



Ministry of
Environment and
Climate Change Strategy

B.C. Fish Processing Plants Effluent Discharge Permit Amendment Information Session

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September 2018



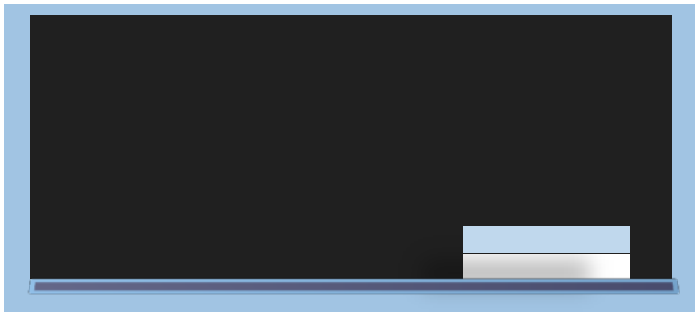
Ministry of
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Introduction

- Purpose
- ENV project team
- Webinar format
- Information Requirements Table (IRT)
 - Template meant to be refined
 - Current standard
 - Cost is a consideration
 - Some requirements are sector wide

Webinar Objectives

- Share information
- Create dialogue
- Provide clarity



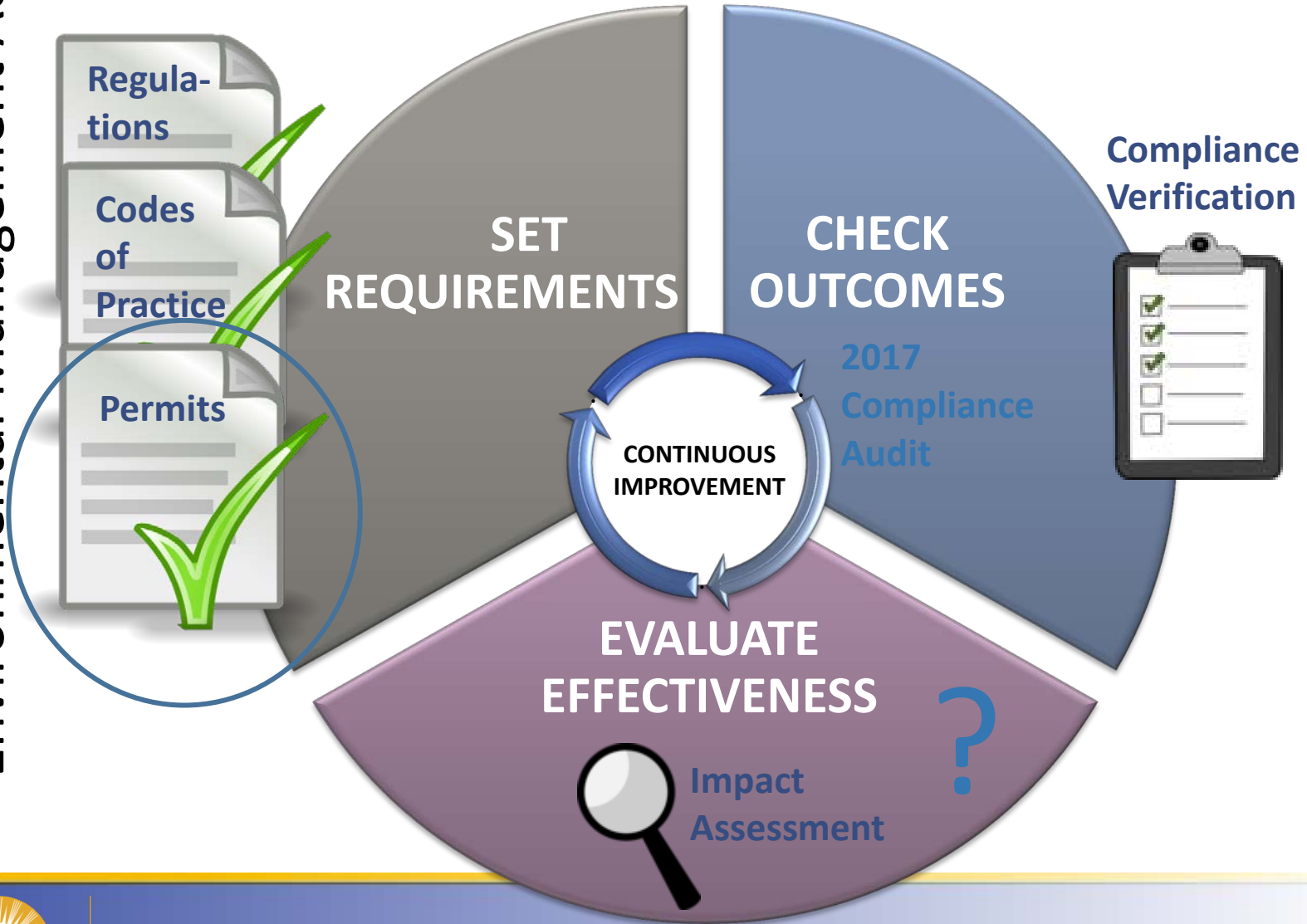
Outline

1. Context
2. Process
3. Information requirements
4. Next steps, timelines
5. Discussion

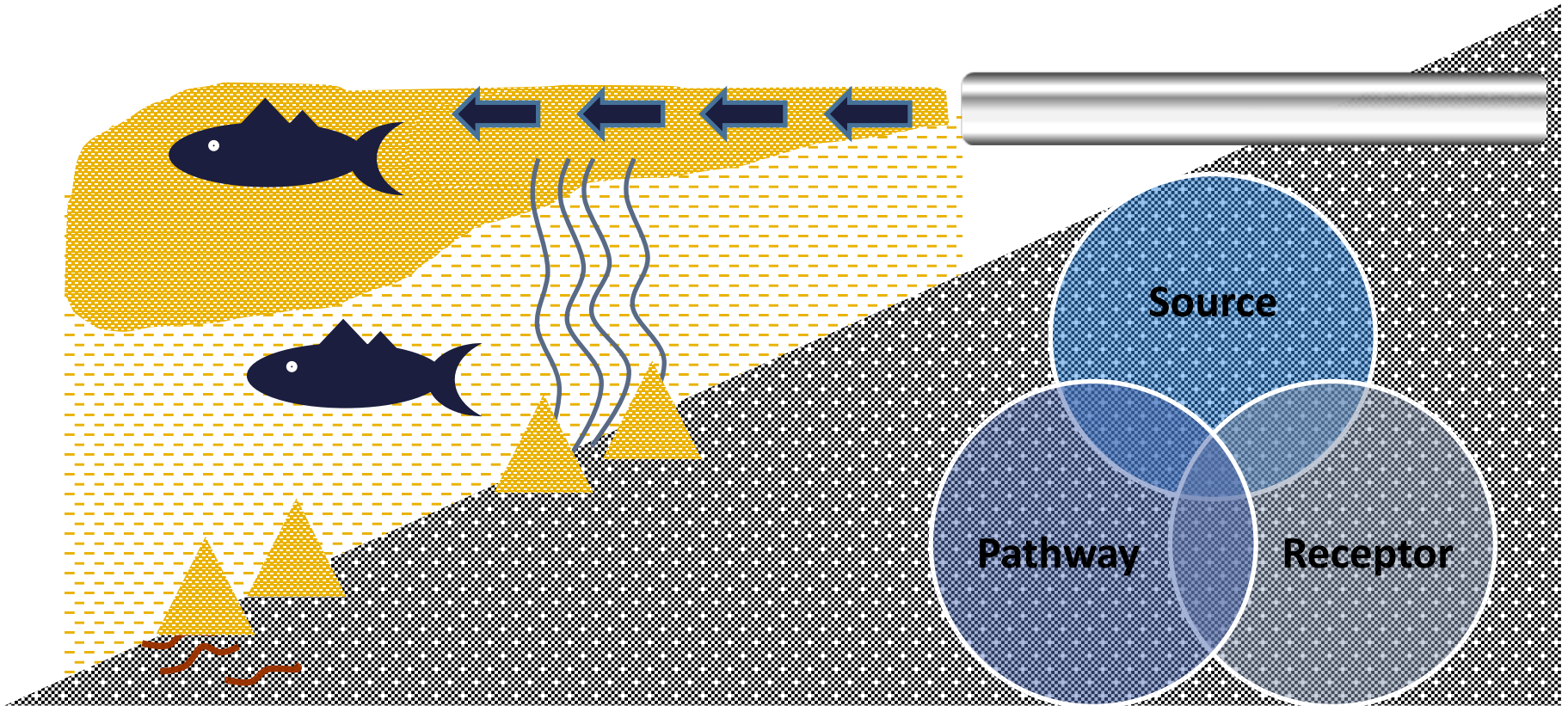
Context

Environmental Management Act

Waste Discharge Regulation



Potential for Impact

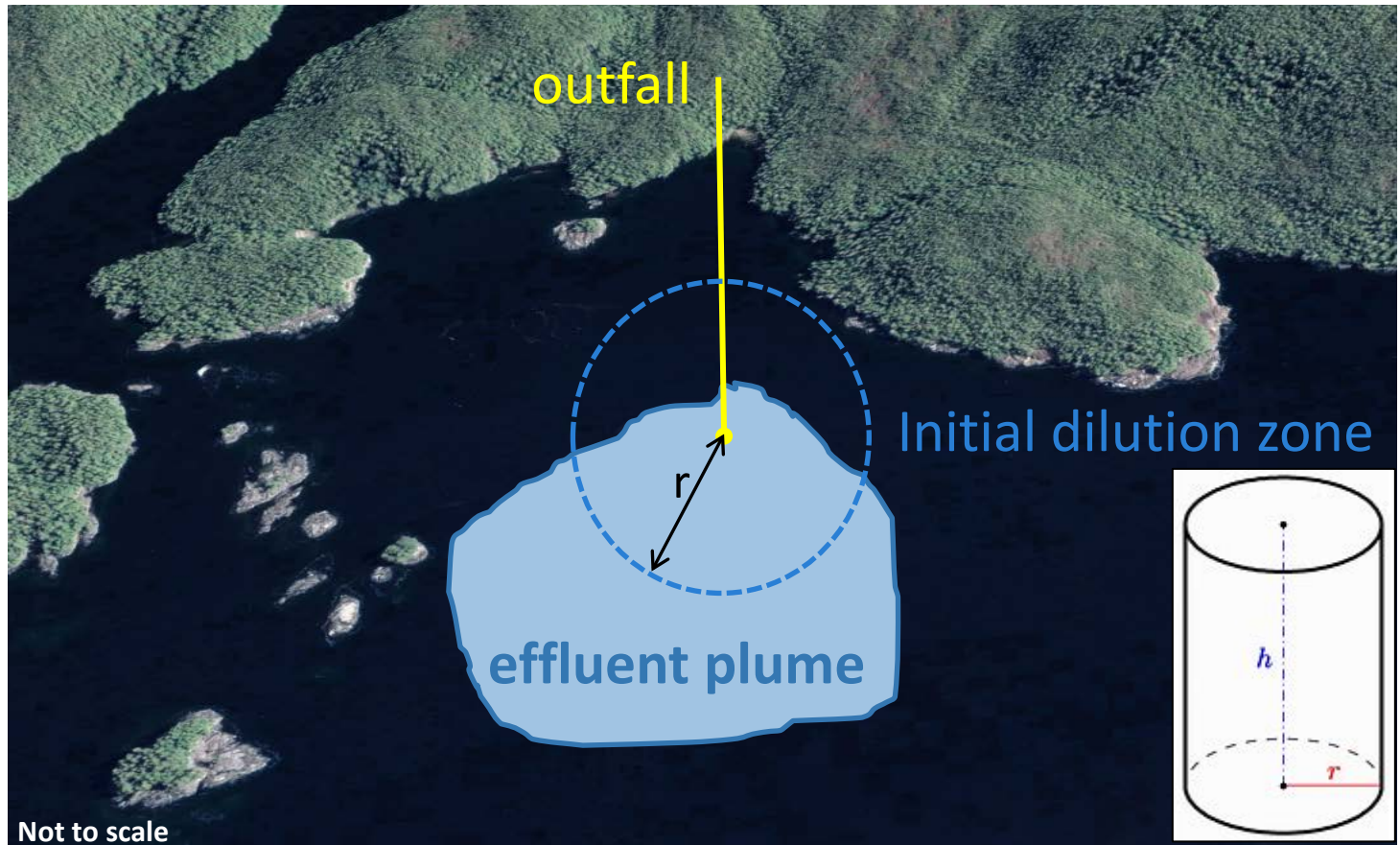


Potential Impacts

- Total Suspended solids
 - Physical impacts
 - Light penetration
- Biochemical oxygen demand (BOD)
 - Oxygen depletion
 - Low flushing
 - Shallow water
 - Higher temperatures
- Nutrient loading
 - Algal blooms
 - Oxygen demand
- Pathogens
 - Fish health
 - Human health
- Sediment deposition
 - Smothering
 - Resuspension
- Scouring

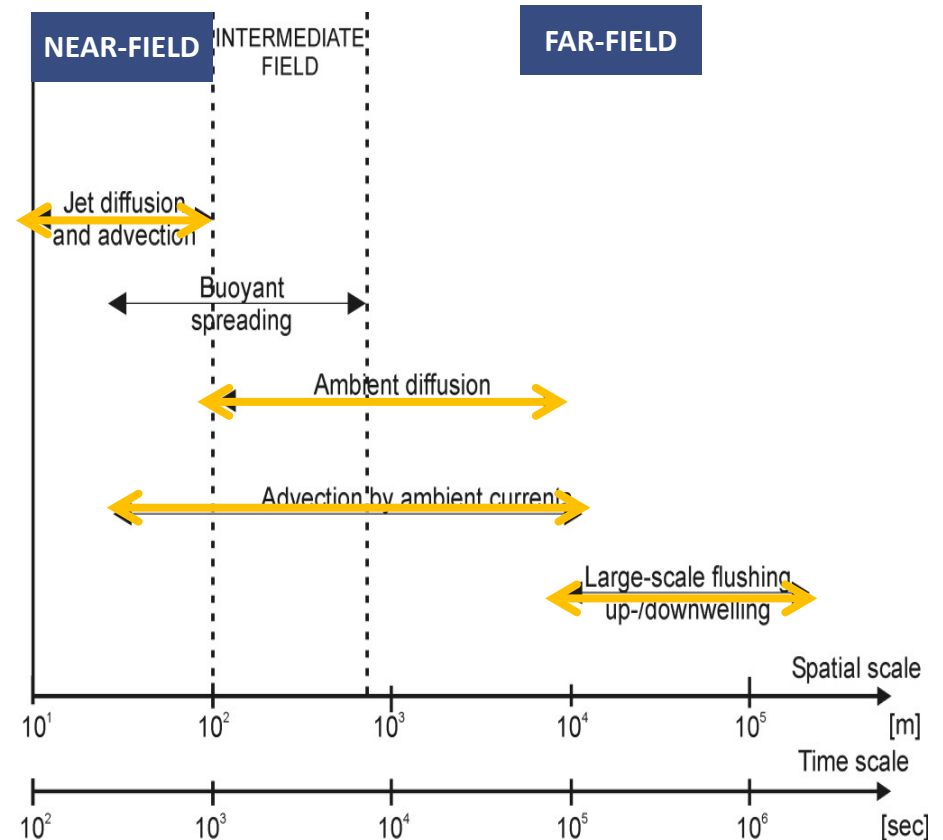


Initial Dilution Zone



Mixing Processes

- Mixing process govern:
 - Where the plume moves
 - How fast it disperses
- Near field:
 - Effluent velocity, density
 - Outfall design and location
- Far field:
 - Receiving environment characteristics:
 - Currents, tides, estuarine flows



Source: Bleninger, T., Jirka, G.H. and Roberts, P.J.W. 2011. *Mixing Zone Regulations for Marine Outfall Systems*. International Symposium on Outfall Systems, May 15-18, 2011. Mar del Plata, Argentina.

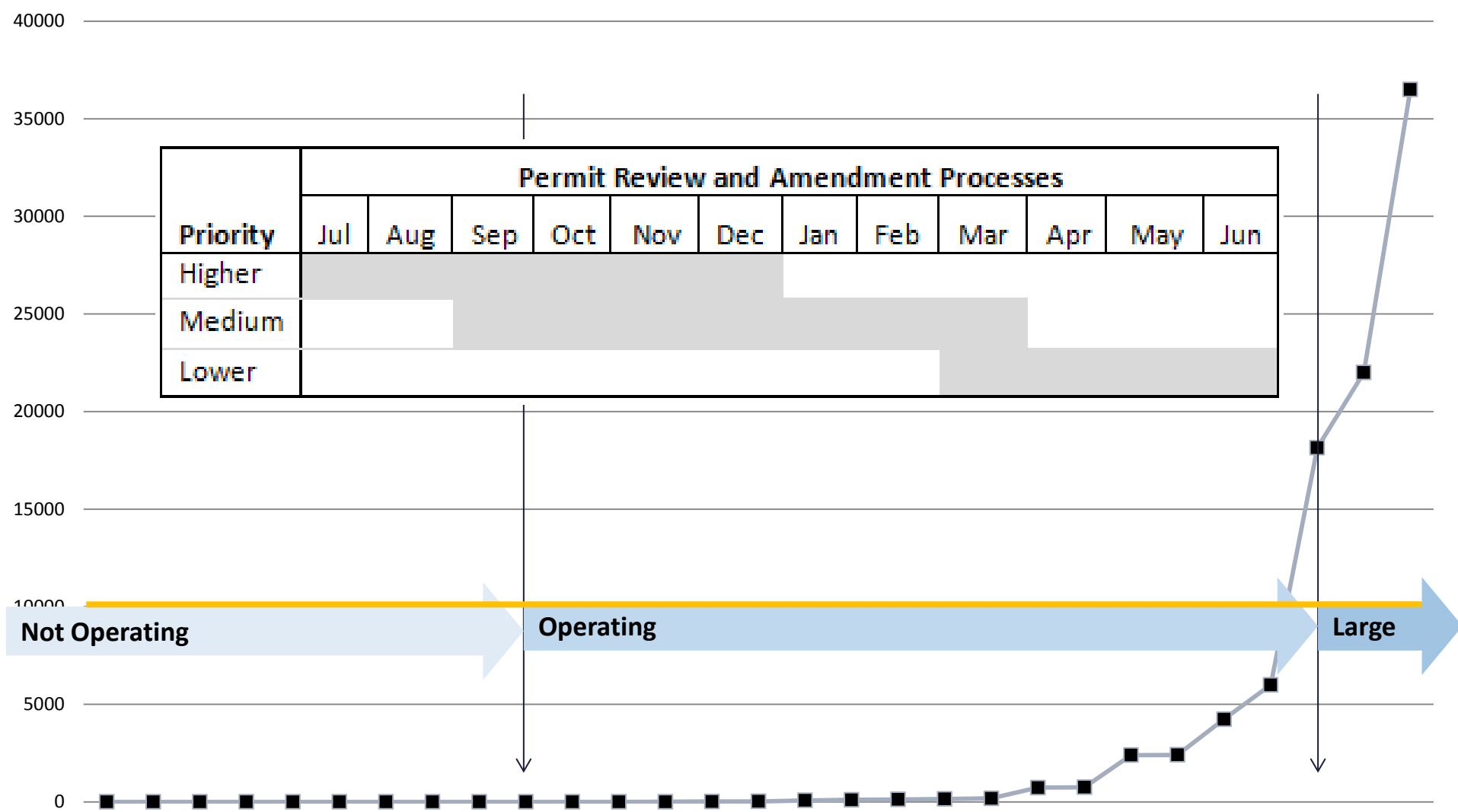
Qualified Professionals

- An applied scientist or technologist specializing in.... agrology, biology, chemistry, engineering, geology, or hydrogeology;
- Registered with the appropriate professional organization
 - acting under that organization's code of ethics
 - subject to disciplinary action by that organization;
- Suitable education, experience, accreditation and/or knowledge to provide advice within their area of expertise.

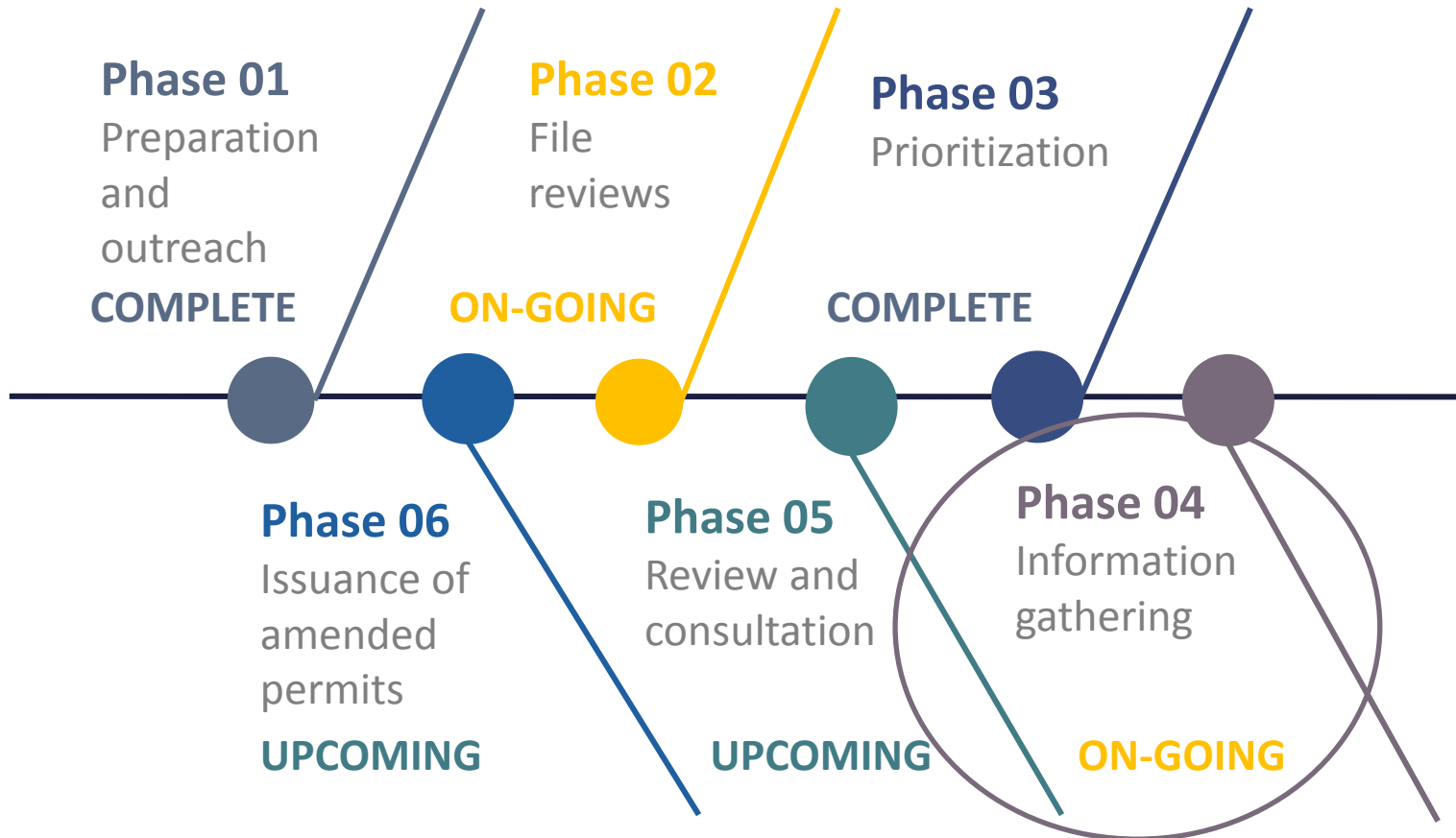
Amendment Process and Approach

- Guided by our Structured Application Process
 - Established procedures
- General approach is sector-wide
- Decisions will be site specific
- Prioritization based on production volume

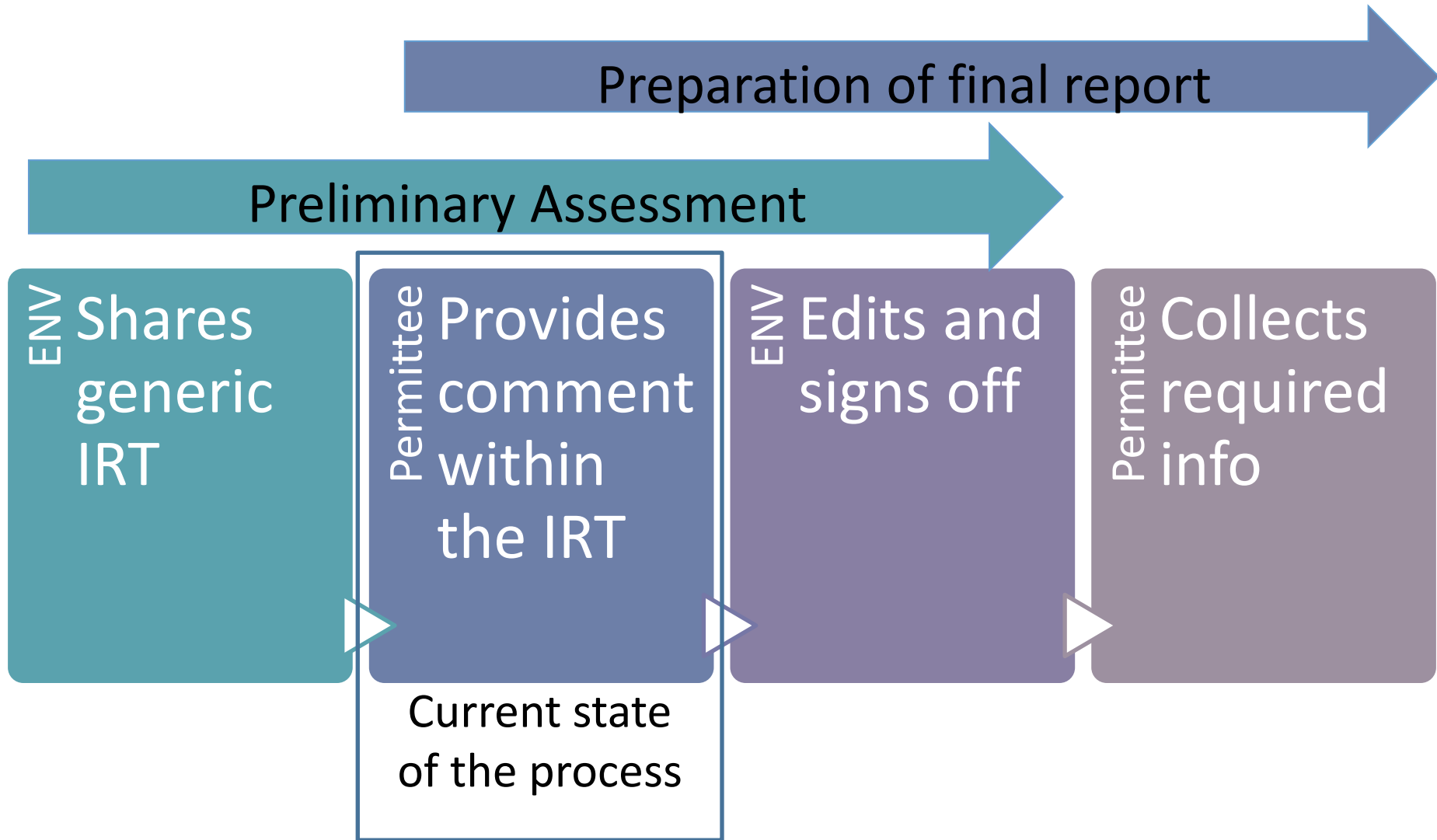
2017 Annual Production Volumes for Fish Processing facilities Permitted under EMA (t/yr)



Amendment Process



IRT Process



Information Requirements Table Overview



IRT Section 2

Environmental Setting

- Desktop review:
 - What is already known or readily available?
- IRT 2.1 – oceanographic features
 - Physical features that influence mixing, dispersion
- IRT 2.2 – existing monitoring data
 - Water quality, receptors, habitat
- IRT 2.3 – monitoring plan

IRT 2.3 - Minimum Requirements: Receiving Environment Monitoring Plan

- Assessment of existing water quality
- 2-4 locations, multiple depths + control
- Depth profiles: DO, temperature, salinity
- 5 in 30 sampling regime preferred
- TSS, BOD, ammonia, nitrate, enterococci
- Comparison to WQG, interpretation of risk
- Expand the program if issues are known
 - sampling locations, parameters, sediment, habitat

IRT 2.3 - Minimum Requirements

Receiving Environment Monitoring Plan

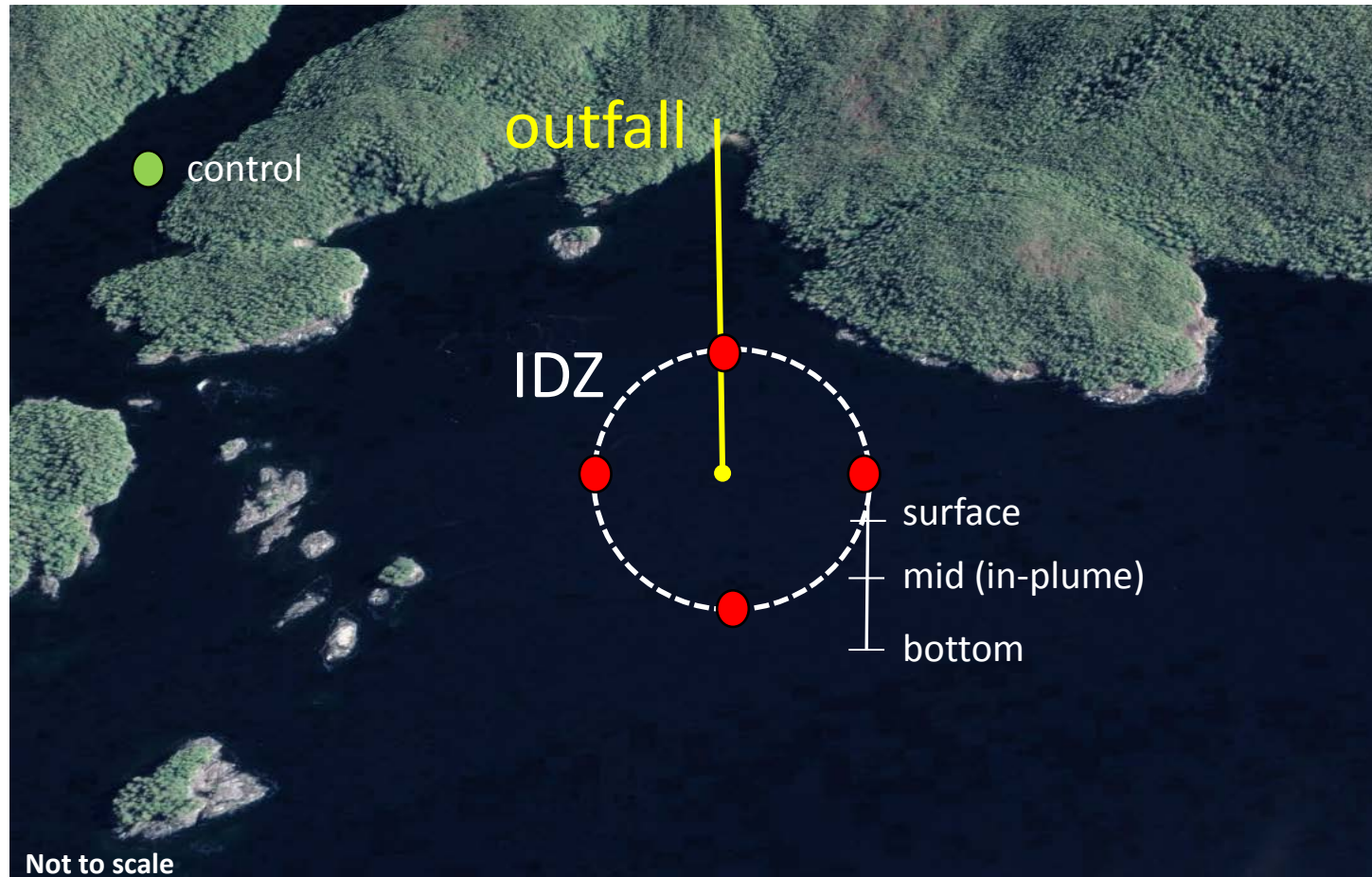


Image courtesy of Google Earth

IRT 2.3 - minimum requirements

Receiving Environment Monitoring Plan

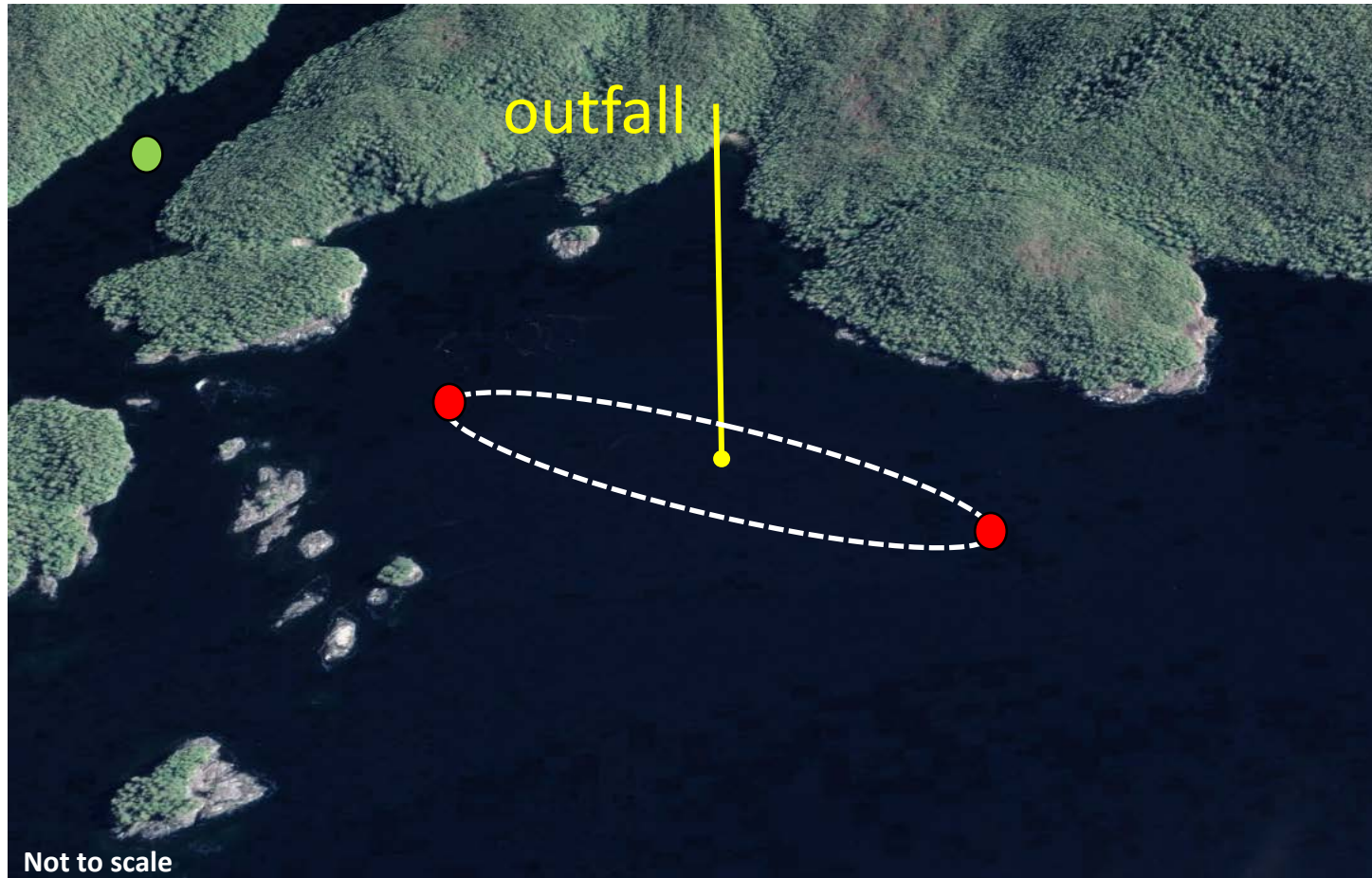
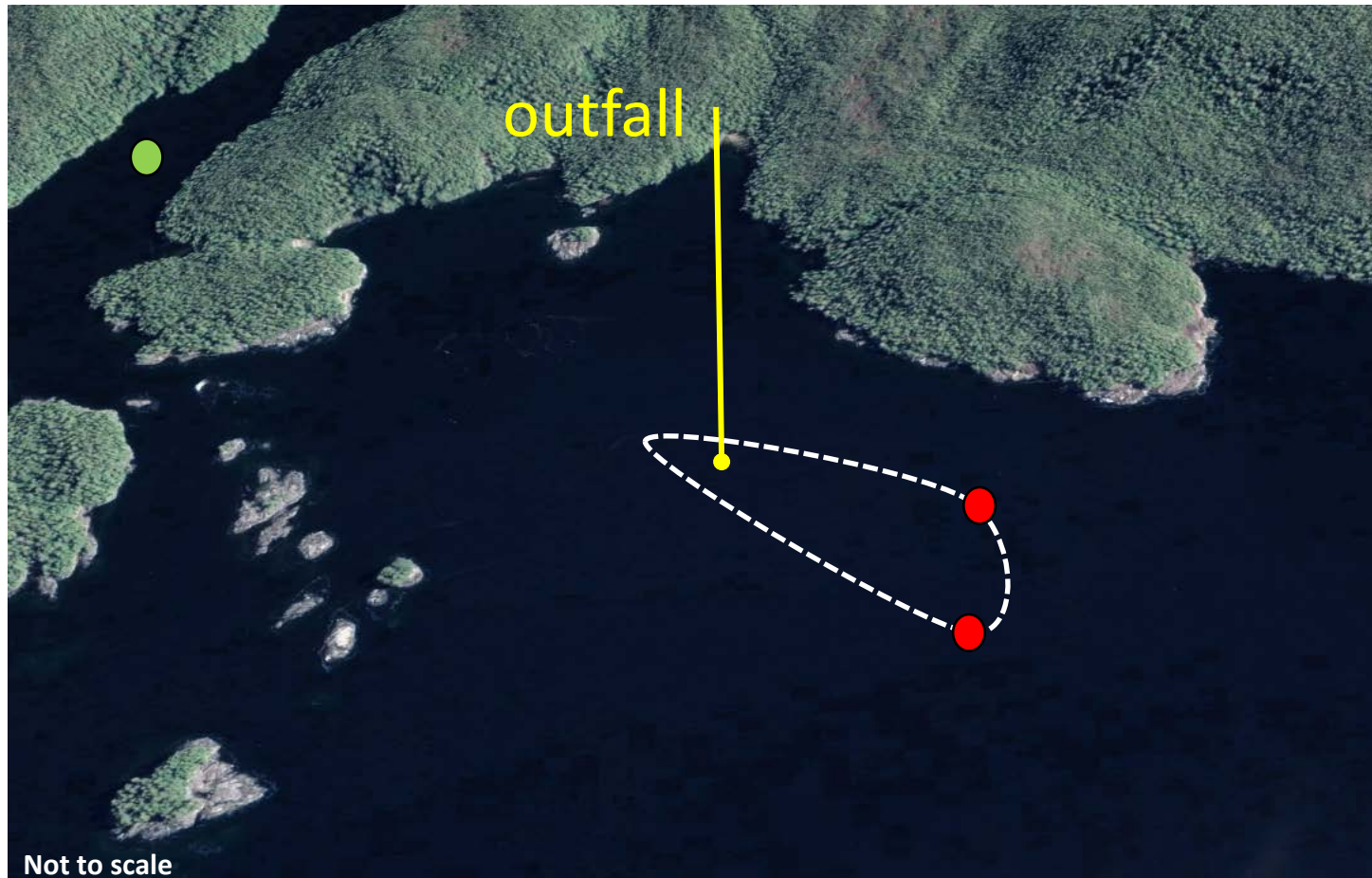


Image courtesy of Google Earth

IRT 2.3 - minimum requirements

Receiving Environment Monitoring Plan



Not to scale

Image courtesy of Google Earth

IRT Section 3

Effluent Discharges and Treatment

- Discharge quantity and quality (IRT 3.6, 3.15)
 - Flow rate
 - Contaminant concentrations
 - *Minimum requirements: TSS, BOD, ammonia, nitrate, enterococci*
 - Provide existing data
 - Collect additional data now
 - Describe the flow meter and sampling port
- Contaminant sources (IRT 3.1, 3.16)
 - Bloodwater
 - Process water
 - Chemical addition
 - Storm water
 - Sewage ➤ *Requires characterization*

IRT Section 3

Effluent Discharges and Treatment

- Treatment (IRT 3.2, 3.3, 3.4, 3.14)
 - Treatment works
 - Design criteria
- Outfall (IRT 3.10)
 - Length, depth, low water mark
 - Configuration of diffusers
- Process components (IRT 3.8, 3.17)
 - Flow diagram
- Residuals and disposal (IRT 3.11)

IRT Section 3

Effluent Discharges and Treatment

- Disinfection and pathogens (IRT 3.5, 3.7)
- Do you disinfect?
 - Rationale for why/why not
 - *Source, pathway, receptor*
 - Rationale for method of disinfection
- Do you have information on fish pathogens?
- Concern over wild salmon stocks

IRT Section 3

BAT and BMPs

- **Best achievable technology (IRT 3.13)**
 - achieves the best waste discharge standards and is economically feasible
 - site specific
 - considered when setting discharge limits
- **Best management practices (IRT 3.12)**
 - reduction of flows and contaminant concentrations
 - water usage, solids handling
 - can reduce the need and cost of treatment

IRT Section 3

Effluent Discharge Limits (IRT 3.9)

- Discharge limits warrant review
- Operating period
- Are the limits too low? ➤ *Compliance*
- Too high? ➤ *Permit fees*
- Capture the parameters of concern?
- Allow you to meet water quality guidelines?
- QP sign off (IRT 3.18)

IRT Section 3

Effluent Discharge Limits (IRT 3.9)

- Propose maximum and average discharge limits for:
 - TSS, BOD, ammonia, nitrates
- Site-specific parameters
 - E.g. Oil and grease, enterococci, chlorine

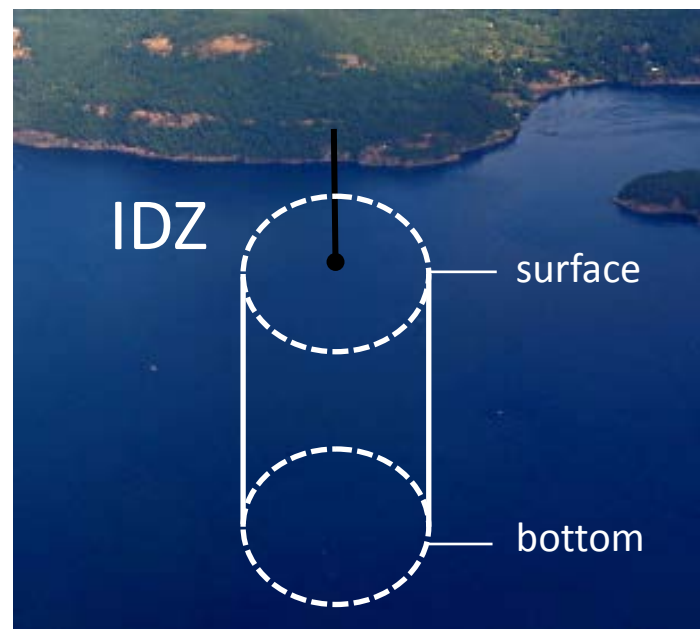
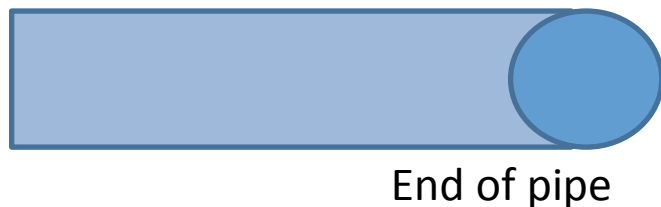
- Permit fees

Parameter	Annual fee per tonne
TSS	\$16.53
BOD	\$24.97
Ammonia	\$124.52
Nitrates	\$49.77
Oil and grease	\$83.02
Chlorine	\$330.62

IRT Section 4

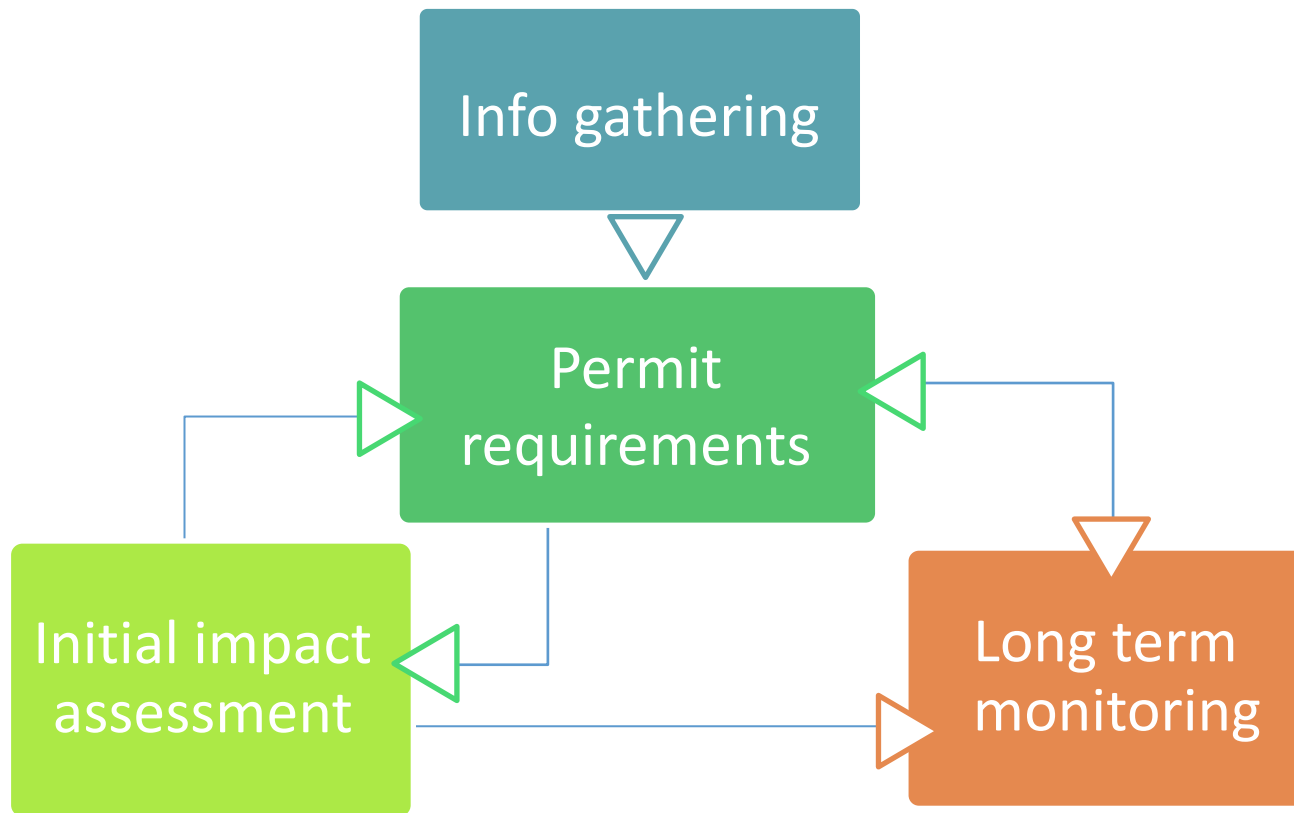
Impact Assessment (IRT 4.6, 4.8, 4.12)

- Provide rationale for the extent of the IDZ
 - Describe receptors and dispersion
- Show that proposed discharge limits allow you to meet WQG at the edge of the IDZ



IRT Section 4

Impact Assessment



IRT Section 5

Monitoring Plans

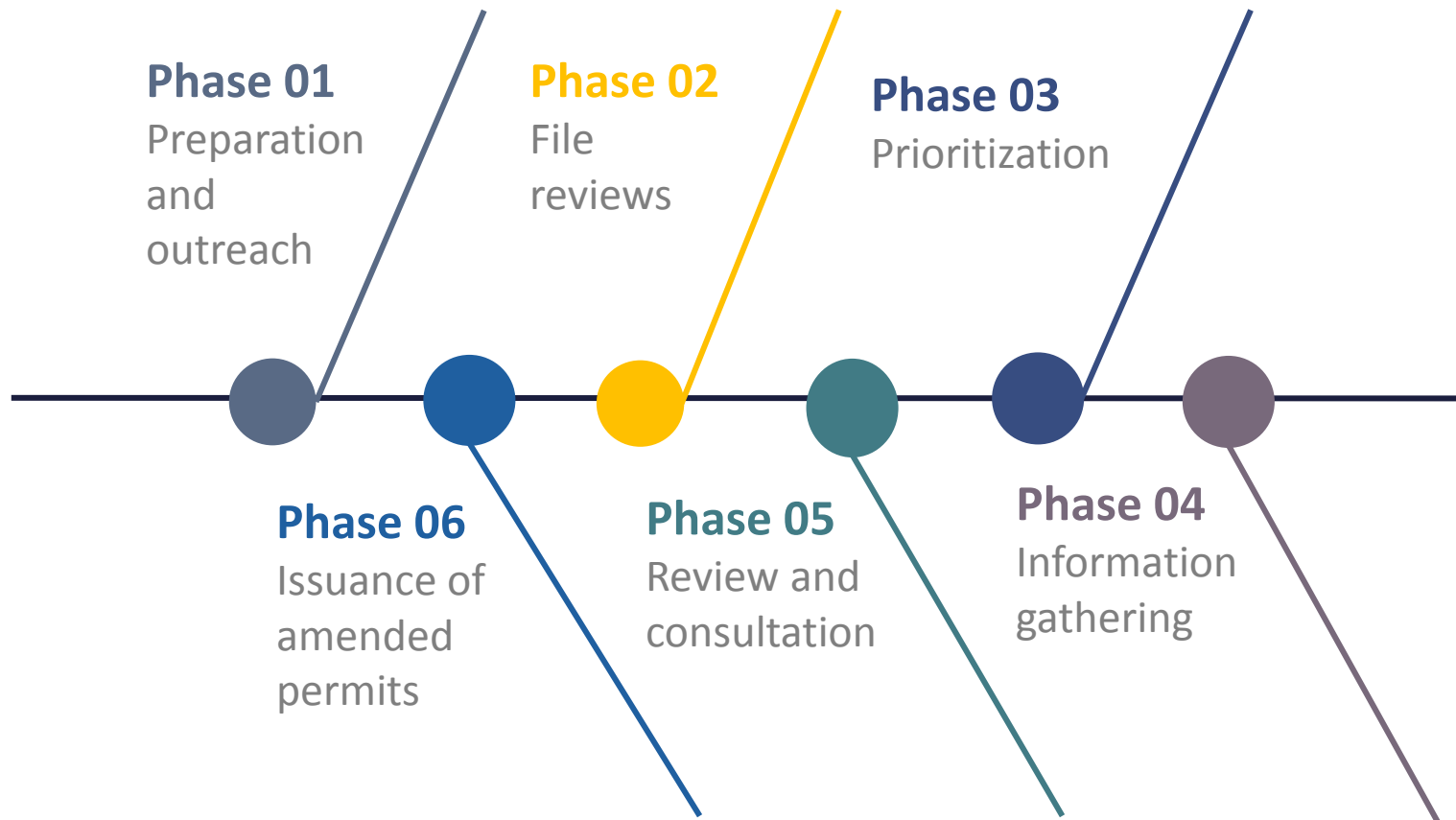
- Discharge monitoring
 - flow measurement in m³/d
 - effluent quality frequency based on operation
- Receiving environment monitoring
 - Long term monitoring plans may be refined following the assessment of existing conditions

IRT Section 6

Sewage Discharges

- Explain how sewage from the facility is managed
 - Septic
 - Combined discharge
 - Sewer connection
 - MWR registration
- MWR: sewage may be combined with an industrial discharge when $<10\%$ of flow

Next Steps: Amendment Process



Next Steps: Information Requirements

Permittee:

- Submit IRT within 3 weeks
- Use comments field in IRT, indicate:
 - Source / method where known
 - Explanation for N/A or not possible
 - Explanation for modifications to the info requirement
- *Begin collecting information*

ENV:

- Review IRT responses from permittees
- Revise and sign off finalized IRTs
- Notify permittees when their IRTs have been signed off
- Indicate expected date to receive complete information packages

Next Steps:

Review and Consultation

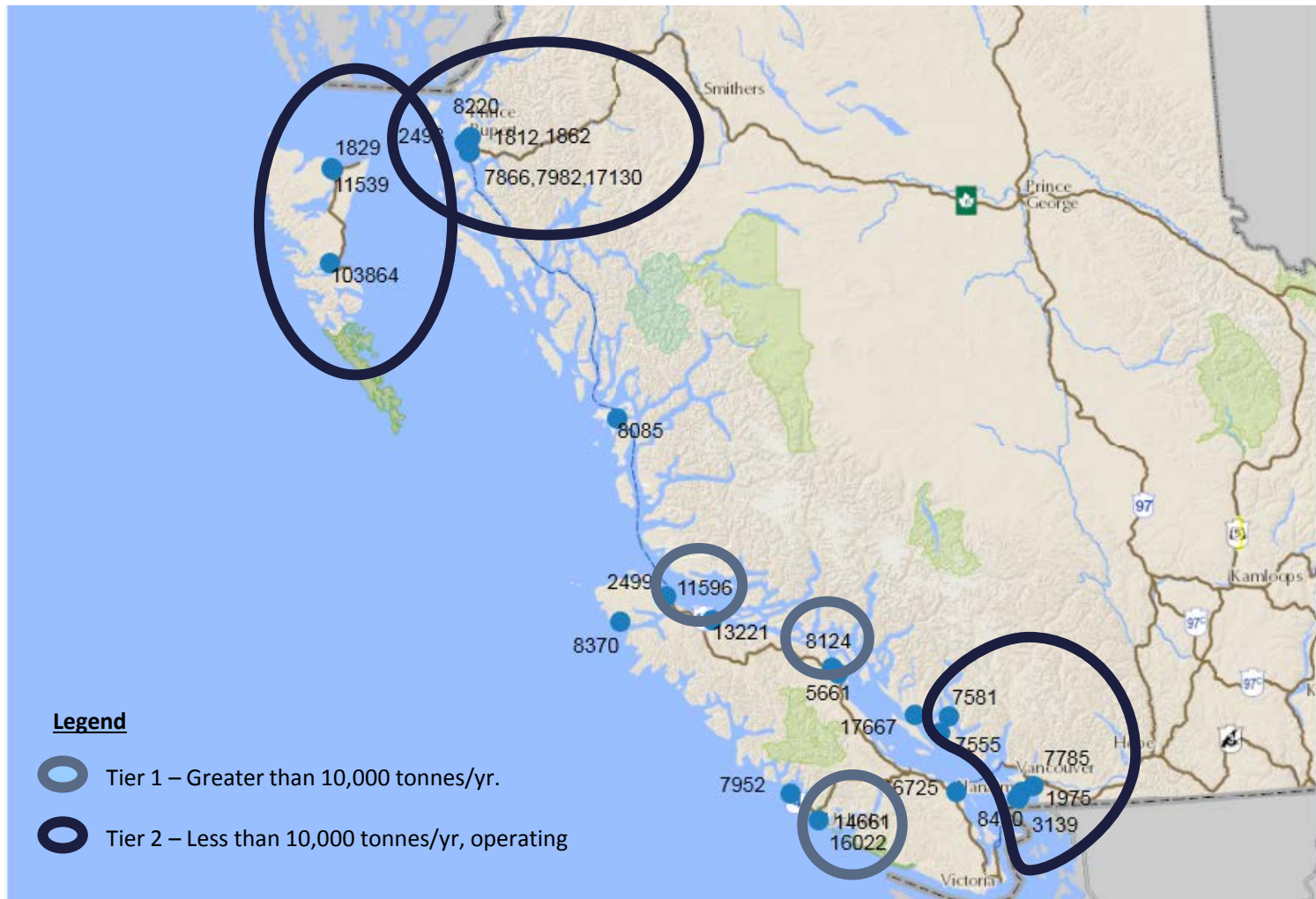
Review

- Expect comments and questions
- Iterative process

First Nations Consultation

- Duty to consult rests with Crown
- 30 day typical minimum consultation period
- Permittees are encouraged to engage First Nations
 - Explain the operation
 - Seek to understand and address concerns
- Government to government consultation in batches

First Nations Consultation



Next Steps: Timeline for Operating Facilities

Task	August	September	October	November	December	January	February	March
Draft IRTs to permittees	█	↓						
Pre-Amendment Information Sessions		█	↓					
IRT responses to ENV			█					
Final IRTs issued				█	↓			
Preparation and submission of information		█	█	█	█			
ENV review and FN consultation					█	█	█	
Draft permits shared for comment						█	█	
Recommendation packages to statutory decision maker							█	█

Next Steps: Timeline for Facilities that are Not Operating

Task	August	September	October	November	December	January	February	March
Draft IRTs to permittees	█	↓					↓	
Pre-Amendment Information Sessions		█					↓	
IRT responses to ENV							█	

