

TOWN OF MANCOS, COLORADO

**WEED MANAGEMENT PLAN and INTEGRATED PEST MANAGEMENT PROCEDURE
(IPM)**

**A Plan for Control of Noxious Weeds and Pests in
Mancos Town Parks**

May 2015

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I. Introduction and Background

Members of the Mancos community approached the Board of Trustees about considering alternative, chemical-free options for maintenance of municipal parks. The Board asked staff and community volunteers who were interested in this to research options and bring back more information and recommendations to the Board in the spring. This Weed Management Plan and Integrated Pest Management Procedure (hereafter “IPM Plan”) represents the recommendations of the group.

This plan recommends moving to a new approach in park maintenance that utilizes fewer chemicals to control weeds and pests. While the use of traditional methods of “weed and feed” using chemicals will be lessened, it may still be required in some areas that are determined to be low impact. Low impact is defined as areas where children and pets are not typically using the environment. The highest impact areas are those that are cultivated parks such as Boyle Park and Cottonwood Park. Lower impact areas include the rock-scaped intersections at Hwy 160 and the boundary areas of trails and parks.

The following are the general 10-year goals of the Town of Mancos IPM Plan 2015 to 2025:

1. Eradication of weeds of concern (e.g. Class A Noxious weeds), as determined by the State of Colorado.
2. Control of noxious and invasive weeds and pests to manageable levels of scattered occurrences.
3. Maintaining the native biodiversity.
4. Conducting educational and public awareness programs.

II. Information About Mancos Parks

The Town of Mancos maintains several parks ranging in size from corner “pocket parks” to small trail sections to larger parks that span six or seven acres. The table below summarizes the parks and other outdoor areas that are maintained by the town.

Park Name	Approx Acreage	Irrigated?	Type of Maintenance
Boyle Park	6.2	Yes	Turf maintenance, weeding, flower beds, tree pruning
Cottonwood Park	13.26	Yes/Ditch-shares	Manual hand cut thistle, tree pruning, mowing, trimming
Skate Park	.12	Yes	Trimming, pruning, weeding flower beds
Pioneer Plaza	.25	Yes	Weeding, pruning, trash pickup
Mesa St. Bridge/Library	.25	Yes	Weeding, pruning, trash pickup
GMC Corner Park	.25	No	Weeding, trash pickup, planters, tree pruning
Creekside Greenway	.25	Yes	Weeding, pruning, trash pickup
Creekside Walking Path	.25	No	Trimming, weeding
Hwy 160 Intersections-Multiple	.50 (combined)	No	Weeding, watering plant materials, CDOT, town spray

Staffing for parks maintenance includes one full time Parks and Recreation Coordinator and one seasonal Parks Maintenance employee, who works from May through October. The IPM Plan recommends that at least one additional seasonal employee be hired to assist in control of weeds, especially for manual means of control.

III. Weed and Pest Identification and Control of Noxious Weeds

The Town of Mancos Board of Trustees accepts and supports the intent, guidance and goals of the Colorado Noxious Weed Act. Private landowners within the Town of Mancos are responsible for noxious weed management on their lands as and the Town of Mancos is responsible for areas under public domain. As such, the Town intends to control weeds that are of greatest concern to the state.

Weeds are classified according to a state noxious weed priority list: A: Eradication is a must. B: Manage and control the spread of these species. C: Support the use of integrated management methods and provide educational, research and biological control resources. A list of the weeds identified within Mancos park areas is provided in the Appendix.

The Town of Mancos IPM Plan has been developed to comply with the Colorado Noxious Weed Act and to provide guidance and support for the long-term effort of effective control of noxious weeds in the Town of Mancos. It is clearly understood that noxious weeds will never be fully eradicated from the Town of Mancos or Montezuma County.

The Town of Mancos IPM Plan is intended to guide this and future generations in what will hopefully become a unified and concerted effort to bring these invasive plants under the control of an effective management program. Citizen awareness of the value of native biodiversity is the key to success for this program.

Serious infestations will be monitored on an annual basis. Weeds of lesser concern will be generally noted as time and resources permit with citizen volunteers encouraged to participate. Accomplishment of these broad general goals will require a significant effort on the part of many individuals, agencies, and organizations. The coordination of the combined efforts of the Town of Mancos Board of Trustees, Mancos Planning Commission, private citizens, corporations and land management agencies will be necessary.

IV. Thresholds and Integrated Methods of Control

The Parks and Recreation Department follows an Integrated Noxious Weed and Pest Management strategy, or IPM. According to the EPA "In technical terms, Integrated Pest Management (IPM) is the coordinated use of pest and environmental information with available pest control methods to prevent unacceptable levels of pest damage by the most economical means and with the least possible hazard to people, property, and the environment." The IPM strategy employs four common sense approaches to effectively manage the pests and weeds identified in the Mancos park areas. These are:

- Establishing thresholds for action
- ID and monitor the weeds and pests
- Prevention
- Control

The Town assumes that all pesticides are potentially hazardous to human and environmental health. Therefore, reasonable non-pesticide alternatives shall be given preference over chemical controls by following the IPM procedure. Town staff will evaluate alternatives to chemical treatment, including the cost-effectiveness of the treatments. For all pest control activities, the IPM procedure outlined below shall be followed.

A. Establishing Threshold Levels. To determine if treatment is warranted, an acceptable threshold level of treatment for each target pest and weed and site should be established. In some instances, treatment may be required by federal or state law. The assessment will be based on the following:

1. The tolerable level of environmental, aesthetic and economic damage as a result of the pest or weed population(s) and the tolerable level of risk to human health as a result of the pest or weed population(s); or
2. The size or density of the pest or weed population that must be present to cause unacceptable environmental, aesthetic and/or economic damage; and the size, density and type of pest or weed population that must be present to create a human health risk.

B. Identify and Monitor the Weeds and Pests. Regular identification and monitoring of pest and weed populations is critical to determine the type of treatment method to be used and to ascertain whether the method of control is effective.

C. Prevention. Prevention is the first and perhaps the most important step in a weed control program. In addition, preventative measures are probably the most cost effective method of weed control. Preventative weed control includes (among others) weed-free crop seed, weed-free manure and hay, clean (weed-free) harvesting and tillage equipment, the elimination of weed infestations in areas bordering cropland, irrigation ditches and canals. Cleaning is recommended for 4 wheel drive vehicles, ATVs, and other equipment which may have been exposed to weed areas.

By reducing the capacity of the ecosystem to support target pest and weed populations through design and appropriate management, the opportunities for pest and weed establishment can be reduced or eliminated.

1. Use strategies that reduce the preferred harborage, food, water or other essential requirements of pests.
2. Use weed-free materials for road and trail construction and maintenance.
3. Use landscape and structural design that is appropriate to the specific habitat, climate and maintenance the area will receive.
4. When designing projects, consider the potential impacts of pests and mitigate through the use of appropriate landscape design (water requirements, weed barriers, etc).
5. Vegetation management including irrigation, mulching, fertilization, aeration, seeding, pruning and thinning.

D. Control. In general, a combination of treatments is more effective than a single approach. The Department is encouraged to seek out and experiment with innovative IPM treatments (and combinations of treatments) and share this information.

- 1. Treatment Selection Criteria.** Upon determining that treatment is necessary, the following criteria should be used to help select the appropriate IPM treatment strategy:
 - a. Least disruptive of natural controls.
 - b. Least hazardous to human health.
 - c. Least toxic to non-target organisms.
 - d. Least damaging to the general environment.
 - e. Most likely to produce a permanent reduction in the environment's ability to support target pests or weeds.
 - f. Cost effectiveness in the short and long term.

2. Treatment Strategies. The Parks department shall make its own determination about appropriate and effective treatments, based on site-specific requirements. Commitment to the most environmentally sound approach is expected, with non-chemical methods considered first.

The following treatments are listed in the order in which they should be executed:

a. Cultural. Cultural control is the use of management activities that prevent pests and weeds from developing due to enhancement of desired conditions. Including, but not limited to; establishing and managing an adequate population of desirable vegetation to compete with the weeds, utilizing livestock when possible (cattle, goats, sheep), mulching, and burning when appropriate.

Many of the noxious weed infestations in the Town of Mancos are established on disturbed ground of some sort. Land use activities that limit the amount of ground disturbed at a given time, or that limit the amount of time ground remains disturbed without reestablishing a native vegetative cover, would result in fewer and less severe noxious weed infestations. All disturbed areas shall be reseeded as soon as possible after the disturbance.

Specific examples are the following:

- 1) Selection and placement of materials that provide life-support mechanisms for pest enemies and competitors.
- 2) Modification of pest habitat by reducing pest harborage, food supply and other life support requirements.
- 3) Vegetation management including irrigation, mulching, fertilization, aeration, seeding, pruning and thinning.
- 4) Waste management and proper food storage.
- 5) Heat, cold, humidity, desiccation or light applied to affected regions.
- 6) Prescribed grazing.

b. Mechanical. Mechanical control is accomplished by using physical methods or mechanical equipment to control pest and weed infestations.

- 1) Mowing or weed-whipping, tillage and hoeing
- 2) Burning
- 3) Hand-pulling of weeds
- 4) Hand-removal of insect egg masses

c. Biological. Biological controls include the introduction or enhancement of natural enemy populations to target pests and weeds. Biological weed control involves the utilization of natural enemies for the control of specific weed species. This method of control is never a hundred percent effective and can take 5 to 10 years for partial control. Biological weed control is not acceptable as the sole control method for any particular or specific weed species targeted for eradication. Introduction of non-indigenous organisms has an associated risk factor and should be thoroughly evaluated prior to implementation. Biological methods include:

- 1) Conservation and augmentation of the pest's natural enemies
- 2) Introduction of host-specific enemy organisms

d. Chemical. Chemical control of pests and weeds is accomplished by using chemical compounds registered as pesticides and herbicides. All pesticides and herbicides shall be assumed to be potentially hazardous to human and environmental health.

Always read the label before using any herbicide. Weed control with herbicides is an effective tool for many target weed species. However, there are several aspects to consider when choosing a chemical program. These include; herbicide selection, timing of application, target weed, desirable crops or plant species being grown or that will be planted, number of applications per year and number of years a particular species will need to be treated for desired control. Also important are the health and safety factors involved and the need to consider undesirable impacts.

All of these management options will be considered when evaluating a noxious weed infestation in the Town of Mancos.

- 1) The type, methods and timing of chemical treatment shall be determined after consideration has been given to protection of non-target organisms (including threatened or endangered species), protection of water quality, pest biology, soil types, anticipated adverse weather (winds, precipitation, etc) and temperature.
- 2) Initial review of potential chemicals shall begin with the least toxic compounds; i.e., chemicals in EPA Toxicity Categories III and N. The use of compounds in EPA Toxicity Categories I and II shall be avoided if possible or used in situations where exposure to the active ingredient is limited (i.e. baits or soil/trunk injections).
- 3) Staff will review the information available on potential chemicals for persistence in the soil and the potential impacts from persistence. These factors will be considered along with the potential for more frequent application of chemicals that do not persist in the environment.
- 4) If chemical treatment is warranted in a riparian area, applications will generally be plant specific and limited to wick applications.

Potential chemical approaches

- pheromones and other attractants to confuse pests and/or act as bait
- insecticidal soaps
- juvenile hormones that arrest pest development
- repellants
- use of allelopathy
- sterilants or contraceptives to reduce breeding
- contact, stomach or other poisons
- fumigants
- combinations of above (baits with poisons)
- herbicides, insecticides

Appendix:
Weed Identification List (2015)

2015 Weed Identification				
Locations	Weed	Nuisance Class		
		A	B	C
Boyle Park	Dandelion			X
	Bindweed			X
	Filaree			X
	Broadleaf plantain			X
	Mallow		X	
	Mustard		X	
	Yarrow		X	
	thistles		X	
	Johnson grass			X
	Mullien			X
GMC Lot	Mustard		X	
	Bindweed			X
	Dandelion			X
	Mallow		X	
	Mullien			X
	Scotch Thistle		X	
	Redstern Filaree		X	
Cottonwood Park	Bindweed			X
	Dandelion			X
	Redstern Filaree		X	
	Mallow		X	
	Yarrow		X	
	Hoary Cress		X	
	Jointed goatgrass			X
	Thistle -Canada		X	
	Thistle-Bull		X	
	Russian Knapweed		X	
	Wormwood		X	
	Mullien			X
	Ragwort	X		
	Chamomile		X	
	Chicory			X
	Brome			X
Pioneer Park	Elm tree sprouts			
	Redstern Filaree		X	
	Johnson Grass			X
	Dandelion			X
Skate Park	Redstern Filaree		X	
	Johnson Grass			X
	Dandelion			X
Library	Redstern Filaree		X	
	Johnson Grass			X
	Dandelion			X
Creekside	Johnson Grass			X
	Redstern Filaree		X	
	Dandelion			X

Checking on Ragwort to verify Class