

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:

- ▶ 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.

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1 **Table 3.11-1 State of Colorado, County, and CDOT Weed List Species Observed in**
2 **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 (<i>Cirsium arvense</i>)	B	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Common mullein (<i>Verbascum thapsus</i>)	C						Yes	
Common teasel (<i>Dipsacus fullonum</i>)	B		Yes				Yes	
Field bindweed (<i>Convolvulus arvensis</i>)	C	Yes		Yes			Yes	
Leafy spurge (<i>Euphorbia esula</i>)	B	Yes	Yes	Yes	Yes	Yes	Yes	
Puncture vine (<i>Tribulus terrestris</i>)	C						Yes	
Russian olive (<i>Elaeagnus angustifolia</i>)	B						Yes	Yes
Salt cedar/ Tamarisk (<i>Tamarix</i> sp.)	B	Yes	Yes			Yes	Yes	Yes
Scotch thistle (<i>Onopordum acanthium</i>)	B		Yes	Yes	Yes		Yes	Yes

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

3 3.11.2 Environmental Consequences

4 Noxious weeds are widespread throughout the project area due to past and present land use
5 practices. These species have an adaptive ability to colonize disturbed areas very rapidly while
6 out-competing existing vegetation species and reducing the viability and usable habitat for
7 wildlife species (see **Section 3.10 Vegetation** and **Section 3.12 Wildlife** for further discussion
8 of impacts to these resources). Noxious weed populations typically colonize and are a frequent
9 problem in areas that have had recent ground or soil disturbances. Based on proposed project
10 activities, the environmental consequences for spread of noxious weeds would be greater in
11 areas that would be impacted by expansion of the roadway or addition of rail lines or express
12 lanes due to the greater disturbance of soil within the project area. Approximate impact
13 acreages for soil disturbances were calculated using an average percentage of soil
14 disturbance based on the impacts to vegetation communities as described in **Section 3.10**
15 **Vegetation**. Impact acreages are generalized and provided here for the purpose of
16 comparative analysis.

1 Impacts common to all build alternatives include potential disturbance to natural resources due
2 to the establishment and spread of noxious weeds. Noxious weeds alter natural vegetation
3 communities, sometimes outcompeting native species and degrading the natural functions of
4 native vegetation communities. Within the project area, the most prevalent natural vegetation
5 communities are native prairie and riparian corridors. Encroachment of noxious weeds into
6 these areas will inhibit natural functions within the native communities, with noxious weeds
7 outcompeting native species and decreasing the available habitat to wildlife.

8 Sensitive wildlife species, including Preble's meadow jumping mouse, are dependent on
9 riparian corridors for nesting and dispersal and will be affected by the further establishment
10 and spread of noxious weeds in riparian areas throughout the project area.

11 The potential for noxious weeds to establish and spread onto public lands such as parks and
12 open spaces, and agricultural areas throughout the project area, is present for all build
13 alternatives. Implementation of mitigation measures can decrease the likelihood of the
14 introduction and further establishment of noxious weeds as a result of the build alternatives
15 and are described in greater detail in **Section 3.11.3 Mitigation Measures**.

16 **3.11.2.1 NO ACTION ALTERNATIVE**

17 Because the No-Action Alternative includes plans for structure replacement (e.g., SH 392
18 interchange) it would contribute to the spread of noxious weeds. However, given the relatively
19 limited scope of the No-Action Alternative, impacts would be less substantial than the impacts
20 described below for the build alternatives.

21 **3.11.2.2 PACKAGE A**

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

25 **Safety Improvements**

26 Under Package A, major and minor safety improvements would occur between SH 1 and
27 SH 14 (A-H1). Soil disturbance (approximately 26 acres) caused by construction equipment
28 could increase the spread of Canada thistle and leafy spurge into open areas.

29 **General Purpose Lanes**

30 Under Package A, one additional northbound general purpose lane and one additional
31 southbound general purpose lane would be constructed between SH 14 and SH 60 plus
32 auxiliary lanes between Harmony Road and SH 60 (A-H2) and between SH 60 and E-470
33 (A-H3). Soil disturbance (approximately 172 acres) caused by construction equipment could
34 increase the spread of noxious weeds on roadsides and possibly introduce new noxious weed
35 species. Ground disturbance caused by construction projects are often colonized by noxious
36 weed species preventing the establishment of native vegetation. Soil disturbance along the
37 banks of streams could increase the invasion and establishment of tamarisk, which threatens
38 native riparian trees and shrubs. Various streams lie within the project alignment, including the
39 St. Vrain and Big Thompson rivers.

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

5 **Structure Upgrades**

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

9 **Commuter Rail**

10 Package A includes a double-tracked commuter rail line using the existing BNSF railroad track
11 plus one new track from Fort Collins to downtown Longmont (A-T1). Also included would be a
12 new double-tracked commuter rail line that connects this point to the FasTracks North Metro
13 end-of-line station in Thornton (A-T2). It is anticipated that impacts associated with weed
14 populations would occur from construction activities involved with rail construction,
15 maintenance facilities, park and ride facilities, and rail stations. Soil disturbance
16 (approximately 102 acres) caused by construction equipment could increase the spread of
17 leafy spurge and Canada thistle into open and residential areas, as well as patches of native
18 prairie that lie within the rail alignment.

19 **Commuter Bus**

20 Package A includes commuter bus service and bus stations between Greeley, Denver, and
21 Denver International Airport (DIA). The bus routes proposed for Package A would run along
22 existing roadways and thus would not contribute to the spread of noxious weeds, but soil
23 disturbance (approximately 5 acres) caused by construction equipment at station locations
24 could increase the spread of noxious weeds in open and residential areas.

25 **3.11.2.3 PACKAGE B**

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

29 **Safety Improvements**

30 Under Package B, major and minor safety improvements would occur between SH 1 and
31 SH 14 (B-H1). Soil disturbance (approximately 25 acres) caused by construction equipment
32 could increase the spread of Canada thistle and leafy spurge into open areas.

33 **Tolled Express Lanes**

34 Under Package B, a northbound and southbound tolled express lane would be constructed
35 from SH 14 to SH 60, SH 60 to E-470, and E-470 to US 36; the exception being the section
36 between Harmony Road and SH 60, which would include two tolled express lanes in each
37 direction. The consequences of construction of tolled express lanes would be similar to that of
38 Package A for the alignments between SH 14 and E-470. Soil disturbance (approximately
39 241 acres) caused by construction equipment could increase the spread of noxious weeds on

1 roadsides and possibly introduce new noxious weed species. Ground disturbance caused by
2 construction projects are often colonized by noxious weed species preventing the
3 establishment of native vegetation. Soil disturbance along the banks of streams could increase
4 the invasion and establishment of tamarisk, which threatens native riparian trees and shrubs.
5 Various streams lie within the project alignment, including the St. Vrain and Big Thompson
6 rivers.

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

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

15 ***Bus Rapid Transit***

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

19 Minor impacts in the form of soil disturbance (approximately 5 acres) caused by construction of
20 bus rapid transit stations and park and ride facilities could increase the spread of leafy spurge
21 and Canada thistle into open and residential areas, as well as patches of native prairie
22 adjacent to the facilities.

23 **3.11.2.4 PREFERRED ALTERNATIVE**

24 The Preferred Alternative includes construction of additional general purpose lanes on I-25,
25 the implementation of commuter rail, I-25 express bus improvements and a commuter bus
26 service. This alternative is described in detail in **Chapter 2 Alternatives**.

27 **I-25 Highway Improvements**

28 The Preferred Alternative includes buffer-separated tolled express lanes in each direction of
29 I-25. One general purpose lane would be added in each direction of I-25 from SH 14 to SH 66,
30 and 16 existing interchanges would be upgraded. Soil disturbance (approximately 198 acres)
31 caused by construction equipment could increase the spread of noxious weeds on roadsides
32 and possibly introduce new noxious weed species. Ground disturbance caused by
33 construction projects are often colonized by noxious weed species preventing the
34 establishment of native vegetation. Soil disturbance along the banks of streams could increase
35 the invasion and establishment of tamarisk, which threatens native riparian trees and shrubs.
36 Various streams lie within the project alignment, including the St. Vrain and Big Thompson
37 rivers.

38 In general, a wide variety of noxious weeds are present in Weld County; therefore, areas
39 impacted by project activities in Weld County would be impacted by further invasion and
40 establishment of weedy species of concern, including field bindweed and Canada thistle.

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

5 **Commuter Rail (Fort Collins to North Metro)**

6 The Preferred Alternative includes commuter rail transit service from Fort Collins to the
7 anticipated FasTracks North Metro end-of-line in Thornton. A maintenance road has been
8 added along part of the BNSF line. The rail line would be largely single-track with passing
9 tracks at four locations. It is anticipated that impacts associated with weed populations would
10 occur from construction activities involved with rail construction, maintenance facilities, park
11 and ride facilities, and rail stations. Soil disturbance (approximately 55 acres) caused by
12 construction equipment could increase the spread of leafy spurge and Canada thistle into open
13 and residential areas, as well as patches of native prairie that lie within the rail alignment.
14 Noxious weed impacts associated with the commuter rail component of the Preferred
15 Alternative would affect a smaller area of disturbance than the commuter rail component in
16 Package A (see **Section 3.10 Vegetation**) for vegetation impacts.

17 **I-25 Express Bus (Fort Collins/Greeley to Denver/DIA)**

18 The Preferred Alternative includes express bus service from the northern communities of Fort
19 Collins and Greeley to downtown Denver and to DIA. The bus routes would use the proposed
20 express lanes along I-25. The consequences of construction of tolled express lanes are
21 discussed in the I-25 Highway Improvements component.

22 Impacts in the form of soil disturbance (approximately 13 acres) caused by construction of
23 express bus stations could increase the spread of leafy spurge and Canada thistle into open
24 and residential areas, as well as patches of native prairie adjacent to the facilities.

25 **US 85 Commuter Bus (Greeley to Denver)**

26 The Preferred Alternative includes commuter bus service along US 85 connecting Greeley to
27 downtown Denver. In general, the proposed bus routes would run along existing roadways and
28 thus would not contribute to the spread of noxious weeds.

29 Five proposed commuter bus stations and a maintenance facility would result in permanent
30 impacts and soil disturbance (approximately 3 acres) caused by construction equipment.
31 Construction of these facilities could increase the spread of noxious weeds into adjacent and
32 open areas.

33

1 **3.11.2.5 SUMMARY OF DIRECT IMPACTS**

2 **Table 3.11-2** summarizes direct impacts associated with the No-Action and build alternatives.

3 **Table 3.11-2 Summary of Direct Impacts**

Alternative	Noxious Weeds Direct Impact (acreage of soil disturbance)
No-Action Alternative	0.0
Package A	305
Package B	271
Preferred Alternative	269

4 **Indirect Impacts Common to All Build Packages**

5 Construction of all build packages would disturb areas that are already inhabited by noxious
6 weeds, and would also disturb areas that are currently weed-free. These new disturbances
7 could inadvertently contribute to the potential introduction of noxious weed populations. Both
8 temporary roads and work areas would be susceptible to potential new noxious weed
9 population invasions. Impacts to environmental resources as a result of induced growth
10 caused by the construction of the build packages are further discussed in **Section 3.1**
11 **Land Use** and **Appendix C**.

12 **3.11.3 Mitigation Measures**

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

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

- 1 Preventative control measures for project design and construction may include:
- 2 ▶ **Native Plants.** Only native species will be used to revegetate sites disturbed by
3 construction activities. Native plant species used for revegetation will be coordinated with
4 agencies and CDOT specialists.
- 5 ▶ **Weed Free Forage Act.** Materials used for revegetation will be inspected and regulated in
6 accordance with provisions of the Weed Free Forage Act, Title 35, Article 27.5, CRS.
- 7 ▶ **Topsoil Management.** Imported topsoil must be inspected by the project's Noxious Weed
8 Management Supervisor. If it is determined to be contaminated with weeds, or if it cannot
9 be inspected properly, it cannot be used on the project.
- 10 ▶ **Equipment Management.** Equipment will remain on designated roadways and stay out of
11 weed-infested areas until the areas are treated. All equipment will be cleaned of all soil and
12 vegetative plant parts before its arrival at a project site.