)
-  Seal COC in zip bag
-  Pack bottles securely
-  Ship via courier

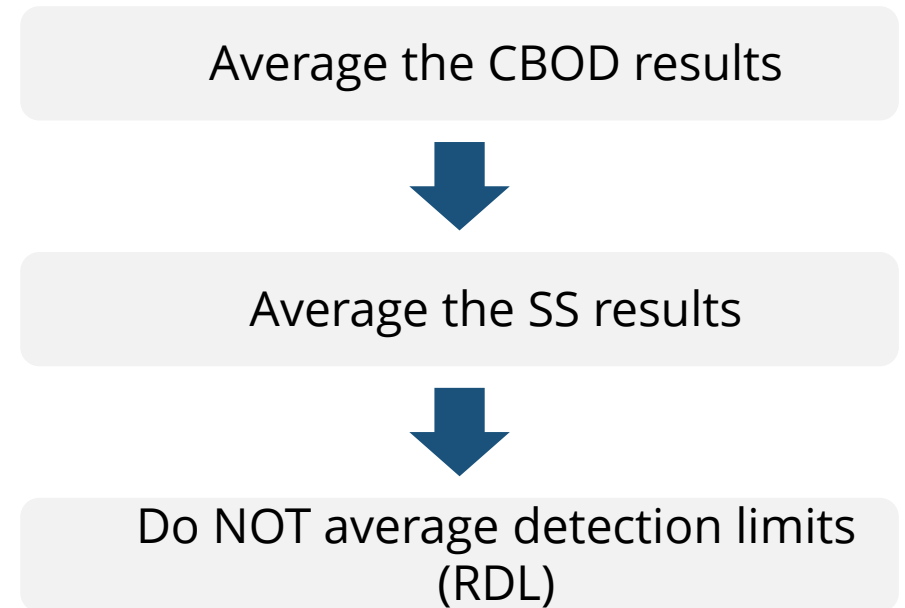
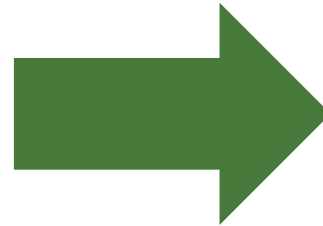
Step

5

Review Lab Certificate

When results are received, check:

- ✓ CBOD (mg/L)
- ✓ SS (mg/L)
- ✓ Sample Date
- ✓ Reporting Period





AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER:
PROJECT:

11 Morris Drive, Unit 122
Dartmouth, Nova Scotia
CANADA B3B 1M2
TEL (902)468-8718
FAX (902)468-8924
<http://www.agatlabs.com>

CLIENT NAME Demo Community
SAMPLING SITE: Outfall

ATTENTION TO: Town Clerk
SAMPLED BY: Town Operator

TSS, cBOD, pH

DATE RECEIVED: 2026-02-06

DATE REPORTED: 2026-02-12

SAMPLE DESCRIPTION:

SAMPLE TYPE: Water
DATE SAMPLED: 2026-02-06
12:15
7467943

Parameter	Unit	G / S	RDL	7467943
Biochemical Oxygen Demand, Carbonaceous	mg/L		2	45
Total Suspended Solids	mg/L		5	50
pH				7.46

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

7467943 pH has been analyzed past the recommended holding time of 15 minutes from sampling. Field measurement recommended for most accurate result
Analysis performed at AGAT Halifax (unless marked by *)

Step 6

Entering Data into ERRIS – Annual Reporting

1 Select Yes

2 Choose the month(s) when discharge occurred using the drop-down menu

3 Enter:

- Number of discharge days
- Total volume discharged
- Average CBOD (mg/L)
- Average SS (mg/L)

4 If Acute Lethality test was completed, select YES and enter results

Monitoring Report

Wastewater System Summary

Owner:	
Wastewater System:	
Approval State:	New
Reporting Year:	2026
System Type:	Continuous
Reporting Frequency:	Annually
Reporting Period:	January To December
Average daily effluent volume (m ³) based on volumes from the previous year:	
Averaging Period:	Annually

Effluent Monitoring Data

Was effluent deposited in this reporting period? (required): 1

For each month indicated, was effluent deposited? (required):

January:	<input type="checkbox"/>	February:	<input type="checkbox"/>	March:	<input type="checkbox"/>
April:	<input type="checkbox"/>	May:	<input type="checkbox"/>	June:	<input type="checkbox"/>
July:	<input type="checkbox"/>	August:	<input type="checkbox"/>	September:	<input type="checkbox"/>
October:	<input type="checkbox"/>	November:	<input type="checkbox"/>	December:	<input type="checkbox"/>

Reporting Period	Limit	Number of days that effluent was deposited	Total volume of effluent deposited (m ³)	Average CBOD (mg/L)	Average concentration of suspended solids (mg/L)
January To December					

Indicate any months from May to November (maximum of four) where the suspended solids results were not included in the calculation of the average because the result was greater than 25 mg/L and the result was caused by a bloom of algae or aquatic invertebrate:

May:	<input type="checkbox"/>	June:	<input type="checkbox"/>
July:	<input type="checkbox"/>	August:	<input type="checkbox"/>
September:	<input type="checkbox"/>	October:	<input type="checkbox"/>
November:	<input type="checkbox"/>		

Acute Lethality Test Results

Does your wastewater system have Acute Lethality test sample(s) to report in this reporting period? (required) Select

Sample Date (YYYY/MM/DD)	Procedure(s) Used	Was sample acutely lethal?	Action
	EPS 1/RM/13 Select	EPS 1/RM/50 Select	Select Delete

Add Test Result



Summary

Part 4

Summary

- ▶ Key Takeaways
- ▶ Resources
- ▶ Questions / Closing

Key Takeaways



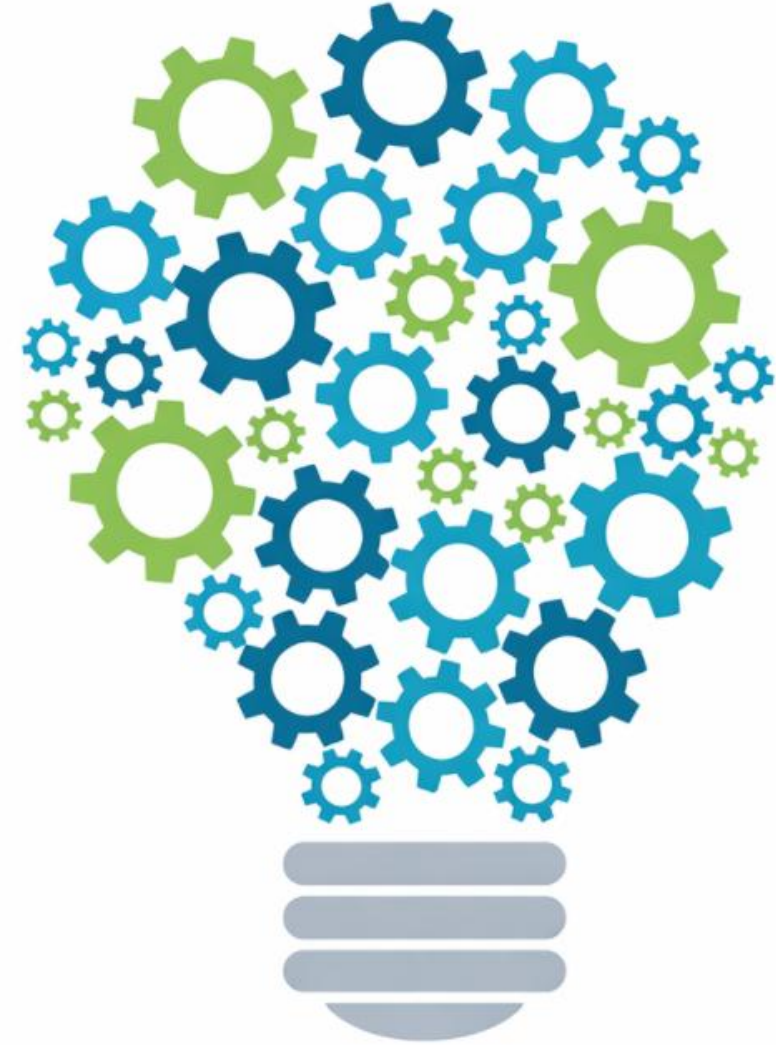
Data collection and reporting steps can be carried out by your community.



A Transitional Authorization reduces the frequency of monitoring and reporting.



Flows can be estimated if you have a TA with a small Mechanical Plant or Outfall.



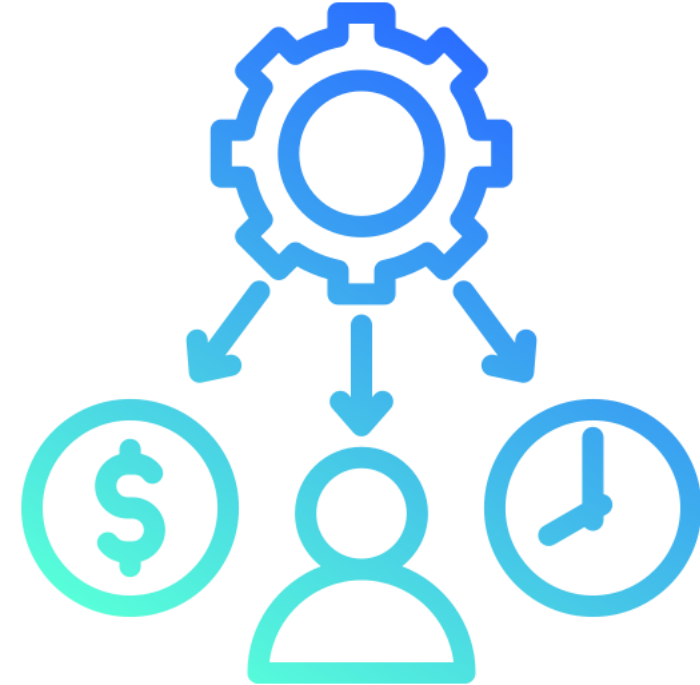
Resources



See the spreadsheet tool and the technical fact sheets on each topic for more details.



Contact ECCC to apply for a Transitional Authorization.





Questions / Closing

