

2115 COMMISSIONER STREET
PORT OF VANCOUVER PROJECT PERMIT SUBMISSION
STORMWATER POLLUTION PREVENTION PLAN (SPPP)
REV.00

Revision	Date	Remarks
0	July 24, 2017	

MANAGEMENT APPROVAL

I certify that this plan has been reviewed and the methods contained in the plan are appropriate and adequate to minimize the discharge of pollutants by stormwater runoff. This plan receives full management support I authorize the necessary resources to the full implementation of this plan.

Signature

Date

Name:

Title: Site Manager

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1 INTRODUCTION

The stormwater pollution prevention plan is designed for the work planned for 2115 Commissioner Street. This site is required as a temporary work space for a project in the Lower Mainland of BC.

For the purpose of this document, stormwater is defined as water that originates from precipitation events (such as rainfall) and from snow and ice melt. Stormwater remains on the ground surface through ponding, gets soaked into the ground, or becomes stormwater runoff, which ultimately enters nearby bodies of water. Stormwater runoff flows over land or impervious surfaces such as paved roadways, parking lots and building rooftops. As it flows it accumulates debris, soil and sediment, and contaminants that could negatively impact water quality.

The purpose of the SPPP is to provide guidance for the management of stormwater discharge, and for the implementation of Best Management Practices (BMPs) for pollution prevention and response. Best Management Practices (BMPs) are those management practices which are considered sound, and are applicable to a broad category of industries and types of pollutants. Advanced BMPs are defined as those which are specific to a type of industry or pollutant. The BMPs discussed in this plan have been designed to improve the quality of stormwater discharged from the facility and to aid in the development, implementation and evaluation of the SPPP.

2 OVERVIEW

2.1 Background

The intended purpose for this site is a marine off-loading facility and laydown yard to support construction of the project. Preparation of the site will include the following main elements:

- General site preparation and grading, including any necessary upgrades to the existing ground to make suitable for the operation of a 300T Crawler Crane.
- Installation of a trestle dock and dolphin piles, to facilitate material transfer from barges, legal trucks and the yard. This may also be used as an access point for crews to board water taxis to be transported to the Westridge Marine Terminal;
- Setup of temporary construction offices, lunchrooms, wash cars and storage containers.
- Installation of temporary lighting, fences, gates and other measures to secure the site for the duration of the Project.

Layout of internal access roads, vehicle parking locations, bus staging areas and security access points.

2.2 Location

As indicated in Figure 1, the site is located at the 2115 Commissioner Street in the western end of the East Vancouver Port Lands region. The site is bounded by the Burrard Inlet to the north and the Canadian National Railway to the south.

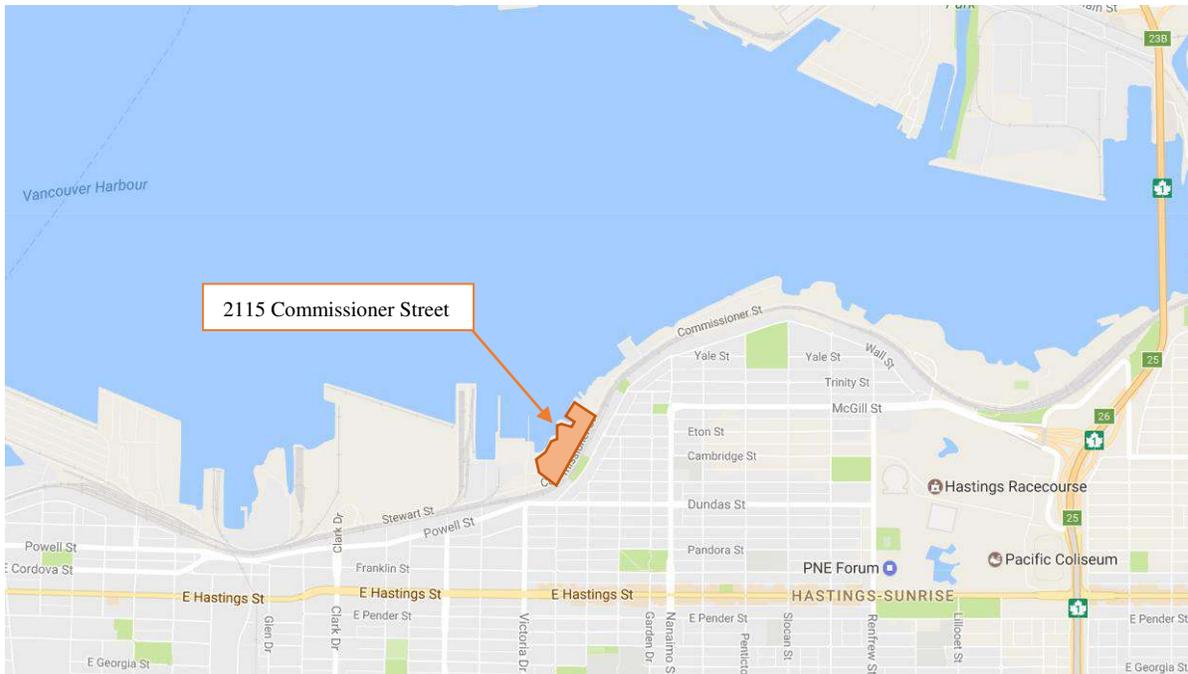


Figure 1: Project Location

3 SITE INVENTORY

3.1 Activities

During the operation of the site, the following activities listed below have the potential to expose stormwater runoff to contaminants. Figure 2 shows a proposed facility plan.

- Barge loading and off-loading;
- Equipment and material laydown;
- Waste disposal;
- Hazardous materials storage
- Fueling of service vehicles;

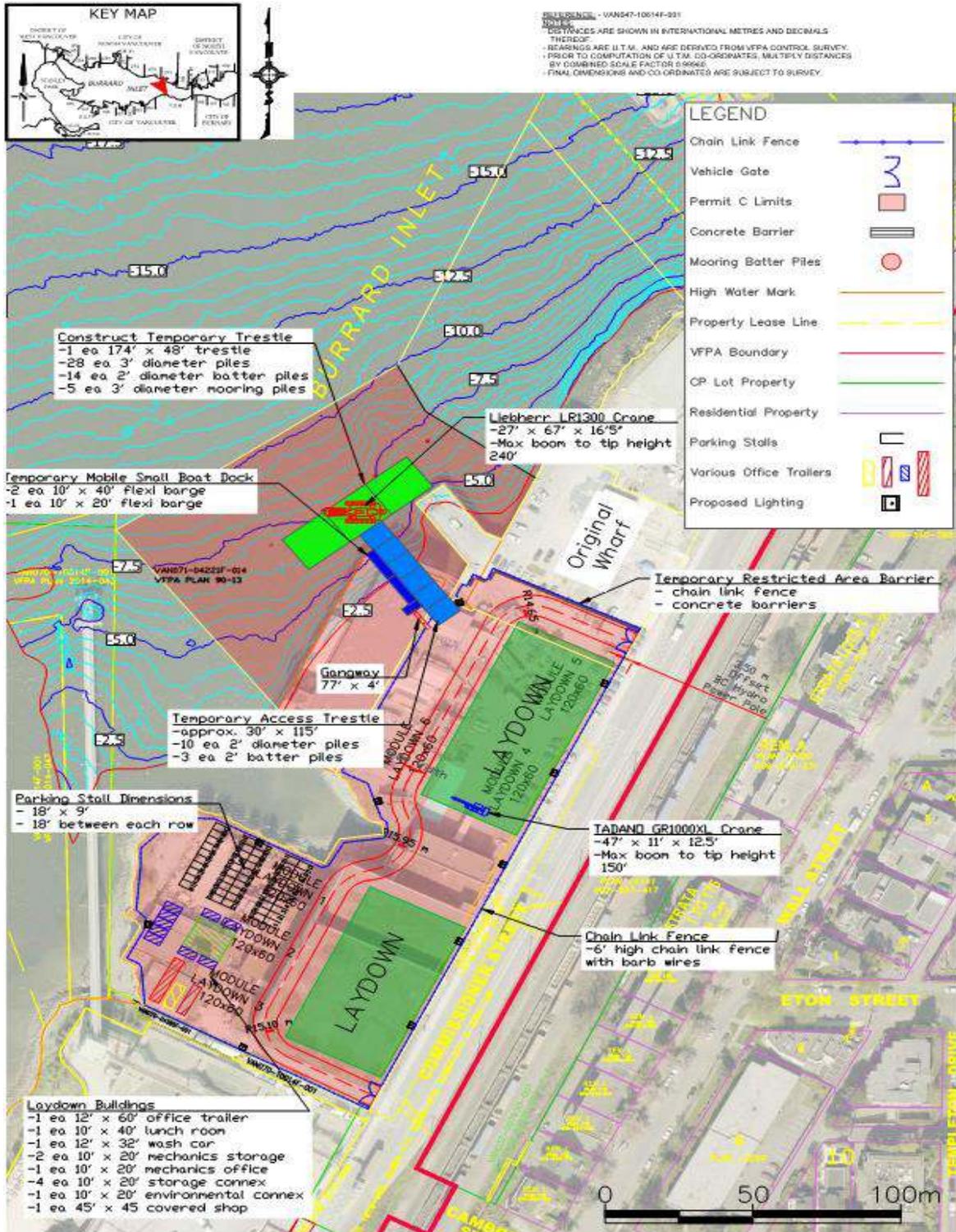


Figure 2: Proposed Site Plan

3.2 Materials

Significant materials, as they relate to stormwater, include but are not limited to raw materials; material handling equipment or activities; storage, cleaning, by-products; final products or waste products. The materials expected to be located at the facility which are exposed to stormwater include the following:

- Granular commodities;
- Petroleum fuels (diesel and gasoline);
- Solid waste/garbage; and,
- Hydraulic and lubricating oils.

4 ISSUES IDENTIFICATION AND RISK ANALYSIS

4.1 Applicable Standards, Acts and Regulations

The following relevant legislation and standards are applicable given the potential pollutant sources listed above.

- *Canada Fisheries Act* regarding the deposition of deleterious substance in waters frequented by fish.
- *Canada Shipping Act*, National Spill Response Protocol regarding the release of pollutants to the marine environment.
- *Canada Environmental Protection Act* regarding the management of harmful substances.
- *Canada Transportation of Dangerous Goods Act* – regarding the transportation of dangerous goods.
- Canadian Council of Ministers of the Environment (CCME) Guidelines relating to water quality standards.
- *B.C. Environmental Management Act*, regarding the unauthorized release of substances into the environment.
- *B.C. Environmental Management Act*, regarding the storage, handling, and disposal of hazardous materials and waste.
- Port of Vancouver Authority – Environment Policy

4.2 Potential Pollutant Sources

An assessment of the site was conducted to identify materials and practices which may reasonably be expected to add significant levels of pollutants to stormwater or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. This section will provide a description of potential sources which may contribute to the presence of contaminants in stormwater runoff.

- Fuel, oil or coolant from service vehicles could leak from the vehicle from damage, normal wear and tear or during maintenance.
- Suspended sediment from soil erosion.
- Fuel could be dripped or spilled from diesel or gasoline fuel tanks during the fueling of service vehicles, during the filling of the tanks or as a result of damage to the tanks.

- Hydraulic oil or lubricating oil could be spilled during maintenance activities, or from leaks in oil-filled equipment.
- Garbage could be spilled onto the ground during the disposal of solid waste into designated dumpsters.
- Road salt used for de-icing.

4.3 Potential Sensitive Receptors

The stormwater design for the marine yard has all stormwater runoff directed away from Burrard Inlet and towards the existing catch basins at the south of the site. The implementation of this SPPP and associated mitigation measures will minimize harmful impacts from stormwater runoff to Burrard Inlet.

4.4 Identified Issues

The risk any potential pollutants releasing into stormwater is considered to be low. Upon arrival, the materials receiving from the barges are mainly fabricated steel with minimal harmful impacts from stormwater runoff.

Bulk hazardous materials will not be stored onsite. Waste materials will be stored in designated areas and disposed of in accordance with the Waste Management Plan. Small quantities of hazardous materials (jerricans of fuel, lubricants and aerosol cans) will be stored in an environmental Connex, equipped with secondary containment.

Refueling will be conducted a minimum of 100 m from a watercourse, unless otherwise approved by an Environmental Inspector.

The following measures will be employed to limit the risk of fuel spills in water if refueling within 100 m of a watercourse, wetland or lake is approved by an Environmental Inspector:

- All containers, hoses and nozzles are free of leaks;
- All fuel nozzles are equipped with automatic shut-offs;
- Operators are stationed at both ends of the hose during fuelling, unless the ends are visible and readily accessible by one Operator; and
- Fuel remaining in the hose is returned to the storage facility

During the operational phase of the site the potential source for the release of these pollutants into the environment will be primarily during maintenance operations (either planned or from equipment failure); operations crews conducting the maintenance will immediately clean up and report all spills in accordance with the site Spill Prevention and Emergency Response Plan. The risk for the introduction of chemical pollutants will be low with an effective implementation of the Spill Prevention and Emergency Response Plan.

4.5 Identified Pollutant Pathways

The primary pollutant pathway for the site will be via the stormwater drainage system. The entire site will be graded so that all rainfall and snow melt is directed into a network of catch basins and sub-

grade culverts to a single outfall at the west northwest side of the site where the existing site outfall is located.

A preliminary detailed site drainage plan drawing is provided in Appendix A of this plan. KLTP is conducting site survey and utility as-built work to finalize this plan. A final site drainage drawing will be provided when the design is complete and will include the following features:

- The boundaries for each sub-catchment;
- Unique identifiers for each sub-catchment;
- Stormwater drainage infrastructure;
- Stormwater drainage collection points;
- Stormwater drainage release points from the site;
- Location of treatment units, if any;
- Downstream receiving water bodies; and,
- Special features within the site.

5 STORMWATER POLLUTION PREVENTION PLAN

5.1 Management Strategy

The project specific stormwater pollution prevention strategy is to implement a set of best management practices to target the potential pollutant sources identified in section 4.2 of this plan. These practices will encompass prevention, containment/reduction and treatment.

5.1.1 Good Housekeeping

Maintenance of work areas which may contribute pollutants to stormwater will be the most effective management practice for this site. Good housekeeping practices are not only beneficial in terms of limiting exposure of materials to stormwater, but they also improve worker safety and often contribute to reducing losses of products thereby lowering operational or capital costs.

Good housekeeping will be practiced throughout the facility. All exposed areas of the facility are maintained in a clean and orderly manner. Trash and other waste products are removed from the site on a regular basis. Routine inspections are made to insure that good housekeeping is being practiced.

5.1.2 Preventive Maintenance

The site will employ a preventive maintenance program that includes inspections, testing, maintenance, and repairs of equipment and systems whose failure could result in a non-stormwater discharge.

5.1.3 Containment/Reduction

All hazardous material will be stored in an environmental Connex equipped with secondary containment to reduce the likelihood of stormwater to become contaminated by their contents. If the secondary containment accumulates stormwater, the water will be examined to ensure it is free of oil, foam or discoloration prior to being drained. Should any water in the secondary containment be contaminated, the containment will be drained and the water disposed of at an appropriate facility that can accept this waste.

In areas where there is a possibility of solid contaminants entering a waste water drain, the drain will be equipped with a screen to reduce the amount of solids allowed to enter the storm drain.

5.1.4 Spill Prevention and Response Procedures

Spill prevention and emergency response procedures are outlined in the Spill Prevention and Emergency Response Plan.

6 IMPLEMENTATION AND MONITORING

6.1 Implementation and Monitoring

The KLTP Management will identify an operational SPPP Manager who will be responsible for the implementation of this plan, with the oversight of the TMEP Environmental Inspector. The SPPP Manager will possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at the facility, and who can also evaluate the effectiveness of the management practices.

Regular site inspections shall be conducted by the SPPP Manager to confirm that stormwater best management practices (BMPs) outlined in this plan are being implemented effectively and to identify any possible concerns related to the quality of the stormwater.

At a minimum, the SPPP Manager will conduct weekly inspections of all areas of the facility where industrial materials or activities are exposed to stormwater and/or where the potential for exposure to stormwater exists. Such areas specifically include laydown area, site trailer offices, trestle dock and access, the areas where vehicle or equipment maintenance takes place, and waste disposal areas.

In addition to the weekly inspections, the SPPP Manager will monitor local weather reports for upcoming storm events and conduct inspections during a period when a stormwater discharge is occurring. The stormwater emission will be inspected for the presence of odor, foam, discoloration,

sediment and/or an oily sheen. If stormwater emission is found to be abnormal, the cause of the abnormality will be investigated and appropriate mitigating action will be taken to return the quality of the stormwater emission to normal and prevent future reoccurrences.

All weekly and storm event SPPP inspections will be documented in an SPPP inspection form that will include weather, BMPs inspected, outfall inspected, effectiveness of the BMPs, any repairs/maintenance of existing BMPs, any new BMPs proposed, the personnel responsible in BMP maintenance or installation and a timeline for completion of the prescribed maintenance or installation.

All operational site staff will receive training on the contents of this plan at hire orientation and annually. The training will clearly indicate that it is the responsibility of all staff to be able to recognize ineffective stormwater BMPs and to report them to their supervisor, the SPPP Manager and/or site management.

The plan will be updated to reflect any changes deemed necessary.

6.2 Adaptive Management and Continuous Improvement

A key process in the effective implementation of the SPPP is the ability to change mitigation measures or actions as site conditions warrant to protect stormwater quality. This approach, generally termed as 'adaptive management', is a planned and systematic process for continuously improving environmental management practices by learning about their outcomes.

On a quarterly basis, the SPPP Manager along with site management will review the SPPP effectiveness by reviewing the SPPP inspection reports for trends in effective and ineffective mitigation actions and measures. The results of these reviews may determine that current BMPs are working effectively or additional mitigation efforts are needed. Any changes to the actual SPPP will also be in the review. The reviews will be minuted with clear action items, those responsible and timelines for completion.

H-2 APPENDIX A
SITE DRAINAGE PLAN

