Emergency Response Plan

Westridge Marine Terminal

TRANSMOUNTAIN

TABLE OF CONTENTS

PLAN MAINTENANCE

Responsibility

Single point accountability for the Emergency Response Plan development and maintenance rests with the Manager, Emergency Management. This accountability is for:

- The development of the Emergency Response Plan and managing any future revisions,
- Ensuring the pre-plans are evergreen, i.e., review and modify as needed,
- Ensuring the systems (ICS) and response structure are in place and able to meet the requirements set out in the Plan, and
- Ensuring an annual review of the plan is conducted for completeness with all updates issued to Plan holders.

Manual holders are responsible:

- For keeping their copies current and ensuring that all revisions are appropriately filed
- Studying all new material issued and incorporating it into their work practice
- Suggesting changes to correct existing material and contributing new text material to improve the quality of the manual

PLAN REVISIONS

Initiating Revisions

All requests for change must be made through the Manager, Emergency Management using the Revision Request Form located in this section of the manual.

Revision Distribution

Plan revisions are issued with an Acknowledgement of Receipt Form and a brief description of the changes itemized by chapter. The Acknowledgment of Receipt form must be signed and returned to the Emergency Management Department as specified. Revisions to the Distribution List will be maintained in a secure Trans Mountain (electronic) location and will be distributed to confidential manual holders only. All other revisions will be distributed to manual holders in a timely manner. A revised date is shown at the bottom of each updated or new page. The original date of the manual is 07/2014, with a revision completed on 02/2026. All revisions will be tracked on the Control Sheet.

Revisions after Release or Exercise

In the event that Trans Mountain experiences a release (worst case or otherwise), or conducts an exercise or training session, the effectiveness of the plan will be evaluated and updated to include any learnings as necessary. Time frames for completing Plan updates after a release or exercise are provided within the 1430-0002 Emergency Management Documentation Procedure and guided by applicable regulations.

Changes in Operating Conditions

If a new or different operating condition or information would substantially affect the implementation of the plan, Trans Mountain will modify the plan to address such a change. Time frames for completing Plan updates after a change in operating condition are provided within the 1430-0002 Emergency Management Documentation Procedure and guided by applicable regulations.

REVISION REQUEST FORM

Requested by:			Date:
Dept/ Agency:			Phone No.:
Revision Type:	Addition:	Deletion:	Correction:
Manual Section:			Page:
Revision (attach separate sheet if necessary):			
Signature of Requestor:			
Send to: Manager, Emergency Management Trans Mountain 2700-300 - 5th Avenue S.W. Calgary, AB T2P 5J2 Canada emergency_management@transmountain.com			

To be completed by Manager, Emergency Management	
Date Received:	Comments:
Date Reviewed:	
Issued as Revision: Y/ N	
If No, reason for Rejection:	
Signature Manager, Emergency Management:	

CONTROL SHEET

Revision Numbers	Date of Revisions	Change(s)	Approval
1	July 2014	New Format Issued with minor updates to all sections.	K. Malinoski
2	October 2014	2.0, Personnel Change; 7.0, Addition of Spill Scenarios	K. Malinoski
3	September 2015	Minor updates to Preface, 2.0, 4.0 and 9.0. 7.0 – added scenarios, 8.0 added coast Guard Duties, 10.0 – replaced Air Monitoring Plan & 16.0 updated reporting requirements for Coast Guard	K. Malinoski
4	September 2016	Updated minor wording throughout manual, updated Preface, 2.0, 4.0, 5.0 and 7.0. Removed Confidential information to Confidential Appendix.	K. Malinoski
5	September 2017	Updates to minor wording in the Preface and Introduction 2.1 Spill Verification, 2.13 Other Notifications, 6.0 all, 8.13 Liaison Officer, 8.14 Lead Agency Designation, 8.15 Greater Vancouver Integrated Response Plan, 8.19 Incident Records, 9.6 Emergency Equipment and Response Times	K. Malinoski
6	April 2018	Updated wording throughout manual including: Preface, 2.11 – Reporting Requirements, 3.1 – Site Assessment Guidelines, 4.0 – Spill Containment and Recovery, 5.0 – Protection of High Consequence Areas, Added 6.1.4 – Tsunami, 8.13 – Liaison Officer, 8.14 – Government Agency Representatives, 8.18 – Terminating/Downgrading the Response, 8.20 – Post Incident Reporting and Debrief, 9.4 Waste Management Plan, 9.5 – Emergency Response Equipment and Response Times, 9.6 – Decontamination Plan, 9.7 – Public Evacuation Plan, 10.3 – Sampling and Monitoring Plan, 10.4 – Demobilization, 10.7 – Air Monitoring Plan, 11.4 – Communications, 13. 0 – Supplemental Plans, 15.0 – Response Plan Certification, 16.2 – Regulatory Background Provincial, 17.0 – Training and Exercises	K. Malinoski
7	October 2018	Rebranding from Kinder Morgan Canada to Trans Mountain: headers, footers and throughout the document.	K. Malinoski
8	April 2019	Updates to sections 2.11, 2.12, 9.0, 9.2, 9.3, 9.5.2, 9.5.6, 9.5.7 9.7, 15.1, 15.3 and distribution list	K. Malinoski

Revision Numbers	Date of Revisions	Change(s)	Approval
9	April 2020	Updated wording throughout manual, including: ERL to TAS, NEB to CER. Updates to 2.5 – Incident Management Team Notification/Activation, 4.8 – Response Tactics for Non-Floating Oil, 9.5 – Emergency Equipment & Response Times, 13.0 – Supplemental Plans and 16 – Regulatory Background	K. McLernon
10	April 2021	Minor wording updates to Preface and Introduction Sections 2.9 – updated CER Incident Reporting Line telephone number 2.11 – Updated Reporting Requirements language for EMBC and included BC EAO drinking water reporting 2.13.2 – addition of Landowner Notification procedure 4.4 - revised on-water containment diagrams 7.5 – minor wording enhancements to Spill Scenarios including references to WCMRC vessels 8.13.1 – Added reference to On-Site Community Monitor procedure 13.8 – Added reference and link to Convergent Volunteer Management Plan 17.0 – additional detail added to descriptions of responder training and exercises Updated all E:\Manuals references to Trans Mountains internal Emergency Tool Kit	K. McLernon
11	April 2022	Annual Review Completed. Contact information updates to Sections 2.8 – Facility Contacts; 2.14 – Industry Contacts; 2.16 – Mutual Aid. 5.0 – Revised language added to High consequence Areas 7.5 – minor wording revisions 7.6 – Updated Product Summary Table 9.7 – Revised wording to Public Evacuation 10.0 – Addition of Common Operating Picture description	K. McLernon
12	August 2022	Updates throughout to include Line 2 and the Trans Mountain Pipeline Systems Emergency Response Philosophy – Reordered and updated to identify appropriate PPE first 2.1.2 – Updated to include the signs of a possible	K. McLernon

Revision Numbers	Date of Revisions	Change(s)	Approval
		facility release 2.1.4 – Updated to include Line 2 technology 2.1.5 – Updated to include Line 2 technology 2.3 – Updated personnel titles to reflect changes to Organization Chart (carried through document) 2.4.1 – Minor update to wording throughout section 2.10 – External Notification Chart- Minor editorial revision 2.11 – External Notification Chart- editorial revision 2.13.1 – Minor update to clarify language 2.13.4.1 – Added GVIRP year, updated Appendix reference number 2.13.5 – Added reminder to state purpose when calling 2.14 – Updated title to “Industry” and added CN Rail 2.16 – Specified that activation procedures are identified in the Confidential Appendix 2.17 – Minor update to clarify language 2.18 – Updated title to “Community Support Centres” and added reference to evacuee reception and convergent volunteer coordination centres 4.2 – Added “Tank/Cavern” 4.4.2 – Updated image 4.4.3 – Updated image 4.4.4 – Added WCMRC specific GRS identifiers and map of GRS as well as link to Coastal Mapping Program 4.5.2 – Added specific WCMRC response times 4.6.3 – Updated list of fire suppression equipment to include monitors and specific content on propane bullet 4.7 – Added reference to 5.2 4.10.4 – Updated “response” to “cleanup” 5.1 – Minor update to arrangement of content 6.1 – revised content 6.2.1 Wildfire/Grass Fires – Added reference to searching for missing persons 6.2.2. Earthquake – Added reference that seismic event data is received by Control Centre; and searching for missing persons 6.2.3 Floods – Added reference to searching for missing persons; gas & water shut off 6.2.4 Avalanche – Added reference to searching for missing persons 6.2.5 Tornado – Added reference to searching for missing persons; gas & water shut off	

Revision Numbers	Date of Revisions	Change(s)	Approval
		6.4.2 Pump Station Fire – Added reference to searching for missing persons 6.4.3 Right-of-Way Pipeline Fire – Added reference to searching for missing persons 6.5.1 Terrorism – Added reference to searching for missing persons 6.5.3 Bomb Threat – Added reference to searching for missing persons 7.0 – Updated to include Line 2 information and integrated 7.1 (marine Berth) content into the section 7.1.1, 7.1.2, 7.1.3, 7.1.4 – New content 7.1.5.1 – New section to include maps for the Protective Action Zone (Tanks and Berths) 7.1.6 – New section to include Terminal diagram 7.2.2 – Updated requirements/limitations descriptions for Under-Keel Clearance, Mooring Lines, Sustained Wind Speed Limits 7.3 – Reordered Spill Scenarios content prior to Shoreline Types and Use Maps (7.4) 8.5 – New diagram; addition of Security Officer to Command 8.9 – New diagram 8.13 – New section with description of Security Officer 9.0 – New diagram 9.2 - New diagram; addition of positions in the Pipeline Protection Branch 9.5.1 – Minor update to terminology to include “berths” 9.5.4 – Updated to identify placement of secondary containment boom independent of other activities 9.5.5.1 – Updated title 9.5.6 – Minor updates to equipment list (number of items) 9.7 – Updates to align with the Terminal Evacuation Plan, including outlining authority to evacuate and summarizing legislated roles in ordering and conduction evacuation 10.0 – Planning Section: addition of Qualified Professional 10.2 – Diagram revised 11.2 - New diagram; removed Security Unit Leader	

Revision Numbers	Date of Revisions	Change(s)	Approval
		13.11 Terminal Evacuation Plan – new section added. 14.2 Safety Data Sheets- content added regarding sharing of SDS with responders 15.1 -Table 1 –updated 16.1 Regulatory Background – Federal – Updated language	
13	April 2023	Distribution – description changed location of Incident Notification Guideline and name change for BCER. Date of Revision format changed to mm/dd/yyyy 2.6 and 2.7 changed location of Incident Notification Guideline 2.11 name change from BC OGC to BCER 2.13 Other Notification – updated language 2.13.5 name change from BC OGC to BCER 2.15 and 2.16 changed location of Incident Notification Guideline 2.17 and 2.18 changed location of Incident Notification Guideline 4.3 Terminal- Primary Recovery/Removal- Spills— new section added 4.6 Winter Response Tactics -updated language 6.4.5 Propane Releases/Fires – section moved 6.4.5.4 changed location of Incident Notification Guideline 6.1.4 Terminal Fire Response- updated language 6.2.5 Avalanche – section removed, replace by 6.2.5 Landslides 6.2.6 Tornado – section removed 7.0 Site Information – updated language 7.1.4 Public Evacuation – new section added 7.1.6 Protective Action Zone, Table 1 -updated table 7.1.6.1 Protective Action Zone Map – updated picture 7.4.1 changed location of Incident Notification Guideline 9.0 Operations – updated chart 9.5.5.1 Terminal Specific Equipment – updated language 9.5.6 Mobile Spill Equipment – section updated 9.5.7 Mobile Fire Equipment – section updated 9.5.8 changed location of Incident Notification Guideline 11.3.1, 11.3.2, and 11.4.2 changed location of	K. Malinoski

Revision Numbers	Date of Revisions	Change(s)	Approval
		Incident Notification Guideline 11.5 Table 1 revised name to Incident Notification Guideline 15.1 Declaration of Contingency Plan – updated designated contact and revised name to Incident Notification Guideline updated Table 2 16.2 changed BCOCG to BCER 18.5.1 revised name to Incident Notification Guideline	
14	August 2023	2.10 External Notification Chart – Confirmed Emergency Condition – addition of Environment Canada 2.11 Reporting Requirements – addition of Environment Canada 7 Site Information – updated to include language on propane bullets 7.1.6 Protective Action Zones – addition of propane bullet distances 14.2 Safety Data Sheets – addition of propane 17.1 Training – addition of training required for E2 compliance. 17.2 Exercises – addition of exercise requirements for E2 compliance.	K. Malinoski
15	April 2024	Annual Update: Preface Revision Distribution – Revised date. Revisions After Release or Exercise - EM Documentation Procedure to EM Documentation Standard. Changes in Operating Conditions - EM Documentation Procedure to EM Documentation Standard. Revision Request Form – Removed fax number, added emergency management email. Distribution List – Revised location names for internal copies 2102, 2103, 2105-2110, and revised uncontrolled copy 2200 from Environment Canada to Environment and Climate Change Canada (ECCC). Emergency Response Philosophy – PPE – added fire resistant clothing. 1.1.1 Skin Contact – Added fire resistant clothing. 2.4 Internal Notification Procedures – Specific Response Level is in Introduction – Emergency Levels. 2.5 IMT Notification/Activation – Under mandatory calls, added Manager, Emergency Response.	K. Malinoski

Revision Numbers	Date of Revisions	Change(s)	Approval
		2.9.1 External Notification – Reference changes: Emergency Management BC (EMBC) changed to BC Ministry of Environment and Climate Readiness (EMCR), Canadian Pacific (CP) Rail to Canadian Pacific Kansas City (CPKC) Rail, added BCER, revised flowchart to include acronyms. 2.10 External Notification Chart – Confirmed Emergency Condition – All references of EMBC changed to EMCR, Environment Canada to ECCC, CP Rail to CPKC Rail. 2.11 Reporting Requirements – Added jet fuel incident calling procedure for BCER, added acronyms throughout, reference changes: Environment Canada to ECCC, EMBC to EMCR, BC Ministry of Environment Lands & Parks to BC Ministry of Environment and Climate Change Strategy (MoE), revised ECCC's 24-hour number, changed references of "a Terminal" to "WMT". 2.13.5 Agency Contacts – Acronyms added throughout 6.2.4 Tsunami – Changed references of EMBC to EMCR 7.1 Site Description – Revised to reflect that WMT is now operating, and construction complete. Information regarding crude oil being loaded into tankers/barges and offloading jet fuel via three berths on the dock complex. Berths 1 and 2 description added consisting of their purpose, length, location. Jet Fuel Pipeline information updated to include segment 4, 10 & 11, location, length, PAZ, and pipeline project number 7.1.7 Westridge Terminal Diagram – Revised version. 7.3.1 Jet Fuel Spill Scenario – Specified location of control building, reference changes: EMBC to EMCR, BC Ministry of Environment to MoE, CP Rail to CPKC Rail. 7.3.2 Crude Oil Spill Scenario – Revised propane volume from 22,900 GALS to 21,000 USWG, specified location of control building, added Transport Canada to Incident Management, reference changes: EMBC to EMCR, BC Ministry of Environment to MoE, CP Rail to	

		CPKC Rail. 7.4 Shoreline Types and Use Maps – Burrad Inlet - Images changed from portrait to landscape. 8.15.6 Lead Agency Designation – BCER identified as a lead agency responsible for jet fuel storage tank and pipeline incidents. 8.15.8 Addition of BCER Incident Classification Matrix requirements for other Reportable Incidents. 9.5.2 Response Equipment – Removed Fire Foam Trailer. 9.5.6 Mobile Spill Equipment List – Verified and revised equipment location and quantities. 9.5.7 Mobile Fire Equipment List - Verified and revised equipment location and quantities, removed fire foam trailer. 10.5 Shoreline Cleanup Assessment Technique (SCAT) – References of Environment Canada changed to ECCC. 13.1 Geographical Response Strategies – Corrected URL link to Coastal Response. 13.9 Wildfire Plan changed to Wildfire Response Plan 14.1 Summary Safety Data Sheet - Crude Oil Products – Changed MSDS to SDS. 14.2 Summary Safety Data Sheets – Propane - Added statement regarding SDS located online via SDS TM intranet site or in SDS binder at WMT. 14.3 Safety Data Sheets - Corrected intranet URL site. 15.1 Declaration of Contingency Plan – Table 1 reference changed to Table 3. 15.3 OHF Declaration – 2024 signed version. Table 3: Verified and revised all section locations 16.0 Regulatory Background – Revised spill reporting requirements for BCER, acronyms added throughout, reference changes: CTSB to TSB, Canadian Transportation Safety Board to Transportation Safety Board of Canada, Environment Canada to ECCC, AEP to EPA, EMBC to EMCR, BC Ministry of Environment Land and Parks to MoE, Ministry of Forests Lands Natural Resource Operations & Rural Development to Ministry of Forests, OGC to BCER, “TM Expansion Project” to “TM Operations.”	

Revision Numbers	Date of Revisions	Change(s)	Approval
		16.2 Addition of BCER Incident Classification Matrix requirements for other Reportable Incidents. 17.2 Training – Reference of tank farms changed to terminals.	
16	April 2025	Annual review and update Preface/Introduction Section 2.5 Incident Management Team notification list updated Section 7.1 Updated site overview to include two propane bullets. Section 7.1.6.1 Updated WMT PAZ maps Section 7.1.7 Updated WMT drawing Section 8 Aligned with ICS Guide Section 9.5.6 updated equipment tables Section 15 Declaration signed and EHS policy updated	K. Malinoski
17	February 2026	Annual review and update Preface/Introduction Section 2.13.5 Agency Contacts Section 3.3 updated Vapour Monitoring Flowchart Section 9.5.2 updated Response Equipment Section 9.5.6 updated Mobile Spill Equipment tables Section 15 updated Response Plan Certification	K. Malinoski

DISTRIBUTION

As of September 2016, this Emergency Response Plan is available online to all external agencies and members of the public. Material that has been placed in the Incident Notification Guideline has been protected in accordance with CER Board Order MO-006-2016. Controlled copies are distributed as below; however, the distribution list may change from time to time. A new version of the Emergency Response Plan will not be issued for a revision to the distribution listing.

No.	Issued To
Uncontrolled Copies - External	
2000	Transport Canada
2001	Canada Energy Regulator
2002	Canada Energy Regulator – Vancouver Office
2003	British Columbia Energy Regulator
2200	Environment and Climate Change Canada - NEEC
2201	Vancouver Fraser Port Authority
Controlled Copies - Internal	
2100	Control Centre – Edmonton
2101	Back-up Control Centre – Edmonton
2102	Director, Edmonton Terminal and Control Centre
2103	Manager, Burnaby and Westridge Marine Terminal
2104	Director, Emergency Management
2105	Manager, Emergency Management
2106	Advisor, Emergency Management
2107	Fraser Room
2108	Westridge Upper Control Room
2109	Westridge Dock Control Room
2110	Director, Burnaby and Westridge Marine Terminal

INTRODUCTION

Initial Incident Actions

The initial responder to arrive at a spill site will take immediate actions to ensure responder safety and that of the public and protect the environment. The initial responder will complete the following things, if appropriate and safe to do so while waiting for the Qualified Individual. [1]

1. Ensure the safety of all workers and public in the area of the spill
2. Assess the situation (i.e., incident size, severity, likely impacts)
3. Notify the Control Centre and/or Operations Supervisor/Manager immediately to activate the Trans Mountain Alert System (TAS) as outlined in 2.0. Internal and External Notification.
4. Take appropriate action to mitigate the impacts to life, safety, the environment, and property prior to the arrival of the Qualified Individual (QI)

Note: the initial responder will begin documentation on an ICS 201 form, and/or notes on other paper, or will relay the information to personnel at the Control Centre or District Supervisor who will initiate an ICS 201 form. This initial documentation will be kept with all other incident documentation.

How to use this Plan

This Plan is divided into 3 sections:

[1] The person who has been given authority to fund response efforts without consulting Trans Mountain leadership for further authorization and knows how to commence the response procedures identified in the pertinent response plans.

Purpose of the Plan

This is the Emergency Response Plan for the Westridge Marine Terminal operated by Trans Mountain. These entities are all referred to as " Trans Mountain", “Trans Mountain Corporation” or "The Company”.

The purpose of this Plan is to provide guidance for a quick, safe and effective response to an emergency, in order to protect the public, personnel, environment and company property.

Scope of the Plan

This Emergency Response Plan (ERP) covers emergencies that originate at the Westridge Marine Terminal. As part of the Emergency Response Plan maintenance practice, Trans Mountain implements a Hazard Assessment Process to generate an all-encompassing hazard inventory list. This list identifies potential emergency conditions that result from hazards associated with the Trans Mountain Pipeline System and other facilities including the Westridge Marine Terminal.

Emergency Conditions may be defined as the result of a hazard negatively impacting people, property and/or the environment. Through the evaluation of hazards and their subsequent consequences, the Emergency Management Department develops and maintains plans and procedures to assist in mitigation, planning and response efforts for all real or potential emergencies.

The hazard inventory list is reviewed on an annual basis to ensure that new hazards are identified and evaluated against their potential emergency condition. This assessment is also used to determine if existing plans and procedures continue to meet the response requirements for all identified hazards and their associated risks. The Emergency Management Department maintains the hazard inventory evaluation internally.

The response zones for this plan contain large diameter pipelines, associated storage facilities and marine loading facilities carrying refined and crude oil products as outlined in Section 7.0 Site Information. The potential effects of those products are outlined within the Safety Data Sheets for each product with information provided in 14.0 Safety Data Sheets. An incident at the Westridge Marine Terminal has the potential to cause harm to the environment and/or people.

This plan will not cover the tactical response techniques to be implemented for a fire. Detailed response actions including tactical information for fires can be found in the Westridge Terminal Fire Pre-Plan.

Plan Implementation

This Emergency Response Plan (ERP) will be implemented for any emergency or drill (exercise) within the Westridge Marine Terminal. On July 6, 2017, the Canadian Coast Guard signed a letter promulgating the Greater Vancouver Integrated Response Plan (GVIRP). The signing of the letter brings into force section 12(2) of the Environmental Response Regulation within the geographical area of the plan. “The operator must ensure that the oil pollution emergency plan takes into account any contingency plan for the geographical area that may affect the facility’s plan, including contingency plans that are issued by the Canadian Coast Guard or provincial or municipal governments”.

The purpose of the GVIRP is to promote a consistent and predictable response to a pollution incident in the marine environment within the Burrard Inlet. Response to a marine pollution event within Greater Vancouver would potentially involve multiple stakeholders and jurisdictions. To address this challenge, the integrated plan clarifies roles & responsibilities and establishes how principal organizations, including Trans Mountain, will work together in response to a spill in Burrard Inlet. The GVIRP is a localized, operational plan that acts as a guide during emergency response to a marine pollution incident. It helps to inform others how key response organizations intend to work together to manage a spill. It clarifies the

roles of local government authorities and Indigenous communities, among others, in the collaborative efforts needed for success.

The GVIRP does not replace or supersede the Westridge Marine Terminal ERP but rather compliments the plan to harmonize response actions specific to the Burrard Inlet. See 8.0 Incident Management for GVIRP specific considerations.

Emergency Definition

An emergency is defined as any condition that results in or may result in:

- Death or injury requiring hospitalization
- Explosion or fire
- Leak, rupture, or spill
- Any significant event such as earthquake, flood, severe storm, or bomb threat that may threaten the Westridge Marine Terminal

Emergency Levels

The Trans Mountain Emergency Response Organization is based on a three-tiered response structure. Incidents are identified and categorized into one of the three tiers. Each Tier is managed by an escalating degree of management seniority and authority, and assistance from outside the initial response organization. The standardization of the ICS Structure and Incident Management Process provides the flexibility to tailor the size of the response organization to the specifics of the incident and allows for rapid adjustments as an incident evolves. Where appropriate, the Trans Mountain Incident Commander will invite the participation of federal, provincial and local agencies to form a Unified Command.

Level	Definition	Examples
1	The Company has the capability to manage and control a Level I emergency using company resources available within the area. The District Supervisor will assume the Incident Commander position.	• Oil spills confined to company property (pipeline station, terminal, or scraper trap) • Public, contractor, or employee safety not endangered • Public property not endangered • Local response handled by district personnel • Notification may not be required to regulatory authorities • Little or no media interest • Security Incident (squatters on ROW, copper theft, etc.) • Account compromised malware on one account or one device
2	The Company has the capability to manage and control a Level II emergency using company resources and expertise, with some assistance from local contractors. The Region Director or designate may assume the Incident Commander position.	• Oil has migrated beyond company property (pipeline station, terminal, or scraper trap) but not into a waterway • Emergency services may be required (e.g., fire, police, ambulance) • Public, contractor, or employee safety and/or property may be endangered • Notification required to regulatory authorities • May use a unified command organizational structure in the emergency • Local media interest

		• Security Incident (protest) • Business disruption • Account compromised malware on multiple accounts

3	The Company may request assistance from other industry, municipal, or state agency personnel to support the response to the incident. The Region Director will assume the Incident Commander position.	• Major emergency condition such as:
		  ○ uncontrolled leak
		  ○ spill on a watercourse
		  ○ large fire at an operating facility or office building
		  ○ fatality or serious injury to an employee, contractor, or the public
		  ○ spill of hazardous substances
		• Major off-site environmental impact has occurred
		• Public, contractor, or employee safety and/ or property is endangered
		• Emergency services are required (e.g., police, fire, ambulance)
		• Notification required to regulatory authorities
		• Use of a Unified Command organizational structure in the emergency, as required, to facilitate coordination of company, government and other agency response to the emergency.
		• Local, provincial/state, and/or national media interest.
		• Security Incident (Act of violence, hostage, etc.)
		• Cyber attack (ransom ware attack) on IT network
		• Cyber attack (ransom ware attack) on OT network

Emergency Response Philosophy

On all emergency incidents, Trans Mountain will follow the following basic response approach:

- **Select and Don Personal Protective Equipment (PPE)**
    - All incident responders must be protected with the PPE appropriate to the hazards present:
        - Approved fire-resistant coveralls / clothing
        - Hard hats (where overhead hazards are present)
        - Gloves
        - Splash goggles
        - Rubber steel-toed boots
    - Also:
        - PPE must be worn properly in order to fully protect responders.
        - Damaged or heavily oiled PPE should be replaced as soon as possible.
        - All responders leaving the *Hot Zone* must go through a decontamination zone *(Warm Zone)* to ensure that contamination is not spread into the *Cold Zone*.
- **Control the Incident Site**
    - The incident scene must first be controlled to ensure a safe and effective response to any incident:
        - Don't rush in; hazards must first be fully assessed
        - Conduct vapour monitoring and confirm levels (H_2S, LEL levels) are safe as approaching the incident site
        - Establish and maintain an isolation perimeter, with hot, warm and cold zones
        - Establish communications with the Control Centre; request information regarding the situation (e.g., alarms, product, pipeline readings, shutdown actions and other relevant information)
        - Establish and announce command at the ICP, either at the incident scene location or, if necessary, at a remote location
        - Establish staging area(s)
- **Size Up the Situation**
    - A site assessment will identify the scope and nature of the incident, as well as any potential hazards to responders:
        - Assess whether or not visual alarms have been activated
        - Recognize and identify any hazardous materials involved
        - Source of any releases
        - Potential exposures
- **Evaluate the Hazards and Risks**
    - An assessment must be conducted to evaluate the level of risk to responders and the public:
        - Assess health, physical and chemical hazards
        - Gather technical data (SDSs, etc.)
        - Conduct vapour monitoring

- **Establish Initial Objectives**
    - After the potential hazards have been identified, the Incident Commander(s) can establish the initial objectives for the response. Typical initial objectives include:
        - Control the incident Scene
        - Ensure the safety of responders and the public
        - Establish Incident Command Post

- **Manage Information and Coordinate Resources**
    - It is essential that information flows quickly and freely to all resources to ensure a safe and coordinated response:
        - Expand the ICS as needed, especially if a Unified Command is established
        - Ensure that all (internal and external) notifications are made
        - Conduct briefings
        - Confirm all communications to ensure that they are fully understood and implemented

- **Implement Response Objectives**
    - Once initial objectives have been established, it will be possible to develop, and implement, strategies and tactics to achieve these objectives. These may be:
        - Offensive (i.e., emergency rescue, firefighting, spill source control)
        - Defensive (i.e., protecting the public, fire control, spill response)
        - Non-intervention (protecting the public)

- **Manage the Incident**
    - On larger incidents, it will be necessary to operate over a number of Operational Periods. In these cases, it will be necessary to fully staff the Incident Management Team, especially the Planning Section:
        - Establish Incident Objectives for each Operational Period
        - Conduct Tactics and Planning Meetings
        - Develop and approve Incident Action Plans
        - Conduct Operations Briefings

- **Terminate the Incident Response**
    - Once the emergency phase of the incident is over, the Incident Commander will stand down the Incident Management Team and ensure that all post-incident activities are completed:
        - Transition to, and conduct the post-emergency phase of the response
        - Conduct an incident debrief
        - Ensure that all incident documentation is completed
        - Ensure that all equipment, PPE and ICP supplies are replenished
        - Transition from Emergency Phase to Project Phase with adequate documentation and continue any required project phase activities, i.e., site remediation, repair to terminal assets

1.0 RESPONDER HEALTH AND SAFETY

It is important to understand that the different hydrocarbon products handled pose different hazards when spilled, and/or are on fire, depending on their chemical composition. Therefore, the primary hazards, and the need for vapour monitoring, and the cleanup techniques will depend on the characteristics and volume and type of product.

Many crude oils (including “sweet” crudes) can emit potentially dangerous levels of H_2S, and most crude oils also contain Benzene. Typically, the risks associated with the concentration of potentially dangerous vapours will diminish with time, due to reduced vapour production as the lighter components volatize, and vapours disperse. There are exceptions to this however, i.e., in some cases, where crude oil pools into thick layers, a skin may develop on the surface, trapping vapours. Later, if the skin is broken and the oil disturbed, the oil might emit vapours normally associated with freshly spilled oil. Some crude oils have low flash points, especially during the initial hours after being spilled, when hydrocarbons burn there are other risks to consider, such as the combination of chemicals in the smoke plume and radiant heat emitted by the fire. In all of these cases, the risk of accidental ignition and/or the inhalation of toxic vapours must be mitigated, and a detailed site assessment (see Section 3.0 Spill/Site Assessment) must be completed before on-scene operations are initiated. This assessment will be made by the Safety Officer. In all cases, the results of the initial site assessment should be used to develop a Health & Safety Plan.

The Initial Site Health & Safety Plan (ISHSP) should be completed as soon as possible by one of the initial responders and updated as required. When completing the ISHSP some of the information may not apply during the initial stages of the response, but may change within a short period, thereby altering the PPE and/or other requirements.

The ISHSP:

- Aids the initial responders in assessing hazards related to the incident
- States the required PPE to be used
- Documents important health and safety information
- Serves as an interim "Plan" until the Site Health & Safety Plan (Section 1.3 Health and Safety Plan) is developed
- Assigns responsibilities, i.e., completion of the ICS 201 and notification
- Identifies "site set-up" features that may be required
- Authorizes work to be completed (in lieu of a Safe Work Permit)

Upon the completion and delivery of the Site Health & Safety Plan, the Initial Site Health & Safety Plan becomes void.

1.1 Safety Guidelines

1.1.1 Skin Contact

The accidental absorption of toxins through skin/eye contact can be greatly reduced through the wearing of oil-resistant personal protective equipment (PPE). These include:

- Approved fire-resistant coveralls/clothing
- Hard hats (where overhead hazards are present)
- Gloves
- Splash goggles
- Rubber steel-toed boots

Also:

- PPE must be worn properly in order to fully protect responders.
- Damaged or heavily oiled PPE should be replaced as soon as possible.
- All responders leaving the *Hot Zone* must go through a decontamination zone *(Warm Zone)* to ensure that contamination is not spread into the *Cold Zone.*

1.1.2 Inhalation of Vapours

The need for respiratory protection will be determined by the Safety Officer after a review of the SDS and data retrieved from the initial site assessment (see 3.0 Spill/Site Assessment). If toxic vapour levels are determined to exceed safe working limits (see 3.3 Vapour Monitoring Flowchart for details), it might be possible for responders to work while wearing half-face respirators fitted with organic cartridges, or SCBA. In this case, ongoing vapour monitoring is essential to ensure that vapour levels do not exceed safe working limits.

1.1.3 Fire/Explosion

All hydrocarbon products are capable of ignition if certain conditions are met. It is important to review the SDS to determine the flash point of the material spilled and perform vapour monitoring (for LEL). Whenever vapour levels are approaching 10% of the LEL for any spilled product, responders will leave the area immediately. In the event of a fire and response efforts are required the responders will have radiant heat protection.

1.1.4 Other Hazards

There are a number of additional potential hazards faced during spill response including slips, trips and falls, and working around water and equipment. Special care should be taken when walking on oiled surfaces, especially during night-time operations. The Site-Specific Health and Safety Plan shall identify these potential hazards, and they must be clearly communicated to responders.

1.2 Initial Health and Safety Plan

The Initial Health and Safety Plan form is available on the intranet site in the Emergency Toolkit.

1.3 Health and Safety Plan

The Health and Safety Plan form is available on the intranet site in the Emergency Toolkit.

2.0 INTERNAL AND EXTERNAL NOTIFICATION

Immediate notification is a key element of any emergency response action. The health and safety of employees and the public is paramount and, as a result, immediate notification is essential. This section describes both the internal and external notification processes and includes the contact information for Trans Mountain resources, and external resources.

2.1 Incident Verification

The first step in many incidents is to confirm that an emergency condition exists. Reports may come from a number of sources including automated detection systems, on-site Trans Mountain or other personnel, and members of the public and/or emergency services (police, ambulance, and fire).

2.1.1 Trans Mountain Personnel Detection

Trans Mountain employees and contractors conduct routine maintenance and inspection work at all Trans Mountain Terminals on a regular basis. In the course of this work Trans Mountain employees and contractors may come across signs of a facility emergency or potential emergency. In the event that a Trans Mountain employee or contractor identifies or suspects that an emergency has or may occur they are to follow the internal notification procedure as outlined in 2.4 Internal Notification Procedure of this Emergency Response Plan.

2.1.2 Member of the Public

Facility releases, both real and/or suspected, may be identified by a member of the public. Signs of a facility release may include:

- A strong petroleum odour (like gasoline or diesel fuel)
- Strong sulphur smell (like rotten eggs)
- Dead or discoloured vegetation
- Pools of liquid when the rest of the right-of-way is dry
- Petroleum sheen on water
- Unusual hissing or roaring sound

In the event that a member of the public identifies or suspects an emergency at a Trans Mountain terminal, they are to call the Emergency Number at **1-888-876-6711**. This number connects directly to Trans Mountain's Control Centre and is monitored on a 24/7 basis.

2.1.3 Emergency Services

In the event that an emergency services agency (police, fire, EMS) is notified of, or suspects, a terminal emergency, they are to call the Emergency Number at **1-888-876-6711**.

2.1.4 Automated Spill Detection

The pipeline is equipped with pressure and flow monitors, which exercise local control and transmit data to the Control Centre. These systems are set to alarm or shut down on pre-set deviations of pressure flow.

Engineering Operating Limits establish the alarm thresholds for mainline pressures and flow rates for all operating line segments.

The Trans Mountain pipeline system is continuously monitored by four types of protective monitoring systems:

- Distributed Fiber Optic Sensing System
- Real-Time Transient Hydraulic Modeling Leak Detection
- Statistical Pressure Deviation Leak Detection
- Statistical Flow Imbalance Pipeline Leak Detection

Trans Mountain has flexibility and redundancy in the manner in which data is transmitted to the Control Centre. Network configuration and transmission protocols provide the flexibility to establish guaranteed delivery transmissions as required. Communication system redundancy provides accurate and reliable data to pipeline operators. The SCADA system acquires data primarily via a dedicated fibre-optic network. Fiber optic Satellite communications allow large volumes of data to be transmitted both to and from all field locations very rapidly. Fibre-optic connectivity via a fibre line exclusive to Trans Mountain provides the primary telecoms and secondary telecoms are provided by a third party.

In case of an alarm, the Control Centre personnel will take the appropriate actions in accordance with operating procedures. The following are a summary of the operating procedures for automated spill detection:

- SCADA System 5-Second Data Access – Control Centre monitor and control pipeline operations with the SCADA system in the Control Centre. The ultimate decision on leak detection lies with the Control Centre.
- Operating Limits Alarms – is a parameter alarm which is programmed in the station PLC to alert upset conditions regardless of whether the Operator is actively monitoring the data point in question.
- Tank Gauging with Parameter Alarms – tank gauge data is available to Control Centre. The systems are gauged automatically by the SCADA System. Operating Limit Parameter alarms are also available for tank levels to ensure no potential tank discharge.
- Operating Limits Alarms Parameter alarms, in combination with five-second data acquisition rates, provide near-instantaneous notification of potential upset conditions on all operation mainlines.
- Terminal and Pump Stations Hydrocarbon monitors – detection of hydrocarbons at the Terminals and Pump Stations alarm in the Control Centre and the local Terminal control room
- Trending – the SCADA system and the protective monitoring systems includes a trending facility which graphically displays pressures, temperature, and flow rate data for each mainline pump and oil receiving location on the system. This system can provide valuable insight into operations history and can help the operator proactively address potential upset conditions.

2.1.5 Automated Fire Detection

Westridge Marine Terminal relies on automated fire detection systems, in combination with verification by Trans Mountain personnel. All three berths have Ultra-Violet/Infra-Red (UV/IR) heat detection sensors. Both the Control and Office building and the Water and Foam Storage buildings have smoke detector alarms. Heat/smoke alarms are installed in the Sample and Lab Storage Building, Water and Foam Building, and all electrical buildings. Fire detection systems consist of early detection multi-spectrum infra-red/ultraviolet detectors in the manifold and berth areas.

When an alarm is signalled to the Programmable Logic Controller (PLC), the PLC initiates a local fire alarm and alarms at the local Control Room and the Control Centre in Edmonton, which are staffed on a 24/7 basis. Following this, the fire will be visually verified by Trans Mountain onsite personnel. If a fire is

confirmed, the onsite operator will inform the Control Centre Operator of the incident, who will then initiate the internal Trans Mountain notification procedure.

2.1.6 Automated/Complaint Detection Verification

If the detection method comes from alarms to the Control Centre Operator (CCO) or a member of the public the potential incident must then be visually verified by Trans Mountain personnel. If a leak, fire, or other emergency event is confirmed the on-site operator will inform CCO of the incident and CCO will initiate the internal notification procedure.

2.1.7 Early Detection Methods

Aerial patrol flights are made on a regular basis along the right-of-way. The intent of the patrol is to observe the area directly over the pipeline right-of-way for leaks, exposed pipes, washes, missing markers, and other unusual conditions. Construction on the right-of-way, or adjacent to the right-of-way is also closely monitored.

Discharge to the land and/or surface waters may also be detected by company personnel when employees perform daily scheduled inspections of the site.

Right-of-way marker signs are installed and maintained at road crossings and other noticeable points and provide an emergency telephone number for reporting emergency situations. The company also participates in the “call before you dig” or “One Call” utility notification services which can be contacted to report a leak and determine the owner/operator of the pipeline.

If a notification is made to a local office or pump station, the Trans Mountain representative receiving the call will generally implement the following actions:

- Notify the Control Centre and regional office/Qualified Individual
- Dispatch field personnel to the site to confirm discharge and conduct preliminary assessment
- Notify their immediate supervisor and provide assessment results

2.1.8 Detection in Adverse Weather

Line ruptures that cause worst case spills in adverse weather conditions would normally be detected and acted upon within 5 minutes by the Control Centre Operator. In the event of detection by a member of the public, or where a leak is suspected it must be visually verified. If adverse weather is preventing visual detection the pipeline will be shut down for safety reasons, until visual detection occurs. Additional equipment may be used in these situations which includes vapour detection, and thermal/infrared imagery.

2.1.9 Detection of Spills to Groundwater

In an area where a spill occurs that is not on impermeable ground a contractor will be used to assist with the detection and ongoing evaluation of a spill that may impact groundwater.

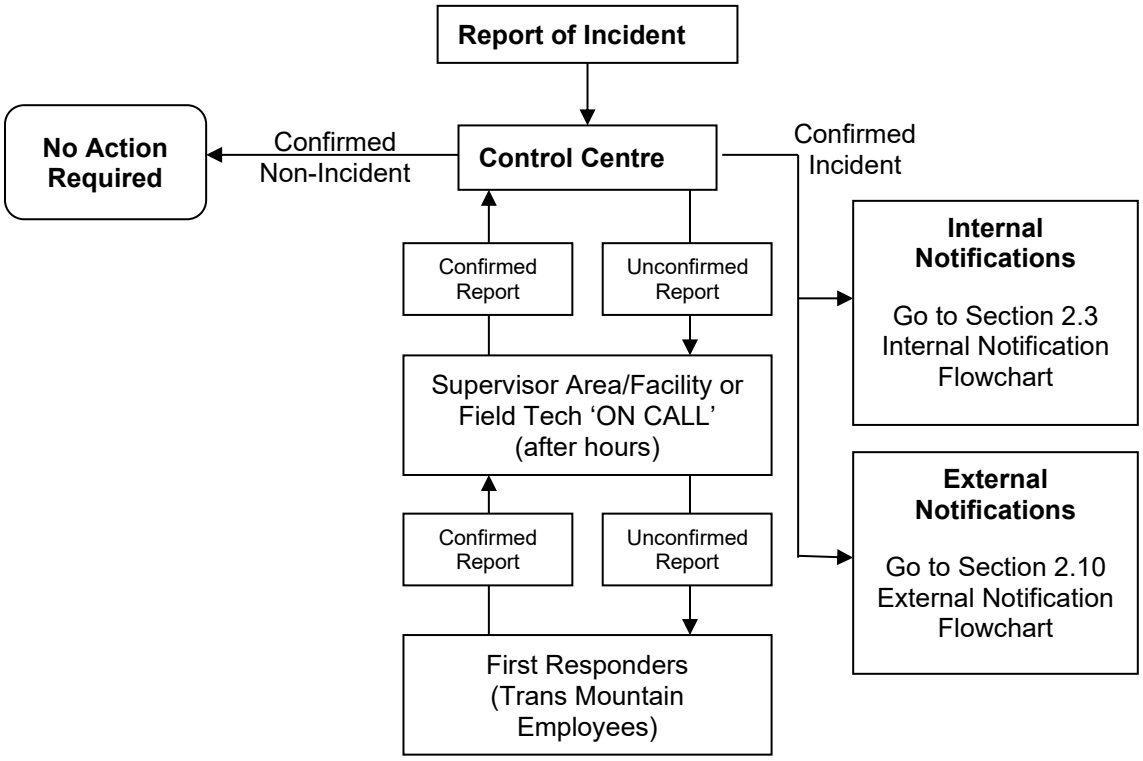
2.1.10 Shutdown Events

If abnormal conditions exist, the Control Centre will take the appropriate actions to ensure that a release does not occur. If a discharge has occurred, the Control Centre will take actions to limit the magnitude. In either case appropriate actions taken by the Control Centre may include, but are not limited to:

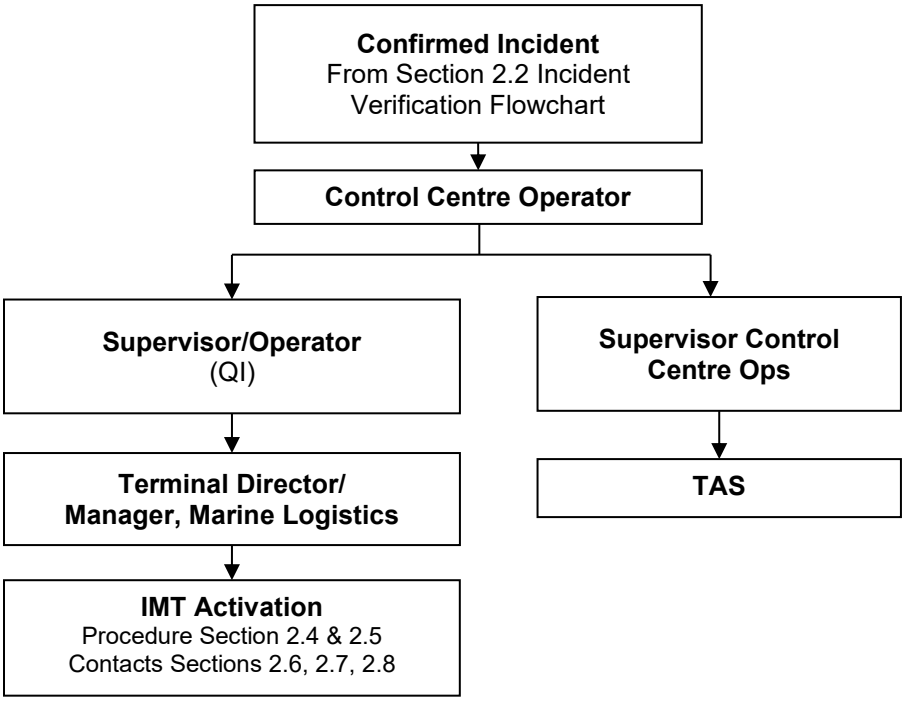
- Shut down affected line segment if there is an indication of a leak
- Isolate line segment
- Depressurize line
- Start internal and external notifications
- Mobilize additional personnel as required

2.2 Incident Verification Flowchart

The first step in many incidents is to confirm that a spill has actually occurred. Spill reports may come from a number of sources including the public and first responders (police, ambulance, fire). Once a report is received the following flowchart shows the direction of communication to verify an incident.



2.3 Internal Notification Flowchart



2.4 Internal Notification Procedure

All spills, regardless of size, must be reported immediately to the Control Centre, who will:

- Contact the Supervisor to verify and assess the situation
- Determine the Response Level (i.e., Level 1, 2 or 3. See Introduction – Emergency Levels for a description of the 3 Response Levels)
- Initiate the notification process of company and external personnel

2.4.1 Information to Report

Information about the incident should be as clear, concise, accurate and timely as possible. The minimum information required, for initial report and update reports, should be:

- Name and telephone number of the caller
- Date and time of the call
- Name of facility/pipeline
- Location of the incident
- Type of incident
- Product(s) involved
- Estimated quantity
- Actions taken to-date
- Assistance required
- Injuries
- Weather conditions
- Reason for discharge (if known)

2.4.2 How to report

Call the Control Centre at 1-888-876-6711.

Note: The Control Centre number is monitored 24 hours a day and voice recorded.

2.5 Incident Management Team Notification/Activation

Upon being notified of the incident, the Control Centre will issue a TAS. The TAS system is an online tool that delivers an automated group text message to designated Trans Mountain personnel when notification of an emergency or non-emergency event is required. The CCO fills in the Emergency Condition Report and issues a TAS call. Once received, the mandatory call-in personnel will participate in a conference call to determine next actions, and the IMT members that need further contact/mobilization. An initial IMT will be set up using these individuals. The mandatory callers are as follows:

- Director, Pipeline Operations
- Director, Edmonton Terminal & Control Centre
- Director, Burnaby & Westridge Terminals
- Director, EHS
- Director, Emergency Management
- Director, Pipeline Integrity
- Director, Engineering and Facility Integrity
- Director of Indigenous Relations
- Manager, Emergency Management
- Manager, Emergency Response
- Manager, Environment
- Public Affairs Representative
- Legal Representative
- Field Representative
- Security Representative

Other Active Participants:

- President & Chief Operating Officer
- VP, Operations & Engineering
- Director, IT Technical Services
- Director, Applications and Business Services
- Manager/Supervisor Control Centre
- Manager, Marine Logistics
- Manager, Cyber Security
- Manager, Scada and Measurement
- Manager, Security
- EHS, Regional Contact
- Shipper Services Representative
- Impacted District Supervisor

If the on-line system is not operational, the CCO will begin a manual call down of the above individuals and request they join the conference call. If the conferencing telephone lines are not operational the flow of information will occur via individual telephone calls until an alternate conferencing solution is available.

The following positions will be assigned at a minimum during this call:

- Incident Commander
- Safety Officer
- Security Officer
- Information Officer
- Liaison Officer
- Legal Officer
- Operations Section Chief
- Planning Section Chief
- Logistics Section Chief
- Finance/Administration Section Chief

As core IMT members arrive at the site or are assigned, they are responsible for contacting the remaining members of their respective sections/units/groups/division, deemed necessary based on the size and nature of the incident.

2.6 Trans Mountain Contacts

"Trans Mountain Contacts" consist of a list of Trans Mountain personnel names and contact information, who have been trained in the use of the Incident Command System (ICS) and their applicable ICS roles. In the event of an emergency, these personnel would fill the ICS functional roles. This information has been removed from the manual following the requirements of the Personal Information Protection and Electronic Documents Act (PIPEDA) (federal legislation). The information is provided on a controlled basis within the Incident Notification Guideline located in the Emergency Toolkit.

2.7 Trans Mountain Alert System Contacts

The "Trans Mountain Alert System (TAS) Contacts" is a list of Trans Mountain business unit leadership including supervisors/managers/directors and their alternates contact information. If an event were to occur, these personnel participate in the initial emergency notification briefing and any follow-up calls, if required. This briefing normally occurs via a telephone conference call by-way of a pre-designated emergency conference call telephone number but could occur in person, if all were in the same location at the same time. This information has been removed from the manual following the requirements of the Personal Information Protection and Electronic Documents Act (PIPEDA) (federal legislation). The information is provided on a controlled basis within the Incident Notification Guideline located in the Emergency Toolkit.

2.8 Facility Contacts

Terminal	Facility	Phone
Westridge Terminal	Westridge Terminal	604-298-3612

2.9 External Notification

2.9.1 External Notification – Potential Emergency Condition

In the case of a potential emergency condition [2] notification to the Transportation Safety Board of Canada (TSB), Canada Energy Regulator (CER), Emergency Management and Climate Readiness British Columbia (EMCR) is made by the on-call EHS Representative when any of the following conditions are met:

1. **Emergency Shutdown** – is an event or situation that could imminently be hazardous to persons, property or the environment. This includes but is not limited to component malfunction or personnel error that could cause a hazard to persons, property or the environment, an operational failure causing a hazardous condition, natural disaster, a terrorist threat, third-party damage that could affect pipeline operations, leaks or spills, fires or a response to the activation of an emergency system.

2. **Safety Shutdown** – is a situation where a pipeline is shut down due to an emergency or abnormal operating condition along a pipeline, or at a terminal, station or other facility. The automated shutdown of a pipeline due to the activation of a protective device in response to an abnormal operating condition is also considered a Safety Shutdown.

3. **Odour Complaint** – in the event of multiple complaints and/or a single complaint in conjunction with available operating data, the CCO has a reason to suspect a release of product and decides to do a Safety Shutdown of the pipeline and/or station.

Canada Energy Regulator Online Event Reporting System (OERS)

Canadian Coast Guard 800-899-8852

Emergency Management and Climate Readiness British Columbia: 800-663-3456

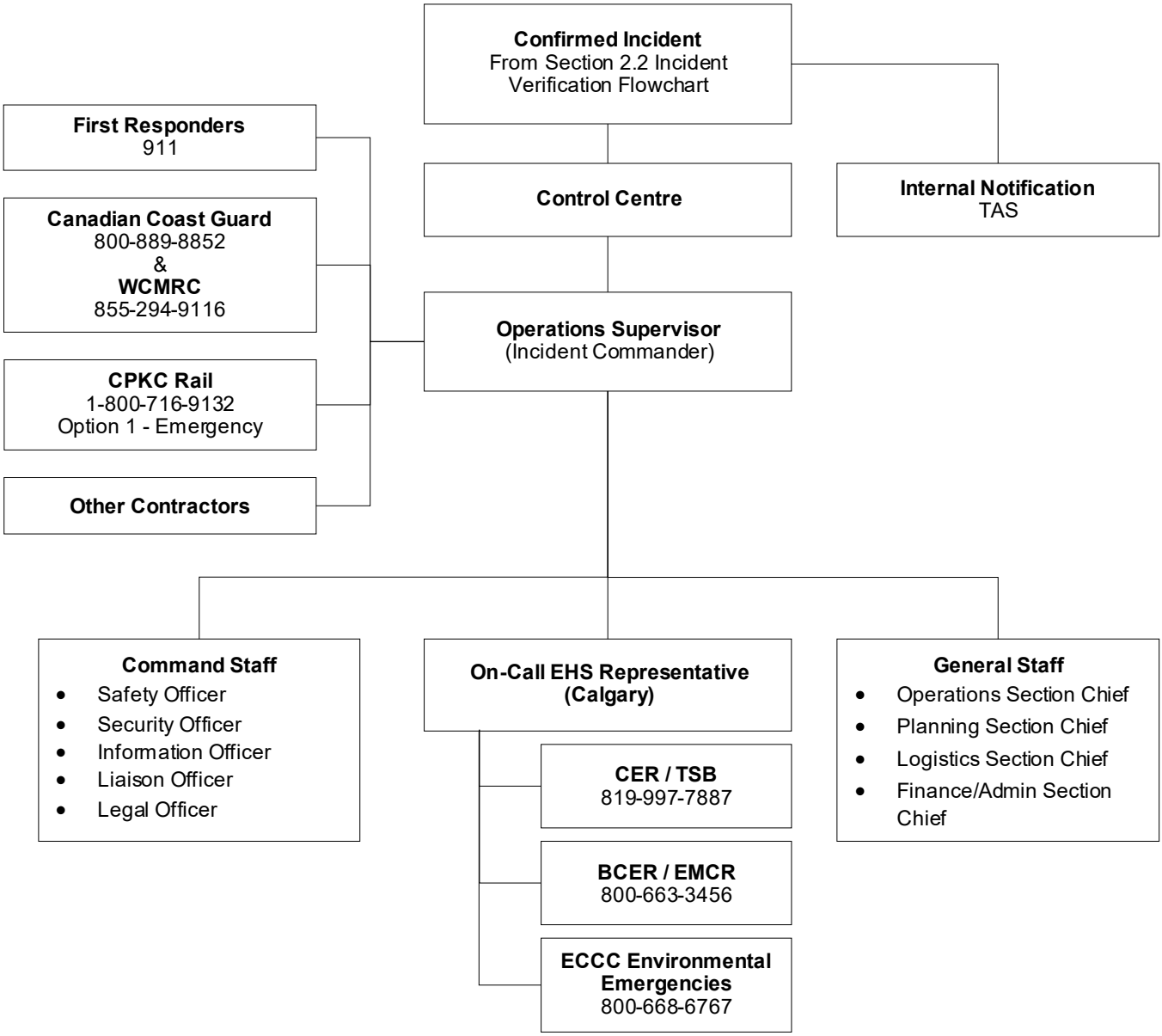
Notes: The CCO has the authority and the responsibility to shut down a pipeline, station, or terminal during an emergency or as a precaution when in their judgment, further operation is unsafe. The CCO will not be faulted for shutting down under these conditions.

A field technician, Terminal Manager, or District Supervisor may request a shutdown as the result of local conditions in response to the investigation of a complaint or regular duties where a release or other abnormal operating condition is suspected. The CCO will comply with the request and initiate the Emergency Condition Response Procedures.

Notification to the Canada Energy Regulator OERS System is through the online portal https://apps.cer-rec.gc.ca/ers. CER Incident Reporting Line 403-299-2773 may also be used when there is a potential emergency situation. If there is some doubt as to whether an event should be reported, or whether an event has occurred, a potential event will be reported at the very least.

[2] A potential emergency can be defined as a spill of unknown volume, unconfirmed and is adjacent to water or where there is a pathway to water, and the environmental conditions, such as rain events or known shallow groundwater make impacts to water likely.

2.10 External Notification Chart – Confirmed Emergency Condition



Note: Notification to the Canada Energy Regulator /Transportation Safety Board is conducted through the one window Online Event Reporting System (OERS). Where an event qualifies as a significant incident [3] it must be reported immediately via the TSB Reporting Hotline, then the incident details entered into OERS as soon as possible and within a minimum of three (3) hours after the incident occurrence.

[3] Significant incident is an acute event that results in: death, missing person (as reportable pursuant to the DPR under COGOA or OGOA), a serious injury (as defined in the OPR or TSB regulations), a fire or explosion that causes a pipeline or facility to be inoperative, a LVP hydrocarbon release in excess of 1.5 m^3 that leaves company property or the right of way, a rupture; or a toxic plume as defined in CSA Z662. For the purposes of this document, a "rupture" is an instantaneous release that immediately impairs the operation of a pipeline segment such that the pressure of the segment cannot be maintained.

2.11 Reporting Requirements

Call Order	Agency	Notes
Terminal Director/Manager, Marine Logistics/Incident Commander Initial Calls		
1	**911 Call Centre** 911 *or* 9911 - from a company land line	The local 911 call centre will be notified of any incident to inform the call centre operators of the problem or potential problem, so they do not allocate additional unneeded resources to the event.
2	**Canadian Pacific Kansas City (CPKC) Rail Police** 1-800-716-9132; option 1 for an emergency	WMT *only,* contact CPKC Rail Police and report incident impacts Mile 121.15 (Cassade Crossing).
Operations Supervisor/Incident Commander – Incident impacting Fraser River or Burrard Inlet		
1	**Canadian Coast Guard** 1-800-889-8852 *or* **Marine Communications and Traffic Services (MCTS)** Marine Channel 16 VHF *and* **Department of Transport Canada Marine Safety Office** Office: 604-666-3636 Fax: 604-666-5444	All marine spills must be reported verbally as soon as feasible. All marine spills must be reported in writing as soon as feasible. Form available in Section 2.12 External Agency Reporting Form.
2	**Vancouver Fraser Port Authority** 604-665-9086	For spills that impact the Fraser River (from approximately Darby Reach Regional Park to the mouth of the river) and/or Burrard Inlet.
Operations Supervisor/Incident Commander/EHS Representative or Designate		
1	**Western Canada Marine Response Corporation (WCMRC)** 855-294-9116	Primary Response Contractor to assist with equipment and personnel for spill that impact the Fraser River and/or Burrard Inlet.
Trans Mountain On-Call EHS Representative – All Incidents		
1	**Canada Energy Regulator/ Transportation Safety Board** https://apps.cer-rec.gc.ca/ers **Significant Event TSB Reporting Hotline** 819-997-7887	Reportable incidents must be reported through the one window Online Event Reporting System (OERS). Where an event qualifies as a *significant* incident it must be reported *immediately* via a call to the TSB Reporting Hotline; incident details then entered into OERS as soon as possible and within 3 hours.
2	**Environment and Climate Change Canada (ECCC)** 800-668-6767	In the event of an emergency relating to the propane bullet, Trans Mountain is required to notify ECCC.

Call Order	Agency	Notes
Trans Mountain On-Call EHS Representative – Incident in British Columbia		
1	**Emergency Management and Climate Readiness (EMCR)** 800-663-3456	Notifications for all environmental emergencies, including spills, can be made by one call to EMCR at 800-663-3456. EMCR makes notifications to other provincial agencies as needed including BC Ministry of Environment and Climate Change Strategy (MoE), ECCC, Canadian Coast Guard, BCER[4], and affected municipal governments.
2	**British Columbia Ministry of Environment & Climate Change Strategy (MoE)** 800-663-3456	Must report a spill that enters, or is likely to enter, a body of water, or the quantity of the substance spilled is, or is likely to be, equal to or greater than the listed quantity for the listed substance (BC Spill Reporting Regulation). In the event that a spill originating from WMT is confirmed to contaminate drinking water, the company must notify BC MoE within the following time periods: • As soon as practicable; • Within 72 hours, whichever is less. The BC MoE 24-hour toll free number connects with Emergency Coordination Centre (part of EMCR).
3	**BC Environment Assessment Office (BC EAO)** 800-663-3456	In the event that a spill originating from WMT is confirmed to contaminate drinking water, the company must notify BC EAO within the following time periods: • As soon as practicable; • Within 72 hours, whichever is less. The 24-hour, toll free number connects with the Emergency Coordination Centre (part of EMCR).
Trans Mountain On-Call EHS Representative – Jet Fuel Incident		
1	**BC Energy Regulator (BCER)** **800-663-3456**	If the incident receives a score of Level 1, 2, or 3, it must be reported to the BCER immediately (within 1 hour) through EMCR's incident reporting line at 1-800-663-3456. BCER staff will enter initial incident information and follow up with permit holder contacts to obtain more information.

[4] EMCR discretion to include BCER on incident notification and update list.

2.12 External Agency Reporting Form

Name and Address of Company/Oil Handling Facility
Name of Pipeline/Identity of Vessel Involved
Name and Position of On-Scene Commander/Person Responsible for Implementing Emergency Response Plan
Date and Time Discharge
Location of Discharge
What is the receiving environment? Land, Water, Wetland, Solid Surface (asphalt, concrete)
Name of Product Involved and Associated SDS
Reason for Discharge (i.e., Material Failure, Excavation Damage, Corrosion)
Estimated Volume of Discharge
Weather Conditions On Scene
Actions Taken or Planned by Persons On Scene

2.13 Other Notifications

2.13.1 Local Governments

Notification of the local government agencies may occur through 911 and on-scene coordination with emergency services. Alternately the impacted communities will be identified based on the location of the incident using the Geographic Information System mapping applications. Trans Mountain maintains the database of local contacts, including emergency managers, and will contact affected communities as soon as possible. The Liaison Office will be provided with all local contacts for additional notifications and follow-up as soon as possible, but within 24 hours of the immediately reportable incident occurring.

2.13.2 Landowners

Notification to landowners, including those whose land may be affected, occurs through the Affected Landowner Coordinator as part of the incident Liaison Office. The impacted landowners will be identified based on the location of the incident using the Geographic Information System mapping applications. Trans Mountain maintains a database of landowner contacts and will contact affected landowners with priority to those that are geographically closest to the incident.

2.13.3 Indigenous Communities

Notification of Indigenous communities, including those whose traditional territories may be affected, occurs through the Indigenous Relations Coordinator as part of the incident Liaison Office. The impacted communities will be identified based on the location of the incident using the Geographic Information System mapping applications. Trans Mountain maintains a database of Indigenous community contacts and will contact affected communities as soon as possible, but within 24 hours of the immediately reportable incident occurring. Priority will be given to those that are geographically closest to the incident.

The Trans Mountain Indigenous Advisory and Monitoring Committee (IAMC) will be notified in accordance with the established protocol.

2.13.4 Other Government Contacts

British Columbia has one window reporting which is to trigger call-down of additional resources if required. Trans Mountain recognizes that in some situations a provincial response may not be required, however the local authorities and/or other potentially impacted provincial agencies may wish to receive additional information regardless of the decision to respond from the provincial or federal governments, therefore is committed to making additional notification calls, as time allows and establish conference call solutions to ensure potential responders are aware of the situation. The following list is a list of agencies that may be contacted after all other mandatory reporting is complete.

2.13.4.1 Coordination Call

An inter-agency coordination call will be arranged by the Liaison Officer to provide an incident briefing, including confirming Unified Command membership and establishing an ongoing briefing schedule. The call's purpose is to:

- Provide a situation update utilizing verified information only (approved situation reports from previous or current operational period):
- Incident situation: location, magnitude and potential impacts
- Consequences (actual and potential) including communities affected; consequences could include:
    - Contamination of water (drinking (human, livestock), irrigation, or agricultural watering)
    - Air contamination
    - Other actual or potential consequences
    - Initial/ongoing response status including mitigation measures taken

- Activation (status and level) of the Emergency Response Plan(s)
- Agencies, stakeholders, and Indigenous communities who have been notified

In preparation for the meeting, Appendix 5 (Coordination Conference Call Agenda) of the GVIRP (2021) will be reviewed and referenced accordingly.

2.13.5 Agency Contacts

The following list is a list of agencies that may be contacted after all other mandatory reporting is complete.

Agency	Contact
When contacting agencies be clear as to whether the call is for the purposes of awareness, or for the purposes of requesting support.	
Federal Government	
Vancouver Fraser Port Authority 24/7 Operations Centre	604-665-9086
Department of Fisheries and Oceans	604-666-0384
Provincial Government	
BC Energy Regulator (BCER)	800-663-3456 250-794-5200
BC Ministry of Transportation and Infrastructure (MOTI)	250-387-3198
Health Emergency Management BC (HEMBC) [5]	855-554-3622 (24 Hour)
First Nations Health Authority (FNHA)	Regional Office: 604-693-6500 After Hours: 844-666-0711
Fraser Health Authority [6]	604-587-4600
Vancouver Coastal Health Authority[5]	604-736-2033
WorkSafe BC	After Hours: 866-922-4357 M-F (8-4:30): 888-621-7233
Local Government	
City of Burnaby Fire Department	911 604-294-7190
RCMP	911 604-646-9999
Burnaby Municipality Emergency Management Office	604-294-7097
Indigenous Communities	
Squamish First Nation	604-980-4553
Tsleil-Waututh First Nation	604-345-3423

[5] HEMBC should be contacted for all BC incidents, together with the appropriate regional health authority and BC First Nations Health Authority to invite them to participate in Liaison Office and/or Planning Section – Environmental Unit activities

[6] If an incident involves either the Westridge Marine Terminal or the Burnaby Terminal, then both Fraser Health and the Vancouver Coastal Health Authority should be contacted.

Agency	Contact
Non-Government	
NAV Canada Flight Information Centre [7]	Kamloops FIC –866-541-4101 Edmonton FIC –866-541-4102
Pembina Control Centre	800-360-4706
Simon Fraser University – Campus Safety & Security Services [8]	Emergency 24/7: 778-782-4500

2.14 Industry Contacts

The following is a list of industry contacts that may be contacted after mandatory reporting is complete.

Company	Name/Office	Phone	Emergency/24-Hour
Canadian National Railway (CN)	Head Office	800-465-9239	800-465-9239
Parkland	Refinery	604-257-4040	604-257-4040
Imperial	Head Office	800-567-3776	800-279-8047
Suncor Terminal	Refinery	604-933-3000	604-933-3000
	Head Office	866-786-2671	403-296-3000
Shell Canada	Facility	604-296-2900	800-661-7378

2.15 Support Services

“Support Services” consists of the names and contact telephone numbers of all entities that have been identified and pre-approved to supply services to Trans Mountain in day-to-day business or in the event of an emergency. Support Services information consists of primary response contractors, industrial firefighting and air monitoring providers, communications equipment and aviation providers, lodgings, equipment, etc. These are private entities with which Trans Mountain has a contractual relationship. The removal of this information follows the requirements of The Personal Information Protection and Electronic Documents Act (PIPEDA) (federal legislation). The information is provided on a controlled basis within the Incident Notification Guideline located in the Emergency Toolkit.

[7] In the event of a hazardous release into the atmosphere, including large amounts of smoke and/or toxic material, request issuance of Notice to Airmen (NOTAM) from NAV Canada. Provide location of the incident (coordinates), direction and altitude of plume (if known).

[8] Notification to SFU is required for all emergencies impacting, or that have the potential to impact Westridge Marine Terminal or Burnaby Terminal

2.16 Mutual Aid Activation

Contact information and specific procedures for the activation of the mutual aid agreements is contained within the Incident Notification Guideline located in the Emergency Toolkit. In many cases these numbers are those of specific personnel or unpublished numbers. The removal of this information is consistent with the requirements of the Personal Information Protection and Electronic Documents Act (PIPEDA).

Mutual Aid Agreement	Activation Instructions
Mutual Emergency Assistance Agreement (MEAA)	Contact the Emergency Management Department to identify nearby resources and request assistance in accordance with the procedures outlined in the MEAA.
Strathcona District Mutual Aid Partnership (SDMAP)	Provides assistance and equipment in the Edmonton Area for the Terminal Operations. It is activated at the request of Strathcona County Emergency Services, or by directly calling a member company by the Terminal Supervisor.
Kamloops Fire and Rescue	Emergency Response support for incidents inside the City of Kamloops. Activation is by direct contact between Emergency Services and Trans Mountain Supervisor or the Emergency Management Department.
Burrard Industrial Mutual Assistance Group (BIMAG)	Requests for Assistance will be made in writing or through the requested 'Responding Member's emergency 24-hour numbers set out in Section 2 of the 'BIMAG' Mutual Aid Agreement by the Emergency Management Department.

2.17 Incident Command Post and Staging Area Locations

There are pre-designated potential Incident Command Posts (ICP) and Staging Areas located in close proximity to the Westridge Marine Terminal. Access to these facilities, and the lead time required to establish them varies depending on the location and type of facility being used. Trans Mountain has agreements and protocols in place where appropriate with the service providers. All facilities meet the requirements for internet and telephone connectivity, food, lodging, meeting space, parking and security for a multi-agency response.

Incident Command Post facilities are private entities with which Trans Mountain may have contractual relationship. The information is provided on a controlled basis within the Incident Notification Guideline located in the Emergency Toolkit. The removal of this information follows the requirements of The Personal Information Protection and Electronic Documents Act (PIPEDA) (federal legislation).

2.18 Community Support Centres

"Community Support Centres" are locations, separate from the ICP, that can be utilized as media relations centres, evacuee reception centres, or convergent volunteer coordination centres.

The Media Relations Centre, in the event of an emergency, will be designated at the time of an emergency, based on the location of the ICP. The identification of a facility to be used for evacuees or other community support, such as convergent volunteer coordination centres, will be made, as appropriate and able, in collaboration with the community (Local Authority or First Nation).

These are private entities with which Trans Mountain has a contractual relationship. The removal of this information follows the requirements of The Personal Information Protection and Electronic Documents Act (PIPEDA) (federal legislation). The information is provided on a controlled basis within the Incident Notification Guideline located in the Emergency Toolkit.

3.0 SPILL/SITE ASSESSMENT

The primary purpose of a site assessment is to evaluate the presence of risk to both incident responders and the public. However, if it is safe to do so, information about the incident should be gathered as quickly as possible in order to evaluate the situation and develop an initial response plan. It might also be possible for the Site Assessment Team to take measures to reduce possible impacts.

NOTE: Site Assessment Team members should wear all PPE (boots, FR coveralls, gloves, eye protection, hard hat and half-face respirators) while assessing the incident. This may include radiant heat protection. If vapour levels reach 10% of the LEL, Site Assessment Team members should leave the area immediately.

3.1 Site Assessment Guidelines

When conducting the initial site assessment of the spill the following parameters must be documented:

- Identify and evaluate the immediate risks to and impacts on human health, environment, and infrastructure.
- Classify the spill according to the following factors:
    - Substance spilled
    - Quantity of the substance spilled
    - The location and circumstances of the spill
- Assess:
    - What is to be done to protect the safety of response personnel and the public,
    - Whether or not an evacuation is necessary.

3.1.1 Safety Checklist

- ❑ Conduct vapour monitoring (see 3.3 Vapour Monitoring Flowchart)
- ❑ Conduct Pre-Entry Safety Checklist (ISHSP, or HSP)
- ❑ Remove all non-intrinsically safe radios, pagers, etc.
- ❑ Establish communications with the Control Centre
- ❑ Request information regarding the situation (e.g., alarms, product, pipeline reading, shutdown actions and other relevant information)
- ❑ Establish communications procedures/schedules
- ❑ Don appropriate PPE, as per health and safety plan
- ❑ Refer to SDS
- ❑ Determine wind speed and direction
- ❑ Determine current direction
- ❑ Approach spill from upwind/up current if possible
- ❑ Conduct vapour monitoring

3.1.2 Incident Intelligence Checklist

- ❑ Determine status of any injured personnel
- ❑ Determine spill source
- ❑ Confirm spilled product (if different, leave the area)
- ❑ Determine if source is isolated
- ❑ Estimate spill rate/volume
- ❑ Determine if product has or will reach the water

- ❑ Determine if product has escaped local containment

3.1.3 Incident Mitigation Checklist

- ❑ Evacuate and attend to any injured personnel
- ❑ Isolate spill source
- ❑ Close all valves
- ❑ Block escaping product on dock

3.2 Vapour Monitoring Site Assessment Procedure

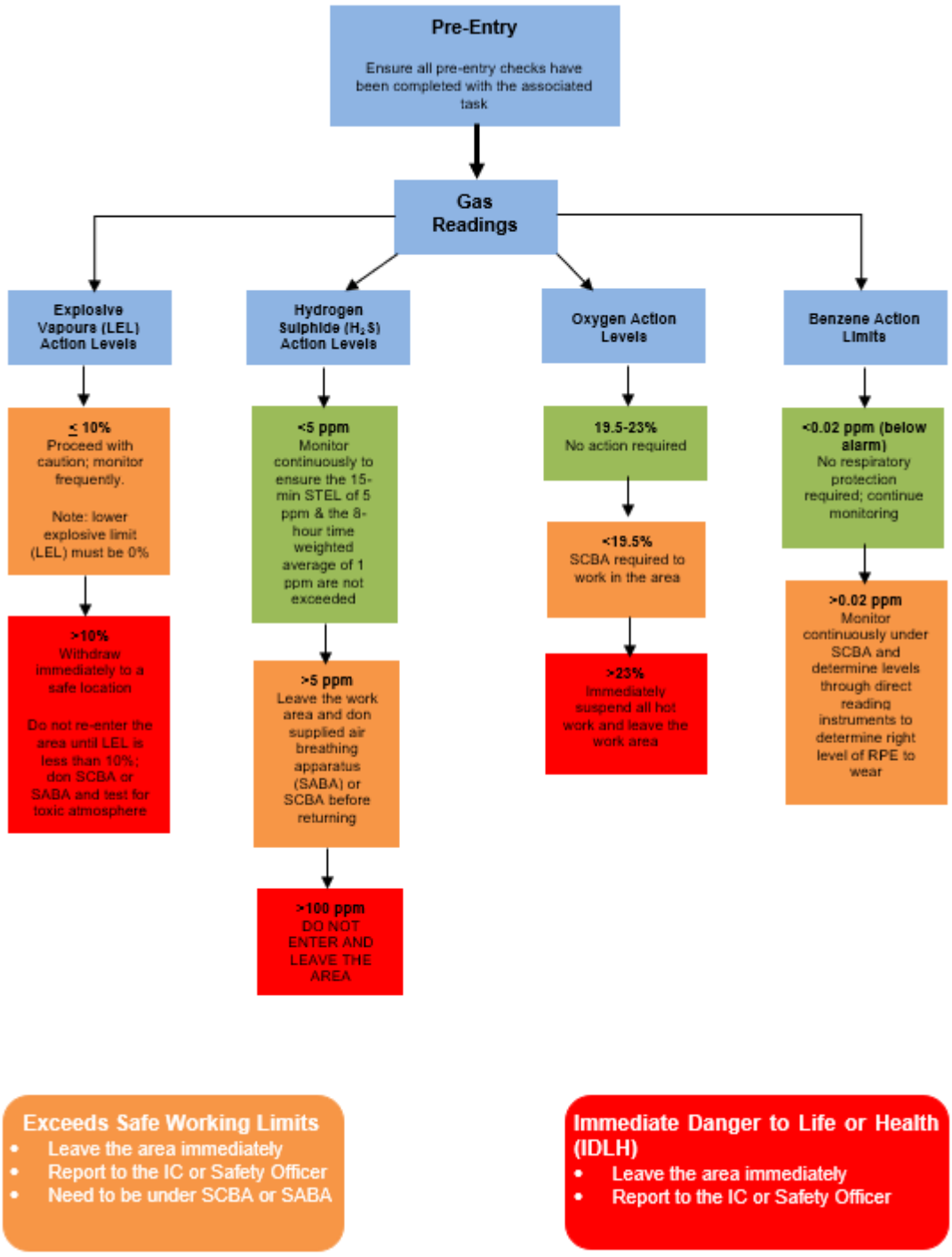
The team should move toward the area and stop at an acceptable location, preferably upwind, to make final preparations for assessment. The team must evaluate its options and decide the best approach route. Frequent reading of air monitoring instruments can ensure the safety of the survey party during the approach. The assessment team leader needs to exercise caution and use controls that will best protect the team.

The survey should continue as long as air monitoring instrument readings remain within acceptable limits, with the objective of (a) obtaining readings across the zone and (b) locating a significant accumulation to provide a detailed assessment. A safe and effective site assessment will require caution, persistence and field decisions.

The team leader must take immediate action if at any time the air monitoring instrument readings meet or exceed “evacuation” levels. If “evacuation” levels are met or exceeded, move upwind from the spill and halt the assessment. Notify the Incident Commander.

When sufficient representative locations have been recorded, the air-monitoring phase of the initial site assessment is complete. The identification of physical, environmental, or other hazards will complete the assessment.

3.3 Vapour Monitoring Flowchart[9]



[9] This flowchart should be used as a guideline only. Follow site-specific SWP and regulatory exposure limits: if there are any questions about safe working vapour levels, consult the Safety Officer.

3.4 Spill Observation/Assessment/Estimation Factors

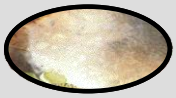
3.4.1 Spill Surveillance

The following guidelines should assist in spill surveillance:

- Surveillance of an oil spill should begin as soon as possible following discovery to enable response personnel to assess spill size, movement, and potential impact locations. Dispatch observers to crossings downstream or down gradient to determine the spills maximum spread.
- Efforts should be made to approach from an uphill/upwind direction.
- Clouds, shadows, sediment, floating organic matter, submerged sand banks or wind-induced patterns on the water may resemble an oil slick if viewed from a distance.
- Spill surveillance is best accomplished using helicopters or small planes; helicopters are preferred due to their superior visibility and maneuverability.
- All observations should be documented in writing and with photographs and/or video recording devices.
- Record observations on detailed maps.
- Surveillance is also required during spill response operations to gauge the effectiveness of response operations; to assist in locating skimmers; and assess the spill's size, movement, and impact.

3.4.2 Estimating Spill Volume

If possible, the initial assessment should also include an estimate of the volume of oil spilled. Oil volumes can be estimated by multiplying the area of the slick by the average estimated thickness. The following chart applies when the oil is on the water. In the case of an impoundment area the spill can be estimated by multiplying the thickness by the area covered.

Appearance	Slick Thickness	Spill Volume
 Barely visible	0.05 µm	50 L/km^2
 Visible as silvery sheen	0.08 µm	80 L/km^2
 First trace of colours	0.15 µm	150 L/km^2
 Bright bands of colour	0.3 µm	300 L/km^2
 Colours begin to turn dull	1 µm	1,000 L/km^2
 Colours are much darker	2 µm	2,000 L/km^2

3.4.3 Rapid Methods for Estimating Spill Size

- Transfer operations: Multiply the pumping rate by the elapsed time that the leak was in progress, plus the drainage volume of the line between the two closest valves or isolation points (volume loss = pump rate [bbl./ min] x elapsed time [min] + line contents [bbl.])
- Tank overfills: Elapsed time multiplied by the pumping rate
- Visual assessment of the surface area and thickness (note that this method may yield unreliable results):
    - Interpretation of sheen color varies with different observers
    - Appearance of a slick varies depending upon amount of available sunlight, sea-state/turbulence, and viewing angle
    - Different products may behave differently, depending upon their properties

4.0 SPILL CONTAINMENT AND RECOVERY

4.1 Initial Containment Actions

Initial containment actions will focus on utilizing containment on site in the most effective manner to prevent oil from impacting water, thus reduce the surface area and shoreline to be cleaned; concentrate the oil (when safe to do so), making physical recovery more efficient; and limit the environmental impact to the immediate spill area.

The containment of spilled oil will:

- Reduce the spread of slicks and their impacts beyond the property
- Reduce potential impacts to the surrounding environment
- Reduce potential economic impacts
- Maximize the thickness of floating slicks
- Maximize the effectiveness of mechanical countermeasures (i.e., skimmers and sorbents)

Selection of the appropriate location and containment and recovery tactic method will depend upon:

- Length of time since the spill occurred
- Amount and type of spilled material
- Area of coverage
- Environmental factors such as wind speed and direction

The following sections outline spill mitigation procedures, and response options for containment and recovery of spilled oil. Refer to the specific Geographic Response Strategy for detailed information on response tactics.

4.2 Spill Mitigation Procedures

Trans Mountain Terminals are designed to contain any released product onsite. Early actions implemented to reduce or eliminate harm to people, environment and property can alleviate the negative impact of an oil spill. Response actions and mitigation procedures undertaken at the time of a release can ultimately influence the duration, magnitude, and extent of impacts. Trans Mountain personnel must ensure that spills are treated with great care and dealt with promptly to minimize the possibility of them becoming a major issue. The following table describes spill mitigation procedures.

Failure	Procedure
Failure of Transfer Equipment	• Personnel safety is the first priority. Evacuate nonessential personnel or personnel at high risk. • Terminate transfer operations and close block valves. • Drain product into containment areas if possible. • Eliminate sources of vapour cloud ignition by shutting down all engines and motors.

Failure	Procedure
Tank/Cavern Overfill/ Failure	• Personnel safety is the first priority. Evacuate nonessential personnel or personnel at high risk. • Shut down or divert source of incoming flow to tank. • Transfer fluid to another tank with adequate storage capacity (if possible). • Shut down source of vapour cloud ignition by shutting down all engines and motors. • Ensure that containment bay discharge valves are closed. • Monitor containment area for leaks and potential capacity limitations. • Begin transferring spilled product to another tank as soon as possible.

Failure	Procedure
Piping Rupture/Leak (under pressure and no pressure)	• Personnel safety is the first priority. Evacuate nonessential personnel or personnel at high risk. • Shut down pumps. Close the closest block valves on each side of the rupture. • Drain the line back into contained areas (if possible). Alert nearby personnel of potential safety hazards. • Shut down source of vapour cloud ignition by shutting down all engines and motors. • If piping is leaking and under pressure, then relieve pressure by draining into a containment area or back to a tank (if possible). Then repair line according to established procedures.
Fire/ Explosion	• Personnel safety is the first priority. Evacuate nonessential personnel or personnel at risk of injury. • Notify local fire and police departments. • Attempt to extinguish fire if it is in incipient (early) stage. • Shut down transfer or pumping operation. Attempt to divert or stop flow of product to the hazardous area (if it can be done safely). • Eliminate sources of vapour cloud ignition shutting down all engines and motors. • Control fire before taking steps to contain spill.
Manifold Failure	• Personnel safety is the first priority. Evacuate nonessential personnel or personnel at high risk. • Terminate transfer operations immediately. • Isolate the damaged area by closing block valves on both sides of the leak/ rupture. • Shut down source of vapour cloud ignition by shutting down all engines and motors. • Drain fluids back into containment areas (if possible).

4.3 Terminal – Primary Recovery/Removal - Spills

At the Terminal, the primary recovery of product from the impoundment areas is via vacuum truck. Small spills at tank areas may use sorbents or other manual removal techniques, whereas skimmers may be used in the remote impoundment areas or drainage ponds. For more significant spills within the impoundment areas that result in unsafe working conditions and/or offsite odours complaints, the use on-site foam application systems may be utilized at the discretion of the Safety Officer.

4.4 Containment Tactics in Land and Small Watercourse

The penetration of oil into soil depends on a number of factors, including oil viscosity, soil type, wetness, and permeability and ground temperature. Normally, the amount of oil in saturated soil will range from 15-40 litres/m^3, however, the amount may exceed 50 litres/m^3 in dry soils, i.e., beneath structures. Also, low viscosity products (gasoline, diesel) will tend to penetrate into coarse sediments. In homogenous soils, the deepest penetration will normally be located below pooled oil. In the unlikely event that oil reaches groundwater, the oil will typically move relatively slowly - typically 0.5 to 1 m/day.

Containment can prevent further spreading by concentrating the product to make it more efficient to recovery released oil. The following outlines the containment methods recommended.

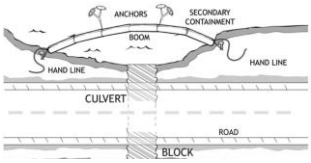
4.4.1 Earthen Berm and Bell Hole

An earthen berm and bell hole can be used to contain and/or divert released fluids and fresh water from high consequence areas (HCAs) (e.g., rivers, wetlands etc.). Both techniques can be used in conjunction with each other or on their own and are applicable for all types of released products and volumes.

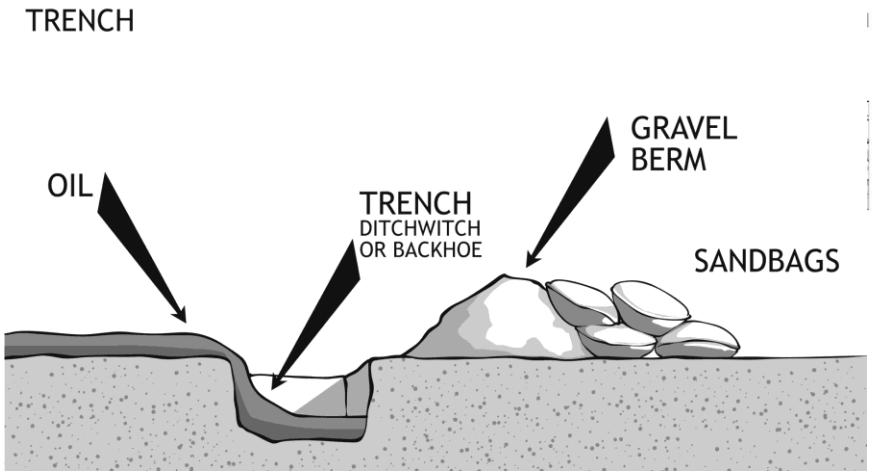
Earthen berm should be construct of a non-porous substance (i.e., clay, wood, poly, or metal) and can be built with mechanical (i.e., backhoe) or hand equipment (i.e., shovel). If a non-porous material is unavailable, sandbags and an impermeable liner can be used instead. Vegetation and other porous materials should be removed before constructing berm.

When constructing a bell hole in conjunction with a berm it should be created upslope of the berm to allow for additional fluid storage volumes. The material removed from the bell hole can be used to create the berm on the downslope side. Berms and bell holes can be used to separate areas of high impact from areas of low impact and aid in recovery efforts.

4.4.2 Earthen Trench



An earthen trench is used to recover and/or divert released fluids and fresh water from high consequence areas (HCAs) (e.g., rivers, wetlands etc.) and can be used to separate areas of high impact from areas of low impact. A trench will require constant monitoring and managing of inflow of water to maintain containment.



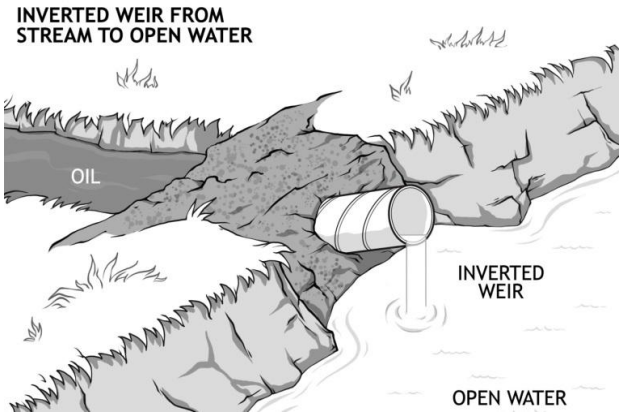
An earthen trench can be built in porous or non-porous material and can be built with mechanical (e.g., backhoe) or hand equipment (e.g., shovel). The trench should be built in a solid non-porous base (e.g., clay vs. grass/sand) to help prevent the migration of product. However, if a non-porous material is not available the trench can be constructed and lined with an impermeable substance (i.e., plastic sheeting, hard containment boom skirting etc.). When an earthen trench is constructed in a porous material, there is the potential to push impacts subsurface.

4.4.3 Culvert Block

Blocking a culvert will stop all fluids from traveling through the culvert this will include any water entering the water system as well as any released product. The largest consideration for blocking a culvert is the amount of fluid entering the water system and the amount of storage available upstream of the culvert to allow backflow. If a gated culvert is available this will allow the fresh water to flow underneath and retain the release product upstream of the culvert. A full culvert block should only be utilized if water flow can be managed by pumps in order to maintain a stable water level. When blocking the culvert use an impermeable material (i.e., non-porous material, a culvert plug, sheet metal, clay etc.).

4.4.4 Inverted Weir / Underflow Dam

An inverted weir is designed to stop free product on surface while allowing freshwater to continue to flow downstream. An inverted weir can be used in conjunction with additional containment tactics, or it can be used to separate areas of low and high impacts. The inverted weir is made up of two components a berm and a culvert.



The berm can be constructed out of any non-porous substance (e.g., clay, wood, poly or metal) and built with mechanical (e.g., backhoe) or hand equipment (e.g., shovel). If possible, the berm should be keyed into parent material as it provides the highest level of containment.

The culvert or culverts depending on the volume of flow should be designed for the current water flow x 150 percent to withstand any rain and/or melt events. This can be determined based on culvert sizes on engineered roads in the area. The top of the inflow end of the culvert must be lower than the bottom of the discharge end.

4.4.5 Water – Gate Dam

Water – Gate Dams are portable quick installation barriers that allow the depth of water upstream to be regulated. Keeping a consistent water depth ensures released product does not become stranded along the shorelines. Water – Gate Dams can be used in conjunction with additional containment techniques, or it can be used to separate areas of low and high impacts. Water - Gate Dams are largely used to increase the water depth to allow additional containment and recovery tactics to be more effective upstream of the dam.

4.4.6 Turner Valley Gate

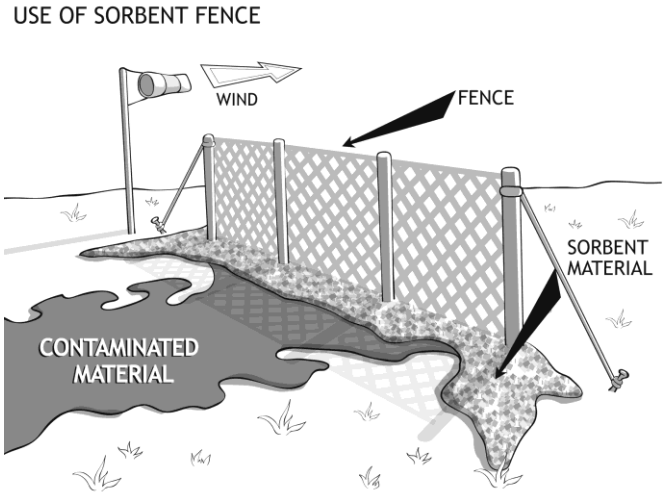
Turner Valley Gates are rapidly deployed shallow water containment measures. The Turner Valley Gate consists of two components, a stand and a plastic skirt. The stand allows the watercourse to be spanned and supports the plastic skirt. The stand is composed of a material that will support the skirt but also allow water to flow past. The Skirt is composed of an oil-resistant plastic skirting typically PVC fabric. The skirting deflects the product to a recovery area. The angle a Watergate is deployed spanning a watercourse is consistent with a typical boom angle. The Turner Valley Gate can be used alone or in conjunction with other containment tactics.

4.4.7 Aquadam / Waterbloc

An Aquadam / Waterbloc is a water filled inflatable bladder that impedes fluid movement downstream or downslope where installed. An Aquadam / Waterbloc can be used to contain product, divert freshwater or isolate an area of a waterbody or watercourse. Aquadams / Waterblocs are installed by pumping water into the rubber bladders to inflate the tubes and provide fluid control. Aquadams / Waterblocs come in numerous sizes depending on the application. Aquadams / Water blocks typically come in 50- or 100-foot sections and can be joined together to increase the length if required.

4.4.8 Sorbent Fence

A sorbent fence is a rapidly constructed containment technique. The largest advantage is the sorbent fence can be constructed very quickly with readily available materials. When constructing the sorbent fence it should be constructed from high ground to high ground or in a U shape for the most effective containment. The sorbent materials should be placed along the water's surface for the entire length of the fence creating a barrier. Once the sorbent material has become saturated, they should be removed and replaced with fresh sorbent material. The sorbent fence can be used in conjunction with other containment and recovery tactics.



4.5 On Water Containment

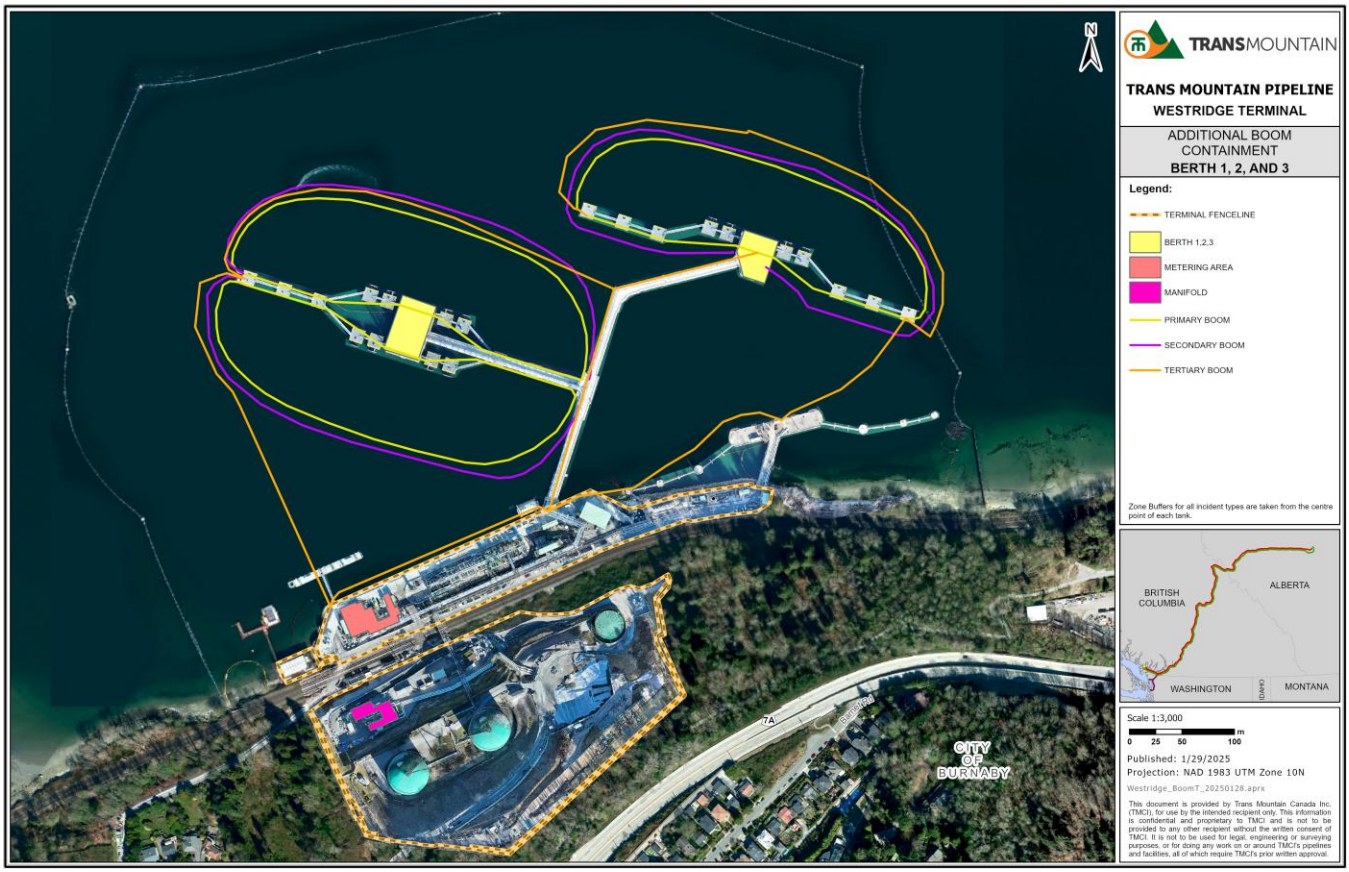
4.5.1 Initial Containment

Trans Mountain's policy is to pre-boom vessels during product transfers where the risk of fire and/or explosion is low (i.e., Jet A-1, crude).

4.5.2 Primary/Secondary Boom

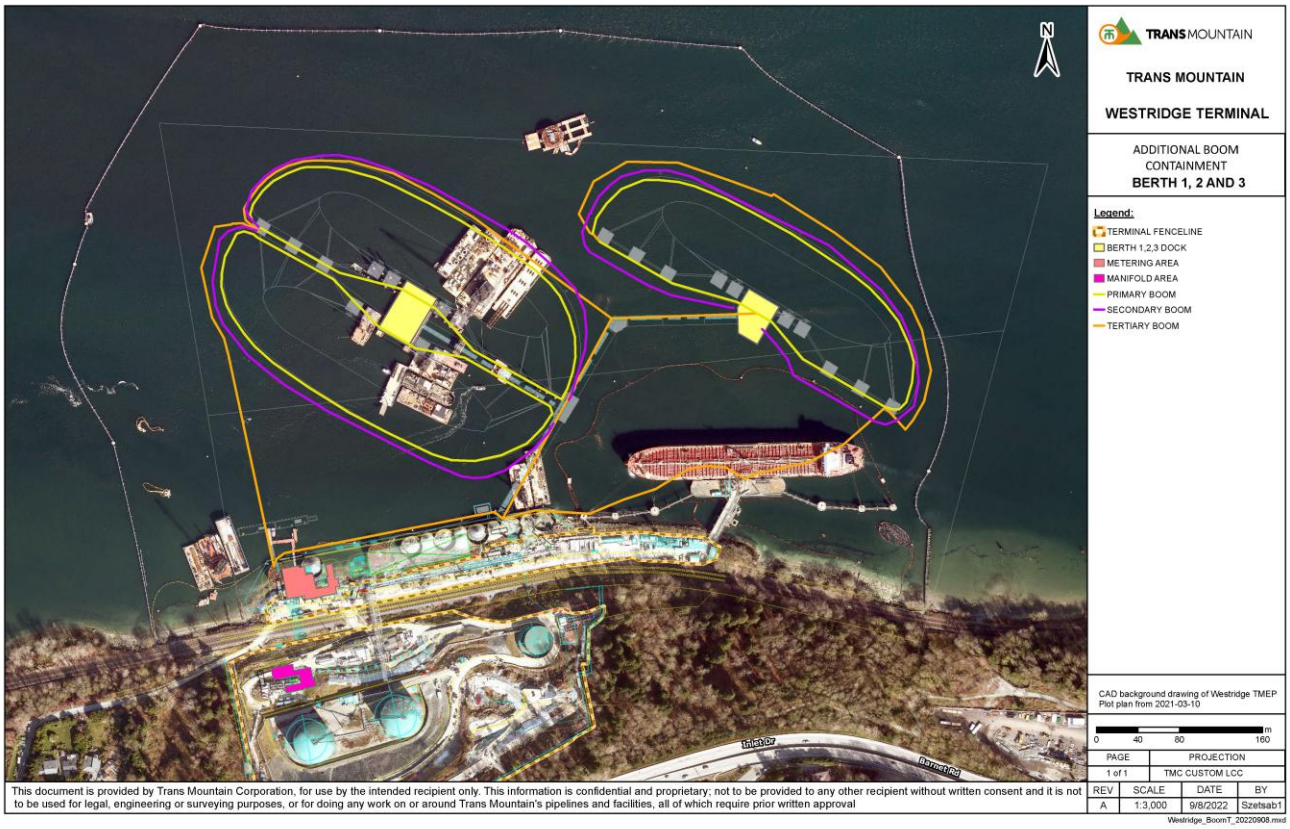
During loading/off-loading operations a permanent boom (primary) is secured around the vessel to limit the impact from any potential spills, including possible ship source releases.

Trans Mountain stores and maintains a secondary boom in the water at the Westridge Terminal to further limit the potential impacts of a spill. This secondary boom will be towed into place by either a Trans Mountain owned vessel operated by Trans Mountain personnel, or by a contract vessel during times when the Trans Mountain owned vessel is unavailable due to maintenance activities. Deployment of this secondary booming will occur within 1 hour of confirmation of an incident where a spill to water has occurred or is likely to occur.



4.5.3 Tertiary Containment

Initial spill response efforts focus on maximizing the effectiveness of the primary and secondary booms surrounding the vessel. Tertiary containment boom may be deployed by Western Canada Marine Response Corp. (WCMRC) if there is concern of spread beyond initial containment. Deployment of tertiary booms would help to minimize product spread and assist with maximum product recovery.



4.5.4 Additional Protection – Burrard Inlet

Pre-determined Geographic Response Strategies (GRS) have been prepared by WCMRC to protect locations throughout Burrard Inlet. Deployment of GRS's will be based upon real-time spill modelling for the conditions at the time of the release. The initial strategies that would be considered for deployment are:

- VH0008 Maplewood Mud Flats
- VH0011 Cate's Park
- VH0030 Barnet Cove
- VH0038 Scenic Point Park
- VH0040 West Barnet Marine Park
- VH0055 Admiralty Point
- VH0063 Trans Mountain Westridge Marine Terminal

The GRS' are held by WCMRC and are available online at the Coastal Mapping Program; they are also available in the Emergency Toolkit. WCMRC has multiple equipment caches; two are in the Burrard Inlet. The following map outlines the location of seven GRS in the Burrard Inlet for initial response.

4.5.5 Open Water Booming

In cases where significant amounts of spilled oil enter a lake type environment, it might be necessary to attempt to contain free-floating oil in open water using the U, J or V-booming techniques. This activity will be conducted by WCMRC.

4.5.6 U-Booming (Open Water Containment)

A U-Boom can be created when two workboats pull a section of boom attached to each in a horseshoe pattern or when one boat pulls a section of boom equipped with a Boom Vane to create drag and a horseshoe pattern. This method is effective for actively corralling free product in open water scenarios with negligible flow.

On water recovery can be completed via a bow skimmer equipped work boat or by ferrying the product to shore within the boom to a designated recovery area.

4.5.7 J-Booming

A single boom can be towed at a low speed (around 0.5 knots) allowing the oil to collect/concentrate in the apex.

Once oil is collected, the second vessel drops back and deploys a skimmer into the thickest patches of oil.

4.5.8 V-Booming

A V-Boom is utilized in open water where there is negligible flow, and the product is located away from the shoreline requiring active oil recovery. A V-Boom is created between three work boats with the two leading boats each pulling a section of boom anchored to a third recovery boat in a triangular formation. The recovery boat located at the apex of the triangle is equipped with a bow mounted skimmer or other method to recover the free product from the surface. A V-Boom configuration allows for the active recovery of product in place rather than waiting for the product to migrate to a shoreline recovery area.

4.6 Winter Response Tactics

Cold weather will have a significant impact on the response. Loss of light ends (weathering) slows down at lower temperatures, which can offset some of the temperature effect on viscosity. The evaporation rate at 5°C/41°F is approximately 1/3 of what it is at 30°C/86°F. As a result, oils may remain amenable to treatment by recovery or burning for a longer period. Water is at or near its maximum density in near-freezing temperatures. Cold, viscous oil will spread slower providing additional time for response.

Snow can be used to contain oil and as an effective sorbent. Any available snow near a spill can be used by forming snow berms to help contain oil and minimize its spreading prior to removal by mechanical means. When using equipment such as pumps and hoses to remove snow, equipment must be thoroughly dried after use to minimize residual water that can freeze, causing damage or limiting use.

Biological recovery on shorelines may be slower, although many organisms grow well at near-freezing temperatures. Biodegradation is likely to stop if shorelines freeze solid. Also, vulnerable times for key

sensitivities typically are shorter than in temperate settings. Therefore, planning protective strategies requires specialized teams, and tactics related to shoreline protection.

Frozen conditions on waterbodies can serve to facilitate recovery operations by providing a solid working platform over the oil and by creating natural barriers, which can be used to contain and immobilize oil. However, frozen conditions can also obstruct recovery operations. Downward-growing ice may quickly encapsulate oil under ice; additionally, there may be many under-ice pockets where oil can accumulate in natural depressions, providing access for recovery. Prior to commencing any activity over a frozen waterbody, the type, strength and thickness of the ice must be established. Refer to the Geographic Response Plan for detailed information on calculating type, strength and thickness of the ice.

In the event of winter conditions, please refer to the Trans Mountain Pipeline ERP for ice and snow covered land tactics.

4.7 Recovery Operations

4.7.1 Initial Recovery Operations

Due to the focus on initial containment at the facility using primary, secondary and tertiary booms, it is not expected that product will be released from the immediate vicinity of the Westridge Marine Terminal, therefore when tertiary booming is completed, recovery operations will commence using a combination of WCMRC and Trans Mountain owned recovery equipment. Trans Mountain maintains recovery equipment at its Burnaby Terminal; this equipment will be on-site and begin recovery operations within 6 hours of the confirmation of an incident.

4.7.2 Secondary Recovery Operations

Although, a spill is not expected to leave the immediate vicinity of the Westridge Marine Terminal, the potential exists for spilled product to escape the primary, secondary and tertiary booms. In order to mitigate the potential for product to spread beyond the initial response area WCMRC will commence with open water and shoreline recovery operations in accordance with identified Geographic Response Strategies (GRS), emergency response plans and based upon priorities set by Incident Commander as soon as possible after the confirmation of an incident. WCMRC response time is to have commence deployment of equipment and resources required to respond to a 2,500-tonne spill within the Port of Vancouver within 2 hours of notification. Response Tactics for Shorelines

Trans Mountain will conduct shoreline assessments and clean-up through the appropriate method on a site-specific basis using SCAT teams. The following table is a general summary of shoreline types and potential response tactics. See Section 5.2 for additional details and techniques.

Type of Shoreline	Recommended Cleanup Activity

Developed (urban) or unforested Land	• May require high pressure spraying:
	  ○ To remove oil.
	  ○ For aesthetic reasons.

Freshwater Flat	• These areas require high priority for protection against oil contamination • Minimal disturbance and low-impact cleanup is usually considered because of the likelihood of mixing oil deeper into the sediments during cleanup effort • Passive efforts such as sorbent boom can be used to retain oil as it is naturally removed.

Fresh marsh	• Marshes require the highest priority for shoreline protection.
	• Natural recovery is recommended when:
	  ○ a small extent of marsh is affected.
	  ○ as small amount of oil impacts the marsh fringe.
	• The preferred cleanup method is a combination of low-pressure flushing, sorption, and vacuum pumping performed from boats.
	• Any cleanup activities should be supervised closely to avoid excessive disturbances of the marsh surface or roots.
	• Debris may be removed by hand.

Swamp	• Natural recovery and monitoring recommended under light conditions. • Under moderate to heavy accumulations to prevent pollution of the surrounding areas placement sorbent along the fringe swamp forest may be effective under close scientific supervision. • Proper strategic boom placement may be highly effective in trapping large quantities of oil, thus reducing oil impact to interior swamp forests. • Oil trapped by boom can be reclaimed through the use of skimmers and vacuums.

4.8 Response Tactics for Non-Floating Oil

Floating oil describes oil that is on the surface of the water and remains buoyant; whereas non-floating oil describes oil that has become either submerged (oil that is not floating at or near the surface) or sunken (oil that sinks to the bottom of the water column due to specific gravity and resides on the bottom of the waterbody). It is possible to have non-floating oil in marine and freshwater environments. The likelihood of oil becoming non-floating is low; rapid deployment of on-water recovery is the best strategy to prevent floating oil from becoming non-floating.

Non-floating oil poses detection, containment, and recovery challenges that floating oil does not. Floating oil is readily observable and forms into identifiable plume models that can be anticipated and tracked as well as recovered using conventional techniques. Non-floating oil is not readily observable, due to environmental factors that can contribute to the potential for the product to disappear from one area only to reappear in another. Due to the many challenges posed by non-floating oil, tactics for its containment and recovery require the integration of multiple techniques based on the site-specific environmental factors and the specific type of oil or oil-containing product released.

Once a spill occurs, it will be assessed for the potential of the product to become non-floating oil. Responders must assess the situation and gather information to determine the best method for the detection, containment, and recovery of non-floating oils. The proposed recovery of non-floating oil requires a rational assessment of the environmental trade-offs associated with cleanup techniques is required. The Environmental Planning Unit will initiate a Net Environmental Benefit Analysis (NEBA) request to vet counter-measure techniques. NEBA must proceed in a rapid systematic manner to be effective, given the time sensitivity of tracking and recovering non-floating oil.

Refer to the *Non-Floating Oil Assessment and Response Plan* for information on the detection, containment, and recovery of non-floating oil.

4.9 Response Tactics for Urban Environments

Urban environments pose a challenge to response tactics due to varying surface materials including those that are impermeable such as asphalt and concrete. Initial response tactics should consider if a spill could enter the wastewater and/or urban subterranean networks. Possible methods of preventing the spread of a spill include the use of booms, cardboard, plywood, drainage covers, sorbents sandbags and other barriers to contain the spill and prevent entry of product to openings leading to subterranean municipal public works.

4.10 Recovery Tactics

The selection of the recovery method is dependent on the specific location and environmental conditions during the spill, the containment tactic used the characteristics of the product, the interaction of the product with sediments and finally the potential environmental impacts of implementing the recovery techniques particularly in sensitive environments. Wherever possible, spilled oil will be mechanically removed from the environment, using sorbents and/or oil skimmers.

4.10.1 Sorbents

On small spills, sorbent pads should be deployed into the thickest areas of the collected slicks. On heavy oil, the pads should be flipped over to maximize oil recovery. Oil-only pads will water-saturate if left in the water too long. Once pads are oil-soaked, they should be removed using pitch forks, pike poles or debris scoops. Care should be taken when recovering oiled sorbents, i.e., personnel should wear gloves, oil-resistance coveralls, and splash goggles.

Sorbent booms can also be used, either to sweep oil within the contained area to increase the oil thickness or they can be positioned, as a liner, inside skirted booms.

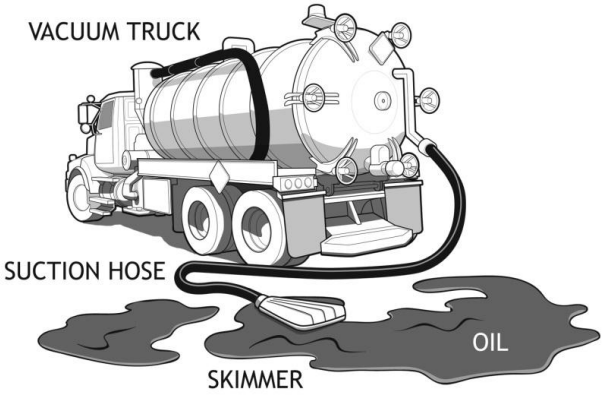
Recovered sorbents should be placed in 6 mil poly bags, with the bag weight limited to 25 - 30 lbs. Bags should then be sealed and then double-bagged and placed in lined bins to avoid secondary contamination.

4.10.2 Skimmers

Where pooled oil is concentrated in sufficient quantities, mechanical skimmers should be used. This activity would focus on areas where oil has collected, either in down-wind/current boom pockets or in near-shore boom pockets. Where possible, recovery efforts should be mounted where recovered oil could be stored temporarily on shore.

4.10.3 Vacuum Truck, Gator Vacuum Truck, Port – a – Vac Unit

Vacuum trucks are used to assist in the cleanup and transport of released product and waste material. These trucks are equipped with vacuum pumps and a cylindrical chamber capable of sustaining low internal pressures. Vacuum trucks use 2-4-inch (5-10 cm) diameter hose which is placed slightly below the surface of the oil slick for collection. Depending on the slick thickness and density, a mixture of oil and water will enter the chamber. Positioning the intake end of the hose is critical to minimize the amount of water that is collected.



4.10.4 Cleanup Techniques – Removal

Assessing the overall environmental impact must be considered when selecting a removal recovery technique. There are several variables that will influence the removal strategy used during a spill, such as product type and spilled area restrictions. A combination of removal cleanup methods will be used.

Technique	Description	Recommended Equipment	Applicability	Potential Environmental Impacts
Manual Removal	Hand tool (scrapers, wire brushes, shovels, cutting tools, wheelbarrows, etc.) are used to scrape oil off surfaces or recover oiled sediments, vegetation, or debris where oil conditions are light or sporadic and/ or access is limited.	Equipment misc. hand tools Personnel 10-20 workers	• Can be used on all habitat types • Light to moderate oiling conditions for stranded oil or heavy oils that have formed semi-solid to solid masses • In areas where roosting or birthing animals cannot or should not be disturbed.	• Sediment disturbance and erosion potential.
Mechanical Removal	Mechanical earthmoving equipment is used to remove oiled sediments and debris from heavily impacted areas with suitable access.	Equipment motor grader, backhoe, dump truck elevating scrapers Personnel 2-4 workers plus equipment operators	• On land, wherever surface sediments are accessible to heavy equipment • Large amounts of oiled materials.	• Removes upper 5 to 30 cm of sediments.
Sorbent Use	Sorbents are applied manually to oil accumulations, coatings, sheens, etc. to remove and recover the oil.	Equipment misc. hand tools misc. sorbents Personnel 2-10 workers	• Can be used on all habitat types • Free-floating oil close to shore or stranded on shore, secondary treatment method after gross oil removal • Sensitive areas where access is restricted.	• Sediment disturbance and erosion potential • Trampling of vegetation and organisms • Foot traffic can work oil deeper into soft sediments.
Vacuum/ Pumps/ Skimmers	Pumps, vacuum trucks, skimmers are used to remove oil accumulations from land or relatively thick floating layers from the water.	Equipment 1-2 50- to 100-bbl vacuum trucks w/ hoses 1-2 nozzle screens or skimmer heads Personnel 2-6 workers plus truck operators	• Can be used on all habitat types • Stranded oil on the substrate • Shoreline access points.	• Typically, does not remove all oil • Can remove some surface organisms, sediments, and vegetation.

4.10.5 Recovery Techniques – Washing

Washing is often a viable method for removing stranded oil from hard surfaces, like large rocks and seawalls. However, while effective, when used incorrectly washing may drive oil to further contaminate clean areas and triggered additional environmental effects. Because of these considerations, responders need to be very cautious about the situations and habitats in which washing is employed. Washing techniques should normally be combined with an effort to contain and collect the mobilized oil.

Technique	Description	Recommended Equipment	Applicability	Potential Environmental Impacts
Flooding	High volumes of water at low pressure are used to flood the oiled area to float oil off and out of sediments and back into the water or to a containment area where it can be recovered. Frequently used with flushing.	Equipment 1-5 380- to 750-lpm pumping systems 1 100-ft perforated header hose per system 1-2 200-ft containment booms per system 1 oil recovery device per system Personnel 6-8 workers per system	• All shoreline types except steep intertidal areas • Heavily oiled areas where the oil is still fluid and adheres loosely to the substrate • Where oil has penetrated into gravel sediments • Used with other washing techniques.	• Can impact clean down gradient areas • Can displace some surface organisms if present • Sediments transported into water can affect water quality.
Flushing	Water streams at low to moderate pressure, and possibly elevated temperatures, are used to remove oil from surface or near-surface sediments through agitation and direct contact. Oil is flushed back into the water or a collection point for subsequent recovery. May also be used to flush out oil trapped by shoreline or aquatic vegetation.	Equipment 1-5 189- to 380-lpm/ 689 kpa pumping systems with manifold 1-4 30 m hoses and nozzles per system 1-2 60 m containment booms per system 1 oil recovery device per system Personnel 8-10 workers per system	• Substrates, riprap, and solid man-made structures • Oil stranded onshore • Floating oil on shallow intertidal areas.	• Can impact clean down gradient areas • Will displace many surface organisms if present • Sediments transported into water can affect water quality • Hot water can be lethal to many organisms • Can increase oil penetration depth.
Spot (High Pressure Washing)	High pressure water streams are used to remove oil coatings from hard surfaces in small areas where flushing is ineffective. Oil is directed back into water or collection point for subsequent recovery.	Equipment 1-5 1,200- to 4,000-psi units with hose and spray wand 1-2 30 m containment booms per unit 1 oil recovery device per unit Personnel 2-4 workers per unit	• Bedrock, man-made structures, and gravel substrates • When low-pressure flushing is not effective • Directed water jet can remove oil from hard-to-reach sites.	• Will remove most organisms if present • Can damage surface being cleaned • Can affect clean down gradient or nearby areas.

4.10.6 Recovery Techniques – In-Situ Treatment

When conducted properly, in situ treatment significantly reduces the amount of oil spilled and minimizes the adverse effect of the oil on the environment. Although, in-situ treatment is considered an infrequent recovery method because of widespread concern over atmospheric emissions and uncertainty about its impacts on human and environmental health.

Technique	Description	Recommended Equipment	Applicability	Potential Environmental Impacts
Sediment Tilling	Mechanical equipment or hand tools are used to till lightly to moderately oiled surface sediments to maximize natural degradation processes.	Equipment 1 tractor fitted with tines, dicer, ripper blades, etc. or 1-4 rototillers or 1 set of hand tools Personnel 2-10 workers	• Any sedimentary substrate that can support heavy equipment • Sand and gravel beaches with subsurface oil • Where sediment is stained or lightly oiled • Were oil is stranded above normal high waterline.	• Significant amounts of oil can remain on the shoreline for extended periods of time • Disturbs surface sediments and organisms.
In Situ Bioremediation	Fertilizer is applied to lightly to moderately oiled areas to enhance microbial growth and subsequent biodegradation of oil.	Equipment 1-2 fertilizer applicators 1 tilling device if required Personnel 2-4 workers	• Any shoreline habitat type where nutrients are deficient Moderate to heavily oiled substrates After other techniques have been used to remove free product on lightly oiled shorelines Where other techniques are destructive or ineffective.	• Significant amounts of oil can remain on the shoreline for extended periods of time • Can disturb surface sediments and organisms.
Log/ Debris Burning	Oiled logs, driftwood, vegetation, and debris are burned to minimize material handling and disposal requirements. Material should be stacked in tall piles and fans used to ensure a hot, clean burn.	Equipment 1 set of fire control equipment 2-4 fans 1 supply of combustion promoter Personnel 2-4 workers	• On most habitats except dry muddy substrates where heat may impact the biological productivity of the habitat • Where heavily oiled items are difficult or impossible to move • Many potential applications on ice.	• Heat may impact local near-surface organisms • Substantial smoke may be generated • Heat may impact adjacent vegetation.
Natural Recovery	No action is taken, and oil is allowed to degrade naturally.	None required	• All habitat types • When natural removal rates are fast • Oiling is light • Access is severely restricted or dangerous to cleanup crews • When cleanup actions will do more harm than natural removal.	• Oil may persist for significant periods of time • Remobilized oil or sheens may impact other areas • Higher probability of impacting wildlife.

4.11 Alternative Recovery Techniques

All non-traditional or alternative cleanup techniques require regulatory approval and a net environmental benefit analysis (NEBA) to be completed. This analysis will consider the specific treatment options appropriate to the response; the potential for successfully implementing those discrete options; the environmental trade-off attached to each technique; and, lastly, the types of treatments that can be authorized within the existing regulatory framework. Although each incident is unique, NEBA will conceptually develop a decision flow chart that asks the questions of:

- What recovery techniques should be executed?
- How long should the existing recovery techniques continue?
- Will certain areas within the response become later candidates for natural attenuation?
- Should sunken oil be left for remedial treatment?
- What is the regulatory process for permitting a remedial treatment?

NOTE: Dispersant, In-Situ Burning and Decanting all require regulatory approval.

4.11.1 Decanting

Large quantities of oily fluids can be generated during an oil spill response. These fluids include the products of skimming and vacuuming operations and usually contain some amount of water. Oil recovery operations can only continue as long as there is a place to store the recovered fluids, as such when the field storage capacity is reached, skimming/recovery operations must then cease until additional storage is available.

Decanting is an option for increasing on-site storage capacity by removing the water once the liquids have separated. Separation may occur through the use of on-site vacuum trucks equipped with separator equipment or by allowing the collected fluids to sit in a quiescent state long enough to separate. The separated water can then be siphoned out back to the collection point thus freeing up storage capacity.

4.11.2 Dispersant

The decision to use dispersants must be made as soon as possible after a spill occurs before substantial weathering takes place or the oil has spread. Therefore, early in the spill response Unified Command may evaluate the potential use of dispersants. If Unified Command feels the potential for dispersant use exists, they should have their staff gather the information necessary to complete a review of dispersant use and action plan for approval by Unified Command.

4.11.3 In-Situ Burning

Burning is an alternative tactic to provide a rapid means to remove oil in the event of a spill from the pipeline or terminal operations. Advantages of in situ burning include rapid removal of oil from the water surface, requirement for less equipment and labour than many other techniques, significant reduction in the amount of material requiring disposal, significant removal of volatile oil components, and may be the only solution possible, such as for oil-in-ice situations and wetlands. Disadvantages of in-situ burning include creation of a smoke plume, residues of the burn may have to be removed, oil must be a sufficient thickness to burn quantitatively; and therefore, may require containment, and danger of the fire spreading to other combustible materials. Potential human health impacts may result from smoke plume and particulate generation so may not be suitable where public exposure will result.

5.0 PROTECTION OF HIGH CONSEQUENCE AREAS

The Westridge Marine Terminal is located within the central harbour of the Burrard Inlet. The geographic area surrounding the terminal incorporates a variety of habitats including marine, coastal, forested, and urban zones. The preservation of these environments is critical for the protection of local wildlife as well as for local businesses and surrounding communities. For this very reason Trans Mountain incorporates the protection of environmentally and/or culturally sensitive features into its emergency response planning and ensures that in the event of a spill the protection of these areas remains a top response priority.

The term High Consequence Areas (HCA) is used to define those areas where a spill incident can have a significant negative impact on, but not limited to:

- Populated areas
- Ecological areas
- Heritage resources
- Essential infrastructure

High Consequence Areas have been identified which are in proximity of the Terminal which could be impacted if product migrates offsite and beyond initial containment area. HCAs are identified and captured in the Geographic Response Strategies (GRS') that are maintained by WCMRC. Additionally, HCAs are captured in the Common Operating Picture mapping tool (COP).

The Environment Unit, operating within the Planning Section, is responsible for identifying the incident-specific areas of concern (i.e., High Consequence Areas), and recommending response priorities. This includes locating sensitive areas, providing response recommendations, and determining the potential extent, fate, and effects of subsequent consequences. GIS specialists (Planning Section) have access to a variety of mapping layers to prepare incident-specific maps, including spill model projections, with the information on High Consequence Areas required to support the response. Responders may also use remote electronic devices to access mapping layers for identification of HCAs.

5.1 High Consequence Areas

5.1.1 Populated Areas at Risk

Populated areas are located along and within the vicinity of the Westridge Marine Terminal and are subject to potential safety hazards if an incident were to occur. Populated areas are geographical regions where concentrations of people locate. Populated areas are separated into two categories:

- *High Populated Areas:* Urbanized areas, cities, towns, bands, villages, hamlets, or registered municipalities that fall within 8 km of Trans Mountain's pipelines.
- *Low Populated Areas:* Places with concentrated populations that fall outside of municipal boundaries, including towns, bands, villages, or unincorporated cities, within 8 km of Trans Mountain's pipelines.

5.1.2 Ecological Areas at Risk

Ecological Areas are located throughout British Columbia and include ecosystems dedicated to achieving long-term conservation such as recreational areas and fish spawning areas. Ecological Areas at risk are gathered from a combined British Columbia dataset. Datasets include, but are not limited to federal and provincial parks, bird sanctuaries, threatened or endangered species areas, and fish and important bird habitats.

The Westridge Marine Terminal is situated adjacent to significant fish habitats and has been identified as environmentally sensitive due to the presence of spawning salmonids and other fish species.

The following factors are detrimental to spawning fishes, their nests and eggs:

- Changes in water temperature
- Increased siltation or turbidity
- Increased amount of dissolved gas in the water column
- Physical destruction of habitat by personnel and/or equipment

To reduce the impact of an oil spill and response activities, the following steps would be taken:

- Attempt to contain spilled product as close to the source of the release as possible
- Minimize the number of personnel working at each response site
- Minimize use of heavy equipment at each response site
- Eliminate warm/hot water flushing tactics at response sites

Inlets, intakes, harbors and marinas are inhabited by a variety of fish, invertebrates and water birds that would be at risk if an oil spill occurs near the Westridge Marine Terminal. Marinas have a great potential for public exposure to spill related hazards and therefore should be boomed to exclude oil to the greatest extent possible.

5.1.3 Heritage Resources at Risk

Heritage resources are present throughout British Columbia. These resources include archeological and paleontological sites, sites of cultural and historical significance to Indigenous communities, such as burial grounds, and sites of spiritual and ceremonial importance of Traditional Territory. Information regarding heritage resources is restricted to maintain confidentiality. Trans Mountain's Incident Management Team will collaborate with Indigenous communities' liaisons for additional information regarding the determination of, and assist in, the defining of the boundaries of such sites, if at risk from a spill.

5.1.4 Essential Infrastructure at Risk

Essential infrastructure is present throughout British Columbia and includes Trans Mountain and other pipelines and related infrastructure, oil and gas refinery sites, utilities, telecommunication lines, and transportation routes (including railways).

Essential infrastructure also includes drinking water sources including private water wells and municipal water sources (including Regional Districts, Communities, and Indigenous Groups) which are subject to impact due to safety hazards, loss of use and damage claims. Water wells that are within 150 metres on either side of the centre of the pipeline right-of-way are inventoried on a regular basis to determine ownership and location. Municipal water sources, including water intakes and aquifers that are currently relied upon and sources identified for future potential use are also inventoried regularly. Intakes for commercial, industrial and municipal water usage are also subject to spill impacts due to safety hazards, loss of use and damage claims. Protective measures could include exclusionary booming to prevent or exclude oil from entering these areas. Booms should be placed at an angle to the current to guide oil to an area where it can be recovered. The deployment of a second boom behind the first may be desirable to contain any oil that escaped under the primary boom. It is also important to recognize that while certain immediate environment protection response strategies must be planned for in advance, the ongoing protection and cleanup during a major spill would involve professional input from the company's oil spill advisors and the environmental regulatory bodies.

Navigable waterways are also considered essential infrastructure. Navigable waterways are bodies of water created or altered as a result of the construction of any work that is used or where there is a reasonable likelihood that it will be used by vessels for transport or travel for commercial or recreational purposes.

Essential infrastructure sites can be displayed via GIS mapping. If infrastructure is at risk from an incident, then infrastructure owners/operators will be asked to provide a liaison for information and coordination purposes with Trans Mountain.

5.2 High Consequence Areas Protection Techniques

Spills that impact a high consequence area are greatly compounded and endure far more response actions than a spill elsewhere. If a spill were to impact an HCA, specific booming techniques should be set up to contain product and reduce the environmental impact. When responding to spills in an HCA, the following measures should be considered:

- Minimize the number of personnel working at each response site
- Minimize use of heavy equipment at each response site
- Eliminate warm/hot water flushing tactics at response sites.

5.2.1 Low Impact Response Activities

Low impact activities involve accessing and completing response actions in a manner which limits the overall response footprint. The response is still effective and efficient, but care is taken in cultural, historical, or ecologically sensitive areas such as wetland complexes, waterbodies, and watercourses.

These activities tend to represent an increased requirement for personnel and equipment during the initial stages of a response. The final reclamation requirements may be reduced due to the minimized disturbance.

Techniques that can be used to maintain the structural integrity of sensitive areas include:

- Accessing areas by foot traffic only.
- Establishing pallet or plywood walkways for access.
- Restricting travel to the established pathways.
- Staging matting for heavy equipment access into sensitive areas.
- Using Low Ground Pressure (LGP) heavy construction equipment to reduce soil compaction; rutting, and overall disturbance.
- Using specialized tracked equipment.
- Utilizing portable vacuum units.
- Deploying helicopters and long lines to transport supplies and personnel in and out of worksites.
- Establishing staging areas in appropriate areas to prevent damage to the ecosystem.

The use of pre-existing trails, roads, or disturbed areas should always be the preferred access point(s). By using these previously disturbed areas we can reduce the overall impact that occurs to the environment during initial response.

5.2.2 Exclusion Booming

Boom is deployed across or around sensitive areas and anchored in place. Approaching oil is deflected or contained by boom. This method is often used across small bays, harbor entrances, inlets, river, and creek mouths with currents less than 1 knot (0.5 m/s) and breaking waves of less than 1.5 ft (0.5 m) high. Typically, environmental effects are limited to minor disturbance to substrate at shoreline anchor points.

5.2.3 Deflection Booming

Boom is deployed at an angle to the approaching slick. Oil is diverted away from the HCA to a less sensitive location for recovery. This technique is often used across small bays, harbor entrances, inlets, river and creek mouths with currents exceeding 1 kt (0.5 m/s) and breaking waves of less than 1.5 ft (0.5 m). It should be used only on straight coastline areas to protect specific sites, where breaking waves are less than 1.5 ft (0.5 m). Typically, environmental effects are limited to minor disturbance to substrate at shoreline anchor points; however, diverted oil may cause shoreline oil contamination down-wind and down-current. A Net Benefit Analysis should be conducted to determine if deflection booming should be conducted.

5.2.4 Along-Shore Booming

Boom is positioned along the shoreline to provide a barrier to floating oil. Oil is diverted away from the sensitive area to a less-sensitive location for recovery. Along-shore booming might be difficult during a falling tide because constant attention is required to ensure the boom doesn't strand. This technique can be used in quiet areas with breaking waves of less than 1 ft (0.3 m). Typically, environmental effects are limited to possible shoreline oil contamination down-wind and down-current.

5.2.5 Shore-Seal Booming

Specially designed, shore-sealing boom is positioned in the inter-tidal zone to deflect oil. This technique can be used in a wide range of substrates but is most often used on mud and sand flats. Typically, environmental effects are limited to minor disturbance to substrate at shoreline anchor points.

5.2.6 Use of Passive Sorbents

Sorbents are positioned in the swash zone to absorb incoming oil. This technique can be used in a wide range of low-slope substrates. Pom-Poms normally work best on heavier, weathered crude oil, while sorbent rolls work best on lighter, fresher crudes. The environmental effects of passive sorbents are typically limited to the minor disturbance to the substrate.

6.0 TERMINAL RELATED HAZARDS AND ASSOCIATED RISKS

Trans Mountain's Westridge Marine Terminal is located in the Lower Mainland of British Columbia and may be exposed to a range of natural and human induced hazards, each with the ability to negatively impact operations and personnel. The following section aims to describe hazards that could negatively impact the Westridge Marine Terminal and those working there, in order to provide both hazard context and to outline actions that may be undertaken in order to mitigate and/or respond to such events.

6.1 Terminal Hazards

6.1.1 Heat

Thermal radiation decreases as the distance from the source increases.

Potential impacts from heat include:

- Injuries
- Burns from thermal radiation (in extreme cases)

Calculations have been done to determine the radiant heat effects based on product, volume, and infrastructure present at the Terminal.

In the scenario of a pool fire in the metering area on the foreshore (the credible worst-case scenario for Westridge Marine Terminal), the distance that could be impacted by heat is 300m.

6.1.2 Vapour & Smoke

Dispersion of vapour and/or smoke is dependent on environmental and atmospheric conditions and may pose risks beyond the boundaries of the Terminal.

Potential impacts from vapour and/or smoke include:

- Injuries resulting from inhalation
- Reduced air quality that may impact community members with pre-existing respiratory conditions such as asthma

Air monitoring of vapour and smoke is an essential component in determining when to implement applicable public safety measures and which measure (evacuation or shelter-in-place) is appropriate. Odours can be strong and may be detected by the nose at levels much lower than the levels that pose negative health effects.

Smoke dispersion is incident specific. Smoke dispersion modelling is dependent on several product-based variables, including the rate of release, estimated cloud size, atmospheric conditions, height of release, and distance from the release. Modelling can also support local authorities, the CCG and the Medical Health Officer in making incident-specific decisions regarding any expansion of initial public safety measures and/or returning people safely home.

6.1.3 Other

Dispersion of product, and/or firefighting fluids, beyond the boundaries of the terminal is dependent on environmental, atmospheric, and marine conditions and may pose a risk to human health if there is transdermal contact or ingestion. Public protection measures may include rerouting or minimizing vessel traffic, closure of beaches, limitation of access to shorelines, and/or evacuation of marine areas through issuing and implementing a notice to mariners.

6.1.4 Terminal Fire Response

Strategies and tactics to be utilized when responding to fire at the Westridge Marine Terminal are specifically outlined in the *Westridge Marine Terminal Fire Pre-Plan*. The Fire Pre-Plan was developed to assist Trans Mountain personnel, management, and off-site emergency response services to effectively prepare for and respond to fire related events at Westridge Marine Terminal. The Fire Pre-Plan addresses fire and potential fire event scenarios involving bulk flammable liquid products that are stored, distributed, and handled at the site. It describes the site, activation procedures, and interactions with this Emergency Response Plan and the Fire Safety Plan. Tactical Workbooks are provided for specific locations within the station property, including each individual tank, and a manifold area fire related event.

In addition to The Fire-Pre Plan, Westridge Marine Terminal has a Fire Safety Plan which provides information regarding building evacuation procedures, evacuation routes, on-site fire equipment and fire prevention practices.

6.2 Natural Hazards

Natural Hazards may be defined as naturally occurring physical phenomena caused either by rapid or slow onset events which may be geophysical (earthquakes), hydrological (avalanches, floods), climatological (extreme temperatures, wildfires), meteorological (hurricanes and storms/wave surges) or biological (disease epidemics and insect/animal plagues). While the Trans Mountain Pipeline may not be exposed to the entirety of the aforementioned hazards there are some naturally occurring hazards that could certainly be expected to impact pipeline operations and personnel.

6.2.1 Wildfire/Grass Fires

Wildfires, including forest fires and grassland fires, are a natural hazard in any forested and grassland region of Alberta and British Columbia. These fires are common between May and September and are most often caused by human activity and lightning strikes. Of particular concern are interface wildfires, the area where wildfire and human development meet. Interface fires often destroy homes and other critical infrastructure and typically lead to local or large-scale public evacuations.

A hazard specific Wildfire Mitigation and Response Plan has been developed to assist with the response to wildfires/grass fires.

In the event that Trans Mountain personnel identify a significant wildfire or grassfire they are to report the fire immediately to the local fire department and the provincial wildfire agency. In Alberta contact Alberta Wildfire at 310-FIRE (3473), in B.C. contact the British Columbia Wildfire Service at 800-663-5555. Be prepared to provide the following information:

4. **Location**: i.e., Where is the fire? How far up the hillside?
5. **Size**: e.g., Metres? Hectares? Size of a house? Size of a football field?
6. **Rate of spread**: i.e., How quickly is the fire spreading?
7. **Fuel**: i.e., What is burning? Grass, bushes, trees?
8. **Smoke/flames**: i.e., What colour is the smoke? Are flames visible?
9. **Threat**: i.e., Are there any people or infrastructure at risk?
10. **Action**: i.e., Is anyone fighting the fire?

In the event Trans Mountain personnel discover a small grass fire along access roads or the pipeline Right-of-Way personnel may utilize small handheld equipment including shovels and portable fire extinguishers to suppress the fire if it is safe to do so. If the fire increases in size, spreads or presents a

threat to life safety then personnel are to evacuate the area and contact the local fire department and the provincial wildfire body.

6.2.1.1 Wildfire/Grass Fire Checklist

- ❑ Notify Edmonton Control Centre and your supervisor, issue TAS.
- ❑ For large, uncontrolled fires, notify local fire department (call 911) & Provincial Wildfire Authority. In Alberta call toll free 310-3473. In British Columbia call 800-663-5555.
- ❑ Evacuate all non-essential personnel and secure area.
- ❑ Muster company response personnel at a safe location.
- ❑ If required, and safe to do, search for missing people. Utilize appropriate equipment and resources.
- ❑ Conduct initial wildfire assessment and following the wildfire decision tree as outlined in Section 2 of the “Wildfire Plan”.
- ❑ Determine strategic options, including offensive, defensive or monitoring as per Section 3 of the “Wildfire Plan”
- ❑ Determine strategies and tactics as per Section 4 of the “Wildfire Plan”.
- ❑ Coordinate response with the fire department or provincial wildfire officials.

6.2.2 Earthquake

An earthquake is a sudden and/or violent shaking of the ground, sometimes causing great destruction and injuries, as a result of movements within the earth's crust or volcanic action. While earthquakes may occur anywhere along the Trans Mountain Pipeline it is the coastal areas of British Columbia that pose the greatest risk.

In the event that Trans Mountain operations are affected by an earthquake it is vital to first ensure personnel safety and immediately notify the on-site supervisor and the Edmonton Control Centre. The Edmonton Control Centre also receives alerts and data on seismic events from various external services.

If an earthquake does occur and impacts Trans Mountain personnel while working in the field or at an office location, personnel should take steps to ensure the safety of themselves and coworkers.

At the outset of an earthquake Trans Mountain personnel should follow the ***Drop, Cover and Hold-On*** technique. This technique involves dropping to the ground once shaking is felt and moving underneath sturdy furniture such as a table or desk. Once safely underneath solid furniture, cover your head and torso to avoid being hit by falling objects. Finally hold onto the object you are underneath in order to remain covered. Once the shaking has stopped remain in place for a least one minute to let any loose objects settle. Before exiting your safety location scan the area to look for additional hazards that may have developed as a result of the shaking. Examples may include broken glass, fallen objects and fire. While completing this scan consider the most appropriate means of exiting the building as quickly and safely as possible. Once outdoors, personnel should gather at pre-determined muster points in order to complete head counts.

Trans Mountain personnel who are outdoors during the onset of an earthquake should attempt to move to a clear area if it is safe to do so. Extra attention should be paid towards overhead power lines, trees, signs, buildings, vehicles, and other potential falling hazards. The Drop, Cover, and Hold-On technique should be utilized as it will protect individuals from objects thrown horizontally, even if nothing is directly above them.

If Trans Mountain personnel are in a vehicle during the onset of an earthquake they should immediately and safely pull over to the side of the road, stop, and set the parking brake. Drivers should avoid overpasses, bridges, power lines, signs and other hazards. Stay inside the vehicle until the shaking stops. After the shaking has stopped proceed carefully by avoiding fallen debris, cracked or shifted pavement, and emergency vehicles. If a power line falls on the car, stay inside until a trained person removes the wire.

Notify your supervisor and/or the Edmonton Control Centre as soon as safely possible. Additional details including facility, pipeline or equipment damage and shutdowns should also be communicated at this time.

6.2.2.1 Earthquake Checklist

In the event of an earthquake, the following steps and procedures should be taken:

If Indoors

- ❑ Follow the Drop, Cover and Hold-On technique once an earthquake is felt.
- ❑ Remain in place for at least one minute after the shaking has stopped to let any loose objects settle.
- ❑ Before exiting the building, scan the area for additional hazards (e.g., broken glass, fire, fallen objects).
- ❑ Exit the building.
- ❑ Notify Supervisor.

If Outdoors

- ❑ Move to a clear area if safe to do so; pay attention to:
  - Overhead power lines
  - Trees
  - Signs
  - Vehicles
  - Potential falling hazards
- ❑ Follow the Drop, Cover and Hold-On technique once an earthquake is felt.
- ❑ Remain in place for at least one minute after the shaking has stopped to allow movement of objects to settle.
- ❑ Notify Supervisor.

If in Vehicle

- ❑ Pull off the road to the far-right shoulder, if possible, immediately.
  - Avoid overpasses, bridges, and power lines.
  - Stop on the median only if there is no other option; ensure that the vehicle is well off the travelled lanes.
- ❑ Set parking brake.
- ❑ Activate hazard warning lights.
- ❑ Shut off the vehicle.
- ❑ Stay in the vehicle.
  - If a powerline falls on the vehicle, stay inside until trained personnel remove the wire.
- ❑ Notify Supervisor.

After the Shaking Stops

- ❑ Complete a headcount and account for all personnel.
  - If any personnel are unaccounted for, determine last check-in time and location or known whereabouts and relay to emergency services.
  - If required, and safe to do, search for missing people. Utilize appropriate equipment and resources.
- ❑ Notify the Edmonton Control Centre Operator and Site Supervisor of response steps taken and obtain further instructions.
- ❑ Evacuate all nonessential personnel and third parties to a safe location.
- ❑ Shut down any transfer/loading operations and secure facilities:
  - Close isolation valves and tank valves.
  - Shut off nonessential power supplies.
- ❑ In the event of earthquake damage to critical Trans Mountain infrastructure enact the Emergency Response Plan.
  - If applicable, refer to the facilities Fire-Pre Plan in the event of a Tank Fire or 3-Dimensional Fire.
- ❑ Monitor site for evidence of leaks from pipelines and storage tanks.
- ❑ Exercise caution when entering damaged buildings watch for:
  - Downed power lines
  - Fire
  - Flooding
  - Debris
- ❑ Secure facility for aftershocks.

6.2.3 Floods

Floods are the most frequent and costly natural disaster often causing large-scale damage to properties, facilities and infrastructure while also posing a threat to life safety. Flooding events known as flash floods are of particular concern. Flash floods are typically caused by abrupt and extreme rain fall that causes a river, stream, pond or other body of water to swiftly overflow its banks in a short period of time, often in several hours or less. Flash floods can also be caused by erosion of soil and sand, or by ice jams on rivers/streams in conjunction with a winter or spring thaw.

Trans Mountain Emergency Management monitors for, and the risk of, flood of the waterways in the vicinity of the Trans Mountain Pipeline. If a flood does occur and impacts Trans Mountain personnel while working in the field or at an office location, personnel should take steps to ensure the safety of themselves and coworkers. Notify your supervisor and/or the Edmonton Control Centre as soon as safely possible.

Government entities provide current and forecast streamflow conditions, including modeled forecast data, and flood advisories and warnings, using the following stages:

High Streamflow Advisory: River levels are rising or expected to rise rapidly, but that no major flooding is expected. Minor flooding in low-lying areas is possible.

Flood Watch: River levels are rising and will approach or may exceed bank full. Flooding of areas adjacent to affected rivers may occur.

Flood Warning: River levels have exceeded bank-full or will exceed bank-full imminently, and that flooding of areas adjacent to the rivers affected will result.

In the event the risk of a flood has been identified, the following steps and procedures should be taken:

Mitigation from Flood Risk

- ❑ Receive notice of potential for flood.
- ❑ Identify and action appropriate activities based on alert levels and risk assessment to protect workers, the public, and the environment. Such activities could include:
  - Preparation of incident specific pre-emptive controlled evacuation plan.
  - Procurement, and set-up of sandbags or polyethylene barriers to protect buildings or equipment.
  - Removal of critical records from site.
  - Movement, or removal, of hazardous materials and dangerous goods from low-lying areas to prevent environmental damage.
  - Movement of critical equipment to higher ground.
  - Buoying any above-ground facilities that could become submerged to prevent damage from craft operating in flooded areas.

Decision to Evacuate Site

- ❑ Receive order to evacuate.
- ❑ If required, and safe to do, search for missing people. Utilize appropriate equipment and resources.
- ❑ Inform the Edmonton Control Centre if this has not already been done, issue TAS.
- ❑ Take action to shut down, isolate and de-pressurize equipment, as required.
  - Shut off electricity and electrical equipment.
  - Do not attempt to shut off electricity if water is already present; the combination of water and live electrical current can be lethal.
  - Shut off gas supply and water supply if safe to do so.
  - Shut down and isolate the section of the pipeline area at risk.
- ❑ Implement and follow applicable evacuation plan.
- ❑ Evacuate site to the pre-determined location.
  - Follow the specified evacuation route. Do not attempt to take short cuts as they may lead to a dangerous or blocked-in area.
  - Never try to walk or swim in flood waters.
  - If evacuating by vehicle:
    - Do not drive through flood waters.
    - Water will often prove deeper than it appears, and the vehicle could get struck or swept away by fast water.
    - Avoid driving across bridges if the water is high and flowing quickly, unless advised by Responders that it is the safest route.
    - If caught in fast-rising waters and the vehicle stalls, exit and remain with the vehicle until help arrives.

Re-entry to Site

- ❑ Confirm re-entry has been approved by Supervisor.
- ❑ Determine site and damage assessment requirements; determine if there is sufficient cover over pipeline.
- ❑ Notify landowners of areas of reduced cover.
- ❑ Monitor for damage to buildings and unsafe work areas. Indicators to watch for include:
  - Buckled walls or floors, holes in the floor, bent or broken piping, broken glass and other potentially dangerous debris.
  - Water that is heavily contaminated with sewage and other pollutants that can cause sickness and infections.
  - Electrical components and panels that need to be cleaned, dried, and tested by a qualified electrician. All equipment, heating, pressure, or sewage systems (including appliances) will need to be thoroughly cleaned, dried, inspected and deemed safe before use.
- ❑ In the event of flood damage, follow the Emergency Response Plan Section 3.0 Spill/Site Assessment.
- ❑ Conduct an aerial overflight.

6.2.4 Tsunami

Tsunamis are not associated with weather, like floods, and pose a different threat profile.

A tsunami is a series of ocean waves generated by a sudden displacement of large volumes of water. The impacts of a tsunami can vary widely. A small tsunami may result in unusual tides or currents that can be dangerous to swimmers or cause damage to berthed vessels. A large tsunami can cause widespread flooding and destruction. It may also cause strong rips and currents in oceans around the world for up to a few days after the initiating earthquake.

The size of tsunami can range from centimetres resulting in strong and unusual currents to tens of metres causing the flooding of coastal land. Earthquakes have generated the majority of tsunami that have occurred in the Pacific Ocean.

Warning time, and therefore warning arrangements, will vary depending on the proximity of tsunami generation, for example:

- A distant tsunami may arrive over 12 hours after it has been generated.
- An earthquake generated tsunami may arrive approximately 2 hours after it was generated.
- A local tsunami possibly caused by a submarine landslide may arrive at the initial point of impact along the coast within minutes. Under these circumstances, limited warning time may be available to adjacent coastal communities outside the initial impact area.

The National Tsunami Warning Centre (NTWC) and BC Emergency Management and Climate Readiness (EMCR) uses the following tsunami alert system:

- Warning;
- Advisory;
- Watch;
- Information Statement; and
- Cancellation.

Tsunami Warning

A “Warning” is the highest level of tsunami alert. Warnings are issued due to the imminent threat of a tsunami from a large undersea earthquake or following confirmation that a potentially destructive tsunami is underway. They may initially be based only on seismic information as a means of providing the earliest possible alert. Warnings advise that appropriate actions be taken in response to the tsunami threat. Such actions could include the evacuation of low-lying coastal areas and the movement of boats and ships out of harbours to deep waters. Warnings are updated at least hourly, or as conditions warrant, to continue, expand, restrict or end the Warning.

Tsunami Advisory

An “Advisory” is the second highest level of tsunami alert. Advisories are issued due to the threat of a tsunami that has the potential to produce strong currents dangerous to those in or near the water. Significant inundation is not expected for areas under an Advisory, but coastal zones may be at risk due to strong currents. Appropriate actions by emergency management personnel may include closing beaches and evacuating harbours and marinas. Additionally, local officials may opt to move boats out of harbours to deep waters if there is time to safely do so.

Tsunami Watch

A “Watch” is the third highest level of tsunami alert. Watches are an advance alert that, based on an analysis of the event, may be cancelled or upgraded to a Warning or Advisory prior to impact. There is a potential threat to a zone contained in a Watch, but communities have time to prepare. Watches are normally based on seismic information, without confirmation that a destructive tsunami is underway. Emergency management personnel and coastal residents should prepare to take action in case the Watch is upgraded.

Information Statement

An “Information Statement” informs that an earthquake has occurred and that there is no threat of a destructive tsunami affecting Coastal B.C. These statements are used to prevent unnecessary evacuations when an earthquake felt in coastal areas has a magnitude that may raise concern about a possible tsunami.

Cancellation

A “Cancellation” cancels any previously issued alerts when no there is no longer a threat of tsunami. This notification will be the last bulletin NTWC and EMCR will issue for this event.

If a tsunami threat is imminent or does occur and impacts Trans Mountain personnel while working in the field or at an office location, personnel should take steps to ensure the safety of themselves and coworkers. Notify your supervisor and/or the Edmonton Control Centre as soon as safely possible.

Actions that Trans Mountain personnel may undertake as part of a proactive response to imminent tsunami, **if time permits**, include:

- Understand the difference between a Tsunami Warning, Advisory, and Watch.
- Moving critical equipment and records to higher ground.
- Remove hazardous materials and dangerous goods from low-lying areas to prevent environmental damage.
- Shut off electricity and electrical equipment as required. (Do not attempt to shut off electricity if water is already present, the combination of water and live electrical current can be lethal).

If it is determined that evacuation is needed during as a result of a tsunami warning, Trans Mountain personnel should, **if time permits**:

- Inform the Edmonton Control Centre
- Take action to shut down, isolate and de-pressurize equipment, as required
- Vacate the work area as soon as possible or if advised to do so by their supervisor and/or emergency authorities. Never ignore an evacuation order because it may endanger your safety, the safety of coworkers or emergency responders who may come to your rescue
- While evacuating the work area always follow the specified evacuation route. Do not attempt to take short cuts as they may lead to a dangerous or blocked in area.

In the case that Trans Mountain personnel are evacuating by vehicle:

- Do not drive through water or flooded underpasses. Water will often prove deeper than it looks, and the vehicle could get stuck or swept away by fast water.
- If you are caught in fast-rising waters and your vehicle stalls, exit and remain with the vehicle until help arrives.
- Avoid driving across bridges if the water is high and flowing quickly, unless advised by local authorities that it is safest evacuation route.

In the event that tsunami threat has been mitigated and it is now safe to re-enter the work site/area, personnel must exercise great caution before returning to a work area after a tsunami has occurred.

Re-entry must be approved by the Site Supervisor prior to building, facility or work site re-entry. Regardless of re-entry approval it is essential that personnel look for and/or report any indications that the area and buildings may not be safe.

Indicators to watch for may include:

- Buckled walls or floors. Holes in the floor, bent or broken piping, broken glass and other potentially dangerous debris.
- Water that is heavily contaminated with sewage and other pollutants that can cause sickness and infections.
- Electrical components and panels that need to be cleaned, dried, and tested by a qualified electrician. All equipment, heating, pressure, or sewage systems (including appliances) will need to be thoroughly cleaned, dried, inspected and deemed safe before use.

Tsunami Checklist

- ❑ **<u>If time permits and it is safe to do so</u>**, shutdown any transfer/loading operations and secure facilities:
  - Close isolation valves and tank valves
  - Shut off non-essential power supplies
- ❑ Notify Edmonton Control Centre, issue TAS
- ❑ Never try to walk, swim or drive through swift water
- ❑ Evacuate if necessary or directed to do so
- ❑ When tsunami subsides, perform survey to determine if there is sufficient cover over pipeline
- ❑ In the event of damage, follow the Emergency Response Plan **Section 3.0 Spill/Site AssessmentF**

6.2.5 Landslides

Landslides are defined by collapsing / falling soil, rock, and debris in a work area, and/or in the vicinity of the terminal, due to proximity and exposure to an unstable natural slope. The severity of a landslide can

vary, with debris volume ranging from a few cubic metres up to 10km^3. Landslides are a hazard to Trans Mountain personnel, first responders, the public, natural resources, and infrastructure.

Trans Mountain personnel working on site should be aware of the signs of a potential landslide, such as:

- Unusual sounds such as trees cracking or rocks knocking together.
- Any increase in the flow of a river or a change in water colour; both can indicate upstream debris activity that could have been triggered by a landslide.

It is important to note that excavation activities taking place during snowmelt or following significant rainstorms can increase the risks of landslides. An effective response prioritizes the health and safety of rescuers. If you are on site at the time of a landslide, **move away from falling or fast-moving debris**. Personnel should stay mustered until the landslide has stopped, and there are no indicators of subsequent landslides. Scan the area carefully before returning to the site muster. Notify your supervisor and/or the Edmonton Control Centre as soon as safely possible.

6.2.5.1 Landslide Response Checklist

In the event of a landslide, reference the steps below:

If On Site

- ❑ Move quickly uphill and away from the likely path of the debris flow.
- ❑ Remain in place until debris is no longer falling/flowing, and noises of cracking trees, knocking rocks or rushing water can not be heard.
- ❑ Before moving, scan the area for any hazards that may have developed, such as fallen power lines, and/or loose or hanging debris.
- ❑ Notify Supervisor.

If in a Vehicle

- ❑ Remain in the vehicle.
- ❑ Shut off engine and headlights.
- ❑ Leave flashers and radio on.
- ❑ Call for help.
- ❑ If you must evacuate the area in your vehicle, watch for collapsed pavement, mud, fallen rocks and other road debris.

If a Landslide is Witnessed

- ❑ Evacuate the area to the site muster; complete a headcount and account for all personnel.
    - If any personnel are unaccounted for, determine last check-in time and location or last known whereabouts and relay to emergency services.
    - Be aware that the slope may experience further movement for hours to days afterward. Do not look for missing people if sounds of cracking trees or knocking rocks can be heard, which may indicate another landslide.

- ❑ Call 911; communicate:
    - Time and date
    - Reporting persons name
    - Witness name
    - Time of accident
    - Location of accident (ROW KP or access route) GPS Coordinates (Lat/Long)
    - Number of persons involved, injured and/or missing
    - Vehicular involvement

- Additional relevant information (weather [flyable?] and road condition, special requirements)
- A call back number for reporting personnel

- Notify supervisor and relay the above Preliminary Accident Details to the Edmonton Control Centre at 888-876-6711.
- Brief arriving rescuers.
- Document evacuations, arrivals, departures, environmental concerns (shelter, food/water, lights), site sketch, and photos.
- Notify off-site personnel and expected travelers and visitors; instruct them to postpone attendance to site or provide alternative routes of travel.

Re-entry to Site

- ❑ Confirm re-entry to the site has been approved by a Supervisor.
- ❑ Determine site and damage assessment requirements to determine if there is sufficient cover on the pipelines.
- ❑ Notify landowners of areas of reduced cover.
- ❑ Monitor for damage to buildings and unsafe work areas:

  - Buckled walls or floors, holes in the floor, bent or broken piping, broken glass and other potentially dangerous debris.
  - Water that is heavily contaminated with sewage and other pollutants that can cause sickness and infections.
  - Electrical components and panels that need to be cleaned, dried, and tested by a qualified electrician. All equipment, heating, pressure, or sewage systems (including appliances) will need to be thoroughly cleaned, dried, inspected and deemed safe before use.

- ❑ In the event of pipeline damage, follow the Emergency Response Plan Section
- ❑ Conduct an aerial overflight.

6.3 Seasonal Response Hazards

As response to pipeline and facility emergencies may occur at any time of year there is a possibility that personnel may be required to respond during adverse weather conditions. Given the location of the Westridge Marine Terminal responders may face conditions ranging from high heat to extreme cold, blizzard like conditions. It is imperative that responders take weather conditions into consideration as part of their overall response planning. Responders themselves must be aware of their own personal health at all times if effective operations are to be conducted. Ensuring a thorough Hazard Assessment/Tailgate Meeting is completed and a Safety Watch is appointed prior to operations cannot be overstated.

6.3.1 Winter Response Considerations

During a winter response personnel must consider the impacts that wind-chill and cold temperatures may have on responder health. Winter hazards that should be considered as part of the Health and Safety Plan include:

- **Hypothermia** – when the body loses heat faster than it can be produced leading to a reduced overall body temperature. Characterized by shivering, clumsiness and/or confusion.
- **Frostbite** – a freezing of the skin and underlying tissue leading to numbness, hard, red and/or pale skin.
- **Visibility during blizzards**, especially when driving and operating equipment
- **Warm-up areas**, including tents and vehicles, should be available and on-site in order to provide responders with a place to take breaks and effectively recover.

For additional information, see the Ice Safety Assessment Guideline located on the winter response trailer prior to setup and on the intranet site in the Emergency Toolkit.

6.3.2 Summer Response Considerations

During the summer months personnel must be aware of the impact that heat and/or humidity will have on overall health. Summer related hazards that should be considered as part of the Health and Safety Plan include:

- **Heat Exhaustion** - a condition that occurs when the body is overheated and dehydrated. Symptoms associated with this illness may include heavy sweating, dizziness and fainting
- **Heat Stoke** – occurs when the body is overheated, at or above 104° F (40° C), due to prolonged heat exposure. Is considered a medical emergency requiring immediate treatment in order to prevent permeant physical damage

1. **Biological hazards** – a review of potentially hazardous wildlife (insects, mammals) and plants (poisonous weeds) should be completed with responders as part of the pre-job Tailgate Meeting
2. **Shaded areas** with adequate rehab supplies, including water, should be established on-site in order to provide responders with an area to rest and recover during break periods

6.4 Westridge Marine Terminal Fire Hazards

6.4.1 Fire Classifications

3. In general, there are three classes of fire that Trans Mountain responders should be familiar with. These classifications stem from the type of fuel that ignited and maintains the fire. The following descriptions provide a brief overview of these classes.

4. **Class A Fires** - Consist of ordinary combustibles such as wood, paper, trash or anything else that leaves an ash. Water works best to extinguish a Class A fire.
5. **Class B Fires** - Are fueled by flammable or combustible liquids or gasses, which include oil, gasoline, propane, and other similar materials. Class B fires often spread rapidly and, unless properly secured, can re-flash after the flames are extinguished. Smothering effects which deplete the oxygen supply work best to extinguish Class B fires.

- **Class C Fires** - Energized electrical fires are known as Class C fires. Always de-energize the circuit then use a non-conductive extinguishing agent, such as Carbon dioxide. They can be caused by a spark, power surge or short circuit and typically occur in locations that are difficult to reach and see.

In the event of a fire originating from the Westridge Marine Terminal priority must be given to life safety. Notification and evacuation of the hazard area are the primary means of initial response. Once personnel are accounted for the On-Scene Commander may determine response options including offensive, defensive or non-intervention strategies.

6.4.2 Class B Fire Hazards

Hazards associated with a Class B fire at the Westridge Marine Terminal that could result in impacts to both on-site workers and members of the public include vapour, heat and smoke. Each of these hazards are described.

Vapour

Vapour odours can be strong and may be detected by the nose at levels much lower than the levels that pose negative health effects. When undertaking assessment of risk and planning for public safety measures, vapour can be dispersed via the wind and may pose risks beyond the boundaries of the

Terminal, which emphasizes the need to monitor actual and forecasted wind direction and speed. Potential impacts include injuries resulting from vapour inhalation; and reduced air quality that may impact community members with pre-existing respiratory conditions such as asthma.

Heat

Thermal radiation decreases as the distance from the source increases. Calculations have been done to determine the radiant heat effects, based on the product, volume and infrastructure present at the terminal. Impacts may include injuries and in extreme cases burns from thermal radiation.

Smoke

The smell of smoke can be strong and may be detected by the nose at levels much lower than the levels that pose negative health effects. When undertaking assessment of risk and planning for public safety measures, smoke can be dispersed via the wind and may pose risks beyond the boundaries of the Terminal. Monitor actual and forecasted wind direction and speed.

Potential impacts include injuries resulting from smoke inhalation; and reduced air quality that may impact community members with pre-existing respiratory conditions such as asthma.

6.4.3 Westridge Terminal Fire Response

Strategies and tactics to be utilized when responding to a fire at the Westridge Marine Terminal are specifically outlined in the Westridge Marine Terminal *Fire Pre-Plan*. Fire Pre-Plans provide initial responders with immediate response options including defensive and offensive firefighting tactics. These plans incorporate calculations for required amounts of water, foam concentrate, and pumping capacities needed to extinguish credible onsite fire scenarios. They also include strategies for the extinguishment of three-dimensional fires that may occur at valve and/or manifold locations.

In addition to Fire-Pre Plans the Westridge Marine Terminal has a *Fire Safety Plan* which provides information regarding building evacuation procedures, evacuation routes, on-site fire equipment and fire prevention practices. For additional information refer to the Westridge Marine Terminal Fire Safety Plan.

6.4.4 Vehicle Fires

Most vehicle fires are a result of malfunctioning electrical components, fuel lines or a fuel pipe splitting. In the case that Trans Mountain personnel are in a vehicle and begin to see smoke or smell burning material they should safely pull over and shut off the vehicle. Shutting off the engine will stop the flow of fuel and may prevent a full-blown fire. It is critical for the driver and other personnel to ensure they immediately exit the vehicle, and if safe, move off the road in order to reduce the likelihood of secondary accidents.

- For small fires only (passenger section, electrical fault, fires contained to contents of cargo space or trunk) use a vehicle ABC type fire extinguisher, if it is safe to do so.
- For large fires or fires involving fuel or storage tanks on the vehicle, evacuate the area by at least 25 metres and call for assistance from emergency responders. Once in a safe area you should stand by, assess the situation, and wait for assistance from emergency responders.

6.4.4.1 Vehicle Fire Response Checklist

- ❑ If smoke or flames are detected from an operating vehicle, safely pull to the side of the road and exit the vehicle.
- ❑ Move away from the vehicle and call 911 for any large or out of control fire.
- ❑ If the fire is small in size attempt extinguishment with vehicle fire extinguisher if it is safe to do so.

- ❑ Notify your supervisor and the Edmonton Control Centre.

6.4.5 Propane Releases/Fires

6.4.5.1 Releases

In the event of a propane release:

- Evacuate the area in the vicinity of the propane bullet, specifically downwind
- Isolate all sources of potential ignition
- Utilize 4 head gas monitors to confirm LEL levels downwind
- If safe to do so isolate the source of the release

6.4.5.2 Fires

In the event of a propane fire at the Westridge Marine Terminal, Trans Mountain responders will implement response procedures outlined within the Westridge Marine Terminal Fire Pre Plan including the *Propane Bullet Fire Tactical Workbook*.

6.4.5.3 Fire Suppression Equipment

Fire suppression equipment at the Terminal consists of:

- Fire Hydrants
- Hydrant Monitors
- Foam Monitors
- Dry Chemical Extinguishers
- Emergency Shut Down Valves
- Propane Bullet Pressure Relief Valves

The propane bullet (tank and fired vapourizer) has cooling water fixed monitors manually activated with water spray. Additional cooling water hose streams can be sourced from strategically located hydrants in the area. The concrete area underneath the propane bullet slopes to a safe location and the propane area is separated from the nearby vapour process area by a raised curb.

6.4.5.4 Role of Third-Party Fire Fighters

In the case of a propane fire, on-site Operations Technicians would complete initial response and notification tasks that are within his/her training and call for additional support. Additional support is provided by Trans Mountain Emergency Response Technicians (ERTs) and a designated on-call Third Party Firefighting Response Contractor. The contractor provides 24/7 on-call coverage with a minimum of four qualified firefighters. Contact information for Third-Party Response Contractors is listed within the Incident Notification Guideline. Note that all listed fire response contractors are called upon confirmation of a fire event to ensure all potential resources are dispatched should the incident escalate.

6.5 Security Hazards

Security hazards present themselves in a variety of ways including, terrorism, breach of security events and vandalism. Often the main objective of these actions is to halt or disrupt normal operations. For these reasons Trans Mountain has established robust security protocols for the Trans Mountain Pipeline System and its related facilities. Security protocols and response actions are further supported by an active Security Management Program. The Security Management Program focuses on direct and/or impending threats to ongoing operations and in most instances resolves issues without concern. However, in the event that a substantial security incident results in an impact to operations there is a strong likelihood that the Incident Management Team and Emergency Response Plans are activated.

For these reasons a brief overview of common security hazards and response actions are outlined in the following subsections.

6.5.1 Terrorism

Terrorism is used to intimidate, coerce or attain ransom through the use of violence and/ or threats against persons (employees, general public, governing bodies, etc.) or property (pipeline, facilities, equipment, etc.). Violence is not the main goal of terrorism but a means to draw the attention of the local public, the government and the world to their cause.

The main reasons terrorist groups commit acts of violence to:

- Satisfy vengeance
- Create a desired influence on Governing bodies decisions, legislations or other crucial actions
- Attract media attention in order to acquire worldwide, national or local recognition for their cause
- Discourage foreign investment, tourism or assistance programs that may affect the target country's economy
- Produce widespread fear of society
- Destroy key infrastructure and facilities that will disturb lines of communication and create societal uncertainty about the Government's ability to protect and provide for its citizens

6.5.1.1 Terrorism Response Checklist

If you experience or witness a direct, credible threat to Trans Mountain personnel or property:

- ❑ Call 911 immediately to report the situation.
- ❑ If possible, evacuate the site and move to a secure location.
- ❑ If required, and safe to do, search for missing people. Utilize appropriate equipment and resources.
- ❑ If unable to leave the facility/building, choose a safe location such as an office to hide. Lock and/or barricade yourself in a secure room if possible.
- ❑ Notify your supervisor and the Edmonton Control Centre as soon as safely possible.

6.5.2 Breach of Security or Vandalism

In the event that a Trans Mountain employee or contractor arrives at a company owned site and notices suspicious and/or unusual activity, including property damage they should contact local police/security and the Edmonton Control Centre before proceeding to investigate.

Other unusual activity may include:

- The presence of drones flying overhead or hovering around the incident site
- Media representatives or unidentified individuals using cameras, cell phones, video recording devices or any other devices to document the incident site
- Fixed wing aircraft or helicopters exhibiting behaviour indicating their presence is related to the incident

6.5.2.1 Breach of Security or Vandalism Checklist

- ❑ Notify the Control Centre immediately of any of the following in the vicinity of an active Trans Mountain site; provide details to the Control Centre Operator:
  - Suspicious individuals
  - Suspicious vehicles parked at, or near, the incident site
  - Suspicious packages located at, or near, the incident site
  - Signs of unauthorized access including vandalism or breach of security

- ❑ If the situation is judged to be UNSAFE in any way:
  - Withdraw to what is judged to be a safe distance.
  - Immediately contact Police (911).
  - Do not engage any individuals in any way.
  - Await the arrival of the Police at the incident site.

- ❑ If the situation is considered SAFE:
  - Request that Police (911) be called to the site.
  - Try to preserve any possible evidence found which may indicate malicious activity.
  - Notify Trans Mountain Security Manager.

- ❑ Remain on-site to serve as a point of contact for the authorities.
- ❑ Be available as a liaison between Company Management and the local authorities.
- ❑ Inventory damages/property loss and estimate cost of repair or replacement.
- ❑ Make notes of evidence obtained.
- ❑ Obtain duplicate photos taken during the investigation.
- ❑ Evaluate the necessity of security personnel during non-business hours

6.5.3 Bomb Threat

A bomb threat or threat of any other nature may be received by anyone in Trans Mountain. In most cases, persons making such threats will deliver their message by phone to the first person contacted and will not wait for the call to be transferred. Consequently, it is important that a call of this nature be handled in accordance with an established plan.

6.5.3.1 Bomb Threat Checklist

All threats must be taken seriously.

- ❑ If threat is received by telephone, record the following information:

  - Exact wording
  - Time call was received
  - Record callers phone number if available on call display
  - Time the device or bomb is set to go off
  - Sex of caller
  - Age (young, old, teen)
  - Accent
  - Background noise (music, traffic, etc.)

- ❑ If the caller remains on the line, attempt to ascertain the following information:

  - Exact location of the bomb or nature of any other threat
  - When is it set to go off?
  - The kind and size of bomb?
  - Why was it put there?
  - How did it get into the facility?

- ❑ While the caller in on the line, attempt to locate your supervisor to listen in on the call.
- ❑ If the threat is received by email, do not delete, and contact management immediately.

- ❑ If threat is received by mail:

  - Do not handle it unnecessarily.
  - Place it in a plastic cover immediately.

- ❑ After call is over, or email/mail received contact your supervisor, and VP Operations or designate to determine further actions i.e., terminal shut down and evacuation. If required, and safe to do, search for missing people. Utilize appropriate equipment and resources.

7.0 SITE INFORMATION

7.1 Site Description

Westridge Marine Terminal (WMT) is located adjacent to the Burrard Inlet in the Port of Vancouver and has been in operation since 1957. The general topography of the terminal slopes downward from the main entrance towards the Burrard Inlet. The geographic area surrounding the terminal incorporates a variety of habitats including marine, coastal, forested and urban zones.

The WMT acts as a transfer and storage facility with the ability to accommodate vessels up to 115,000 DWT. The local Control Centre Building monitors ship loading operations including product transfer/measurement, mooring and berthing, marine vapour control system and provides office space, shop space and locker room space for day-to-day activities. The building is two-stories high with an approximate area of 650°m^2. The building is located on the north-east corner of the foreshore area.

Trans Mountain's underground tunnel houses three 30-inch delivery pipelines that connect the Burnaby and Westridge Marine terminals. The tunnel is 130 metres below the surface, at its deepest, and is 2.6 km in length and 4 metres in diameter. The tunnel is heavy steel-lined and fully sealed with concrete to increase product containment and safety features. The underground tunnel contains valves at each side with multiple leak detection mechanisms in place. Should a leak be detected, the pipeline will be shut-in, drained and repaired via inline tools.

There are three on-site storage tanks located at the terminal with a total combined volume of approximately 63,000 m^3 (395,000 barrels). The terminal exports crude oil internationally while importing jet fuel from tankers and barges. Jet fuel is stored in the Westridge Marine Terminal tanks prior to being delivered to Vancouver International Airport via a third-party Jet Fuel Pipeline. The jet fuel stored within Tanks 93, 201, and 202 is considered a combustible liquid based upon its inherent flashpoint. This means it does not catch fire as easily as flammable liquids, such as gasoline, which have much lower flashpoints. The flashpoint for jet fuel is above normal working conditions, 37.8° to 93.3° C (100° to 200° F) making it more difficult to ignite.

The WMT Jet Fuel Pipeline consists of three segments: Segment 4 (upstream portion which connects into Segment 11) and starts at LAT 49.288729/LON -122.954567 and connects to Segment 11 at LAT 49.289254/LON -122.954815 which is 68m, Segment 10 (Jet Fuel offloading line onto Pier 61) which starts at LAT 49.289254/LON -122.954815 and ends at LAT 49.29083/LON -122.950412 which is 412m, and Segment 11(Jet Fuel offloading line onto Berth 1) starts at LAT 49.289254/LON -122.954815 and ends at LAT 49.291455/LON -122.955191 which is 554.08m. This pipeline has a Public Aware Zone (PAZ) of 300 m. The Pipeline Project Number is 000024718.

The dock is designed for transfers both to and from vessels. The terminal has a dock complex with three berths for loading crude oil onto tankers and barges and offloading jet fuel. Normally, only one or two berths will be in operation at a given time with three berths in operation as a maximum. The dock can safely accommodate fully laden tanker vessels (typically in the 100,000-115,000-deadweight tonnage (DWT) range), as well as partially laden larger vessels.

Berths 1 and 2 are opposite each other, sharing the common loading platform and mooring dolphins (MD1 to MD6), while Berth 3 has its own loading platform and mooring dolphins (MD7 to MD12). Each berth has four berthing dolphins. Access to berthing and mooring dolphins from the loading platforms is via the access catwalks. Each berth is 330 m long (end to end), and the mooring and berthing dolphins are 13 m x 13 m. The loading platforms contain:

- The pipe manifold.
- Marine loading/unloading arms.
- Equipment required to receive jet fuel and load crude to oil tankers and barges.

In order to reduce the risk of dangerous and ignitable vapours being released from vessels while they load, Westridge Marine Terminal has a dedicated Vapour Recovery System on site. This ensures the capture and mitigation of the dangerous vapours. As part of this System, a Vaporizer is used, which is fueled by propane. This propane is stored currently within two Propane Bullets located in the Terminal. The propane bullet located in the east of the Terminal is known as Propane Bullet - Legacy Pier 61 and has a volume of 30,000 gallons. The new propane bullet located in the west of the Terminal, next to the Vapour Recovery Area Packaged Unit, is known as TK-3070 and has a volume of 21,000 gallons. The propane stored within the bullet is stored at pressure and low temperatures to keep it in a liquid state. Propane has a low flashpoint of -104°C (-155°F). The flashpoint for propane is below normal working conditions making it easy to ignite, should a leak occur. Propane is delivered to the site via road. Propane Bullet – Legacy Pier 61 is due to be decommissioned.

Propane is an E2 regulated substance[1] (CAS# 74-98-6 and UN# 1978). TK-3070 is located on a concrete area which slopes to a safe location at a minimum grade of 1%. Propane Bullet - Legacy Pier 61 is located on an area of concrete.

Based upon the completed risk assessment for the Westridge Marine Terminal the identified worst-case fire scenario would be a pool fire in the metering area. This scenario sets the threshold for the onsite provision of fire suppression equipment (e.g., pumps, distribution piping, foam cannons), water and foam storage, and personnel.

7.1.1 Mutual Aid

Trans Mountain belongs to the Burrard Industrial Mutual Assistance Group (BIMAG). The agreement is amongst industrial operators in the Burrard inlet area.

7.1.2 Air Monitoring

Westridge Marine Terminal has a permanent air monitoring station that provides continuous monitoring of volatile organic compounds, ozone, and toxic gases. Meteorological parameters of air temperature, relative humidity, wind speed and direction, atmospheric pressure, and precipitation are continuously measured. Personal air monitors can be used to supplement monitoring.

In the event of an emergency, the Public Health Assessment and Response Plan for Airborne Health Risks will be activated in conjunction with this Plan. Fixed air monitoring units will be set up around the impacted area to assess migration of air emissions. These monitors can send real time data to the EU, including: LELs, O_2, VOCs, and toxic gases (H_2S, SO_2, CO or NO_2). Mobile air monitoring teams will be deployed to nearby communities or public areas to assess ambient air quality using direct reading instruments.

An incident specific air monitoring plan will be developed to support the Incident Action Plan.

7.1.3 Fire Safety Plan

There are a number of site drawings for Westridge Marine Terminal which outline the berths, individual buildings and tank areas with respect to mustering locations and fire escape routes. Please refer to the "Fire Safety Plan" for detailed drawings.

7.1.4 Public Evacuation

If an incident occurs, Trans Mountain personnel will determine and communicate to the IC or Control Centre the Protective Action Zone and recommended public protective measures. Local authorities are responsible for enforcing the measures, including public evacuation alerts and orders. For additional information on public evacuations, refer to the Westridge Marine Terminal Evacuation Plan, and Section 7.1.6 Initial Protection Action Zones – Westridge Marine Terminal.

7.1.5 Site Drainage

Secondary containment of the jet fuel tanks is provided by earthen berms with an impermeable liner or concrete berms. Two tanks at the Terminal are surrounded by a common containment area, while the third tank is surrounded by an individual containment bay. The containment bays are designed to contain 110% of their volume. Storm water management at the Terminal consists of a storm water collection and treatment system which collects and treats potentially contaminated storm water before discharge into Burrard Inlet.

7.1.6 Protective Action Zone

During the outset of the incident, the local authority makes the decision whether to implement the initial public safety measures for the Protective Action Zone.

Trans Mountain personnel will provide the local authority and other relevant government departments and supporting entities with incident-specific technical information and air monitoring data. Trans Mountain personnel will also communicate the incident-specific Protective Action Zone and suggested public safety measures.

Using **Table 1** and the Westridge Marine Terminal Evacuation Plan as a reference together with the incident-specific technical and hazard information provided by Trans Mountain and the local authority's evacuation procedures, the local authority will identify the appropriate public safety measures and determine, if required, the size and boundaries of the evacuation or shelter-in-place area. The local authority may use its own distances, but they should not be smaller than those calculated by Trans Mountain.

Trans Mountain will support, as required, the implementation of the public safety measures under the direction of the local authority.

Table 1: Incident-specific Protective Action Zones

Incident Description	Hazard	Zone
Spill, no fire	Vapour	300 metres
Full surface fire	Heat	384 meters
3D/pool fire in the metering area on the foreshore	Heat	300 metres
3D/pool fire on a berth	Heat	300 metres
Propane bullet release, no fire	Vapour	300 metres
Propane bullet relief vent fire	Heat	300 metres
BLEVE	Blast, Heat, Projectiles	300 metres

The ICP, together with the local authority, will continually monitor the hazards and the incident outside of Terminal boundaries to determine if the situation has evolved, using the technical information and air monitoring data collated by the Environment Unit. This additional assessment will be used to determine if subsequent actions are required, including if the Protective Action Zone requires expansion or contraction. Trans Mountain will support the local authority in these efforts by assisting with the implementation of further public safety measures, as required.

7.1.6.1 Protective Action Zone Map

The following map depicts the Protective Action Zone buffers for Westridge Marine Terminal including a credible worst-case scenario. At the time of an incident, and based off the incident location, the protective action zones will be identified and confirmed upon by the Incident Commander and the Local Authority.

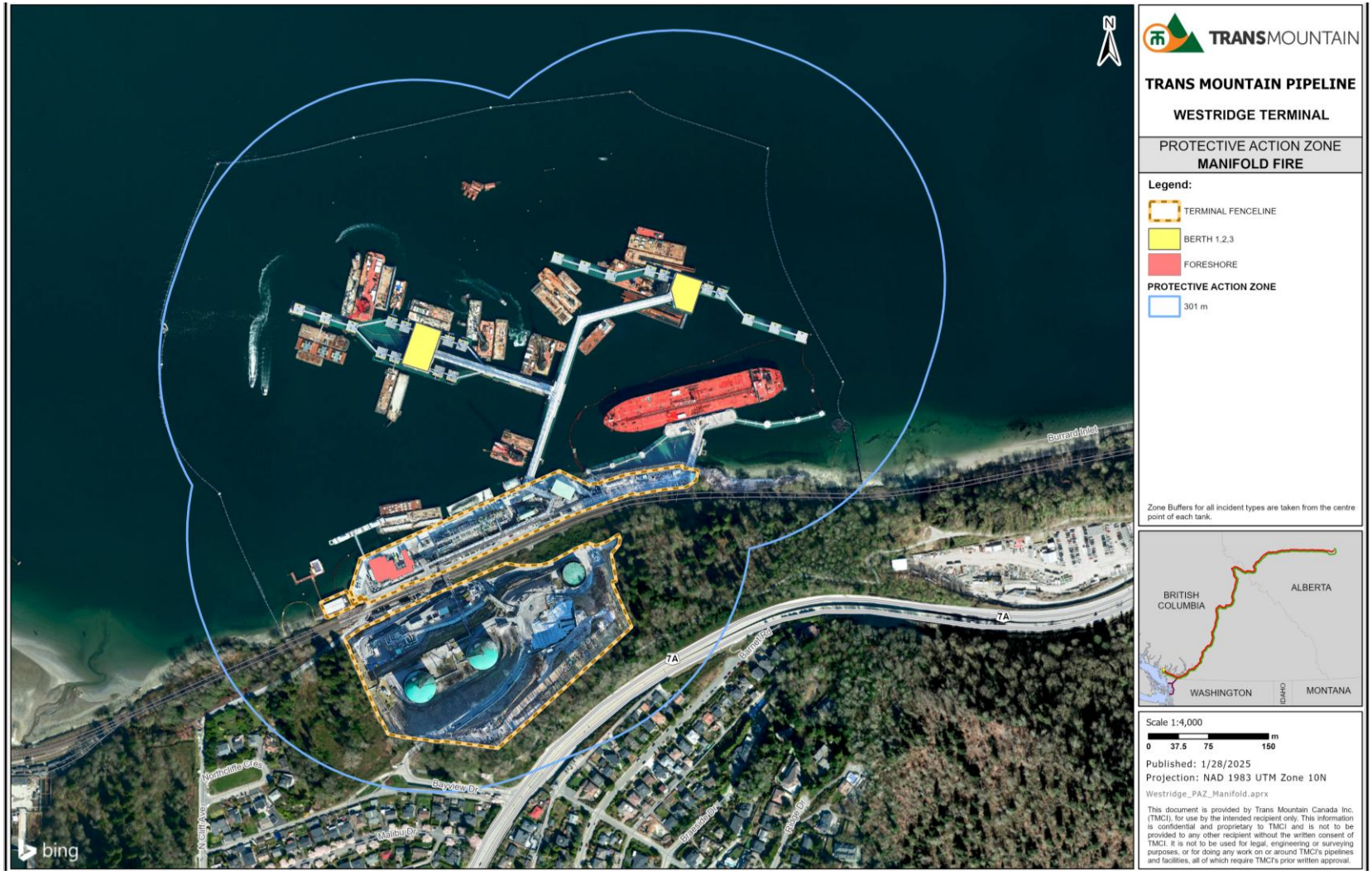
GIS specialists (Planning Section) have access to a variety of mapping layers, to prepare high resolution, incident-specific maps with the information on High Consequence Areas and receptors required to support the response.

No vulnerable groups have been identified, at this time, within the Protective Action Zone for the Westridge Marine Terminal.

Protective Action Zone (Tanks)

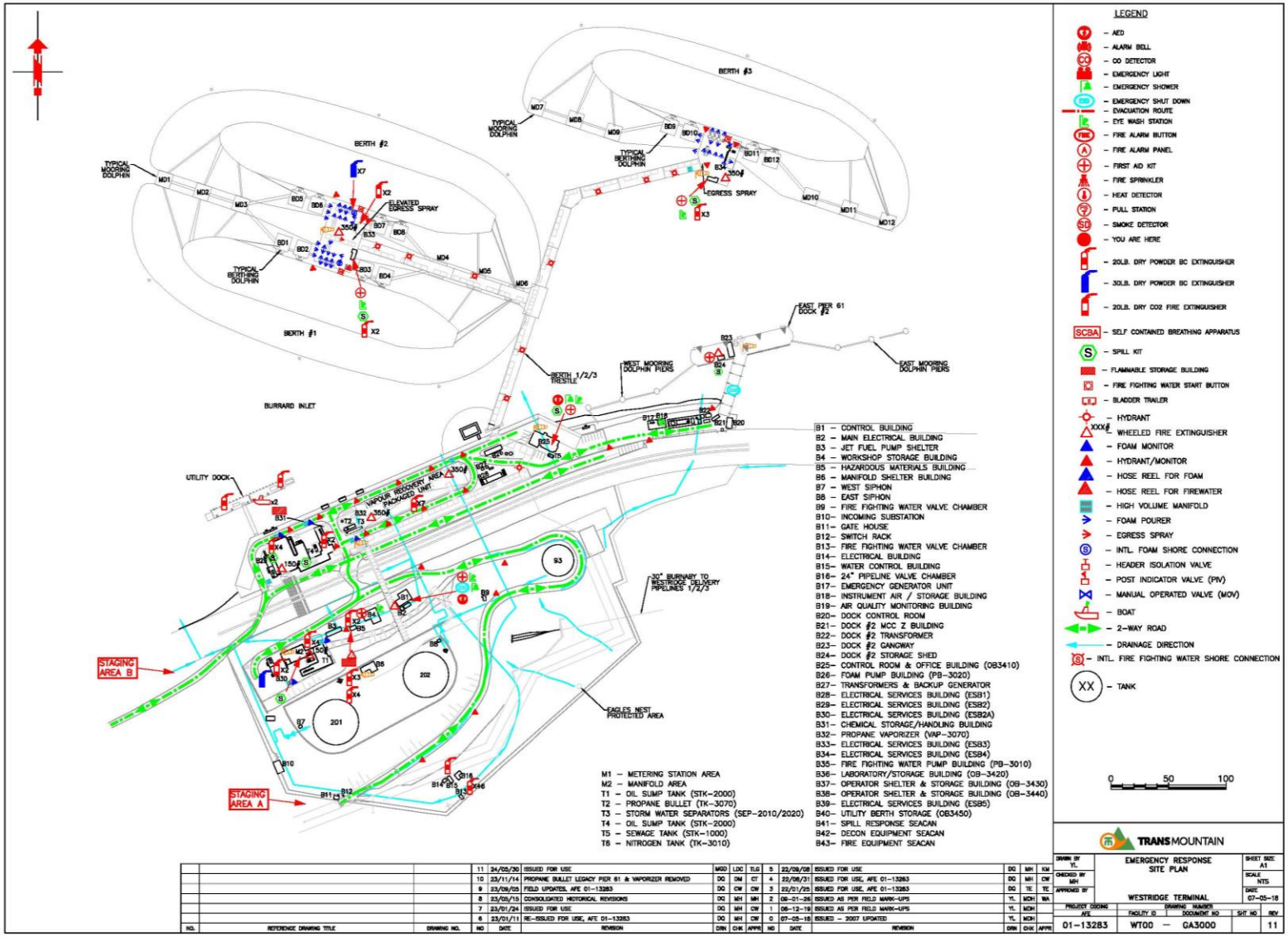
GIS specialists (Planning Section) will produce high resolution maps for reference in the case of an emergency.

Protective Action Zone (Offshore Berths; Metering and Manifold areas)



GIS specialists (Planning Section) will produce high resolution maps for reference in the case of an emergency.

7.1.7 Terminal Diagram



7.2 Spill Prevention Plan

Trans Mountain's priority is on the prevention of incidents. This is achieved through various means including standards for Site Management, Risk Assessment and Management, Formal Internal Audits, Training and Procedures, and Preventative and Predictive Maintenance.

In the case of preventing potential spills from the Terminal, a comprehensive Spill Prevention Plan comprises the following:

- Operator Training
- Remote Emergency Shut Down capability
- Pre-booming of vessels (where safety allows)
- Numerous requirements of vessels
- Ship-Shore Safety Communications

7.2.1 Remote Emergency Shut Down

Trans Mountain has installed a remotely controlled motorized Emergency Shut Down (ESD) for all dock line valves. In the event of an emergency, the Terminal Operator (TO) can remotely activate the system from either the Terminal Control Room or the Dock Area.

7.2.2 Vessel Requirements/Limitations

Type	Requirement/Limitation
Under-Keel Clearance	The minimum under-keel clearance for any vessel at the dock is 5% of the draft of the vessel (as required by Port of Vancouver requirements).
Bunkering	Bunkering is not allowed at the berth.
Oily-Water Reception	There are no reception facilities for ballast, bilge, or cargo slops.
Inspection	Trans Mountain or their representatives will board the vessel upon arrival to ensure compliance with international and local safety regulations.
Communications	Portable, intrinsically safe radios are used for communication among the vessel, dock and Control Room.
Mooring Lines	Vessels under 5,000 sdwt require a minimum of 4 lines. Vessels over 5,000 sdwt require a minimum of 8 lines. Powered winches shall be used for handling of mooring lines Vessels of Panamax size and larger require minimum of 12 mooring lines, all of which shall be on powered winches.
Sustained Wind Speed Limits	30 knots Stop cargo transfers 35 knots Disconnect hoses and consider deploying additional moorings 40 knots Prepare to leave from the dock, subject to availability of pilot and tug/s

7.2.3 Transfer Operations

- The loading and discharging of vessels at the Westridge Terminal shall be in accordance with the International Safety Guide for Oil Tankers and Terminals (ISGOTT).
- A ship/shore safety checklist and a ship/shore Cargo Handling Plan are used to control all transfer operations/procedures.

7.2.4 Halting of Operations

Transfer operations will immediately be halted in the event of any of the following conditions:

- Fire or explosion on the vessel or dock regardless of size
- Spillage (or suspected spillage) of cargo
- Marine incident in the vicinity of the Terminal (including excessive speed of passing vessels)
- Adverse weather, winds or electrical storms
- The presence of potentially dangerous vapour levels
- Failure of the communications system
- Inadequate mooring
- At the request of either the vessel or the Terminal
- Either the shore or vessel person-in-charge is absent without relief
- Any other unsafe condition exists

7.2.5 Ship-Shore Safety Checklist

The Ship-Shore Safety Checklist is completed and signed by the ship representative and Trans Mountain personnel before transfers are initiated and are retained by both:

- Is the vessel securely moored?
- Is there safe access between vessel and shore?
- Are adequate insulating means in place in the ship/shore connection?
- Are fire hoses and firefighting equipment on board and ashore positioned for immediate use?
- Are there sufficient personnel on board and ashore to deal with an emergency?
- Is self-contained breathing apparatus available?
- Are the sea chest valves isolated and sealed?
- Are all cargo tank lids closed?
- Are scuppers effectively plugged and drip trays in position both on board and ashore?
- Are the cargo arms properly rigged?
- Is radar switched off? AIS on low power
- Is main tug/engine propulsion available at all times (no engine repairs)?
- Has the agreed tank venting system been discussed?
- Are ship/shore communications operative and of the approved type?
- Has a cargo detail sheet been issued (i.e., volume, density, temperature, etc.)?
- Has a Material Safety Data Sheet been issued?
- Has the ship/shore stop been agreed to?
- Have procedures for loading/unloading (i.e., start-up rate, normal rate, topping rate) been discussed?
- Have emergency shutdown procedures been agree to?
- Have smoking requirements been discussed?

7.3 Spill Scenarios

The oil spill scenarios are intended to show how this Oil Spill Contingency Plan would be implemented in the event of potential spill incidents at the terminal.

Scenarios #1 and #2 described below are marine oil spill scenarios involving Crude Oil and Jet Fuel entering the Burrard Inlet. The parameters of these scenarios (i.e., type of product, spill size) were determined in accordance with the Environmental Response Regulation which specifies the nature of the scenarios to be used based on products loaded and maximum transfer rates.

As a Class 4 category facility under the Environmental Response Regulation, the required incident size for the Westridge Marine Terminal is 50 m3 for each classification of product.

7.3.1 Jet Fuel Spill Scenario

A spill occurs from a leaking connection during the unloading of a Jet Fuel barge. Approximately 50,000 Litres of Jet Fuel enter the water.

Time	1145
Weather	High Overcast, 13°C
Tide	Ebb Flow
Wind	3km/h SW
Notes/Assumptions	The barge is pre-boomed

Hour 0 – 1

Procedure to Stop the Discharge

- The Terminal Operator located in the operations control building visually identifies a jet fuel release entering the Burrard Inlet and initiates the Emergency Shut Down (ESD) to halt product transfer. The transfer must not resume until cleanup is underway and must not interfere with response efforts.
- The Emergency Shut Down (ESD) automatically closes all product lines to the dock which allows for safe egress of dock workers.
- TM Load Master confirms with operator in the operations control building that transfer operations have ceased.

Notification/Alerting

- TM Load Master confirms emergency situation with Vessel Captain via radio.
- The Control Room Operator confirms the incident with the Trans Mountain Control Centre, who in turn issues a Trans Mountain Alert System (TAS) internal notification.
- The Manager, Terminal Operations assumes the role of Incident Commander and ensures notifications are completed to the following: 911, Canadian Coast Guard, Transport Canada, WCMRC and CPKC Rail. Other agencies listed on the form will be called as soon as maximum cleanup efforts are underway.
- The Manager, Terminal Operations participates in the TAS call indicating the need for additional management and tactical assistance.

Safety

- The Terminal Operator ensures all sources of ignition are eliminated. Every effort is taken to ensure the health and safety of the personnel working in the area. Personal Protective Equipment must be worn by all responders. The Terminal Operator takes appropriate action to ensure that safe egress is maintained for all dock personnel.
- Accountability of onsite personnel is taken at muster locations.
- A Safety Watch is assigned, the Initial Site Health & Safety Plan is completed, and a tailgate meeting is conducted for all initial responders.

Situation Assessment

- An on-site Incident Command Post (ICP) is established within the Cold Zone away from dock area.
- When safe to proceed on-site operators conduct an initial assessment of the impacted area to confirm that product is no longer releasing into the water, estimate the quantity of product spilled, and determine the potential for spread beyond the containment area. Operators report their findings back to the Incident Commander.

Containment and Control

- During their initial investigation operators confirm that the primary boom is secured and positioned to maximize product containment
- Secondary containment boom is stored in the water and is deployed using Trans Mountain's response vessel for secondary containment.
- WCMRC mobilizing to Westridge to assist with containment and control measures.

Hour 1 – 3

Notification/Alerting

- Trans Mountain's Incident Management Team notifies BC EMCR to confirm earlier notification by MCTS. Subsequent notifications are completed in accordance with Section 2.0 Internal and External Notification of the Westridge Emergency Response Plan including Indigenous and Local Government notifications.

Incident Management

- The Incident Command Post is moved to the Executive Plaza Hotel Metro Vancouver in Coquitlam.
- Local IMT members begin to arrive at the ICP. The Incident Commander conducts an Initial Briefing with the Command Staff and the Section Chiefs and key Agency representatives in attendance.
- A spill trajectory model is requested in order to track the potential movement of any product which might escape from the primary containment boom.

Field Communications

- Communications confirmed between the Incident Command Post, Westridge Marine Terminal and WCMRC on-water response vessels. Emergency radio frequencies are secured and verified as operating properly and reliably. WCMRC communication equipment including sat radios onsite along with shoreline based WCMRC responders.

Public Affairs/Media Relations

- A Media Relations Centre for press conferences, briefings, and interviews is established at the ICP. A public inquiry centre is also established for answering public inquiries and dealing with damage and other claims from local residents who have concerns about the spill.
- An initial information release is prepared by the Information Officer and reviewed by the Incident Commander prior to release. The information briefing is released to the various news media, government agencies, and City of Burnaby.

Containment and Recovery

- WCMRC workboats and boom skiffs deploy tertiary containment around the secondary boom to act as a third line of defense should product escape outside the secondary boomed area.
- WCMRC deploy shoreline protection boom east and west of the dock. A mobile skimming vessel from WCMRC has deployed to assist with on-water skimming operations.

Hour 3 – 6

Incident Management

- The Incident Commander and IMT members work closely with representatives from local indigenous communities and key government agencies including Coast Guard, ECCC, VFPA and MoE, keeping them fully apprised of all response actions.
- The Trans Mountain Incident Commander, Lead Agency Incident Commanders and local Indigenous community representatives agree to form a Unified Command and to issue a joint information release about the incident and a joint press briefing is scheduled.
- The incident investigation process is started by obtaining statements from personnel directly involved or working in the area when the spill occurred.

Surveillance

- Air surveillance is arranged to establish the spill area size, the potential for escape out of the primary boomed area, and to track product movement.

Containment and Recovery

- A WCMRC skimming vessel enters the primary boomed area, around the barge, and begins skimming operations. WCMRC Sentinel 104 with 2000’ of 24” boom, is used for shoreline protection and additional tertiary booming as required.
- Seaforth is asked to provide a tug to move the primary containment boom inward as product is collected, gradually reducing the size of the slick.
- The Burnaby Oil Spill Containment and Recovery (OSCAR) trailer located at Burnaby Terminal arrives. The trailer contains the following equipment listed below:

    - 24 - Lengths of containment boom with ASTM connectors
    - 4 – 5” x 10’ Oil absorbent booms
    - 3 – 8” x 10’ Oil absorbent booms
    - 6 – (100 per package) Oil absorbent pads
    - 1 – 10’ x 10’ x 12’ portable berm
    - 1 – Portable tank frame with liner (4,500 litre)
    - 1 – Portable Fast Tank (7,500 litres)
    - 2 – Portable pillow tanks (11,000 litres)
    - 6 –Portable transfer pumps
    - 1 – Aqua guard skimmer (includes brush, disc & drumheads)
    - 2 – Pedco skimmers 2’ & 4’

- 5 – Shovels
- 4 – Rakes
- An assortment of ropes, hoses and fittings to support the operation of the equipment.

Shoreline Protection

- Trans Mountain responders continue to monitor the shoreline within the boomed area, and on both sides of the dock to identify any areas that may be impacted.
- A response boat is instructed to watch the perimeter of the boomed area and waters around the slick to observe any escaping product and track its progress.
- Environmentally sensitive areas are identified by the Environmental Unit working closely with the Science Table and are carefully monitored during overflights and by a WCMRC vessel with ECCC personnel on board.

Hour 6 – 12

Incident Management

- The IMT continues to direct the response efforts with support and advice from government agencies and local indigenous communities. A relief schedule for IMT members and other Trans Mountain response personnel is prepared at the Planning Meeting to ensure that all personnel are relieved appropriately both at the spill scene and in the ICP.
- Additional IMT members arrive at the ICP and are incorporated into the Incident Management Team.

Containment and Recovery

- Skimming operations continue, and the primary containment boom is drawn in by the tug to facilitate recovery operations.
- WCMRC deploys applicable Geographic Response Strategies (GRS) within the Burrard Inlet.

Shoreline Protection and Cleanup

- Small quantities of spilled product near the shoreline are absorbed using various types of sorbent materials. A WCMRC vessel is used to track and mop up small amounts of product escaping from within the primary boomed area. Additional WCMRC vessels are asked to join in this effort.
- Two 2-man Shoreline Clean-up and Assessment Teams (SCAT) are dispatched to check nearby shorelines for possible stranded product. Small shoreline clean-up crews are assembled to be immediately dispatched to any sites where product is detected coming ashore outside initial spill site.

Waste Storage and Handling

- Proper containers for temporary storage of various solid wastes are collected and placed near the spill site (e.g., sealable drums).
- A barge is used to store product recovered from skimming activities. Storage tanks are setup at Westridge within the designated waste transfer area in order to receive both liquid and solid waste. Additional storage containers are staged at Burnaby Terminal.
- The Waste Management Branch of BC MoE is consulted to prepare a disposal plan for all recovered waste materials. A Hazardous Waste Regulation Section 52 exemption is granted for the transportation of hazardous waste.

Hour 12 – 24

Incident Management

- Press releases and information updates on the progress of the response continue to be provided to the media.

Containment and Recovery

- Skimming and recovery operations continue within the boomed area through the night.

Waste Storage and Handling

- Waste characterization and separation into waste streams continues. Some quantities of wastes are put into the separator system to allow separation to take place. Solid wastes (e.g., sorbent materials, soiled rags, twigs, branches, etc.) are packaged and moved to the identified waste transfer area until final disposal can be arranged.
- An agreement is reached with BC MoE and the Vancouver Fraser Port Authority on offsite disposal of various waste materials.

Hour 24+

Incident Management

- The Unified Command and ECCC conduct a joint inspection of the spill area to determine that the spill site has been adequately cleaned before terminating response operations.
- The Manager, Terminal Operations undertakes a full and thorough investigation of the incident as part of Trans Mountain's standard incident investigation system.

Containment and Recovery

- Recovery and clean-up operations continue until all spilled product and deployed material have been recovered.
- Small quantities of product continue to be recovered within the waters around the dock and along various shoreline areas.
- Limited shoreline clean-up activity is required (e.g., washing of rocks, flushing material out from between rocks) within the boomed area.
- The secondary containment boom is recovered by WCMRC vessel.
- Loading of the barge only resumes when all spilled material within the primary containment boom has been recovered.

7.3.2 Crude Oil Spill Scenario

A spill occurs from a leaking connection during the loading of a tanker. Approximately 50,000 Litres of Mixed Sweet crude enter the water.

Time	1145
Weather	Warm, 24°C
Tide	Flood Flow
Wind	5km/h S
Notes/Assumptions	The vessel is pre-boomed

Hour 0 – 1

Procedure to Stop the Discharge

- The Terminal Operator located in the operations control building visually identifies a crude oil release entering the Burrard Inlet and initiates the Emergency Shut Down (ESD) to halt product transfer. The transfer must not resume until cleanup is underway and must not interfere with response efforts.
- The Emergency Shut Down (ESD) automatically closes all product lines to the dock which allows for safe egress of dock workers.
- TM Load Master confirms with operator in the operations control building that transfer operations have ceased.

Notification/Alerting

- TM Load Master confirms emergency situation with Vessel Captain via radio.
- The Control Room Operator confirms the incident with the Trans Mountain Control Centre, who in turn issues a Trans Mountain Alert System (TAS) internal notification.
- The Manager, Terminal Operations assumes the role of Incident Commander and ensures notifications are completed to the following: 911, Canadian Coast Guard, Transport Canada, WCMRC and CPKC Rail. Other agencies listed on the form will be called as soon as maximum cleanup efforts are underway.
- The Manager, Terminal Operations participates in the TAS call indicating the need for additional management and tactical assistance.

Safety

- The Terminal Operator eliminates all sources of ignition. Every effort must be taken to ensure the health and safety of the personnel working in the area. Personal Protective Equipment must be worn by all responders. The Terminal Operator takes vapour readings to assess flammability and H_2S levels while ensuring that safe egress is maintained for all dock personnel.
- Accountability of onsite personnel is taken at muster locations.
- A Safety Watch is assigned, the Initial Site Health & Safety Plan is completed, and a tailgate meeting is conducted for all initial responders.

Situation Assessment

- An on-site Incident Command Post (ICP) is established within the Cold Zone away from dock area.
- When safe to proceed on-site operators conduct an initial assessment of the impacted area to confirm that product is no longer releasing into the water, estimate the quantity of oil spilled, and determine the potential for spread beyond the containment area. Operators report their findings back to the Incident Commander.

Containment and Control

- During their initial investigation operators confirm that the primary boom is secured and positioned to maximize oil containment
- Secondary containment boom is stored in the water and is deployed using Trans Mountain's response vessel for secondary containment.
- WCMRC mobilizing to Westridge to assist with containment and control measures.

Hour 1 – 3

Notification/Alerting

- Trans Mountain's Incident Management Team notifies EMCR to confirm earlier notification by MCTS. Subsequent notifications are completed in accordance with Section 2.0 Internal and External Notification of the Westridge Emergency Response Plan including Indigenous and Local Government notifications.

Incident Management

- The Incident Command Post is moved to the Executive Plaza Hotel Metro Vancouver in Coquitlam.
- Local IMT members begin to arrive at the ICP. The Incident Commander conducts an Initial Briefing with the Command Staff and the Section Chiefs and key Agency representatives in attendance.
- An oil spill trajectory model is requested in order to track the potential movement of any oil which might escape from the primary containment boom.

Field Communications

- Communications confirmed between the Incident Command Post, Westridge Marine Terminal and WCMRC on-water response vessels. Emergency radio frequencies are secured and verified as operating properly and reliably. WCMRC communication equipment including sat radios onsite along with shoreline based WCMRC responders.

Public Affairs/Media Relations

- A Media Relations Centre for press conferences, briefings, and interviews is established at the ICP. A public inquiry centre is also established for answering public inquiries and dealing with damage and other claims from local residents who have concerns about the spill.
- An initial information release is prepared by the Information Officer and reviewed by the Incident Commander prior to release. The information briefing is released to the various news media, government agencies, and City of Burnaby.

Containment and Recovery

- WCMRC workboats and boom skiffs deploy tertiary containment around the secondary boom to act as a third line of defense should product escape outside the secondary boomed area.
- WCMRC deploy shoreline protection boom east and west of the dock. A mobile skimming vessel from WCMRC has deployed to assist with on-water skimming operations.

Hour 3 – 6
Incident Management

- The Incident Commander and IMT members work closely with representatives from local indigenous communities and key government agencies including Coast Guard, ECCC, Transport Canada, VFPA and BC MoE keeping them fully apprised of all response actions.
- The Trans Mountain Incident Commander, Lead Agency Incident Commanders and local Indigenous community representatives agree to form a Unified Command and to issue a joint information release about the incident and a joint press briefing is scheduled.
- The incident investigation process is started by obtaining statements from personnel directly involved or working in the area when the spill occurred.

Surveillance

- Air surveillance is arranged to establish the spill area size, the potential for escape out of the primary boomed area, and to track oil movement.

Containment and Recovery

- A WCMRC skimming vessel enters the primary boomed area, around the barge, and begins skimming operations. WCMRC Sentinel 104 with 2000’ of 24” boom, is used for shoreline protection and additional tertiary booming as required.
- Seaforth is asked to provide a tug to move the primary containment boom inward as product is collected, gradually reducing the size of the slick.
- The Burnaby Oil Spill Containment and Recovery (OSCAR) trailer located at Burnaby Terminal arrives. The trailer contains the following equipment listed below:

    - 24 - Lengths of containment boom with ASTM connectors
    - 4 – 5” x 10’ Oil absorbent booms
    - 3 – 8” x 10’ Oil absorbent booms
    - 6 – (100 per package) Oil absorbent pads
    - 1 – 10’ x 10’ x 12’ portable berm
    - 1 – Portable tank frame with liner (4,500 litre)
    - 1 – Portable Fast Tank (7,500 litres)
    - 2 – Portable pillow tanks (11,000 litres)
    - 6 –Portable transfer pumps
    - 1 – Aqua guard skimmer (includes brush, disc & drumheads)
    - 2 – Pedco skimmers 2’ & 4’
    - 5 – Shovels
    - 4 – Rakes
    - An assortment of ropes, hoses and fittings to support the operation of the equipment.

Shoreline Protection

- Trans Mountain personnel continue to monitor the shoreline within the boomed area, and on both sides of the dock to identify any areas that may be oiled.
- A response boat is instructed to watch the perimeter of the boomed area and waters around the slick to observe any escaping oil and track its progress.
- Environmentally sensitive areas are identified by the Environmental Unit working closely with the Science Table and are carefully monitored during overflights and by a WCMRC vessel with ECCC personnel on board.

Hour 6 – 12
Incident Management

- The IMT continues to direct the response effort with support and advice from government agencies and local indigenous communities as required. A relief schedule for IMT members and other Trans Mountain response personnel is prepared at the Planning Meeting, to ensure that all personnel are relieved appropriately both at the spill scene and in the ICP.
- Additional IMT members arrive at the ICP and are incorporated into the Incident Management Team.

Containment and Recovery

- Skimming operations continue, and the primary containment boom is drawn in by the tug to facilitate recovery operations. WCMRC positions storage tanks and vacuum trucks to receive recovered oil and oil/water mixture as required.
- WCMRC deploys applicable Geographic Response Strategies (GRS) within the Burrard Inlet.

Shoreline Protection and Cleanup

- Small quantities of spilled oil near the shoreline are absorbed using various types of sorbent materials. A WCMRC vessel is used to track and mop up small amounts of oil escaping from within the primary boomed area. Additional WCMRC vessels are asked to join in this effort.
- Two 2-man Shoreline Clean-up and Assessment Teams (SCAT) are dispatched to check nearby shorelines for possible stranded oil. Small shoreline clean-up crews are assembled to be immediately dispatched to any sites where oil is detected coming ashore outside the Trans Mountain site.

Waste Storage and Handling

- Proper containers for temporary storage of various solid wastes are collected and placed near the spill site (e.g., sealable drums).
- A barge is used to store product recovered from skimming activities. Storage tanks setup at Westridge within the designated waste transfer area in order to receive both liquid and solid waste. Additional storage containers are staged at Burnaby Terminal.
- The Waste Management Branch of BC MoE is consulted to prepare a disposal plan for all recovered waste materials. A Hazardous Waste Regulation Section 52 exemption is granted for the transportation of hazardous waste.

Hour 12 – 24

Incident Management

- Press releases and information updates on the progress of the response continue to be provided to the media.

Containment and Recovery

- Skimming and recovery operations continue within the boomed area through the night.

Waste Storage and Handling

- Waste characterization and separation into waste streams continues. Some quantities of wastes are put into the separator system to allow separation to take place. Solid wastes (e.g., sorbent materials, soiled rags, twigs, branches, etc.) are packaged and moved to the identified waste transfer area until final disposal can be arranged.
- An agreement is reached with BC MoE and the Vancouver Fraser Port Authority on offsite disposal of various waste materials.

Hour 24 – 48

Incident Management

- Unified Command continues to provide overall guidance to the operation.
- Unified Command members participate in an overflight to assess the progress of cleanup operations and the extent of remaining oil contamination.

Containment and Recovery

- Recovery and clean-up operations continue, focusing on darker patches near shore.
- Small quantities of emulsified product continue to be recovered within the waters around the wharf and various shoreline areas.
- Considerable shoreline clean-up activity is required (e.g., washing of rocks, flushing material out from between rocks) within the boomed area.
- Shoreline cleanup is coordinated through the Environmental Unit working closely with the Science Table.
- The secondary containment boom is maintained by WCMRC vessel.

Hour 48+

Incident Management

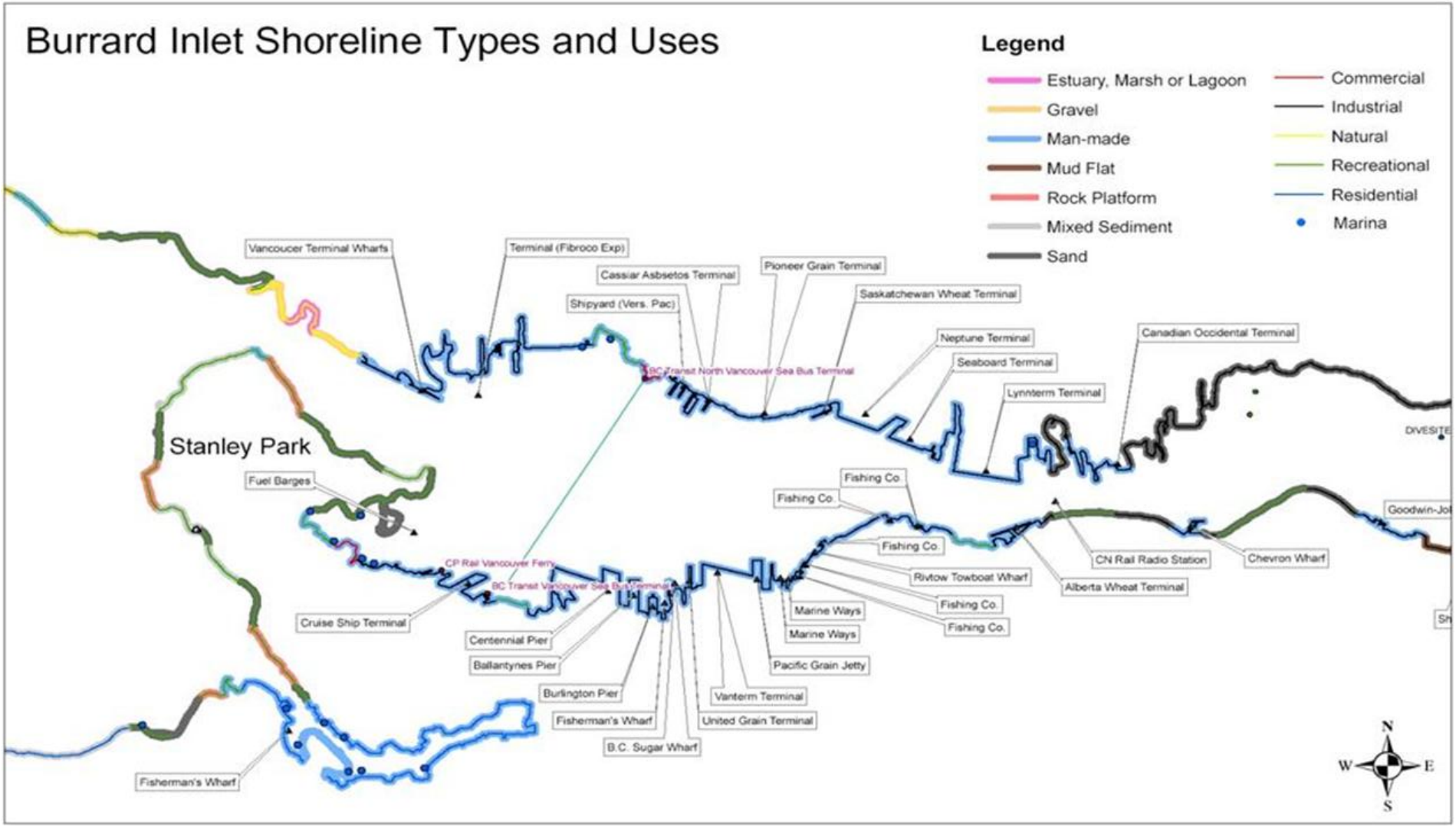
- The Unified Command and ECCC conduct a joint inspection of the spill area to determine that the spill site has been adequately cleaned before terminating response operations.
- The Manager, Terminal Operations undertakes a full and thorough investigation of the incident as part of Trans Mountain's standard incident investigation system.

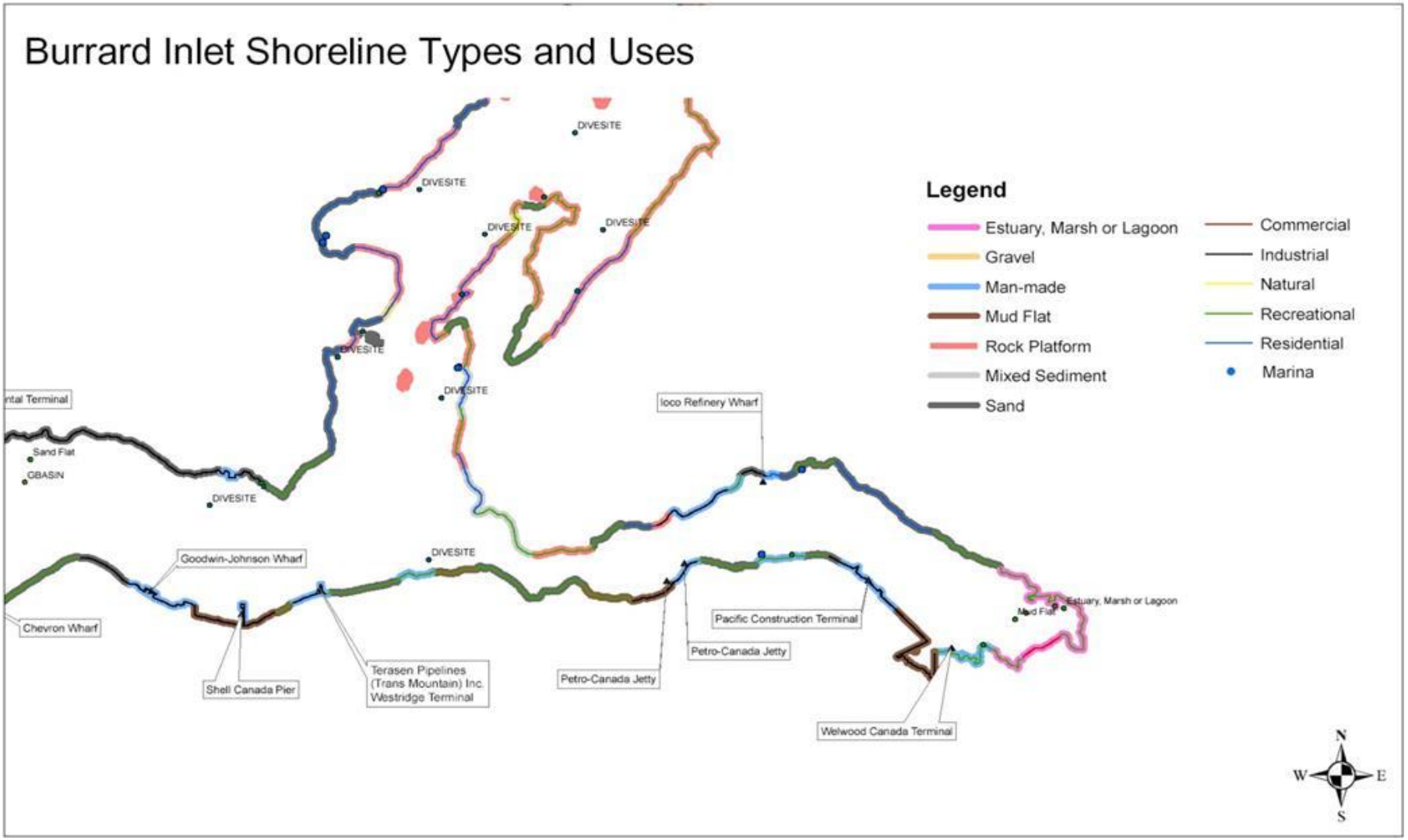
Containment and Recovery

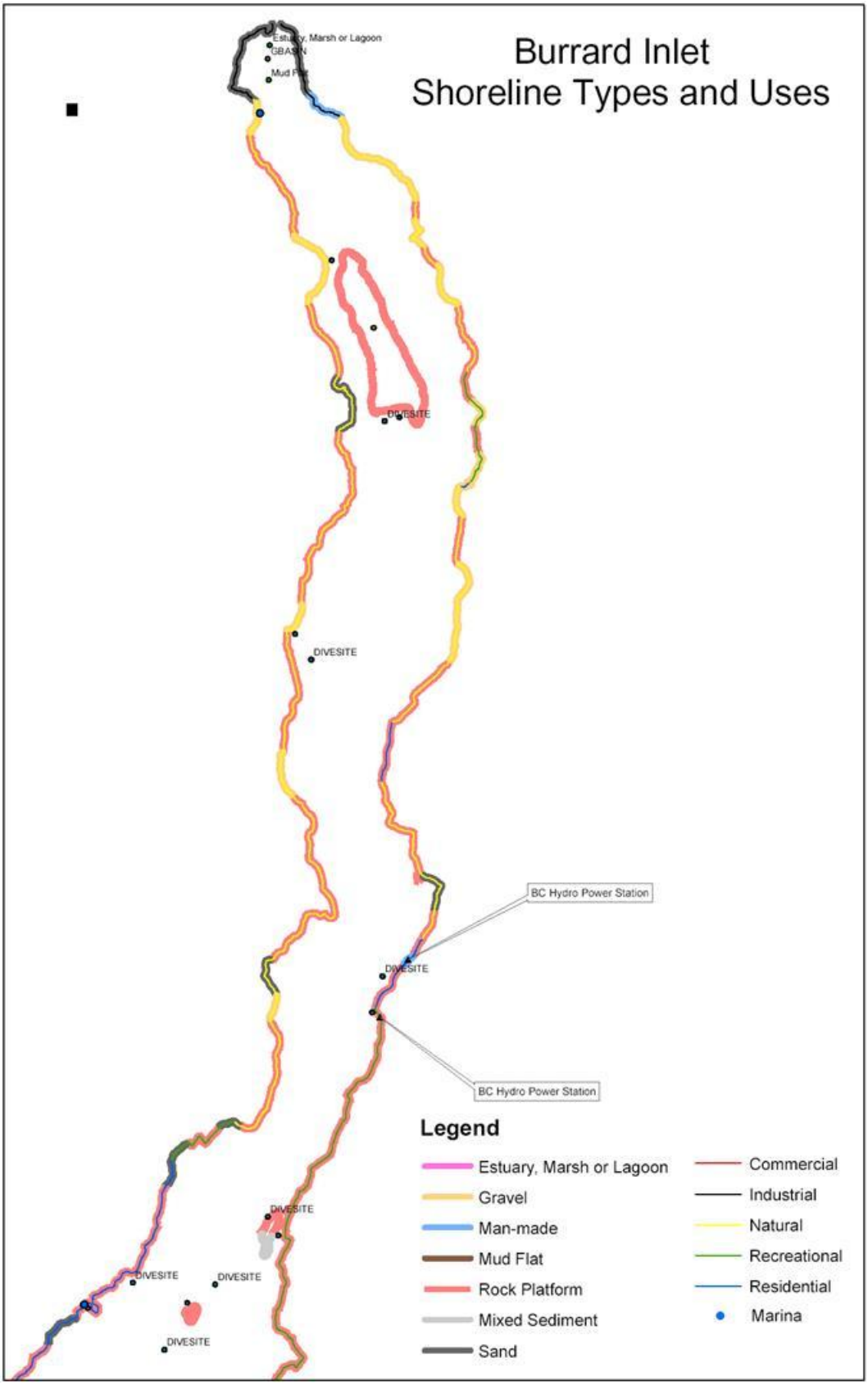
- Recovery and clean-up operations continue focusing on any remaining recoverable patches near shore.
- Small quantities of emulsified product continue to be recovered within the waters around the wharf and various shoreline areas.

- Ongoing shoreline clean-up activity is required (e.g., washing of rocks, flushing material out from between rocks) within the boomed area.
- The secondary containment boom is recovered by WCMRC vessel.
- Loading of the tanker resumes when all spilled material within the primary containment boom has been recovered.

7.4 Shoreline Types and Use Maps – Burrard Inlet




Burrard Inlet Shoreline Types and Uses
Legend
Estuary, Marsh or Lagoon
Gravel
Man-made
Mud Flat
Rock Platform
Mixed Sediment
Sand
Commercial
Industrial
Natural
Recreational
Residential
Marina
DIVESITE
Sand Flat
GBASIN
Goodwin-Johnson Wharf
Chevron Wharf
Shell Canada Pier
Terasen Pipelines (Trans Mountain) Inc. Westridge Terminal
Petro-Canada Jetty
Pacific Construction Terminal
Petro-Canada Jetty
Welwood Canada Terminal
Ioco Refinery Wharf
Estuary, Marsh or Lagoon
N
W
E
S


Burrard Inlet
Shoreline Types and Uses
Estuary, Marsh or Lagoon
DIVESITE
BC Hydro Power Station
BC Hydro Power Station
Legend
Estuary, Marsh or Lagoon
Gravel
Man-made
Mud Flat
Rock Platform
Mixed Sediment
Sand
Commercial
Industrial
Natural
Recreational
Residential
Marina

7.5 Trans Mountain Products Summary

Product Name	Product Identifier	Vapour Density	Specific Gravity	API	Oil Group Number	Total Sulfur (wt%)
REFINED PRODUCTS						
Diesel	DSL	>1	0.85	34.7	3	<0.005
Ethanol Blend Gasoline	G85	>1	0.74	59.8	2	0.03
Premium Gasoline	G91	>1	0.68	76.2	2	<0.005
SUPER LIGHTS						
Pembina Condensate	CPM	>1	0.76	53.1	2	0.12
Fort Sask Condensate	FSC	>1	0.70	70.8	2	0.09
LIGHT SWEET						
Central Alberta Sweet	CSW		0.83	38.6	2	0.36
Peace River Crude	PCR	>1	0.80	45.0	2	0.45
Pembina Crude	PEM	>1	0.82	41.1	2	0.40
Pembina North	PNC	>1	0.83	40.1	2	0.40
Rainbow Crude	RBW	>1	0.83	39.6	2	0.42
Gibson Light Sweet	MGL	>1	0.83	40.1	2	0.50
LIGHT SOUR						
Central Alberta KOC	CAL	>1	0.85	34.9	3	1.13
Peace Sour Crude	PCSR	>1	0.83	39.1	2	1.29
LIGHT SYNTHETIC						
Horizon Synthetic	CNS		0.87	31.3	3	0.14
Suncor Synthetic A	OSA	>1	0.86	32.8	3	0.25
Premium Albian Synthetic	PAS	>1	0.87	30.9	3	0.09
Shell Synthetic	SSX	>1	0.88	29.9	3	0.16
Syncrude	SYN	>1	0.86	33.8	3	0.19
HIGH – TAN- DILBIT						
Access Western Blend	AWB	>1	0.91	23.2	3	3.89
Borealis Heavy Blend	BHB	>1	0.94	19.4	3	3.60
Fort Hills Reduced Carbon Lifecycle Dilbit Blend	FRB	>1	0.94	19.2		3.91
Kearl	KRL	>1	0.92	22.0	3	3.84

Product Name	Product Identifier	Vapour Density	Specific Gravity	API	Oil Group Number	Total Sulfur (wt%)
Sunrise Dilbit	SDB	>1	0.93	20.8	3	4.19
Surmont Heavy Dilbit	SHD	>1	0.92	22.0	3	4.10
Western Canada Dilbit	WDB	>1	0.92	21.9	3	4.09
HIGH TAN SYNBIT						
McKay Heavy	MKH	>1	0.94	19.3	3	2.85
Surmont Mix A	SMA	>1	0.92	21.7	3	3.37
LOW-TAN DILBIT						
Cold Lake Blend	CL	>1	0.93	22.4	3	3.72
OTHER HEAVIES						
Albian Heavy Synthetic	AHS	>1	0.94	19.6	3	2.75
Albian Vacuum Blend	AVB	>1	0.94	19.7	3	3.21
Suncor Synthetic H	OSH	>1	0.94	19.2	3	2.91
Suncor Synthetic PTCN	OSP	>1	0.92	21.6	3	3.07

8.0 INCIDENT MANAGEMENT

8.1 Incident Management Team Organization

Trans Mountain has a pre-defined Incident Command Structure with role descriptions defined and personnel pre-assigned to the key roles. In addition to the ICS Management Structure, Trans Mountain has a number of response operations components:

8.2 Initial Response Team

Initial Response resources are managed by the Senior On-Site Individual who assumes the role of Incident Commander until such time as a more senior employee takes over. The IC will handle all initial response Command and General Staff responsibilities until additional resources arrive.

8.3 Local Incident Management Team

The Local Incident Management Team (IMT), which is comprised of district/terminal personnel in each response area, will respond to incidents beyond the capability of the Initial Responders.

If deployed, the Local IMT's primary tasks are to:

- Ensure the safety of all workers in the area of the incident
- Assess the situation (i.e., incident size, severity, likely impacts)
- Take appropriate action to mitigate the impacts to life safety, the environment, and property

The Local IMT will perform these tasks until relieved or replaced by a higher level of management within the response organization.

8.4 Incident Management Team

On larger spills, where the local IMT cannot manage a response without assistance, additional IMT personnel will be asked to attend from within Trans Mountain's company-wide support system.

The IMT is headed by the Incident Commander who directs and coordinates all response activities and resources. The Deputy Incident Commander provides on-site staff support to the Incident Commander through the Command Staff and relieves the Incident Commander as required.

Each Section is headed by a Section Chief reporting directly to the Incident Commander. The Initial Response Team and initial IMT may be absorbed into the response organization as additional IMT personnel arrive on the scene. The Operations Section Chief is also responsible for directing the activities of outside contractors called in to assist with the response.

8.5 Response Team Organization

The following diagram depicts a typical response organization to the branch director/unit leader level. If a position below a specific Chief, Director, Supervisor, Manager, or Unit Leader is not filled then the Chief, Director, Supervisor, Manager, or Unit Leader must complete the tasks of reporting position as well. For further information on each position and the supporting roles, please see the Trans Mountain Incident Command System Guide.

8.6 Initial Response

The initial response will be carried out by local Trans Mountain personnel and WCMRC for water-based spills.

These are employees who are present at or near the scene of an incident who are properly trained in emergency response, defensive firefighting, safety and first aid. All other employees should be cleared from the incident scene immediately.

The senior person at the scene is automatically designated as the Incident Commander. Depending on the circumstances, the person-in-charge may be replaced by the Terminal Director/Manager, Marine Logistics.

The initial responder's primary tasks are to:

- Ensure the safety of all workers and public in the area of the incident
- Assess the situation (i.e., incident size, severity, likely impacts)
- Notify the Terminal Supervisor immediately
- Take appropriate action to mitigate the impacts to life safety, the environment, and property

Initial responders will perform these tasks until relieved or replaced by a higher level of management within the IMT organization. In the event of a Level 1 incident, the initial responders may conduct the entire response effort. On larger incidents, the initial responders will typically be incorporated into the Operations Section of the IMT organization.

8.7 Control Centre Emergency Duties

8.7.1 Control Centre Operator

- Initiate the Emergency Conditions Report (ECR)
- Advise caller as appropriate
- Contact first responders, as required
- Contact "affected" Field Supervisor(s)
- Contact the Supervisor, Control Centre Operations
- Record all events in the "Additional Information" section of the ECR for the full duration of the incident
- Assume notification role of the Supervisor, Control Centre Operations, if no contact acknowledgment is received

8.7.2 Supervisor, Control Centre

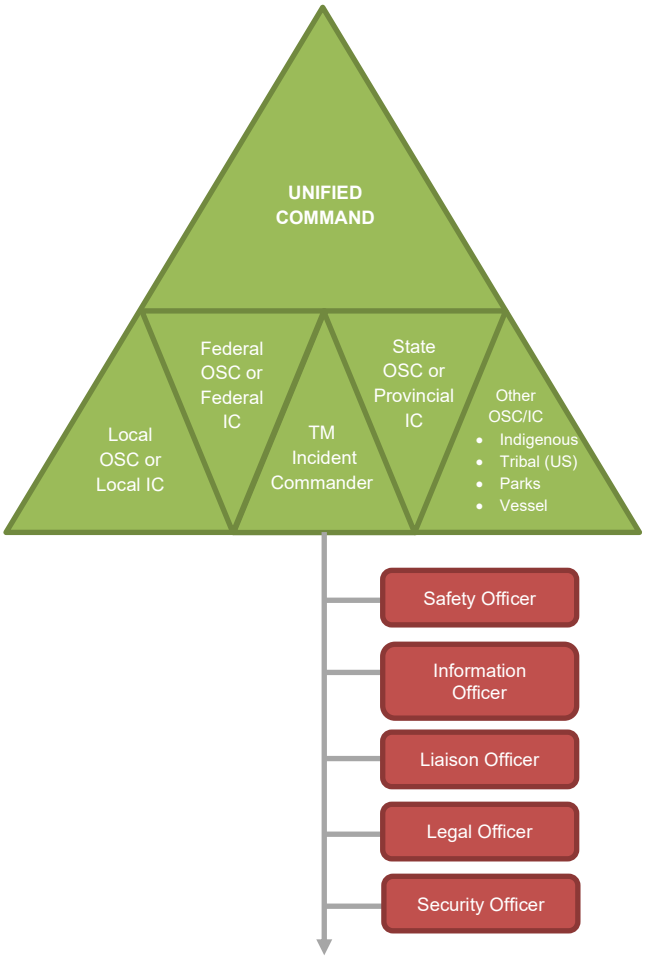
- Send an TAS using the appropriate TAS list
- If the TAS system in unavailable, contact personnel as shown in Section 2.0 Internal and External Notification for back up TAS contacts
- Call into the TAS line to start the Initial Information Exchange
- Participate in conference calls as required
- Send additional TAS updates as needed or required
- Forward the completed ECR to the Manager, Technical Services and Control Centre, for approval

8.8 Transfer of Command

The Trans Mountain Incident Management Team is designed to work on a 24-hour basis. If 24-hour coverage is required, Command Staff and other response personnel will normally be relieved on a 12-hour shift schedule. Briefing meetings for Command Staff and other essential response personnel will be held at the time of each shift change. The Planning Section will be responsible for providing a summary of the ending shift activities along with a plan for the next shift. Written plans will be made in consultation with government agencies. Key ICS positions will be transferred on a 4–7-day rotation as needed after the initial transfer of command. The resources unit has the responsibility to identify and obtain any additional personnel required.

Whether internal or external, transfers of command for ICS positions will overlap to ensure that operations are not interrupted. The individual incoming and the individual leaving are required to meet and discuss any relevant information so that the position can be properly filled in and necessary task accomplished.

8.9 Unified Command



Wherever possible, the IMT will establish, and operate within, a Unified Command structure as warranted by the circumstances of an incident. When a federal or state/provincial agency arrives on-scene to participate in managing a response action, the agencies will utilize a Unified Command structure to jointly manage the spill incident. In the Unified Command, decisions with regard to the response will be made by consensus and documented through a single Incident Action Plan (IAP) for each operational period. If Unified Command is unable to reach consensus, the Federal On-Call Coordinator (FOSC) or Federal Incident Commander (FIC) has ultimate decision-making authority. The Unified Command may incorporate additional Indigenous or local government on-scene coordinators into the command structure as appropriate.

Incident Commanders for oil discharges and hazardous substance releases will, whenever possible and practical be organized under the Unified Command Structure which includes, but not limited to:

- The pre-designated Federal On Scene Coordinator (FOSC)/Federal Incident Commander (FIC);
- The State/Provincial On Scene Coordinator (SOSC)/Incident Commander (PIC);
- The representative of the Responsible Party (RP); and
- The local and/or Indigenous On Scene Coordinators, as appropriate.

To be considered for inclusion as a Unified Command member, the following criteria must be considered:

- The organization must have jurisdictional authority or functional responsibility under a law or ordinance for the incident; and
- The organization must be specifically charged by law or ordinance with commanding, coordinating or managing a major aspect of the incident response; and
- The incident or response operations must have impact on the organization's Area Of Responsibility (AOR); and
- The organization should have the resources to support participation in the response organization.

Actual Unified Command makeup for a specific incident will be determined on a case-by-case basis taking into account:

- The specifics of the incident;
- Determinations outlined in the four criteria listed above; and
- Decisions reached during the initial meeting of the Unified Command.

The Unified Command is responsible for the overall management of the incident. The Unified Command directs incident activities including the development and implementation of strategic decisions, approval of the incident action plan, and approves the ordering and releasing of resources. It is expected that each Unified Command member will have the authority to make decisions and commit resources on behalf of their organization.

8.10 Incident Commander/Deputy Incident Commander

The Incident Commander's responsibility is the overall management of the incident. On Level 1 incidents, the command activity will likely be carried out by a single (Trans Mountain) Incident Commander. On larger, Level 2 and 3 incidents, a Unified Command structure will be employed, with additional Incident Commanders from key agencies.

The initial IC is the senior person witnessing the incident. One or more changes of the IC role might take place during the initial phase of the incident, as more-senior personnel arrive on-scene until the ultimate IC takes over and the ICP is established.

The Incident Commander may have a deputy, who may be from Trans Mountain, or from an assisting agency. Deputies must be fully qualified to take over that position at any time.

The Incident Commander/Deputy IC Responsibilities can be found in the Incident Command System Guide; in general, the duties are to:

- Ensure that adequate safety measures are in place.
- Assess the situation and/or obtains a briefing from the prior Incident Commander.
- Determine Incident Objectives and strategy using the Incident Objectives (ICS 202).
- Establish the immediate priorities.
- Establish an Incident Command Post.
- Establish an appropriate organization.
- Ensure planning meetings are scheduled, if a Planning Section Chief has not been assigned.
- Approve and authorize the implementation of an Incident Action Plan.
- Coordinate activity for all Command and General Staff.
- Coordinate with key stakeholders and officials through the Liaison Officer (LO)
- Approve requests for additional resources or for the release of resources.
- Keep lead agency and Crisis Management Team informed of incident status.
- Approve the use of trainees, convergent volunteers, and auxiliary personnel.
- Authorize release of information through the Information Officer (IO)
- Order the demobilization of the incident when appropriate.

8.11 Safety Officer

The Safety Officer (SO) will correct unsafe acts or conditions through the regular line of authority, although the SO may exercise emergency authority to prevent or stop unsafe acts when immediate action is required. The SO maintains awareness of active and developing situations, ensures the Site Health and Safety Plan is prepared and implemented, and includes safety messages in each Incident Action Plan.

Only one Safety Officer will be assigned for each incident. The Safety Officer may have assistants as necessary, and the assistants may also represent assisting agencies or jurisdictions. Safety assistants may have specific responsibilities such as air operations, hazardous materials, etc.

The specific duties related to the Safety Officer's responsibilities can be found in the Incident Command System Guide, in general the duties are to:

- Develop a Site-Specific Health and Safety Plan.
- Participate in planning meetings.
- Identify hazardous situations associated with the incident.
- Review the Incident Action Plan for safety implications.
- Exercise emergency authority to stop and prevent unsafe acts.
- Investigate accidents that have occurred within the incident area.
- Assign assistants as needed.
- Review and approve the Medical Plan.

8.12 Information Officer

The Information Officer (IO) is responsible for developing and releasing information about the incident to the media (news, social, print, TV), incident personnel, members of the public, impacted parties and local elected officials (except in Washington State) via the development and implementation of the external communications plan. Only one IO will be assigned for each incident, including incidents operating under UC and multi-jurisdictions.

The external communications plan objectives are to:

- Provide information about the incident and the related response effort to all stakeholders in a timely, accurate, and responsible fashion.
- Ensure that information about the incident is clear, factual and consistent with that provided by other responders and government agencies.
- Minimize unnecessary speculation, rumor, or concerns about the incident and potential risks to the public.
- Protect the company's reputation as a responsible corporate citizen.

The Information Officer is supported by a team of pre-assigned employees to assist in implementing the communications plan. This group is known as the External Communications Team.

The Information Officer, in consultation with the Incident Commander, ensures that the necessary contacts have been made to Trans Mountain public affairs staff at the Trans Mountain's head office in Calgary.

The Information Officer's responsibilities are to:

- Determine from the Incident Commander if there are any limits on information release.
- Develop material for use in media briefings.
- Obtain Incident Commander's approval of media releases.
- Establish and staff a Joint Information Centre (JIC) or Public Information Officer (PIO) Inform news media and conduct news media briefings.
- Arrange for media tours and other interviews or briefings that may be required.
- Obtain news media information that may be useful for incident planning.
- Maintain current information summaries and/or displays on the incident within the ICP and on incident website, if established
- Provide information of status of incident to assigned personnel.
- Activate a 24-hour, recorder public information line.

8.13 Security Officer

The Security Officer is responsible for providing safeguards for protecting personnel and property from loss or damage.

The Security Officer's responsibilities are to:

- Develop Security Plan for the incident site and facilities, including Staging Area, ICP and any location where personnel are housed; adjust Plan for personnel and equipment changes and releases.
- Establish security for the ICP
- Implement identification program for incident facilities.
- Establish contacts with law enforcement agencies, as required
- Contact agency representatives to discuss any special custodial requirements which may affect operations
- Coordinate security activities with appropriate incident personnel
- Keep the peace, prevent assaults and settle disputes by coordinating with Agency Representatives
- Prevent theft of company and personal property
- Document all complaints and suspicious occurrences.

8.14 Liaison Officer

Incidents that are multi-jurisdictional, or involve several agencies, may require the establishment of the Liaison Officer (LO) position on the Command Staff. The Liaison Officer is the contact point for the assisting and cooperating Agency Representatives, elected officials, Indigenous communities, and other Emergency Operations Centre's (EOCs) and stakeholder groups. Only one LO will be assigned for each incident, including incidents operating under UC and multi-jurisdictional incidents. The LO may have assistants, as necessary, and the assistants may also represent assisting agencies or jurisdictions. These are personnel other than those on direct tactical assignments or those involved in Unified Command.

The Liaison Officer's responsibilities are to:

- Provide a point of contact and maintain a list of assisting and cooperating agencies, stakeholders and Indigenous groups.
- Organize and chair coordination calls in order to provide incident status updates. Refer to the Liaison Office Toolkit for coordination call agenda.
- Keep Indigenous Communities and other surrounding communities that are not assisting/supporting the incident aware of the incident status through regular updates and coordination calls.
- Arrange and schedule on-site Community Monitors to access select divisions of the incident site, subject to required training and PPE, as required.
- Monitor incident operations to identify current or potential inter-organizational issues and advise Incident Command, as appropriate.
- Participate in Planning Meetings, providing current resource status information, including limitations and capabilities of assisting agency resources.
- Arrange for and provide personnel to act as an External Liaison Officer at any responding agency Incident Command Post(s), and/or Emergency Operations Centres as

needed/requested by a federal agency, provincial/state agency, Indigenous Community and/or local authority.
- Appoint and supervise, as required, positions to assist the Liaison Officer.

8.14.1 On-Site Community Monitors

Trans Mountain has developed an On-Site Community Monitors procedure which identifies the process for providing safe and timely access of non-responders to incident sites. Timely access of monitors is important for collaboration and transparency between Trans Mountain and Indigenous Communities, community groups, and other stakeholders who may be associated with the area of impact. On-site access of monitors may assist with the incorporation of local and/or cultural knowledge into response operations and the remediation phase. On-site Community Monitors will be coordinated through the Liaison Office and will be escorted by someone appointed by Trans Mountain. Community Monitors are required to wear PPE while on-site, need to be signed into the response, and will need to follow all safety and security plans that are in place.

8.15 Government Agency Representatives

Agency Representatives are individuals assigned to an incident from Federal, Provincial, local government agency or cooperating agency who has been delegated authority to make decisions on matters affecting that agency's participation at the incident. Agency Representatives report to the Liaison Officer or to the Incident Commander in the absence of a Liaison Officer.

8.15.1 Agency Representatives Responsibilities

- Ensure that all agency resources are properly checked-in at the incident.
- Attend briefings and planning meetings as required.
- Provide input on the use of agency resources unless resource technical specialists are assigned from the agency.
- Cooperate fully with the Incident Commander and the General Staff on agency involvement at the incident.
- Ensure the well-being of agency personnel assigned to the incident.
- Advise the Liaison Officer of any special agency needs or requirements.
- Report to home agency dispatch or headquarters on a prearranged schedule.
- Ensure that all agency personnel and equipment are properly accounted for and released prior to departure (forms, reports, and documents).

8.15.2 Canada Energy Regulator (CER)

The CER's top priority in any emergency is to make sure that people are safe and secure, and that property and the environment are protected. Any time there is a serious incident, CER Inspectors may attend the site to oversee a company's immediate response. The CER will require that all reasonable actions are taken to protect employees, the public and the environment. Further, the CER will verify that the regulated company conducts adequate and appropriate clean-up and remediation of any environmental effects caused by the incident.

- Monitors, observes and assesses the overall effectiveness of the company's emergency response in terms of:
    - Emergency Management
    - Safety
    - Security
    - Environment

  - Integrity of operations and facilities; and
  - Energy Supply

- Investigates the event, either in cooperation with the TSB, under the Canada Labour Code, or as per the Canada Energy Regulator Act or Canada Oil & Gas Operations Act (whichever is applicable)
- Inspects the pipeline or facility
- Examines the integrity of the pipeline or facility
- Requires appropriate repair methods are being used
- Requires appropriate environmental remediation of contaminated areas is conducted
- Coordinates stakeholder and Indigenous community feedback regarding environmental clean-up and remediation
- Confirms that a company is following its Emergency Procedures Manual(s) commitments, plans, procedures, and CER regulations and identifies non-compliances
- Initiates enforcement actions as required
- Approves the restart of the pipeline

8.15.3 Transportation Safety Board of Canada

The TSB's role is to advance transportation safety through the investigation of transportation occurrences in the marine, pipeline, rail and aviation modes

TSB Classification System - The primary criterion for determining if an occurrence in any mode will be investigated is whether or not such analysis is likely to lead to a reduction of risk to persons, property, or the environment.

Class 1 Occurrences (Public Inquiry)

- the potential for reducing the risk to persons, property, or the environment;
- whether an inquiry would uncover facts that might not otherwise be made known;
- whether an inquiry would result in quicker remedial action;
- the actual or potential extent of injuries and/or loss of life;
- the degree of public interest in and concern about public safety; or
- the possible involvement of an arm of government.

Class 2 Occurrence (Individual Occurrence Investigation)

- there is a high probability of advancing Canadian transportation safety in that there is significant potential for reducing the risk to persons, property, or the environment; or
- the Governor in Council so requests (pursuant to Section 14(1) of the CTAISB Act).

Class 3 Occurrences (Individual Occurrence Investigation)

- there is significant public expectation that the TSB should independently make findings as to cause(s) and contributing factors; or
- there is potential for better understanding the latent unsafe conditions contributing to a significant safety issue; or
- a government representative so requests (pursuant to Section 14(2) of the CTAISB Act); or
- the Board must do so to meet its obligations or commitments.

Class 4 Occurrences (Safety Issue Investigation)

Multiple occurrences, which the Board deems to be indicative of significant unsafe situations or conditions, will be subject to a safety issue investigation when:

- there is a high probability of advancing Canadian transportation safety by reducing the risk to persons, property, or the environment; or
- in the Board's opinion, there is widespread public expectation that the TSB should independently analyze a particular safety issue.

Class 5 Occurrences (Data Collection)

Data pertaining to occurrences that do not meet the criteria of classes 1 through 4 will be recorded in suitable scope and detail for possible safety analysis, statistical reporting, or archival purposes.

8.15.4 British Columbia Health Authorities

British Columbia Health Authorities will aid in an emergency response through the following duties and response capabilities:

- Act as a consultant utilizing provided information on toxic chemicals to the Emergency Operations Centre.
- Monitor health effects of the incident to ensure appropriate data is collected and investigate such health effects.
- Provide advice to the government on the existing or potential health effects of the incident.
- Establish and operate trauma teams for emergency health services.
- Provide health advice and safety levels for any health care or special care facility and for the more vulnerable residents.
- Monitor adverse effects/contamination of water systems.
- Enforce and regulate Public Health Regulations.

8.15.5 British Columbia First Nations Health Authority (FNHA)

The FNHA is a province-wide health authority that has assumed the programs, services, and responsibilities formerly handled by Health Canada's First Nations and Inuit Health Branch – Pacific Region. The FNHA does not replace the role or services of the Ministry of Health and Regional Health Authorities. The FNHA will collaborate, coordinate, and integrate with other health authority's health programs and services to assist BC First Nations.

8.15.6 Health Emergency Management British Columbia (HEMBC)

HEMBC provides expertise, education, tools, and support for the BC health authorities to effectively mitigate, prepare for, respond to, and recover from the impacts of emergency events, ensuring the continuity of health services.

During an emergency HEMBC will:

- Provide a representative to collaborate with the Liaison Officer;
- Provide Subject Matter Expert representatives from the Health Authorities to ICP – Environmental Unit to communicate and coordinate air monitoring data to enhance and expedite public safety assessments and protective measures; and
- Coordinate between Health Authorities Communications personnel and the ICP Public Information Officer on public messaging and media releases related to public health.

8.15.7 Canadian Coast Guard

The Canadian Coast Guard is the lead federal agency for the response component of Canada's National Oil Spill Preparedness and Response Regime. This includes spills and the associated clean-up efforts for a spill, originating at Westridge Marine Terminal. The Government of Canada is accountable to the Canadian public to ensure that the public interest is being protected in the event of a marine pollution incident. The Canadian Coast Guard will participate in and/or monitor marine spill responses, including the deployment of Trans Mountain's resources, those of a Response Organization, and/or some other service provider to conduct a response. The Canadian Coast Guard will ensure an appropriate response to marine incidents is maintained.

8.15.8 Lead Agency Designation

The Lead Agency as outlined in the GVIRP for Marine Pollution Incidents is described as the governmental authority that regulates or has legislative authority over management of the incident. The Westridge Marine Terminal has multiple stakeholders and jurisdictions and although the Lead agency model helps agencies involved in response efforts to organize actions in a coordinated fashion the concept is flexible and adaptable to work within the Unified Command structure.

The following table outlines the lead federal/provincial agencies for Westridge Marine Terminal depending on the source of the incident

Pollution Incident	Department Identified as Lead Agency
• Ship source spills (other than CCG and DND vessels). • Westridge Marine Terminal source spills if it involves a vessel or vessel loading.	Canadian Coast Guard (CCG)
Spills from: • The Trans Mountain pipeline, transfer lines, and facilities • The Westridge Marine Terminal except when a vessel is attached at the facility and transfer of oil is underway, in which case, the CCG would be the lead agency.	Canada Energy Regulator (CER)
Spills from: • WMT Jet Fuel Pipeline Other Reportable Incidents: • Spill or release of hazardous substances which are not provincially regulated • Major damage to oil and gas roads or road structures • Pipeline incidents, such as spills during construction phase, exposed pipe caused by flooding, pipeline over pressure, failure (without release) of any pressure control or ESD device during operations	BC Energy Regulator (BCER)

Pollution Incident	Department Identified as Lead Agency
• Security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only. Note: as outlined in the BCER Incident Classification Matrix – 2023 **Note:** BCER only regulates the jet fuel pipeline. These reporting requirements do not apply to CER regulated facilities	

8.15.9 Activating the GVIRP

The decision to activate the GVIRP in whole or in part (scalable) is made by the initial Incident Commanders for both CCG or CER and BCMOE. This decision to activate is made when the initial assessment determines that there is a potential that it will be a large scale, complex incident and/or will have significant public and political concerns. The following criteria for this assessment can be applied:

Human Health and Safety, for example:

- Poisoning of water or food sources and/or supply
- Presence of toxic vapours or potentially explosive conditions
- Damage to personal property
- Need for evacuation of people

Environmental & Economic Resources, for example:

- Injury or loss of animal or plant species, or their habitats, that are of economic or ecological importance such as:
- Commercial, recreational or Indigenous fisheries (marine plants, crustaceans, shellfish, aquaculture facilities)
- Sensitive fish rearing and/or spawning habitats
- Seal haul outs
- Marine bird rookeries
- Impact to recreational areas such as public beaches
- Impact to ecological reserves, marine/foreshore parks, archaeological and cultural sites
- Interference with public or commercial transportation

It is important to note that during the initial stages of the response, Trans Mountain will activate this Emergency Response Plan, mobilize personnel and take actions to protect the public and minimize impacts. The below table outlines the command evolution for an incident at the Westridge Marine Terminal which impacts Burrard Inlet.

Pollutant Source	Initial Assessment (Pre-GVIRP Active)	Unified Command (After GVIRP Activation)	Comment
Westridge Marine Terminal (Ship: Shore Transfer)	Canadian Coast Guard	Federal IC (Lead) – CCG Federal IC - CER Provincial IC – BC MoE First Nation IC Municipal IC Trans Mountain IC	When a vessel is attached, and a transfer of oil is underway and enters or threatens to enter the marine environment, the CCG is Federal Lead Agency.

Westridge Marine Terminal (No Transfer Underway)	Canada Energy Regulator	Federal IC (Lead) – CER Federal IC - CCG Provincial IC – BCMOE First Nation IC Municipal IC Trans Mountain IC	If no vessel involved, CER will be Federal Lead;

8.15.10 Unified Command Composition under GVIRP

The UC composition as outlined in Section 8.2 Initial Response Team of this ERP will apply and consideration shall be given to the GVIRP for a response involving Trans Mountain operated pipelines or facilities impacting Burrard inlet.

The Information Officer, Liaison Officer and/or Environmental Unit Leader may be led by a coordinating government agency as directed by Unified Command.

8.16 Legal Officer

The Legal Officer is responsible for providing advice and direction on all matters that may have a legal impact on Trans Mountain and should participate in:

- Legal requirements in execution of agreements
- Incident investigation report reviews/meetings
- Environmental damage assessments
- Claims, where applicable
- Any major contracts that are not standard to the operation
- Any insurance issues/concerns
- Major health & safety issues/injuries
- Information releases
- Government Agency requests
- Reporting to Incident Commander

Note: Legal maintains contact information for Insurance and other agencies for claims in the Calgary office.

8.17 Response Planning (Short-Term and Initial Phase of Long-Term Events)

Short-term responses that are small in scope and/or duration and require few resources can often be managed using only the Incident Command Briefing (ICS 201 Form). Responses to longer-term events will also begin with the completion of the ICS 201 and Incident Briefing.

8.17.1 Incident Briefing

During the transfer of command process, an Incident Briefing provides the incoming Incident Commander with basic information regarding the incident situation and the resources allotted to the incident. Most importantly, it is the de facto Incident Action Plan (IAP) for the initial response and remains in force and continues to develop until the response ends or the Planning Section generates the incident's first IAP. It is also suitable for briefing individuals newly assigned to Command and General Staff, as well as needed assessment briefings for the staff.

When	• Upon the arrival of a new Incident Commander a transfer of Command will take place. The Incident Briefing also serves as an opportunity to provide initial information to incoming key IMT and agency personnel.
Facilitator	• The Incident Briefing is facilitated by the Current (and often initial) Incident Commander.
Attendees	• The Incident Briefing is attended by the incoming IC, the Command and General Staffs, as well as any senior responding Government Agency personnel and senior contractor representatives.
Agenda	• Situation (note territory, exposures, safety concerns, etc. use map/charts) • Objectives and priorities • Strategy(s) and tactics • Current organization • Resource assignments • Resources enroute and/or ordered • Facilities established

8.18 Response Planning (Long-Term Events)

Trans Mountain follows the ICS model for incident response planning. The planning cycle and associated meetings can be found in the Trans Mountain Incident Command System Guide located in the Emergency Toolkit.

8.19 Terminating/Downgrading the Response

The decision to terminate and/or downgrade emergency operations and to demobilize personnel and equipment shall be made on a site-specific basis, based on the status of the incident. Factors that may affect the decision to terminate the response include the following:

- The emergency condition has been controlled and immediate threats to the health and safety of the public have been eliminated
- Any leaks or spills have been contained, and all remaining free oil, petroleum products, or hazardous materials have been recovered from the site
- Repair operations have been undertaken to prevent further leaks or spills from occurring
- Further emergency operations at the site will cause more damage to property and the environment than that which resulted from the leak or spill initially.

The Regional Director or designee shall consult appropriate government agencies and other involved parties before making any decisions related to terminating response activities. These agencies and involved parties include representatives from federal, provincial and/or municipal agencies with jurisdiction in the emergency.

Prior to terminating the response, the following issues should be considered by the Unified Command:

- Demobilize equipment and personnel at the first opportunity in order to reduce cost
- Consider which resources should be demobilized first; for example, berthing expenses can be saved by demobilizing out-of-area contractors before local ones
- Equipment may need both maintenance and decontamination before being demobilized
- All facilities (staging area, Incident Command Post, etc.) should be returned to their pre-incident condition before terminating operations
- Determine what documentation should be maintained, where, and for how long
- Contract personnel may be more susceptible to injuries as they approach termination
- Some activities will continue after the cleanup ends; examples include incident debriefing, bioremediation, claims, and legal actions
- Express gratitude to the community, police department, fire department, and emergency crews for their work during the response.
- Develop project plans and/or Recovery Plans as required prior to terminating the response

8.20 Incident Records

Trans Mountain utilizes the Incident Command System when responding to any real and/or potential emergency. As part of this process Trans Mountain's Incident Management Team utilizes ICS Forms in order to support and respond to the emergency. Any sustained response will result in the Incident Management Team establishing a Planning Cycle in order to generate an Incident Action Plan that will address all aspects of the emergency.

All forms generated as part of the incident response will be submitted to the Documentation Unit, under the Planning Section. Upon termination of the incident the Documentation Unit will ensure all original documents are properly stored with the Legal Department. Incident Records will be used to generate reports and for any follow up investigations, both internal and external, if required.

Incident Records are retained by the Legal Department who store all incident files in accordance with Trans Mountain's Record Retention Policy and procedures.

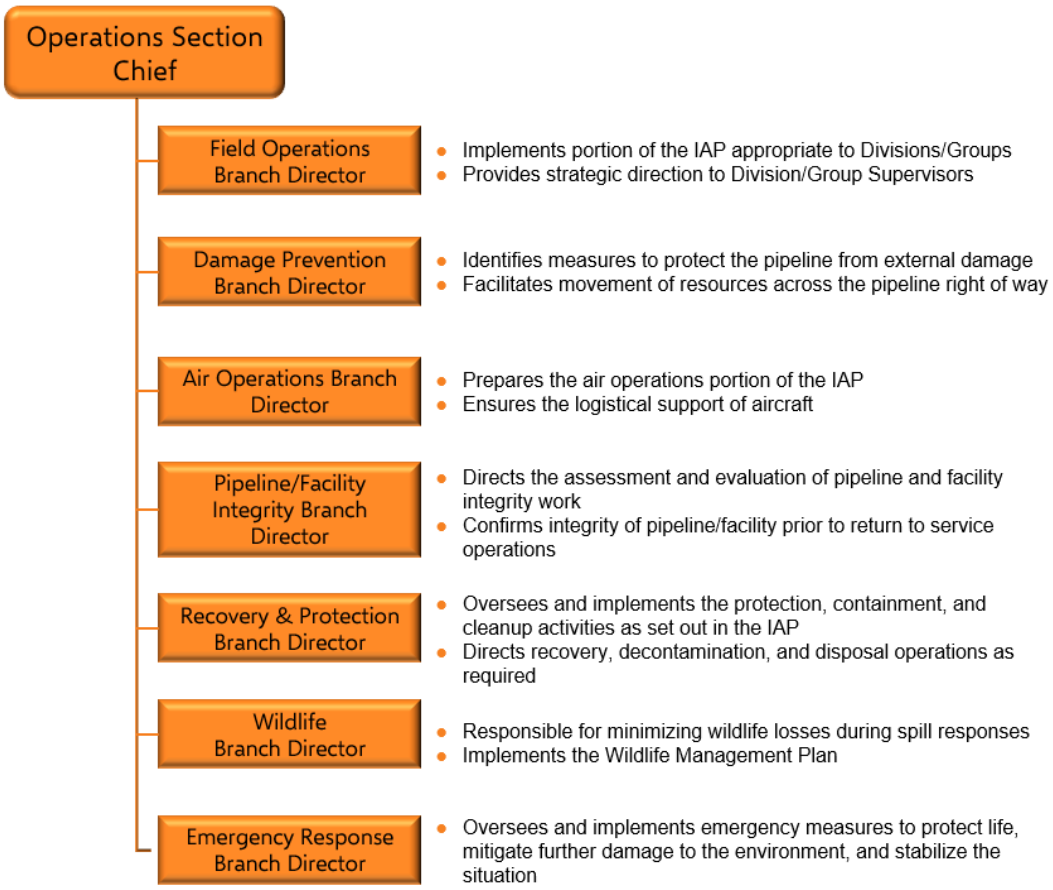
8.21 Post-Incident Reporting and Debrief

Trans Mountain reviews all incident responses using the Emergency Management Exercise Reporting Procedures and produces a report focusing on the effectiveness of the response and emergency procedures and emergency procedure manuals. The Incident Investigation Committee investigates the cause of the incident.

9.0 OPERATIONS SECTION

The Operations Section is responsible for the oversight of all tactical assignments in the response. These include all contractors or other agencies that supply tactical resources in response to the incident. These might include representatives from the Fire Department, the police, the Ambulance Service as well as response organizations. Detailed duties and responsibilities for individuals in the Operations Section can be found in the Trans Mountain Incident Command System Guide in the Emergency Toolkit.

The Operations Section may consist of numerous (functional) Groups and Branches, (geographic) Divisions. If Staging Areas are used, these are also managed by the Operations Section.



9.1 Response Objectives

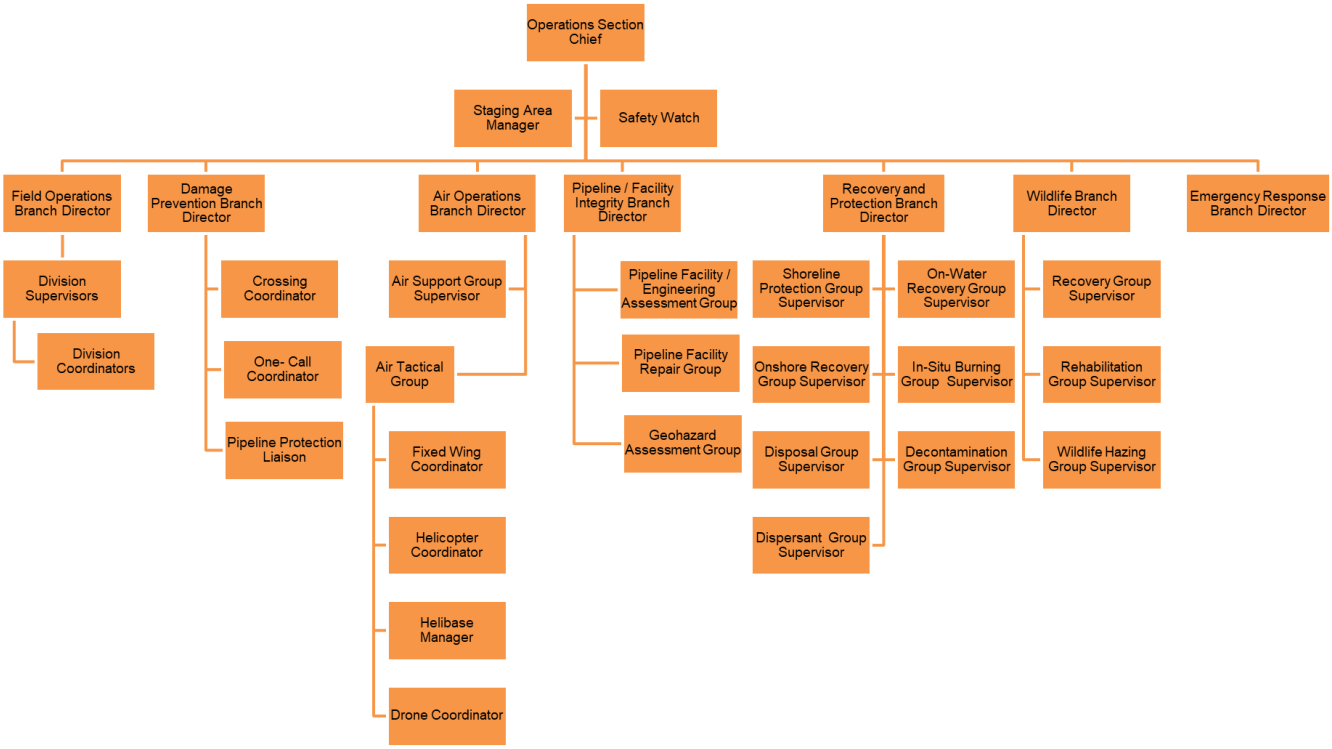
Once the safety of all personnel has been ensured, the source of discharge is secured, and initial notification has been activated, the overall tactical priorities covered are:

- Containment and Recovery of Spilled Oil
- Protection of Sensitive Resources
- Site and Shoreline Clean-Up

Response objectives and priorities will be determined by the Incident Commander, Unified Command, and the Planning and Operations Section members. Critical advice will be provided by representatives of key government agencies.

9.2 Operations Section Organization Chart

Not all roles will be filled for all incidents; however, the following chart is an outline of the possible positions to be filled. Detailed descriptions of each position and its duties can be found in the Trans Mountain Incident Command System Guide in the Emergency Toolkit.



9.3 Operations Section Chief

The Operations Section Chief, a member of the general staff, is responsible for managing all operations directly applicable to the primary mission. The Operations Chief activates and supervises elements in accordance with the Incident Action Plan and directs its execution; activates and executes the Site Health and Safety Plan; directs the preparation of unit operational plans, requests or releases resources, makes expedient changes to the Incident Action Plans as necessary, and reports such to the Incident Commander.

9.4 Waste Management Plan

The management of waste from a spill is a priority for Trans Mountain and a key component supporting incident response. The appropriate handling, storage, transport, disposal and tracking of waste associated with a spill is essential for effective planning and response to a spill.

In the event of an emergency that has the potential for generating waste, the Waste Management Plan will be activated in conjunction with this Plan. After the initial assessment has been conducted an incident specific waste management plan will be developed to support the Incident Action Plan.

Responsibility for working with the provincial authorities to develop an incident specific waste management plan lies with the Environmental Unit Leader. More information on the duties of the Disposal (Waste Management) Technical Specialist can be found in the Incident Command System Guide as well as in the Waste Management Plan, both located in the Emergency Toolkit.

All waste materials collected from a spill should be sorted and stored in separate containers or piles that are clearly marked showing the type of waste they contain. Temporary storage locations on the terminal premises should be totally contained and secure to prevent further leakage or migration of spilled product.

9.4.1 Temporary Storage Methods

Method of Containment	Product						
	OIL	Oily Water	Oily Soil	Oil/Debris (Small)	Oil/Debris (Medium)	Oil/Debris (Large)	Capacity
Drums	✓	✓	✓				0.2-0.5 yd^3
Bags		✓	✓	✓			1.0-2.0 yd^3
Boxes			✓	✓			1-5 yd^3
Open top roll-off	✓	✓	✓	✓	✓	✓	8-40 yd^3
Roll top roll-off	✓	✓	✓	✓	✓	✓	15-25 yd^3
Vacuum box	✓	✓					15-25 yd^3
Frac tank	✓	✓					500-20,000 gal
Poly tank	✓	✓					200-4,000 gal
Vacuum truck	✓	✓	✓				2,000-5,000 gal
Tank trailer	✓	✓					2,000-4,000 gal
Barge	✓	✓					3,000+gal
Berm, 4 ft		✓	✓	✓	✓	✓	1 yd^3
Bladders	✓	✓					500-1,500 gal

9.5 Emergency Equipment and Response Times

Trans Mountain owns and maintains a large fleet of emergency response equipment strategically placed at various points along the Trans Mountain Pipeline. The equipment ensures that the company is able to respond to any emergency in a timely manner in accordance with the planning standard.

9.5.1 Planning Standard

The planning standard establishes the desired response outcomes and forms the basis for Trans Mountain's emergency response plans, procedures and processes.

The planning standard:

- Outlines the hazard assessment process, which includes a hazard listing (spill, fire, explosion);
- Specifies the quantity and location of response equipment and personnel needed to respond within maximum target response times; and
- Defines maximum target response times to be used for response planning to warrant a prompt, safe and effective response to an emergency.

Maximum target times are based, in part, on a variety of regulatory requirements. Real response times are reviewed after any event requiring activation of the Emergency Response Plan to confirm Trans Mountain has resources and equipment placed in the appropriate location to meet the maximum target response times.

Current emergency response capabilities and equipment are strategically placed to meet the planning standard and include:

- Early detection systems/alarms and firefighting equipment for fires and spills;
- Contracted, on-call third party responders to support berth and tank fire response;
- Personnel and company vehicles to respond to spill and fires;
- Secondary boom and Oil Spill Containment and Response (OSCAR) units strategically placed to ensure rapid response.

9.5.2 Response Equipment

Emergency response equipment, such as spill drums with absorbent material to assist in immediate cleanup of any local spill, is available at all facilities. Other emergency resources, such as river boats and response trailers, are located at strategic locations along the Trans Mountain Pipeline. All company facilities, fleet vehicles and emergency response vehicles/trailers contain first aid equipment.

Air Monitoring Equipment – All Trans Mountain's initial responders will arrive on site with personal air monitoring equipment that they will use to assist in the development of the Initial Site Health and Safety Plan. The initial on-site results will also identify if there are any potential public safety concerns. The Public Health Assessment and Response Plan for Airborne Health Risks Associated with Pipeline/Terminal Operations and Incidents (Air Monitoring Plan) will be implemented for potential on-going public safety concerns.

Boats - Trans Mountain owns and maintains a number of boats along the pipeline route to ensure response actions can be carried out on rivers and lakes in locations where a spill could potentially impact water bodies. Response boats are jet drive boats that range in size from 18' to 24' and allow for response in all expected water environments, including shallow water.

Boom Trailer - Boom trailers may vary in size however their primary purpose is to house containment boom for on -water spill operations. The trailers contain supplementary equipment, such as additional rope, to assist with boom deployment.

Decontamination Trailer – Decontamination trailers are sized to be towed by half-ton or three-quarter ton trucks and contain equipment to facilitate the cleaning of personnel and small equipment. The use of decontamination trailers ensures when personnel leave an impacted area, they are not tracking contaminates with them. The trailer includes wash stations, pools, tents, detergent, hand sprayers and other equipment necessary to decontaminate people and small equipment.

Fire Hose Trailer – Hose trailers contain large quantities of fire hoses to support fire response efforts as required.

Foam Bladder Trailer – A Foam Bladder Trailer is a wheel mounted bladder foam storage tank with inline proportioning used to mix and inject water/ foam concentrate into a facilities fire piping system. The trailers can draw water/foam directly from the bladder or externally from foam concentrate drums utilizing a hose. The trailers include a mounted monitor which may be used for direct fire suppression.

Foam Cannon – Foam cannons are located at Trans Mountain Terminals for use in the unlikely event of a tank fire. These mobile large volume discharging platforms can deliver water or foam solution for fire suppression, tank cooling, personnel protection and vapour suppression.

Land/Creek Response Trailer – Land/Creek Trailers contain specialized equipment designed to be used for spills on land or in small creeks and/or ditches. Equipment includes Watergate dams, turner valley gates and water block dams as well as sandbags and sorbent materials and other common spill response equipment.

OSCAR Trailer – Oil Spill Containment and Recovery (OSCAR) trailers are located strategically at various points along the Trans Mountain Pipeline. These trailers contain various tools and spill response equipment ranging from absorbent materials and skimmers, to booms and other cleanup tools specific to the area.

Portable Fire Pump – Portable fire pumps are located at Trans Mountain Terminals for use in the unlikely event of a large tank fire. These mobile pumps assist the existing fire systems by providing higher capacity pumping of water and/or foam solution.

Rapid Response Trailer – Rapid Response trailers are similar to OSCAR trailers however, they are smaller in size (typically under 30’ long), can be towed behind a half-ton or three-quarter ton truck and are more maneuverable in tight locations. Rapid response trailers have containment, recovery, and storage equipment on board.

Non-Floating Oil Response Trailer – Non-Floating Oil Response Trailers contain specialized equipment designed to be used for the detection of sunken and/or submerged oil. Equipment such as silt fencing, boom, view boxes, pompoms and other sorbent materials are housed inside a trailer to be dispatched in the event there is a possibility of the spilled product becoming sunken or submerged.

Structural Protection Unit (SPU) Trailer - The SPU trailers are designed to protect at risk facilities along the pipeline right-of-way. Equipment housed in the SPU trailers includes foam, hose, nozzles, sprinklers (tripod and perimeter) pumps, pumpkin bladder and various tools.

Water Trailer - Mobile water distribution systems positioned at the Burnaby Terminal. They provide a dependable water supply to support terminal operations, including the extinguishment of small spot fire and general response activities

Wildlife Response Trailer – Wildlife Response Trailers are deployed to spill locations to deter wildlife, including birds and a variety of ground animals, from entering or landing near the contaminated area(s). A variety of equipment including fencing, flags and effigies are housed within these trailers.

Wildfire Response Trailer – Wildfire Response Trailers are designed as a self-supplied water and/or foam deployment system. Equipment on the Wildfire Response Trailers include foam, hose, pump, nozzles, various tools and a water tank.

Winter Response Trailer – Winter Response Trailers contain specialized equipment designed to be used in ice and snow. Winter response equipment includes specialized ice cutting devices (ice auger, chainsaw), ice rescue equipment, specialized ice lifting devices and additional rehabilitation supplies. Personal protective equipment and safety equipment that would be useful during a cold weather response, such as blankets, heaters, winter liners for hard hats, are also included.

9.5.3 Response Equipment Maintenance

Trans Mountain response equipment is tested and inspected as noted below.

- Daily and Weekly – portions of the fire suppression systems are tested and inspected on a weekly and daily basis depending on the system component and regulatory requirements.
- Monthly – all emergency response equipment is inspected and inventoried monthly to ensure response readiness.
- Spring Inspection – all emergency response equipment undergoes a thorough spring maintenance check which may include inspection by a third-party inspection facility. All equipment is function tested at this time.
- Fall Inspection – all emergency response equipment undergoes a thorough fall inspection and maintenance check which includes winterizing any equipment that is at risk of freezing. Some equipment is also inspected by a third-party inspection facility.
- Exercises – all equipment is deployed at least annually during an exercise at which time all components are inspected and tested in a response environment. All equipment used during an exercise is inspected in accordance with its Post-use Inspection procedures, which may include decontamination of watercraft, function testing pumps/generators, drying ropes, and boom etc.
- Multi-year Programs – some emergency equipment such as fixed fire suppression systems undergo 3-year inspections and 5-year inspection and maintenance activities in accordance with guidance provided by industry standards.

Trans Mountain will produce, upon request of the BC Minister of Environment & Climate Change Strategy, records evidencing the inspection and maintenance of equipment.

9.5.4 Response Times

Trans Mountain has a planning standard to identify the maximum times by which specific activities are anticipated to occur. The planning standard is used to strategically locate people and equipment to ensure a prompt response to any event involving the Trans Mountain Pipeline System. These response times are for planning purposes only and do not act as target times. All incidents are responded to immediately upon notification of a potential incident or at the confirmation of an incident. Response times are reviewed after any event requiring activation of the Emergency Response Plans to ensure they are adequate and effective. Response times are divided into nine response targets and are measured from the time an emergency is confirmed.

ACTIVITY AND RESPONSE TIME

Activity	Response Time
Confirmed emergency – shutdown of operations	Immediate
Internal emergency response (TAS) conference call	30 Minutes
Initial site safety assessment	1 Hour
Secondary containment boom is in place *Applicable only to Westridge Marine Terminal*	1 Hour
Emergency Response Equipment arrives on site	2 Hours
Emergency Response equipment deployed to initiate extinguishment of full-surface tank fires and flammable liquid storage facilities	4 Hours
Emergency Response Equipment at site deployed (boom and skimmers)	6 Hours
Incident Command Post established	6 Hours
Advanced spill response equipment at site	12 Hours
Additional equipment at site (as needed)	24+ Hours

9.5.5 Equipment Requirements

To determine equipment placement and requirement the worst-case discharge volume is used. The worst-case discharge volume is calculated based on the highest volume for each response zone using the highest volume for each of the following criteria:

- The maximum time to detect the release, plus the maximum shutdown response time multiplied by the maximum flow rate per hour, plus the largest line drainage volume after shutdown;
- The maximum historic discharge from the pipeline; or
- The largest single breakout tank or battery of breakout tanks, without a secondary containment system.

9.5.5.1 Terminal-Specific Equipment

Westridge Marine Terminal is resourced with response and recovery equipment for fire and spill events to facilitate rapid deployment in the event of an event. Equipment housed on-site includes items such, secondary emergency boom, which is stored on-water, recovery and decontamination equipment, fire monitors, Self-Contained Breathing Apparatus' (SCBA), etc.

Additional response equipment that can be deployed to augment the equipment available at the Westridge Marine Terminal, is located at Burnaby Terminal and assigned to be deployed by those present on the TAS call. The Burnaby Response Trailer equipment includes additional boom, recovery, storage and other response equipment anticipated to be required during a release event.

9.5.6 Mobile Spill Equipment List

Trans Mountain Location*	Boat	Boom Trailer	Secondary Boom (Not mobile)	Decontamination Trailer	Land/Creek Trailer	Non-Floating Oil Trailer	OSCAR Trailer	Rapid Response Trailer	Wildlife Trailer	Winter Response Trailer
Blackpool Station				x						
Blue River Station	x	x					x			x
Burlington Station							x			
Burnaby Terminal	x						x			
Edson Station	x			x						
Gainford Station	x	x					x			x
Hope Station	x							x	x	x
Jasper Station	x	x					x (2)		x	x
Kamloops Terminal	x (2)	x				x	x		x	x
Kingsvale Station		x		x				x		
Laurel Station	x (3)			x	x		x			
Rearguard Station				x						
Sumas Station	x	x		x	x		x		x	
Westridge Marine Terminal	x (2)		x	x[1]			s[2]			

**Equipment is subject to movement based on risk*
[1]*Decontamination Trailer stored in a sea can.*
[2]*Spill equipment is stored in a sea can.*

9.5.7 Mobile Fire Equipment List

Trans Mountain Location*	Fire Hose Trailer	Foam Bladder Trailer	Foam Cannon	Gorilla	Structural Protection Unit (SPU)	Wildfire Trailers	Water Trailer
Blue River Station						x	
Burnaby Terminal	x		x	x			x
Edmonton Terminal	x (2)	x	x	x			
Hope Station						x	
Jasper Station					x	x	
Kamloops Terminal			x		x*	x	
Sumas Terminal	x		x		x		
Laurel Station					x		

**Kamloops has one SPU trailer, and one SPU sea can*

9.5.8 Contractors, Contractor Equipment and Labor

Trans Mountain's primary response contractors and support services are private entities with which Trans Mountain has a contractual relationship. The removal of this information follows the requirements of The Personal Information Protection and Electronic Documents Act (PIPEDA) (federal legislation). The information is provided on a controlled basis within the Incident Notification Guideline located in the Emergency Toolkit.

9.6 Decontamination Plan

All personnel and equipment must go through a decontamination process to ensure spilled material does not contaminate a larger area than needed. The Decontamination Plan will be activated in conjunction with this Plan. After the initial assessment has been conducted an incident specific decontamination plan will be developed to support the Incident Action Plan. A copy of the Decontamination Plan can be found in each Decontamination Trailer or in the Emergency Toolkit.

9.7 Public Evacuation

When an emergency is declared, and it has been determined that the incident has risk to the public, which may require the implementation of immediate public safety measures, the applicable Terminal Evacuation Plan will be activated.

The Terminal Evacuation Plan is intended to be activated in coordination with the Local Authority and in conjunction with this plan (the ERP) and the Trans Mountain Public Health Assessment and Response Plan for Airborne Health Risks.

The Local Authority sets the direction of appropriate public safety measures and lead the development of the incident-specific evacuation plan. Trans Mountain will support the local authority by supplying incident-specific information and resources, as needed, to implement public evacuation.

Trans Mountain has no legislative authority to evacuate the public, except for within the Terminal boundaries. Trans Mountain is responsible to:

- Take immediate action to identify the hazards and/or potential hazards that may arise from an incident at the Terminal.
- Confirm the parameters of the Protective Action Zone and implement the appropriate safety measures to protect people and property.
- Provide hazard-specific and technical information to the local authority to aid in the determination of public safety measures required for the community surrounding the Terminal.

As the incident evolves, Trans Mountain is responsible for providing updated information to the local authority to support the ongoing assessment of risk to the public and the implementation of public safety measures.

Trans Mountain support may include, as requested, the sharing of personnel and resources to aid in the preparation and execution of the local authority's evacuation plan.

The ICP together with the local authority will continually monitor the hazards and the incident outside of Terminal boundaries to determine if the situation has evolved, using the technical information and air monitoring data collated by the Environment Unit. This additional assessment will be used to determine if subsequent actions are required, including if the Protective Action Zone requires expansion or contraction. Trans Mountain will support the local authority in these efforts by assisting with the implementation of further public safety measures, as required.

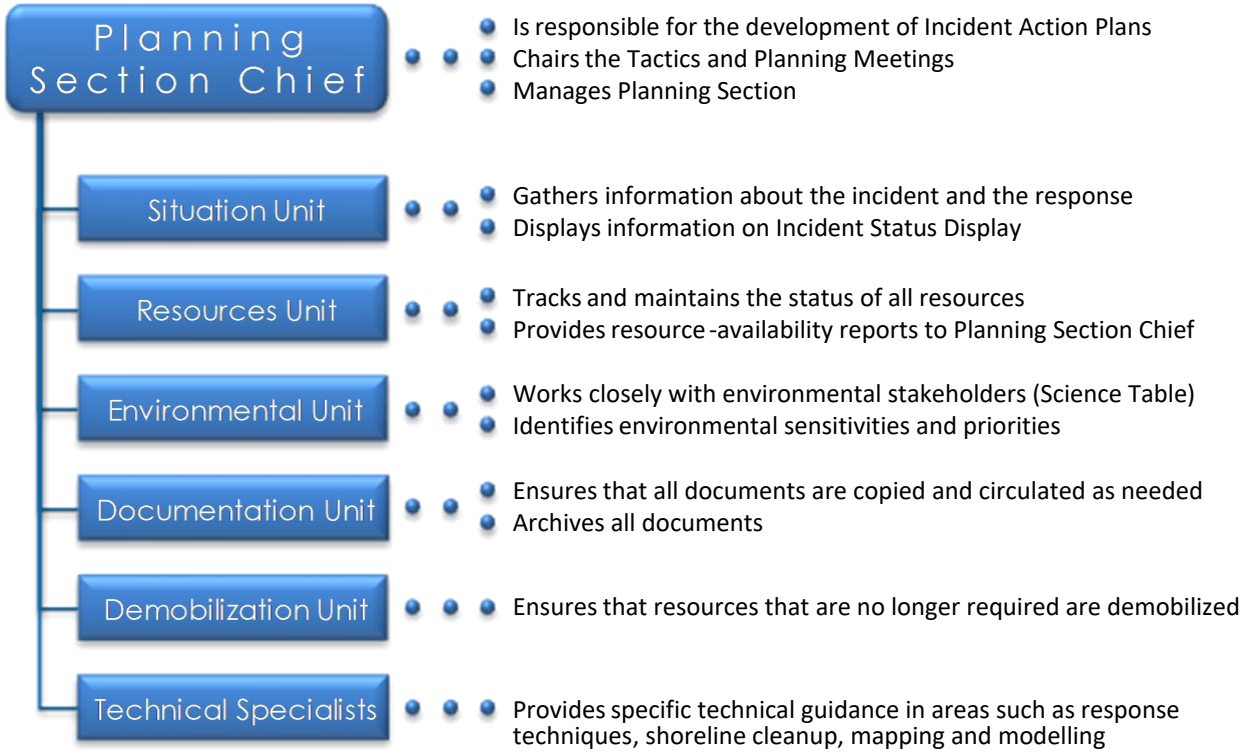
Note - Public protection measures do not apply to responders who are wearing appropriate PPE to respond.

A copy of the Westridge Marine Terminal Evacuation Plan can be found in the Emergency Toolkit.

10.0 PLANNING SECTION

The Planning Section is responsible for the gathering of incident intelligence, and the development of Incident Action Plans. This includes the tracking of incident information and resources, and the documentation of the incident. Detailed duties and responsibilities for individuals in the Planning Section can be found in the Trans Mountain Incident Command System Guide in the Emergency Toolkit.

Technical Specialists, i.e., fire or oil spill specialists will also be assigned to the Planning Section. Technical Specialists will be Qualified Professionals. [10]



10.1 Planning Section Chief

The Planning Section Chief, a member of the General Staff, is responsible for collecting, evaluating, disseminating, and using information about the incident and status of resources. Information is needed to:

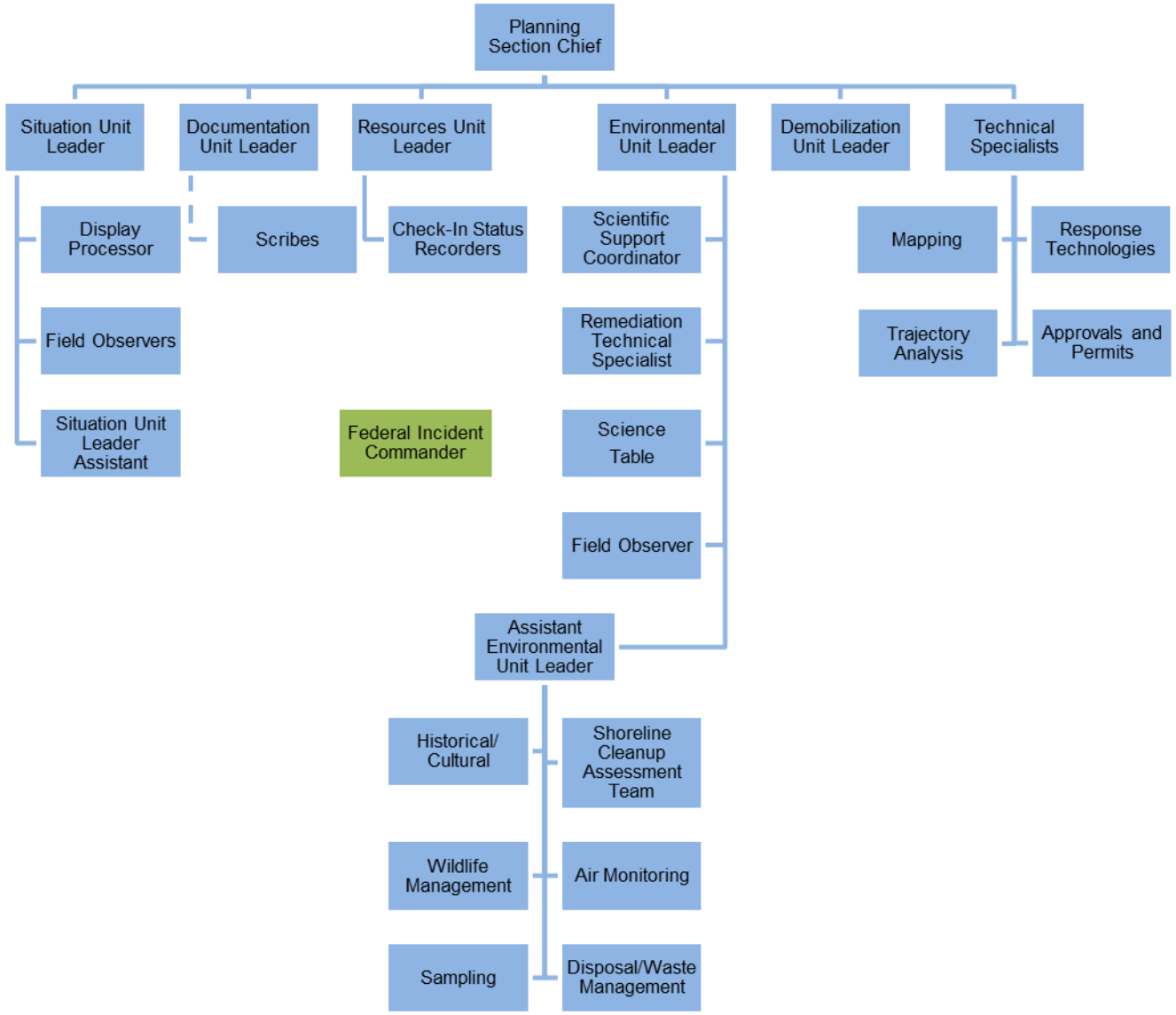
- understand the current situation,
- predict probable course of incident events, and
- prepare alternative strategies for the incident.
- Review Common Responsibilities in the Incident Command System Guide (Section 5.1 Common Responsibilities)
- Activate Planning Section Units.

[10] A Qualified Professional is an applied scientist or technologist specializing in a relevant applied science or technology including, but not necessarily limited to, agrology, forestry, biology, engineering, geomorphology, geology, hydrology, hydrogeology, or landscape architecture. A qualified professional must be registered in Alberta or British Columbia with the appropriate professional organization and acting under that association's Code of Ethics and subject to disciplinary action by that association. He or she must also be someone who, through demonstrated suitable education, experience, accreditation, and knowledge relevant to the particular matter, may be reasonably relied on to provide advice within his or her area of expertise.

- Review Emergency Response Plan (ERP) for the specific area of response for additional duties/special circumstances.
- Assign available personnel already on-site to Incident Command System (ICS) organizational positions, as appropriate.
- Identify gaps in the Planning Section and request additional resources as needed.
- Collect and process information about the incident and ensure the Incident Status Display Board (ISD) is up to date.
- Coordinate with Incident Commander (IC)/Unified Command (UC) to develop the Daily Meeting Schedule (ICS 230). Post in the Incident Command Post (ICP).
- Supervise preparation of the Incident Action Plan (IAP), Executive Summary (if used), and General Plan.
- Provide input to Incident Command and Operations Sections Chief (OPS) in preparing the IAP.
- Facilitate Operational Period meetings and participate in other meetings, as required.
- Refer to Incident Command System Guide *Section 11.1* ***Error! Reference source not found.*** and *Section 12.2* for guidance.
- Utilize the Meeting Go Box for preparation of meeting rooms.
- Fill in and distribute the Incident Briefing (ICS 202) in conjunction with Incident Command.
- Determine need for any specialized resources in support of the incident.
- Provide Resources Unit with the Planning Section's organizational structure, including names and locations of assigned personnel.
- Assign Technical Specialists (THSPs), where needed.
- Assemble information on alternative strategies.
- Provide periodic predictions on incident potential.
- Provide status reports to appropriate requesters.
- Advise General Staff of any significant changes in incident status.
- Incorporate the Incident Traffic Plan (from Ground Support Unit), Vessel Routing Plan (from Vessel Support Unit), and other supporting plans in the IAP.
- Instruct Planning Section Units in distribution and routing of incident information.
- Prepare resource release recommendations for submission to IC.
- Maintain Section records.
- Maintain Unit/Individual Log (ICS 214/214a).
- Ensure planning meetings are scheduled, as required.

10.2 Planning Section Organization Chart

Not all roles will be filled for all incidents; however, the following chart is an outline of the possible positions to be filled. Detailed descriptions of each position and its duties can be found in the Trans Mountain Incident Command System Guide.



10.3 Sampling and Monitoring Plan

10.3.1 Spill Monitoring and Sampling

The protection of water resources in an emergency is a priority for Trans Mountain. Monitoring and mitigation of impacts during the response to a spill is a main focus of the Incident Management Team which will establish, and be located in, the Incident Command Post (ICP). The timely assessment of the condition of water quality, and sediment quality, provides valuable information, allowing for mitigation planning, and the response to a spill.

The procedures in the Sampling and Monitoring Plan will be used to identify and document the location and movement of, and the area covered by, the spill.

In the event of an emergency, the Sampling and Monitoring Plan will be activated in conjunction with this Plan. After the initial assessment has been conducted an incident specific sampling and monitoring plan will be developed to support the Incident Action Plan.

10.3.2 Assessment of Adverse Effects

The Sampling and Monitoring Plan procedures will be utilized to continuously to assess and document the current and potential adverse effects of the spill on human health, environment, and infrastructure.

A copy of the Sampling and Monitoring Plan can be found in the Emergency Toolkit.

10.3.3 Spill Response Planning

The terminals have been designed to be fully self-contained with released product remaining onsite. In the event of migration offsite the Trans Mountain Pipeline Emergency Response Plan will take effect.

The protection of human health, environment, and infrastructure are of the highest priority in spill response planning. High Consequence Areas (HCAs) have been identified in each District in which Terminals are located including:

- Populated Areas
- Ecological Areas
- Heritage Resources
- Essential Infrastructure

Response actions and mitigation procedures undertaken at the time of a release can ultimately influence the duration, magnitude and extent of impacts to HCA. Tactics are contained within Geographic Response Plans and in 4.0 Spill Containment and Recovery. In the event of an offsite release HCAs identified within the Control Point Datasheets and GIS database are used to develop incident-specific response plans.

For planning purposes, spill scenarios and an associated timeline of response actions are outlined in Section 7.0 Site Information. Maps depicting the deployment of primary and secondary booming adjacent to the loading dock are provided in Section 4.0 Spill Containment and Recovery. Geographic Response Strategies (GRS) have been identified by WCMRC to protect HCAs located throughout Burrard Inlet.

10.4 Demobilization

Trans Mountain will develop a Demobilization Plan, to ensure the resources available are what is required. Therefore, emphasis must be placed on establishing efficient demobilization procedures.

Further information on the Demobilization Unit Leader is available in the Incident Command System Guide located in the Emergency Toolkit.

10.4.1 Demobilization Procedures

- The Planning Section will initiate the development of a Recovery Plan for implementation upon completion of the response phase of the incident
- Operations Section will determine which resources are ready for release from a specific collection site
- The Planning Section will provide guidance on release priorities and demobilization recommendations
- Information maintained by the Planning Section will be utilized to assist in the prioritization
- Decontaminated equipment will be returned to appropriate staging area for release or re-deployment
- Transports for equipment will be required if remote from staging area
- The Planning Section will document all demobilization and decontamination activities
- Equipment designated for re-assignment will be mobilized to the appropriate staging area
- The Division Supervisor will ensure a log is maintained documenting that proper decontamination procedures are performed for each piece of equipment
- The Operations Section will ensure that redeployed personnel receive proper rest prior to returning to duty. The Planning Section Chief will monitor personnel redeployment activities to ensure number of hours worked is within acceptable guidelines

10.5 Shoreline Cleanup Assessment Technique (SCAT)

The SCAT process is conducted as part of the overall planning activity to identify sensitive shoreline resources, develop appropriate protection plans as outlined above, and identify recommended pre-treatment and cleanup techniques. A SCAT Team Leader, under the Environmental Unit Leader, is responsible for coordinating and directing these activities.

The specific goals of the SCAT process are to:

- identify the shoreline areas that are, and are not, oiled as a result of the spill through aerial surveys
- conduct ground surveys of these areas if necessary to define precise oil conditions, operational limitations, and to establish clean-up locations and priorities
- determine the most environmentally suitable methods of clean-up based on shoreline type and characteristics
- conduct and monitor shoreline clean-up operations

A comprehensive, practical description of the SCAT process is contained in Environment and Climate Change Canada's *Oil Spill SCAT Manual for the Coastlines of British Columbia*.

10.6 Public Health & Air Monitoring

Trans Mountain contractors will conduct air monitoring operations during emergencies in order to obtain accurate and reliable air quality data. As per Trans Mountain's Public Health Assessment and Response Plan for Airborne Risks, the collected information will be used to determine appropriate response actions to ensure public protection.

In the event of an emergency, the Public Health Assessment and Response Plan for Airborne Risks will be activated in conjunction with this Emergency Response Plan. After the initial assessment has been conducted an incident specific air monitoring plan will be developed to support the Incident Action Plan.

A copy of the Public Health Assessment and Response Plan for Airborne Risks can be found in the Emergency Toolkit.

10.7 Common Operating Picture

The Common Operating Picture (COP) is a readily available web-based interface that provides visual mapping representation of Trans Mountain assets and resources, in relation to nearby land, people, and resources. It has the capacity to provide relevant information and data-mapping to all relevant portions of the Trans Mountain pipeline and associated Terminals. Data can be seen against both current and historical aerial imagery, satellite imagery, and terrain models. It also contains data synchronized to publicly available Government alerts and databases, that together, provide an up-to-date common operating picture during the response.

In the event of an incident, the COP will be used to provide a spatial context of the incident in relation to the Right-of-Way and facilities. Information available includes:

- Resources: Trans Mountain assets, offices, and equipment caches
- High consequence areas, including ecological areas, heritage resources, and essential infrastructure
- Potentially affected persons or groups
- Natural hazards
- Spill Response control points and boat launches
- Information regarding Third-Party Contractors and Mutual Aid, such as location, coverage, and/or equipment

Additional information which can be added to the COP, if available:

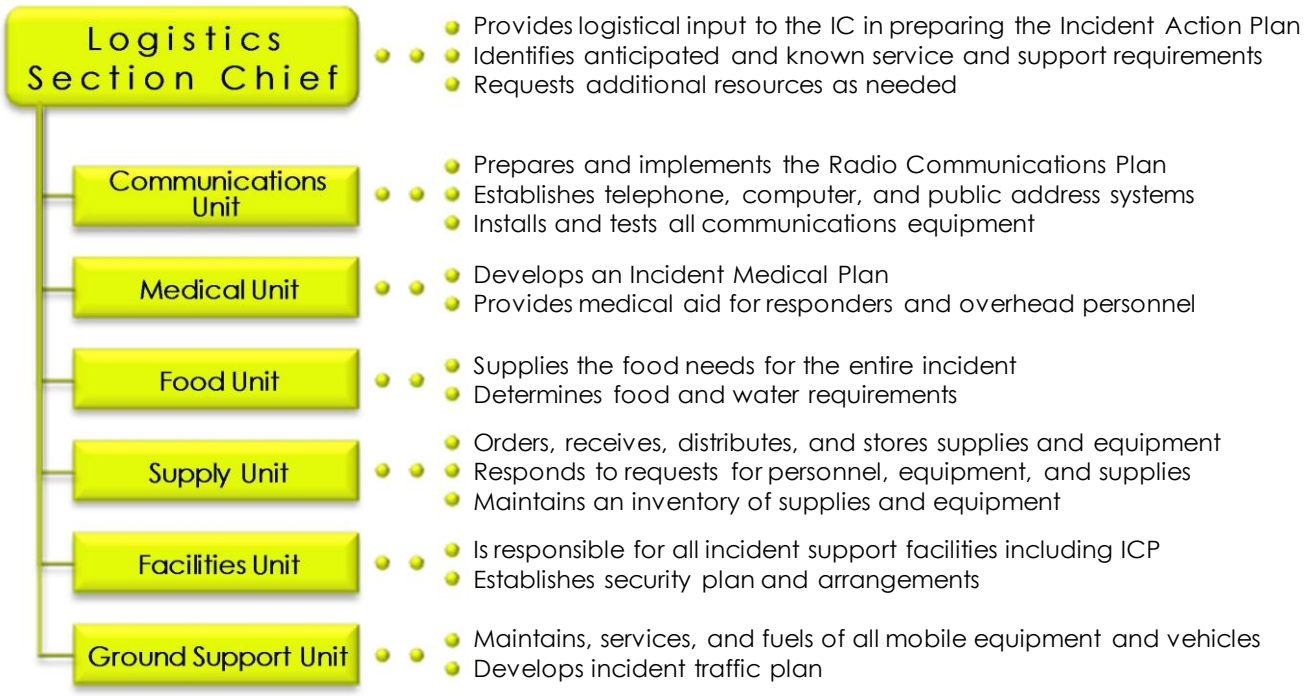
- Driving alerts and notifications
- Weather station readings
- Flood and wildfire alerts and warnings
- Government-issued evacuation alerts and orders

COP users can determine access routes, obtain a visual 3D context with terrain, and conduct a ‘desktop’ assessment of safety, which can be combined with field observations as part of developing a comprehensive assessment in the quickest amount of time. The COP can also be used to calculate response times for deployment of equipment, Trans Mountain personnel (from offices and facilities), mutual aid personnel and third-party contractors.

The COP Tool itself is managed by the Incident Command Post- Planning Section- Mapping/GIS Technical Specialists; information is added at the request of the ICS Section Chiefs, Unit Leaders and Emergency Management.

11.0 LOGISTICS SECTION

The Logistics Section is responsible for providing support to the incident, including all incident facilities (including the Incident Command Post). The Logistics Section will also source all required resources, including personnel and equipment, accommodations, food and supplies. Detailed duties and responsibilities for individuals in the Logistics Section can be found in the Trans Mountain's Incident Command System Guide in the Emergency Toolkit.

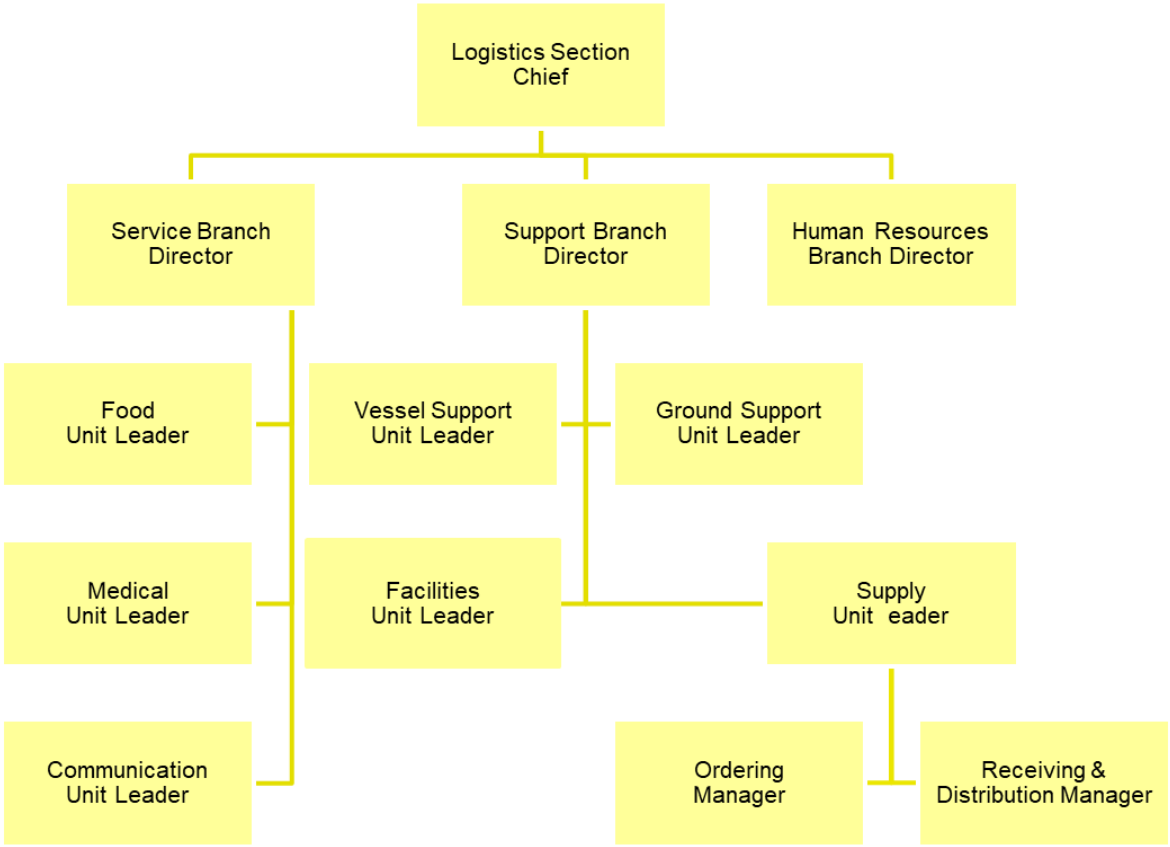


11.1 Logistics Section Chief

The Logistics Section Chief, a member of the General Staff, is responsible for providing facilities, services, and material in support of the incident response. The Logistics Section Chief participates in developing and implementing the Incident Action Plan and activates and supervises Branches and Units within the Logistics Section.

11.2 Logistics Section Organization Chart

Not all roles will be filled for all incidents; however, the following chart is an outline of the possible positions to be filled. Detailed descriptions of each position and its duties can be found in Trans Mountain's Incident Command System Guide.



11.3 Facilities

11.3.1 Incident Command Post

Typically, the ICP is located near the incident site and is the focus for the conduct of direct, on-scene control of tactical operations. Incident planning is also conducted at the ICP; an incident communications centre also would normally be established at this location. The ICP may be collocated with the incident base if the communications requirements can be met. The ICP may perform local Emergency Operations Centre-like functions in the context of smaller jurisdictions or less complex incident scenarios.

Upon arrival at the site, IMT members should go directly to the primary ICP location. The IMT will assemble at the designated Command Post as soon as possible following notification. If another location is being utilized, team members will be notified upon arrival.

There are pre-designated Incident Command Posts (ICP) and Staging Areas located in close proximity to the Westridge Marine Terminal. Access to these facilities, and the time required to establish them vary depending on the location and type of facility being used. Trans Mountain has agreements and protocols in place where appropriate with the service providers. All facilities meet the requirements for internet and telephone connectivity, food, lodging, meeting space, parking and security for a multi-agency response.

Incident Command Post facilities are private entities with which Trans Mountain may have contractual a relationship. The information is provided on a controlled basis within the Incident Notification Guideline located in the Emergency Toolkit. The removal of this information follows the requirements of The Personal Information Protection and Electronic Documents Act (PIPEDA) (federal legislation).

11.3.2 Media Relations Centre

The designated Media Relations Centre in the event of an emergency will be designated at the time of an emergency, based on the location of the ICP. Media Relations facilities are private entities with which Trans Mountain may have a contractual relationship. The information is provided on a controlled basis within the Incident Notification Guideline located in the Emergency Toolkit. The removal of this information follows the requirements of The Personal Information Protection and Electronic Documents Act (PIPEDA) (federal legislation).

11.3.3 Staging Areas

A number of locations may serve as the key staging areas for response activities, the actual location of the staging area will depend on the type of emergency event. It is important to note that Logistics is responsible for establishing staging areas but once established, Operations is responsible for their continued operation and staffing.

Factors considered in the selection of staging areas include:

- Safety and security
- Accessibility by road, water
- Available space for storing equipment
- Suitability for landing helicopters
- Ease of providing long-term logistics support (personnel changes, fueling, and provisioning)

11.4 Communications

11.4.1 Emergency Communications System

During a response, communications will take place through one or more of the following modes:

- Landline and/or cellular telephones
- Radio System
- Satellite Communication
- Electronic Mail (email) Communications

The Control Point Data Sheets, found in the GRPs, contain areas where communication gaps have been pre-identified. An incident specific communications plan should be developed upon completion of the initial assessment of spill to ensure reliable communications are established.

11.4.2 Telephone Communications

Regular or cellular telephones will be the primary mode of communications between team members to whom cellular phones have been assigned, and the Incident Command Post, and between the Incident Command Post and various outside agencies and organizations. Regular and cellular telephone contacts for all IMT personnel and agencies are provided in the Incident Notification Guideline located in the Emergency Toolkit.

11.4.3 Radio Communications

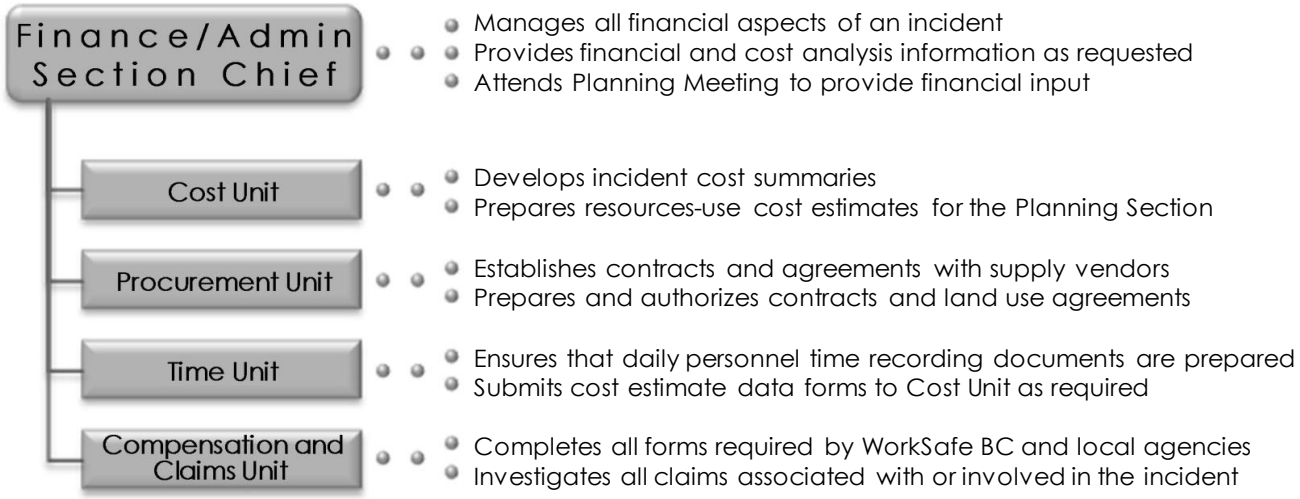
The radio system utilizes Motorola portable radio units. Separate channels may be used for the incident response and normal operations. Also, different contractors operate a number of radios on separate channel. When necessary to facilitate communications between Trans Mountain and contract personnel, radios may be shared during an incident. During an incident, all radio frequencies used will be tracked using the ICS 205.

11.5 Security

Due to the large amount of public attention created at an incident site, additional security measures are required. Security needs will be evaluated for any command post, staging area as well as the incident site. Additional duties for security can be found in the Incident Command System Guide.

12.0 FINANCE AND ADMINISTRATION SECTION

The Finance and Administration Section is responsible for all financial aspects of the response, including assisting in establishing contracts with suppliers, and setting up systems to monitor time and costs. Detailed duties and responsibilities for individuals in the Finance and Administration Section can be found in the Trans Mountain Incident Command System Guide in the Emergency Toolkit.

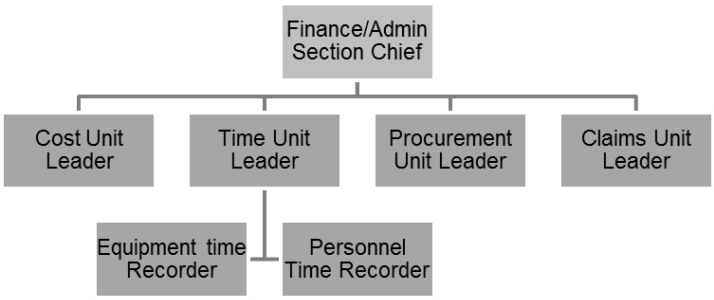


12.1 Finance Section Chief

The Finance/Administration Section Chief, a member of the General Staff, is responsible for all financial and cost analysis aspects of the incident and for supervising members of the Finance/Administration Section.

12.2 Finance Section Organization Chart

Not all roles will be filled for all incidents; however, the following chart is an outline of the possible positions to be filled. Detailed descriptions of each position and its duties can be found in the Trans Mountain Incident Command System Guide.



12.3 Managing Spill Liability Claims

The Insurance/Risk Management Department will do the following things while managing spill liability claims. The Compensation and Claims unit leader will either work closely with the Trans Mountain Insurance Risk Management Department, or the Insurance/Risk Management Department will deploy specific personnel to the ICP.

- Participation in the initial TAS conference call to gather information.
- Provide notice of incident to appropriate insurers.
- Coordinate with legal, operations & procurement to investigate any contractual protections available.
- Establish contact with liability adjuster and instruct them to proceed immediately to the incident site. Adjuster(s) can usually be on site within 4-12 hours of notification.
- Member of Risk Management group will travel to site to work with the adjuster and act as the liaison with the incident commander on site.
- Adjuster can make contact with the displaced residents at the discretion of Trans Mountain or the local authorities. Adjuster will gather pertinent information (phone no., address, damage assessments, costs incurred) and will provide contact information to them for later follow-up.
- If needed, set up an 800 number for the intake of damage claims to be funneled back through the adjuster for processing. This would be coordinated through the Communications Department.
- Adjuster and/or Risk Management to follow-up with displaced residents to address concerns regarding damage claims or out of pocket expenses that resulted from the incident.
- Risk Management to coordinate with the business unit to set up a property damage/liability AFE to cover the costs of damage claims of third parties.
- Instruct adjuster to gather documentation from third party claimants in order to settle and/or resolve any damage claims arising from the incident.
- Risk Management to coordinate with legal department on those third-party claims in which Trans Mountain is sued or third party has legal representation.

12.4 Managing Spill Liability Claims – Informal Claims Process

A land agent (“Adjustor” in this context) enters the field as soon as possible after the report of the incident, often within hours. The land agent begins identifying and communicating with parties that are either directly affected by the incident or close enough to warrant communications on what is occurring. This land agent has the authority to immediately compensate or make arrangements with affected parties to mitigate the negative effect the event has had on their lives. Examples of this “immediate compensation” might be: Short term accommodations for displaced persons; water, food or groceries provision or compensation; short term lost income payment (in cases where the party has limited resources); payment for boarding of livestock or household pets; rental vehicle compensation necessitated due to loss of access to their own car; travel costs to stay with relatives or to get away from trauma of situation; compensation for short term counseling; payment for destroyed tools/equipment that might prevent the person from carrying on their livelihood until replaced.

These immediate “claims” are identified in the field, settled immediately (with consultation with the Claims Unit Leader, or under agreed terms of reference) and either cash or check is completed on the spot, or company credit cards are used to procure things like hotel rooms. Formal paperwork is not required on these payments; the party must sign a receipt acknowledging the payment. If there are additional claims, the formal process will be followed.

12.5 Managing Spill Liability Claims – Formal Claims Process

If the informal process cannot settle claims by individuals, this formal process will be followed.

12.5.1 Oil Spill Claims Event Tiers

Oil spill claims events can be generally classified by the number of claims anticipated rather than the quantity of product released. These tiers are defined as follows:

- Tier 1 – up to 50 oil spill claims anticipated
- Tier 2 – between 50 and 500 spill claims are anticipated
- Tier 3 – over 500 spill claims are anticipated

12.5.2 Oil Spill Claims Management

Management of oil spill claims will be provided by the Claims Unit Leader and the Trans Mountain Insurance/Risk Management Department representatives in cooperation with the Incident Commander. Outside contractors will support claims processing during all events.

12.5.3 Insurance

Trans Mountain currently has $750 million of spill liability insurance, the first $2 million which is covered by self-insurance.

12.5.4 Oil Spill Claims Handling Process

After an oil spill occurs, Trans Mountain will advertise for claims. Oil spill claims information and forms will be made available through local claims centres, if established, or via the internet. Depending on the anticipated number of claims related to the spill, Trans Mountain will establish local claim centres. Oil spill claims will be accepted by Trans Mountain up to 3-years from the date that Trans Mountain began advertising for claims or 3-years from the date that the injury or damage being claimed was reasonably discovered – whichever date is earlier.

12.5.5 Oil Spill Claims Advertisements

Trans Mountain will advertise for claims after being advised to do so by our legal department, or within 15-days after being designated as the Responsible Party. The geographic extent of the oil spill will dictate the publications in which claim advertisements will be placed. The length of time advertisements will run in local publications will be based on recommendations provided by our legal department or the length of time specified by the regulatory authority.

12.5.6 Oil Spill Claims Contact Information

In the event of an oil spill contact information for oil spill claims, location of local claim centres and mailing address for claims submission will be available via the toll-free Public Information Line, established at the time of an incident, and on the website established at the time of an incident, as well as in advertisements placed in local publications.

12.5.7 Local Claims Centres

Local claims centres will be established based on community need and/or the number anticipated claims. Local claims centres will remain in operation for as long as warranted by workload and community need.

12.5.8 Oil Spill Claims Forms

The claims form used by Trans Mountain will be made available at the time of an incident as soon as the claims process is determined. Information entered in any claim form must be typed or legibly hand-written in blue or blue-black ink. The claim form must include the “sum-certain” monetary amount being claimed and be signed by the claimant in black or blue-black ink. The Claims Tracking Sheet may be used in the

claims adjudication process to track the status of claims received and a Claim Check Sheet may be used to record the type of documentation provided with each claim. Samples of the forms are available in the Emergency Toolkit.

12.5.9 Oil Spill Claims Adjudication and Timeframe

Trans Mountain will process claims in the order they are received. Each claim will be assigned a unique identification number which will be used to track the claim internally. The identification number can also be used by claimants who wish to provide additional information to support their claim or inquire about the status of a claim. Trans Mountain will review each claim received to ensure, as much as possible, that all needed information to make a claim decision has been provided by the claimant. If additional information is needed, we will request that the claimant forward that information to us so it can be added to the claim and considered during adjudication. If the information requested is not received within 90 days, Trans Mountain will adjudicate the claim with the available information. This may result in a reduction of possible claim compensation or an outright denial of the claim.

Once Trans Mountain sends the claimant a claim determination, the claimant must either accept or reject the offer within 60 days. The claimant must sign a release before the claim will be processed for payment. If the claimant takes no action within 60 days after receiving the claim determination, the offer to pay the claim will be voided and the claim will be closed. If the claimant rejects the offer, they can provide additional information and ask Trans Mountain to reconsider the claim determination; typically, this will start an entirely new review process with another claim determination made as a result of the reconsideration. Claims submitted to Trans Mountain will be paid in the order that accepted offers (with signed releases) are received. Claims are usually paid with 30-days from the date Trans Mountain receives the claimant's signed release.

12.6 Oil Spill Claims Documentation

The amount and type of documentation needed to make a claim determination depends on many factors, including the claim type and the monetary amount claimed.

The following types of claims may be submitted to Trans Mountain. Example types of documentation are also included below within the listing of each claim type. The examples provided are for reference only; they may or may not represent everything needed to adjudicate a claim.

12.6.1 Removal Costs

Costs to prevent, minimize, mitigate, or clean up the oil spill. Examples of Proof and Documentation that may be needed:

- Proof that actions were coordinated with the FOSC.
- Witness statements
- Detailed description of actions
- Dates on which work was performed
- Analysis of spill substance
- Map of area
- Pictures of area, damage, and spill
- Receipts, invoices, or similar records with description of work
- How rates were determined and any comparison of rates
- Daily records of personnel costs including details on labor rates, hours, travel, and transportation
- Daily records of equipment costs including description and use
- Signed disposal manifests and proof of payment for disposal

- Payroll verification of hourly rate at the time of spill
- Verification of equipment rates for equipment used

12.6.2 Property Damage

Injury or damage to or economic loss resulting from destruction of real property (land or buildings) or other personal property including a boat. Examples of Proof and Documentation that may be needed:

- Proof of ownership or leasehold interest in the property; lease or rental agreement of any substitute property used
- Proof or evidence that property was injured, destroyed, or not usable because of the oil spill
- Report of any expenses or money lost while the property was unavailable because of spill damage
- Proof of value of property both before and after the spill or injury
- Documented cost of repair or replacement of the property
- Proof of value of property before and after the spill
- Documentation that shows whether or not substitute property was available, and related costs of substitute property if used.
- Documentation that shows how claimant lost money from the damage to the property
- Witness statements
- Copy of title, deed, lease, or license to property in claimant's name
- Pictures or videotape of property and/or damage
- Maps or legal documents showing the location of the property within the spill area
- Professional property appraisals for the value of the property prior to and after the spill, actual selling price of the property, and evidence connecting the depressed selling price to the oil spill rather than to other economic or real property factors
- Copies of bills paid for repair of damage or two estimates showing activities and costs to repair the damage

12.6.3 Loss of Profits or Earning Capacity

Damages equal to the loss of profits or impairment of earning capacity due to the injury, destruction, or loss of property or natural resources. Examples of Proof and Documentation that may be needed:

- Proof that property or natural resources that were damaged, destroyed or lost, resulted in claimant's loss
- Proof the claimant's income was reduced due to the damage or loss of the property or natural resources and how much it was reduced
- Documentation showing the number of profits and earnings in similar time periods
- Documentation showing any alternative employment or business during the period claimed and any income received during that period
- Documentation showing and savings to overhead costs or other normal expenses - those not paid as a result of the spill (commuting costs, utility fees, employee salaries)
- Photos of damaged property (before and after the spill)
- Witness Statements on how the spill led to loss of business income or earning capacity; explain any earnings anomalies
- Statement on how the spill caused a loss in income
- Affidavit from claimant's employer about the impact the spill had on an employees work or income, and if the employer intends to file a claim for lost profits or earning capacity.
- Copies of pay stubs, receipts, timesheets from before, during, and after the spill

- Personnel records from claimant's employer before, during, and after the spill, showing employment
- Claimant's description of efforts to reduce loss, including job search
- Copies of any job-hunting expenses (e.g., travel costs)
- Signed copies of income tax returns and schedules for at least two years prior to spill
- Details of employment expenses not paid during period being claimed (e.g., commuting costs)
- Copies of pay stubs, receipts, timesheets from alternative employment during time of spill (including unemployment compensation)
- Description and documentation of business losses due to spill
- Copies of letters of business cancellations caused by the spill damage
- Maps or descriptions of the area showing the business location and the spill impact area
- Financial statements for at least two years prior to spill and from the year of the spill
- Signed copies of business income tax returns and schedules for at least three years prior to spill
- Details on efforts to mitigate business losses or why no efforts were taken
- For hotels, daily and monthly occupancy information for two years prior to spill and the year of the spill
- Description of marine charter business losses caused by the spill
- Evidence that charter vessel(s) was in the area impacted by the spill and were unable to carry on their business due to the spill
- Maps or descriptions of the area showing charter business location within spill area
- Signed copies of income tax returns (for charter boat business) and schedules for at least three years prior to spill
- Details on expenses not paid out during period being claimed (e.g., wages)
- Booking records for three years prior to spill and year of spill
- List of charter rates, including any services the business specializes in (e.g., sport fishing)
- Copies of any logs relating to boating activities for the year prior to and the year of the spill
- Registration documents for the vessel

12.6.4 Loss of Subsistence Use of Natural Resources

Loss of subsistence use claim if natural resources claimants depend on for subsistence use purposes that have been injured, destroyed, or lost by an oil spill event. Examples of Proof and Documentation that may be needed:

- Proof that injury, destruction, or loss of natural resources would have been used by the claimant to obtain food, shelter, clothing, medicine, or other minimum necessities of life;
- Documentation identifying each specific natural resource for which compensation for loss of subsistence use is being claimed;
- Description of the actual subsistence use you make of each specific natural resource you identify;
- Description of how and to what extent claimant's subsistence use of the natural resource was affected by the injury to, destruction of, or loss of, each specific natural resource;
- Description of claimant's efforts to mitigate subsistence use loss;
- Description of alternative source(s) or means of subsistence available to claimant during the period.

12.6.5 Loss of Government Revenue

Net loss by Federal, State, or Local Governments of taxes, royalties, rents, fees, or net profit shares due to the injury, destruction, or loss of real property, personal property, or natural resources. Examples of Proof and Documentation that may be needed:

- Information showing that the loss of revenue was caused by the injury to, destruction of, or loss of real or personal property or natural resources caused by the discharge
- Information showing the amount, identity, and description of the revenue loss for which compensation is claimed, including the applicable authority for collecting the revenue, method of assessment, applicable rate, and dates of collection or periods of loss
- Documentation showing expenditures saved because revenue was not collected
- The total assessment or revenue collected and related expenditures for comparable revenue periods, typically covering two years
- Description of what revenues were impacted and how the spill caused a loss of revenues
- Copies of statutes, regulations, ordinances, etc., outlining applicable authority to raise such revenues, property affected, method of assessment, rate of assessment, and method and dates of collection of assessment
- Government financial reports showing total assessment or revenue collected for comparable periods, typically covering two years
- Details of any expenses not paid out by government

12.6.6 Increased Public Service Costs

Net costs by State & Local Governments for providing increased or additional public services during or after removal activities, including protection from fire, safety, or health hazards, caused by a discharge of oil or directly attributable to response to the oil spill Event. *Examples of Proof and Documentation that may be needed:*

- Documentation showing justification for the public services provided, including documentation of what specific services were provided and the relationship to the spill.
- Documentation showing when services were provided during and after the oil spill removal.
- Documentation showing services were in addition to services normally provided
- Documentation showing the net cost for the services and the methods used to compute those costs
- Reports showing the increased public services were required and if the services were due to fire, health, or safety hazards
- Detailed description of what increased services were necessary and why, including a distinction between removal activities, safety acts, and law enforcement acts, and if the increase was actually incurred or if normal resources were diverted for use
- Daily reports on the activities of the government personnel and equipment involved Government Labor and Equipment Rates:
    - Payroll verification of the government hourly rate at the time
    - Verification of the standard government equipment rates for any equipment claimed
    - Signed and dated records of the spill including hourly rates for labor and equipment
    - Explanation as to whether rates are fully loaded or not and formulas used
    - Certification that rates used reflected actual costs incurred and did not include punitive damages or fees

13.0 SUPPLEMENTAL PLANS

In support of the ERP, a number of supplemental plans have been developed.

13.1 Geographic Response

13.1.1 Geographic Response Plans

Geographic Response Plans (GRPs) provide detailed, geographic specific information to assist spill responders in the containment and recovery of released product. GRP's identify and describe environmental sensitivities, including natural and cultural resources, as well as locate and classify Control Points.

Four GRPs have been developed, one for each District:

- Alberta District
- North Thompson District
- Kamloops District
- Sumas District

A copy of each GRP can be found in the Emergency Toolkit.

13.1.2 Geographical Response Strategies

Geographical Response Strategies Trans Mountain is a member of the Western Canada Marine Response Corporation (WCMRC), a Transport Canada certified oil spill response organization for Canada's West Coast. In order to assist in response efforts WCMRC has created a series of Geographic Response Strategies (GRS) designed to ensure efficient and safe response to oil spills. GRS's are site-specific response plans tailored to protect sensitive areas threatened by a spill. They are developed to safeguard archaeological and cultural sites, critical habitats and infrastructure, public beaches and parks, sensitive shorelines, and water-dependent commercial users. GRS's are implemented within the first 24 hours of a spill once control and containment of the spill has been achieved.

To view existing GRS visit the following URL https://coastalresponse.ca/

In the event of an emergency originating from the Westridge Marine Terminal, Trans Mountain will activate internal resources in order to initiate immediate response efforts. Trans Mountain will also notify and activate WCMRC resources to ensure a timely an effective response to all marine based spills.

13.2 Waste Management Plan

The management of waste from a spill is a priority for Trans Mountain and a key component supporting incident response. The appropriate handling, storage, transport, disposal and tracking of waste associated with a spill are essential for effective planning and response to a spill.

In the event of an emergency that has the potential for generating waste, the Waste Management Plan will be activated in conjunction with this Plan. After the initial assessment has been conducted an incident specific Waste Management Plan will be developed to support the Incident Action Plan.

A copy of the Waste Management Plan can be found in each Decontamination Trailer or form can be found in the Emergency Toolkit.

13.3 Decontamination Plan

All personnel and equipment must go through a decontamination process to ensure spilled material does not contaminate a larger area than needed. The Decontamination Plan will be implemented by the Decontamination Group Supervisor who will work under the Recovery and Protection Branch Director. The Decontamination Group Supervisor is responsible for creating and implementing an incident specific Decontamination Plan, if necessary.

A copy of the Decontamination Plan can be found in each Decontamination Trailer or form can be found in the Emergency Toolkit.

13.4 Sampling and Monitoring Plan

The protection of water resources in an emergency is a priority for Trans Mountain. Monitoring and mitigation of impacts during the response to a spill is a main focus of the Incident Management Team which will establish, and be located in, the Incident Command Post (ICP). The timely assessment of the condition of water quality, and sediment quality, provides valuable information, allowing for mitigation planning, and the response to a spill.

In the event of an emergency, the Sampling and Monitoring Plan will be activated in conjunction with this Plan. After the initial assessment has been conducted an incident specific Sampling and Monitoring Plan will be developed to support the Incident Action Plan.

A copy of the Sampling and Monitoring Plan can be found in the Emergency Toolkit.

13.5 Public Health Assessment & Response Plan for Airborne Risks (Air Monitoring Plan)

Trans Mountain has developed a Public Health Assessment and Response Plan for Airborne Risks. In the event of an emergency, the Public Health Assessment and Response Plan for Airborne Risks will be activated in conjunction with this Emergency Response Plan. After the initial assessment has been conducted an incident specific air monitoring plan will be developed to support the Incident Action Plan.

The objectives of the incident specific air monitoring plan are to:

- Anticipate and identify Potential Chemicals of Concern (PCOC) from product releases and/or fires;
- Evaluate, via proper monitoring principles, public health exposures;
- Facilitate development and implementation of incident-specific air monitoring and response strategies to protect the public; and
- Identify action levels for PCOC that triggers assessment of public health risk.

A copy of the Public Health Assessment and Response Plan for Airborne Risks can be found in the Emergency Toolkit.

13.6 Wildlife Management Plan

The protection of wildlife in an emergency is a priority for Trans Mountain; monitoring and mitigation of impacts during the response to a spill is a main focus of the Incident Command Post (ICP). The timely assessment of wildlife and wildlife habitat conditions provides valuable information, allowing for mitigation planning, and the response to a spill.

In the event of an emergency, the Wildlife Management Plan will be activated in conjunction with this Plan. After the initial assessment has been conducted an incident specific Wildlife Management Plan will be developed to support the Incident Action Plan.

A copy of the Wildlife Management Plan can be found in the Emergency Toolkit.

13.7 Non-Floating Oil Assessment and Response Plan

The purpose of the Non-Floating Oil Assessment and Response Plan is to provide initial guidance for the assessment and response to spilled oil that is at risk of, or has become, non-floating within an inland water environment. In the event of a spill emergency, the Non-Floating Oil Assessment and Response Plan will be activated in conjunction with this Emergency Response Plan. The Non-Floating Oil Assessment and Response Plan will remain active until such time that an incident specific version can be implemented by the Incident Command Post (ICP).

A copy of the Non-Floating Oil Assessment and Response Plan can be found in the Emergency Toolkit.

13.8 Convergent Volunteer Management Plan

During an emergency, it is possible that members of the public will converge on the incident scene with the intention of supporting emergency response and restoration efforts. Although Trans Mountain does not request volunteer assistance, if there is a strong interest demonstrated by the community, Trans Mountain will attempt to support and incorporate Convergent Volunteers into the response effort.

In the event of an emergency, the Convergent Volunteer Management Plan will be activated in conjunction with this Plan, if necessary. After the initial assessment has been conducted an incident specific Convergent Volunteer Management Plan will be developed to support the Incident Action Plan.

A copy of the Convergent Volunteer Management Plan can be found in the Emergency Toolkit.

13.9 Wildfire Mitigation and Response Plan

Wildfires, including forest fires and grassland fires, are a natural hazard in any forested and grassland region of Alberta and British Columbia. A Wildfire Mitigation and Response Plan has been developed to assist with the response to wildfires/grass fires. After the initial assessment has been conducted an incident specific Wildfire Plan will be developed to support the Incident Action Plan.

A copy of the Wildfire Mitigation and Response Plan can be found in the Emergency Toolkit.

13.10 Crisis Communications Plan

The Crisis Communications Plan will support the Trans Mountain Emergency Management Program (EMP) and Integrated Safety and Loss Management System (ISLMS) and is designed to ensure the company has adequate resources and processes in place to quickly and effectively respond to the information needs of its stakeholders, customers, government and regulatory officials, the public and the media during a crisis.

A copy of the Crisis Communication Plan can be found in the Emergency Toolkit.

13.11 Terminal Evacuation Plan

An Evacuation Plan has been prepared for the Terminal which describes the measures Trans Mountain personnel, the local authority, the CCG and first responders, along with supporting entities, complete during an emergency at the Terminal that may require the evacuation or shelter-in-place of the surrounding community and/or marine environment.

The fundamental concepts of the Evacuation Plan are initiated when it has been determined that the incident has risk to the public, which may require the implementation of immediate public safety measures. The local authority and/or CCG sets the direction of appropriate public safety measures as applicable for land based and marine environments. Trans Mountain will supply incident-specific information to assist in the decision to evacuate and supply resources, as needed, to implement public evacuation.

A copy of the Evacuation Plan can be found in the Emergency Toolkit.

14.0 SAFETY DATA SHEETS

14.1 Summary Safety Data Sheet – Crude Oil Products

This Summary Safety Data Sheet represents the range of crude oil products that may be stored in the Terminals. The ranges provide information on the most extreme to least extreme of the specifications a Safety Data Sheet (SDS) will be provided to all responders upon arrival at site which will outline the specific hazards for the product involved.

Physical Description
Liquid, black to colourless, Odors include rotten eggs, sulphur, hydrocarbon, petroleum and solvent

Route of Exposure
Inhalation, Skin absorption, skin or eye contact, accidental ingestion

Hazards
- Inhalation of oil mist vapours from hot oil may cause irritation of the upper respiratory tract. Can also cause headaches, nausea, loss of appetite, drowsiness, vomiting, loss of consciousness and death
- Carcinogenic
- May affect fetal development and heritable genetic damage
- Prolonged exposure may cause serious health effects
- Flammable Liquid
- Extremely toxic and H_2S may be present
- Irritating to eyes, skin, nose, throat and lungs
- May cause headaches and dizziness
- Ingestion may cause chemical pneumonia, sever lung damage, and respiratory failure
- Combustible and can accumulate static charges which may cause an ignition
- Can cause central and peripheral nervous system damage
- May produce thermal burn
- Toxic gases will form upon combustion
- Vapour accumulation could flash and/or explode if ignited

Chemical Properties	
High	**Low**
Boiling Point	
1100°C	-89°C
Density	
1200 kg/m^3 (1.013 g/cm^3)	800 kg/m^3 (0.661 g/cm^3)
Vapour Density	
7.8	>1
Specific Gravity	
1.03	0.7
Flashpoint	
260°C	-40°C
Auto Ignition	
537°C	229°C
Viscosity	
350 mm²/s	0.11 mm²/s
Water Solubility	
Slight	Insoluble

14.2 Summary Safety Data Sheet – Propane

This Product Summary Data Sheet provides information on propane. A Safety Data Sheet (SDS) will be provided to all responders upon arrival at site which will outline the specific hazards for the product involved.

This SDS is also available online via the Safety Data Sheets Trans Mountain intranet site or in the SDS binder at the Terminal.

Physical Description

Liquified gas, colourless, odourless, unless odourised with ethyl mercaptan (skunky odour, similar to boiling cabbage).

Route of Exposure

Inhalation, skin or eye contact.

Hazards

- May displace oxygen and cause rapid suffocation. May cause respiratory irritation.
- Contact of the eyes with rapidly expanding or liquefied gas may cause
- irritation and/or frostbite. The pain after contact with liquid can quickly subside. Permanent eye damage or blindness could result. May cause eye irritation.
- Contact of skin with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Symptoms of frostbite include change in skin colour to white or grayish-yellow. The pain after contact with liquid can quickly subside. May cause skin irritation.
- Product is not classified as a carcinogen.

Chemical Properties
Boiling Point
-42°C (-43.6°F)
Density
0.51 (Water = 1)
Vapour Density
1.52 (Air = 1)
Specific Gravity
1.55 (Air = 1)
Flashpoint
-103.4°C (-154.1°F) (Closed Cup)
Auto Ignition
432 °C (809.6 °F)
Flammability
2.1 - 9.5 %
Water Solubility
Not Soluble

Toxicological Information	
Not classified	**Not classified**
LD50	LC50

14.3 Safety Data Sheets

The SDS for products shipped through the Trans Mountain Pipeline and/or stored at the Terminal Sites are available to Trans Mountain personnel online via the Safety Data Sheets Trans Mountain intranet site or in the SDS binder at the Terminal.

The SDS for the relevant product will be provided to all First Responders upon arrival at incident site and forwarded to affected and potentially affected communities.

15.0 RESPONSE PLAN CERTIFICATION

15.1 Declaration of Contingency Plan

DECLARATION THAT SPILL CONTINGENCY PLAN IS TRUE,

ACCURATE AND COMPLETE

As an authorized representative of the regulated person, I declare that a spill contingency plan has been prepared for the substance(s) for which the regulated person is a regulated person under the Environmental Management Act, S.B.C. 2003, C. 53. The regulation and Act are administered by the British Columbia's Ministry of Environment and Climate Change Strategy. I declare that the Spill Contingency Plan is true, accurate and complete, and that the information contained in **Table 2** on the following page and substances and quantities listed in Section 7.0 Site Information contain accurate information.

Regulated Person

Trans Mountain Canada Inc.	Davies, Michael	President & Chief Operating Officer
From	Surname, given name	Title
(original on file)	(original on file)	2700, 300 – 5th Avenue S.W. Calgary, Alberta T2P 5J2
Signature	Date (day-month-year)	Address

Designated Contact

Trans Mountain Canada Inc.	Malinoski, Kelly	Director, Emergency Management
From	Surname, given name	Title
(original on file)	(original on file)	2700, 300 – 5th Avenue S.W. Calgary, Alberta T2P 5J2
Signature	Date (day-month-year)	Address

Table 2: Sections in the Emergency Response Plan where information that satisfies the requirements of the Spill Contingency Planning Regulation (SCPR) is available

Section of the SCPR	Section in ERP	Section Title
Contents of Spill Contingency Plan		
3 (a)	Section 15.2	Owner/Operator Information
3 (b)	Section 15.1	Declaration of Contingency Plan
Hazard Assessment		
4 (1)(a)	Section 7.0 and 14.1	7.0 Site Information 14.1 Summary Safety Data Sheet
4 (1)(b)	Section 7.0	Site Information
4 (1)(c)	Section 7.0 Section 7.2 (Spill Prevention Plan) and 7.3 (Spill Scenarios) Within the Common Operating Picture Tool, Geographic Response Plans, Geographic Response Strategies (per Section 4.4.4) and Westridge Marine Terminal Evacuation Plan	7.0 Site Information 7.2 Spill Prevention Plan 7.3 Spill Scenarios
4 (2)	Within the Common Operating Picture Tool and Westridge Marine Terminal Evacuation Plan	
Spill Response Planning Map	Within the Geographic Response Strategies (per Section 4.4.4) Section 7.2 (Spill Prevention Plan) and 7.3 (Spill Scenarios)	
Equipment, Personnel, and Other Resources		
6 (1)(a)	Section 9.5.6	Mobile Spill Equipment List
6 (1)(b)	Section 9.5.3	Response Equipment Maintenance
6 (2)(a)	Section 9.5.7	Mobile Fire Equipment List
6 (2)(b)	Section 9.5.2	Response Equipment
6 (2)(c)	Section 9.5.2	Response Equipment
Incident Command System		
7 (1)(a)(i)	Section 8.10	Incident Commander/Deputy Incident Commander
7 (1)(a)(ii)	Section 8.12	Information Officer
7 (1)(a)(iii)	Section 8.13	Security Officer
7 (1)(a)(iv)	Section 8.11	Safety Officer
7 (1)(a)(v)(A)	Section 12.1	Finance Section Chief
7 (1)(a)(v)(B)	Section 11.1	Logistics Section Chief
7 (1)(a)(v)(C)	Section 9.3	Operations Section Chief
7 (1)(a)(v)(D)	Section 10.1	Planning Section Chief

Section of the SCPR	Section in ERP	Section Title
7 (1)(b)	Information is contained in the Incident Notification Guideline	
Human Health and Safety		
8(a)	Section 1.0	Responder Health and Safety
8(b)	Section 1.0 Within the Initial Site Health & Safety Plan and Westridge Marine Terminal Evacuation Plan	Responder Health and Safety
Communications		
9(1)(a)	Section 11.4	Communications
9(1)(b)	Section 13.10	Crisis Communications Plan
Waste Management	Section 13.2	Waste Management Plan
Wildlife	Section 13.6	Wildlife Management Plan
Spill Response		
12(1)(a)	Introduction, and Sections 1.0 and 3.0	1.0 Responder Health and Safety 3.0 Spill/Site Assessment
12(1)(b)	Section 2.0	Internal and External Notification
12(1)(c)	Sections 1.0, 2.0, 3.0, 4.0 and 5.0	1.0 Responder Health and Safety 2.0 Internal and External Notification 3.0 Spill/Site Assessment 4.0 Spill Containment and Recovery 5.0 Protection of High Consequence Areas
12(1)(d)(i)	Section 8.19	Terminating/Downgrading the Response
12(1)(d)(ii)	Section 8.19	Terminating/Downgrading the Response
12(2)(a)	Introduction, and Sections 1.0 and 3.0	1.0 Responder Health and Safety 3.0 Spill/Site Assessment
12(2)(b)	Introduction, Emergency Levels	
12(2)(c)(i)	Introduction, and Sections 1.0 and 3.0	1.0 Responder Health and Safety 3.0 Spill/Site Assessment
12(2)(c)(ii)	Section 9.7	Public Evacuation
12(3)(a)(i)	Section 2.11	Reporting Requirements
12(3)(a)(ii)	Sections 2.4 and 2.5	2.4 Internal Notification Procedure 2.5 Incident Management Team Notification/Activation
12(3)(a)(iii)	Sections 2.10, 2.11 and 2.13	2.10 External Notification Chart – Confirmed Emergency Condition
12(3)(b)	Section 9.7	Public Evacuation

Section of the SCPR	Section in ERP	Section Title
12(4)(a)	Section 3.0	Spill/Site Assessment
12(4)(b)	Sections 1.0, 3.0 and 10.3.2	1.0 Responder Health Safety 3.0 Spill/Site Assessment 10.3.2 Assessment of Adverse Effects
12(4)(c)	Section 10.0	Planning Section
12(4)(d)	Section 11.3	Facilities
12(4)(e)	Sections 2.1 and 2.2	2.1 Incident Verification 2.2 Incident Verification Flowchart
12(4)(f)	Sections 4.0 and 5.0	4.0 Spill Containment and Recovery 5.0 Protection of High Consequence Areas
12(4)(g)	Sections 4.0 and 5.0 and within the Geographic Response Plans	4.0 Spill Containment and Recovery 5.0 Protection of High Consequence Areas
Training	Section 17.0	17.0 Training and Exercises

15.2 Owner/Operator Information

Owner: Trans Mountain Corporation
2700, 300-5th Avenue S.W.
Calgary, Alberta T2P 5J2
Phone: 1-888-876-6711

Operator: Trans Mountain Pipeline
2700, 300-5th Avenue S.W.
Calgary, Alberta T2P 5J2
Phone: 1-888-876-6711

15.3 OHF Declaration

SCHEDULE 1

OIL HANDLING FACILITY DECLARATION SOUTH OF 60 DEGREES NORTH LATITUDE

Pursuant to subsection 168(1) of the *Canada Shipping Act 2001* (CSA 2001), I,

Omar Saif, on behalf of

Trans Mountain Canada Inc.
(Name of the Operator of the oil handling facility)

Declare to comply:

(i) with the *Environmental Response Regulations* on the detection of an oil pollution incident that arises out of the loading or unloading of oil to or from a vessel (declare the manner in which the operator will comply with the regulations).

(ii) with the *Vessel Pollution and Dangerous Chemicals Regulations (SOR/2012-69)*, respecting the circumstances in which operators of oil handling facilities shall report discharges or anticipated discharges of oil, the manner of making the reports and the persons to whom the reports shall be made.

(iii) with CSA 2001, Part 8 subparagraphs 168(1)(b)(ii) and (iii) as

I have an arrangement with the response organization known as:

Western Canada Marine Response Corporation (WCMRC)
(Name of response organization)

The arrangement is with respect to **10,000** tonnes of oil and in respect of
(Number of tonnes)

Westridge Marine Terminal
(Geographic location of the oil handling facility)

The persons listed below are authorized to implement the arrangement.
Any Trans Mountain employee who determines that there is an emergency situation which requires implementation of the arrangement.
(Name, address, telephone number and fax or e-mail address)

Westridge Marine Terminal 7065 Bayview Drive, Burnaby BC V5A 4S9
1-888-876-6711 or 604-298-3612
(Name, address, telephone number and fax or e-mail address)
(If required, attach additional pages)

The persons listed below are authorized to implement the oil pollution emergency plan.
Any Trans Mountain employee who determines that there is an emergency situation which requires implementation of the Emergency Plan
(Name, address, telephone number and fax or e-mail address)

Westridge Marine Terminal 7065 Bayview Drive, Burnaby BC V5A 4S9
1-888-876-6711 or 604-298-3612
(Name, address, telephone number and fax or e-mail address)
(If required, attach additional pages)

(Signed by the operator of the oil handling facility or its representative)

Mar 2, 2026
(Date)

15.4 Environment, Health and Safety Policy

TRANSMOUNTAIN

Effective Date	9/13/2024
Reviewed Date	9/13/2024
Policy Owner	Director, EHS
Approver	President and COO

ENVIRONMENT, HEALTH AND SAFETY POLICY

Policy Statement

The Environment, Health, and Safety (EHS) Policy serves to state and reinforce Trans Mountain's commitment to EHS principles in all aspects of its business activities.

Background

Trans Mountain is committed to ensuring that the principles of EHS remain a top priority wherever we operate. All employees and contractors working for, or on behalf of Trans Mountain must share in the commitment of protecting people and the environment, contributing to sustainable development by using materials, natural resources and energy efficiently, and promoting best practices to ensure we continue to earn the confidence of our customers, and the public.

Purpose

This Policy establishes the EHS principles by which Trans Mountain's business activities must be conducted and provides confirmation of Trans Mountain's commitment to the health and safety of our employees and contractors, the public, as well as to environmental protection and sustainability.

Applicability

This Policy applies to all employees, contractors, consultants, entities, companies, and offices under our operational control.

Guiding Principles

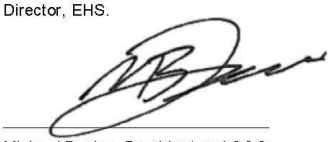
- We comply with all environmental, health and safety, laws, rules and regulations, not just because it is legally required, but also because we believe it is the responsible way to conduct our business.
- We have a systematic approach to environmental, health, and safety, (EHS) management designed to comply with the law and follow industry best practice through the implementation of our environmental management system and Life Saving Rules.
- We train our employees and contractors to be aware of and meet their responsibility for environmental protection, as well as health, safety and to achieve continuous performance improvement.
- We ensure all workers are aware of and understand their right to refuse unsafe work and the authority to stop any work they believe will endanger their health or safety, or that of others.
- We actively identify and manage risks to prevent or reduce possible adverse consequences from our operations and undertake a precautionary approach to EHS challenges.
- We have systems in place to ensure we are prepared for emergencies and procedures that coordinate our response plans with emergency response organizations to minimize the impacts to the environment and the communities where we operate.
- We assess and manage exposure of our employees and contractors to EHS hazards in our operations.
- We monitor and report EHS performance in support of our sustainability goals.
- We implement strategies to reduce our environmental footprint and meet our emissions reduction goals.
- We engage our leadership and resources to effectively implement and execute the principles above.

Compliance

All employees, contractors, and consultants working for, or on behalf of Trans Mountain shall comply with this Policy; any purposeful violation of this Policy may result in disciplinary action, including, where applicable, termination of employment/employment services agreement and/or legal action.

Review and Approval

This Policy, including any substantial revisions following its initial publication, shall be sanctioned by the Director, EHS and approved by Trans Mountain's President and Chief Executive Officer. Administrative modifications to this Policy and its appendices may be approved by the Director, EHS.



Michael Davies, President and COO
Trans Mountain Corporation

TRANS MOUNTAIN INTERNAL USE ONLY

Page: 1 of 1

16.0 TRAINING AND EXERCISES

16.1 Training

Trans Mountain ensures that employees receive the training necessary to protect themselves, the public, the local community and the environment during and incident. Training will be provided to enable employees to perform their designated emergency responsibilities. Formal training will be reinforced by a program of regular emergency response exercises. Trans Mountain will make reasonable efforts to coordinate training and exercising with external agencies.

There are several types of training available to Trans Mountain employees for emergency response, at a minimum all employees who could be involved in emergency response will receive Incident Command System level 100 training, and additionally field operations staff will receive the following training: Initial Response, Spill Response Tactics and Decontamination Response Tactics. Some employees will receive HAZWOPER training if they could reasonably be asked to respond to incidents in Washington State. Employees will also receive training on the Emergency Management Program, including the implementation and use of Emergency Response Plans. All Response Personnel undertake a WHMIS module and Environmental Emergency Response Training. All staff that handle hazardous substances undertake TDG certification.

Training records are the joint responsibility of the Operations Training Group, and Manager, Emergency Management. All training is conducted in accordance with the requirements as set out in the Integrated Safety and Loss Management System and the Emergency Management Exercise and Training Plan.

16.2 Exercises

Exercises allow responders to practice the knowledge and skills received in training, identify areas of future training priority, identify improvement opportunities for emergency procedures and/or equipment, and provides opportunity to share exercise learning's to ensure a smooth response in the unlikely event of an incident. Exercises also provide opportunity for Trans Mountain responders to engage with indigenous community responders and those from federal, provincial, and local agencies.

Members of the various response teams will participate in exercises each year that are relevant to their individual operations as outlined in the *Emergency Management Exercise and Training Plan*. At a minimum, each District will participate in one exercise per year which may be a notification, equipment deployment, tabletop, or functional exercise. Exercises may be organized by Trans Mountain or may be organized by a response partner. At minimum, responders for the Westridge Marine Terminal will participate in one spill response equipment deployment, one fire equipment deployment and one external notification exercise. Note that external notifications may be exercised in conjunction with annual equipment deployment(s).

The Incident Management Team (IMT) will participate in one Level 3 (all resources deployed) Full Scale Exercise per year, the location of which will change from year to year. Full Scale Exercises will be rotated throughout each of the Operations Districts and within the communities in which Trans Mountain operates. The Full-Scale Exercises will utilize a diverse range of emergency scenarios to ensure response capabilities are confirmed under varying conditions. The IMT is the same for the Trans Mountain Pipeline ERP, Westridge Marine Terminal ERP, Terminals ERP and the Trans Mountain (Puget Sound) Pipeline ERP; therefore, the IMT will be trained / exercised annually regardless of the ERP used for the actual exercise. For the Westridge Marine Terminal, a Full-Scale Exercise is conducted once every three years.

Due to the presence of a propane bullet being in operation at the Westridge Marine Terminal, Trans Mountain adheres to the exercising requirements set out in Environment and Climate Change Canada's Canadian Environmental Protection Act, Environmental Emergency (E2) Regulation (2019), Trans Mountain conducts annual exercises (drills, tabletop exercises or functional exercises) specific to the propane bullet, using an environmental emergency identified in the E2 Plan. In addition, every five years, a full-scale simulation exercise is conducted. This exercise simulates either the worst-case scenario or the alternate worst-case scenario identified for the propane bullet.