

3.8 WETLANDS

In recognition of the importance of clean water and the ecological value of wetlands, in 1977 the U.S. Congress passed the Clean Water Act (CWA) to protect the physical, biological, and chemical quality of waters of the U.S., including adjacent wetlands. Section 404 of the CWA defines waters of the U.S. as all traditional navigable waters and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters. The US Army Corp of Engineers (USACE) Regulatory Program administers, and the Environmental Protection Agency (EPA) enforces, Section 404 of the CWA.

The definition of waters of the U.S. under USACE jurisdiction does not include wetlands that lack a surface connection to, and therefore are isolated from, regulated waters. In projects with federal funding or oversight, a second piece of legislation, Executive Order 11990 Protection of Wetlands, directs the lead federal agencies, in this instance Federal Highway Administration (FHWA) and Federal Transit Authority (FTA), to protect isolated wetlands by avoiding direct or indirect support of construction in wetlands when a practicable alternative is available. For the purpose of this wetlands Section 3.8, here after, Waters of the U.S. will be referred to as jurisdictional open waters. Consultation with USACE, EPA, Colorado Department of Wildlife (CDOW), and US Fish and Wildlife Service (USFWS) has occurred and is documented in **Appendix B Agency Coordination**.

What's in Section 3.8?

3.8 Wetlands

- 3.8.1 Affected Environment
- 3.8.2 Environmental Consequences
 - 3.8.2.1 No-Action Alternative
 - 3.8.2.2 Package A
 - 3.8.2.3 Package B
 - 3.8.2.4 Indirect Impacts Common to Both Packages
 - 3.8.2.5 Wetland Functional Values
- 3.8.3 Mitigation Measures

3.8.1 Affected Environment

Wetlands are ecosystems where soils are saturated with water for long periods during the growing season and therefore generally support plant species adapted for very wet environments. In Colorado, wetland areas cover approximately 2 percent of the land surface but provide a wide variety of economically and ecologically important functions. Wetlands provide water quality improvement, groundwater recharge/discharge, bank stabilization, flood protection, food chain support, fish and wildlife habitat, rare species habitat, education and research, and recreation.

Wetlands in the project area were delineated during late spring through the early fall seasons of 2005 and 2006 (Ecotone, 2006). Wetland determinations were based on documenting the presence of diagnostic environmental characteristics for vegetation, hydrology, and soils as outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987).



Big Thompson River



Typical Roadside Ditch

1 As the accompanying photos depict, wetlands in the project area generally occur along streams,
2 roadside ditches, irrigation ditches and canals, and at pond margins. Major streams in the project
3 area are Big Dry Creek, Big Thompson River, Box Elder Creek, Cache la Poudre River,
4 Clear Creek, Fossil Creek, Little Dry Creek, Little Thompson River, St. Vrain Creek, South Platte
5 River, and Spring Creek. These water resources are shown in **Figure 3.8.1**

6 Wetlands are the transition zone between
7 aquatic and upland habitats and are defined
8 by the USACE as, “those areas inundated or
9 saturated by surface or groundwater at a
10 frequency and duration sufficient to support
11 and under normal circumstances do support,
12 a prevalence of vegetation typically adapted
13 for life in saturated soil conditions.” Based on
14 the classifications of waters and wetlands
15 developed by Cowardin and others (USFWS,
16 1979), wetland types present include
17 palustrine emergent systems with persistent
18 vegetation and palustrine scrub-shrub
19 systems with broad-leaved deciduous shrubs.
20 Common wetland species include cattail
21 (*Typha sp.*), reed canarygrass (*Phalaris*
22 *arundinacea*), sedges (*Carex sp.*), rushes
23 (*Juncus sp.*), and narrowleaf willow (*Salix*
24 *exigua*).

25 A Wetland Assessment Form was used to
26 rate wetland functions (Jacobs, 2006).
27 Wetland functions typically include water
28 quality improvement, groundwater
29 recharge/discharge, bank stabilization, flood
30 protection, food chain support, and/or wildlife
31 habitat.

32 Wetland acreage and type is summarized
33 below. Detailed information on wetland types,
34 locations, functions, and probable
35 jurisdictional status is provided in the *North I-25 Wetland and Waters of the U.S. Technical*
36 *Report* (Jacobs, 2008d).

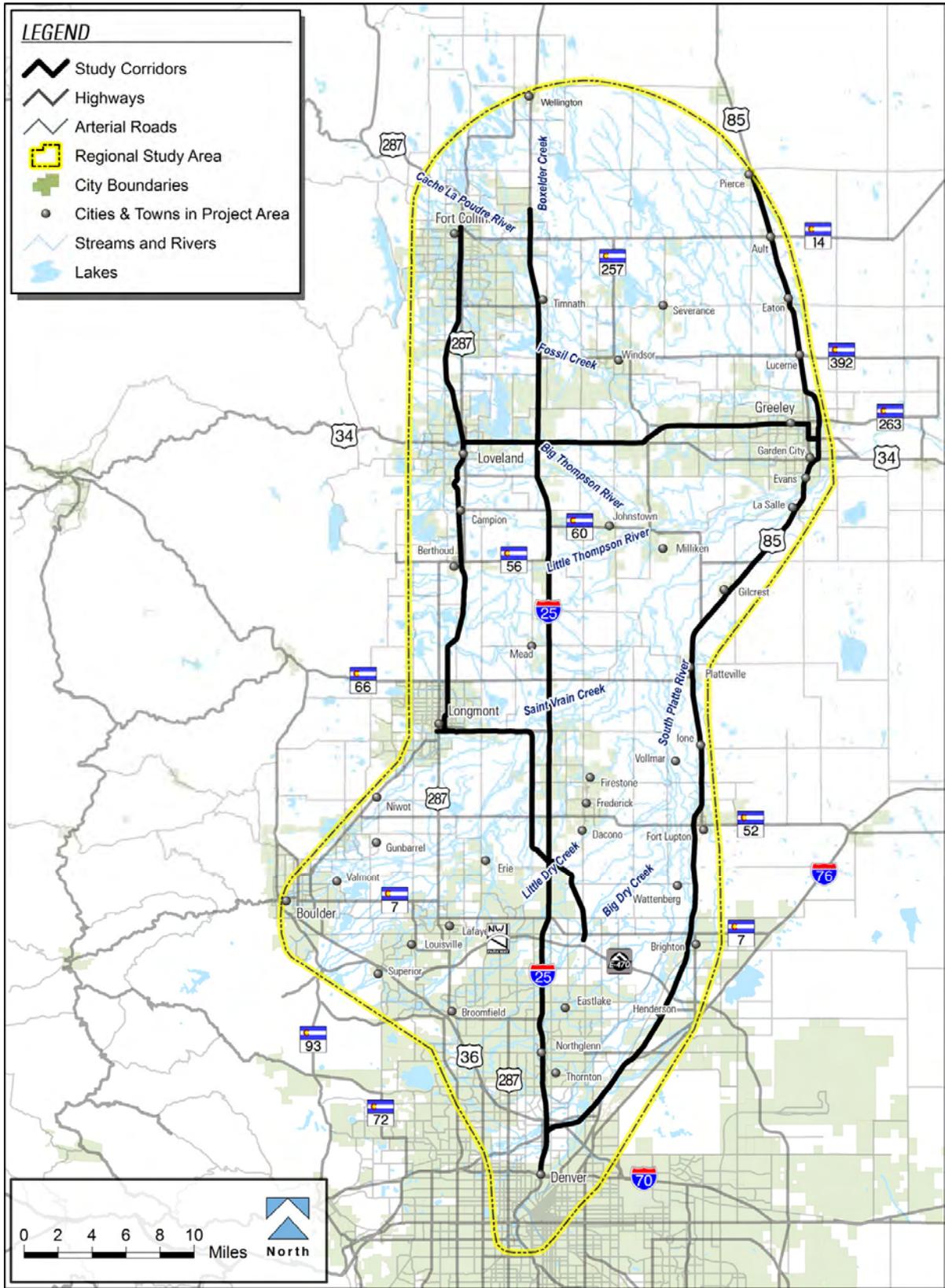


Typical Irrigation Canal



Typical Ponded Area

1 Figure 3.8-1 Water Resources in the Project Area



Map Document - C&B; (Study_Area_eis.mxd)
2-22-2007

1 **Table 3.8-1** summarizes wetland acreage and type in the project area by location, size, and
2 type of vegetation.

3 **Table 3.8-1 Total Wetland Acreage Existing within the North I-25**
4 **Project Corridors**

Location	Size (acres)	Vegetation Type
BNSF right-of-way from Fort Collins (SH 14) through Longmont and FasTracks North Metro Corridor	128 acres	Emergent, scrub-shrub, and combination of emergent and scrub-shrub vegetation
US 34 – I-25 to Greeley	1 acre	Emergent and scrub-shrub vegetation.
US 85 – Greeley to Denver Union Station and DIA (E-470)	1.61 acres	Emergent and scrub-shrub vegetation.
North I-25 Corridor – Fort Collins (SH 14) to intersection with US 36	308 acres	Emergent, scrub-shrub, and combination of emergent and scrub-shrub vegetation

5
6 **Table 3.8-2 Wetlands and Jurisdictional Open Waters Existing within the**
7 **North I-25 Project Area by Package**

Wetland Type/Terrain	Package A (acres)	Package B (acres)
Palustrine Scrub/Shrub		
Existing	83.71	66.80
Palustrine Emergent		
Existing	315.30	234.38
Other waters		
Waters of the U.S.		
Existing	13.8	14.8
Open Water		
Existing	25.7	28.9
Total Wetlands and Other Waters Existing	438.51	344.88

8 * Other waters include perennial and intermittent waterways, or bodies of water including irrigation canals, ponds, lakes,
9 and reservoirs, which may be considered as jurisdictional by the U.S. Army Corps of Engineers under Section 404 of the
10 Clean Water Act.

11 **Wetland Jurisdiction**

12 On June 5, 2007, the EPA and USACE issued agency guidance, effective immediately,
13 regarding jurisdiction of the CWA following the Supreme Court decision in *Rapanos vs.*
14 *United States*. The guidance has been issued to ensure that jurisdictional determinations
15 under the CWA are consistent with the *Rapanos* decision and provide efficient protection for
16 the nation's water resources. Further information regarding jurisdictional and non-
17 jurisdictional wetlands and jurisdictional open water is presented in the *North I-25 Wetland*
18 *and Waters of the U.S. Technical Report* (Jacobs, 2008d). The USACE would make a final
19 determination of jurisdictional status for wetlands and jurisdictional open water within the
20 project area following receipt of the *North I-25 Wetland and Waters of the U.S. Technical*
21 *Report* (Jacobs, 2008d).
22

23 Typical wetland vegetation occurring in emergent wetlands in the project area include cattail
24 species, common threesquare (*Schoenoplectus pungens*), arctic rush (*Juncus arcticus*), reed
25 canarygrass, Emory's sedge (*Carex emoryi*), smooth horsetail (*Equisetum laevigata*),

1 bluejoint (*Calamagrostis canadensis*), clustered field sedge (*Carex praegracilis*), foxtail
2 barley (*Hordeum jubatum*), and curly dock (*Rumex crispus*).

3 Typical vegetation occurring in scrub-shrub wetlands in the project area include various mixes
4 of emergent wetland vegetation in the understory and an overstory primarily dominated in
5 part or combination of narrowleaf willow , boxelder (*Acer negundo*), green ash (*Fraxinus*
6 *pennsylvanica*), crack willow (*Salix fragilis*), and plains cottonwood saplings (*Populus*
7 *deltoides ssp. monilifera*).

8 Riparian zones/buffers are present next to a majority of wetlands occurring along streams,
9 irrigation ditches and canals, and at pond margins. These riparian zones provide important
10 ecological assistance to the existing wetlands and surrounding ecosystem. Typical roles
11 associated with riparian zones include soil/floodplain stability, sediment trap, pollutant filter,
12 wildlife habitat and migration corridors, and water quality improvement.

13 Typical vegetation occurring in riparian zones along wetlands in the project area include silver
14 maple (*Acer saccharinum*), Woods' rose (*Rosa woodsii*), showy milkweed (*Asclepias*
15 *speciosa*), Siberian elm (*Ulmus pumila*), Russian olive (*Elaeagnus angustifolia*), smooth
16 brome (*Bromus inermis*), crack willow (*Salix fragilis*), boxelder , narrowleaf willow , green ash,
17 and a mixture of various emergent wetland vegetation.

18 **3.8.2 Environmental Consequences**

19 This section describes the effects to wetlands that would occur under the No-Action
20 Alternative and under the two build packages (Packages A and B). Potential effects on
21 wetlands were evaluated according to:

- 22 ▶ Direct impacts (acreage) by project alternatives and component
- 23 ▶ Indirect impacts
- 24 ▶ Changes in wetland functions and values

25 Environmental consequences are presented in this document as they are anticipated to occur
26 in the Year 2030. While each resource is assessed for impacts related to all improvements
27 within an alternative (e.g. interchanges, structural improvements, safety upgrades, carpool
28 lots, feeder bus, maintenance facilities), only those areas where impacts would occur are
29 discussed. As a result, not every element of an alternative is discussed. Mitigation measures
30 are also described.

31 Direct and indirect impacts to wetlands and other aquatic environments are described for
32 each of the three alternatives in **Sections 3.8.2.1** through **Section 3.8.2.3**. Direct wetland
33 impacts from Package A components are summarized in **Table 3.8-3** and direct wetland
34 impacts from Package B components are summarized in **Table 3.8-4**. Indirect impacts
35 common to both of the build packages (Package A and Package B) are described in
36 **Section 3.8.2.3**. Impacts to wetland functional values are discussed in **Section 3.8.2.4**.

37 **3.8.2.1 NO-ACTION ALTERNATIVE**

38 The No-Action Alternative includes major and minor structure rehabilitation, replacement or
39 rehabilitation of existing pavement, and minor safety modifications by 2030. These actions

1 would take place regardless of whether any of the proposed improvements in Packages A or
2 B occur. The No-Action Alternative is described in detail in **Chapter 2 Alternatives**.

3 The No-Action Alternative would generally not affect existing wetland resources, except those
4 associated with development activities and rehabilitation of major and minor structures.
5 Existing conditions, described in **Section 3.8.1**, would continue. With increasing traffic
6 volumes and continuing commercial and residential development in the project area, some
7 effects to wetland resources would be expected. Effects from existing or increasing
8 development volumes on wetland resources could result in wetland loss to permanent fill
9 areas, increased sedimentation, waterway channelization, wetland habitat fragmentation, and
10 mortality from vehicle collisions with wildlife species utilizing wetland habitats.

11 3.8.2.2 PACKAGE A

12 Components of Package A include safety improvements, construction of additional general
13 purpose and auxiliary lanes on I-25, structure upgrades, and the implementation of commuter
14 rail and commuter bus service. Development of these components would result in impacts
15 totaling 17.48 acres of wetlands and 1.86 acres of jurisdictional open water (see **Table 3.8-3**).

16 **Table 3.8-3 Direct Impacts to Wetlands and Jurisdictional Open Water from**
17 **Package A Components**

Package A		PEM* (acres)	PSS** (acres)	Other Waters (acres)		Totals (acres)
				Open Water	Waters of the U.S.	
<i>Safety Improvements</i>						
A-H1	SH 1 to SH 14	0	0	0	0	0
<i>General Purpose Lanes</i>						
A-H2	SH 14 to SH 60	7.00	1.42	0.57	0.85	9.84
A-H3	SH 60 to E 470	4.07	0.77	0	0.42	5.26
<i>Structure Upgrades</i>						
A-H4	E 470 to US 36	0	0	0	0	0
<i>Commuter Rail</i>						
A-T1	Ft. Collins to Longmont	0.51	0.23	0	0	0.74
A-T2	Longmont to North Metro Denver	1.28	2.20	0	0.02	3.50
<i>Commuter Bus</i>						
A-T3	Greeley to North Metro Denver	0	0	0	0	0
A-T4	Greeley to DIA	0	0	0	0	0
<i>Commuter Rail Stations</i>						
<i>Maintenance Facilities</i>		0	0	0	0	0
Package A Totals:		12.86	4.62	0.57	1.29	19.34

18 Note: Jurisdictional status of impacted wetlands will be determined by a USACE official as part of a jurisdictional determination; totals
19 account for both jurisdictional and non-jurisdictional wetland impacts. All totals are considered as areas of
20 unavoidable/permanent wetland impact.

21 *PEM = Palustrine emergent wetland

22 **PSS = Palustrine scrub-shrub wetland

23 *Safety Improvements*

24 Safety improvements proposed in Package A would have no direct or indirect impacts on
25 wetlands or jurisdictional open water.

1 ***General Purpose Lanes***

2 Under Package A, one additional northbound and one additional southbound general purpose
3 lane would be constructed between SH 14 and SH 60 (A-H2) and SH 60 and E-470 (A-H3).
4 Implementation of the general purpose lanes for Package A would affect 15.10 acres of
5 wetlands and jurisdictional open water. The majority of impacts associated with this component
6 would be associated with construction activities requiring clearing, grading, or vegetation
7 removal adjacent to and in the floodplains of perennial waterways. Impacts are primarily
8 anticipated to occur along Big Dry Creek, Big Thompson River, Cache la Poudre River, Fossil
9 Creek, Little Dry Creek, Little Thompson River, South Platte River, and St. Vrain Creek.
10 Wetland types that would be impacted are palustrine scrub/shrub and palustrine emergent
11 wetland communities with associated riparian buffers.

12 The construction of general purpose lanes proposed under Package A would have direct
13 impacts to wetlands and jurisdictional open water within the alternative footprint as a result of fill
14 placement caused by construction of transportation improvements, such as roadway widening
15 and realignment, new alignments, and intersection improvements. Wetland types that would be
16 impacted are palustrine scrub/shrub and palustrine emergent wetland communities with
17 associated riparian buffers.

18 ***Structure Upgrades***

19 Package A would provide structural upgrades between E-470 and US 36. Due to a lack of
20 wetlands within construction areas, the proposed structure upgrades under Package A would
21 have no direct or indirect impacts on wetlands or jurisdictional open water.

22 ***Commuter Rail***

23 Package A includes the construction of a commuter rail line from Fort Collins to Longmont,
24 continuing from Longmont to FasTracks North Metro Corridor. Commuter rail installations and
25 stations associated with components A-T1 and A-T2 would have direct impacts to 4.24 acres of
26 wetlands and jurisdictional open water within the alternative footprint as a result of fill
27 placement caused by construction of railway components, such as track installation and
28 alignment, maintenance facilities, and station locations. The great majority of these impacts
29 would occur as a result of component A-T2.

30 The majority of impacts for these components would occur along Big Thompson River, Boulder
31 Creek, Cache la Poudre River, Fossil Creek, Little Thompson River, St. Vrain Creek, and Big
32 Thompson River. Wetland types that would be impacted are palustrine scrub/shrub and
33 palustrine emergent wetland communities with associated riparian buffers.

34 ***Commuter Bus***

35 Package A includes the addition of commuter bus service and associated stations between
36 Greeley, Denver, and Denver International Airport (DIA). The commuter bus lines would
37 operate on existing roadways and would have no direct or indirect impacts to wetlands or
38 jurisdictional open water. Stations are immediately adjacent to the roadway and would have no
39 direct or indirect impacts to wetlands or jurisdictional open water

3.8.2.3 PACKAGE B

Components of Package B include safety improvements, construction of tolled express lanes on I-25, and the implementation of bus rapid transit (BRT) service and associated stations. Development of these components would result in impacts totaling 18.11 acres of wetlands, and 2.27 acres of jurisdictional open water (**Table 3.8-4**).

Table 3.8-4 Direct Impacts to Wetlands and Jurisdictional Open Water from Package B Components

<i>Package B</i>		PEM* (acres)	PSS** (acres)	Other Waters (acres)		Totals (acres)
				Waters of the U.S.	Open Water	
<i>Safety Improvements</i>						
BH-1	SH 1 to SH 14	0	0	0	0	0
<i>Tolled Express Lanes</i>						
BH-2	SH 14 to SH 60	9.78	1.90	1.04	0.71	13.43
BH-3	SH 60 to E 470	4.25	0.81	0.43	0	5.49
BH-4	E 470 to US 36	0.53	0.32	0.09	0	0.94
<i>Bus Rapid Transit</i>						
B-T1	Ft. Collins/Greeley to North Metro Denver	0	0	0		0
B-T2	Ft. Collins to DIA	0	0	0		0
<i>BRT Stations</i>						
	Ft. Collins to Greeley	0.52	0	0		0.52
	Ft. Collins to North Metro Denver	0	0	0		0
	Metro Denver to DIA	0	0	0		0
<i>Maintenance Facilities</i>						
		0	0	0		0
Package B Totals:		15.08	3.03	1.56	0.71	20.38

Note: Jurisdictional status of impacted wetlands will be determined by a USACE official as part of a jurisdictional determination; totals account for both jurisdictional and non-jurisdictional wetland impacts. All totals are considered as areas of unavoidable/permanent wetland impact.

*PEM = Palustrine emergent wetland
**PSS = Palustrine scrub-shrub wetland

Safety Improvements

Safety improvements proposed in Package B would have no direct or indirect impacts on wetlands or jurisdictional open water.

Tolled Express Lanes

Under Package B, a northbound and southbound tolled express lane would be constructed from SH 14 to SH 60 (B-H2), SH 60 to E-470 (B-H3), and E-470 to US 36 (B-H4), except between Harmony Road and SH 60 where two tolled express lanes would be added in each direction. The construction of tolled express lanes would affect 19.86 acres of wetlands and jurisdictional open water. The majority of impacts associated with this component would be associated with construction activities requiring clearing, grading, or vegetation removal adjacent to and in the floodplains of perennial waterways. Impacts are primarily anticipated to occur along Big Dry Creek, Big Thompson River, Cache la Poudre River, Fossil Creek, Little Dry Creek, Little Thompson River, South Platte River, and St. Vrain Creek. Wetland types that would be impacted are palustrine scrub/shrub and palustrine emergent wetland communities with associated riparian buffers.

1 *Bus Rapid Transit*

2 Package B includes the addition of BRT from Fort Collins and Greeley to Denver and to DIA.
3 BRT would operate on existing roadways or share the tolled express lanes and would not
4 result in direct or indirect impacts on existing wetland resources; however, installation of BRT
5 stations would impact 0.52 acre of emergent wetland.

6 The proposed BRT project activity would have direct impacts to wetlands within the alternative
7 footprint as a result of fill placement caused by construction of BRT stations. Impacts for this
8 component would be associated with two minor, stand-alone depressional areas. Wetland types
9 that would be impacted are palustrine emergent wetland communities.

10 **3.8.2.4 INDIRECT IMPACTS COMMON TO BOTH PACKAGES**

11 Both Package A and Package B would cause indirect effects to wetlands located within and
12 adjacent to areas of construction. The following indirect effects are common to build components
13 for general purpose lanes, commuter rail, commuter rail stations, commuter bus, tolled express
14 lanes, BRT stations, and maintenance facilities.

15 Most indirect effects would result from the increase in impervious surfaces caused by additional
16 lanes or added road shoulders. The greater area of impervious surfaces would be expected to
17 increase roadway runoff, surface flows in adjacent streams, erosion, and the creation of channels
18 in wetlands that were previously free of channelization. New flows could contain pollutants
19 associated with roadway runoff. Sediment from winter sanding operations, especially with
20 additional roadway lanes, would likely accumulate in wetlands and drainages. De-icers, petroleum
21 products, and other chemicals, would likely reduce water quality, thus impacting wetland plants
22 and wildlife. Sediment and erosion control would be required to be placed during all phases of
23 construction and would remain in place until all disturbed areas have reached 70% of
24 preconstruction vegetative cover.

25 Other indirect wetland effects include the decrease or elimination of upland tree and/or shrub
26 buffers between the proposed roadway/rail corridor and adjacent wetlands. Buffers filter pollutants
27 before they reach wetlands, streams, and lakes as well as provide habitat for wildlife.

28 Because proposed roadway and/or rail alignments primarily follow existing lines, many wetlands
29 currently receive indirect effects from general activity and maintenance practices. However, the
30 magnitude of indirect effects would increase with increased area of roadway and rail corridors.

31 Indirect impacts resulting from project induced growth, transit oriented development, and
32 carpool lots are discussed within **Section 3.1.5**.

33 **3.8.2.5 WETLAND FUNCTIONAL VALUES**

34 Functions and values of wetlands located within the North I-25 project area include wildlife habitat
35 and travel corridors, production of export/food chain support, sediment/nutrient removal and
36 retention, streambank stabilization, flood flow attenuation and storage, water quality improvement,
37 ground water discharge/recharge, and recreation/education potential.

38 Wetland functions are addressed in detail within the *North I-25 Wetland and Waters of the U.S.*
39 *Technical Report* (Jacobs, 2008d). In general, loss of functions in wetlands would be greater for
40 wetlands occurring along perennial streams and established water bodies in comparison to

1 wetlands occurring along roadside ditches, due to perennial and established water bodies
2 containing more naturally occurring conditions.

3 For both Package A and Package B, wetland locations with higher functions and values are
4 located along the banks and within floodplains of perennial waterways such as the Cache la
5 Poudre River, Little Thompson River, and St. Vrain Creek. The majority of these high value
6 wetlands are located adjacent to I-25 and would be impacted with either package that requires
7 widening of I-25. Package B, which includes a longer stretch of widening along I-25, would affect
8 a greater volume of high value wetlands than Package A.

9 Wetland locations determined as having moderate to high function and value ratings have
10 been identified and coordinated with project design activities. Special attention was paid to
11 avoid and minimize any potential impacts or disturbances to these wetlands.

12 **3.8.2.6 REGULATORY IMPLICATIONS**

13 Several federal, state, and local regulations can apply to wetlands. Agencies having
14 jurisdiction over wetlands include the USACE, the CDOW, and the USFWS. Wetland
15 determinations are subject to verification and approval by agencies. Wetland regulatory
16 decisions and permitting determinations can only be made by the regulatory agencies.

17 The USACE regulates the discharge of dredge and fill material into wetlands and
18 jurisdictional open water through Section 404 of the CWA as amended in 1977. If a proposed
19 project involves temporary or permanent filling of wetlands or other water bodies, which can
20 include intermittent drainages, a USACE Section 404 permit may be required. The USACE
21 makes the final determination as to whether the area meets the definition of a jurisdictional
22 wetland and whether the wetland is “isolated” from or “adjacent” to other water bodies. The
23 USACE and EPA have amended their permit regulations defining discharges of dredged
24 material and fill material (58 FR 45008, August 25, 1993). The regulations now include
25 excavations of wetlands where incidental discharge occurs.

26 The USACE has established two types of permit programs under Section 404 of the CWA
27 which apply to wetland fill proposals – nationwide permit or individual permit (IP)– in
28 accordance with the nature of the proposed fill activity and the amount of impact. The
29 NEPA/404 merger process shall be required when a project is expected to be processed
30 using an EIS and an IP, which is the case with this project.

31 A Section 401 Water Quality Certification is required in conjunction with an Individual 404
32 Permit (dredge and fill permit) for any transportation construction project or maintenance
33 activity where work occurs below the ordinary high-water line or adjacent to wetlands. The
34 401 Certification must be obtained from the Water Quality Control Division of the Colorado
35 Department of Public Health and Environment. If a 404 Nationwide or General Permit is
36 issued for the project, a 401 Certification is not required.

37 A Senate Bill (SB) 40 Certification would be required by CDOW for the crossing of streams or
38 adjacent streambanks to avoid adverse effects to waterways, streambanks, or associated
39 tributaries. This legislation is designed to protect fishing waters and to recognize the
40 importance of the entire stream ecosystem, including wetland and riparian areas. As required
41 by SB 40, an SB 40 wildlife certification application would be submitted to CDOW prior to 60
42 days before construction.

1 Wetlands occurring on private land are subject to the same federal and state jurisdictional
2 authorities as those within public land.

3 **3.8.3 Mitigation Measures**

4 Per Section 404 of the CWA, impacts to wetlands and jurisdictional open water must be
5 avoided, minimized, or mitigated (in order of preference). Although the Act requires
6 compensatory mitigation only for those wetlands and jurisdictional open water considered
7 jurisdictional by the USACE, it is FHWA and CDOT policy to mitigate all wetlands impacts
8 (jurisdictional and non-jurisdictional) at a 1:1 ratio. All impacted wetlands and jurisdictional
9 open water will be mitigated in accordance with the USACE mitigation policies, and the
10 conditions of the USACE Section 404 Permit. All mitigation plans will be developed in
11 coordination with the USACE and other appropriate agencies during the Section 404
12 permitting process. In addition, all mitigation for the wetlands as a result of the North I-25
13 project will be done in accordance with CDOT, FHWA (23 CFR 777).

14 Impacts to wetlands and jurisdictional open water will be avoided and minimized to the
15 greatest extent possible during preliminary and final design through the use of established
16 and approved best management practices (BMP's). During this conceptual design phase,
17 roadway improvements, rail alignments, and retaining walls were located to reduce fill in
18 wetlands where practicable.

19 To facilitate proper coordination and development of measures to avoid and minimize impacts
20 to wetlands, an on-site field meeting was held in April 2007 that included representatives from
21 USACE, EPA, USFWS, CDOT, CDOW, and the project team. At the field meeting the
22 agencies requested that CDOT investigate the option of narrowing the rural median at the Big
23 Thompson River crossing. Preliminary investigations indicate this design option will be
24 feasible. This is a design option that will minimize impact. It will be examined in more detail
25 between the DEIS and the FEIS for the Preferred Alternative.

26 For federally funded transportation projects, TEA-21 provisions state a preference for the use
27 of wetland mitigation banks to compensate for unavoidable impacts to jurisdictional open
28 waters, including wetlands. There are three wetland mitigation banks in the North I-25 DEIS
29 project area that could serve the project. They are Mile High Wetland Mitigation Bank, South
30 Platte Wetland Mitigation Bank, and the Riverdale Wetland Mitigation Bank. Impacts south of
31 Hwy 66 are within these banks' primary service areas and can provide mitigation credit at a
32 1:1 ratio. Project impacts north of Hwy 66 are generally within the secondary service area
33 and provide mitigation credit at a higher ratio. Acceptance of mitigation bank credit as
34 compensation for impacts depends on the banks' ability to replace the impacted wetland
35 functions and agreement from regulatory agencies, primarily the Omaha District of the
36 USACE and EPA.

37 Where wetland functions can not be replaced by banking, potential mitigation sites have been
38 identified on public lands within the study area. They include the St. Vrain State Park, Big
39 Thompson Ponds State Wildlife Reserve and a CDOT-owned former rest area site north of
40 the Cache de Poudre River. For example, if impacted wetland functions include floodplain
41 attenuation or wildlife habitat, these public lands located along a regional river corridor would
42 provide functional replacement unavailable at the three wetland mitigation banks.

1 During construction, BMPs will be used to avoid indirect construction impacts to wetlands.
2 Materials and equipments will be stored a minimum of 50 feet from wetlands, drainages, and
3 ditches that could carry toxics materials into wetlands. Construction fencing and appropriate
4 sediment control BMP's will be used to mark wetland boundaries and sensitive habitats
5 during construction.

6 EPA Section 404(b)(1) guidelines require that impacts to wetlands be avoided and minimized
7 to the greatest extent practicable. The USACE compensatory mitigation guidelines will be
8 considered only when it is shown that the least environmentally damaging practicable
9 alternative (LEDPA) was selected to meet the project's purpose and need. A substantial effort
10 has already been undertaken to avoid and minimize wetland impacts. These have been
11 discussed with the U.S. Army Corps of Engineers, EPA, and the Colorado Division of Wildlife
12 in meetings held in 2007.

13 Approximately 438 acres of wetlands were identified within the Package A project area. Of
14 that total, 19.34 acres of wetlands are anticipated to be impacted from project construction
15 activities. Approximately 345 acres of wetlands were identified within the Package B project
16 area. Of that total, 20.38 acres of wetlands are anticipated to be impacted.

17 A Preferred Alternative that is made from a blend of components between Package A and
18 Package B may be chosen, in which case the wetland impacts will be calculated and the
19 determined acreage of impacts would be used in the Section 404 Permit. Final determination
20 of USACE jurisdiction over the delineated wetlands will be made by the USACE based on
21 new guidance from the national headquarters of USACE and EPA offices in response to the
22 recent Supreme Court decision. All of this information will be submitted to the USACE
23 concurrent with the public release of the FEIS.

24 Once wetland impacts are avoided and minimized to the greatest extent possible,
25 compensatory wetland mitigation will be considered. Mitigation is required for both wetlands
26 under USACE jurisdiction and non-jurisdictional wetlands, per CDOT and FHWA directive.

27 The following mitigation goals are appropriate for unavoidable impacts to wetlands within the
28 build packages project areas:

- 29 1. Wetland mitigation banks offer wetland mitigation credit for purchase to cover unavoidable
30 impacts from construction of the Preferred Alternative. There are three wetland mitigation
31 banks that could serve the project area: the Middle South Platte, the Mile High, and the
32 Riverdale. These banks have wetland credits available for purchase.
- 33 2. Impacted wetlands will be replaced with in-kind wetland plant communities with same
34 wetland functions on-site or on nearby public lands within the same drainage basin, if
35 practicable. Both the physical source of water and the legal availability of the water supply
36 will be considered when evaluating wetland mitigation sites. St. Vrain State Park, the
37 Big Thompson Ponds State Wildlife Area, and the former CDOT I-25 rest stop near the
38 Poudre River are three potential wetland mitigation sites to explore with CDOW and
39 USACE.

40
41 For CDOT/FHWA mitigation, final site selection will be based on the installation of
42 groundwater monitoring wells for the purpose of assessing groundwater flow in the area.
43 The wells would be monitored for a minimum of one year. Well data should be collected

1 weekly during the growing season. The well data will be used to determine if the site is
2 suitable and, if needed, the wells could be monitored during final design.

3 Once a mitigation site is selected and final impacts are known, a detailed mitigation plan
4 will be developed. The plan will describe all phases of wetlands mitigation, including site
5 layout, shallow groundwater monitoring well installation, construction details, and success
6 monitoring. Specifically, the plan will include:

- 7 • A detailed base map outlining the exact location of the site(s).
- 8 • A detailed grading plan based on the well data collected.
- 9 • A detailed planting plan that shows different planting zones and includes the
10 placement of herbaceous plant stock (collected on-site if possible), willow cuttings
11 (collected on-site if possible), trees, and other shrubs.
- 12 • A detailed seed and plant mix including an upland seed mix with grasses, forbs, and
13 shrubs to be used in adjacent areas.
- 14 • Direction to collect and direct transplant of wetland plugs will be utilized for the
15 mitigation area.
- 16 • Information on the sources and quantities of seed and plants to be used.
- 17 • Details on the source(s) of wetland hydrology.
- 18 • Details on construction methods, timing, and sequencing.
- 19 • A detailed success monitoring plan.

20 The mitigation success monitoring for any site will include the requirements defined by the
21 USACE and details for the short- and long-term management and maintenance of the
22 site. The success of the site is typically determined by the USACE and is based on the
23 compliance with the success criteria written into the Section 404 Permit. Non-jurisdictional
24 wetland mitigation will fall under the same criteria for success as the jurisdictional
25 wetlands.

- 26 3. All appropriate BMPs to prevent damage to adjacent wetlands will be followed during
27 project construction.

28