U.S. 287 at Lamar - Noxious Weeds Management Plan

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1.0 Introduction and Project Description

1.1 Project Description

The proposed action will relocate U.S. 287 from Main Street to a new alignment approximately one mile east of Lamar, Colorado. The proposed action consists of new mainline, ultimately four lanes wide, three new interchanges, and provisions for two future access points along the route. In addition, the new alignment includes a new crossing of the Arkansas River. The three interchange locations are at the southern terminus, northern terminus and at a point along the alignment where it crosses U.S. 50. At this location, U.S. 50 will be realigned slightly to the south to allow sufficient distance from the Union Pacific Railroad (UPRR) for a grade-separated crossing.

The east interchange consists of a wide diamond with future directional loop ramps to be added when traffic volumes warrant. The mainline will cross the UPRR at a grade-separated crossing just north of the existing U.S. 50, which will be facilitated by shifting a 1.2-mile segment about 900 feet south of its present alignment. An access point to U.S. 287 will be provided approximately one mile north of the east interchange. This connection will allow the City and/or County to construct an extension of existing Crystal Street east to the relocated U.S. 287. (The proposed action includes constructing an at-grade intersection, with connecting roads to be built by others in the future.)

The mainline will cross the Arkansas River approximately 1.4 miles downstream of the existing U.S. 287/U.S. 50 bridge. The proposed bridge is a 1,400-foot-long multi-span structure to provide adequate flood capacity and wildlife movement along the riparian corridor.

At the northern terminus, the proposed interchange is a diamond configuration. The mainline will cross over SH 196 at two locations, one east of the interchange, and the second at the interchange itself, before curving south to connect to the existing U.S. 287/U.S. 50 alignment just east of the existing port-of-entry. The existing alignment of U.S. 287/U.S. 50 will be reconfigured to serve as a frontage road to maintain access to existing businesses along U.S. 287/U.S. 50. This new frontage road will be extended west approximately 600 feet and connect to County Road 7 with an improved at-grade intersection.

The "study area" in which environmental resources were evaluated is 600 feet wide south of U.S. 50 and 1,200 feet wide north of U.S. 50. The "project footprint" or "preferred alignment" comprises a 300-foot-wide right-of-way, including the features described above, and is illustrated in Figure 1.

For the purposes of this study, the south portion of the study area is defined as the area between the south interchange and the Fort Bent Canal. The central portion of the study area is defined as the area north of the Fort Bent Canal and south of the Arkansas River riparian area. The central study area includes the east interchange area at the junction of U.S. 50 and the county alternate truck route. The north portion of the study area encompasses the area from the Arkansas River riparian area to the junction with S.R. 196 at the Amity Canal. The western portion of the study area is located west of the S.R. 196 junction and ends at the junction with U.S. 50/287 (north interchange area). The project footprint and study area are shown in Figure 1.

1.2 Plan Purpose

Noxious weed control and management will be conducted during development and operation of the project. This Noxious Weed Management Plan has been developed in accordance with the mandates of Colorado Revised Statutes (CRS) 35-5.5-101.

The purpose of this plan is to provide methods and strategies for the management and prevention of the spread of noxious weeds both during and following construction of the project. Monitoring and integrated weed management prior to and during construction and operations will ensure that this goal is achieved.

The project contractors and subcontractors will be responsible for the successful implementation of this plan. This document will be available on the construction site at all times and all project personnel will be trained in noxious weed management requirements.

2.0 Noxious Weeds Inventory

2.1 Existing Vegetation and Habitat

The project area was evaluated during a site reconnaissance conducted in August 2002 for state listed noxious weeds and weeds of concern for Colorado (Attachment A). Weed species dominance was mapped on recent rectified aerial photographs of the project area.

The south portion of the study area is characterized by managed right of way adjacent to the existing unpaved county alternate truck route. Adjacent habitats to this right of way include rangeland/shortgrass prairie. The central portion of the study area is characterized by urban and agricultural development. The north study area is developed in irrigated farm crops (predominantly alfalfa), pasture/rangeland, riparian areas adjacent to the Arkansas River and surface water conveyance ditches, and existing right of way for SH 196 and US 50. The western study area is predominantly commercial/industrial. Potentially valuable habitat areas in the study area include: shortgrass prairie/rangeland/pasture, sandhill/sandsage, and wetlands/riparian areas.

2.2 Noxious Weeds in the Project Area

Review of the Department of Agriculture, Division of Plant Industry 20 priority noxious weeds quarter quad survey information for 2002 indicated the following species in Prowers County in the vicinity of the study area: tamarix (*Tamarix ramosissima*) and Russian olive (*Elaeagnus angustifolia*). The location of these species was indicated along the Arkansas River corridor. The infested acreage for the county is estimated to be 301-5000 acres for tamarix, and 5-50 acres for Russian olive.

The dominant weed species identified in the project area at the time of the survey include: johnsongrass (*Sorghum halepense*), kochia (*Kochia scoparia*), Russian thistle (*Salsola iberica*), tamarix (*Tamarix ramosissima*), wild mustard (*Brassica kaber*), Canada thistle (*Cirsium arvense*), diffuse knapweed (*Centaurea diffusa*), cheatgrass (*Bromus tectorum)*, Russian olive (*Elaeagnus angustifolia*), and green foxtail (*Setaria viridis*) (Table 1). With the exception of tamarix, the majority of noxious weeds in the project area occur in existing road right of way. Road rights of way had been mowed prior to the field survey, thus, additional weed species may be present that were not evident at the time of the survey. Noxious weed species dominance and locations are indicated on Figure 1.

Noxious weed infestation locations that were most dense were: kochia and Russian thistle in the south and central study areas; tamarix in the Arkansas River floodplain; and johnson grass in the north portion of the study area.

The predominant noxious weed species in the southern portion of the project area that will require management actions include kochia, Russian thistle, and cheatgrass. These herbaceous species occur in the existing county road and highway right-of-way, and adjacent to all disturbed areas including the maintained agricultural ditches and access roads. Tamarix is prevalent in the Arkansas River floodplain. Tamarix, a phreatophye, causes high impacts on water resources and riparian habitat areas. Johnsongrass, cheatgrass, kochia, Russian thistle, and green foxtail are common in the northern portion of the project area.

Adjacent land uses to the proposed action include private agricultural (rangeland and irrigated cropland) and urban. No public lands exist adjacent to the proposed action.

TABLE 1
Noxious Weeds Identified in the Project Area

Scientific Name	Common Name
Sorghum halepense	Johnsongrass
Kochia scoparia	Kochia
Salsola iberica	Russian thistle
Tamarix ramosissima	Tamarix
Brassica kaber	Wild mustard
Setaria viridis	Foxtail
Cirsium arvense	Canada thistle

Centaurea diffusa	Diffuse knapweed
Bromus tectorum	Cheatgrass
Elaeagnus angustifolia	Russian olive

3.0 Recommended Noxious Weed Management Guidelines

Noxious weeds can be spread in several ways including vehicles, construction equipment, construction and reclamation materials, livestock, and wildlife. Additionally, soil disturbance greatly increases the weed invasion potential. Implementation of preventative measures to control the spread of noxious weeds is the most cost-effective management approach. Noxious weed controls should be incorporated into each phase of the project development. Integrated weed management typically includes a combination of mechanical, cultural, chemical and/or biological measures.

Mechanical measures, which physically alter the weed growth, include tilling, mowing, and mulching. Cultural measures encourage desirable plant growth and include aggressive seeding of favorable plant species. Chemical control of weeds is accomplished using herbicides that are labeled for specific weed species. Biological controls utilize organisms such as insects to manage weed growth.

3.1 Preventative Measures

The following preventative measures should be used prior to and during construction to prevent the spread of noxious weeds in the project area:

- Any noxious weed infestations identified in the project area will be staked in the field prior to the start of construction or ground clearing activities, and recorded for reference during follow-up noxious weed treatments.
- Identified weed infested areas will be treated prior to construction or ground clearing activities, as appropriate.
- All construction vehicles and equipment will arrive at the work site clean and weed free. Prior to being allowed access to the construction areas, the construction manager/compliance inspector will ensure that vehicles and equipment are free of soil and debris capable of transporting noxious weed propagules (seeds, roots, or rhizomes).
- In areas of known infestations, one piece of heavy equipment will be dedicated for clearing activities and topsoil salvage and redistribution, as applicable. High-pressure water truck wash stations will be used to remove seeds, roots, and rhizomes from the equipment and construction vehicles working in weed infested areas, prior to working other areas of the project area.
- In areas where infestations have been identified or noxious weeds noted in the field, the cleared vegetation and salvaged topsoil, where applicable, will be stockpiled adjacent to the area from which they are stripped to eliminate the transport of soil-born noxious weed propagules. During reclamation, any salvaged topsoil, where applicable, from infestation sites will be returned to the area from which it is stripped. Any vegetative material cleared from infestation sites will be burned, if appropriate permits can be obtained, or redistributed across the area from which it is stripped.

- To minimize disturbance areas, contractors and other project-related personnel will be limited to driving only in designated construction zones.
- Reclamation of disturbed lands will be implemented immediately following construction.
- Continuing revegetation efforts will ensure adequate vegetative cover to minimize the invasion of noxious weeds. Reclamation seed mixes will be certified as weed free.
- Straw bales used on the project for sediment barrier installations or mulch distribution will be certified as weed free.
- Post-construction monitoring and treatment of noxious weeds will be conducted
- Equipment will not be sprayed with pre-emergent chemicals as a preventative measure, as these chemicals target a wide range of vegetation.

3.2 Treatment Methods

Control measures will likely rely primarily on herbicide application both prior to and following construction, as applicable. Herbicide applications will be conducted to minimize impacts to the surrounding vegetation and sensitive resources, including wetlands and other water bodies. Only herbicides labeled for specific weed species will be used. Chemical treatments will be based on species-specific and site-specific conditions.

3.2.1 Pre-Construction Treatment

Noxious weeds will be treated with appropriate methods at least two weeks prior to ground-disturbing activities, where possible. Only approved, short-lived herbicides will be used for pre-construction treatment of noxious weeds. The use of herbicides that break down and de-toxify relatively rapidly is necessary to prevent adverse effects on germination and growth of reseeded species. Prior to application of herbicides in areas adjacent to waterbodies and wetlands, including the Arkansas River and irrigation ditches, a specific evaluation of suitable labeled chemicals, application requirements, and prevention of water contamination should be conducted. Applicable permits for use of herbicides will be obtained as necessary.

3.2.2 Post-Construction Treatment

Post-construction treatment of noxious weeds will consist of appropriate control measures and a follow-up seeding program. Supplemental seeding will be conducted as necessary. The timing of subsequent revegetation efforts will be based on the residual of any selected herbicides.

4.0 Monitoring

Noxious weed management efforts will be enhanced with monitoring. Upon completion of project construction, the project area will be monitored at periodic intervals for noxious weeds. Surveys will be conducted as early in the year as feasible to identify and treat noxious weeds before they produce seed. Areas where post-construction noxious weed surveys will be conducted include: 1) invasion or infestation sites within the project area that are identified during pre-construction surveys, 2) sites adjacent to existing noxious

weed infestations, 3) areas previously treated for noxious weeds, and 4) all areas that were disturbed during construction. Field survey information, including species identified, locations of infestations, and extent of infestations, will be used to determine management requirements.

Attachment A

State of Colorado Noxious Weeds List

State of Colorado Noxious Weeds List

A. The following weed species, listed in alphabetical order, are identified as the State Noxious Weeds. They have been identified by individual counties as problem weeds in the county's area or have been recommended for management through public testimony. These weed species should be considered by each local advisory board and local governing body in the development, adoption and enforcement of their noxious weed list and noxious weed management plan. The State Noxious Weeds are:

Absinth wormwood (*Artemisia absinthium*)
African rue (*Peganum harmala*)
Black henbane (Hyoscyamus niger)
Black knapweed (Centaurea nigra)
Black nightshade (Solanum nigrum)
Blue mustard (Chorispora tenella)
Bouncingbet (Saponaria officinalis)
Bull thistle (Cirsium vulgare)
Camelthorn (Alhagi pseudalhagi)
Canada thistle (Cirsium arvense)
Chicory (Cichorium intybus)
Chinese clematis (Clematis orientalis)
Coast tarweed (Madia sativa)
Common burdock (Arctium minus)
Common crupina (Crupina vulgaris)
Common groundsel (Senecio vulgaris)
Common mullein (Verbascum thapsus)
Common St. Johnswort (Hypericum perforatum)
Common tansy (Tanacetum vulgare)
Common teasel (Dipsacus fullonum)
Cypress spurge (Euphorbia cyparissias)
Dalmatian toadflax, broad-leaved (Linaria dalmatica)
Dalmation toadflax, narrow-leaved (Linaria genistifolia)
Dame's rocket (Hesperis matronalis)
Diffuse knapweed (Centaurea diffusa)
Downy brome (Bromus tectorum)
Dyer's woad (Isatis tinctoria)
Eurasian watermilfoil (Myriophyllum spicatum)
Field bindweed (Convolvulus arvensis)
Flixweed (Descurainia sophia)
Giant Salvinia (Salvinia molesta)
Green foxtail (Setaria viridis)

Hairy nightshade (Solanum sarrachoides)
Halogeton (Halogeton glomeratus)
Hoary cress (Cardaria draba)
Houndstongue (Cynoglossum officinale)
Hydrilla (Hydrilla hydrilla0
Johnsongrass (Sorghum halepense)
Jointed goatgrass (Aegilops cylindrica)
Kochia (Kochia scoparia)
Leafy spurge (Euphorbia esula)
Longspine sandbur (Cenchrus longispinus)
Mayweed chamomile (Anthemis cotula)
Mediterranean sage (Salvia aethiopis)
Medusahead rye (Taeniatherum caput-medusae)
Moth mullein (Verbascum blattaria)
Musk thistle (Carduus nutans)
Myrtle spurge (Euphorbia myrsinites)
Orange hawkweed (Hieracium aurantiacum)
Oxeye daisy (Chrysanthemum leucanthemum)
Perennial pepperweed (Lepidium latifolium)
Plumeless thistle (Carduus acanthoides)
Poison hemlock (Conium maculatum)
Puncturevine (Tribulus terrestris)
Purple loosestrife (Lythrum salicaria)
Quackgrass (Elytrigia repens)
Redstem filaree (Erodium cicutarium)
Rush skeletonweed (Chondrilla juncea)
Russian knapweed (Centaurea repens)
Russian olive (Elaeagnus angustifolia)
Russian thistle (Salsola collina)
Russian thistle (Salsola iberica)
Tamarix (Tamarix parviflora)
Tamarix (Tamarix ramosissima)
Scentless chamomile (Anthemis arvensis)
Scotch thistle (Onopordum acanthium)
Scotch thistle (Onopordum tauricum)
Sericea lespedeza (Lespedeza cuneata)
Sheperdspurse (Capsella bursa-pastoris)
Spotted knapweed (Centaurea maculosa)
Spurred anoda (Anoda cristata)
Squarrose knapweed (Centaurea virgata)
Sulfur cinquefoil (Potentilla recta)
Swainsonpea (Sphaerophysa salsula)
Tansy ragwort (Senecio jacobaea)
Velvetleaf (Abutilon theophrasti)
Venice mallow (Hibiscus trionum)
Wild caraway (Carum carvi)
Wild mustard (Brassica kaber)

Wild oats (Avena fatua)
Wild proso millet (Panicum miliaceum)
Yellow foxtail (Setaria glauca)
Yellow nutsedge (Cyperus esculentus)
Yellow starthistle (Centaurea solstitialis)
Yellow toadflax (Linaria vulgaris)

B. The following weed species are recognized as the top ten prioritized weed species for the State of Colorado. After analysis of a statewide survey of counties, these species are acknowledged to be the most widespread and to cause the greatest economic impact in the State of Colorado. These species shall be considered by each local advisory board and local governing body in the development, adoption and enforcement of their noxious weed list and noxious weed management plan. They are listed in alphabetical order:

Canada thistle (Cirsium arvense)
Diffuse knapweed (Centaurea diffusa)
Field bindweed (Convolvulus arvensis)
Hoary cress (Cardaria draba)
Jointed goatgrass (Aegilops cylindrica)
Leafy spurge (Euphorbia esula)
Musk thistle (Carduus nutans)
Russian knapweed (Centaurea repens)
Spotted knapweed (Centaurea maculosa)
Yellow toadflax (Linaria vulgaris)

C. The following weed species may not be present or are not yet widespread or causing great economic impact within the State of Colorado. However, counties and local advisory boards are encouraged to contain and eradicate these species before they proliferate and significantly impact the economic and environmental values of the lands of the State. They are listed in alphabetical order:

African rue (Peganum harmala)
Black knapweed (Centaurea nigra)
Bouncingbet (Saponaria officinalis)
Camelthorn (Alhagi pseudalhagi)
Coast tarweed (Madia sativa)
Common St. Johnswort (Hypericum perforatum)
Common teasel (Dipsacus fullonum)
Cypress spurge (Euphorbia cyparissias)
Dyer's woad (Isatis tinctoria)
Myrtle spurge (Euphorbia myrsinites)
Rush skeletonweed (Chondrilla juncea)
Scentless chamomile (Anthemis arvensis)
Squarrose knapweed (Centaurea virgata)
Sulfur cinquefoil (Potentilla recta)

Yellow starthistle (Centaurea solstitialis)