



Facilities

Integrated Pest Management Plan

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Nelson Hydro

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Revision History

Revision #	Date	Status	Revision Description	Author
1.0	November 20, 2025	Draft	Initial Document Creation – Nupqu Ltd Partnership	JH and RP



Table of Abbreviations

ALR	Agricultural Land Reserve
Am	Amended IPM Regulation Since 2016
CKISS	Central Kootenay Invasive Species Society
CAS	Chemical Abstracts Service Registry Number (identifies specific active ingredient)
EDRR	Early Detection Rapid Response
IAPP	The Invasive Alien Plant Program (operated from 2005-2023)
IPM	Integrated pest management
IPMA	Integrated Pest Management Act
IPMR	Integrated Pest Management Regulations
KNC	Ktunaxa Nation Council
MBR	Migratory Bird Regulations
MOE	Ministry of Environment
MOTT	Ministry of Transportation and Transit
NIT	Notice of Intent to Treat
NTZ	No-treatment zone
OCP	Official Community Plan
PCP	Pesticide control product
PFZ	Pesticide-free zones
IPMP	Integrated Pest Management Plan
PMRA	Pest Management Regulatory Agency
PPE	Personal Protective Equipment
QP	Qualified Professional
RAPR	Riparian Areas Protection Regulation
ROW	Rights-of-way
SAR	Species at Risk
SDS	Safety Data Sheets
SRW	Statutory Right-of-Way
TDGA	Transportation of Dangerous Goods Act
WHF	Wildlife Habitat Feature
WHMIS	Workplace Hazardous Materials Information System

1. Introduction

This document is a Integrated Pest Management Plan (IPMP) for the maintenance of Facilities. It has been prepared through a collaborative partnership between Nupqu Resource Limited Partnership and VAST Resource Solutions Inc., in accordance with Section 58: Integrated Pest Management Plans [BC Reg. 235/2015, s. 29; July 1, 2026.] and Section 5: Pesticide Use Notice Requirements [BC 235/2015, s.20; 19/2022, s.1.; February 7, 2022] of the Integrated Pest Management Regulation (B.C.) (IPMR). The Regulation was last amended March 5, 2025, by BC Reg 41/2024. The Facilities IPMP aligns with the Nelson Hydro Five-Year Vegetation Management Plan and other Community Management Plans and Best Practices.

1.1. Nelson Hydro

Nelson Hydro is wholly owned by the City of Nelson. Nelson Hydro provides electricity and related services to customers in the City of Nelson and surrounding areas, including Blewett, Taghum, the North Shore, Harrop, Procter, Balfour and Queen's Bay. Nelson Hydro provides generation, transmission and distribution power lines, as well as residential and business services to customers within the City of Nelson and to the above surrounding communities. These services are provided under a series of standard operating practices and guidelines outlined in Nelson Hydro's Integrated Pest Management Plans.

Under the British Columbia *Integrated Pest Management Act (IPMA)*, Section 58, a IPMP is defined as a plan that describes:

- Prescribed for the purpose of Section 7 (1) of the Act as using either restricted, commercial or domestic pesticides,
- A program for managing pest populations or reducing damage caused by pests based on integrated pest management (IPM); and,
- The methods of handling, preparing, mixing, applying and otherwise using pesticides within the program.

Within the *IPMA*, the term "pesticide" is defined as a microorganism, chemical or other material used to prevent, destroy, repel, or mitigate a pest. A pest is referred to under the Act as an injurious, noxious or troublesome living organism (*IPMA*, Part 1, See definitions).

The British Columbia *IPMA* and the IPMR require that vegetation management be implemented on industrial sites (facilities), which include generation stations (including switching stations), substations, pole yards, road systems within generation stations, fenced buildings and structures, and vacant and undeveloped land within the Hydro Territory. **All facilities are fenced areas with restricted access.** Vegetation management is approved under a comprehensive IPMP to reflect all outlined IPMRs.

Compliance with environmental legislation is a top priority for Nelson Hydro; therefore, in 2025, existing IPMPs were revised in accordance with Section 59 of the IPMR, which requires that a IPMP term not exceed five years.

The IPMP ensures:

- Compliance with all applicable provisions of the *IPMA* and IPMR, and other applicable Federal, Provincial and regional laws and regulations;
- The responsible use of pesticides;

- The incorporation and use of IPM, and,
- The Nelson Hydro vegetation management program will be publicly available to the City of Nelson and surrounding communities for pest management activities occurring on Nelson Hydro's facility areas.

1.2. Geographic Boundaries of the Area to Which This Plan Applies

[IPMR Section 58(1)(a)]

This IPMP addresses the Nelson Hydro vegetation management program within facilities, which include generation stations (including switching stations), substations, pole yards, road systems within generation stations, fenced buildings and structures, and vacant and undeveloped land within the City of Nelson and surrounding areas including Blewett, Taghum, the North Shore, Harrop, Procter, Balfour and Queen's Bay. All Facilities are fenced areas with restricted access.

A Nelson territory map, detailing the geographic boundaries to which this IPMP will apply, is shown in 0.

1.3. Person Responsible for Managing Pest

[IPMR Section 58(1)(b)(c)]

Within Nelson Hydro, the person responsible for vegetation management on facilities, as well as the principal contact for information related to this IPMP, is Neal Dermody, Operations and Line Manager at Nelson Hydro. Mr. Dermody can be contacted at (250) 352-8213, or at: NDermody@nelson.ca

1.4. Role and Term of This IPMP

The IPMP permits Nelson Hydro to utilize pesticides in certain situations, when carrying out vegetation management within or around facilities within their service area. The IPMP will remain pertinent until 2030, or one year later if a Confirmation of a Pesticide Use Notice is not issued in 2025.

The use of this IPMP will ensure:

- Legal accountability with the provisions of the *IPMA* and IPMR, as well as all applicable federal, provincial and regional laws and regulations;
- General alignment with the City of Nelson's Management Plans and Best Practices and other area specific guidelines listed in Table 3-1;
- The responsible use of pesticides for vegetation management;
- The incorporation and use of IPM principles;
- Public awareness of, and input into, the vegetation management program; and,
- The practical use of IPM considers environmentally sensitive areas and land uses.

2. Objectives of Facilities Vegetation Management

According to BC regulations, Nelson Hydro is required to control noxious weeds and invasive plants, and maintain awareness of new invasives and priorities specific to the invasive plant management area (CKISS, Table 3--). Also important are the operational and safety concerns that necessitate controlling vegetation

within and around the facilities. Nelson Hydro's policy is to effectively and safely manage the risk of such outages. Nelson Hydro also works to minimize the risk of outages caused by hazard and danger trees (problem vegetation) falling onto the lines, and to comply with the provisions of the *BC Weed Control Act*, which requires occupiers of land to control noxious weeds.

The specific goals of vegetation management on the Nelson Hydro facilities are to:

- Minimize public and worker safety hazards;
- Reduce the number of outages from problem vegetation falling onto power lines;
- Reduce the risk of fires caused by overgrown vegetation and fuel buildup around electrical components and clear access for maintenance, safety inspections and emergency response;
- Allow access to electrical components for maintenance, safety inspections and emergency response;
- Minimize vegetation debris contamination in the crushed rock base at electrical facilities, to reduce the electrical hazard and potential for fire, as well as slip and trip hazards;
- Minimize vegetation as it can serve as shelter and food for structural insect pests, especially rodents;
- Reduce vegetation growth near facilities that could act as seed sources.;
- Minimize vegetation (seeds, leaves, and other organic matter) from collecting in fenced facility areas; and,
- Comply with provisions of the *BC Weed Control Act* that require occupiers of land to identify and control noxious weeds.

Vegetation management at switching stations and substations is critical for safety reasons. If a lightning strike or an electrical fault occurs, electrical current can flow through the structure and into the ground. These can cause potentials (step and touch) that can lead to worker electrocution. Electricity transmission beyond the fenced facility boundary into neighboring areas elevates the public risk in those regions to levels that are considered unacceptable. Worker safety around electrical sites is also covered under WorkSafeBC's Health and Safety Regulations.

3. Facilities Vegetation Management Using Integrated Pest Management

[IPMA Part 1 Interpretation Definitions]

To ensure effective vegetation management, Nelson Hydro has adopted the principles of IPM into its company programming.

IPM means a process for managing pest populations that includes the following activities:

- **Planning** and managing ecosystems to prevent organisms from becoming pests (i.e. Prevention);
- **Identifying** pest problems and potential pest problems;
- **Monitoring** populations of pests and beneficial organisms; damage caused by pests and environmental conditions;
- **Using injury** (treatment) thresholds in making treatment decisions;
- **Suppressing** pest populations to tolerable levels using strategies based on consideration of biological, physical, cultural, mechanical, behavioural and chemical controls in appropriate combinations and environmental and human health protection (i.e. Pest Treatment Options and Treatment Method Selection); and,
- **Evaluating** the effectiveness of pest management strategies.

Each of the above IPM elements is integral to the Nelson Hydro vegetation management program on its facilities.

3.1. Prevention (Planning)

[IPMR Section 58(2)(a)]

Preventative measures, such as regular vegetation management cycles, species identification (including weeds and problem woody vegetation), and shared planning, are integral to an IPM program and aim to prevent the initial growth and spread of unwanted vegetation.

Under its prevention program, Nelson Hydro conducts regular patrols and inspections of its facilities, including rights-of-way, and makes observations on overall site conditions and environmental sensitivities. This includes identifying hazard trees, assessing vegetation management practices, noting sites with loose vegetative matter, and evaluating clearance distances to energized infrastructure. Additionally, cycle times for maintenance activities are forecasted to ensure effective safety and site management practices. Routine patrols enable Nelson Hydro to establish regular vegetation management cycles and schedules for weed control and the removal of problem vegetation. At the end of each cycle, growth rates and minimum acceptable clearances are established to maintain a balanced plan.

All inspections under this Plan will be conducted by qualified and competent professionals who can assess the danger and hazard of trees, as well as identify and quantify invasive and noxious plant occurrences.

Where feasible, preventative measures are incorporated into facility designs prior to construction or may be implemented during infrastructure upgrades. In some instances, these measures may reduce the need for future maintenance requirements of pesticide and non-pesticide control methods.

3.1.1. Surfacing Materials at Facilities

Properly selecting and installing surfacing materials at Nelson Hydro Facilities is important in minimizing the growth of unwanted vegetation. Organic material, such as soil fines, at facilities can promote the development of undesirable vegetation. However, using a suitable surfacing material of the correct thickness and free of organic material can help prevent this.

Crushed rock is the standard surfacing material used within, and for 1 meter (buffer) around, substations and switching stations. When installed, the crushed rock should have a minimum thickness of 15 cm and be free of organic matter, which could be a potential source of weed seed. Areas with less than the minimum 15 cm thickness of crushed rock due to displacement from vehicular traffic, maintenance, or construction activities should be upgraded to the minimum crushed rock thickness.

The use of crushed rock within a substation and switching station, as well as the buffer outside the perimeter fence, will help reduce electrical exposure to workers and the public, as the grounding system (grid wires) extends below the crushed gravel outside the perimeter fence. The key safety and maintenance advantages of using crushed rock as a surfacing material are:

- It offers high foot resistance, thereby increasing the maximum tolerable step and touch voltages for workers; and,
- It promotes rapid drainage of water from the site;
- It maintains the moisture content of the underlying soil (by reducing evaporation), thus increasing the soil's ability to conduct electrical current away from the surface and into the ground;
- It is non-flammable, economical, and widely available; and,
- It reduces the establishment of unwanted vegetation.

To maintain its effectiveness (and resistivity), the crushed rock will be regularly inspected and cleaned of organic material, including leaves, twigs, plant and seed material, and repaired if necessary. To reduce the need to undertake long-term vegetation control at facilities, the following measures are taken, where feasible, when installing and maintaining surface materials:

- Clean gravel of suitable thickness should be installed when upgrading stations. Thick gravel reduces the ability of vegetation to penetrate down to the underlying subsoil for rooting development;
- Controlling vegetation (through non-chemical and/or chemical treatments) if present before upgrading gravel areas;
- Installing landscape (contractor-grade geotextile) under clean gravel to prevent root growth into the underlying subsoil;
- Upgrading areas of low gravel created by vehicular traffic, construction or maintenance activities;
- Minimizing snow clearing of vehicle driveways and around piping, and replacing or regrading gravel in areas with observed snow clearing damage;

- Utilizing landscape fabric and mulches in landscaping around facilities to inhibit vegetation growth; and,
- During regular fall clean-ups, remove and dispose of leaves, needles, cones, branches, and other organic debris that have been deposited or blown into facilities from adjacent trees and shrubs.

Asphalt and concrete are typically restricted to use in access roads and around buildings, serving as a barrier to prevent unwanted vegetation from becoming established. Ensuring that service vehicles are free of soil and vegetative debris before entering facilities is an important preventative measure that helps reduce the risk of new invasive species entering Nelson Hydro sites.

3.1.2. Maintaining Vegetation-Free Perimeter Fences

Vegetation growing adjacent to fences and access roads will be removed or controlled because:

- Large trees (primarily deciduous) and shrubs can be a source of organic debris at stations, while their removal can enhance station security by strengthening access controls over the perimeter fence.
- Debris and live vegetation can create safety and fire hazards if they grow too close to infrastructure.
- Certain types of low-growing vegetation (e.g., horsetail, groundsel, blackberry) can grow through/entwine chain-link fencing and provide a seed source for new growth.
- Vegetation growing along access roads can be spread by vehicles, personnel and by wind-blown seed to non-infested sites; and,
- Overgrown vegetation can impact the site's aesthetics and the surrounding communities, especially in urban areas.

3.1.3. Seeding Disturbed Areas

Soils disturbed during the construction of new facilities, the upgrading of existing facilities, or other activities will be seeded and fertilized if other surfacing materials are not installed. These areas (mainly outside the station fence) can provide optimum conditions for establishing unwanted vegetation. As these disturbed areas are also susceptible to erosion, planting low-growing perennial vegetation and turf, or surfacing with crushed gravel underlain by landscape filter fabric, will be undertaken where feasible.

3.2. Identification of Species[IPMR Section 58(2)b(ii)]

Unwanted vegetation occurring within or adjacent to Nelson Hydro Facilities will be termed “weeds” in this IPMP. The term weeds include any vegetation growing where it is not desired (i.e., interfering with operations, safety, or vegetation mandated for control under provincial regulations). In some cases, other undesirable vegetation such as shrubs or trees on a facility site may also pose safety issues, obstruct access points or increase fire hazard risk. Collectively, weeds, invasive species, and other problematic vegetation are considered pests under this IPMP.

.Accurate identification of undesirable vegetation is important for several reasons:

- Depending on their growth rates, characteristics and physical location, they may become problematic vegetation;
- Control methods for problem vegetation may differ depending on the species. For example, conifers are often controlled using non-chemical methods, whereas other species may require a combination of chemical and non-chemical methods for effective control. An example of the latter would be certain deciduous tree species that are best controlled by manual cutting followed by the application of a herbicide to the freshly cut stump to inhibit re-sprouting;
- Weedy species identified as noxious weeds or invasives would be considered unwanted or undesirable vegetation, as provisions of the *BC Weed Control Act* require occupiers of land to manage provincially, and,
- Specific shrubs and brushland patches, depending on their growth habits, may obstruct access for maintenance and inspections. The condition and growth stage of the vegetation can directly influence the risk of fire hazards.

Numerous publicly available resources are available to help identify undesirable vegetation. Table 3-1 below indicates the websites where information on identifying and managing tree, shrub, and weed species can be accessed. Other online resources and tools for identifying pesticides, environmental sensitivities and links to Nelson Hydro management plans are also included below.

Table 3-1: BC Online Resources and Nelson Community Plans and Best Practices

Source	Document	Web Link
Ministry of Forests	Tree Identification	www.for.gov.bc.ca/hfd/library/documents/tre ebook/in dex.htm
E-Flora BC	Electronic Atlas of the Plants of BC	www.eflora.bc.ca
Invasive Species Council of BC	Field Guide to Noxious Weeds And Other Selected Invasive Plants of BC	Field-Guide-to-Noxious-Weeds-12th-WEB.pdf
BC Ministry of Env. & Climate Change Strategy	B.C Soil Survey Map (SIFT tool) with ALR Polygon GIS layer	https://governmentofbc.maps.arcgis.com/apps/MapSeries/index.html?appid=cc25e43525c5471ca7b13d639bbcd7aa

Source	Document	Web Link
Central Kootenay Invasive Species Society (CKISS)	Nelson IPMA, Plant Priority List 2025	https://ckiss.ca/wp-content/uploads/2025/05/Priority-List-External_2025.pdf
Invasive Species Council of BC	Fact Sheets on Invasive Plants	Find an Invasive Species - Invasive Species Council of British Columbia
BC Weed Control Regulation	Schedule A noxious weeds	https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/10_66_85#ScheduleA
BC Ministry of Env. & Climate Change Strategy	Run a community watershed query	https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/community-watersheds
InvasivesBC database (formerly IAPP, report a weed)	Batch Uploader for terrestrial observation & chemical treatment	https://invasivesbc.gov.bc.ca/Landing
Ministry of Forests	Field Guide to the Biological Control of Weeds in British Columbia	https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/invasive-species/publications/field_guide_to_the_biological_control_of_weeds_in_british_columbia.pdf
Nelson Hydro website	Vegetation Management Plan	https://www.nelson.ca/DocumentCenter/View/5505/2024-Nelson-Hydro-Five-Year-Vegetation-Management-Plan
Nelson Hydro website	Vegetation Management Best Practices	Nelson-Hydro-Vegetation-Best-Management-Practices
Nelson Hydro website	Nesting Bird Management Practices	NH Nesting Bird BMP
City of Nelson Community website	Interim Urban Forestry Plan	nelson.civicweb.net/document/128081/
City of Nelson Community website	Fire Smart Plan	Community-Wildfire-Resiliency-Plan
City of Nelson Community	Spill Response Plan 1-800-663-3456	Contact for Emergency Management BC: https://www.nelson.ca/3094/Spill-Response
Canadian Electricity Association	Bird Beneficial Management Practices Guide for Utilities, 2018	Bird Beneficial Management Practices Guide for Utilities Electricity Canada

Source	Document	Web Link
Government of Canada	Migratory Birds Regulations, 2022	https://laws-lois.justice.gc.ca/eng/regulations/SOR-2022-105 (last amended on 2024-10-04)
Health Canada	Pesticide Label Search (downloadable App)	https://pr-rp.hc-sc.gc.ca/lr-re/index-eng.php
The National Pesticide Info Center website	Links to Pest and Product Info Government of Canada SDS Database	https://npic.orst.edu Note: Additional chemical safety information and the Canadian SDS database can be accessed here: CCOHS: SDS Database (English Language)

3.2.1. Types of Undesirable Vegetation on Facilities

Vegetation management programs at Nelson Hydro Facilities target herbaceous and woody species growing within or adjacent to generation stations (including switching stations), substations, buildings, structures, tower compounds, access roads, pole yards, and vacant and undeveloped land within the facilities.

Invasive grass, forbs and broadleaf weeds are of greatest concern. Woody trees and shrub species often pose challenges when they extend beyond facility boundaries or grow near infrastructure.

3.2.1.1. Herbaceous Grass and Broadleaves

Herbaceous broadleaf and grass species are the most common types of vegetation found within and immediately adjacent to facilities, as well as in other areas where the crushed rock or gravel base is very thin and the subsoil is exposed. The dry, gravel surfaces typical of Nelson Hydro electrical facilities (substations and switching stations) mimic the disturbed conditions where vegetation frequently establishes. Control of herbaceous vegetation is also necessary along access roads, as these are common areas for weed establishment. Significant consideration will be given to roads bordering sensitive lands (e.g. wetlands, conservation areas and cropped lands in the ALR).

Other areas that need mitigation include locations with cracked asphalt, particularly at the edges of buildings and along concrete sidewalks, where seams are often found.

3.2.1.2. Woody Vegetation

Woody tree and shrub species are most problematic when they encroach on the perimeter of facility fences, or are found in areas where their presence:

- Limits visibility or access to a site;
- Presents a safety hazard if disturbed by wind and topples into a facility area.
- Increases fire hazard potential if blown into the facility or overhanging equipment, especially

where there is a risk of ignition.

- Impacts site security by providing easier access over security fencing; or,
- Causes the deposition of organic debris into stations, which increases vegetation growth.

Evergreen and deciduous trees are sometimes found adjacent to facilities. Manual removal and/or pruning are effective non-chemical methods for managing evergreen trees. However, many deciduous trees and shrubs can re-sprout extensively from the areas where cuts have been made, thereby increasing future management efforts. Deciduous re-sprouting can usually only be effectively controlled by applying a pesticide (herbicide) to the cut surfaces immediately after cutting. A combination of manual and herbicide application to the cut surfaces is also often necessary to manage those woody trees and shrubs that frequently sucker within station gravel, in asphalt cracks and concrete seams, and encroaching from landscaped areas adjacent to facilities.

3.2.1.3. Noxious Weeds

Noxious weeds can negatively impact agriculture, where they can displace or reduce the quality and quantity of crop and forage species. They can also outcompete native plant species, reducing biodiversity and foraging opportunities for wildlife. It is for these reasons that these weeds are designated as noxious under the authority of the *BC Weed Control Act*.

Noxious weed species have been identified and controlled within the Nelson Hydro service area, including some of their facilities and adjacent properties. To comply with provisions of the *BC Weed Control Act*, Nelson Hydro will monitor their facilities for the presence of designated noxious weeds and manage them using the principles of IPM.

3.3. Monitoring Populations of Undesirable Vegetation

[IPMR Section 58(2)(c)(i)(ii)(iii)]

Nelson Hydro staff and/or their contractors monitor weed growth and problem vegetation, including hazard trees, in their operational areas. This is completed through Fulcrum to identify issues requiring mitigation. Monitoring is typically conducted on foot or by vehicle, depending on the terrain and conditions. Monitoring involves a visual inspection, during which the density, location, and type of vegetation present are documented.

Monitoring provides a record of information about weed occurrence, density, and site conditions. Monitoring also includes recording information on changes to weed species composition, distribution, and density over time, as well as changes to adjacent plant communities that could invade the facilities.

Nelson Hydro staff visit each facility to observe the occurrence and density of weeds. Sites are usually monitored monthly as part of a general safety and maintenance inspection. Annual inspections are also a legal requirement for dams and penstocks under Section 18(1) of the *BC Water Act*. At sites with electrical concerns or environmental sensitivities, monitoring will occur more frequently.

In addition to these scheduled site assessments, staff will also monitor sites during routine safety and maintenance inspections.

The CKISS Regional Invasive Plant Priority List (See Table 3-1 for web link) and the percentage weed cover of an infestation are used to determine the treatment threshold (the level above which treatment is warranted). This will be described in Section 3.5 (Pest Treatment Methods/Options).

Monitoring occurs visually and is documented in writing. Nelson Hydro uses tree risk identification and evaluation processes based on Nelson Hydro's Vegetation Best Management Practices to decide what hazards are associated with a specific tree or a grouping of trees. The monitoring results from inspections and patrols are used to determine the required action to minimize potential risks associated with the possibility of vegetation coming into contact with or encroaching on the facilities. Table 3-2 below provides a summary of the Nelson Hydro monitoring program.

Table 3-2 Summary of the Nelson Hydro Monitoring Program

Monitoring Method & Practices	Monitoring Frequency	Data Collection/Planning
Ground Inspection/Patrol	At least once annually (Spring or Fall)	GPS, plant species, physical location, hazard rating ¹
GIS Mapping and weed reporting using Invasive BC, an online database for long-term monitoring records ³	Annually, as part of post-treatment evaluations (Late Summer or early Fall)	Inventory of noxious weeds, invasives and other problem vegetation Geo-reference species, density & distribution to plan future control priorities and site risk ²
Public/ Internal Reports	Frequency could change upon receipt of the report	Site-specific work plan
Notes: 1. Hazard rating is determined by the combination of (1) the presence of vegetation that could grow into contact with transmission and distribution lines, and (2) the presence of trees that are defective (i.e. hazard trees) that could hit or damage transmission or distribution lines when they fall. 2. The CKISS Regional Invasive Plant Priority framework determines risk ranking and assigns Priority Categories 1 to 5, as well as recommends the corresponding management approach. See Table 3-1 for the web link. 3. Submit an access request to use the application. A link to Training Videos is found on the Invasive BC webpage header. Data collection and mapping are currently in development.		

3.4. Treatment/Injury Thresholds and How Treatment Decisions Are Chosen and Applied

[IPMR Section 58(2)(d)(i)]

Any percentage of weed cover above the established treatment/injury threshold requires vegetation management action. Treatment thresholds will vary, since vegetation control is more critical for certain areas within each facility. They can be specific and include all weed species (e.g., within a switching station or substation, where there is a low tolerance for vegetation growth), or they may be specific to one weed species (e.g., where a single, tall-growing tree or shrub species compromises site safety and security). Consequently, the level of control required is determined by either the density of weed establishment or the presence of specific undesirable weed species.

In sites where the tolerance for weeds is low, the treatment threshold is determined by the density of all weed species and the amount of dead organic matter present at the site. This is specific to areas classified as Nelson Hydro facilities. Areas such as substations and switching stations will have a much lower treatment threshold, for example, than gravel parking areas and access roads.

Nelson Hydro will utilize the CKISS Invasive Plant Priority framework to guide weed treatment efforts and inform contractors on the recommended level of control that will meet their injury threshold (i.e., the risk to the structural integrity and safety of the infrastructure). The framework is based on the provincial and regional regulation for noxious weed and invasive plant control, managed by the BC Ministry of Forest. CKISS also maintains a watch list of invasive species not currently known to exist in the Central Region that will be targeted as Early Detection Rapid Response (EDRR) plants with the goal of immediate eradication if found. EDRR species must be reported to the local Invasive Species Society and Ministry of Forests immediately.

The CKISS Regional Invasive Plant Priority List consists of 174 plant species, including EDRR species that could be found in the BC Interior. Species listed have been assigned a priority category (i.e., Prevent, Eradicate, Contain, Strategic Control, or Insufficient Information - control based on management objectives). In most cases, species listed at the provincial level tend to overlap with those on regional lists. However, it is essential to note that some regional priorities may not be subject to provincial regulations, which can result in discrepancies in species management and conservation efforts across different jurisdictions. See Table 3-1 for a web link to the 2025 Regional Plant Priority List.

Weed infestations will be assessed based on the threats they pose, taking into account the characteristics of the species, their nature, location and size, as well as the risks they present to ecosystem biodiversity.

Newly disturbed sites or past areas where treatment was ineffective will be prioritized for monitoring and early treatment.

With the exception of noxious weeds, initiating treatment for problem vegetation is based on Risk Categories. Some weeds, trees or shrubs can cause more damage than others. The degree of risk will depend on the management objectives for a particular area. Risk criteria will generally be based on the following:

3.4.1. High Risk

All woody trees and shrubs, noxious weeds, and invasive/difficult to control species are placed in the high-risk category because:

- Some tree species have the potential to grow into overhead electrical infrastructure, posing safety hazards and operational challenges. Additionally, falling branches or entire trees can cause significant damage to infrastructure, leading to fire ignition or outages. Further, surrounding communities could be at risk in the event of an outage.
- They are noxious weeds which are rapidly spreading or invasive and reduce the natural biodiversity; and,
- They will increase the amount of organic matter on the site, and they are deep-rooted species that will grow into the ground grid or be challenging to control.

3.4.2. Medium /Low Risk

These include grasses, non-woody herbaceous species, mosses, lichens, liverworts and algae. They are placed in this risk category because they are low-growing, slow spreading and shallow-rooted species.

Treatments will be implemented annually at all Nelson Hydro Facilities covered under this IPMP to ensure that the surfaces within electrical facilities remain as free of vegetation as possible, and vegetation encroaching alongside fence lines and access roads is maintained. Nelson Hydro staff will visually assess

the vegetation cover at each site, and a decision will be made to take action on undesirable species based on the specific treatment thresholds described below.

3.4.3. Specific Treatment Thresholds

Specific vegetation management treatment thresholds for the different types of Nelson Hydro facilities covered by this IPMP are detailed below:

3.4.3.1. Within Substations and Switching Stations

Electrical facilities are critical sites for vegetation management for safety reasons. If an electrical fault or lightning strike occurs, current can flow through the structure and into the ground, creating step and touch potentials that can cause injury or death to workers.

Due to serious electrical safety hazards, weeds are not tolerated within fenced substations, switching stations, and tower compounds. When treatment crews are present, all weeds on site will be controlled (0% threshold), especially any tall-growing species whose roots could reach the grounding system.

In addition, the following areas are maintained weed-free (0% threshold):

- Under or around electrical equipment to assist in preventing step and touch potential.
- Under switch operators and equipment control cabinets, because of the high risk of people standing at the equipment during an electrical fault;
- Around oil-filled transformers and equipment;
- Around high voltage equipment with ground level insulators.

3.4.3.2. Outside and Inside Substation and Switchyard Perimeter Fences

In many Nelson Hydro substations and switchyards, the ground grid extends beyond the perimeter fence for 1.5 to 2 meters for safety reasons (as outlined above). Herbaceous broadleaf, grass species, and noxious and invasive weeds will be controlled where weed density exceeds 5% of the perimeter area within 6 meters of the fence (5% threshold). For safety reasons, all tall-growing tree and shrub species within 1 meter of the perimeter fence will be selectively controlled (0% threshold), and all other vegetative cover within 6 meters of the fence will be kept below 15 cm in height.

3.4.3.3. Roads Within Generation Facilities

Most roads within Nelson Hydro generation facilities have either gravel or dirt surfacing and are unpaved. Weeds established within or alongside these roads can act as seed sources, rapidly spreading to adjacent electrical compounds, resulting in larger weed infestations. Control will be initiated when weed levels exceed 15% of the area (i.e., the 15% threshold). The exception is for weeds growing through asphalt-surfaced roadways, where all weeds will be controlled (0% threshold), to maintain the resistivity and integrity of the asphalt surface.

3.4.3.4. Fenced Compounds, Equipment, Storage Yards, and Buildings and Offices

Although the electrical hazard within fenced compounds, storage yards and around buildings is not as high as in electrical facilities, weeds growing in these areas can serve as a seed source, interfere with access to equipment, compromise site security, serve as food and harbourage for ants, rodents and wood pests, increase the rate of corrosion of steel equipment by retaining moisture, increase the fire hazard, and increase the risk of slipping and tripping. Controls will be initiated when weed levels exceed 15% of

the area (15% threshold).

3.4.3.5. Fenced Pole Yards

For the same reasons as compounds, storage yards, and around buildings and offices, weeds must be controlled in pole yards. Pole yards may be enclosed within a fenced compound or outside the fenced areas. The Canadian Standards Association governs the storage of wood poles. CAN/CSA 015, Section 5.7 requires that poles be piled and supported in such a manner that all poles are at least 30 cm above the general ground level, and that no vegetation is permitted underneath stored poles. Under pole bunks, all vegetation will be controlled for safety (fire prevention) reasons (0% threshold). Controls will also be initiated when weed cover within 10 meters of the pole bunks exceeds 10% of the area (10% threshold). Controls will be initiated throughout the pole yard when weed cover exceeds 5% of the area (5% threshold).

Additionally, tall trees and shrubs growing within 1 meter of the pole yard perimeter fence will be removed to mitigate the safety hazard.

3.4.3.6. Vacant and Undeveloped Land Within Facilities

Many of the larger facilities, such as generation sites, have large areas of vacant or undeveloped land. Many of these areas contain vegetation. Although vegetation management is not routinely conducted in these areas, they have the potential to be sources of undesirable weeds, weed seeds, and noxious and invasive weeds that can increase vegetative cover in electrical facilities. No threshold level has been established for weeds growing in these areas, except for noxious weeds, which will be controlled (i.e., a 0% threshold).

3.4.3.7. Solar Garden

A solar garden is a centralized array of solar panels that produce electricity from the sun's energy, consisting of individual solar modules and associated land. Management of undesirable weeds is required for ease of access for maintenance purposes. The Solar garden is within a restricted area.

3.5. Pesticide Treatment Options and Methods

[IPMR Section 58(2)(e)(i)(ii)(iii)]

IPM involves the use of various techniques to control invasives, noxious weeds and problem vegetation, including hazard trees. At this time Nelson Hydro is not using rodenticides for the management of rodents, which is a prescribed use per section 5(1) of the Act. Second-generation anticoagulant rodenticides are discussed in Section 81 of the IPMR outlining specific conditions under which a licensee may use rodenticides, including requirements for rodent management plans [Am 2022].

The selection of a particular treatment technique will depend on:

- How the required clearance specifications can be achieved;
- Adjacent land use (public, private or ALR lands);
- Proximity of water sources, bodies of water, and other environmentally sensitive features (i.e. riparian habitat);
- The possibility of adverse impacts to wildlife, fish, the surrounding land, workers and adjacent residents;

- Safety, security and economic impacts; and,
- The existing soil types and the undesirable vegetation present. The objectives of control must also be defined. These factors should then be related to the suitability of the method(s) being considered, including site accessibility and the potential consequences of not treating.

General site conditions and environmental sensitivities assessed during regular inspections or patrols (i.e., monitoring) will be reevaluated for control efficacy, allowing a period for the pesticide to take effect. The IPM techniques proposed for use under this IPMP include

- Physical controls;
- Cultural controls;
- Biological controls; and,
- Chemical control using a herbicide subclass of pesticide.

Herbicides, a specific type of pesticide designed to target undesirable species, may be considered for use where physical, cultural and biological methods alone are insufficient for effectively managing problematic vegetation. The targeted purpose for each herbicide approved for use under this IPMP will be discussed in detail in 0. During all herbicide use, disturbance to low-growing vegetation will be minimized when controlling problem vegetation by selective applications.

3.5.1. Non-Chemical Treatment Options

[PMR Section 58(2)(e)(i)(ii)(iii)]

Physical controls were historically applied to manage vegetation growing within or adjacent to Nelson Hydro Facilities. A combined control method will be considered where physical treatment alone does not provide effective vegetation management.

3.5.1.1. Physical Treatment Methods

Physical controls may include brushing (selective slashing), mowing, frilling (girdling), hand-pulling, and trimming. Table 3-3 provides a description, rationale and the benefits and limitations of each physical treatment method.

Table 3-3: Description and Rationale, Benefits and Limitations of Physical Treatment Methods

Description and Rationale	Benefits/Limitations
Selective Slashing is a manual treatment for managing woody tree and shrub species using tools such as chain saws, brush saws and axes. Woody vegetation is most commonly found encroaching outside of fence lines. Selective slashing of specific deciduous species is sometimes combined with a follow-up herbicide treatment to reduce re-sprouting from the cut stump.	The advantages of selective slashing include its selectivity and compliance with electrical safety requirements. It is the preferred manual control method in areas near riparian habitats and rocky terrain. The disadvantages are that using power tools to fall trees can pose safety hazards, be labour-intensive, and be more costly to complete by a qualified subcontractor. Slashing is not suitable or economical for areas with high stem densities.

Description and Rationale	Benefits/Limitations
Girdling is an effective technique for controlling the growth of particular deciduous species (e.g., alder, birch, cottonwood) that commonly resprout following cutting. A strip of bark is removed from around the tree trunk with an axe or other hand tool. This causes damage to the phloem tissue within the sapwood. Transport of nutrients (needed for photosynthesis) to the roots is inhibited, leading to a gradual decline in tree health and eventual mortality.	This technique effectively kills the tree roots without affecting the above-ground parts. The very labour-intensive method is helpful in areas adjacent to water bodies or other environmentally sensitive areas where herbicide application is not permitted. Girdling also allows for the selective management of individual stems and species, which can be removed tree-by-tree. It can be a useful method within 300 meters of forested land or grassland areas to prevent any fire from spreading (<i>BC Wildfire Regulation</i>).
Hand-pulling is a viable physical control only for certain established weeds that can be easily uprooted, such as young tree seedlings and clumps of grass where the roots can be entirely removed. It is effective if the number of weeds to be pulled is small and the site is a manageable size. When hand-pulling to manage weeds, the exposed soil will be immediately covered with existing gravel.	Hand-pulling weeds at electrical facilities is not often done, as it tends to break down the crushed rock surface. Excessive hand-pulling increases the organic matter in the crushed rock, which encourages the establishment of weeds. Hand-pulling weeds within electrical facilities can also be a serious safety issue. When hand-pulling roots, workers risk electrocution if the weed roots are in contact with the ground grid. In areas where vegetation management has been minimal or nonexistent for an extended period, hand pulling can effectively reduce a large volume of vegetation to a manageable level. Hand-pulling can be effective when combined with other management practices. For weed species with taproots (i.e., Canada thistle) and other rhizomatous plants, hand-pulling is only effective if the entire root is removed, as underground stems broken from the taproot can resprout into new plants.
Weed-trimming at the ground surface can be used in areas such as along fence lines, at low-priority sites, to remove herbaceous vegetation growing on gravel areas, within cracks in asphalt or concrete, and along access roads.	When done early in the season, weed trimming helps remove seed heads, which can be beneficial for reducing the amount of viable seed that disperses in a weedy area. It does not remove roots and has limited effectiveness against weed species that reproduce from stem pieces. A common two-step procedure within gravel areas, combining weed-trimming with a follow-up herbicide application, effectively manages weed growth while removing organic matter. Weeds are cut down, raked up along with the organic matter, bagged, and disposed of off-site. The cut portions of the vegetation remaining on the gravel surface are then treated with an appropriate herbicide.

Description and Rationale	Benefits/Limitations
Mowing is the process of cutting vegetation, primarily grasses or other low-growing herbaceous species. Vegetation will be mowed using commercial lawnmowers, garden tractors or industrial tractors.	Mowing helps maintain vacant or undeveloped areas within a facility. Vacant regions are those that lack electrical facilities or equipment storage or have been designated for future expansion. The surface of the vacant areas may be covered with grass or other low-growing herbaceous vegetation and is maintained only by mowing. Vegetation should be mowed prior to developing seed heads to reduce the seed source available for dispersal to other areas of low weed tolerance within the facility.

3.5.1.2. Cultural Treatment Methods

Cultural weed control refers to practices that enhance the disturbance recovery of a land area surrounding a facility. The prime objective is to make the environment less suitable for weeds, giving desirable vegetation a competitive advantage.

Cultural controls involve:

- Encouraging the establishment of low-growing, competitive, local native vegetation,
- Grass seeding to resist weed establishment naturally, and
- Investigating the development and use of tree growth regulators/inhibitors.

Implementing the cultural control methods mentioned above may reduce the need for long-term management of undesirable vegetation. Table 3-4 details the descriptions, rationales, benefits, and limitations of the cultural treatment methods.

Table 3-4: Rationale, Benefits and Limitations of Cultural Treatment Methods

Description & Rationale	Benefits/Limitations
Grass Seeding refers to the manual planting of turf or agricultural grasses. This method reduces the establishment of broadleaf weeds with rapidly spreading airborne seeds. Required equipment may include cyclone spreaders, seed drills and hydro-seeding machines.	The advantages of using grass seeding are that it prevents erosion, inhibits weed growth and promotes aesthetics. Limitation: Likely to attract wildlife such as ungulates that would forage.
Tree Growth Regulators/Inhibitors will be investigated for possible use on and immediately surrounding facilities.	Currently, no tree growth regulators/inhibitors products are registered for use in Canada. Potentially, facility areas may be suitable candidates for this method as a safer control technique, thereby reducing the risk of electrical hazards from the ground grid.

3.5.1.3. Bio-Control Treatment Methods

Biological control techniques utilize agents, such as fungi or insects, that specifically target undesirable weed species. In BC, Bio-Control primarily uses insects and pathogens to reduce invasive species and weeds to ecologically acceptable levels. The agents are expected to become self-regulating once established; however, biological control is not considered an eradication tool or suitable for small infestations (FPB 2006). At least twelve distinct agents have established operational status for invasive plant bio-control in BC. Refer to the BC Ministry of Environment and Climate Change Strategy (BC Gov.) for an operational list of authorized invasive plant management methods. Agent group types are primarily comprised of beetles, weevils, moths, and one gall-forming fly. Refer to Table 3-1 for a web link to the Biological Control Field Guide in British Columbia.

A biological control agent currently registered for use in Canada for controlling problem vegetation is Chontrol Paste[®]. This biological control product inhibits the re-sprouting and re-growth from the cut stumps of red alder and Sitka alder. Table 3-5 below explains what Chontrol Paste[®] is, why it is used, and its advantages and disadvantages.

Table 3-5: Description and Rationale, Benefits and Limitations of Using Chontrol Paste[®]

Description & Rationale	Benefits/Limitations
Chontrol Paste is a registered biological control alternative to using herbicide active ingredients, such as glyphosate and triclopyr, to control red and Sitka alder re-sprouting following manual cutting. It is applied as a paste from a squeeze bottle to freshly cut stumps.	Using this biological control agent will reduce the need to use chemical pesticides. Because this species of fungus is abundant throughout Canada, its use will not result in a significant increase in the natural environmental background levels of the fungal spores that this species produces. Additionally, since this product is applied directly to the cut stumps of target trees, exposure to adjacent non-target plants will be negligible (i.e., there will be no drift, as the product is not sprayed). Apart from this product being registered for only two tree species, there are no known limitations to using this biological control agent.

3.5.2. Chemical Treatment Methods

[IPMR Section 58(2)(e)(i)(ii)(iii)]

Herbicide use is often the only practical and safe method of controlling vegetation in areas around and within facilities where non-chemical methods cannot be employed due to safety concerns.

3.5.2.1. The Reason for Pesticide Use

Although a primary objective of this IPMP is to minimize pesticide use to control undesirable vegetation where viable alternatives exist, pesticides are an essential tool in vegetation management on facilities and associated infrastructure.

The selective and limited use of pesticides is an integral part of the Nelson Hydro IPM program. An IPM program that combines manual/mechanical methods, cultural control methods, and biological control methods discussed earlier, with the site-specific use of pesticides, is often the only effective way to manage undesirable vegetation at facilities. Manual/mechanical control methods alone will not keep

deciduous vegetation below injury thresholds over the long term due to re-sprouting. Sprouting is a biological response to injury caused by mowing, brushing, grooming, and certain types of pruning. When a single stem is cut, multiple stems can grow from the severed stump or the root system (called root suckering). These re-sprouts are fast-growing because they are fed by the root system that is already well-established. A repetitive manual/mechanical control cycle and re-sprouting can increase the density of tall-growing species.

Depending on the species, the number of shoots/re-sprouts per stem can increase up to 100 times, with re-growth usually averaging 1.5 to 3.0 meters per year following manual/mechanical treatments. Within this IPMP, except for complying with provisions of the *BC Weed Control Act* that require occupiers of land to control noxious weeds, herbicides will only be used to control the re-sprouting of problem deciduous vegetation. This will be done by:

- Injection into individual stems;
- Application onto the bark of individual stems;
- Application to the cut surface of stumps following manual/mechanical treatment methods; or,
- Application onto the foliage of deciduous vegetation that is “missed” following stem injection, basal bark application or cut surface of stumps the previous year.

Non-chemical methods will remain essential parts of the Nelson Hydro IPM program. In some instances, however, these methods can be impractical, hazardous for workers, incompatible with environmental protection values, labour-intensive, and expensive. In certain areas, mechanical methods cannot be used for vegetation control where an ignition potential risk exists around energized sources.

The use of power saws for brushing or thinning operations can have direct and indirect environmental effects, specifically altering microhabitats and displacing birds and small mammals during nesting and breeding seasons. It can also be a fire risk, igniting dry vegetation. From an economic viewpoint, mechanical methods have been shown to cost, on average, four times more per hectare than control of the same vegetation using herbicides.

Pesticide use has not been shown to impair applicator health, provided that personal protective measures and equipment are adhered to, as indicated on product labels. Except for the active ingredient glyphosate, all proposed pesticides are selective in their mode of action (i.e., they will not affect grasses growing on a treatment site, thereby reducing the chances of soil erosion). Due to their generally selective use (to control re-sprouting of deciduous vegetation), their impacts on biodiversity will usually be less than those of mechanical methods.

3.5.2.2. Pesticide Identification, Application Equipment, and Application Methods

The herbicide active ingredients proposed for use under this IPMP are listed below. It is a requirement for a pesticide certificate holder to maintain up-to-date Chemical Safety Data Sheets (SDS) and product labels that are durable, legible, and firmly affixed to the container when performing work on Nelson Hydro sites. Refer to the current Workplace Hazardous Materials Information System legislation (December 2022, GHS 7-8th edition) for a Globally Harmonized System of Classification and Labelling of Chemicals.

- aminocyclopyrachlor
- aminopyralid
- clopyralid
- Chondrostereum purpureum

- dicamba
- diflufenzopyr
- florpyrauxifen-benzyl
- fluroxypyr
- glyphosate
- imazapyr
- metsulfuron-methyl
- picloram

Some herbicide products may have identical active ingredients but different trade names and pesticide control product (PCP) numbers issued by the federal Pest Management Regulatory Agency (PMRA). These herbicides are considered equivalent and can be used under this IPMP. Health Canada provides a free tool called CHEMINDEX, which can provide CAS registry numbers, chemical names, and, most importantly, synonyms (aliases) for more than 200,000 substances (Table 3-1).

A pesticide certificate holder is responsible for ensuring that the confirmation holder is notified of any changes to chemical selection, product variation, or discontinued use, so that the IPMP can be updated. See 0 for a detailed description of commonly used herbicides, species efficacy and environmental toxicity specified by WorkSafe BC.

3.5.3. Pesticide Application Equipment

[IPMR Section 58 (3)(c)]

The equipment proposed for applying chemicals under this IPMP is listed below. A description, rationale for use, and the benefits and limitations of each of the application methods/techniques are shown in Table 3-6.

A Backpack is a portable, manually operated, pressurized container equipped with a positive shut-off system and a nozzle for applying pesticides. It operates under low pressure, thus minimizing the possibility of chemical drift. It is beneficial for spraying small areas or individual trees and plants (e.g., noxious weed species). Within this IPMP, backpack sprayers may be used for herbicides proposed for use in foliar, cut stump, and/or basal applications.

Wick/Wipe-On Applicator selectively applies pesticides containing the active ingredient glyphosate by making contact with plant surfaces. Only small amounts of glyphosate are used, so the need for pumps, control devices and spray tanks is eliminated. Wick/wipe-on application is ideal for vegetation management in areas where no spray drift can be tolerated.

Handgun (Power Hose and Nozzle) is a hand-held spray gun and hose attached to a portable tank filled with pesticide solution, typically equipped with a power-driven pump to pressurize the herbicide solution in the hose. Power hoses are generally used in areas with large amounts of vegetation that exhibit a high distribution and density of noxious weeds and invasive plants. Within this IPMP, handguns may be used for the foliar application of all the active ingredients for vegetation management and the selective control of noxious weed infestations and invasive plant patches.

Squirt Bottle is a hand-held, non-pressurized container that directly applies very small amounts of herbicides onto foliage or cut tree stumps.

Injection Tools: A Battery-powered drill or automatic lance injects herbicide capsules into a target tree's stems or stump. This tool can also include a syringe-type applicator, where permitted per the herbicide product label.

3.5.4. Pesticide Application Methods/Techniques

Herbicide application methods/techniques proposed under this IPMP include foliar, wick/wipe-on, and cut surface applications. These application methods are described below, along with a rationale for their use (Table 3-6). Due to the low risk of chemical exposure to the general public, cut surface application is the only suitable method for urban use. The active ingredients commonly associated with herbicides listed in this IPMP (identified in 3.5.2.2) are listed according to their manner of application and the required equipment to conduct treatment in Table 3-7.

Table 3-6: Description and Rationale for Use, Benefits and Limitations of Herbicide Application Methods/Techniques

Description & Rationale	Benefits/Limitations
Foliar applications involve using a manually operated, pressurized backpack sprayer or a handgun to apply all active ingredients. This method/technique is most effective when the target vegetation is actively growing.	Foliar applications can be carried out at any time of the year, provided the target plants are actively growing. As foliar applications are susceptible to drift, caution must be exercised around desirable plants and environmentally sensitive areas. If non-selective pesticides are applied (e.g., glyphosate), they will control both the target vegetation and desirable growing plants.
Wick-Wipe-on applications involve using a wick soaked with the active ingredient glyphosate, which is wiped or dragged over the foliage of the target vegetation. This technique will generally be used where cut stumps have re-sprouted, or for treating small patches of vegetation within facilities in areas where no drift can be tolerated.	This application technique virtually eliminates drift and is useful for safely and effectively treating individual plants or stems in targeted areas of desirable vegetation. However, this technique is labour-intensive and only practical for small treatment areas or several individual plants.
Cut Surface applications will be used in conjunction with manual treatments to control deciduous vegetation. With this method/technique, the problem vegetation is cut as low to the ground as possible, and herbicide is applied to the cut surface of the stump, or to the bark, or injected into individual stems, to limit re-sprouting.* The active ingredients, glyphosate and triclopyr, may be applied using this method.	This method/technique is preferable in highly visible areas or areas where standing dead trees do not meet treatment objectives. Because the application is restricted to the cut surface of freshly cut stumps, there is generally no chemical drift, resulting in minimal impact on fish, wildlife, and bodies of water, as well as water sources and food intended for human consumption. Cut surface applications pose little risk of herbicide exposure to workers or the general public. This technique may fail if treatment is not undertaken immediately following physical control.

Notes: *Cut-stump herbicide treatment is the only application method suitable for the City area. A treatment plan requires the approval of both Council and Public Works.

Table 3-7: Herbicide Mixtures by Application Method

Manner of Application	Active Ingredient	Equipment Required
Foliar	aminocyclopyrachlor	- Backpack sprayer - Boom sprayer - Powerhose - Wick
	aminopyralid	
	clopyralid	
	dicamba	
	diflufenzopyr	
	florpyrauxifen-benzyl	
	fluroxypyr	
	glyphosate	
	imazapyr	
	metsulfuron-methyl	
	picloram	
	triclopyr	
	2,4-D	
Cut stump	<i>Chondrostereum purpureum</i>	- Backpack sprayer - Spray bottle - Squirt bottle - Modified brush saw
	glyphosate	
	imazapyr	
	picloram	
	triclopyr	
	2,4-D	
Basal bark	glyphosate	- Backpack sprayer - Spray bottle
	triclopyr	
Injection	glyphosate	Injection lance
	triclopyr	
	imazapyr	
Frilling/hack-and-squirt	glyphosate	- Backpack sprayer - Spray bottle - Squirt bottle

Manner of Application	Active Ingredient	Equipment Required
Table Notes: this product list, including active ingredient(s), and the trade names (PCP #) for mixtures in Appendix C, should be updated annually by the confirmation holder. Online database links are provided in Table 3-1 for Government SDS and Pesticide Product Info.		

3.6. Treatment Method Selection Criteria

[IPMR Section 58(2)(e)(iv)]

IPM involves a decision-making process that examines the various treatment options for a particular vegetation complex. This decision-making process ensures that the most suitable, effective, environmentally compatible and cost-effective method or combination of methods is selected. In making these decisions, Nelson Hydro personnel will generally use the following assessment criteria to justify and evaluate the method(s) chosen:

- How the required clearance specifications can be achieved;
- Species of problem vegetation (conifer/deciduous);
- Location of the problem vegetation, including adjacent land use;
- Accessibility to the problem vegetation (terrain, slope, remoteness of sites);
- Safety issues (the public, Nelson Hydro personnel and contractors), including fire and electrocution risks;
- Objectives of the vegetation management;

Risk analysis for taking no action:

- Stem density and height of problem vegetation;
- Public concerns and the effect on adjacent property owners and land uses;
- Short and long-term impacts of the method(s) being considered;
- Expected efficacy of the method(s) being considered;
- Benefits and limitations of each technique;
- Cost effectiveness;
- Environmental considerations (proximity to water sources and drinking water, waterbodies and riparian areas, agricultural crops and wildlife and fish habitat, food growing or planted for human consumption). Importantly, prevention strategies for contamination of food intended for human consumption;
- For pesticide treatments, the choice of pesticide, application methods/techniques and application equipment; and,
- Variable weather conditions and contingency planning for modifying application methods.

Nelson Hydro will work closely with the contractor to ensure that treatments are applied at the most effective time to control the undesirable vegetation. If the treatment option being considered involves using a herbicide, the most effective control will be achieved if the chemical is applied to the correct growth stage of the targeted weed or problem species.

3.7. Post-Treatment Evaluations

[IPMR Section 58(2)(f)(i)(ii)(iii)]

All applications of pesticides for the management of undesirable vegetation under this IPMP will be undertaken by contracts issued to qualified companies possessing a valid BC Pesticide User License. All pesticide applications will be made by certified pesticide applicators in the appropriate certification category or supervised by an appropriately qualified and certified applicator.

Post-treatment evaluations will be conducted for all areas treated under contract. Nelson Hydro will assess treatment effectiveness during routine operations and maintenance visits. These inspections will verify the success of vegetation treatments by contractors, with a focus on the following:

Upon completion, all contract work will be inspected to determine:

- Compliance with the commitments made in this IPMP;
- Compliance with the *IPMA* and Regulations;
- The site objectives have been achieved;
- The success of the treatment methods employed;
- If pesticide free zones, no-treatment zones and buffer zones were maintained;
- If any adverse environmental impacts have occurred, and,
- If corrective action is required.

Inspections will be conducted on-site and primarily based on visual assessments. Invasive BC has developed fillable PDF forms to record visual observations and document vegetation management efficacy. Among the twelve record types is a Chemical Treatment Monitoring Field Form (See Table 3-1). Evaluations may include both qualitative and quantitative determinations of mortality to the targeted vegetation, as well as documentation of any non-target mortality on other organisms that is evident. The effectiveness of the treatments will be determined by comparing the pre-treatment and post-treatment vegetation (expressed as a percentage of the surface area). It is recommended that a competent invasive plant specialist assist with field evaluation.

4. Operational Information

[IPMR Section 58(3)(a)]

The operational information included in this section includes:

- Qualifications and responsibilities of persons applying pesticides;
- Procedures for safely transporting pesticides;
- Procedures for safely storing pesticides;
- Procedures for safely mixing, loading and applying pesticides;
- Procedures for the safe disposal of empty pesticide containers and unused pesticides; and,
- Procedures for responding to spills of pesticides.

4.1. Qualifications and Responsibilities of Persons Applying Pesticides

[IPMR Section 35(1)(d),36(c),37(1) (c), 46 (1)]

All pesticide applications will be conducted or supervised by a person who is a pesticide applicator certificate holder endorsed for the class of pesticide and its application use under this IPMP. Any individual or company (i.e., a contractor) that provides a service to Nelson Hydro by applying commercial or industrial pesticides must have a valid B.C. Pesticide User License. Potential contractors will provide a list of their pesticide products to Nelson Hydro, which will be reviewed annually to verify products conform to the active ingredients listed in this IPMP. The product list must also be checked against the official Canadian online database, listing all pesticide products registered for use in Canada (See Table 3-1). Nelson Hydro is committed to the use of registered products that meet Canadian safety standards.

The responsibilities of the Certified Pesticide Applicator are to:

- Maintain a consistent presence at the location to provide continuous oversight;
- Have proof of certification available and ensure that the certificate holder's certificate is readily accessible at or near any location where the certified individual is conducting work under the regulation [Am. 2022];
- Perform the service, or supervise no more than four assistant applicators [Am. 2016] at one time, maintaining continuous contact, auditory and/or visual, with the assistants;
- Be within 500 meters of all persons being supervised; and,
- Maintain updated safety documentation that includes product SDS, the location and contact numbers of nearby medical treatment centers, Nelson Hydro emergency contact persons and a plan for emergency transport. At least one crew member should have Level II First Aid training with Transportation Endorsement in addition to other specific Nelson Hydro safety certifications.
- Comply with the standards contained in Division 7 of the IPMR.

A pesticide applicator licensee planning to use a pesticide that is a rodenticide should refer to IPMR Section 81 for other 'certificate holder' responsibilities, as well as understand licensing requirements in Division 2 of the regulation.

4.2. Procedures for Safely Transporting Pesticides

[IPMR Section 58(3)(a)(i)]

Herbicide contractors should be familiar with all legislation governing pesticide transport and carry documentation such as Pesticide Service Operations Records, this IPMP and the IPMP approval or notice of permit. The *Transportation of Dangerous Goods Act* (TDGA) regulates the transportation and handling of some herbicides. Personnel shall follow these procedures for safely transporting pesticides:

- Limit the amount of pesticides that will be carried in any one vehicle. The quantity shall be no more than necessary for each project, except for transportation between storage facilities.
- Ensure pesticides are carried in a secure and lockable compartment to prevent spillage, unauthorized access, and removal. The compartment shall be separate from food, drinking water, safety gear, spill containment equipment and people.
- Inspect all pesticide containers for defects before transporting. Keep pesticides in their original containers and with their original labels.
- If transferring a product from its original container, follow the Canadian Workplace Hazardous Materials Information System (WHMIS) regulations for guidance on re-labelling.
- If original labels are unavailable, the wood pesticides shall be placed in appropriate containers with the trade name, active ingredient concentration, and pesticide registration number affixed to the outside of the container.
- Ensure that the vehicle is equipped with a first aid kit, fire extinguisher, spill contingency plan and emergency kit. The operator should have relevant training in safe spill clean-up techniques and the use of fire extinguishers.
- Ensure that all documents and placards are carried in, or placed on, transport vehicles if required under the *TDGA* or the *BC Pesticide Control Act*, the *IPMA* or the *IPMR*; and,
- Read and understand the pesticide labels and the product SDS for all pesticides being transported. Refer to Table 3-1 for web links to online databases providing pesticide product and chemical safety information.

Before transporting pesticide products, conduct a thorough walk-around inspection of the equipment, machinery, and storage compartments, ensuring valves are closed, containers are upright and secured, and pumps are shut off. Address any emergency repairs prior to mobilization.

4.3. Procedures for Safely Storing Pesticides

[IPMR Section 58(3)(a)(ii)]

Personnel shall follow these procedures for safely storing pesticides:

- Ensure that pesticides are stored in accordance with the *IPMA*, *IPMR* and the WorkSafeBC document Standard Practices for Pesticide Applicators.
- Keep pesticides in their original containers and with original packaging. If original packaging is unavailable, the pesticides shall be placed in appropriate containers with the trade name, active ingredient concentration and pesticide registration number affixed to the outside of the container.

- Ensure that storage facilities are locked when left unattended, ventilated to the outside atmosphere, are entered only by persons authorized to do so, and that there is a placard affixed and maintained on the outside of each door leading into the storage area bearing, in block letters that are clearly visible, the words “WARNING – CHEMICAL STORAGE – AUTHORIZED PERSONS ONLY”; and,
- Keep storage facilities separate from work and living areas, and away from food, flammable materials, bodies of water and water sources.

4.4. Procedures for Safely Mixing, Loading and Applying Pesticides

[IPMR Section 58(3)(a)(iii)]

Personnel shall follow these procedures for safely mixing, loading and applying pesticides:

- Ensure that Certified Pesticide Applicators carry out all mixing, loading and application of pesticides, and that all manufacturers’ recommendations, as specified on the pesticide labels, are adhered to;
- Ensure that all mixing, loading and application of pesticides is undertaken in a safe manner. Activities shall be undertaken only in areas at least 15 meters from PFZs, no-treatment zones, waterbodies, fish or wildlife habitats and other environmentally sensitive areas;
- Ensure that containers used to mix, prepare or apply pesticides are not washed or submerged in any body of water and re-purposed;
- Ensure that eye wash station(s), protective clothing, safety spill kits, a copy of the spill response plans, the applicable IPMP and copies of the pesticide product’s SDS are at the facility office or carried by the Applicator. The SDS will provide additional safety details, such as the Product Label and identifier, emergency contact list, and recommended first aid supplies in the event of worker exposure.
- Follow all directions and restrictions on pesticide labels, including adhering to the recommended re-entry times for treatment areas.

4.5. Procedures for the Safe Disposal of Empty Pesticide Containers and Unused Pesticides

[IPMR Section 58(3)(a)(iv)]

Personnel shall follow these procedures for safely disposing of empty pesticide containers and unused pesticides:

- Ensure that all pesticide waste is disposed of in a manner consistent with the requirements of the *BC Waste Management Act* and the *Special Waste Regulations*, as appropriate.
- Ensure empty pesticide containers are returned to the distributor as part of their recycling program. It is recommended that containers be triple rinsed or pressure rinsed to render them non-hazardous for handlers. After the container is rinsed and rendered unusable (due to punctures or crushing), it prevents unsafe reuse. It is recommended that containers be dropped off at an approved recycling depot.
- Ensure that all leftover pesticides are stored for future use in a manner consistent with the requirements specified above, and comply with WHMIS standards (i.e., clearly legible, intact, and

prominently displayed pesticide product labels on containers) under normal conditions of transport and use.

4.6. Procedures for Responding to Pesticide Spills

[IPMR Section 58(3)(a)(v)]

Personnel shall follow these procedures to respond to pesticide spills. Additional information can be referenced in Nelson Hydro's six-step Spill Response Plan. If contractors under this IPMP have a spill response plan, it must meet or exceed the requirements of Nelson Hydro. General procedures which include the following:

- Spill response equipment shall be present or readily accessible near storage (including mobile storage), mixing, and loading sites. It shall consist of the following items: personal protective equipment, absorbent material, neutralizing material, a long-handled broom, a shovel, and a waste-receiving container with a lid.
- A copy of an approved Spill Response Plan shall be at or near each work site, and all personnel working on the project shall be familiar with its contents.
- All personnel shall be protected from pesticide contamination by wearing appropriate protective clothing and safety gear.
- In the event of worker exposure, evacuate the spill location and seek medical attention if necessary. Report the incident to Nelson Hydro's Operations Manager.
- The source of the spill shall be stopped.
- Coordinate spill containment by constructing soil berms, using spill absorbent booms or pads, or constructing a holding pit (Ensure the ground electrical grid is considered if ground disturbance is performed near facilities.)
- The project supervisor shall ensure that operations cease until the spill is contained and the source is repaired.
- Absorbent material shall be spread over the spill, if applicable, to absorb any liquid.
- Contaminated soil or other material shall be removed from the spill site and properly disposed of at a Class 2 facility. A 45-gallon drum or a UN-rated bulk bag are temporary storage options for contaminated soils or absorbent materials used for small clean-ups.
- The person responsible for the project shall contact Nelson Hydro for shipping instructions and disposal requirements; and,
- When more than 5 litres or 5 kg of the concentrate pesticide is spilled, the person responsible for the project shall immediately report to the BC Provincial Emergency Program by telephoning **1-800-663-3456** or, where that is not practical, to the local police or the nearest detachment of the RCMP.

An approved representative of Nelson Hydro shall be notified of the spill details as soon as practicable by the contractor's project supervisor. A formal incident report must be submitted within 24 hours of the incident. In the event of a worker injury, contact WorkSafeBC immediately.

5. Environmental Protection Strategies and Procedures

All pest management activities undertaken under this IPMP (both chemical and non-chemical) to manage undesirable vegetation, including hazard trees, and invasive and noxious weeds on the facilities will incorporate the following environmental protection measures:

- Strategies to protect community watersheds;
- Strategies to protect domestic and agricultural wells and water intakes, bodies of water and streams;
- Strategies to protect fish and wildlife and associated habitat;
- Treatment procedures near riparian areas and strategies for modifying setbacks for protection of transitional upland on the fringe of riparian zones, important for vegetation diversity and herptiles;
- Strategies to prevent pesticide contamination of food intended for human consumption;
- Pre-treatment inspection procedures for identifying treatment area boundaries and assessing overlap or proximity to cultivated lands within the Agricultural Land Reserve (ALR). Refer to Nelson Hydro's Vegetation Management Best Practices for details of the mapping software applications used to outline work. An updated Service Territory Map highlighting ALR polygons is included in **Error! Reference source not found.**;
- Procedures for monitoring weather conditions and strategies for modifying pesticide application methods for different weather conditions; and,
- Procedures for pre-treatment inspections to ensure protection of human health and the environment during the treatment period.

In this IPMP, all no-treatment zones (NTZ) will comply with the standards contained in Division 7 of the IPMR. Note that the *Riparian Areas Protection Regulation* (RAPR) is not a mandated regulation applying to the East and West Kootenay regions. In the Kootenays, Riparian protections often fall under Development Permit Areas for environmentally sensitive zones, OCPs, and the *Fisheries and Water Sustainability Acts* for permitting in and around watercourses.

5.1. Strategies to Protect Community Watersheds From Adverse Effects of Pesticide Use

[IPMR Section 58(3)(b)(i)]

Before the application of pesticides, Nelson Hydro shall implement the following strategies to protect community watersheds:

- Locations of community watersheds will be verified by accessing information from the Ministry of Environment, local governments, and Official Community Plans (OCPs), or by exploring iMapBC, a free BC web mapping tool and provincial geographical database with hundreds of data layers (e.g., land ownership, soils, ecology, and water resources atlas). See Table 3-1 for web links to online resources.
- Pesticides will not be stored within a community watershed for more than 24 hours before use. They will be removed from the community watershed within 7 days of their use, unless they are stored in a permanent structure.

- Pesticide use will be discontinued if pesticide residues or pesticide by-products are detected at a community watershed water intake, and further use will not be undertaken until the BC Ministry of Health Services (Medical Health Officer) has been satisfied that all required measures have been implemented to preserve water quality; and,
- Before using pesticides, community watershed maps will be consulted to determine if proposed treatments are within a community watershed or 100 meters upslope of any water intake, or 30 meters down slope of any water intake.

5.2. Strategies to Protect Domestic and Agricultural Wells and Water Intakes, Bodies of Water and Streams From Adverse Effects of Pesticide Use

[IPMR Section 58(3)(b)(i)]

Before pesticide use, Nelson Hydro shall ensure that strategies are developed and implemented to identify and protect domestic and agricultural wells, water intakes, bodies of water, and streams. A desktop search using iMapBC or the Provincial Groundwater Wells and Aquifer database will identify sensitive wells, intakes and waterbodies, which can be shown on a standard Nelson Hydro work site map and provided to contractors. To protect domestic and agricultural water sources and bodies of water during pesticide use, Nelson Hydro and its contractors shall maintain the NTZ and pesticide free zones (PFZ) shown in Table 5-1.

5.3. Strategies to Protect Fish and Wildlife, Riparian Areas, Wildlife Habitat, and Species at Risk From Adverse Effects of Pesticide Use

[IPMR Section 58(3)(b)(ii)]

Nelson Hydro facilities are generally located in areas that are in proximity to fish and wildlife, riparian areas, wildlife habitat and *Species at Risk* (SAR). When required for their protection, Nelson Hydro and its contractors shall implement the following strategies to protect fish and wildlife, riparian areas, wildlife habitat and SAR before control methods (chemical and non-chemical) are implemented under this IPMP. Where wildlife habitat features or SAR are suspected in a treatment area, it is recommended that Nelson Hydro consult a qualified professional (QP) wildlife biologist. Protection strategies include:

- Routine facility inspections for signs of nesting on infrastructure or within building structures (ospreys on distribution poles or raptors on transformers). There are raptors in BC listed as SAR, and active and inactive osprey nests are protected under the BC *Wildlife Act*.
- Maintaining a minimum 15 m NTZ around riparian areas, fish and wildlife and SAR habitat (considered valued habitat);
- Before applying pesticides, the boundaries of any required NTZ shall be established, and applicable public or private land notifications shall be conducted (See Section 6.2 of the IPMR)
- Undertake all pesticide applications in a manner that ensures endangered wildlife species, riparian areas, fish, and wildlife habitat are not impacted;
- Avoid treating low-growing shrubs and plants with chemical and non-chemical methods, as this vegetation may be browsed by wildlife or used for habitat;
- Cleaning, fueling and refilling of equipment will not be undertaken within 15 meters of an NTZ;
- Setting up PFZs around inhabited raptor and heron nests, wildlife trees and mineral licks during

vegetation management activities; and,

- Minimize soil erosion during vegetation management activities to avoid impacting desirable vegetation and wildlife.

Endangered wildlife species are protected under the federal *Species at Risk Act* (SARA). All migratory birds native to Canada, including their nests and eggs, are protected under the *Migratory Birds Convention Act* (MBCA). Stick-nesting birds such as eagles, hawks, and osprey could be found on Nelson Hydro's infrastructure or nearby wildlife trees, or large stick-nesters (herons and egrets) in adjacent riparian areas to facilities. These nests are explicitly protected year-round under the MBCA. When such nests are observed in Nelson Hydro's area, a QP will be consulted to oversee and implement appropriate mitigation measures.

5.4. Bird Guidance for Operations During Breeding Seasons

Nelson Hydro recognizes birds as a large wildlife group contributing significantly to regional, continental, and global biodiversity. Federal and Provincial legislation protects bird populations and their nests during species-specific breeding seasons. Under the updated Migratory Bird Regulations (2022), Environment Canada provides recommendations to avoid potentially destructive activities and inadvertent disturbance ('incidental take') during key nesting periods and to minimize or mitigate impacts on nests. Such nests could be internal pole cavities or stick nests in risky pole-top locations. Nesting calendars developed by Environment and Climate Change Canada for migratory birds, as well as nesting windows for non-migratory birds (e.g., most raptors in the southern BC region), will guide wood pole maintenance activities conducted by Nelson Hydro.

Furthermore, a Kootenay-Boundary Wildlife Habitat Feature (WHF) Order protects specific high-priority features (bird nests, bat nursery roots, and/or hibernacula in trees) associated with wildlife species of regional management concern. A QP (with bird expertise) will be retained when needed to assist with determining nesting activity, protected WHFs and mitigate Nelson Hydro's risk level as a result of a particular construction operating phase, or other activity such as vegetation maintenance or wood preservative pole treatments.

Nelson Hydro operations follow the Best Management Practices for Nesting Birds (Nelson Hydro BMP, 2021), which outline initiatives and procedures that support ecological operations. The Canadian Electricity Association has developed a beneficial management standard to assist utilities in creating programs to reduce the risk of incidental take and avian injury (See Table 3-1 for web links to both documents).

Table 5-1: Minimum Water Protection Measures for the Protection of Domestic and Agricultural Wells and Water Intakes, Bodies of Water and Streams*

Permitted Applications	NTZ/PFZ	Exception
Domestic and agricultural wells and water intakes, including all methods and pesticides	30 m NTZ	NTZ may be reduced if reasonably satisfied that a smaller NTZ will ensure no pesticide enters the well, water supply, intake or well
Non-Glyphosate Applications		

Around or along a body of water, dry stream, or classified wetland using any pesticide except glyphosate, subject to label restrictions and including all application methods	10 m PFZ	Glyphosate applications (see below)
Glyphosate Applications		
Along or around a body of water, if the body of water is: • non-fish-bearing at any time of the year, or • does not drain directly into a fish-bearing body of water	2 m NTZ	
Along or around a body of water or a classified wetland that is: • fish-bearing, or • that drains directly into a fish-bearing body of water, or • along or around a dry stream that, when wet, is fish-bearing or that drains directly into a fish-bearing body of water	5 m PFZ	
Up to the high-water mark of a temporary free-standing body of water and dry stream, that is: • not fish-bearing at any time of the year • does not drain directly into a fish-bearing body of water	0 m PFZ	
Noxious Weed & Invasive Plant Management -All Uses		
Selective application to noxious weeds & invasive plants if the application is made between 1m & 10m above high water mark	1 m PFZ	
For non-foliar and non-aerial applications, do not apply herbicides more than 1.5 m from a targeted plant.	1.5 m from a targeted weed or plant	Reasonable efforts must be made to protect any biological weed control organisms in the area
Notes *Table information sourced from Division 7 of the IMPR		

Pesticide-free zone (PFZ) – an area of land that must not be treated with pesticides, and must be protected from pesticides moving into it. PFZs are measured by the horizontal distance from the high-water mark. PFZs will be identified and marked/flagged prior to any herbicide application.

No-treatment zone (NTZ) – an area of land that must not be treated with pesticides. NTZs will be identified and marked/flagged prior to any herbicide application.

Body of water – any watercourse or body of water, such as a stream, river, wetland, or lake, but not including a human-made, self-contained body of water or structure of water.

Stream – a watercourse that contains water on a permanent or seasonal basis, is scoured by water, or contains observable deposits of mineral alluvium, and which has a continuous channel bed that is 100 m or more in length, or flows directly into a fish stream or a fish-bearing lake or wetland, or a licensed waterworks.

Wetland – a swamp, marsh, bog, or other similar area supporting natural vegetation, distinct from adjacent upland, and characterized by its unique vegetation and hydrological conditions. This also includes riparian habitat or a strip of vegetation which benefits from the seasonal high-water period (a transitional zone between terrestrial and aquatic environment)

5.5. Strategies to Prevent Contamination of Food for Human Consumption From Adverse Effects of Pesticide Use

[IPMR Section 58(3)(b)(iii)]

Nelson Hydro Facilities are occasionally located near environmentally sensitive areas, such as lawns, vegetable gardens, berry-picking and bee-keeping areas, and regions containing agricultural crops and domestic animals. Food intended for human consumption is sometimes grown or found within these areas. If food for human consumption is found/identified adjacent to undesirable vegetation that may be targeted for control, the following strategies shall be implemented for their protection:

- Non-chemical methods for problem vegetation management shall be considered when treatment objectives can be achieved;
- Where possible, areas containing food plants for human consumption (including fruit trees, berry shrubs, medicinal plants, and organic farms or bee yards) shall be identified and mapped. A map shall be provided to contractors;
- If control methods involving the application of pesticides are required, PFZs shall be maintained around these areas during pesticide application;
- Treatment Notices shall be posted at public access points to proposed treatment areas advising of treatment near food crops. This will ensure that people are aware that the area has been chemically treated; and,
- Where possible, herbicide treatments shall be conducted at times to minimize impact on food plants (i.e., delay treatments until after the fruiting stage).

The onus is on organic farmers to ensure an adequate buffer zone between their farm and Nelson Hydro Facilities. Local indigenous communities within the Nelson Hydro territory region may use native, culturally important plants for ethnobotanical purposes. Through indigenous engagement, the IPMP holder will encourage the submission of a comprehensive list of important species and the locations of sensitive harvest sites to develop avoidance strategies. Before considering treatments within 0.5 km of an environmentally sensitive area, all reasonable efforts will be made to contact the land manager to discuss

the vegetation management strategy and identify the NTZ or setback.

5.5.1. Best Practices for Operations in the Agricultural Land Reserve

The ALR is BC's provincial zone that preserves agricultural land for the future. Emphasizing ecological land stewardship, Nelson Hydro will consider best management practices where practicable for vegetation management occurring in overlapping areas or within 100m of ALR zones. The Agricultural Land Commission has developed landscape buffer specifications intended for farmland and intended to be established on the non-farm property (ALC 1993). Awareness of these landscape buffers is crucial when working near ALR-designated lands. Vegetation fencing and more comprehensive shelterbelts (i.e., hedgerows) are intended to screen for noise, views, dust, sprays, and other farm and wildlife shelters. These landscape buffers should follow similar pest control limitations as riparian buffers.

Nelson Hydro operations will utilize integrated vegetation control strategies, combining mechanical, cultural, and targeted chemical controls where feasible. Such techniques include mowing with a flail, spot herbicide application and manual removal or grazing. In specific situations, a special method called flame weeding may be an alternative, subject to approvals and consultation with the City of Nelson's fire department and the FireSmart program.

ALR sites are sensitive areas and, as such, align with buffer guidelines under the IPMR. Consideration will be given to drift reduction strategies (i.e., coarse droplets, low boom height, specialized nozzles) if there are ALR sites in close proximity to Nelson Hydro facilities. Operations within the ALR will be communicated to landowners, occupants, and the ALC, and written approvals will be obtained for prescriptive treatments. When targeting noxious weeds or invasive species with chemicals, all necessary approvals will be obtained in writing to treat regulated weeds. Through pre-application consultation, herbicide products can be selected that are registered and safe for use near grazing areas and cultivated lands, without reliance on fencing or cattle guards.

5.6. Pre-Treatment Inspection Procedures for Identifying Treatment Area Boundaries

[IPMR Section 58(3)(b)(iv)]

A pre-treatment inspection shall be completed prior to pesticide use to protect environmentally sensitive areas and establish the boundaries of the treatment area. During this inspection, the location of environmentally sensitive areas shall be identified, mapped, and demarcated. A pre-treatment meeting/discussion shall be held. All crew members shall be instructed in the flagging/marking requirements (which may include the use of Riparian Zone and PFZ flagging tape), as well as the methodology and procedures for pesticide application and handling and the posting of Treatment Notices by the contractor at locations that meet regulatory requirements.

5.7. Procedures for Maintaining and Calibrating Application Equipment

[IPMR Section 58(3)(b)(v)]

All pesticide application equipment used on Nelson Hydro property shall be safe, clean, in good repair, compatible, and appropriate for the pesticide being used. At a minimum, all backpack sprayers and handguns (including power hoses and nozzles) shall be calibrated once per year before use and at regular intervals throughout the season when changing herbicide products. Recalibration of equipment shall occur after any equipment modifications or when variability in nozzle output is detected. The frequency

of sprayer calibration shall be determined by factors such as the formulation of the pesticides used and the efficacy of the treatments. Contractors must maintain equipment recalibration records.

5.8. Monitoring Weather Conditions and Adjusting Application Methods

[IPMR Section 58(3)(b)(vi); 71(7)]

Weather conditions will be monitored prior to and periodically during pesticide applications. Wind speed and direction, precipitation, temperature, and sky conditions (clear, overcast, cloudy, or partly cloudy) will be recorded for foliar pesticide applications using backpacks or handheld sprayers. Temperature, precipitation, frost and dew conditions will be recorded for stem, bark, wick/wipe-on and stump applications.

Herbicide applications (broadcast spraying or foliar treatment) will be shut down if:

- The maximum temperature stated on the pesticide label is exceeded; or,
- The wind speed and/or direction cause the application of pesticide to drift and/or miss the weeds to drift and/or miss the weeds; or,
- Wind speed exceeds 8 km/hour; or,
- It begins to rain, increasing the chances of excessive runoff and leaching.

5.9. Posting of Treatment Notices

[IPMR Section 64(1)(2)]

Before treatment, Treatment Notices will be posted in locations that are clearly visible and legible from each approach maintained by Nelson Hydro for use by the public, employees, or contractors to access the treatment area, or at locations where due diligence would seem to require them. The signs shall remain posted for 14 days following pesticide application, and shall contain the following information:

- The trade name or the active ingredient of the pesticide that will be used;
- The date and time of use;
- Precautions to be taken to prevent harm to people entering the treatment area;
- The IPMP confirmation number;
- Contact information for Nelson Hydro to obtain information about the pesticide or pesticide use and voice public safety concerns, and,
- The applicator will maintain a record of where the Treatment Notices were posted for each treatment location.

Treatment of Notice Record, Intent to Treat Form for confirmation holders, and web links sourcing current documentation are included in 0.

6. Reporting, Notification and Consultation

[IPMR Section 37(1)(a) to (e) (2) (3); S10 (5.1)]

6.1. Reporting

Accurate record keeping enables Nelson Hydro and the Administrator, as per the *Integrated Pest Management Act*, to monitor the quantity of pesticides used and ensure compliance with the Act and its Regulations, as well as the commitments outlined in this IPMP and the contents of the Pesticide Use Notice.

Nelson Hydro will ensure that the required records described below are maintained.

6.1.1. Confirmation Holder Use Records

[IPMR Section 35 (1) (a) to (e); (2),(3)]

Each contracting firm applying pesticides for Nelson Hydro must maintain daily records of pesticide use.

Section 37(1) of the IPMR describes the requirements for these records. The following fields are included for all treatment records and must be collected for each treatment location and day of use:

- Region
- Date
- Location Description
- Treatment Type
- Site Priority Recommendation
- Site Photo
- Species percent, Distribution and Density
- Temperature
- Wind Speed
- Wind Direction
- Treatment Method
- Herbicide Trade Name, PCP
- Application Rate
- Mix Used
- Surfactant Used
- Delivery Rate
- Chemical Amount Used
- Area Treated
- Applicator names and certificate numbers
- Comments

A record for each piece of the holder's pesticide application equipment that requires calibration, including the calibration date and the data used for calibration.

Appendix B has a web link to pesticide recordkeeping and reporting (explanatory information) required by the *IPMA* Regulation in the Province of BC.

6.1.2. Annual Summary of Use Report for Confirmation Holders

In accordance with Section 39 of the IPMR, Nelson Hydro will submit to the Regional Administrator, *IPMA*, by January 31 each year, the required information for operations conducted under this IPMP in the previous calendar year. Summary details will include:

- The name and address of the confirmation holder, and their confirmation number;
- Trade names and active ingredients of the pesticides applied, including their PCP numbers;
- Locations and set out the total area treated in the calendar year [Am. 2022];
- Methods used to apply the pesticides;
- Quantity of each active ingredient applied (kg); and,
- Methods of non-pesticide pest controls used and the estimated total area to which pesticides were applied.

An online fillable form web link is included in Appendix B for reporting **annual** confirmation holder information. Note that a specific naming format is required when electronically submitting the Annual Use Report. Instructions are provided with the electronic form. Maps must all be submitted electronically to the Ministry of Environment and Climate Change Strategy.

6.2. Notifications

[IPMR Section 59(1)(a-k) (2)]

Online links to fillable PDF forms, including the Notice of Intent to Treat for confirmation holders, are included in Appendix B. Nelson Hydro commits to providing the following notifications with respect to this IPMP:

6.2.1. Notification of IPMP Confirmation

Nelson Hydro will, within 7 days of the Plan confirmation date, make available, for the term of the confirmation, a copy of the confirmation and the IPMP, along with relevant maps, at their local offices to allow public inspection. Per Section 59 (1) (j), the term of the applicable Integrated Pest Management Plan must not exceed 5 years.

6.2.2. Annual Notice of Intent to Treat

Nelson Hydro will forward, in writing, to the Ministry of Environment (MOE), at least 21 days prior to treatment in each year during which the IPMP is in effect, an Annual Notice of Intent to Treat (NIT) for the following year. The NIT will be submitted to each Regional Office of the MOE within whose geographic boundaries pesticide applications are being proposed. The NIT will identify:

- Name and business location of confirmation holder(s);
- Proposed treatment methods;

- Pesticides proposed for use and their method of application; and,
- Estimated area proposed for treatment.

As per Section 42 of the IPMR, for an annual NIT, Nelson Hydro will prepare and retain a map and/or diagram showing the treatment locations for the applicable calendar year, which indicates the following for each treatment location:

- The maximum number of hectares or poles per year intended to be treated under the applicable Integrated Pest Management Plan [Am. 2022], and,
- The geographic features that require a PFZ or a no-treatment zone.

6.2.3. Requests to Amend the IPMP

Nelson Hydro will forward the amendments requested for the IPMP to the MOE in writing. Amendment requests to add new application techniques or similar changes will not require further consultation, provided the amendment request is within land owned or controlled by Nelson Hydro.

Amendments to add new active ingredients will require further public consultation.

6.2.4. Notification of Contraventions

[IPMR Section 47(1)(e); 54(c)]

Section 72(1)(d) of the IPMR requires that a confirmation holder give written notice to the Administrator (delegate overseeing pesticide regulation) on a contravention of the *IPMA* or IPMR that involves the release of a pesticide into the environment. The licensee must give written notice as soon as practicable [Am. 2016]. Nelson Hydro commits to abiding by this requirement.

6.2.5. Public Notification Prior to Treatment

[IPMR Section 64(1)(2)(a-d)]

Notifying individuals, communities, and organizations in the agreed-upon manner and at the agreed-upon time during the public consultation process will be completed prior to treatments. Nelson Hydro will maintain a record of all public notifications for each treatment area.

Section 10(6) of the IPMR requires a treatment notice(s) of pesticide use to be given to any person approaching an outdoor public use area that complies with Section 63(1) and (2). [BC Reg 234/2016]. The definition of outdoor public use area was amended in the 2016 IPMR to include (b) private commercial land to which members of the public may reasonably be expected to access. Treatment notices must remain in place up to 48 hours after the pesticide use [Am. 2016].

Section 10(5.1) of the IPMR requires the licensee or a certificate holder to provide treatment notification before using a pesticide in an outdoor area of private residential land, in compliance with Section 63. Specifically, notice must be given to occupants, tenants, and the owner, land manager or agent. [Am. 2016].

6.2.6. Employee Notification Prior to Treatment

Nelson Hydro will provide internal notification to all potentially affected employees in advance of all pesticide treatments. Internal notification enables Nelson Hydro employees and contractors to review SDS documents for pesticide products and wear appropriate PPE when entering treatment areas to

conduct other work. Employee notification is not normally conducted in advance of control methods such as mechanical cutting or manual removal.

6.3. Consultations

[IPMR Section 61(1)(2) (a-j);(3)]

6.3.1. Public Consultation Plan

Prior to submitting a Pesticide Use Notice to the MOE for IPMP confirmation, Nelson Hydro will conduct a public consultation process by submitting notices in local community newspapers. The objectives of conducting public consultations when this IPMP is at the draft stage are:

- To increase public awareness of the IPMP process and the principles of IPM, which are embodied in the IPMP.
- To ensure that the public has an opportunity to identify concerns, and for Nelson Hydro to address those concerns, before the IPMP is finalized and submitted, and a Pesticide Use Notice is submitted for confirmation.
- To ensure a transparent and accountable review process for the IPMP.
- To educate the public on the need to conduct vegetation management on Nelson Hydro rights-of-way, including transmission corridors, distribution networks and their access roads; and,
- To explain how the planning process described in the IPMP recognizes the need to protect human health and the environment.

The public will be consulted on the IPMP development through notices in local community newspapers, which will be circulated within the geographic boundaries of the IPMP area.

Section 61(1) of the IPMR states that a Pesticide Use Notice must be submitted to the Administrator at least 45 days in advance. This notice consists of two parts, the first of which must be published within a two-week period in newspapers that are circulated in the relevant communities and/or the nearest communities. As outlined in Section 61(2), the notice must include the following information:

- The heading “DEVELOPMENT OF A INTEGRATED PEST MANAGMENT PLAN” in block letters;
- A reference number or another identifier unique to the proposed IPMP;
- The applicant's name, address, email address and telephone number;
- A statement that the use of pesticides is intended within the area to which the IPMP applies;
- A description with reference to the communities of the area to which the IPMP applies;
- The proposed duration of the IPMP;
- The trade name and active ingredient of the pesticides proposed to be used under the IPMP;
- The proposed manner of applying the pesticides identified in the IPMP;
- A location of copies of the proposed IPMP and maps of the proposed treatment area;
- The following paragraph “A person wishing to contribute information about a proposed treatment area(s), relevant to the development of the IPMP, may send copies of the information to the applicant at the address above or email address above within 30 days of publication of this notice”.

During the public consultation process, the draft IPMP will be accessible to the public, as stated in the public notifications.

6.3.2. Public Consultation Report

[IPMR Section 38(1)(2)(3)]

Nelson Hydro will submit to the Administrator, *IPMA*, a Public Consultation Report that contains:

- A summary of public consultations, including the names and addresses of those who provided input, the nature of their concerns and/or recommendations, and the Nelson Hydro response to the input from the public; and,
- A record of when, where and how the notice of the pending IPMP submission was published or when the notice was given of the public consultation, as applicable [Am.2022].

6.3.3. First Nations Consultation

The City of Nelson acknowledges that it resides and operates within the unceded traditional territories of the Sinixt, the Syilx, and the Ktunaxa peoples. The engagement will follow the Indigenous Engagement Guide for *IPMA* Proponents.

6.3.4. First Nations Consultation Report

To assist the Ministry in evaluating the effectiveness of First Nations consultations and Nelson Hydro's response to any concerns raised, Nelson Hydro will compile a report detailing the consultation process and its outcomes. This report will be submitted to the MOE Administrator of the *IPMA*, in conjunction with submitting the Pesticide Use Notice application.

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Appendix A Nelson Hydro Service Territory Map and ALR Polygons

Appendix B Notice of Pesticide Use Record, Intent to Treat and Annual Use Report

The *IPMA* Regulation requires that these records be kept up to date. The records may be kept at or near the treatment location during the use, but within 60 days after the use, they must be kept at the business location identified on the license or permit application or Pesticide Use Notice. The records must be retained for a minimum of 3 years from the date of pesticide use.

Additional Explanatory Information for Pesticide Use can be found online at:

[Pesticide recordkeeping and reporting - Province of British Columbia](#)

Notice of intent to treat:

Confirmation holders must submit a Notice of Intent to Treat (NOI) to the Ministry of Environment and Climate Change Strategy at least 21 days before the first pesticide use in a calendar year.

Submit this form electronically to:

IPMReporting@gov.bc.ca

INSERT:

1. PDF of Pesticide Use Record [Form Ref: EPD-IPM-08.03]
2. PDF of NOI for Confirmation Holders [Form Ref: EPD-IPM-06.03]

Annual Use Report for Confirmation Holders [Form Reference Code: EPD-IPM 02.2]

Click below to access a fillable online form to be completed by confirmation holders:

Annual Reports must be submitted to the ministry email above, following instructions found here:

https://www2.gov.bc.ca/assets/gov/environment/pesticides-and-pest-management/pesticide-use/forms/annual_use_report_confirmation.pdf

Note: A Ministry File Transfer Service (FTP site) is available if a large file size prevents email submission.

Appendix C Common Pesticides and Management Risks

Aminocyclopyrachlor and Metsulfuron-methyl - Navius or equivalent

This is a selective herbicide that provides pre- and post-emergent control of broadleaf weeds, woody species, vines, and grasses on various non-food use sites, including rights-of-way, wildlife management areas, recreational areas, turf/lawns, golf courses, and sod farms. The chemical is a systemic herbicide and acts by disrupting gene expression. This causes undifferentiated cell division and elongation. The herbicide can cause damage to specific conifer species such as spruce and pines. It is classified as having very low toxicity by WorkSafeBC and the PMRA.

Aminopyralid – Milestone or Equivalent

This selective, post-emergent herbicide controls a broad spectrum of broadleaf weeds, including Canada thistle, knapweeds, oxeye daisy, scentless chamomile, and many others. This herbicide is mildly residual and uses reduced application rates to minimize herbicide load on the environment. It is classified as having very low toxicity by WorkSafeBC and the PMRA.

Aminopyralid and Metsulfuron-methyl – ClearView or Equivalent

ClearView combines two active ingredients (aminopyralid and metsulfuron-methyl) to produce a selective, post-emergent herbicide that controls a broad spectrum of broadleaf annual and perennial weeds, including Canada thistle, knapweeds, oxeye daisy, scentless chamomile, and many others. This herbicide can provide effective control for 12-24 months, utilizing reduced application rates. It is classified as having very low toxicity by WorkSafeBC and the PMRA.

Aminopyralid, Metsulfuron-methyl and Fluroxypyr – Sightline or Equivalent

Combining three active ingredients allows this herbicide to effectively control broadleaf weeds, invasive plants, and shrubs on rangeland, pasture, non-crop areas, industrial sites and rights-of-way. Difficult-to-control invasive species, such as kochia, including glyphosate-resistant biotypes, are successfully managed with this combination of active ingredients and are classified as having very low toxicity by WorkSafe BC and the PMRA.

Aminopyralid, Metsulfuron-methyl and Triclopyr – ClearView Brush or Equivalent

ClearView Brush combines the above-listed active ingredients (from ClearView) with triclopyr (from Garlon), resulting in broad-spectrum control of hard-to-control woody species, shrubs, and broadleaf and invasive species. This relatively new product represents the shift to reduced-risk chemistries, offering a safe profile for the environment, wildlife, and adjacent vegetation when used as directed and classified as having very low toxicity by WorkSafe BC and the PMRA.

Chondrostereum Purpureum – Chontrol or Equivalent

This product is a fungal organism that slows or stops the regrowth or suckering of targeted plants. It is best applied during September/October. It provides the best results in areas with a high concentration of alder and other deciduous woody species for which it is labelled. It is classified as having very low toxicity by WorkSafeBC and the PMRA.

Clopyralid – Lontrel, Advantage, or Equivalent

This herbicide is useful for spot-treatment control of broadleaf noxious weed species. It is preferred over picloram for controlling certain noxious weeds, such as Canada thistle, perennial sow-thistle, and scentless chamomile. It is effective only on actively growing plants in areas where high-residual herbicides should not be used. Clopyralid will control the initial top growth for perennial weeds and inhibit re-growth during

the application season. Clopyralid is not used as a soil-applied residual herbicide and will not be used in areas of high rainfall. It is classified as having very low toxicity by WorksafeBC and the PMRA.

Diflufenzopyr and Dicamba – Distinct, Overdrive, or Equivalent

This herbicide contains the first active ingredient from a chemical class known as semicarbazones. Based on available data, diflufenzopyr has low toxicity to humans, birds, aquatic organisms, mammals, and bees. It has low residual properties. Diflufenzopyr causes hormones in plants to become concentrated in the growth regions. These products generally target broadleaf weeds. It is classified as slightly toxic by WorksafeBC and the PMRA.

Florpyrauxifen-Benzyl Ester – Rinskor active

Rinskor active is a new formulation that Health Canada is currently evaluating for registration in Canada. The active ingredient is from a new class of synthetic auxin herbicides. This product has a broad spectrum of activity on grasses and broadleaf weeds and has a very favourable environmental and toxicological profile. It is classified as having very low toxicity by WorksafeBC and the PMRA. Note: this product will not be used until PMRA registration is granted.

Glyphosate –Vantage, VisionMax, or Equivalent

This herbicide is effective for controlling re-sprouts of most deciduous tree species. It is applied to the cut stump surface of the woody vegetation immediately after brushing or injected/squirted into the cut frill of a tree as a liquid formulation. It can also be used in a broadcast application. Glyphosate is non-selective and has no or very little residual activity in the soil. It binds tightly to all types of soils, independent of the levels of organic matter, silt, clay, and soil pH. It is classified as having very low toxicity by WorksafeBC and the PMRA.

Imazapyr – Arsenal Powerline or Equivalent

This herbicide controls brush species, most broadleaf weeds and annual and perennial grasses. It is applied as a low-volume foliar or cut stump application. This herbicide is translocated throughout the plant, and plant growth stops almost immediately after application. It is moderately residual and can

usually provide season-long control on many perennial plants. It is classified as having very low toxicity by WorksafeBC and the PMRA.

Metsulfuron-methyl – Escort, Sightline A or Equivalent

The active ingredient (metsulfuron-methyl) is used as a selective herbicide to control various species of broadleaf weeds, trees, and brush and some annual grasses. It stops cell division in the shoots and roots of the plant, causing plants to die. It is applied pre-and post-emergence (before and after growth begins).

The herbicide has very low toxicity to humans and animals. The best results are obtained when this product is applied to actively growing weeds from late spring to autumn. It is classified as having very low toxicity by WorksafeBC and the PMRA.

Picloram and 2,4-D – Aspect or Equivalent

The combination of picloram and 2,4-D results in the targeted control of both woody plants and broadleaf weeds, while remaining safe for grasses. Picloram is a selective, residual herbicide that can remain in the soil for several years, providing long-term control against susceptible broadleaf invasive plants. Since picloram may persist in the soil, care is taken to avoid applying this herbicide to areas where soil may be disturbed or where shallow aquifers or domestic water intakes and wells are present. Grazon herbicide is a composition of 2,4-D, Picloram and other active ingredients. This is sometimes a preferred product for

pasturelands. 2,4-D is classified as having very low toxicity by WorksafeBC and the PMRA.

Triclopyr – Garlon Products or Equivalent

The active ingredient, triclopyr, is effective for controlling deciduous trees and brush. It provides an effective alternative to glyphosate for controlling particular tree species, such as aspen, poplar, and trembling aspen. Triclopyr is a selective herbicide with minimal soil residual activity, as it rapidly degrades in the presence of soil microorganisms and sunlight. Depending on soil type, moisture, and temperature, it generally takes 10-46 days to break down in soil. Although the herbicide does not bind to soil as tightly as glyphosate, there is usually minimal soil transportation once triclopyr is in the soil. The herbicide tends to stay in the upper 30 cm of the surface soil layers following rainfall, where it undergoes degradation. Garlon products can be used for cut stump, basal, or foliar applications. It is classified as having very low toxicity by WorksafeBC and the PMRA.

2,4-D – LV 700 or Equivalent

2,4-D compounds are hormone-mimicking chemicals that are selective in their effects, depending on the rate and species. It is formulated to rapidly penetrate the waxy covering of plants. The most common application method is foliar, and for optimal results, it should be applied when plants are experiencing rapid growth, typically in May/June and September. 2,4-D herbicides have a short soil persistence period. Products with an LD50 of >1000 are classified as slightly toxic by Worksafe BC and the PMRA.

All Pesticide Products listed in Appendix C are valid and registered through Health Canada <https://pr-rp.hc-sc.gc.ca/lr-re/index-eng.php> as of the IPMP development date.