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PROPOSED AMENDMENTS TO THE *WASTEWATER SYSTEMS EFFLUENT REGULATIONS* (WSER)

ACWWA Information Session
January 27, 2022

Canada

PURPOSE

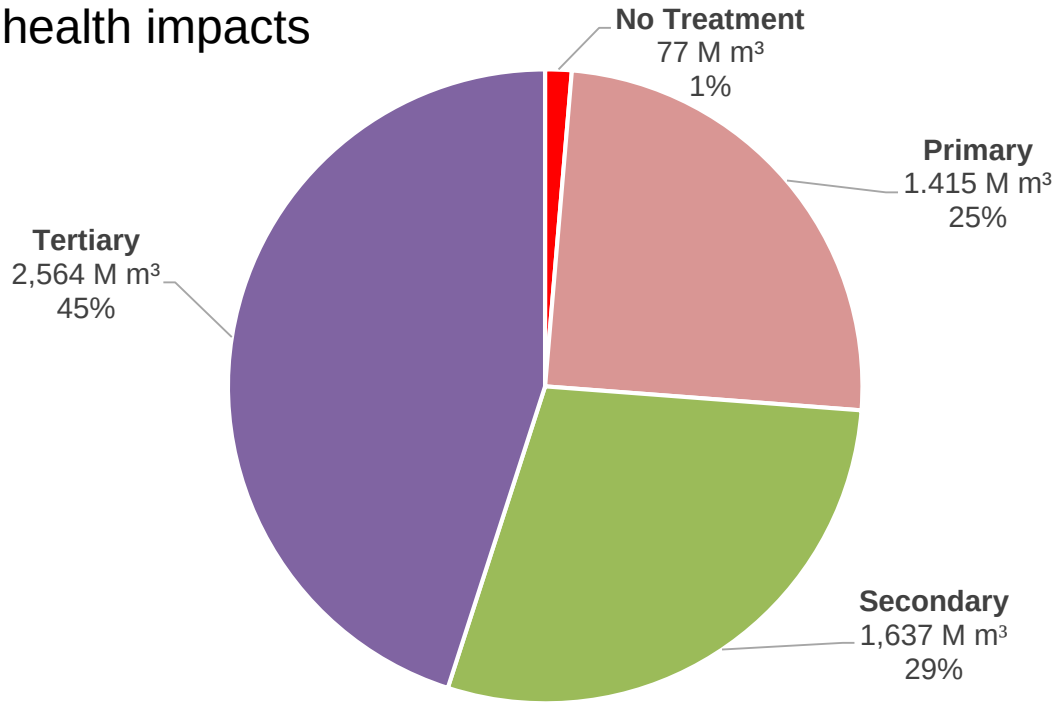
- Provide an overview of the Regulations
- Describe proposed amendments
  - Opportunity to provide feedback and ask questions
- Discuss next steps and timelines

WASTEWATER IN CANADA

- Wastewater is the largest source of pollution to water by volume in Canada (≈ 6 billion m^3/year)
  - Composed of a blend of domestic and industrial, commercial and institutional wastes including chemicals, pathogens, pharmaceuticals and pollutants
  - Known to have environmental, ecosystem, and human health impacts

- Level of treatment varies significantly across Canada, from no treatment, mostly in coastal areas, to advanced treatment

- All wastewater effluent (treated, undertreated or untreated) is subject to the *Fisheries Act* pollution prevention provisions (including Subsection 36(3))



Source: *Wastewater Systems Effluent Regulations* data and Quebec provincial data for 2020. Wastewater volumes with no treatment does not include systems in Quebec as data is not reported to ECCC

JURISDICTION OVER WASTEWATER

Federal Jurisdiction

- *Fisheries Act* pollution prevention provisions prohibit the deposit of deleterious substances into waters frequented by fish, unless authorized by regulation
- *Wastewater Systems Effluent Regulations* (WSER) made pursuant to the *Fisheries Act*
  - Part of a federal commitment in the 2009 Canadian Council of Ministers of the Environment (CCME) Canada-wide Strategy for Wastewater
  - Given shared jurisdiction of wastewater management, the use of bilateral agreements with provinces/territories was part of CCME strategy for implementation of WSER

Provincial/Territorial Jurisdiction

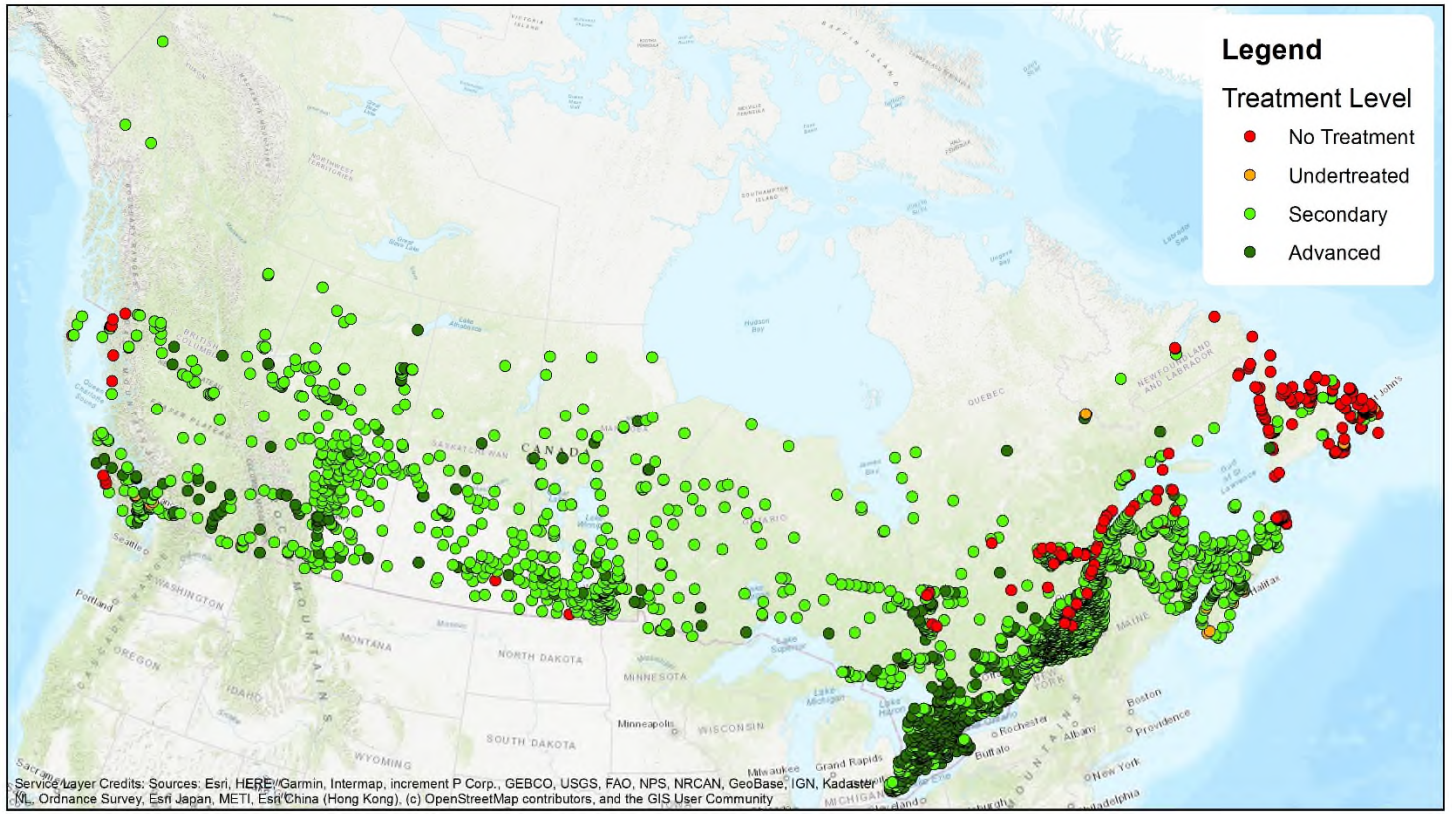
- Approach to wastewater management is not consistent across all provinces and territories
  - All provinces have regulations for effluent quality standards and/or issue permits for wastewater facilities, but differing standards/criteria; territorial water boards set rules and issue licenses

Municipal Jurisdiction

- Municipalities form the majority of owners/operators of wastewater systems
- Can have sewer use by-laws

WASTEWATER SYSTEMS EFFLUENT REGULATIONS

- Came into force in 2012
  - National effluent quality standards came into effect in 2015
  - Bring systems to secondary treatment level
- ~1,600 wastewater systems regulated under the Regulations
  - Collect an average daily wastewater volume of 100 m3 /day or more (≈ 200-250 people)
- The Regulations do not apply to:
  - Very small systems
  - NWT, NU, and north of the 54th parallel in QC and NL due to Arctic climatic conditions
  - Municipal and provincial systems in Yukon and Quebec which have equivalency agreements (approx. 650 systems)



Map includes wastewater systems covered under the QC and YK equivalency agreements

NATIONAL EFFLUENT QUALITY STANDARDS

- To comply with the WSER there are specific conditions for the discharge of wastewater:
  - Limits on the concentrations of certain conventional pollutants
  - Effluent deposited cannot be acutely lethal to fish (i.e. poisonous)
  - Requirements for monitoring, record keeping, and reporting

Deleterious Substances	Limit
Carbonaceous Biochemical Oxygen Demand*	≤ 25 mg/L
Total Suspended Solids	≤ 25 mg/L
Total Residual Chlorine	≤ 0.02 mg/L
Un-ionized Ammonia	≤ 1.25 mg/L

- The quality standards are typically achievable through a secondary level of treatment
  - Approximately 75% of wastewater systems subject to WSER currently have at least secondary level of treatment

TRANSITIONAL AND TEMPORARY AUTHORIZATIONS

- The Regulations provide a mechanism to apply for authorizations for systems to deposit effluent that does not meet the quality standards at the final discharge point

Transitional Authorization	**Allowed for extended compliance timelines for systems not designed to meet the standards; to provide time to plan and finance wastewater system upgrades**
Temporary Bypass Authorization	**Allows for a temporary exceedance of effluent quality limits to undertake maintenance, repairs and upgrades to wastewater treatment plants; to ensure the longevity and proper functioning of wastewater infrastructure**
Temporary Authorization to Deposit Un-ionized Ammonia	Issued for systems discharging acutely lethal effluent due to un-ionized ammonia, but otherwise compliant with TSS/CBOD effluent quality standards

MORE INFORMATION ON THE WSER

- Additional information may also be obtained on the Canada.ca website: https://www.canada.ca/wastewater
- WSER sampling guidance is available at: https://publications.gc.ca/site/eng/9.896119/publication.html
- WSER videos on compliance and reporting are available at: https://www.youtube.com/playlist?list=PLF90V7foF0CemVXJIRj4IlNIgIoRguRA7
- Unauthorized deposits factsheet available at: https://www.canada.ca/en/environment-climate-change/services/wastewater/system-effluent-regulations-reporting/overview/factsheet-unauthorized-deposits.html

PROPOSED AMENDMENTS TO THE *WASTEWATER SYSTEMS EFFLUENT REGULATIONS*

ECCC is considering amendments to the WSER on:

1. **Transitional Authorizations**
2. Temporary Bypass Authorizations

ECCC will also take this opportunity to clarify, simplify or revise administration provisions

Canada

TRANSITIONAL AUTHORIZATIONS (TA)

- Regulatees could apply for authorization before June 2014 for extension to meet effluent quality standards to account for wastewater system upgrades, if:
  - System did not meet effluent standards, and
  - System was not designed to meet the standards
- Needed to collect data at the final discharge point for 12 consecutive months over a 15 month period (between **June 2012** and **June 2014**)
- Could apply if the average concentration of CBOD or TSS exceeded 25 mg/L
  - Averaging period depended on the type of wastewater system and average daily volume
- Regulatees had to submit an application specifying the 12-month monitoring period, rationale, plans for modifications to be made, etc.

POINT BASED APPROACH FOR TRANSITIONAL AUTHORIZATIONS

Level of Risk	Extension period	Point based risk assessment
High Risk	End of 2020	≥ 70
Medium Risk	End of 2030	50 to < 70
Low Risk	End of 2040	< 50

- Points allocated based on effluent quality, volume and receiving environment
- Extended timelines to 2020, 2030, or 2040 were issued to eligible systems
  - 15 issued for 2020
  - 17 issued for 2030
  - 33 issued for 2040

TRANSITIONAL AUTHORIZATION CONDITIONS AND COMPLIANCE OBLIGATIONS

- Effluent must contain less than 1.25 times the concentrations of deleterious substance presented in the TA application:
  - CBOD (average)
  - TSS (average)
  - Un-ionized ammonia (maximum)

- Similar monitoring, reporting and record keeping requirements at final discharge point
  - Exception: no acute lethality testing required

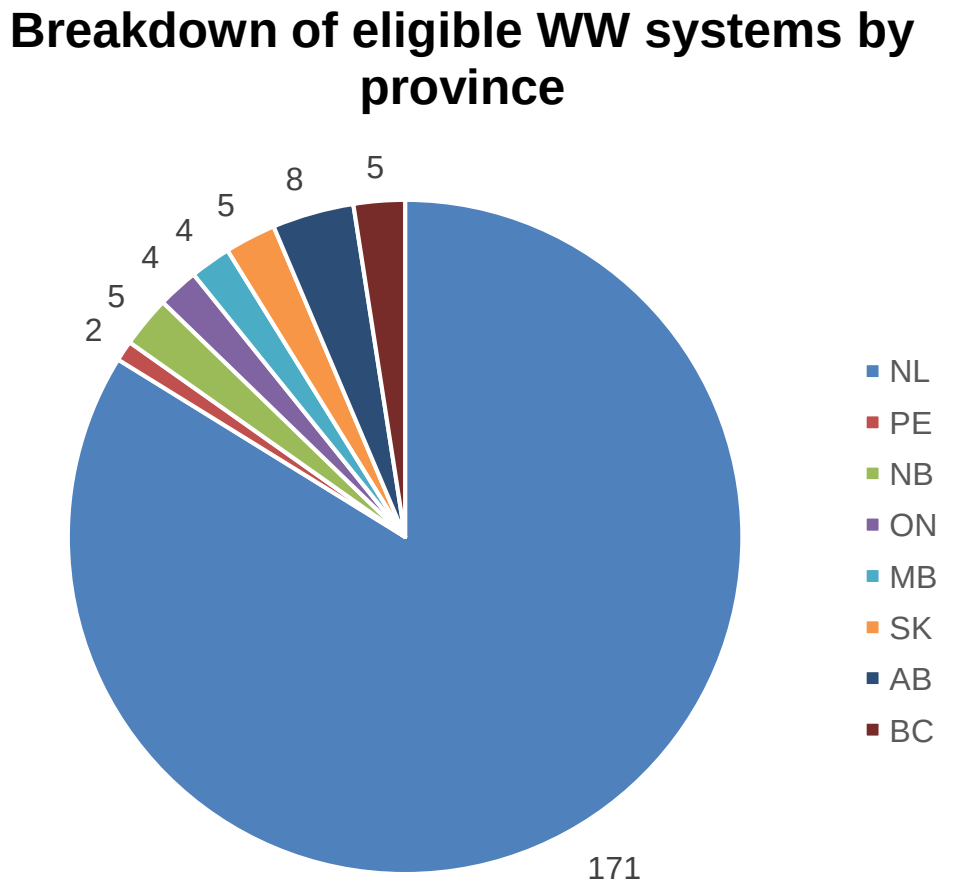
- Progress reports submitted to ECCC on a regular reporting schedule

TRANSITIONAL AUTHORIZATION: ISSUE

- WSER allowed for a one-time opportunity to receive a TA
  - Owners had until June 2014 to apply
- Systems without a TA have been subject to effluent quality limits since 2015
- Owners of more than **200 systems,** in more than **100 communities** across Canada, did not apply for a TA even though they would have been eligible
- These systems have been out of compliance since 2015 with both WSER and the *Fisheries Act*
  - Regulatees face long-term non-compliance as they can no longer access TA provisions even though they were eligible to be granted extended compliance timelines
  - Non-compliance status can reduce access to funding
  - Lack of clear and predictable timelines for when upgrades are expected to occur

SYSTEMS POTENTIALLY ELIGIBLE FOR A TA

- Most of these systems are in NL (84%)
  - Mostly smaller, rural communities with no treatment
- These systems represent just over 1% of total wastewater volumes in Canada
  - Represent approximately 2.4% of total undertreated/untreated wastewater volumes in Canada
- Regionally significant and represent almost 40% of total effluent volumes in NL



PROPOSED AMENDMENTS ON TRANSITIONAL AUTHORIZATIONS

Provide a new opportunity for eligible owners of wastewater systems to receive a transitional authorization

- Would only apply to wastewater systems that would be eligible to receive a transitional authorization to the end of 2030 or 2040
- Would use existing eligibility criteria and same timeline as in WSER currently
- Current transitional authorization holders, or those that would receive a 2020 timeline, would not be eligible to receive a new deadline or to extend their current deadline

PROPOSED TA APPLICATION PROCESS

- Not possible to use current provisions as is, a new 12-month monitoring period will need to be defined
  - Monitoring period currently referenced in the regulations cannot be used as most of the communities that are likely eligible did not sample during this period
  - Need to determine new monitoring period to assess eligibility, compliance timelines, and site specific limits

- ECCC is proposing a more flexible process
  - No set date for when applications must be received (open window to apply)
  - Allow the use of historical data for those already reporting under the WSER

- Approach allows systems already reporting under WSER to apply for a TA shortly after amendments go into effect (as early as 2023)

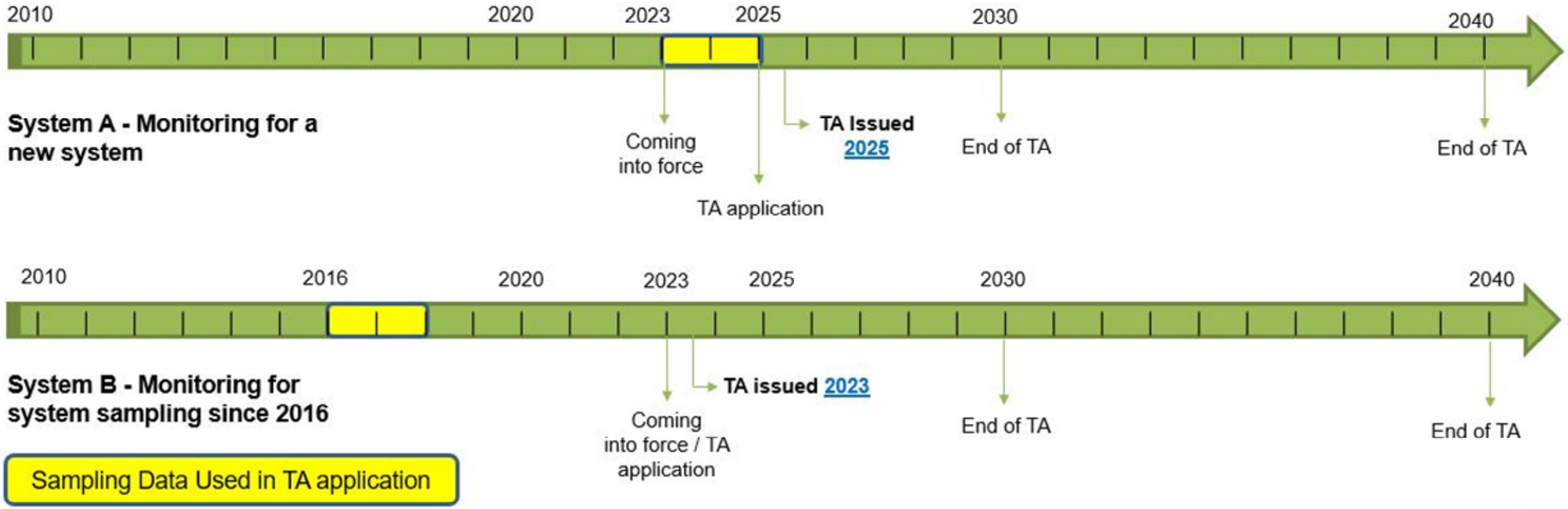
PROPOSED TA SAMPLING TIMELINES

- Sampling requirements will depend on whether a community is already reporting under the WSER or is a new system

- Systems already reporting under WSER
  - Quarterly reporters (mostly continuous systems) – Use a 12 consecutive month period within their earliest reported 15 months
  - Annual reporters (lagoons) – Use a 12 consecutive month period within their earliest reported 24 months

- New systems would monitor and report under the WSER at least 12 months before submitting a TA application

EXAMPLES OF TIMELINES TO APPLY



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UN-IONIZED AMMONIA

- Un-ionized ammonia results were required in the transitional authorization application
- Since 2014, ongoing sampling of ammonia is not required under WSER
- Only 6% of transitional authorization applications received points for ammonia
  - Systems received 20 points if maximum un-ionized ammonia ≥ 1.25 mg/L
- Requiring ammonia sampling for transitional authorization applications could create unnecessary burden and delay the application process

Proposal

Allow flexibility for owners/operators to demonstrate ammonia is not a risk factor through:

- Limited number of tests
- Use of historical data submitted federally or provincially
- Indirect factors to indicate ammonia is not an issue (e.g. low pH, passed acute lethality)

CONSOLIDATED SYSTEMS

Owners/operators are allowed to consolidate 10+ outfalls as one “future” system under the WSER

- Allows monitoring at a single outfall that represents the largest environmental risk for the duration of their transitional authorization

Proposal

Allow owners/operators to consolidate 2+ systems as one “future” system if outfalls will be combined into a single wastewater treatment plant

- Reduces administrative burden by focusing monitoring and reporting on the outfall with the largest volume and largest potential risk to the environment
- Owners/operators could better allocate their resources to upgrade their system rather than monitoring multiple individual outfalls

KEY QUESTIONS FOR CONSIDERATION

- How might the proposed re-opening on the transitional authorizations provisions impact you?
- What considerations should be taken into account to address impacts to you, your community, your environment?
- Do you have any comments or perspectives on re-opening the transitional authorization provisions?
- For systems that might be eligible for a TA:
  - Should the existing monitoring data be utilized for the application?
  - Should there be flexibility to demonstrate ammonia is not an issue (other than add. sampling)?
- What are your thoughts on using a flexible application process?

PROPOSED AMENDMENTS TO THE *WASTEWATER SYSTEMS EFFLUENT REGULATIONS*

ECCC is considering amendments to the WSER on:

1. Transitional Authorizations
2. **Temporary Bypass Authorizations (Planned releases for maintenance and construction)**

ECCC will also take this opportunity to clarify, simplify or revise administration provisions

Canada

OBJECTIVE OF TEMPORARY BYPASS AUTHORIZATIONS (TBA)

- Temporary bypass authorizations allow communities to temporarily exceed effluent quality limits when undertaking regular maintenance, repairs and upgrades to wastewater treatment plants

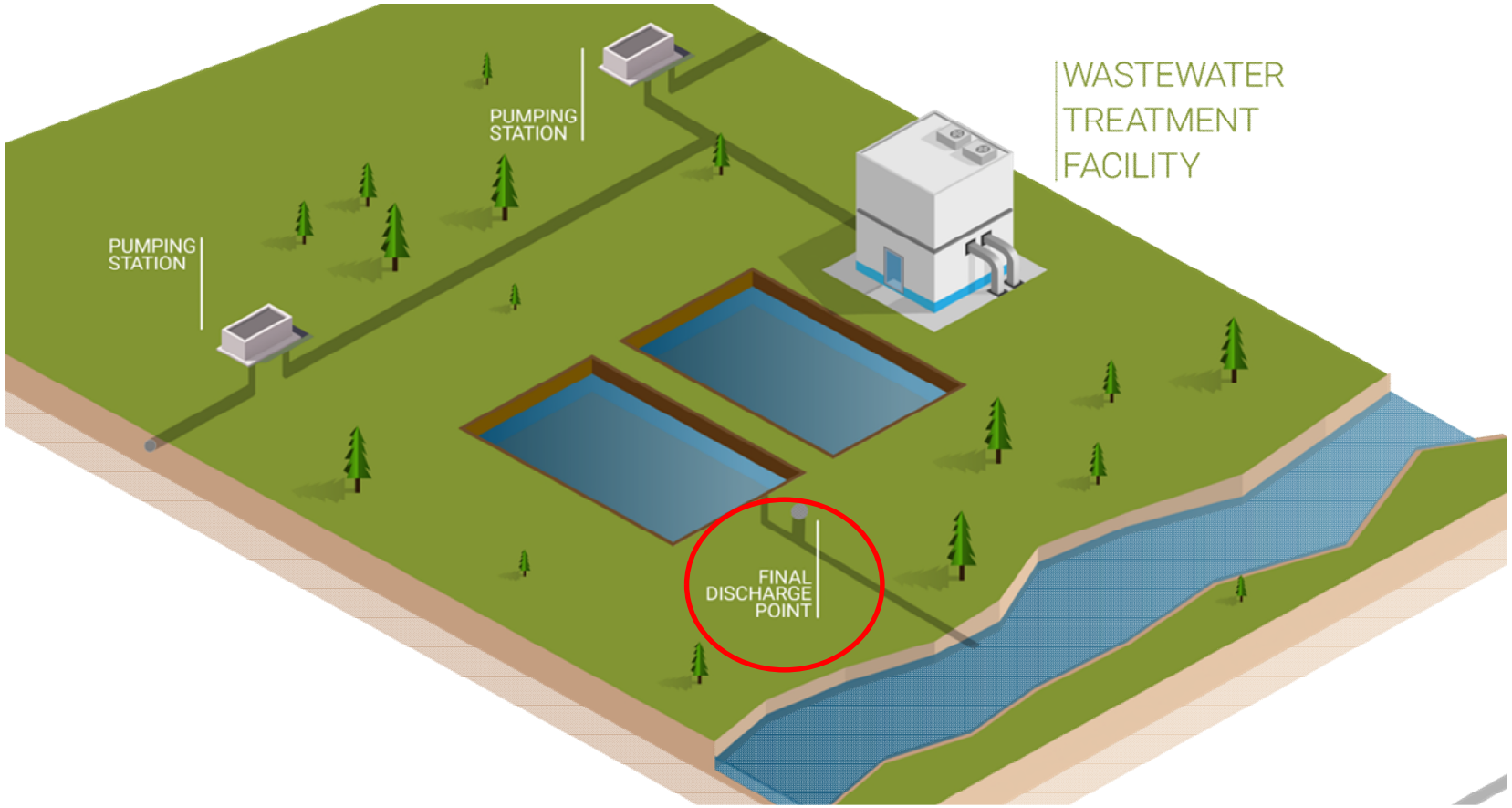
- Types of work include: cleaning filters, repairing lagoon liners, replacing parts that have reached end of service life such as pumps or valves

- Bypasses vary widely in terms of duration (few hours to a few weeks) and level of treatment of the effluent (from no treatment to secondary)

TEMPORARY BYPASS AUTHORIZATIONS

- Temporary bypass authorizations may be issued by the authorization officer if:
  - Release occurs at the wastewater system's final discharge point
  - Required for construction, maintenance or repairs
  - Designed to minimize volume of effluent deposited and concentration of deleterious substances
  - Made at least 45 days in advance
- Communities must mitigate environment impacts to whatever extent is possible
- ECCC may refuse to issue these authorizations if there is reasonable grounds to believe that the authorization would result in adverse effects on fish, fish habitat or the use by man of fish that cannot be mitigated
- 10-20 requests assessed each year; some requests are only submitted as a precaution, many systems are able to maintain some level of treatment while performing the required work

FINAL DISCHARGE POINT



ISSUE

- Communities need to perform maintenance and repairs in their collection systems which can result in unavoidable releases of undertreated wastewater from overflow points
  - Types of work include: repairing or replacing aging sewer pipes, critical maintenance to pumping stations, de-clogging sewer pipes
- Range from very small, short duration events, to larger releases lasting a few days; generally resulting in releases of untreated wastewater
  - Releases occur for health and safety of workers, to prevent breakages, or sewage backups
- Currently not authorized under the WSER and are subject to the pollution prevention provisions of the *Fisheries Act*
  - Likely that ECCC is not notified of all events (10-20 releases are reported yearly on average)
  - Planned discharges from sewer systems are allowed under some provincial regimes
  - Many of the actions that ECCC can take, will occur after a release has already occurred
- Concerns have been raised over absence of regulatory mechanism to authorize under federal regime, provide sufficient oversight, and ensure appropriate notification and engagement to impacted communities

PROPOSED AMENDMENTS ON PLANNED RELEASES

Expand the scope of current provisions to allow temporary bypass authorizations for all planned releases of wastewater for maintenance, repairs, and/or upgrades

- Set clear conditions to ensure transparency and reduce the environmental and social impacts of these planned releases, such as :
    - Notification provisions
    - Mitigation measures
    - Enhanced monitoring requirements
    - Additional reporting requirements
- When amending the regulations, ECCC will consider best practices and available solutions to avoid planned releases, reduce their frequency and duration, mitigate their effects and eliminate them in the longer-term

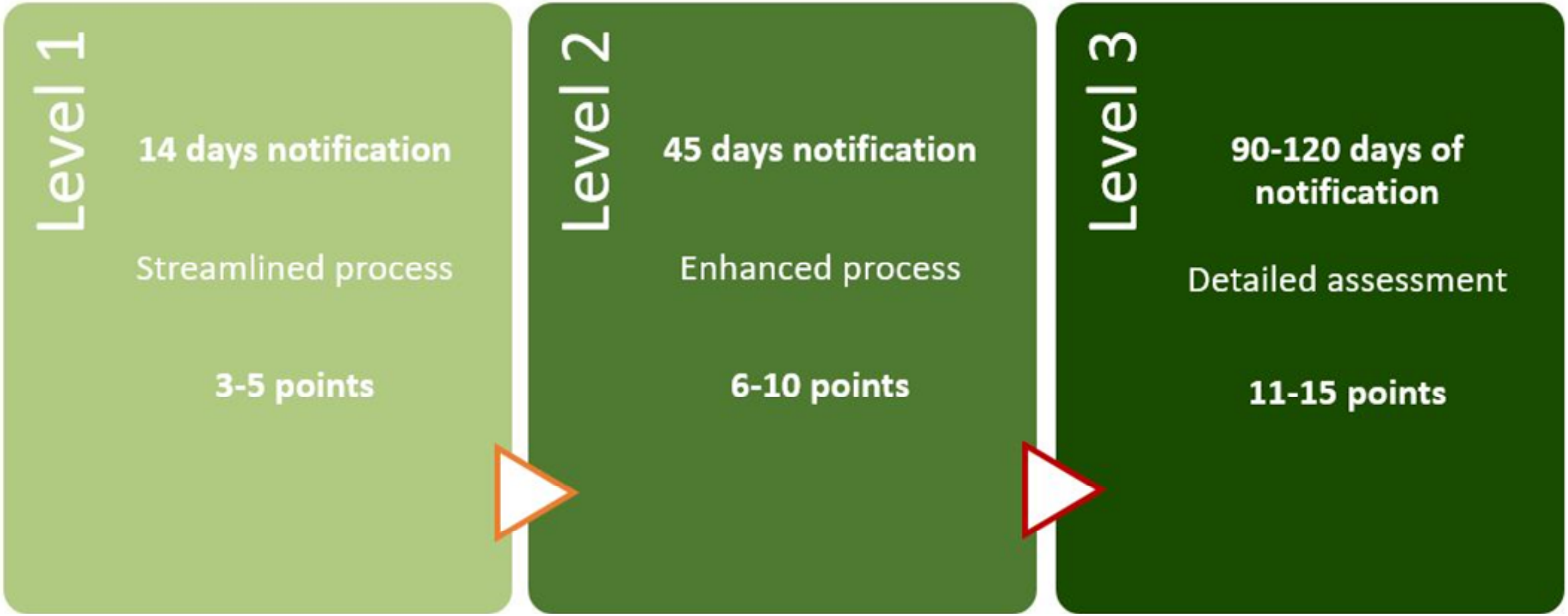
PROPOSED AMENDMENTS

Propose to use a point based scheme for all temporary bypasses to assess the potential level of risk of a release

Points are assigned depending on a number of criteria

Criteria	**1 point**	**3 points**	**5 points**
Rate of flow (volume/duration)	< 250 m^3/hour	250 – 2,500 m^3/hour	> 2,500 m^3/hour
Level of treatment	Greater than primary treatment	Primary treatment	No treatment
Receiving environment	Open marine waters / Larger rivers	Lake/Enclosed bay/Estuary	Small rivers/shellfish harvesting areas

PROPOSED TIERED APPROACH



**ECCC may also engage Indigenous communities*

LEVEL 1 (3 – 5 POINTS)

Example Scenario:
A small repair will bypass the effluent after the secondary treatment step, and discharge into a large river. Treatment plant rated at approximately 20,000 m^3/day (800m^3/hour)

Rate of flow: 250-2,500 m^3/hour (**3 points**)

Level of treatment: Greater than primary treatment (**1 point**)

Receiving environment: Open marine waters/Large rivers (**1 point**)

Total points: 5 points (Level 1)

Criteria	1 point	3 points	5 points
Rate of flow (volume/duration)	< 250 m^3/hour	250 – 2,500 m^3/hour	> 2,500 m^3/hour
Level of treatment	Greater than primary treatment	Primary treatment	No treatment
Receiving environment	Open marine waters / Larger rivers	Lake/Enclosed bay/Estuary	Small rivers/shellfish harvesting areas

LEVEL 2 (6-10 POINTS)

Example Scenario:
A bypass of effluent after primary treatment and discharge to a marine harbour near a shellfish harvesting area. Treatment plant rated at 3,000m^3/day (125 m^3/hour)

Rate of flow: <250m^3/hour **(1 point)**

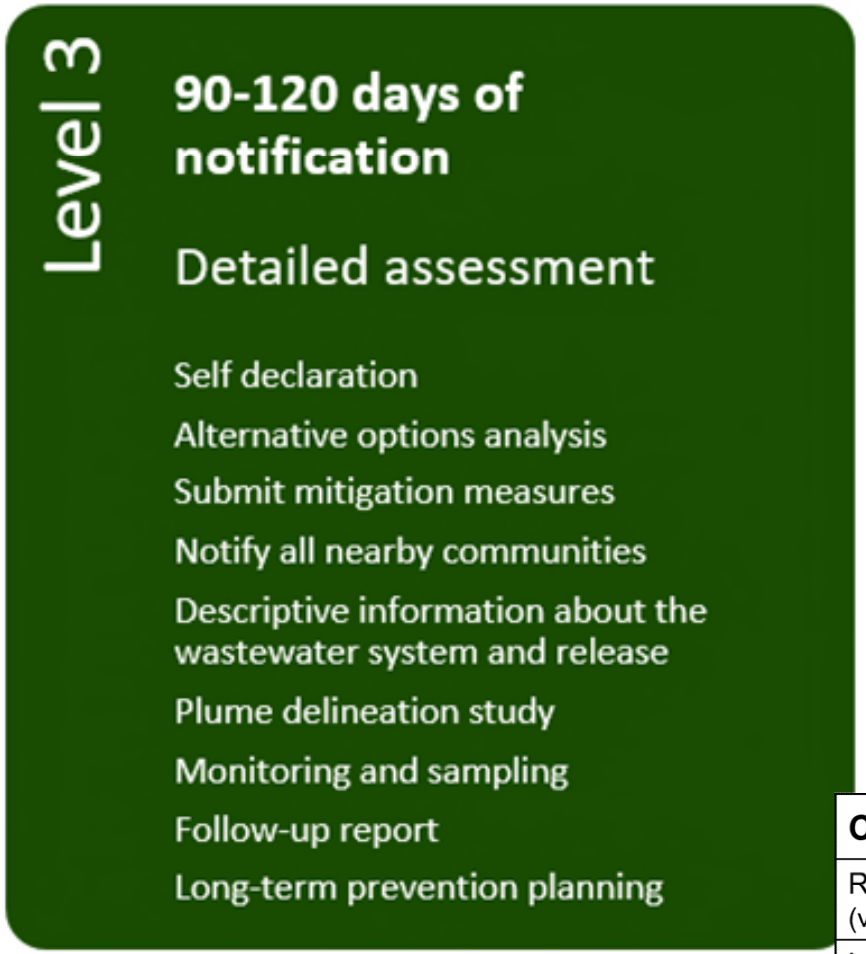
Level of Treatment: Primary **(3 points)**

Receiving environment: Small rivers/shellfish harvesting area **(5 points)**

Total points: 9 points (Level 2)

Criteria	1 point	3 points	5 points
Rate of flow (volume/duration)	< 250 m^3/hour	250 – 2,500 m^3/hour	> 2,500 m^3/hour
Level of treatment	Greater than primary treatment	Primary treatment	No treatment
Receiving environment	Open marine waters / Larger rivers	Lake/Enclosed bay/Estuary	Small rivers/shellfish harvesting areas

LEVEL 3 (11-15 POINTS)



Example of a Potential Level 3 Scenario:
Maintenance work on the sewer system which must bypass untreated effluent to a lake. Treatment plant rated at 500,000 m^3/day (~21,000 m^3/hour)

Rate of flow: >2,500m^3/hour **(5 points)**

Level of Treatment: No treatment **(5 points)**

Receiving environment: Lake/Enclosed Bay/Estuary **(3 points)**

Total points: 13 points (Level 3)

Criteria	1 point	3 points	5 points
Rate of flow (volume/duration)	< 250 m^3/hour	250 – 2,500 m^3/hour	> 2,500 m^3/hour
Level of treatment	Greater than primary treatment	Primary treatment	No treatment
Receiving environment	Open marine waters / Larger rivers	Lake/Enclosed bay/Estuary	Small rivers/shellfish harvesting areas

KEY QUESTIONS FOR DISCUSSION

- How might the proposed new temporary bypass provisions impact you?
- What considerations should be taken into account to address impacts to you, your community, your environment?
- How aware are you of the occurrence of planned discharges:
  - At overflow points/collection systems?
  - At the wastewater plant (final discharge point)?
  - What measures should be put in place to avoid or reduce the duration and volume of these planned releases?
- What are your impressions on using a tiered-level approach and point scheme system to evaluate releases
  - Are the criteria used to classify releases suitable ?
  - Is the information requested adequate to evaluate risk?
  - Is this information available?

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MONITORING AND REPORTING

- Systems that discharge raw effluent have the same monitoring and reporting requirements as a continuous system (i.e. for a small continuous system, monthly sampling and annual reporting)
  - Sampling frequency requires a significant level of investment and time, especially for small communities, with limited benefit given there is no control over effluent quality

Proposal

Small systems granted a transitional authorization sample and report on an annual basis, regardless if they have a continuous or intermittent discharging system

- Help communities concentrate efforts into upgrading wastewater system

OTHER PROPOSED ADMINISTRATIVE AMENDMENTS

- ECCC is proposing to address various operational/administrative challenges that have arisen during the course of administering the Regulations
  - Requiring notification when a system uses the exemption for suspended solids results between July – Oct as part of their average
- ECCC is reviewing provisions to streamline and reduce regulatory burden
  - Allowing more flexible methods for monitoring small continuous outfalls
- Look for opportunities to harmonize the WSER with other FA regulations
  - Outlining the notification requirements for unauthorized deposits

PROPOSED NEXT STEPS

- Discussion paper available for 90 day public comment period until March 5, 2022 Consultations on wastewater - Canada.ca
- Information sessions on the amendments until March 5, 2022
- All comments and inputs provided during this consultation phase will be considered in the drafting of the proposed regulations
- Publication in Canada Gazette Part I – targeting early 2023

PROVIDE FEEDBACK

ECCC invites all interested parties to provide comments or submit questions about the proposed amendments.

Feedback form to facilitate comments: https://forms.office.com/r/4WDPe7zRKQ

Comments can also be submitted:

– Via email : eu-ww@ec.gc.ca
– Via telephone : 819-420-7727
– Via mail :

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QUESTIONS?