



# Vegetation Management, Inc.

“May all your Weeds be Wildflowers  
and all your Trees be Healthy”

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## **2010 Weed Management Plan for the Basin Authority as administered by Cherry Creek State Park, Colorado**

Prepared by: Vegetation Management, Inc.

### **Purpose**

Vegetation Management Inc. (hereafter referred to as VMI) has been contracted through Cherry Creek State Park (hereafter referred to as CCSP) to perform weed control for the Basin Authority (hereafter referred to as BA) on designated areas within the park. Areas consist primarily of disturbed areas, creek, native grasses and plants large portions of which have been infested by a variety of noxious weeds and undesirable plants, including but not limited to a variety of Thistles (Canada, Musk & Scotch), Knapweed, Teasel, Toadflaxes, Leafy Spurge, Common Mullein, Redstem Filaree, Hoary Cress, Common Mallow, Kochia, Field Bindweed, Poison Hemlock, Russian Olive, Prickly Lettuce, Curly Dock, and Redroot Pigweed. This Plan provides for critical areas of noxious weed management, assessment, monitoring and reporting of designated areas.

### **Background**

The authority and responsibility to formulate and implement a Noxious Weed Management Plan comes from Colorado Revised Statutes 35-5.5-101 et seq., the Colorado Noxious Weed Act (Act). The Act states that the justification for this statute resides in the fact that certain undesirable plants represent a threat to the economic and environmental value of lands throughout the State; therefore, they must be managed where they occur. Furthermore, it is the responsibility of local governing bodies to assure that these plants are in fact managed.

### **Organization and Responsibilities**

#### **I. Cherry Creek State Park (CCSP)**

##### **A. Contracting Agency Responsibilities**

1. Agency Staff contracts and communicates with the contractor as to what areas are to be treated for the Basin Authority (BA).
2. Agency Staff receives a copy of Invoices and BA processes payment.

#### **II. Vegetation Management Incorporated (VMI)**

##### **A. Contractor Responsibilities**

1. Contractor performs Assessment, Management/Control, Monitoring, makes recommendations and prepares reports of areas that have been treated.

### **GOAL AND OBJECTIVE**

- **Goal:** Weeds left unchecked infest both private and public lands. It is the primary goal of this management plan to ensure that as many noxious weeds as possible are either not allowed to establish a foothold or that sizeable infestations be controlled.

- **Objective:** To provide chemical treatment to designated areas as necessary to manage noxious weeds, report and make recommendations as to success and ongoing treatment.
- **Action:** Contractor will provide the tools necessary to perform chemical application to the designated areas.

#### **ASSESSMENT**

- **Objective:** To evaluate weed populations within the designated areas by utilization of visual inspection by VMI staff, field trips with CCSP representative/s, and review of various maps provided by the CCSP.
- **Action:** Visually survey designated areas to locate infestations and treat them with appropriate chemical application.

#### **MANAGEMENT/CONTROL**

- **Objective:** Control infestations by chemical application.
- **Action:** Evaluate and treat noxious weed populations within each designated area.

#### **MONITORING**

- **Objective:** Assess treatment areas in order to establish trends in success ratios.
- **Action:** Visit the treated areas several times annually and note the populations of noxious weeds.

#### **REPORTING**

- **Objective:** To provide CCSP and the BA with information detailing effectiveness of treatment.
- **Action:** Produce a report, which will provide assessment and recommendations on the populations of noxious weeds within the designated areas. Identify appropriate management techniques for weed species on a case-by-case basis.

#### **ADDITIONAL NOTES**

VMI will utilize the following to establish priorities:

1. Priority will be given to specific areas as requested by CCSP personnel and approved by CCBWQA if the priority area is within the disturbance area of a PRF.
2. Priority will be to treat newly introduced species and/or species that have yet to establish a foothold within designated areas.
3. Priority will be given to high traffic areas such as trails (paved first, non-paved second), roads, parking lots, drainage/irrigation areas, and fence lines of abutting properties. Controlling weeds in these areas is important in reducing spread.
4. Small infestations (especially of highly invasive species) are concentrated on repeatedly to confine and allow native species to thrive.
5. Strategies for sizeable infestations are to begin along the outer edges combined with overall broadcast applications (when possible) to reduce the area of infestation.

## **ASSESSMENT/SITE VISITS**

### **Site Visits/Meetings conducted during 2010**

Strategizing meetings were held with CCSP Representative on March 12<sup>th</sup>, June 10<sup>th</sup> & 15<sup>th</sup>, and October 7<sup>th</sup> during which specific areas and methodologies were discussed along with several other impromptu meetings throughout the season to view results and discuss areas of concern. During the March 12<sup>th</sup> meeting all sites were visited and prioritized including the Cottonwood Creek re-alignment both Phase I & II. Again it was noticed how the Prairie Dog population was increasing and impacting both the Phase I & Phase II areas. We reviewed a copy of the 2010 Weed Control Estimate prepared by Bill Ruzzo on 1/4/10 in order for us to plan this season's treatment. VMI was contacted directly to propose and prepare a re-seeding recommendation of areas within Phase I & II of the Re-Alignment areas. Between all site visits, meetings, and email discussions VMI was able to determine exactly what was needed for the 2010 season.

## **SPECIFIC TREATMENT DETAILS**

Treatments were conducted on the following dates:

June 10<sup>th</sup>, June 15<sup>th</sup>, June 16<sup>th</sup>, June 29<sup>th</sup>; July 1<sup>st</sup> and July 2<sup>nd</sup>; August 5<sup>th</sup> and August 11<sup>th</sup>; September 25<sup>th</sup>; and October 7<sup>th</sup> and October 14<sup>th</sup>

- **Basin Authority Cottonwood Creek Re-Alignment Phase I**

**Treatment:** Heavy to Moderate infestations of Thistles (Canada, Musk and Scotch) Common Mullein and Leafy Spurge, Field Bindweed and Poison Hemlock; Moderate amounts of Kochia; and Light amounts of Diffuse Knapweed and Russian Olive were found and treated approximately 25' on both sides of realignment from bridge at SW to the beginning of the new creek realignment area in the N, along pathways and road as well as in outlying adjacent areas. Due to the creek as well as native plantings along the shoreline, this area continues to require a lot of detail work. Just as in 2009, there was a cost share agreement between the Basin Authority and CCSP allowing for \$1500 each for a total of \$3000 to be used on weed control of approximately 35.29 acres of the above mentioned area as well as outlying areas. This methodology was utilized throughout the Re-alignment area in an effort to reduce migration of weeds from adjacent areas.

**RECOMMENDATION:** In 2011 we recommend that treatments again be conducted in this area, While infestations have shown improvement from the past treatments in this area, there still exist sizeable populations of noxious weeds which will likely re-infest the treatment area as well as barren areas being created by the Prairie Dog infestation. We advise the most effective methodology is to conduct three treatments annually especially in light of the

summer annual Kochia which is present in this area. This method allows for treatment of a wide variety of undesirable weeds i.e., biennials, both summer and winter annuals, and perennials. VMI conducted a survey and provided a spreadsheet detailing areas with Phase I where re-seeding should occur and it was determined that the both noxious weed control as well as Prairie Dog control efforts should occur prior to reseeded. We will continue to advise that the Prairie Dog infestation be monitored and controlled along with Noxious weed control in an effort to reduce the disturbance these creatures and weeds impart on native grasses and vegetation.

- **Basin Authority Cottonwood Creek Re-Alignment Phase II**

**Treatment:** Heavy to moderate infestations of Thistles (Canada, Musk and Scotch), Leafy Spurge, Common Mullein and Poison Hemlock are present in this area; as well as Moderate to Light amounts of Dalmation Toadflax, Diffuse Knapweed, Russian Olive, Kochia, and Field Bindweed were found and treated in this approximately 60 acre disturbed area on both sides of the creek and outlying adjacent areas from the entrance area at the N near the Lake road and equipment building to the Phase I area in the S and from the roadside along the W and the berm in the Shooting Range on the E side of the pole fence. Due to the creek as well as native plantings along the shoreline, this area continues to require a lot of detail work. In 2009 VMI conducted both herbicide treatments coupled with mowing which aided in the decrease of noxious weeds and increase of grasses. It should be noted that the Prairie Dog infestation in this area has increased dramatically and is impacting both the weed population as well as decreasing the grasses. In mid 2010 it was noted that the Prairie Dogs were moving to the East side of the creek and beginning to decrease grasses and increase noxious weeds in areas where they were moving in. VMI conducted a survey and provided a spreadsheet detailing areas where re-seeding efforts should occur. The methodology of mowing coupled with chemical application was extremely effective particularly when adding a summer annual chemical application which kept a sizeable infestation of Kochia from competing with the grasses. Again the methodology of treating outlying adjacent areas to reduce the migration of weeds proved most effective.

**RECOMMENDATION:** In 2011 we recommend that spring, summer and fall treatments of both herbicide and mowing be conducted in this area. While infestations showed improvement from the 2010 treatments, there still exist sizeable populations of noxious weeds which will likely re-infest the treatment area. It is strongly recommended that Prairie Dog populations be dramatically reduced in the Phase II area particularly the small population which has established on the East side of the creek. It is anticipated there is likely to be substantial weed germination due to the existing seed bank therefore the methodologies used would be recommended in the future as they allow for

treatment of a wide variety of undesirable weeds i.e., biennials, both summer and winter annuals, and perennials.

- **Compressor Building**

**Treatment:** Heavy to Moderate infestations of Leafy Spurge; Moderate to Light infestations of Thistles, Diffuse Knapweed, Kochia, Common Mullein and a few Dalmation Toadflax plants were found and treated on all sides of the Compressor Building and outlying areas which stretched E all the way to the bridge by the waters edge and from the rock along the Dam face all the way to the roadside/fence line to the S including all around the parking lot. A total of 5 acres were treated in this area with an original budget of \$450 for which VMI came in \$25 under budget. There was a mowing budget established for this area for which CCSP personnel determined not to do.

**RECOMMENDATION:** In 2011 we recommend that at least one spring and one fall treatment be conducted in this area due to the potential seed bank from the noxious weed population in this area in an effort to reduce competition for the good grasses which exist here.

- **Traditional Areas**

**Treatment:** Heavy infestations of Leafy Spurge, Thistles and Common Mullein; with Moderate to Light amounts of Kochia, Redstem Filaree and Curly Dock were found and treated in the East Ramps area which was the only Traditional area treated in 2010. Again since we held our pricing to the same as in 2009, we were able to conduct this treatment and come in at \$50 under budget. Mowing was also allocated for the Traditional Areas but was not conducted.

**RECOMMENDATION:** VMI recommends, if budgets allow, treatments continue in these areas especially along the lakeshore area of East Ramps where it is anticipated that seed banks are likely sizeable due to the infestations found and treated in this area in 2010.

- **Re-seeding Survey**

VMI was contacted by Bill Ruzzo of the Basin Authority to conduct a survey of both Phase I & II to GPS and estimated acreage of areas in need of re-seeding. This resulted in an approved expenditure of \$2250 and a four page spreadsheet detailing GPS points, acreage and detail notes. It was determined by CCSP personnel that noxious weed coupled with Prairie Dog control efforts be conducted prior to any re-seeding efforts. The Prairie Dog population is reaching sizeable proportions causing for larger and larger areas to be impacted, subsequently re-seeding efforts might prove to be ineffective unless the Prairie Dogs are removed.

**GENERAL COMMENTS**

It has been our hope that by providing this comprehensive report of our weed control efforts for Basin Authority designated/disturbed areas within the park we justify the dollars spent on Herbicide treatments, mowing and survey expenditures. VMI is quite proud of the progress we have made on Traditional areas, Phase I and Phase II of the creek alignment, as well as control efforts conducted in the Compressor building area. Below is a breakdown of total acreages treated for the Basin Authority within the park in 2010:

**Herbicide Treatments**

<b>Area/s Treated - Responsibility</b>	<b>Total Acres</b>
Traditional areas – cost share CCSP & Basin Authority	5 (BA)
Phase I – cost share CCSP & Basin	17.647 (BA)
Compressor Building – Basin Authority	5
Phase II – Basin Authority	181.25
<b>Herbicide Grand Total</b>	<b>208.897</b>

**Mowing Efforts**

<b>Area/s Mowed</b>	<b>Total Hours spent</b>
Phase II – Basin Authority	40 Total hours spent mowing

A 2010 budget was established for and by the Basin Authority (see Spreadsheet in Section 3 of this report). For all Basin responsible areas there was allocated \$21,500 for Chemical treatment at \$90 per Acre. Since VMI held prices from 2009 of \$85 per acre it was determined that a total of 235 acres could be treated to keep within the budgeted amount. With spring, summer and fall treatments VMI treated a total of 181.25 acres for a total amount spent of \$15,407.25 resulting in a \$5743.75 under budget for chemical treatments conducted in 2010. A mowing budget had been allocated based on \$190 per hour; however CCSP personnel determined the only mowing which was to be done was in Phase II. Subsequently with VMI holding its 2009 per hour mowing price and spending a total of 40 hours mowing in Phase II we came in at \$400 under budget for Phase II mowing and a grand total of \$4407 under budget for all mowing allocated. It is recommended that efforts be similar in 2011 (although additional mowing would be advised as well as Prairie Dog control) to the above for this is the most effective methodology in realizing an on-going reduction of noxious species within the park.

NOTE: In general multiple treatments for weeds should certainly result in a reduction of noxious weeds, however treatment is not a guarantee that additional plants will not continue to germinate and grow either before or after applications.