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DISCUSSION PAPER

CANADA'S PREPAREDNESS AND RESPONSE FOR HAZARDOUS AND NOXIOUS SUBSTANCES RELEASED FROM SHIPS



Through the [Oceans Protection Plan](#), we are improving how we prepare for and respond to releases of hazardous and noxious substances (HNS) from ships into the marine environment. This discussion paper provides an overview of the current situation and seeks public perspectives on this issue.

In this paper

- [Introduction](#)
- [Definition of hazardous and noxious substances](#)
- [HNS in Canada's marine safety system](#)
- [Comparing HNS releases and oil spills](#)
- [Potential actions](#)
- [Next steps](#)
- [Contact us](#)

Introduction

The transportation of hazardous and noxious substances (HNS) by ships is an important part of Canada's international trade. HNS include substances transported in bulk as liquids, liquefied gases, solid materials and materials in packaged form.

While HNS releases at sea are extremely rare, they could have a significant impact on public health, the environment, marine life and the economy. For this reason, we intend to build a preparedness and response system so that, in the event of an HNS incident in Canada, all parties know their respective roles and responsibilities. This would allow an effective plan to be developed to quickly and effectively mitigate the damage.

We are seeking public input to assist us with the development of a Government approach to prepare for and respond to HNS incidents in Canadian waters. This discussion paper has been designed to guide your thoughts and comments.

Definition of hazardous and noxious substances

The term “hazardous and noxious substances” is used by the International Maritime Organization (IMO). It appears in a number of international treaties, including the IMO's protocol on HNS preparedness and response. For the purposes of this paper, HNS is intentionally defined in general terms as most substances, if released into the marine environment, would likely require some form of response.

An HNS is any substance other than a petroleum product which, if introduced into the marine environment from a ship, is likely to:

- create hazards to human health
- harm living resources and marine life
- damage amenities
- interfere with other legitimate uses of the sea

When released, HNS can float, dissolve or sink in water, evaporate into the atmosphere or have multiple different reactions. Interactions between substances can also result in different behaviours and since HNS may evaporate or dissolve, there may be nothing to recover after a release.

In the context of HNS preparedness and response, the primary focus is on substances that are toxic or potentially harmful, with the exception of petroleum, which already has a preparedness and response regime.

Questions for consideration:

Do you agree with this definition of HNS for Canada? If not, how could it be improved?

Hazardous and noxious substances within Canada's marine safety system

Canada's marine safety system is built on 3 pillars to protect marine ecosystems and enable safe and efficient shipping.

1. **Prevention:** establishing measures so that incidents are avoided
2. **Preparedness and response:** being ready and taking action in case of an incident or spill
3. **Liability and compensation:** ensuring the polluter pays for response, clean-up and restoration after an incident

While there is a [robust regime for oil spills from ships](#) that extends across all 3 pillars, the measures in place for HNS incidents are more limited.

Canada has a system to **prevent** marine incidents from occurring, such as aids to navigation and vessel traffic services. This system supports the safe movement of ships in Canadian waters, whether they are carrying oil, HNS or other cargo. For more detail on these prevention measures, visit our [preventing spills from vessels](#) page.

To date, we have not developed a **preparedness and response** system that specifically applies to HNS incidents. This is in part because of the low number of HNS releases internationally, as compared to oil spills. While no major HNS incident has occurred in Canadian waters so far, an effective HNS preparedness and response program would reduce the harmful impacts of any future incidents.

The Government of Canada recently ratified the IMO's 2010 HNS Convention for **liability and compensation**. This positions Canada as a leader in the move towards creating a liability and compensation structure for HNS.

Current approach

Hazardous and noxious substances incidents in Canada have been relatively small in scale. For that reason, they have been managed on a case-by case basis. The volume of HNS transported as part of our international trade, however, highlights the potential for a major HNS release occurring in Canadian waters. As the circumstances of major HNS incidents could vary dramatically and involve a wide range of parties, we are looking at establishing a more formal approach to HNS preparedness and response that guides response across a variety of scenarios.

Canada's preparedness and response measures for HNS incidents have been the focus of several reports in recent years.

Most recently, the [Tanker Safety Expert Panel's 2014 report](#) recommended that a formal approach to HNS preparedness and response be established in Canada.

Notably, the Tanker Safety Expert Panel recommended that Canada sign on to the IMO's Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS Protocol) as an initial step towards a national program of preparedness and response for HNS releases from ships.

2000 OPRC-HNS Protocol

- 40 countries are party to the Protocol
- Endorses "polluter pays" and "precautionary" principles
- Provides a global framework for HNS preparedness and response

Towards a new approach

Preparing for and responding to HNS releases in the marine environment is highly complex. We need a unique approach for HNS. Simply expanding or copying the approach used to deal with oil spills from ships is not appropriate.

Comparing HNS with oil spill preparedness and response helps illustrate why we need tailored HNS measures. For example, on the oil spill side, Transport Canada certified [response organizations](#) act quickly because they:

- understand the behaviour of petroleum products in the marine environment

- have appropriate on-water response equipment stored in strategic locations along Canada's coasts

Comparing HNS releases and oil spills

HNS release from ship	Oil spill from ship
<ul style="list-style-type: none"> • Behaviour in water varies dramatically by substance (sinks, floats, dissolves, etc.) 	<ul style="list-style-type: none"> • Behaviour in water is less variable and more generally understood
<ul style="list-style-type: none"> • Different equipment and expertise is needed, depending on the substance 	<ul style="list-style-type: none"> • Most spills require the same types of equipment (booms, skimmers, etc.)
<ul style="list-style-type: none"> • May require analysis and time to build a response strategy that is tailored to complex situations 	<ul style="list-style-type: none"> • Response strategy developed quickly as tactics for oil spill response are well understood
<ul style="list-style-type: none"> • Response may not involve recovery from water 	<ul style="list-style-type: none"> • Response generally involves some level of recovery of oil from water
<ul style="list-style-type: none"> • Partners involved in response may vary dramatically depending on the incident 	<ul style="list-style-type: none"> • Predictable set of partners involved in response effort

For HNS, we often need careful expert analysis before the on-water response begins. This allows us to fully consider the substances involved, and their potential interactions with each other and with the marine environment. Fully understanding the situation is a critical step in order to identify risks to nearby populations and the marine environment so we can mitigate them, and help ensure the safety of responders. We also need to work with provincial, municipal, and other partners in emergency preparedness to ensure the public is informed and protected during an incident.

The potential actions below reflect the unique challenges of hazardous and noxious substances releases from ships. They focus on improving how we assess HNS incidents so the response is safe, appropriate and effective.

Potential action

The potential actions outlined in this paper are designed to integrate key recommendations from the 2014 Tanker Safety Expert Panel report and adapt international best practices in a way that reflects the Canadian context and risk levels.

Guiding principles

Six principles will guide our approach:

1. Protect human health and the marine environment
2. Develop a national risk-based approach
3. Build on Canada's existing marine safety system
4. Uphold the "polluter pays" principle and industry involvement
5. Respect international commitments
6. Maintain the viability of marine shipping

Collaborative action

Collaboration must be a feature of hazardous and noxious substances preparedness and response. A wide range of parties would have a role to play in building and implementing a Canadian HNS program.

This work may involve:

- the Government of Canada: Transport Canada (TC), Fisheries and Oceans Canada, the Canadian Coast Guard (CCG), Environment and Climate Change Canada, Public Safety Canada, the Canadian Border Services Agency, the Public Health Agency of Canada, Health Canada and the Canadian Food Inspection Agency
- municipal and provincial/territorial governments
- international partners (such as the IMO and United States Coast Guard)
- industry (such as ship or cargo owners, chemical producers, terminal operators, salvors, liability insurers)
- Indigenous groups and coastal communities
- emergency responders (local fire departments and hazardous materials teams)
- port authorities

Question for consideration:

Are there other stakeholders that should be involved?

A phased approach

We are considering an approach that takes action in 3 phases over several years. In Phase I, we would strengthen the foundation of hazardous and noxious substances preparedness and response by clarifying the current system. In Phase II, we would make step-by-step improvements to strengthen industry and government preparedness. In Phase III, we would evaluate and improve the national program to reflect changing conditions.



Phase I: clarify current system

In years 1-2 we would clarify the current preparedness and response system for hazardous and noxious substances releases from ships. We would engage with partners and stakeholders to identify where we can improve the current approach to enhance our readiness for HNS incidents.

<p>Clarify roles and responsibilities</p>	<ul style="list-style-type: none"> • The CCG would expand their national contingency plan to include the roles, responsibilities and procedures for HNS preparedness and response • TC would organize regular regional symposiums to improve awareness and build relationships among parties involved in HNS preparedness and response • The Government of Canada would enhance its capacity to provide scientific advice and information on chemical response safety in the marine environment • The CCG would organize and develop joint response exercises to test Canada’s readiness and identify gaps in HNS marine response
<p>Align approach with international partners</p>	<ul style="list-style-type: none"> • TC would assess requirements to accede to the OPRC-HNS Protocol • The Government of Canada would develop international science and data partnerships with the European Maritime Safety Agency, United States Coast Guard, IMO, the Center for Documentation, Research and Experimentation on Accidental Water Pollution and other international partners, and share best practices

Questions for consideration:

Are activities listed under Phase I appropriate? If not, how could we improve them?

Phase II: targeted enhancements

Together with partners, we would make targeted enhancements through years 3-4, and address gaps and opportunities for improvement identified during Phase I. Some examples of



potential targeted enhancements are listed below. These enhancements would build Canada’s capacity to respond to hazardous and noxious substances incidents.

<p>Improve knowledge of HNS in the marine environment</p>	<ul style="list-style-type: none"> • TC would further develop HNS risk assessment methodologies to improve our ability to identify high-risk locations/situations and work with others to develop targeted mitigation strategies
<p>Expand preparedness requirements</p>	<ul style="list-style-type: none"> • If gaps in industry’s preparedness for HNS releases are identified in Phase I, the Government of Canada could require prescribed vessels that carry HNS to have plans for addressing HNS releases • TC could explore more planning requirements for ports and marine facilities handling HNS to include preparedness and response plans for ship-source HNS releases in their practices and procedures
<p>Build marine HNS response capacity</p>	<ul style="list-style-type: none"> • The Government of Canada would deliver ongoing HNS response training to preparedness and response stakeholders, including operational response techniques • The Government of Canada would develop and actively maintain a national inventory of organizations with trained responders and equipment to respond to HNS releases

Questions for consideration:

Are the activities listed under Phase II appropriate? If not, how could we improve them?

Phase III: continuous improvement

The third phase, beginning in year 5, is about adapting the program to reflect the evolving context. This means:

- taking new data and information into account
- evaluating changing risk levels across the country
- working with partners and stakeholders to determine what refinements are needed

In Phase III, we would evaluate the range of improvements we have made and ensure they are sustainable and appropriate.

<p>Adapt to reflect the evolving context</p>	<ul style="list-style-type: none"> • The Government of Canada could respond to changing risk levels through new mitigation strategies, legislative or regulatory amendments, industry incentives and other means • TC and the CCG would engage partners and stakeholders at regional symposiums and other venues to identify areas we can continue to improve
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| | <ul style="list-style-type: none">• The Government of Canada would consider lessons learned from CCG-led HNS exercises |
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Next steps

We are soliciting comments on this discussion paper until February 28, 2019. We are also holding in-person engagement sessions with Indigenous partners, coastal communities and stakeholders throughout 2018.

We will report back on key comments received through online and in-person engagement, and will explain how we are taking them into account. Your input will inform Government decisions related to preparedness and response for HNS releases from ships.

Question for consideration:

Do you have any comments on any part of this discussion paper or the potential action?

Contact us

If you would like to provide comments on anything you read here, you can email them to:

TC.OppHNS-PpoSNPD.TC@tc.gc.ca

We thank you in advance for your participation.

