3.11 NOXIOUS WEEDS

3.11.1 Affected Environment

Noxious weeds are invasive, non-native plants introduced to Colorado by accident or which spread after being planted for another purpose and which result in lands with decreased economic and environmental value. The Colorado Noxious Weed Act of 2003 (35-5.5-101 through 119, C.R.S.) recognizes that, "certain undesirable plants constitute a present threat to the continued economic and environmental value of the lands of the state and if present in any area of the state must be managed." The legislation places all public and private lands in Colorado under the jurisdiction of local governments to manage noxious weeds. According to the Act, a noxious weed meets one or more of the following criteria:

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- Aggressively invades or is detrimental to economic crops or native plant communities
- Is poisonous to livestock
- Is a carrier of detrimental insects, diseases, or parasites
- Has direct or indirect effects that are detrimental to the environmentally sound management of natural or agricultural systems

Under the revised Colorado Noxious Weed Act of 2003, state-designated noxious weeds are categorized as high (List A), medium (List B), or low (List C) priority, and individual counties publish their own specific noxious weed lists designated for management. CDOT also maintains a priority noxious weed list.

Biological resource data for the regional study area were collected from existing sources, such as maps, databases, publications, and agency information. This information was used to provide context of the resource in the region and to assist in assessing direct, indirect, and cumulative effects in the project area. A noxious weed reconnaissance survey of the project area was conducted in late summer 2006. No noxious weed species from the high-priority list were noted in the project area during the survey. Infestations of noxious weed species from the state medium-priority list, low-priority list, county lists, and CDOT's priority list were apparent in the project area during the surveys. These noxious weed species are listed in **Table 3.11-1**. Cheatgrass (*Bromus tectorum*) (List C) is also present in the project area. Other noxious weed species that have an earlier blooming period or that would only be noted during a complete walking survey also could be present in the project area. Impact acreages were calculated using existing CDOT right-of-way areas and evaluation of aerial photography.

Table 3.11-1 State of Colorado, County, and CDOT Weed List Species Observed in the Regional Study Area

Common Name / Scientific Name	Colorado Noxious Weed List	Adams County Weed List	Boulder County Weed List	Broom-field County Weed List	Denver County Weed List	Larimer County Weed List	Weld County Weed List	CDOT Priority Weed List
Canada thistle (*Cirsium arvense*)	B	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Common mullein (*Verbascum Thapsus*)	C						Yes	
Common teasel (*Dipsacus fullonum*)	B		Yes				Yes	
Field bindweed (*Convolvulus arvensis*)	C	Yes		Yes			Yes	
Leafy spurge (*Euphorbia esula*)	B	Yes	Yes	Yes	Yes	Yes	Yes	
Puncture vine (*Tribulus terrestris*)	C						Yes	
Russian olive (*Elaeagnus angustifolia*)	B						Yes	Yes
Salt cedar/ Tamarisk (*Tamarix* sp.)	B	Yes	Yes			Yes	Yes	Yes
Scotch thistle (*Onopordum acanthium*)	B		Yes	Yes	Yes		Yes	Yes

Since there are no improvements proposed within Jefferson County, only six counties were discussed within the regional study area.

3.11.2 Environmental Consequences

Noxious weeds are widespread throughout the project area due to past and present land use practices. These species have an adaptive ability to colonize disturbed areas very rapidly while out-competing existing vegetation species and reducing the viability and usable habitat for wildlife species (see **Section 3.10** and **Section 3.12** for further discussion of impacts to these resources). Noxious weed populations typically colonize and are a frequent problem in areas that have had recent ground or soil disturbances. Based on proposed project activities, the environmental consequences for spread of noxious weeds would be greater in areas that would be impacted by expansion of the roadway or addition of rail lines or express lanes due to the greater disturbance of soil within the project area. Colonization of noxious weed species in locations where the addition of commuter buses, safety improvements, and general structure upgrades would be minor since these resources are mostly established already and would only create very minor areas of ground disturbances.

3.11.2.1 No-Action Alternative

The No-Action Alternative would not contribute to the spread of noxious weeds. Existing conditions, as described in **Section 3.11.1**, would continue.

3.11.2.2 Package A

Package A includes safety improvements, construction of additional general purpose and auxiliary lanes on I-25, structural upgrades, and the implementation of commuter rail and bus service. This alternative is described in detail in **Chapter 2**.

Safety Improvements

Under Package A, major and minor safety improvements would occur between SH 1 and SH 14 (A-H1). Soil disturbance caused by construction equipment might increase the spread of Canada thistle (*Cirsium arvense*) and leafy spurge (*Euphorbia esula*) into open areas.

General Purpose Lanes

Under Package A, one additional northbound general purpose lane and one additional southbound general purpose lane would be constructed between SH 14 and SH 60 plus auxiliary lanes between Harmony Road and SH 60 (A-H2) and between SH 60 and E-470 (A-H3). Soil disturbance (approximately 287 acres) caused by construction equipment could increase the spread of noxious weeds on roadsides and possibly introduce new noxious weed species. Ground disturbance caused by construction projects are often colonized by noxious weed species preventing the establishment of native vegetation. Soil disturbance along the banks of streams could increase the invasion and establishment of Tamarisk, which threatens native riparian trees and shrubs. Various streams lie within the project alignment, including the St. Vrain and Big Thompson rivers.

In general, a wide variety of noxious weeds are present in Weld County (see **Table 3.11-1**); therefore, areas impacted by project activities in Weld County would be impacted by further invasion and establishment of weedy species of concern, including field bindweed (*Convolvulus arvensis*) and Canada thistle.

Structure Upgrades

Package A would provide structural upgrades between E-470 and US 36 (A-H4). Soil disturbance caused by construction equipment in the project area could increase the spread of noxious weeds in open and residential areas.

Commuter Rail

Package A includes a double-tracked commuter rail line using the existing BNSF railroad track plus one new track from Fort Collins to downtown Longmont (A-T1). Also included would be a new double-tracked commuter rail line that connects this point to the FasTracks North Metro end-of-line station in Thornton (A-T2). It is anticipated that impacts associated with weed populations would occur from construction activities involved with rail construction, maintenance facilities, park and ride facilities, and rail stations. Soil disturbance (approximately 36 acres) caused by construction equipment could increase the spread of

Leafy spurge and Canada thistle into open and residential areas, as well as patches of native prairie that lie within the rail alignment.

Commuter Bus

Package A includes commuter bus service and bus stations between Greeley, Denver, and Denver International Airport (DIA). The bus routes proposed for Package A would run along existing roadways and thus would not contribute to the spread of noxious weeds.

3.11.2.3 PACKAGE B

Package B includes construction of safety improvements, tolled express lanes on I-25, and the implementation of bus rapid transit service. This alternative is described in detail in **Chapter 2** *Alternatives*.

Safety Improvements

Safety improvements under Package B are the same as those associated with Package A. Therefore, impacts associated with this component would be the same under either Package A or B.

Tolled Express Lanes

Under Package B, a northbound and southbound tolled express lane would be constructed from SH 14 to SH 60, SH 60 to E 470, and E 470 to US 36; the exception being the section between Harmony Road and SH 60, which would include two tolled express lanes in each direction. The consequences of construction of express toll lanes would be similar to that of Package A for the alignments between SH 14 and E 470. Soil disturbance (approximately 258 acres) caused by construction equipment could increase the spread of noxious weeds on roadsides and possibly introduce new noxious weed species. Ground disturbance caused by construction projects are often colonized by noxious weed species preventing the establishment of native vegetation. Soil disturbance along the banks of streams could increase the invasion and establishment of Tamarisk, which threatens native riparian trees and shrubs. Various streams lie within the project alignment, including the St. Vrain and Big Thompson rivers.

In general, a wide variety of noxious weeds are present in Weld County (see **Table 3.11-1**); therefore, areas impacted by project activities in Weld County could be impacted by further invasion and establishment of weedy species of concern, including Field bindweed and Canada thistle.

For the project area between E 470 and US 36, soil disturbance would lead to an increase in the spread of noxious weeds in open and residential areas, including several small wetlands that lie within the rail alignment. Weedy species of concern in this area include Leafy spurge and Canada thistle.

Bus Rapid Transit

Package B includes bus rapid transit from Fort Collins and Greeley to Denver and to DIA. The bus routes proposed for Package B would run along existing roadways and thus would not contribute to the spread of noxious weeds.

Minor impacts in the form of soil disturbance caused by construction of bus rapid transit stations and park and ride facilities could increase the spread of Leafy spurge and Canada thistle into open and residential areas, as well as patches of native prairie adjacent to the facilities.

Indirect Impacts Common to Both Build Packages

Construction of both build packages would disturb areas that are already inhabited by noxious weeds, and would also disturb areas that are currently weed-free. These new disturbances could inadvertently contribute to the potential introduction of noxious weed populations. Both temporary roads and work areas would be susceptible to potential new noxious weed population invasions. Impacts to environmental resources as a result of induced growth caused by the construction of either build package are further discussed in **Section 3.1.5.2** and **Appendix A**.

3.11.3 Mitigation Measures

Since highway construction will involve soil disturbance that could exacerbate invasion of noxious weed species, an Integrated Noxious Weed Management Plan will be incorporated into the project design and implemented during construction. The Integrated Noxious Weed Management Plan will identify and describe the noxious weed infestations in the project area and identify the most appropriate control methods for each. Specific best management practices (BMPs) will be required during construction to reduce the potential for introduction and spread of noxious weed species. These will include:

- Noxious weed mapping will be included in the construction documents along with appropriate control methods for noxious weeds.
- Highway right-of-way areas will be inspected periodically by the associated city or its consultants during construction and during post-construction weed monitoring for invasion of noxious weeds.
- Weed management measures will include removal of heavily infested topsoil, herbicide treatment of lightly infested topsoil, and other herbicide or mechanical treatments, limiting disturbance areas, phased seeding with native species throughout the project, and monitoring during and after construction.
- Use of herbicides will include selection of appropriate herbicides, timing of herbicide spraying, and use of a backpack sprayer in and adjacent to sensitive areas, such as wetlands and riparian areas. See **Section 3.8** for more information.
- Certified weed-free hay and/or mulch will be used in all revegetated areas.
- No fertilizers will be allowed on the project site.
- Supplemental weed control measures will be added during design and construction planning.

Preventative control measures for project design and construction may include:

- **Native Plants.** Only native species will be used to revegetate sites disturbed by construction activities. Native plant species used for revegetation will be coordinated with agencies and CDOT specialists.

- **Weed Free Forage Act.** Materials used for revegetation will be inspected and regulated in accordance with provisions of the Weed Free Forage Act, Title 35, Article 27.5, CRS.
- **Topsoil Management.** When salvaging topsoil from on-site construction locations, the potential for spread of noxious weeds will be considered. Importing topsoil onto the project site will not be allowed.
- **Equipment Management.** Equipment will remain on designated roadways and stay out of weed-infested areas until the areas are treated. All equipment will be cleaned of all soil and vegetative plant parts before its arrival at a project site.