

Dust and Weed Mitigation Plan

For a Medium-Scale Solar Facility
Dove Solar, LLC

Case Number: USR Number – USR22-0003
Archdiocese of Denver (Parcel ID No. 105916100039)

Prepared for:

TOWN OF JOHNSTOWN

PO BOX 609

JOHNSTOWN CO 80534

Prepared by:

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Denver, Colorado



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1.0 Overview

As a condition of approval for the Site-Specific Development Plan and Use by Special Review Permit, the Town of Johnstown required that SunShare prepare a *Dust and Weed Mitigation Plan* for the solar facility, that is to be reviewed and approved by the Johnstown Review Committee. The intent of this *Dust and Weed Mitigation Plan* is to provide a comprehensive plan for control of dust, noxious weeds, and any drainage issues that could cause erosion from the solar facility.

1.1 Dust Mitigation During the Construction Phase

Water tankers will be used to help control dust while the construction activities are occurring on the site. During the construction of the facility, SunShare will exercise BMPs to limit fugitive dust from being airborne and traveling beyond the property lines. Dust control efforts will be monitored by the site foreman on a regular basis to ensure fugitive dust is adequately controlled. Water spray will be applied, as needed, to unpaved areas during periods of dry weather. Care will be taken not to over-apply water and create mud. Vehicle tracking devices will be installed at truck exit drives. Vehicles operating on the site during the construction phase will limit their speed to 15 mph or less, to minimize dust emissions.

1.2 Noxious Weed Management

The Colorado Department of Agriculture (CDA) requires landowners to prevent the spread of State Listed Noxious Weeds. Construction activities on the site have the potential to introduce new noxious weed species to the site, or spread existing species on to or off of the site. This noxious weed management program was developed to prevent further spread of noxious weeds. SunShare will comply with CDA regulations through implementation of this plan. Periodic reviews and updates to this plan will be completed as necessary to keep it current with noxious weed control issues. This plan will be implemented throughout the life of the solar facility.

Appropriate management actions will be implemented whenever noxious weed species are observed growing within the project area. The goals of weed management are to:

- 1.) Identify and manage noxious weeds within and immediately adjacent to the project areas to be disturbed and after the area has been reclaimed;
- 2.) Conduct pre-treatment and post-treatment evaluations, and continue or modify treatment measures as necessary;
- 3.) Minimize the potential for transportation and importation of noxious weed species;

- 4.) Educate field personnel in order to encourage compliance with weed management program goals and assist with identification and control efforts.

To prevent or minimize the infestation and spread periodic inspections of the project area during the beginning, middle, and end of the growing season will evaluate presence or absence, degree of invasion, and the response of previous treatments. SunShare's operational staff will conduct regular site inspections and ensure implementation of this plan. Specific treatment methodologies and timetables will be developed based on species of concern, location and extent of the infestation(s), and other pertinent factors.

1.2 (a) Noxious Weed Prevention

Noxious weeds are spread through dispersal of seed and/or transport of plant propagules (i.e. spores, seeds, roots, etc.). The most effective way to control noxious weeds is to prevent their introduction into the site in the first place. A combination of methods and practices will be employed to prevent the introduction of weed species and their regeneration within the project area.

The following methods and practices may be employed, either singly or in combination, to prevent the introduction of weeds into the solar site:

- 1.) A thorough cleaning of equipment will be conducted before entering the project area to prevent the introduction of seed and plant propagules from other sites;
- 2.) Seed mixtures used for revegetation or temporary site stabilization will be free of noxious weeds;
- 3.) Hay, straw, and/or other materials used for mulch or other purposes will be certified weed free;
- 4.) A periodic inspection will be conducted to identify any new weed infestations that may have occurred. Any new infestations will be scheduled for management before they become well established and/or spread;
- 5.) Communication and coordination with adjacent land holders whose property is infested with noxious weeds that may threaten the site should occur. Establishing partnerships for weed management within the local area is essential for successful long-term weed management;
- 6.) Noxious and pest weed infestations that threaten natural and reclaimed areas will be treated with accepted Integrated Weed Management (IWM) methods. These methods are further discussed below.

1.2 (b) Integrated Weed Management (IWM)

An Integrated Weed Management approach will be implemented for treatment of noxious weeds within the project area. An IWM approach enables selection of one or more weed management methods based on site specific environmental conditions and control needs. The following weed management methods will be considered for the project area:

- 1.) Cultural – Planting native or desirable plant species for site colonization and promoting healthy vegetation communities in reclaimed areas. Prevent unnecessary disturbance through precise planning of construction projects and other activities. Prompt revegetation of disturbed areas.
- 2.) Mechanical – Mowing, pulling, disking, and plowing may be used on weedy species for which these treatments are effective.
- 3.) Biological – Introduction of insects or other biologic agents which are known to inhibit or prevent reproduction of noxious weed species. If biological agents are employed, control methods will be coordinated with the Colorado Department of Agricultural Insectary in Palisade, Colorado.
- 4.) Chemical – Application of appropriate herbicides by a licensed applicator. All herbicides will be applied in accordance with the manufacturer’s label and in accordance with Colorado laws.

In some cases, only one control method may be warranted, while in other cases a combination of control methods may be appropriate. Control methods selected will be dependent upon species of concern, and the location and extent of the infestation.

The use of IWM methods will protect pollinators, reduce hazards to wildlife, reduce the possibility of herbicide resistance, and minimize persistence and mobility of herbicides in the soil. Weed control methods and practices will be applied in a manner that conforms to applicable federal, state, and local laws.

1.2 (b) 1 – Cultural Control

Germination and establishment of noxious weeds can be reduced by following accepted revegetation and vegetation management techniques that favor the growth of desirable plants. These include prompt seeding and revegetation of disturbed areas with appropriate seed mixes, maintaining optimum fertility and moisture levels, planting at optimum density of pure live seed, minimizing use of fertilizers, and selecting suitable species for revegetation. Minimizing areas of disturbance and exposed soil prevents opportunities for aggressive species to establish.

A revegetation plan has been developed for the site that utilizes native species that are well-adapted to the site. Seeding native species in conjunction with other management practices will provide some level of competition with noxious weeds, and minimize the opportunity for new infestations to become established.

1.2 (b) 2 – Mechanical Control

Mechanical Control of noxious weeds can be an effective tool to physically disrupt noxious weed growth and seed development. A combination of mechanical methods may be used including tilling or disking, mowing, hand-held weed trimmers, mulching, hand-pulling, hoeing, or livestock grazing. Mechanical weed control practices must be applied with correct timing to maximize their effectiveness in preventing vegetation development or seed production.

Annual weedy species may be readily controlled with mowing or physical removal. Perennial species such as Dalmatian toadflax have extensive root systems. For such weed species, mowing may only control seed production without seriously affecting the plant's survival. Mowing after seed production has occurred may spread the plants. Disking or tilling areas containing perennial noxious species may increase the area of infestation due to root sprouting. In most cases, mechanical control methods used alone are not effective against noxious weed species.

1.2 (b) 3 – Biological Control

Biological control of noxious weeds can be an effective tool to physically disrupt plant growth and seed development. A combination of biological methods may be used including introduction of insect weed predators and species-specific plant diseases. Biological weed control methods and practices will be applied with appropriate timing to maximize their effectiveness in preventing seed production. It must be noted that the use of biological controls normally does not eradicate an infestation of weeds; rather they are capable of reducing weed species vigor and reproduction. The Colorado Department of Agriculture's Biological Pest Control Program has on-going biological control programs for several noxious weed species. Note, the use of insect bio-controls typically require large populations of the target weed to sustain the population of bio-control agents. Biological controls should not be expected to eliminate the entire infestation of a noxious weed, but instead to bring the infestation down to a more manageable level.

1.2 (b) 4 – Chemical Control

Chemical control of noxious and pest weeds can be an effective tool to disrupt plant growth and seed development. Herbicides can kill targeted species, prevent development and/or germination of noxious weed seed, can be used with minimal disturbance to soils, and in some cases, can be selective to specific species or groups of plants. Herbicides must be applied at the

appropriate time to maximize their effectiveness in preventing seed production, for disrupting plant establishment and growth, or achieving kill of noxious species. To avoid development of resistance to a particular herbicide through repeated use over prolonged periods of time, herbicides with varying modes of action to be used. Also, herbicides will be applied according to manufacturer's label recommendations (i.e. application rate, method, and timing) to prevent development of plant resistance. Herbicide selection will be based on weed emergence, timing of application, past applications, and ground and weather conditions during the applications.

Successful IWM begins with an understanding of the target plant species and the environment within which it grows. Next, the physiologic effects of an herbicide on plant growth and development must be understood. Understanding a pesticide's chemical nature is also important in minimizing impacts to non-target species, the applicator, endangered species, and pollinators, as well as surface water runoff hazards and leaching into groundwater. Every herbicide label contains information regarding environmental hazards. This information will be evaluated for each herbicide considered for use at the site and herbicides will be selected which pose minimal to no environmental hazards.

All pesticides will be handled with care, and applied by qualified personnel. Properly identifying the weed problem and the most effective chemical control method for use during the plant growth cycle is critical to effective weed control. Equipment will be properly calibrated before herbicides are applied and appropriate Personal Protective Equipment (PPE) will be used. Empty containers will be disposed of promptly, safely and according with product labeling.

Herbicides vary in the amount of time after an application before it is safe to re-enter the treated area without protective clothing and equipment. The site re-entry time is affected by the rate of application, size of the area treated and the amount of time to be spent in the field. For the safety of employees and contractors, the Restricted Entry Interval (REI) listed on the herbicide's label will be followed. Appropriate herbicide application records will be maintained as specified by the CDA.

1.2 (c) – Monitoring and Follow-Up

Even with effective weed management strategies, it often takes several seasons to eradicate or bring weed populations to an acceptable level. With well-established infestations, it is likely that a seed bank has developed in the soil capable of producing new plants for many years. An infestation of weeds can easily re-invade treated areas in one growing season if control and treatment activities are prematurely curtailed. Weed management efforts should be carried out over an adequate number of growing seasons to realize effective weed management within the target area.

As with all weed management, this multi-season effort is best served by effective documentation of control efforts and continued vigilance in successive seasons of management.

Information can be used to modify treatment priorities and weed management strategies over time. Vigilance is required against new infestations that may be moving into the site. These new sources of infestation may be worked into prevention and management plans as necessary.

This weed management plan will be modified over time as site conditions change. Weed management strategies and priorities can be modified as weed infestations change in response to continued control efforts.

1.3 – Drainage and Erosion Control

Installation of the solar facility will not alter existing drainage patterns or flow rates on the site and runoff water quality will not be impacted by the solar facility components. Installation of water quality or detention facilities would require clearing, grubbing, grading and reseeding of a portion of the site and would likely increase the potential for erosion, sediment transport and concentrated flow. Accordingly, water quality and detention are not recommended for this project.

Appropriate temporary (construction-related) erosion and sedimentation control Best Management Practices (BMPs), will be applied during the construction phase of the project. The BMPs will be inspected on a regular basis to ensure proper functionality.

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