Envision 24 West
The Entryway

Noxious Weed Assessment Technical Memorandum

US 24 West

CDOT Project No. NH 0242-040

Project Control No. 187824

Colorado Department of Transportation

February 2010

US 24 West Environmental Assessment: Noxious Weeds

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1.0 Introduction

The Colorado Department of Transportation (CDOT) is conducting an Environmental Assessment (EA) for changes to a 4-mile portion of US 24 between Interstate 25 and Manitou Springs. CH2M HILL conducted a noxious weed survey of the US 24 study area during the summer of 2006. Noxious weeds were defined as those appearing on the current El Paso County Noxious Weed List. A follow-up windshield survey was conducted during the summer of 2009. This technical memo provides documentation of existing conditions along the affected portion of US 24 West. The scope of the survey effort did not include developing mitigation strategies or a weed management plan. Mitigation will be addressed in the EA and will include the completion of a Noxious Weed Management Plan during final design and the implementation of this plan during construction.

2.0 No Action Alternative

The No Action Alternative consists of existing transportation facilities and committed transportation projects that would occur regardless of whether the Proposed Action is constructed. The No Action Alternative would not make any improvements to the existing condition beyond those which are already planned and funded. The projects listed below are shown in existing adopted transportation plans and are locally funded projects.

- **8th Street Intersection Improvements.** Lengthens turn lanes and acceleration and deceleration lanes on US 24, and widens 8th Street north and south of US 24.
- **8th Street Bridge Replacement.** Replaces the existing four-lane bridge structure over Fountain Creek at 8th Street.
- **21st Street Roadway Improvements.** Includes the widening of 21st Street south of US 24 to four 12-foot travel lanes with dedicated turn lanes, extended acceleration lane, and curb and gutter. Geometric improvements to the US 24/21st Street intersection will also be constructed.
- **21st Street Bridge Replacement.** Replaces the existing four-lane bridge structure over Fountain Creek.

- **25th Street Bridge Replacement.** Replaces the existing two-lane bridge structure over Fountain Creek at 25th Street.
- **Midland Trail Extension.** Extends Midland Trail between 21st Street and Manitou Avenue to connect with Manitou Springs' Creekside Trail.

Under the No Action Alternative, improvements to intelligent transportation systems (for example, variable message signs) would be implemented as part of the congestion management program. Existing bus routes and service would continue as they are today, and bike and pedestrian facilities would only be extended or improved as local funds and grants allow.

3.0 Proposed Action

The Proposed Action would provide additional capacity on US 24 by building additional travel lanes, two new interchanges, and one new overpass. The Proposed Action includes rebuilding several cross-streets, replaces bridges over Fountain Creek, and includes modifications to Fountain Creek's channel at each bridge crossing. Sidewalks would be built at all intersections and interchanges. The Proposed Action would also accommodate a park and ride facility and two future local access points along the route, which would be built by others. The Proposed Action is illustrated in Exhibit 1.

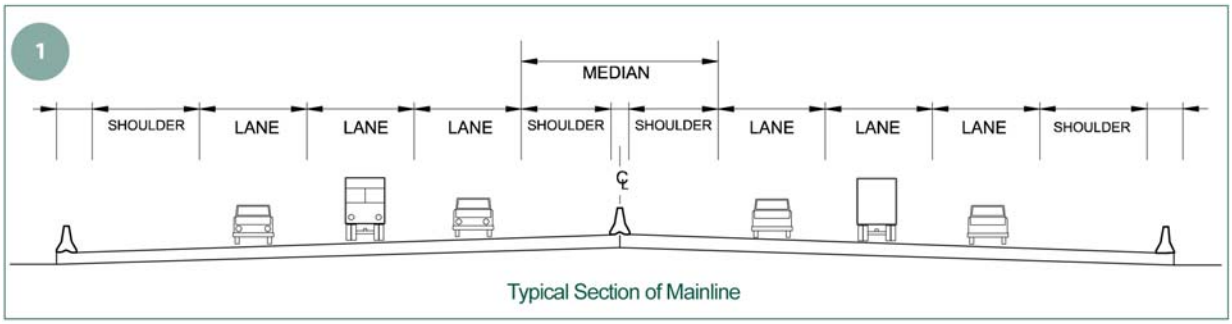
A single point diamond interchange is proposed at the Cimarron Interchange. This interchange design differs from what was originally presented in the *I-25 Improvements through the Colorado Springs Urbanized Area EA* (CDOT, 2004). Since the I-25 EA was approved, new opportunities have been identified to improve existing and future traffic operations, making this improved design now feasible.

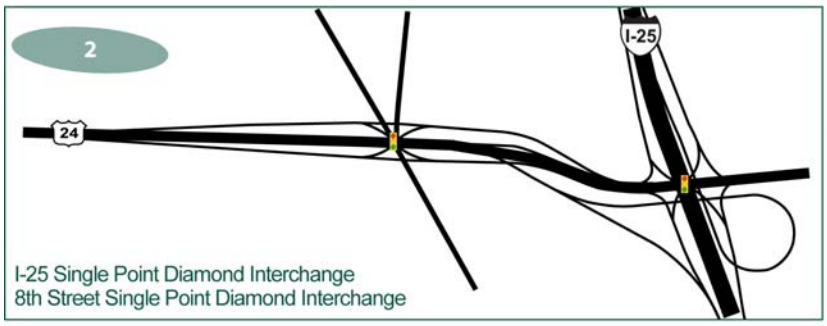
US 24 in the project area would be built to have eight through-lanes, four in each direction, east of 8th Street, and six through-lanes, three in each direction, from 8th Street to a point west of 31st Street. New interchanges are proposed at 8th and 21st Streets.

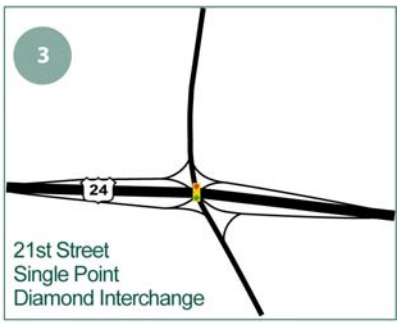
Intersection upgrades are proposed at 26th Street. The intersection of US 24 and 31st Street would be widened, as would the intersection with Colorado Avenue to the north. South of US 24, 31st Street would be rebuilt to align with the highway intersection.

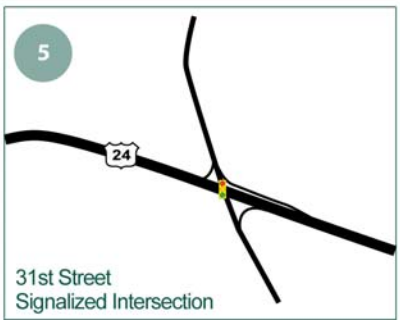
At the west end of the corridor, an overpass would be built to carry US 24 over Ridge Road. Ridge Road would be widened between High Street and Colorado Avenue. The west end of the Proposed Action is approximately 1,800 feet west of the Ridge Road overpass where the overpass connects to the existing highway. Because there is not an existing or future congestion problem between Ridge Road and Manitou Avenue, no changes are proposed west of Ridge Road.

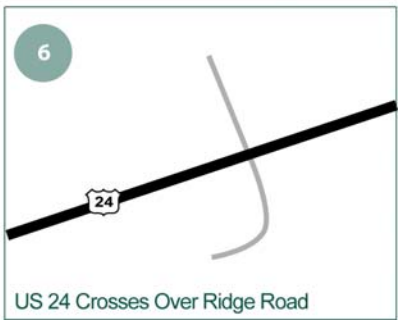
EXHIBIT 1
Proposed Action











Accommodations would be made for the following features that will be built by others in the future:

- At 15th Street an overpass would be constructed to carry 15th Street over US 24 and Fountain Creek, and connect to the street network of Old Colorado City and Gold Hill Mesa. This overpass would include ramps on the east side to connect to the 8th Street intersection. Between the ramps and Colorado Avenue, 15th Street would be reconstructed to provide pedestrian features such as sidewalks.
- At Ridge Road ramps providing direct access to US 24 would be constructed to convert the overpass to a tight diamond interchange.
- At 31st Street a park and ride facility would be constructed in the northeast quadrant of the intersection, with access from Colorado Avenue.

As described in Chapter 4 of the EA, the Proposed Action also includes various mitigation measures such as the construction of a greenway and the extension of some trails. The Proposed Action is illustrated in Exhibit 1.

4.0 Background

The eleven plant species appearing on the El Paso County Noxious Weed List are indicated in Exhibit 2, *El Paso County Noxious Weeds Subject to Control* (El Paso County 2006). Exhibit 2 also indicates the frequency of occurrence of each species in El Paso County and the management status of each species with respect to the State of Colorado Noxious Weed List (El Paso County 2006, Colorado Department of Agriculture 2006). All eleven species are designated as "List A Noxious Weed Species" or "List B Noxious Weed Species" by the State of Colorado. List A species are designated for eradication by the state and by El Paso County. List B species are those for which a state noxious weed management plan is developed and implemented to stop their spread (Colorado Department of Agriculture 2006). List B species are designated for suppression or containment by El Paso County (El Paso County 2006).

EXHIBIT 2
El Paso County Noxious Weeds Subject to Control

Species	Frequency of Occurrence in El Paso County	State of Colorado Noxious Weed List Management Status
Acroptilon repens (Russian knapweed)	Uncommon	List B
Carduus nutans (musk thistle)	Very common	List B
Centaurea diffusa (diffuse knapweed)	Common	List B
Centaurea maculosa (spotted knapweed)	Uncommon	List B
Cirsium arvense (Canada thistle)	Very common	List B
Clematis orientalis (Chinese clematis)	West of I-25*	List B
Euphorbia cyparissias (cypress spurge)	Uncommon	List A
Euphorbia esula (leafy spurge)	Common	List B

EXHIBIT 2
El Paso County Noxious Weeds Subject to Control

Species	Frequency of Occurrence in El Paso County	State of Colorado Noxious Weed List Management Status
Euphorbia myrsinites (myrtle spurge)	Common	List A
Linaria vulgaris (yellow toadflax)	Common	List B
Lythrum salicaria (purple loosestrife)	Uncommon	List A

Source: El Paso County 2006, Colorado Department of Agriculture 2006 * The El Paso County weed list provides this geographic distribution but does not provide a statement as to the frequency of occurrence in El Paso County.

5.0 Study Area

The study area for this analysis (referred to as the "US 24 West Study Area" in the following discussion) extends approximately 30 feet north and south of US 24 just east of the US 24/Interstate 25 (I-25) interchange to the US 24/El Paso Boulevard intersection in the city of Manitou Springs (see Exhibit 3, *Distribution of El Paso County-Listed Noxious Weeds Recorded within the US 24 West Study Area*). Short segments of land north and south of I-25 at the US 24/I-25 interchange and along local streets at intersections with US 24 where improvements are proposed are also included. Existing vegetation consists of smooth brome (*Bromus inermis*) and, in some places, crested wheatgrass (*Agropyron cristatum*), which were likely planted as "reclamation grasses" along the CDOT right of way (ROW), a few native plant species, a variety of common weeds, and the noxious weeds discussed here. CDOT ROW adjacent to the highway appears to be maintained by occasional mowing.

6.0 Survey Methods

El Paso County and State of Colorado noxious weed lists were inspected to identify the noxious weed species of interest for this survey, and Mark Johnston, the El Paso County Weed Supervisor, was contacted to identify any other potential weed species of concern not currently on the El Paso County list. Mr. Johnston indicated which noxious weed species would be most likely to occur in the US 24 West Study Area.

The noxious weed survey was conducted by Sandra White, CH2M HILL botanist, and Brett Weiland, CH2M HILL environmental scientist, on June 8 and June 9, 2006. The survey was conducted during the blooming season for most of the species of interest in order to ensure positive identification. An additional site visit was conducted on August 3, 2006, to verify the identification of one suspected noxious weed that was not in flower at the time of the initial survey. A windshield survey of the US 24 West Study Area was conducted on July 23, 2009, to record any more recent noxious weed infestations.

The site assessment was conducted by means of a pedestrian survey of the US 24 West Study Area, as described above. Noxious weeds were recorded using GPS as they were encountered, either as points representing individuals or small groups or as lines or polygons delineating more extensive distributions. Additional details of weed distributions and associated species were recorded in written field notes corresponding to the GPS record

numbers, and descriptions of intervening vegetation were also recorded. GPS data were subsequently converted to a GIS data layer for use in depicting the locations and distributions of the noxious weeds recorded by the survey. Locations of noxious weeds observed during the windshield survey were recorded according to automobile odometer readings, and these locations were subsequently incorporated in the noxious weed distribution database.

7.0 Survey Results

El Paso County Noxious Weeds

Six of the eleven plant species designated by El Paso County as noxious weeds (see Exhibit 2, *El Paso County Noxious Weeds Subject to Control*), were recorded during the course of the 2006 field survey. The species encountered, the number of observations of each as GPS points, lines, or polygons, and their management status are indicated in Exhibit 3, *El Paso County Noxious Weeds Recorded by the 2006 US 24 West Field Survey and the 2009 Windshield Survey*. All six species are included in the State of Colorado List B and, as such, are designated by El Paso County for suppression or containment. The locations recorded for each of the six noxious weeds are illustrated in Exhibit 3, *Distribution of El Paso County-Listed Noxious Weeds Recorded within the US 24 West Study Area*. Comments on the setting and associated plant species for each location are included in the field notes provided in Appendix A, *US 24 West Noxious Weed Survey Data*. Canada thistle and Chinese clematis were the most commonly observed noxious weeds within the US 24 West Study Area.

EXHIBIT 2
El Paso County Noxious Weeds Recorded by the 2006 US 24 West Field Survey and the 2009 Windshield Survey

Species	Number of Observations within US 24 West Study Area	State of Colorado Noxious Weed List Management Status
Carduus nutans (musk thistle)	1	List B
Centaurea diffusa (diffuse knapweed)	15*	List B
Centaurea maculosa (spotted knapweed)	5	List B
Cirsium arvense (Canada thistle)	32	List B
Clematis orientalis (Chinese clematis)	31*	List B
Euphorbia esula (leafy spurge)	10	List B

Source: El Paso County 2006, Colorado Department of Agriculture 2006*
Plus one additional observation not recorded via GPS or mapped on Exhibit 3, *Distribution of El Paso County-Listed Noxious Weeds Recorded within the US 24 West Study Area.*

Canada Thistle

Canada thistle is a cosmopolitan weed that commonly occurs in areas that are at least seasonally wet. The species is a perennial that reproduces by seed and by fleshy, creeping roots that may extend up to 15 feet deep. Control or eradication is difficult because of its vigorous growth and extensive underground root system.

Canada thistle occurs intermittently along the entire length of the US 24 West Study Area (see Exhibit 3, *Distribution of El Paso County-Listed Noxious Weeds Recorded within the US 24 West Study Area*). Canada thistle most frequently occurs in the lowest lying parts of the CDOT ROW (a shallow ditch designed to receive and convey runoff from the highway), and also occurs near culvert entrances and at the drip line at the base of the CDOT ROW fence. Within the US 24 West Study Area, Canada thistle is most often associated with dense stands (up to 80 percent cover) of smooth brome and weeds, including curly dock (*Rumex crispus*), field bindweed (*Convolvulus arvensis*), common milkweed (*Asclepias speciosa*), and lamb's quarters (*Chenopodium album*).

Chinese Clematis

Chinese clematis is a perennial, herbaceous to woody vine that occurs in a variety of habitats, often climbing to cover trees and shrubbery. This species can be distinguished from the native clematis species by its yellow flowers and, otherwise, by its duller, bluish leaves.

Chinese clematis occurs along much of the length of the US 24 West Study Area (see Exhibit 3, *Distribution of El Paso County-Listed Noxious Weeds Recorded within the US 24 West Study Area*). Within the US 24 West Study Area, Chinese clematis grows primarily on the CDOT ROW chainlink fence. In a few places, it is found rambling down embankments or clambering over various small trees and shrubs within the ROW. Two other climbing species, Virginia creeper (*Parthenocissus quinquefolia*) and virgin's bower (*Clematis ligusticifolia*), a native clematis, share the fence in some locations. Smooth brome is the most common cover along the base of the ROW fence. Chinese clematis infestations consisted of what appeared to be individual plants growing on the ROW fence and areas where the plant rambled on the ground.

Diffuse Knapweed

Diffuse knapweed is a biennial or short-lived perennial that reproduces only by seed. It prospers in disturbed situations, including roadsides, often covering areas where nothing else will grow.

The largest concentrations of diffuse knapweed within the US 24 West Study Area were recorded within the circular highway cloverleaf in the southwest quadrant of the US 24/I-25 interchange (see Exhibit 3, *Distribution of El Paso County-Listed Noxious Weeds Recorded within the US 24 West Study Area*). Infestations ranged from individual plants to areas up to 10 square feet in this area. Diffuse knapweed occupies the driest parts of the area within the cloverleaf, including the margins of the surrounding roadway. The cloverleaf also supports other common weeds, such as kochia (*Kochia scoparia*), purslane (*Portulaca oleracea*), and ragweed (*Ambrosia* sp.), as well as some alfalfa (*Medicago sativa*), a filiform sage (*Artemisia* sp.), smooth brome, and western wheatgrass (*Agropyron smithii*).

Diffuse knapweed also occurs as individual plants or small clumps at four other locations within the US 24 West Study Area (see Exhibit 3, *Distribution of El Paso County-Listed Noxious Weeds Recorded within the US 24 West Study Area*). At these sites, it is associated with a variety of common weeds, including oyster plant (*Tragopogon dubius*), native grasses, including needle-and-thread (*Stipa comata*), saltgrass (*Distichlis spicata* var. *stricta*), and blue grama (*Bouteloua gracilis*), as well as smooth brome, yellow sweet clover (*Melilotus officinalis*), and alfalfa.

Leafy Spurge

Leafy spurge is a creeping perennial that reproduces by seed that can remain viable in the soil for 8 or more years and by extensive creeping roots that can extend as deep as 20 feet or more. The species is adapted to a wide variety of habitats and, in some situations, may exclude all other vegetation due to its highly competitive nature. Leafy spurge is extremely difficult to control because of its extensive sprouting root system and is probably the most serious noxious weed threat in Colorado.

Nine of the ten leafy spurge locations were recorded within the eastern one-third of the US 24 West Study Area (see **Exhibit 3**, *Distribution of El Paso County-Listed Noxious Weeds Recorded within the US 24 West Study Area*). Associated vegetation was most commonly a smooth brome "monoculture," but leafy spurge was more often found on bare ground or bare ground with smooth brome leaf litter (dead smooth brome).

Farther west, leafy spurge was also recorded as a large polygon in a swaley area at the northeast quadrant of the US 24/Ridge Road intersection (see Exhibit 3, *Distribution of El Paso County-Listed Noxious Weeds Recorded within the US 24 West Study Area*). Associated vegetation included smooth brome and abundant smooth brome leaf litter and an unidentified forb.

Spotted Knapweed

Spotted knapweed is a biennial or short-lived perennial that occurs in disturbed areas such as fields or roadsides.

Spotted knapweed was recorded at five scattered locations within the eastern one-third of the US 24 West Study Area (see Exhibit 3, *Distribution of El Paso County-Listed Noxious Weeds Recorded within the US 24 West Study Area*). All sites were disturbed areas, including a packed roadway, an area apparently disturbed by truck traffic for powerline construction, and other bare ground. Associated vegetation included weeds such as bindweed and purslane; grasses, including smooth brome, crested wheatgrass, needle-and-thread, and Indian ricegrass (*Oryzopsis hymenoides*); and alfalfa and yellow sweet clover.

Musk Thistle

Musk thistle is a biennial that reproduces only by seed, although new plants can propagate from root and shoot pieces if plants are disturbed by tilling. Seeds may remain viable in the soil for 10 or more years.

Two individuals of musk thistle were found at a single location about midway within the US 24 West Study Area (see Exhibit 3, *Distribution of El Paso County-Listed Noxious Weeds Recorded within the US 24 West Study Area*). They were located in the ROW ditch with smooth brome and yellow sweet clover.

Other Noxious Weeds

Other noxious weeds that appear on the State of Colorado Noxious Weed List (Colorado Department of Agriculture 2006) but are not listed by El Paso County (El Paso County 2006) were observed and recorded in the course of the noxious weed survey. The species encountered, the number of observations of each, and their management status are

indicated in Exhibit 4, *Other State-Listed Noxious Weeds Recorded by the 2006 US 24 West Field Survey*. Comments on the locations of these species are included in the field notes provided in Appendix A, *US 24 West Noxious Weed Survey Data*.

Management of List B species is described above. List C species are those for which a state noxious weed management plan designed to support the efforts of local governing bodies to facilitate more effective integrated weed management on private and public lands will be developed and implemented (Colorado Department of Agriculture 2006). The goal of such plans is not to stop the continued spread of these species but, rather, to provide additional education, research, and biological control resources to jurisdictions that choose to require management of List C species List B species are those for which a state noxious weed management plan is developed and implemented to stop their spread (Colorado Department of Agriculture 2006).

EXHIBIT 4
Other State-Listed Noxious Weeds Recorded by the 2006 US 24 West Field Survey

Species	Number of Observations within US 24 West Study Area	State of Colorado Noxious Weed List Management Status
Elaeagnus angustifolia (Russian olive)	5	List B
Linaria dalmatica (Dalmatian toadflax)	3	List B
Tamarix pentandra (salt cedar, tamarisk)*	1	List B
Convolvulus arvensis (field bindweed)	12	List C
Cardaria draba (whitetop, hoary cress)	1	List B
Cirsium vulgare (bull thistle)	1	List B
Onopordum acanthium (Scotch thistle)	1	List B

Source: El Paso County 2006, Colorado Department of Agriculture 2006. * Colorado Department of Agriculture 2006 lists *Tamarix chinensis*, *T. parvifolia*, and *T. ramsissima* as noxious weeds in Colorado. Weber 1976 recognizes only a single species of tamarisk, *Tamarix pentandra*.

Summary

Noxious weeds occur throughout the US 24 West Study Area. Of the six El Paso County noxious weeds recorded, Canada thistle is the most common, occurring intermittently along the entire length of the US 24 West Study Area, most frequently in the a shallow ditch along the highway, near culvert entrances, and at the drip line at the base of the CDOT ROW fence. Chinese clematis is also common, growing along much of the length of the US 24 West Study Area on the CDOT ROW chainlink fence. Diffuse knapweed is largely concentrated within the circular highway cloverleaf in the southwest quadrant of the US 24/I-25 interchange, where it occupies the driest areas, including the margins of the surrounding roadway. Leafy spurge was recorded primarily within the eastern one-third of the US 24 West Study Area, with a single large infestation farther west in a swaley area at the northeast quadrant of the US 24/Ridge Road intersection. The few occurrences of spotted knapweed were scattered in disturbed areas within the eastern one-third of the US 24 West Study Area. Two individuals of musk thistle were found in the ROW ditch at a single location about midway within the US 24 West Study Area.

The Proposed Action will include mitigation to preserve native vegetation, maintain healthy riparian habitat, and control the spread of noxious weeds. Mitigation will be detailed in the EA and will include the implementation of a Noxious Weed Management Plan.

8.0 Potential Impacts

Under the No Action Alternative and in the absence of other ground-disturbing activities within the CDOT ROW in the future, noxious weed conditions within the US 24 West Study Area are expected to be similar to existing conditions. Any changes in future noxious weed conditions within the US 24 CDOT ROW would depend on future weed management objectives, plans, and activities.

The Proposed Action would widen US 24 and reconfigure intersections of US 24 and neighborhood streets within the US 24 West Study Area. Construction activities would include grading and contouring within the CDOT ROW prior to paving the roadway. These earth-moving activities would uproot existing noxious weeds. However, these activities also have the potential to spread severed underground root and shoot pieces, which can act as vegetative propagules, particularly in species with species with extensive root systems such as Canada thistle, leafy spurge, and musk thistle. Ground-disturbing activities also have the potential to turn up and redistribute the existing reservoir of noxious weed seeds in the on-site soils. Leafy spurge and musk thistle are notable for having seeds that can remain viable in the soil for long periods.

Therefore, apart from the paved roadway, disturbed areas would have the potential for being colonized by plant propagules from the existing noxious weed populations. They also would have the potential for being colonized through the introduction of seeds of these or other noxious weed species from other locations. Common practices to reduce the latter occurrence include 1) washing construction and reclamation vehicles and equipment prior to their entering the construction area and 2) using only certified weed-free mulching materials and certified weed-free seeds for site stabilization and revegetation. Prompt revegetation with suitable reclamation mixtures and early weed control through the application of approved herbicides or other methods, as appropriate, would further minimize the potential for noxious weed infestations that could be caused by implementation of the Proposed Action. Future conditions within the US 24 CDOT ROW would depend on future weed management objectives, plans, and activities. The scope of the survey effort did not include developing mitigation strategies or a weed management plan. Mitigation will be addressed in the EA and will include the completion of a Noxious Weed Management Plan during final design and the implementation of this plan during construction.

9.0 References

El Paso County. 2006. County Noxious Weeds Subject to Control. http://adm.elpasoco.com/Environmental_Services/Forestry_and_Noxious_Weeds/. Accessed 05/21/2006.

Colorado Department of Agriculture. 2006. 8 CCR 1206-2 -- Rules Pertaining to the Administration and Enforcement of the Colorado Noxious Weed Act. Colorado Department of Agriculture, Conservation Services Division. March 9, Effective May 30.

Weber, William A. 1976. Rocky Mountain Flora. Colorado Associated University Press, Boulder, Colorado.

APPENDIX A

US 24 West Noxious Weed Survey Data

APPENDIX A

US 24 West Noxious Weed Survey Data

	File Number	Date	Species	Area Infested* (square feet)	Cover (percent)*	Comments
2006 Noxious Weed Pedestrian Field Survey						
1		20060608				N side Black Canyon Road. Good cover blue grama, mountain mahogany, little bluestem, fringed sage. Alfalfa, yellow sweet clover, ash, pinyon, juniper. Virtually no weeds. A little Russian olive.
2						S side Black Canyon Road. Lots of crested wheatgrass, some smooth brome.
3	B060808A	20060608	Cirsium arvense	--	30	SW corner US 24/El Paso Boulevard. Mainly beneath ash tree, with dense smooth brome; uphill is snowberry, scattered ash, locust, elm nearby.
4		20060608				W end US 24, south side. Smooth brome, sparse alfalfa, Grindelia, elm seedlings, kochia. Weedy.
5		20060608				Base of sandstone cliff. Curly dock, Sitanion, curly dock, Agropyron sp.
6	B060808B	20060608	Clematis orientalis	12	90	Just up hill from B060808A at corner of bridge abutment and chain link fence. Voucher specimen.
7		20060608				Manitou Avenue S of US 24. Commercial and park area landscaped.
8		20060608				S side US 24 East along frontage road from Manitou Avenue east. Crested wheatgrass, elm saplings, scattered alfalfa and yellow sweet clover, kochia immediately by pavement.
9	B060808C	20060608	Clematis ligusticifolia			Just E of Manitou Avenue. Not in bloom but flowers in panicle/umbel. Several at drainage sign I-I-17-GJ. Voucher specimen.
10	B060808D	20060608	Cirsium arvense	12	30	Small patch just E of culvert. In dense smooth brome; virgin's bower and snowberry farther back in ROW.

	File Number	Date	Species	Area Infested* (square feet)	Cover (percent)*	Comments
11		20060608				Farther E along US 24. Redrock hillside. Smooth brome, yucca, grindelia, elm seedlings, mountain mahogany, plains cottonwood, scrub garry oak, sparse crested wheatgrass, some orchardgrass.
12	B060808E	20060608	Cirsium arvense	--	20	80% cover smooth brome, some alfalfa.
13	B060809A	20060608	Cirsium arvense	9	10	50% cover smooth brome.
14	B060809B	20060608	Clematis orientalis	25	50	N side of US 24 at bridge over Crystal Hill Boulevard. Growing on chain link CDOT ROW fence** from road down about 25 feet or more along fence.
15	B060809C	20060608	Clematis orientalis			On CDOT ROW fence. 1+? plant.
16		20060608	Linaria dalmatica			Same location as B060809C. Scattered individuals with crested wheatgrass, alfalfa, fringed sage, yucca. Voucher specimen.
17	B060809D	20060608	Linaria dalmatica	--	1	S of US 24 just W of Ridge Road. With grass, elm saplings, alfalfa, little Lathyrus?
18	B060810A	20060608	Linaria dalmatica	--		Same as B060809D.
19		20060608	Centaurea diffusa		0.1	From B060810A to intersection US 24/Ridge Road. Scattered throughout whole area.
20	B060810B	20060608	Cirsium arvense	--	1	With needle-and-thread, a little alfalfa, scattered elm saplings.
21	B060810C	20060608	Cirsium arvense	30	10	Base of sandstone wall in little ditch. With smooth brome.
22	B060811A	20060608	Centaurea diffusa	10	50	Just W of 31st Street. Small clumps with needle-and-thread at 50% cover.
23	B060811B	20060608	Tamarix pentandra			Individual plant in ditch.
24	B060811C	20060608	Cirsium arvense			Small patch in dense smooth brome at +/- 100% cover.
25	B060811D	20060608	Euphorbia esula	--	20	Swaley area in NE quadrant US 24/Ridge Road. Large polygon with smooth brome (20% cover), smooth brome leaf litter (30% cover), fleshy forb w/ opposite leaves (10% cover), etc.
26	B060811E	20060608	Cirsium arvense	100	10	Small patch with sparse smooth brome (50% cover), smooth brome leaf litter (40% cover).
27		20060609				SW corner US 24 and 31st Street to 26th Street. Less than 30% cover, mowed. Kochia, grindelia, field

	File Number	Date	Species	Area Infested* (square feet)	Cover (percent)*	Comments
						bindweed, scattered alfalfa, yellow sweet clover, smooth brome, crested wheatgrass, a little cheat grass. Curly dock and annual sunflower in small drainage. Virgin's bower and Virginia creeper on CDOT ROW fence with snowberry and mock orange.
28	B060907A	20060609	Cirsium arvense			Along CDOT ROW fence with smooth brome at 30% cover plus smooth brome leaf litter and some curly dock. Good cover smooth brome from here to 26th Street, mowed.
29	B060907B	20060609	Clematis orientalis			At power line. On CDOT ROW fence with Virginia creeper. Also a few in patches scattered out in ROW grass.
30	B060907C	20060609	Clematis orientalis			≥ 2 individuals along CDOT ROW fence in front of carport-like businesses and postal boxes. With smooth brome at 50% cover, mowed.
31	B060907C	20060609	Cirsium arvense			With smooth brome at 50% cover, mowed.
32						Farther east near Travel Lodge, yellow sweet clover, alfalfa, Tragopogon, blue grama, needle-and-thread, Gaura sp. (upright clump less than 12 inches high).
33	B060907D	20060609	Clematis orientalis			Clumps near culvert under US 24. Virgin's bower on CDOT ROW fence E from here.
34	B060907E	20060609	Cirsium arvense	60		All Canada thistle today has been up along CDOT ROW fence with smooth brome. Alfalfa, field bindweed, common milkweed, some curly dock. Mowed and sprayed.
35						Farther along, bare ground with kochia, Distichlis, and yellow sweet clover along ROW. Ash and locust along CDOT ROW fence, then Russian olive and elm.
36	B060907F	20060609	Carduus nutans			Two plants in ditch with smooth brome and yellow sweet clover.
37	B060907G	20060609	Cirsium arvense	18	30	In ditch with smooth brome, lamb's quarters, and curly dock.
38	B060907H	20060609	Cirsium arvense	24	30	In ditch with smooth brome, lamb's quarters, and curly dock, then common milkweed, field bindweed, curly dock, tumblemustard.
39	B060907I	20060609	Cirsium arvense	120	50	Extends east a way.

	File Number	Date	Species	Area Infested* (square feet)	Cover (percent)*	Comments
40	B060907J	20060609	Cirsium arvense	18		In ditch with annual weed stalks from last year, Lactuca serriola, a little smooth brome.
41	B060907J	20060609	Clematis orientalis			Growing up spruce tree.
42	B060908A	20060609	Cirsium arvense	12	10	With sparse smooth brome, field bindweed.
43	B060908B	20060609	Cirsium arvense	6	20	With smooth brome at 60% cover, four-o'clock, common milkweed. 80% total cover.
44	B060908C	20060609	Centaurea maculosa	--	≤ 1	Single plants along packed roadway. With smooth brome, field bindweed.
45	B060908D	20060609	Cirsium arvense	20	2	With smooth brome at 50@ cover.
46	B060908E	20060609	Centaurea diffusa			A few individuals in packed track with 10% cover of yellow sweet clover, alfalfa, Distichlis, a few Agoseris sp.
47	B060908F	20060609	Clematis orientalis			On CDOT ROW fence.
48	B060908F	20060609	Euphorbia esula			A few individuals in smooth brome beside packed track.
49						White top farther on.
50	B060908G	20060609	Centaurea maculosa			A few plants scattered all along ROW to B060908H. This part of ROW is very disturbed/bare by truck traffic (for powerline construction?). Very beat up. A little Indian ricegrass, needle-and-thread, smooth brome, crested wheatgrass.
51	B060908H	20060609	Euphorbia esula	25	10	Both sides CDOT ROW fence with dead smooth brome.
52						Farther along Glycyrrhiza.
53	B060908I	20060609	Clematis orientalis			On CDOT ROW fence.
54	B060908I	20060609	Unknown knapweed			Collected unknown knapweed???? Doesn't have divided leaves, no inflorescence or buds. With yellow sweet clover, alfalfa, Grindelia at 60% cover.
55	B060909A	20060609	Centaurea diffusa			Single plant with alfalfa, blue grama, Tragopogon at 60% cover. Then continues to B060909C.
56	B060909B	20060609	Euphorbia esula			≤ 10 plants along CDOT ROW fence. Nearly bare ground.
57	B060909C	20060609	Euphorbia esula			A few plants scattered on bare ground with grass leaf litter.

	File Number	Date	Species	Area Infested* (square feet)	Cover (percent)*	Comments
58	B060909D	20060609	Clematis orientalis			On CDOT ROW fence in grass leaf litter.
59	B060909E	20060609	Euphorbia esula			≤ 10 plants on bare ground both sides CDOT ROW fence.
60	B060909F	20060609	Euphorbia esula	200	5	On bare ground with smooth brome leaf litter.
61	B060909G	20060609	Centaurea maculosa	30	30	With smooth brome and crested wheatgrass at 60% cover plus bare ground and grass leaf litter. Mowed.
62		20060609				End of S side US 24 from 31st Street to 8th Street.
63		20060609				N side US 24 from 31st Street to 21th Street. This side is narrow and barer and weedier than S side.
64		20060609	Centaurea repens? Not confirmed.			NE quadrant US 24 and 31st Street. Then Distichlis, Grindelia, alfalfa, curly dock. Then kochia, smooth brome, common weedy mallow, Chrysopsis, Agoseris, blue grama, cheat grass.
65	B060909H	20060609	Cirsium arvense	16	20	Along CDOT ROW fence with smooth brome.
66	B060909H	20060609	Cirsium vulgare			Single bull thistle near US 24.
67	B060910A	20060609	Cirsium arvense	10	1	With smooth brome at 30% cover plus smooth brome leaf litter. Yellow sweet clover, then elm saplings inside guardrail with sparse smooth brome.
68	B060910B	20060609	Clematis orientalis			1 clump climbing elm tree.
69		20060609				Mostly bare and weedy with field bindweed, some smooth brome and western wheatgrass.
70	B060910C	20060609	Cirsium arvense	20	10	With smooth brome. Lots of loose dirt in this section. Equisetum in ditch. Then smooth brome in the ditch, Grindelia, Indian ricegrass, Distichlis, Large elms up opposite bank of ditch, occational Russian olives, chokecherry, shrubby viburnum, and boxelder.
71		20060609	Centaurea repens? Not confirmed.			US 24 just W of 26th Street.
72		20060609	Centaurea repens? Not confirmed.			Russian knapweed ???? scattered throughout this side from 21st Street to 8th Street at ≤ 0.1%.
73	B060910D	20060609	Clematis orientalis			Near NW quadrant US 24/21st Street intersection. With common milkweed, alfalfa, yellow sweet clover, lots of elm saplings forming 100% cover up to culvert.
74		20060609				NE quadrant US 24/21st Street intersection. Equisetum along fence, Grindelia, western wheatgrass, smooth

	File Number	Date	Species	Area Infested* (square feet)	Cover (percent)*	Comments
						brome.
75		20060609				Bare ground with weeds. Russian knapweed??? Continues with field bindweed and kochia.
76	B060911A	20060609	Centaurea diffusa			1 individual with smooth brome.
77	B060911A	20060609	Clematis orientalis			1 to 3 individuals along bank.
78	B060911B	20060609	Cirsium arvense	40	15	In ditch near fence with equisetum, smooth brome, and smooth brome leaf litter, field bindweed totaling 100% cover.
79	B060911C	20060609	Cirsium arvense	60	20	With smooth brome around culvert entrance and smooth brome leaf litter at 60% cover.
80	B060911D	20060609	Clematis orientalis			Growing on CDOT ROW fence.
81	B060911E	20060609	Clematis orientalis			Growing on CDOT ROW fence.
82	B060911F	20060609	Centaurea maculosa			1 plant at corner US 24 and 8th Street, NW quadrant on bare ground with a little leaf litter and field bindweed, alfalfa, yellow sweet clover.
83	B060911F	20060609	Clematis orientalis			At culvert near NW quadrant US 24 and 8th Street intersection.
84	R080307A	20060803	Cirsium arvense	160		Between fence and guardrail. NE quadrant I-25/US 24 intersection. Wide variety of common weeds plus blue grama, sideoats grama, smooth brome.
85	R080307A	20060803	Clematis orientalis	10		On fence and ash tree.
86	R080307B	20060803	Cirsium arvense	40		In smooth brome.
87		20060803				Then nearer intersection beyond Fountain Creek, woods with mainly elm and poplar and smooth brome understory, some narrow-leaf poplar, willow. Ash on road edge.
88	R080307C	20060803	Euphorbia esula	--		Open woods (see above) with smooth brome “monoculture” understory. Some Russian olive. Sandy floodplain of stream below street grade.
89	R080307D	20060803	Euphorbia esula			Also small amounts between last polygon and here.
90	R080307E	20060803	Cirsium arvense	90	60	Corner W of I-25 and N of stream. With lots of bindweed.
91	R080307F	20060803	Clematis orientalis	100	50	A little farther N at base of I-25 embankment.
92	R080308A	20060803	Centaurea diffusa	--	50	Base of I-25 embankment with kochia. Smooth brome

	File Number	Date	Species	Area Infested* (square feet)	Cover (percent)*	Comments
						farther up bank.
93	R080308B	20060803	Clematis orientalis	--		Growing on chain link fence.
94	R080308C	20060803	Clematis orientalis			Scandant on I-25 embankment.
95	R080308D	20060803	Onopordum acanthium			E of I-25, S of US 24 along Fountain Creek. Very large thistle w/ large grayish leaves, winged stem w/ spines. Not musk thistle.
96	R080308E	20060803	Euphorbia esula			On stream side of path and up near I-25 guardrail.
97	R080308E	20060803	Clematis orientalis			Intermittently on fence from I-25/US 24 intersection S to footbridge and underpass.
98	R080308F	20060803	Clematis orientalis			On fence.
99	R080308G	20060803	Clematis orientalis	10		W of I-25, S end along drainage. On embankment below large retaining wall. Poplars, smooth brome.
100	R080308H	20060803	Clematis orientalis			On chain link fence, with smooth brome.
101	R080308I	20060803	Clematis orientalis	20		On bank down to drainage ditch.
102	R080308J	20060803	Clematis orientalis			Bank of drainage ditch.
103	R080308K	20060803	Clematis orientalis			Heading W at approach of US 24 onto SB I-25. On chain link fence.
104	R080309A	20060803	Cirsium arvense	270	70	In smooth brome and assorted weeds.
105			Clematis orientalis			Intermittently along fence to W.
106	R080309B	20060803	Cirsium arvense	100	40	In smooth brome with curly dock and bindweed.
107	R080309C	20060803	Clematis orientalis	--		More or less continuous along chain link fence and rambling on currant bushes. Also Virginia creeper on fence.
108	R080309C	20060803	Cirsium arvense	--	10	In smooth brome in patches all along. This is a wet area below the slope down from road opposite cloverleaf.
109	R080309D	20060803	Centaurea diffusa	20		In smooth brome and weeds.
110	R080309E	20060803	Centaurea diffusa			SW quadrant of I-25/US 24 interchange. Circular part of cloverleaf, near off-ramp from SB I-25 to US 24. Scattered all along margin.
111	R080309F	20060803	Centaurea maculosa			In circle of cloverleaf. All portulaca and alfalfa, some bindweed. A few cottonwoods, elm, and Russian olive near outer part of circle.

	File Number	Date	Species	Area Infested* (square feet)	Cover (percent)*	Comments
112	R080309G	20060803	Centaurea diffusa			One plant in smooth brome near I-25 embankment in circular part of cloverleaf.
113	R080309H	20060803	Centaurea diffusa	30		10-15 scattered plants along the lowest area of irregular part of cloverleaf. Portulaca nearly covers the ground. Some alfalfa, filiform sage, smooth brome, western wheatgrass.
114	R080309I	20060803	Centaurea diffusa	50		In N arm of irregular part of cloverleaf. About 50 plants scattered near the edges in the driest parts and along the edges of the road around this area. Portulaca, kochia, and ragweed.
115	R080309J	20060803	Centaurea diffusa			Same as above.
116	R080309K	20060803	Clematis orientalis	100		Rambling under powerline S of beginning of on-ramp to SB I-25. Also on fence beyond.
117	R080309L	20060803	Clematis orientalis	--		On bank below US 24, intermittent to Fountain Creek.
118	R080309M	20060803	Clematis orientalis			Same as above.
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1	J072309A	20090723	Centaurea diffusa	--	--	Roadside bank on inner curve of cloverleaf exiting SB I-25 to US 24. Fairly dense with scattered alfalfa.
2	J072309B	20090723	Cirsium arvense	--	--	In drainageway at NW quadrant of US 24/31st Street intersection. With common seeds, alfalfa, and elm saplings.
3	J072309C	20090723	Cirsium arvense	--	--	SW quadrant of US 24/26th Street intersection, 0.5 to 0.6 mile E of US 24/31st Street intersection. Near CDOT ROW fence.
4	J072309D	20090723	Cirsium arvense	--	--	S side of US 24 just W of 21st Street, 0.9 to 1.0 mile E of US 24/31st Street intersection. Large patch.
5	J072309E	20090723	Centaurea diffusa	--	--	S side of US 24, 2.0 miles E of US 24/31st Street intersection, 0.3 mile W of US 24/8th Street intersection. Large area.
6	J072309F	20090723	Centaurea diffusa	--	--	Along W side of on-ramp from US 24 to NB I-25.
7	J072309G	20090723	Centaurea diffusa	--	--	Along E side of on-ramp from US 24 to NB I-25.

* Unless otherwise noted in under Comments, blanks in the Area Infested and Cover columns indicate a few scattered individuals.
** All CDOT ROW fence is 8-foot-high chainlink.
*** Area Infested and Cover were not recorded in the Windshield Survey.