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Guidance for Weed Management Plans in the City of Fort Collins

Background: A well thought out and properly implemented Weed Management Plan (WMP) is critical to achieve the success standard of less than ten percent (10%) absolute cover of noxious weeds found in most Development Agreements (DA) or restoration plans. Necessary aspects of a WMP include a baseline inventory, outlines applicable best management practices (BMPs), outlines the monitoring plan to facilitate an adaptive management approach, and establishes success criteria. WMPs created to meet City of Fort Collins (City) requirements are required to follow an Integrated Pest Management model in which all every type of control is considered – mechanical, cultural, biological, and chemical.

Regulatory Code and Applicable Documents: Buffer Zone Performance Standards [LUC 3.4.1(E)(1)(a, e, g)], Development Activities Within the Buffer Zone [LUC 3.4.1(E)(2)(b, c)], Development Agreement (project specific)

Elements to Consider:

Planning Phase:

- **Site assessment:** mapping of weed populations, species, densities, priority species/populations to address, identification of weed sources (on and offsite), identification of appropriate and inappropriate soil salvage areas (where to and not to salvage from, where to stockpile, define weed prevention on stockpiles)
- **Create treatment plan:** develop treatment plans for specific weeds and a timeline of treatment actions, identify appropriate construction BMPs to assist with general weed management, identify which treatment methods (mechanical, cultural, biological, and chemical) are appropriate for the project across the life of the project
- **Create adaptive management framework:** establish success criteria, monitoring timeline, monitoring methodology (preferably line point intercept), and feedback mechanism to ensure that monitoring results appropriately alter the management methods

Pre-Construction Phase:

- Treat weeds within Natural Habitat Buffer Zones (NHBZs) PRIOR to initiation of construction;
- practice appropriate soil handling during salvage and placement.

During Construction:

- Require earthmoving equipment to be washed PRIOR to arriving on site;
- Ongoing weed management of all areas and stockpiles to prevent weeds from going to seed;
- Minimize amount of bare ground and length of time ground is bare;
- Insure that only certified weed-free material is used for erosion BMPs (fiber roll barriers, sediment logs, erosion blankets, etc.).
- Monitor weed populations at least twice during the growing season and provide reports to alter weed management as needed.

Post-Construction Phase:

- Actively manage weed populations;
- Establish and maintain healthy/vigorous stands of turf/landscaping to provide competition;
- Pay particular attention to areas that require hand pulling around tree and shrub plantings;
- Monitor weed populations at least twice during the growing season and provide reports to alter weed management as needed.

Glossary of Key Terms:

Adaptive Management is a structured, iterative process based on a feedback loop of monitoring and implementation that can adapt to ever-changing situations.

Biological Control involves using living organisms, such as insects, nematodes, bacteria, fungi, or livestock, to reduce weed populations. Not all weeds have viable biological controls, and the release of biological agents is regulated by the Colorado Department of Agriculture.

Chemical Control involves the use of chemicals called herbicides to kill and prevent plant growth. Different herbicides function in different ways and are can more or less effective depending on the weed species and method of function. Types of herbicides are contact (destroy plant tissue on contact), systemic/translocating (applied to the leaves and then moves to other parts of the plant), and pre-emergent (applied to the soil to prevent germination or early growth of weeds). Herbicides are regulated by the US EPA and label instructions must be followed to insure human and ecological health. The label is the law! Licensed applicators are advised.

Cultural Control involves modifying the growing environment to reduce weeds. Examples include modifying soil pH or fertility, altering irrigation practices, controlled grazing, the use of ground covers (i.e., mulching), and providing ample resource competition through desired vegetation.

Integrated Pest Management is an ecosystem-based strategy that focuses on long-term prevention of pests through a combination of biological, chemical, cultural, and mechanical methods.

Mechanical Control involves the removal or manipulation of weeds by physical means such as mowing, cutting, or handpicking.

A Weed Management Plan often includes the following elements:

- Baseline survey of existing site vegetation (including weed species, distribution, and density)
- Appropriate management techniques for the project - mechanical, cultural, biological, and chemical
- Adaptive management framework – the who, what, when, where, why, and how of the monitoring, as well as the communication framework to ensure that management is adjusted to monitoring results
- Applicable BMPs – pre-, during, and post-construction
- Proposed success criteria

Resources:

Colorado Department of Agriculture

Treatment guidelines and resources, biological control options, identification resources

<https://www.colorado.gov/pacific/agconservation/noxiousweeds>

Colorado State University Extension – Small Acreage Management Program

Species profiles, treatment recommendations

<https://sam.extension.colostate.edu/topics/weeds/>

Larimer County Weed Management District

Expert advice, species profiles, educational resources, list of licensed applicators

2649 E. Mulberry St., Suite 6, Fort Collins, CO 80524

(970) 498-5768; <https://www.larimer.org/naturalresources/weeds>

