Alaska Railroad Corporation

Integrated Vegetation Management Plan

April 2020

Table of Contents

1.0 Introduction 1

1.1 Alaska Railroad 1

1.2 Integrated Vegetation Management Plan (IVMP) 1

1.3 Identifying Information 1

2.0 Purpose and Objectives of the ARRC IVM Program 2

2.1 Purpose of IVM 2

2.2 Objectives of IVM 2

2.3 Vegetation Management Zones 3

2.3.1 Reasons for Vegetation Management in the Ballast Section Zone, including Railroad Yards and Facilities 4

2.3.2 Reasons for Vegetation Management on Inner and Outer Rights-of-Way 6

3.0 ARRC IVM Program 7

3.1 Prevention 7

3.2 Monitoring 8

3.3 Allowable Pest Presence/Treatment Threshold 8

3.4 Selection Criteria and Treatment Options 11

3.4.1 Mechanical or Physical Control Methods 11

3.4.2 Chemical Control (Herbicides) 13

3.5 Post Treatment Evaluations 16

4.0 Notification, Reporting and Record Keeping 17

4.1 Notifications 17

4.2 Reporting 18

4.3 Record Keeping 18

1.0 Introduction

This document is an **Integrated Vegetation Management Plan (IVMP)** for the management of vegetation within property owned and controlled by The Alaska Railroad Corporation (ARRC), including track ballast, rights-of-way and railroad yards. It has been prepared in accordance with 18 AAC 90, the pesticide control regulations for the state of Alaska.

1.1 Alaska Railroad

The Alaska Railroad Corporation is a public corporation that owns and operates a full-service railroad with both passenger and freight operations. ARRC operates 611 miles of track within Alaska, between Seward and the northern terminus at Eielson Air Force Base. This includes 466 miles of main line, 59 miles of branch line and 86 miles of siding and yard track. Its mission:

To be profitable by focusing on safe, high quality service to our freight, passenger and real estate customers. To foster the development of Alaska's economy by integrating railroad and rail belt community development plans.

1.2 Integrated Vegetation Management Plan (IVMP)

This IVMP describes ARRC's planning process and the principles of integrated pest management (IPM) it employs and how, together, these approaches ensure effective vegetation management while considering and incorporating environmental and human health. ARRC is committed to ensuring worker and public safety and environmental protection, as well as the safe and efficient operation of its railroad.

ARRC and its contractors will use and conform to this plan when carrying out vegetation management activities.

1.3 Identifying Information

The person responsible for implementing this IVMP, serving as the principal contact for information relating to this IVMP and otherwise functioning as ARRC's Person in Charge under 18 AAC 90.650 is:

Brian Lindamood, Vice President of Engineering

P.O. Box 107500, Anchorage, AK 99510

Information about this IVMP and ARRC's IPM activities can also be obtained by requests sent to the following email address: **public_comment@AKRR.com**

2.0 Purpose and Objectives of the ARRC IVM Program

2.1 Purpose of IVM

The main purpose for controlling problem vegetation along the railway is to maintain the safe functioning of train operations and to protect the public, ARRC employees and the environment from potential hazards that are associated with railway operations. This IVMP has been developed to provide a single document that describes the ARRC planning process, using the principles of IVM that will both ensure effective vegetation management while protecting human health and the environment.

For the purpose of this IVMP, problem vegetation Includes:

- Vegetation that is interfering with railway operations and/or causing safety issues
- Ballast section vegetation
- Vegetation that interferes with sightline requirements
- Noxious weeds and invasive plants
- Vegetation in yards around buildings and signal infrastructure

If not managed properly, unwanted vegetation can:

- Hinder the inspection of the track structure, including ties, rail, and the rail/tie fastening system
- Obstruct visibility of railway signs and signals
- Interfere with and increase the risk of injuries to railway employees walking and working alongside the tracks
- Cause trackside fires
- Reduce visibility at public road crossings, which increases the risk of train-vehicle collisions
- Damage the integrity of the roadbed
- Inhibit the operation of signals and switches

2.2 Objectives of IVM

The objectives of IVM are to ensure effective vegetation management while considering and incorporating environmental and human health values. ARRC is committed to ensuring worker and public safety and environmental protection in balance with the safe and efficient operation of a railway.

The objectives of the ARRC IVM program are to:

- Maintain a vegetation-free track ballast section
- Develop a stable, self-sustaining, plant community that is compatible with federal railway safety requirements within the remainder of the right-of-way
- Manage vegetation in railway yards including around buildings and signal infrastructure
- Manage or eliminate noxious weeds and invasive plants

2.3 Vegetation Management Zones

As shown in Figure 1, the ARRC right-of-way can typically be divided into three vegetation management zones:

- Ballast/shoulder section: This zone has a typical width of 24 ft. The ballast section supports dynamic train forces and is the most critical area of the right-of-way. This area also includes the walking and working surfaces for many railroad employees.
- Inner right-of-way: This zone extends out about 20 ft. from the edge of the ballast/shoulder section. The outer edge of this zone lies at about the maximum reach of an on-track brush cutter.
- Outer right-of-way: This zone extends from the edge of the inner right-of-way to the outer boundary of the ARRC right-of-way. The outer boundary of the right-of-way is 100' from the center of the main track in almost all locations.

Figure 1: ARRC Vegetation Management Zones

2.3.1 Reasons for Vegetation Management in the Ballast Section Zone, including Railroad Yards and Facilities

Safety and Inspection

Railroad employees must be able to visually inspect both stopped and moving trains for defects in car equipment such as wheels, bearings and couplings. It is also imperative that maintenance personnel are able to visually inspect the track roadbed and track structure such as switches, ties, rail and fasteners. The presence of vegetation can significantly impair proper inspection of the track and roadbed structure.

Vegetation in the ballast can also interfere with the proper functioning of laser-guided track alignment and automated inspection equipment devices such as power switches, crossing signals, hot-box detectors, flat wheel detectors, and lateral load detectors, which all rely on line-of-site infrared scanning.

Structural Integrity of the Roadbed (Ballast)

Ballast is the layer of rock that supports the track and ties where train dynamic forces are applied. Ballast material is selected to:

- Provide free drainage of water
- Provide structural support for vertical loads
- Keep the ties and rails from moving as a result of compressive and expansive forces occurring during rail operations and temperature changes.

Total vegetation control in the ballast/shoulder section is the most critical aspect of the ARRC vegetation management program. Any type of vegetation in the ballast section leads to problems with a stable track structure, which compromises railroad safety.

Vegetation will negatively impact the structural integrity of the railroad roadbed. Vegetation within the track ballast reduces drainage. Proper drainage of the ballast section is critical for a stable track structure. Vegetation retains fine particles such as silt or clays and increases organic matter within the ballast, which in turn, reduces drainage of water and decreases ballast integrity. Decreased ballast integrity in turn reduces the ballast's ability to support the weight of trains, resulting in problems with track support, alignment and profile, all of which are common causes of train derailments.

Hazards to the Public

Excessive growth of brush reduces visibility at public at-grade crossings, which can lead to the increased risk of train collisions with public vehicles and pedestrians and potential injury to railroad passengers and employees.

Tall growing vegetation can also reduce the visibility of railroad signals or signs and interfere with the operation of switches that are necessary for safe operations. In addition to direct physical damage and injuries to the public and railroad employees that may be caused by all train derailments, derailments involving hazardous materials have the potential to negatively impact public health and cause significant environmental damage.

Hazards to Railroad Employees

Vegetation can be hazardous to employees conducting their everyday trackside duties. Train crews must be able to safely walk beside the track and climb on and off trains. Maintenance personnel must work around the track structure and throughout the right-of-way. Vegetation can impede movement, cause slippery conditions and create tripping hazards for employees. Excessive vegetation may also obscure tripping hazards such as equipment, uneven ground or holes.

Hazards to Animals

Efficient snow removal (plowing) from the tracks is impeded by excessive vegetation. Deep snow banks created by brush adjacent to the track may act as a barrier to moose and other animals attempting escape from moving trains. The unsure footing in these areas may cause the animal to return to the track and run ahead of a train until they are killed by collision.

Browsing animals are attracted to the brush and shrub vegetation along the right-of-way. Control of brush increases the growth of grasses rather than woody species, which are less desirable for browsing animals and are covered by snow in the winter.

Track Communications and Signal Systems

Radio facilities are contained in structures located at intervals throughout the railway network to provide communication links between dispatchers, train crews, maintenance workers and other employees working on the ARRC system. Electrical power lines

supply power to operate the radio system, track switches, heaters and signals. Problems at these facilities associated with excess vegetation include:

- Risk of grass or brush fires that may damage fuel tanks and structures
- Reduced visibility of track signals and obstruction of track switches by vegetation and snow trapped by vegetation
- Hazards to power lines, poles and support wires
- Corrosion around steel signal structures and fuel tanks from moisture
- Reduced access to sites and structures from encroaching vegetative growth

2.3.2 Reasons for Vegetation Management on Inner and Outer Rights-of-Way

Inner Right-of-Way

Selective control of vegetation within the inner right-of-way is sometimes required to remove brush and trees. Controlling brush and tree growth within the inner right-of-way is necessary in order to:

- Maintain visibility (i.e. sight lines) at road and pedestrian crossings
- Maintain sight line visibility at curves
- Provide clear visibility of signs and signals
- Reduce physical hazards to train crews and track maintenance personnel
- Reduce the potential fire hazard

Outer Right-of-way

Vegetation control is seldom practiced within the outer right-of-way. Situations that may require selective vegetation management within the outer right-of-way include:

- Vegetation growing at road and/or pedestrian crossings and on the inside of curves, where sight line visibility is limited
- Trees and brush interfering with the ability of trainmen to look back at their train to visually inspect it while traveling
- Woody vegetation and brush that is interfering with the normal functioning of equipment used to detect slides
- Vegetation that is impacting railroad site security
- Vegetation that is too close to electrical equipment, creating a potential fire hazard, or creating a safety hazard
- Vegetation that may impede emergency response

Sight Line Requirements

Maintaining visibility at road and pedestrian crossings is necessary to reduce the potential for accidents with vehicles and pedestrians.

The Federal Railroad Administration (FRA) has mandatory sight line requirements for road and pedestrian crossings. The greater the posted road speed limits and the greater the train speed limits at these crossings, the greater the sight line requirements will be. The required sight line distances are set to allow motor vehicles on the road sufficient time to see and stop safely for the approaching train and to allow trains to see motor vehicles approaching a crossing and to take any appropriate actions, such as braking or sounding horns.

3.0 ARRC IVM Program

The elements of the ARRC IVM Program are:

- Preventing vegetation: Managing the ecosystem to prevent unwanted vegetation
- Monitoring vegetation: Monitoring the right-of-way for damage caused by vegetation and monitoring environmental conditions
- Allowable pest presence: Determining vegetation thresholds for treatment decisions
- Mechanical or physical control: Determining the potential for mechanical and physical vegetation control activities
- Suppressing vegetation: Suppressing vegetation to acceptable levels using appropriate treatment options used in conjunction with environmental and human health protection
- Evaluating effectiveness: Analyzing the effectiveness of vegetation management strategies

3.1 Prevention

ARRC undertakes proactive measures aimed at minimizing initial growth and spread of unwanted vegetation. These measures are utilized when feasible and cost effective and may include the following:

- Ballast/shoulder reconstruction, surfacing and cleaning
- Selective brush and tree removal from rights-of-way and crossings
- Planting disturbed areas with desirable ground cover or low growing shrubs/grasses (competition/re-vegetation)

3.2 Monitoring

ARRC mainline tracks and sidings are inspected twice per week. Yard tracks are inspected monthly. These documented inspections are required under FRA regulations. These inspections are performed, as part of their regular duty, by ARRC Track Inspectors or ARRC Roadmasters. During these inspections, vegetation conditions/issues are noted as part of the formal inspection process. Specific areas of focus that are monitored on an on-going basis include:

- An assessment of track condition and extent of vegetation growth
- Sightlines at road and pedestrian crossings
- Vegetation within the right-of-way to determine if trees and brush are a safety issue

The data collected from the weekly track inspections is sent to the Superintendent of Maintenance for the ARRC. The Superintendent of Maintenance and the Manager, Environmental Operations will develop a specific annual vegetation management plan based on the highest priorities and available resources.

In addition to the above inspections, vegetation problems that can be or are potential safety hazards for workers (e.g., slipping or tripping hazards) may be identified in daily, weekly, or monthly safety meetings. Identification of these problems will result in control measures being initiated based on the treatment options outlined in this IVMP.

3.3 Allowable Pest Presence/Treatment Threshold

The treatment threshold is the point at which the abundance of vegetation and the damage it is causing, or is likely to cause, indicate that control is necessary. A treatment decision regarding unwanted vegetation is required when these thresholds are exceeded.

In this IVMP, the treatment threshold is generally defined by zone. Treatment thresholds will vary because certain zones are much less tolerant of vegetative growth:

Ballast/Shoulder Zone: To meet the stated purpose of the IVMP, this zone must be practically free of vegetation. Because the ARRC has not had the ability to effectively control vegetation on much of its right-of-way for many years prior to 2013, the zone has endemic vegetation. Mechanical methods have entrained the ballast shoulder section with roots and seeds, necessitating a thorough, complete treatment with chemicals. See photo. Due to the factors noted above, most areas of this zone will be treated annually with a pre-emergent herbicide.

Mechanical methods on ARRC Main Track have plowed seeds and roots into ARRC ballast and shoulder section.

Inner and Outer Right of Way Zones: Vegetation control in this zone is focused on maintaining sight lines for safety at crossings, and to provide visibility for train crews in certain curves. A combination of mechanical and chemical methods is most effective for this zone.

Yard Track Zones: Similar to the ballast/shoulder zone, this track area must be practically free of vegetation. Mechanical methods are not effective.

Buildings/Communications and Signal Facilities: These areas have a low tolerance for vegetation to reduce tripping hazards in the workplace.

Mechanical control in Seward Yard is not effective in meeting vegetation management requirements.

Table 1 summarizes the treatment thresholds used in this IVMP that will trigger a treatment decision:

Table 1: Treatment Thresholds

Zone	Location	Treatment Threshold	Primary Control Action
Ballast/Shoulder[1]	Main track	1% weed cover (post-emergent); N/A for preemergent	Chemical
	Siding	1% weed cover (post-emergent; N/A for preemergent	Chemical
	Storage track	5% weed cover (post-emergent); N/A for preemergent	Chemical
Inner Right-of-Way	General	20% cover by area or height above 3' or sight lines	Mechanical & chemical
	Signalized crossing	Sight lines	Mechanical & chemical
	Non-signalized crossing	Sight lines	Mechanical & chemical
	Pedestrian crossing	Sight lines	Mechanical & chemical
	curve	Line of sight	Mechanical & chemical
Outer Right-of-way	Trees	Line of sight or safety concerns	Mechanical
	Crossings, as above	As above for inner right-of-way	Mechanical & chemical
	curve	Line of sight 300'min	Mechanical & chemical
Yards[1]	Tracks/ballast	1% weed cover	Chemical
	Shop, building and work area	5% weed cover	Mechanical & chemical
Communication and signal installations[2]	Buildings, signal bungalows, communication, electrical infrastructure	3% weed cover	Mechanical & chemical

[1] As explained in section 3.4.2, the ballast/shoulder zone and the yards will be treated using the Recospray system in 2020.

[2] For 2020, some communication huts and signal bungalows will be treated with a herbicide application

3.4 Selection Criteria and Treatment Options

The decision to undertake vegetation management and the treatment used will depend primarily on whether or not the treatment threshold has been exceeded for that particular area. The degree, to which the threshold has been exceeded, however, will also influence the decision for treatment. Thresholds that are exceeded intermittently over small, localized areas may be deferred until control activities can be completed over a larger area. If specific safety hazards are identified, however, control activity may be accelerated or initiated.

Once a decision has been made that treatment is required for an area, the selection of method(s) used will depend on the following criteria:

- Urgency of the required treatment
- Characteristics of the site, including the proximity of water bodies, water sources and environmentally sensitive features
- Timing of the treatment
- Percentage cover, species and composition of the vegetation
- Existing soil types, reasons for control, and how they relate to the suitability of the particular method(s) being considered
- Potential impact of the vegetation on safety and site security
- The consequences of no treatment

3.4.1 Mechanical or Physical Control Methods

Mechanical and physical control methods may include hand pulling, hand cutting, weed trimming, mowing, brush cutting, using the ballast regulator and chain sawing. A description of these methods, the rationale for each control option, including the benefits and limitations of each control option are described in more detail in Table 2.

Table 2: Mechanical/Physical Control Methods

Description and Rationale	Benefits and Limitations
Hand Pulling and Hand Cutting are viable manual control methods for spot control of certain established vegetation that can be easily uprooted, such as young tree seedlings, clumps of grass and small patches of noxious/invasive plants, where the roots can be fully removed. Hand removal and cutting may be used around signs, switches, shops and buildings or where chemical controls cannot be used.	These methods produce immediate results and can be conducted throughout the growing season. They are effective if the number of plants to be pulled or cut is small and the site is a manageable size. These methods are costly, however, because they are slow and labor intensive. In addition, vegetative debris must be removed from the site and the re-growth of undesirable vegetation within the disturbed areas often occurs.
Weed Trimming can be used in areas such as along fence lines, around switches, signs and equipment and in areas around buildings, shops and material storage piles.	Weed trimming allows the problem vegetation to be cut to the ground level. When done early in the season, it helps remove seed heads. For small areas in close proximity to environmentally sensitive areas where herbicides cannot be used, it may be an effective non-chemical alternative. Weed trimming does not remove the roots however, and is only of limited effectiveness against weed species that reproduce from stem pieces.
Mowing and Brush Cutters are effective for the removal of brush and small trees from the right-of-way for the maintenance of sight lines. Mowers and brush cutters can work off-track or can travel and work from the track. They cut most vegetation to a height of 6 to 12 inches and extend from the shoulder of the ballast out into the inner right-of-way for 12 to 20 feet.	Mowing and brush cutting quickly removes vegetation may reduce seed sources and leave treatment areas aesthetically pleasing. These methods however, are slow, they remove all vegetation (including desirable vegetation) and they encourage plant re-growth or suckering/pruning. These methods can increase maintenance requirements over the longer term, can create a safety hazard for both workers and animals by leaving sharp, exposed cut stems and can increase the fire hazard if the plant debris is not removed.

Table 2: Mechanical/Physical Control Methods (cont.)

Description and Rationale	Benefits and Limitations
Chain saws are generally used in the outer right-of-way to remove or prune trees and tall shrubs that cannot be reached by mowers or brush cutters. Chain saws are used for tree removal to maintain sight lines on rights-of-way at curves and crossings.	The use of chain saws provides immediate results and provides selective control of vegetation. They can be used in areas where herbicides cannot be used. The use of chain saws, however, is physically demanding and there is a risk of injury to the operator.
A Ballast Regulator has been used to till and "whip" the ballast/shoulder section of the track. The BR has been equipped with custom made tines that till the shoulder areas and a spinning wire wheel that whips the weeds between the rails.	The ballast regulator has been proven to be ineffective in controlling weeds. The ballast regulator will remove the vegetation and leave the treatment area aesthetically pleasing. The wire wheel rips the top of the plants off, leaving the roots and thus encouraging re-growth of the weeds. The BR has been used in areas where herbicides have not been an option; the method has been mostly ineffective, slow, and expensive.

3.4.2 Chemical Control (Herbicides)

Herbicides are an important tool in railroad vegetation management. Although non-chemical control options described above are critical parts of the ARRC IVM program, in some zones those methods can be impractical, dangerous for workers, incompatible with environmental protection values, labor intensive and inordinately expensive. This is especially true in areas where non-chemical methods cannot be employed or are not effective, or in areas such as track ballast where there are no effective non-chemical methods with the exception of reconstructing or cleaning the ballast.

Based on ARRC's vegetation management experience to date and its current needs for vegetation control that cannot be met using solely non-chemical control methods, ARRC has identified several herbicides for targeting problem vegetation within ARRC's right-of-way under this IVMP. Those herbicides are listed in Table 3 below. ARRC will continue to monitor vegetation levels and control needs to determine whether any additional registered herbicides are necessary to achieve adequate control. If any such additional herbicides are identified, this IVMP will be revised accordingly.

ARRC will again be using a new spray technology to combat weeds within the ballast/shoulder section of the track. The new technology is called Recospray. Recospray utilizes laser technology and complex algorithms to apply herbicides only

where weeds are present. This technology will benefit ARRC's Integrated Vegetation Management Program (IVMP) in several ways:

- It will optimize the chemistry being sprayed in areas that don't currently have weed pressure in the ballast zone.
- It will utilize mapping technology that will show weed densities in the areas sprayed, which will allow evaluation of the weed pressure by zone within the treated area.
- No spray zones can be mapped into the software.
- Cameras will record what is actually being sprayed.
- On board weather station can take wind speed and direction much more frequently than handheld instruments can.
- Using Recospray will result in less herbicides being applied in the ballast/shoulder zone.

Table 3: Herbicides Proposed for Possible Use in 2020*

Name	Active Ingredient	EPA Registration Number
Alligare Glyphosate 4 Plus	Glyphosate	81927-9
Alligare MSM 60	Metsulfuron methyl	81927-7
Alligare Triclopyr 3[1]	Triclopyr Triethylamine Salt	81927-13
Bayer Telar XP	Chlorsulfuron	432-1561
Bayer Cimarron Plus	Metsulfuron Methyl Chlorsulfuron	432-1572
Bayer Landmark XP	Sulfometuron methyl Chlorsulfuron	432-1560

* Each year, when the integrated vegetation management plan is revised, this table will be updated with the product names and EPA registration numbers that will be used for that year.

[1]For 2020, Triclopyr will be used for brush control on the north end of the railroad and near the Salcha bridge.

Use of herbicides for vegetation control may be appropriate in certain areas of the right-of-way under certain circumstances or for certain purposes. Table 4 summarizes the reasons for possible use of herbicides for vegetation management within specific use areas or for specific purposes under this IVMP.

Table 4: Vegetation Management within Specific Areas or Specific Purpose

Area Purpose of Use	Criteria for Using Herbicides for Vegetation Management
Ballast	Ballast section treatment includes all tracks within the IVMP area. As noted earlier there are no effective non-chemical controls for ballast vegetation. Most ballast areas will be treated with a pre-emergent herbicide on an annual basis. Factors such as track type, site details (e.g. the type of vegetation present and the proximity of environmentally sensitive areas adjacent to proposed treatment site), and past management results determine the priority, frequency and type of treatment selected. The track type is a major factor in determining the prioritization of ballast treatment each year. For example, primary yards and mainline tracks have the highest priority for vegetation management due to their high levels of traffic and associated safety concerns.
Rights-of-Way	Areas within right-of-way that are vegetated with a suitable and stable cover of low growing plant species that do not pose a fire or safety risk to the public, ARRC or its personnel, will receive only limited management. However, in instances where tall growing vegetation is impeding sight line requirements or compromising access to buildings, signals, communication or electrical infrastructure, the appropriate herbicide(s) listed in Table 3 may be used.
Maintain Sight Line Requirements	The maintenance of sight lines is most critical at vehicle or pedestrian crossings and for railroad operating signs. Deciduous vegetation has the capacity to re-sprout following mechanical control methods. Treatment with appropriate herbicide listed in Table 3 may be done to the cut surfaces of stumps, to the basal bark areas of individual trees following cutting or mowing to stop re-sprouting, or applied in areas where mechanical methods are not feasible or practical.
Trees	Treatment with appropriate herbicide(s) listed in Table 3 may be done by application to the cut surfaces of stumps of individual trees following cutting.
Noxious Plants Invasive Weeds	The treatment of Noxious weeds and invasive plants will be based on the advice of The National Forest and University of Alaska Fairbanks Cooperative Extension Service.

All methods for handling, mixing, preparing, transporting, applying and otherwise using herbicides will be done strictly in accordance with product labels.

All herbicide applications will be conducted by a person who has a valid Certified Pesticide Applicator's license issued by the Alaska Department of Environmental Conservation.

All herbicide applications will comply with the requirements of 18 AAC 90.640 and with this IVMP.

The responsibilities of a Certified Pesticide Applicator conducting activities under this IVMP are to:

- Read and understand the herbicide labels and the product Material Safety Data Sheets (MSDS) for all herbicides being applied
- Be in continuous attendance at the site of application
- Have proof of certification available
- Have a working knowledge of the information covered in the National Pesticide Applicator Certification Core Manual
- Have a working knowledge of the information covered in the State of Alaska Pesticide Regulations in Title 18, Chapter 90 of the Alaska Administrative Code (18 AAC 90)

ARRC will grant ADEC access to herbicide application sites at reasonable times without prior approval, as provided in 18 AAC 90.640(a)(9). Given the inherent risks in railroad operations in the ARRC right-of-way, the determination of what constitutes a reasonable access time should take into account railroad operational and safety considerations.

3.5 Post Treatment Evaluations

Post treatment monitoring is conducted to determine if the vegetation control goals of the IVMP have been met and to record the effectiveness of the treatment. Visual inspections of the treatment areas are completed after the effects of treatment are well established; generally these inspections are conducted in late summer or early fall. Post treatment evaluations are used to update baseline information for use in the following treatment season and to determine what adjustments, if any, are needed in subsequent years to meet compliance and control objectives.

Post-treatment evaluations will document and record:

- Amount and rate of re-growth of the unwanted vegetation
- Whether application rates of the herbicides used were sufficient
- Evidence of off-target herbicide movement
- General effectiveness of the treatment

4.0 Notification, Reporting and Record Keeping

4.1 Notifications

No notifications will be made for mechanical methods.

Prior to applying herbicides under this IVMP, ARRC will notify the public and the Alaska Department of Environmental Conservation (ADEC) in accordance with 18 AAC 90.640(a)(3), (5), (6) and 18 AAC 90.640(b).

The ARRC will:

- Submit this IVMP to ADEC for publication on its website as an integrated pest management plan as required by 18 AAC 90.640(a)(2)
- Publish this IVMP plan on the ARRC website: www.alaskarailroad.com/environmental/vegetation management
- Provide notice of the proposed application to owners of any public water system whose water source (as defined in 18 AAC 80.1990) is located within 200 feet of the proposed application area.
- Notify the ADEC of each proposed application, including each application of a multiple application project, not later than 15 days before the scheduled application date as required by 18 AAC 90.640(6)
- Publish two consecutive notices of the planned herbicide application in a newspaper of general circulation in the affected area, no later than 30 days before the scheduled application date as required by 18 AAC 90.640(b). This notice will include:
    - The location of the application
    - The complete name and EPA registration number of the herbicide(s)
    - The target pests
    - The method of application
    - For multiple application projects, the approximate number of applications to be made
    - How the public can receive more information about the proposed application

  These newspaper notices will only be made before the first application of a multiple application project. For purposes of this IVMP, a multiple application project has the definition set forth in 18 AAC 90.640(d).

In addition to the above notices, the ARRC will maintain an email address for the public to use to request information and to register comments or concerns about this IVMP or any scheduled herbicide applications.

Email for questions, comments or concerns: public_comment@akrr.com

4.2 Reporting

For each herbicide applied to more than 20 acres in a calendar year, ARRC will post a report on the ARRC website. The report will contain:

- The complete herbicide name and EPA registration number
- The rate and dilution of the herbicide applied
- Quantity of mixed herbicide applied
- Date and location of each application

4.3 Record Keeping

Record keeping under this IVPM will be conducted by ARRC's Person-in-Charge and shall comply with 18 AAC 90.640(a)(7). All records, reports and notifications pertaining to this IVMP and herbicide use by ARRC will be kept for at least two years. All such records will be made available to ADEC upon request.

This integrated vegetation management plan will be reviewed annually. The annual review will be in the fall and will include a review of the previous vegetation management season. This annual review will include consideration of the following:

- Monitoring reports and track inspection reports
- Treatment thresholds
- Post treatment evaluations

The annual review will facilitate the planning cycle for the next vegetation management season, as well as any revisions to this IVMP.