



**Invasive Plant  
Management Plan for  
Highway 91A at Howes  
Street Multi-Use Pathway,  
New Westminster BC**

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## List of Acronyms Used

BC	British Columbia
BMPs	Best Management Practices
CEMP	Construction Environmental Management Plan
ENV	Ministry of Environment and Climate Change Strategy
EM	Environmental Monitor
EOR	Environmental Orientation Record
ESC	Erosion and Sediment Control
MBCA	Migratory Birds Convention Act
MOE	Ministry of Environment (BC)
MOTT	Ministry of Transportation and Transit (BC)
MUP	Multi-Use Pathway
AQP	Qualified Professional (Environmental)
MSDS	Material Safety Data Sheet
TDG	Transportation of Dangerous Goods
WHMIS	Workplace Hazardous Materials Information System



# 1. Introduction

McElhanney Ltd. (McElhanney) was retained by the Ministry of Transportation and Transit (the Owner) to prepare an Invasive Plant Management Plan (IPMP) for activities associated with the proposed construction of a Multi-Use Pathway (MUP) along the shoulder of Howes Street in New Westminster, BC (the Site) (*Figure 1*). Invasive Species were identified within the project footprint and in several areas adjacent to the project area.

This IPMP outlines methods to appropriately handle, control and remove the invasive species infestation from within the project area, and on how to appropriately identify and avoid invasive species outside of the project area.

## 1.1. DEFINITIONS

**Best Management Practices (BMPs):** a recommended approach shown to be effective and practical in mitigating or preventing harmful impacts on the environment. BMPs are based on known science that, if followed, should allow the Owner to meet the required environmental protection standard(s) and achieve the desired compliance objective(s) (MOE 2014). Information in BMP documents will help assist project activities to be planned and carried out in compliance with the applicable legislation, regulations, and policies.

**Appropriately Qualified Professional (AQP):** means a member in good standing of a profession regulated in British Columbia and who is recognized by that profession as being qualified to work in an area of practice for which an opinion or advice is required (i.e., RPBio, RBTech). This person possesses an appropriate combination of formal education, knowledge, skills, and experience to conduct a technically sound and rational assessment for the area of practice, and is familiar with applicable provincial and federal regulation, policies, protocols, and guidelines.



Figure 1. General location of the work area (red line) located along Howes Street in New Westminster



## 2. Project Description

### 2.1. SITE DESCRIPTION

The Project site is located in the Queensborough area of New Westminster on the eastern tip of Lulu Island. It extends along Howes Street between Ewen Avenue and Boyd Street with the Highway 91 Queensborough Connector overpass crossing over the middle. Land use north of Highway 91 is primarily commercial and industrial, and south is high density residential with the Queensborough Community Center to the east. The proposed footprint is within the MoTT road right-of-way with an approximate centre point at 49.188024° N, -122.948464° W (*Figure 2*). The proposed MUP is approximately 4.0 m wide, connecting to existing and future City of New Westminster pathways along Boyd Street, Ewen Avenue, and Howes Street. The southern end of the proposed pathway will start at the Howe Street and Ewen Avenue intersection, where a pathway-sized letdown already exists at the northwest corner of the intersection.

### 2.2. DESCRIPTION OF EXISTING ENVIRONMENTAL RESOURCES

A detailed summary of the existing environmental values and conditions at the site have been provided by McElhanney under separate cover (McElhanney 2024). The proposed MUP will be located alongside existing roadways, and additional impacts will be limited to previously disturbed grassy areas and man-made ditches. No waterways are to be impacted by the construction of the Project.

### 2.3. CONSTRUCTION WORK

McElhanney has reviewed the detailed design drawings for this work to determine the project activities. The project involves the construction of a new 4.0 m wide paved MUP at the Site along the southwest shoulder of Howes Road. Vegetation removal at the Site, in the form of minimal brush clearing along with grubbing is required to accommodate construction of the MUP. This management plan is focused on vegetation removal activities as well as MUP construction activities including the installation of the MUP and post-construction landscaping.

### 2.4. EQUIPMENT

Equipment may include hand-held pruning tools (shears) and a mini excavator for vegetation removal, and a larger excavator for MUP construction and other installations. It is recommended that any equipment which may contain petroleum products or other harmful and polluting substances in on-board tanks and/or hydraulic systems is inspected and free of leaks prior to deployment on the site.





Figure 2. Location and footprint of works associated with the construction of a multi-use pathway located along shoulder of Howes Street in New Westminster, BC (work area outlined in red).

### 3. Invasive Plant Presence Summary

Previously noted invasive species on site include spotted knapweed (*Centaurea stoebe* ssp. *micranthos*), common tansy (*Tanacetum vulgare*) in addition to American vetch (*Vicia americana*), perennial sow-thistle (*Sonchus arvensis*), lesser cattail (*Typha angustifolia*), tree lupine (*Lupinus arboreus*), common evening primrose (*Oenothera bienni*), yellow sweet-clover (*Melilotus officinalis*), and creeping buttercup (*Ranunculus repens*). Additionally, a query of the InvasivesBC database identified multiple occurrences of wild chervil (*Anthriscus sylvestris*) in two patches in the EAA (BC 2024c). There were records for treatment of both patches in 2023 and 2024 (BC 2024c). Other invasive species noted onsite included reed canarygrass (*Phalaris arundinacea*), Himalayan blackberry (*Rubus armeniacus*), and Scotch broom (*Cytisus scoparius*).

Of the previous listed species, spotted knapweed is provincially noxious. As noxious species were found growing in and around the project site, the plant and soil material must be handled and removed appropriately with compliance to the provincial *Weed Control Act*. Under this Act, provincially noxious species carry a legal duty to be treated by landowners or land occupiers (BC 1996). As such, knapweed will require treatment to prevent the spread of their seeds, roots or other parts both within the Project and outside of it. Additionally, common reed (*Phragmites australis* ssp. *australis*) was documented within 100 m of the Project. Preconstruction surveys are recommended to delineate the footprint of any patches of provincially noxious species.

### 4. Invasive Plant Management in the Project Area

McElhanney reviewed the property to determine the presence of provincially noxious weeds and other invasive species, to identify their distribution throughout the project area. The approximate location and cover of invasive species is outlined in *Figure 1*. Only one provincially noxious species was found within the project footprint.

#### 4.1. SPOTTED KNAPWEED

Spotted knapweed is a perennial plant which germinates in spring or autumn, forms a rosette in year one of growth, then typically bolt in the second growing season and flower during June-July. The species reproduces via seed and from a seed bank which can be viable for several years (ISC BC 2019). The species also produces a chemical that kills neighbouring plants and can cause skin irritation for humans. This plant must be handled with care using personal protective equipment (PPE) (Invasive Species Council of BC 2023).





*Photo 1. Spotted knapweed in bloom (source: Invasive Species Council of BC)*

#### 4.1.1. Control Methods

Spotted knapweed spreads via seed and produces large quantities of viable seed. Treatment requires removal of the entire plant including full root stem, and removal or ongoing treatment of plants emerging from the residual seed bank until the bank is depleted. Appendix A provides the best management practices to follow as outlined by Invasive Species Council of BC (ISC BC) (2019).

##### 4.1.1.1. Biocontrol

Twelve biocontrol agents have been released in the BC, and several of these show promise for a variety of habitats. Biocontrol agents for this species are most effective when used in combination (ISC BC 2019). For a single construction site, biocontrol agents may be considered but a detailed, timed, deployment strategy would need to be developed. This is likely to be out of scope for this project.

##### 4.1.1.2. Herbicide Control

There are several effective herbicides for this species: picloram, dicamba, 2,4-D, clopyralid, aminopyralid and glyphosate. Use of herbicide must be prescribed based on site characteristics, goals and objectives. Multiple treatments may be necessary to treat newly sprouted plants from the residual seed bank. Picloram has been determined to be most effective but has residual effects. Use of selective spot-spraying is recommended to minimize damage to adjacent non-target plants. A Pest Management Plan will need to be prepared if herbicide control is selected, in consultation with a professional carrying a certified applicator

license. (ISC BC 2019). The timeline for herbicide treatment requires multiple years, and may be out of scope for this project.

#### 4.1.1.3. Mechanical Control

The goal of mechanical control is to physically remove the entire plant and the residual seed bank. The key risk to be managed during this process is the potential for seeds to spread during removal and transport. Once removed, the plant and soil seed bank is to be disposed of at a MoTT-approved disposal site, in alignment with best practice.

During removal, all equipment, including but not limited to PPE, boots, and excavators that come into contact with noxious plant material or soils, must be brushed off and cleaned prior to leaving the noxious plant removal area. It is recommended that haul trucks be kept outside of the removal area on maintained clean gravel. If trucks require entry into the noxious plant removal area, they will require brushing and cleaning before leaving the area. At the dump site, truck beds and wheels should also be swept out after each load dumped, to ensure no seeds are transported back onto roadways or the site.

Ideal timing is prior to flowering to minimize risk of new seeds being produced or spread. Timing of mechanical removal must avoid seeding times of July-August. After mechanical removal of the plants and seed bank, follow-up treatments via alternate methods may be required to address any regrowth.

#### 4.1.2. Control within the Project Footprint

The Ministry of Transportation and Transit (MOTT) is responsible for removal of spotted knapweed on site and retaining the appropriate professionals to eradicate the species. With consideration of the project area footprint and timing of project construction (one season) excavated removal of this species is expected to be the primary control method for this project. All materials within the knapweed control areas (areas within 1m of visible plants) as delineated by the contractor's AQP will be removed to a minimum depth of 0.5 m and disposed of as noted above. The method for full removal is detailed above and the following best management practices are to be followed.

##### *Condition of Equipment:*

- Where possible, avoid contact with spotted knapweed infested soils. This will be facilitated by clear delineation of the patch with stakes and flagging prior to treatment. Stage equipment operation away from knapweed control areas, if possible.
- Machinery is to be kept on designated routes.
- All equipment allowed to come in contact with the identified knapweed control area must be thoroughly cleaned (e.g., remove dirt from other work sites that has accumulated on the tracks, undercarriage or tires) prior to departure.
- Clothing and footwear must be checked for seeds or plant matter and, if materials are detected, remove and segregate as to not infest the area. Create a cleaning area with brooms and brushes for clothing. Accumulated cleaning area debris will need to be confined to this area and will be subsequently hauled away with the knapweed removal material.

##### *Plant Removal Procedures*

- Engage an AQP (knowledgeable in invasive species) to monitor the containment, excavation, tarping and removal of the noxious weed material from the project area.



- Dig up entire plant to the minimum 0.5-m depth and/or as directed by the AQP. Target removal of all native topsoil within the control area.
- When transporting plant material away to an appropriate land fill which can dispose of the noxious material, each dump truck load is to be under-filled to prevent accidental littering of material. Commercial waste bins with lids are a recommended alternative to regular dump trucks.
- Once the material is dumped at the disposal site, the truck bed and wheels should be brushed off /swept, before leaving the dump facility.
- Once all noxious plant and soil material have been removed from site, brush the excavator bucket off into the final dump truck bed.
- Machinery used to excavate and move the weed material must be cleaned before leaving site. Brush vehicles and equipment as they leave the work area.
- Replace removed fill **with clean fill material free of invasive plant seeds.**
- Other considerations: Be aware that vegetation clearing during the bird breeding season can negatively impact nesting birds. Inspect your work area for any occupied nests, eggs or nests of species protected under the *Wildlife Act* or the *Migratory Bird Convention Act*.

## 4.2. TRAINING AND MONITORING

The AQP will be responsible for training the construction contractor and their employees on site about the spread and health risks of spotted knapweed, how to handle and remove it, how to prevent spread and the cleaning procedures for clothes and equipment. On-site workers will be briefed on best practices to avoid spreading invasive species, and the truck drivers will be briefed on their responsibility to cover the loads, dumping, brushing the truck at the dump site and clean habits to prevent the spread of invasive plants.

### *Monitoring during Construction*

An AQP is required to be on site during excavation of the noxious materials to monitor the work and prevent spread outside the control area. The AQP will direct the contractor and excavator to remove additional soil material if needed to control the species. This AQP is also responsible for providing the Project Owner with a final report of invasive species removal from the site and its final disposition.

### *Monitoring Post-Construction*

Once the site is constructed and landscaped, the project site will need to be monitored by the for the reoccurrence of invasive species plants. Once a year, during the early growing season, the project area should be reviewed by an AQP for any re-occurring plant development. Any invasive species regrowth identified and mapped by the AQP is recommended to be sprayed with herbicide by a qualified pesticide applicator.

## 5. Restoration

Once all noxious plant materials have been removed from the site, clean material should be used to back-fill the excavation site prior to the start of MUP construction. The MUP construction project includes landscaping which will reseed any areas left bare by noxious plant removal. Until landscaping is completed, bare soils should be stabilized with straw, mulch, or temporarily reseeded, as needed. Any materials used to stabilize against erosion should be certified to be weed-free in order to prevent contamination of clean fill.



## 6. In Closing

We trust that this report meets your needs. Should there be any questions regarding the information within this report, please do not hesitate to contact the undersigned.

Yours truly,

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## 7. References

- Invasive Species Council of British Columbia (ISC). 2019. Invasive Species Factsheet: Knapweeds. Accessed from URL: [https://bcinvasives.ca/wp-content/uploads/2021/01/Knapweeds\\_FINAL\\_20\\_02\\_2019.pdf](https://bcinvasives.ca/wp-content/uploads/2021/01/Knapweeds_FINAL_20_02_2019.pdf)
- Metro Vancouver. 2018. Best Management Practices for Invasive Species in the Metro Vancouver Region. Ministry of Environment. 2008. Riparian Restoration Guidelines. Accessed from URL: [www.env.gov.bc.ca/lower-mainland/electronic.../RiparianRestorationGuidelines.doc](http://www.env.gov.bc.ca/lower-mainland/electronic.../RiparianRestorationGuidelines.doc)
- Ministry of Transportation and Infrastructure (MOTI). 2016. 2016 Herbicide Guidelines for control of Invasive Species on Crown Lands. Accessed from URL: [https://www.for.gov.bc.ca/hra/plants/publications/2016\\_Herbicide\\_Summary\\_for\\_Control\\_of\\_Invasive\\_species\\_on\\_Crown\\_Lands.pdf](https://www.for.gov.bc.ca/hra/plants/publications/2016_Herbicide_Summary_for_Control_of_Invasive_species_on_Crown_Lands.pdf)
- Province of BC (BC). 1996. *Weed Control Act*, RSBC 1996 Chapter 487. Accessed from URL: [http://www.bclaws.ca/Recon/document/ID/freeside/00\\_96487\\_01](http://www.bclaws.ca/Recon/document/ID/freeside/00_96487_01)
- Province of BC (BC). 2011. *Weed Control Regulation*. BC Reg. 143/2011 Accessed from URL: [https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/10\\_66\\_85](https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/10_66_85)



## 8. Limitations of Report

The Invasive Species Management Plan was prepared for the exclusive use by the Ministry of Transportation and Transit, its assignees and representatives. The guidance and findings documented in this report have been prepared for the specific application to this Project. This document has been developed in a manner consistent with the level of care normally exercise by environmental professionals currently practicing under similar conditions in BC.

The IPMP may be revised, at the request of the Client, should new information, discovered in future work from other investigations, require amendments prior to any reliance upon the information presented herein.

## 9. Legal Disclaimer

This report was prepared by McElhanney Ltd. for the exclusive use of the Ministry of Transportation and Transit and may not be reproduced in whole or in part without the prior written consent of McElhanney, or used or relied upon in whole or in part by a party other than the MOTT and their assignees and representatives for the Project. Any unauthorized use of this report, or any part hereof, by a third party, or any reliance on or decisions to be made based on it, are at the sole risk of such third parties. McElhanney accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report, in whole or in part.



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