

RECOVERY AND RESTORATION – SPEAKING NOTES

Slide #1 Title slide

Slide #2 Agenda

Slide #3 Terminology

- The term “recovery” is not referring to the recovery of spilled materials during the emergency/response phase of a spill.
- Environmental Recovery means the process of assisting in the recovery of an environment/ecosystem that has been degraded, damaged or destroyed by a spill. It includes any or all actions taken to return the site and any impacted resources to their pre-spill conditions. Umbrella term that includes restoration, remediation, and potentially in the future, the concept of compensation for loss of public use.
 - Restoration includes the restoration of: physical habitat such as flora and fauna; species (e.g. rebuilding a population of fish impacted by a spill); and infrastructure such as drinking water intakes.
 - Remediation generally refers to the process to remove residual contamination from soil, water, vapour and other media.
 - Compensation for loss of public use recognizes there may be impacts to communities and First Nations when resources are impacted by a spill. For example, a spill in the marine environment could result in materials being washed up on shore and lead to the closure of a popular beach. While rules for compensation of loss of public use are not being proposed at this time, amendments to the *Environmental Management Act* have created a framework for the Ministry to propose rules in this area in the future.
- BC already has a very comprehensive contaminated sites regime that handles remediation. Responsible persons who are required to undertake remediation would still be subject to the CSR.
- The Ministry is looking to create new rules around restoration and is working closely with the Contaminated Sites Regime to ensure alignment between processes. These conversations are ongoing.

Slides #4-7 What is recovery?

- Example to illustrate the recovery of the environment following a spill:
 - Slide 4: Imagine a lake with species such as fish and ducks. The lake is next to a forest which provides habitat for animals such as deer. The lake is a popular destination for fishing, swimming and other activities.
 - Slide 5: One day a spill occurs and materials enter the lake and surrounding soils/forest. During the emergency or response phase of a spill, clean-up efforts would seek to contain and remove spilled materials. However, after this phase has ended, there may still be impacts to the environment that require additional remediation or restoration actions.
 - Slide 6: Remediation actions would occur through the existing Contaminated Sites Regime and would be looking to remove any residual contamination from water, soils etc. Necessary restoration actions may include replanting trees, rebuilding impacted fish populations etc. There may be a period of time where there are no fish or where it is unsafe to swim which in the future could be addressed through compensation for loss of public use.
 - Slide 7: Recovery would not be considered complete until the site and impacted resources are returned to their pre-spill state; however, the Ministry recognizes this may not always be possible due to a number of reasons. In recognition of this, the Ministry has proposed new

mechanisms for mitigation and offsetting under the amendments to the *Environmental Management Act*. I will touch more on this later in my presentation.

Slide #8 Recovery in other jurisdictions

- While it is common for other jurisdictions to have regimes addressing remediation, it is less common for jurisdictions to have rules outlined for environmental restoration prior to a spill. This is not to say that jurisdictions don't undertake recovery and restoration, but that this tends to happen on a case-by-case basis and rules for doing so are generally not outlined ahead of incidents.
- In some cases, jurisdictions may have rules for specific pieces related to restoration as opposed to whole regimes addressing recovery and restoration. For example, the UK has a Pollution Response in Emergencies: Marine Impact Assessment and Monitoring (PREMIAM) programme that applies best practices in terms of science and coordination to post spill monitoring and impact assessment.
- On this slide, I've included a few examples of common elements within those jurisdictions that do have rules for recovery and restoration. However, these are not true comparisons because even those jurisdictions that do have common elements for recovery and restoration, each jurisdiction does things differently.
- For example, in the first column I've flagged both Washington State and the United States on a national level as having Natural Resource Damage Assessment (NRDA) processes. However, these two jurisdictions both approach NRDA processes quite differently. The NRDA process is a process to evaluate or quantify damages from a spill. On a federal level in the United States, they approach the NRDA process through a research model, undertaking studies to determine damages. In Washington state, they have developed a formula model approach where they use a compensation schedule to determine damages from a spill. This approach involves using an equation where they plug in pre-determined values in a spill for things like the receiving environment, species present, and the product, and can quite quickly calculate a value that equates to the damages from a spill.
- I am happy to speak to these or other examples from this slide further during our question and answer session at the end.

Slide # 9 Recovery in BC after a spill

- Prior to the introductions of the amendments to the *Environmental Management Act*, there was no process for determining how impacts to the environment following a spill will be determined, recovered or compensated for.
- Staff in the Environmental Emergency Program may either negotiate with the party at fault on how to remediate or lead remediation work and pursue costs through the court (*2012 technical analysis, Nuka Research Group*).

Slide #10 Recovery in BC after a spill

- Amendments introduce new powers to ensure recovery and restoration of the environment following a spill.

Slide #11 Work to date

- Work on the development of BC's Spill Response Regime actually originated back in 2010 when the Ministry received cabinet approval to proceed. This led to the Technical Analysis in 2012 and the first intention's paper.

Slide #12 Work to date

- In 2013, the Ministry held a symposium on land based spill preparedness and response attended by around 200 participants. This symposium was followed by technical working groups including one for recovery and restoration.
- Also in 2013, the Ministry commissioned a three volume report by Nuka Research Group entitled “West Coast Spill Response Study”. This report included an assessment of gaps in BC’s Spill Response Regime which noted a lack of formal process to ensure recovery and restoration following a spill.

8. Work to date

- In 2014, the Ministry released its second intentions paper. Both the first and second intentions paper discussed the possibility of a NRDA process for BC. If you’ve read the legislation and third intentions paper, you’ll note this is not something that is being proposed at this time. The Ministry is still considering a NRDA process and looking at research and formula based models for NRDA processes, but has developed a process using recovery plans at this time. This is to allow the Ministry to have direct oversight over the recovery and restoration process in the first few years of this regime to ensure it works as it should prior to implementing an automated process such as a formula model approach. I am happy to speak to this more during the question and answer period at the end of the presentation.

Slide #13 Work to date

- Brings us to 2016 – as I’ve noted, we’ve introduced amendments to the *Environmental Management Act* and have released our third intentions paper which you all received a copy of in your registration package. We also commissioned another report by Nuka Research group which examined world leading practices for spill preparedness, response and recovery in other jurisdictions.

Slide #14 The Recovery Process

- This slide shows the recovery process as outlined in the *Environmental Management Act* amendments. I am going to spend most of my time talking about the middle piece of it in light blue, but want to first draw your attention to the three different arrows showing the ‘response phase’, ‘recovery phase’, and ‘remediation under the CSR’. You’ll notice that all three arrows start at the same time, which is to show that actions under the recovery phase may commence during the response or emergency phase and continue well after the response or emergency phase has ended.
- The recovery process – shown in light blue in the middle of the slide – starts when the director determines a recovery plan is needed and if so, orders the responsible person to prepare one (Box 1). This determination is made based on the severity or significance of a spill and at the discretion of a director. This decision will be guided by operational policy.
- You may wonder about the “No” – this just means that recovery was not required which could be for a number of reasons. For example, there was no damage to the environment or clean-up in the response stage ensured there was no environmental damage etc.
- The responsible person prepares a plan which the director can either approve or send back for amendments. Once approved, the responsible person will carry out the plan and ensure they have qualified staff to do so. Upon completion, a report is prepared for the director. The director may order a certificate of recovery.

- As I touched on earlier, remediation may be necessary as part of returning the environment to its pre-spill state. Remediation is shown as a separate line because it is governed under the Contaminated Sites Regime. This slide shows that restoration and remediation actions may occur concurrently; however, this process may also occur sequentially. In some cases, restoration actions may not be necessary or vice versa. For example, spill of 20000L of boiling water – would not contaminate soil – but, may kill fish populations etc. This is just to say that due to the unpredictable nature of spills, this process may not always look exactly as outlined on this slide.

Slide #15 Mitigation and Offsetting

- As I mentioned earlier, we have introduced new mechanisms for mitigation and offsetting when complete restoration of a site impacted by a spill is not possible.
- This slide is showing the Mitigation Hierarchy from BC's Environmental Mitigation and Offsetting Policy. This policy states that impacts are always to be avoided whenever possible, minimized when they cannot be avoided, restored, and as a last resort, offset.
- Once a spill happens, it is no longer possible to avoid impacts and through the emergency or response phase of a spill, efforts would be made to minimize impacts through actions like deploying protective booming for sensitive areas etc. Any impacts to the environment remaining after the emergency/response phase would aim to be addressed through on-site restoration; however, we recognize this may not always be possible. For example, it may be unsafe to undertake further restoration or restoration actions may actually cause more damage than allowing the environmental to naturally recover. In these circumstances, offsetting may occur through restoration undertaken at another site with similar species or habitat, or payment may be made to an organization to undertake restoration activities.
- The emphasis is always to restore whenever possible, but these mechanism do allow the Ministry more flexibility when complete restoration is not possible.

Slide #16 Work underway

- In terms of the work the Ministry will be undertaking for recovery in the next year, a significant piece of work is determining the content of recovery plans. The third intentions paper discusses some of the pieces the Ministry is considering including in recovery plans, e.g. recovery actions which outline the actions the responsible person will undertake to recover the environment including associated timelines to undertake those actions. In order to ensure actions are successful, it will likely be necessary to undertake sampling and monitoring.
- Further, what role do stakeholders and First Nations play in the recovery process? Transparency and participation is another significant piece of work the Ministry is examining over the next year. For example, should stakeholders and First Nations work with government and the responsible person to propose recovery actions? Should there be a public comment period where recovery plans are posted online for stakeholder and First Nations input? We're looking to hear from you.
- I also mentioned earlier the Ministry will be developing operational policy to support the decision maker in determining when a recovery plan is needed. This is another piece of work the Ministry will be developing over the short term.
- There are many other pieces of work to be undertaken in the future for recovery such as the compensation for loss of public use I referenced earlier. It is likely work on the recovery and restoration part of BC's Spill Response Regime will take place over many years to come.

Slide #17 Next steps

- In terms of next steps, the Ministry is looking to gather your input through the discussion at the end of this presentation as well as through online submissions at <https://engage.gov.bc.ca/spillresponse/>.
- You'll note that there is no technical working group proposed for recovery and restoration at this time. This is not to say that there will not be working groups for this topic, but just that more work needs to be done prior to having more detailed discussions. It is likely there will be multiple working groups for recovery and restoration in the future. If you are interested in participating in future working groups for recovery and restoration, you can indicate your interest on the sign-up sheet.

Slide #18 Thank you!**Slide #19 Questions****Slide #20 Discussion**

- In the third intentions paper, we propose the following questions for your input:
 1. Do you have any thoughts on the elements under consideration for inclusion in recovery plans? Anything you would add?
 2. To what extent should stakeholders be involved in recovery planning? E.g. propose recovery actions, comment on plans
- We are also interested in any examples you may have of when restoration was successful and why.

Slide #21 Feedback on the Intentions Paper 3