



FOX CREEK TO NAMAJO JUNCTION EXPANSION PIPELINE PROJECT

GREEN AREA VEGETATION MANAGEMENT PLAN FOR OPERATIONS

AUGUST 2016

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1. INTRODUCTION

1.1 Overview

Pembina Pipeline Corporation (“Pembina”) is currently constructing the Fox Creek to Namao Junction Expansion Pipeline Project (the “Project”) to connect existing and future supplies of hydrocarbon liquids from its facility in the Fox Creek area to existing processing facilities located north of Edmonton, Alberta.

This Green Area Vegetation Management Plan for Operations (the “Plan”) is to comply with Condition 3 of the AER Hearing Decision Report 2016 ABAER 004 (March 2016) (the “Decision”) for the Project. The Condition 3 states:

Pembina must submit an updated Green Area vegetation management control plan to the panel for review within 120 days of this decision. In this plan, Pembina must assess opportunities to minimize the extent of post-construction, ongoing vegetation control to maintain line of sight for monitoring in the Green Area (see Figure 4). Such opportunities might include use of drones or other evolving technologies, where appropriate, with a goal of allowing as much of the ROW as is practicable to revegetate given the requirement to be able to visually monitor the line. Following receipt and review of this plan, the panel will either accept it as filed as a condition of the authorization or provide Pembina with further direction.¹

This plan also references compliance with Condition 4b of the Decision² which states:

Pembina must comply with the following conditions as they are set out in the PLA pipeline agreement Notice of Decision documents:

4b) Pembina must not undertake ongoing vegetation management or brush control for the tree species in KWBZs following construction.

2. PROJECT VEGETATION MANAGEMENT CONTROL PLAN – SUPPLEMENTAL

2.1 Procedures

Pembina will maintain the vegetation or control the brushing (“vegetation control” or “brushing”) of the Project Right-of-Way (“ROW”) to a width of approximately 10 metres or 5 metres on either side of the pipelines centre-line. To address potential ground access requirements the vegetation control may not be centred over the pipelines. A minimum width on either side of the pipelines will be approximately two metres.

In areas of grade it may be necessary to widen the brushing width to allow for the safe operation and passage of ground-based equipment.

¹ 2016 ABAER 004 (March 2016), page 88

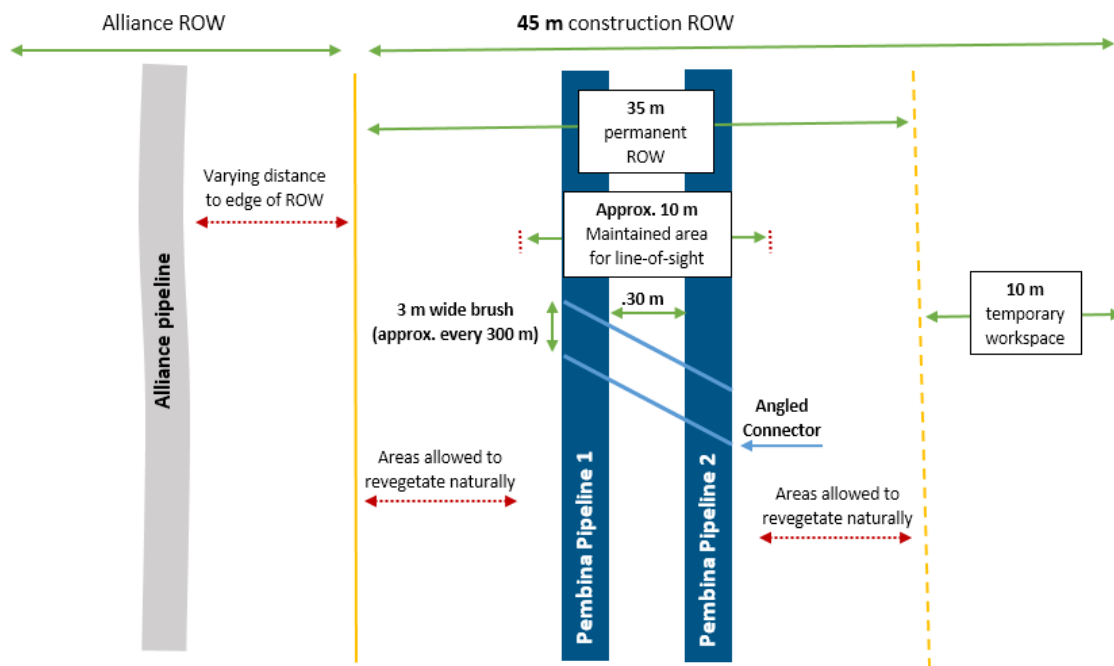
² 2016 ABAER 004 (March 2016), page 88

To reduce line of site and create a vegetation screen, Pembina will maintain the brushing of the ROW to approximately 3 metres wide in areas identified as angled connectors over a distance of approximately 20 metres. These sections are allowed to grow to reduce the potential for long lines of site for predators and hunters. This information is shown in Figure 1 below. These sections will coincide with natural features such as long flat areas where the connectors will be positioned approximately 300 metres apart.

Locations such as access roads that cross the pipeline will have vegetated screens left on either side of the road with some vegetation control at the road crossing to allow for safe access to the ROW.

During the operation of the pipelines there will be times when Pembina will require a larger cleared work area for maintenance and operational activities (i.e. dig repair programs). We will try to minimize the cleared area and use the existing 10 metres with vegetation control where possible, however there may be occasions where the full 35 metres width of the permanent easement may be cleared to create a safe work environment and allow for storage of upper surface material (topsoil) and ditch material. In addition, the angled connectors may be expanded in width to allow for the safe passage of heavy equipment without encroaching on the operating pipelines.

Figure 1 Pembina Fox to Namao Junction Expansion Project Vegetation Management



This diagram is for illustration only and is not to scale

2.2 Key Wildlife Bio-Diversity Zones Considerations

Pembina operations for the Project are aware of the Alberta Environment and Parks timing constraints and setbacks when working in Key Wildlife Bio-Diversity Zones (“KWBZ”)

These constraints and setbacks are as follows:

- No activity is permitted from January 15th to April 30th
- All activities planned within 100 metres of existing arterial all-weather roads can be initiated at any time provided ground conditions are favourable, and may continue until adverse ground conditions are encountered
- Where materials are available place rollback across the entire pipeline easement width for at least 40% of the linear distance within the KWBZ with no section of rollback exceeding 250 metres in length
- No legumes are to be seeded for any re-vegetation
- Revegetate with species compatible and consistent with the adjacent vegetation type

For the Project the KWBZ are located in Table 1, below:

Location Name	LSD from Location	LSD to Location
Athabasca River	10-09-60-11 W5M	14-34-59-11 W5M
Iosegun River	06-08-62-18 W5M	04-15-62-18 W5M
Sakwatamau River	07-22-61-13 W5M	07-24-61-13 W5M

2.3 Training and Implementation of the Plan

Pembina is committed to the sustainability of this commitment by using the below listed Pembina processes.

Pembina Learning System

The Pembina Learning System (“PLS”) is a competency management solution which provides operations and maintenance staff access to any training, manuals, policies, procedures, etc. which are required for their jobs.

The Plan will be listed in the PLS as required training for Pembina staff that have responsibility for ROW vegetation control in the Project area.

Training of new employees includes documented task observations to be deemed competent of these policies, procedures, etc. required for their jobs.

Pembina Maintenance Management

The Pembina Maintenance Management Program (“PMM”) is made up of two distinct components that help Pembina manage maintenance and inventory, these include Plant Maintenance (PM) and Inventory Management (IM). The Plan will be included in PMM as a regular Operations maintenance task, and as a work procedure specific to the subject Project area.

Pembina Alignment Sheets

Pembina maintains pipeline alignment sheets in our central electronic filing system. Pembina will clearly indicate in the alignment sheets the Green Area and KWBZ related to the Plan.