

CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action of this Revised EA for C-470 would add one managed, tolled express lane in each direction between I-25 and Kipling Parkway, and a second managed express lane as follows:

- Westbound, I-25 to Lucent Boulevard
- Eastbound, Broadway to I-25

These new through lanes, plus new auxiliary lanes where warranted, would supplement the existing (free) general purpose lanes. **Figure 2-1** shows typical sections for the eastern portion of the corridor. Painted pavement buffers would separate the tolled lanes from the non-tolled lanes.

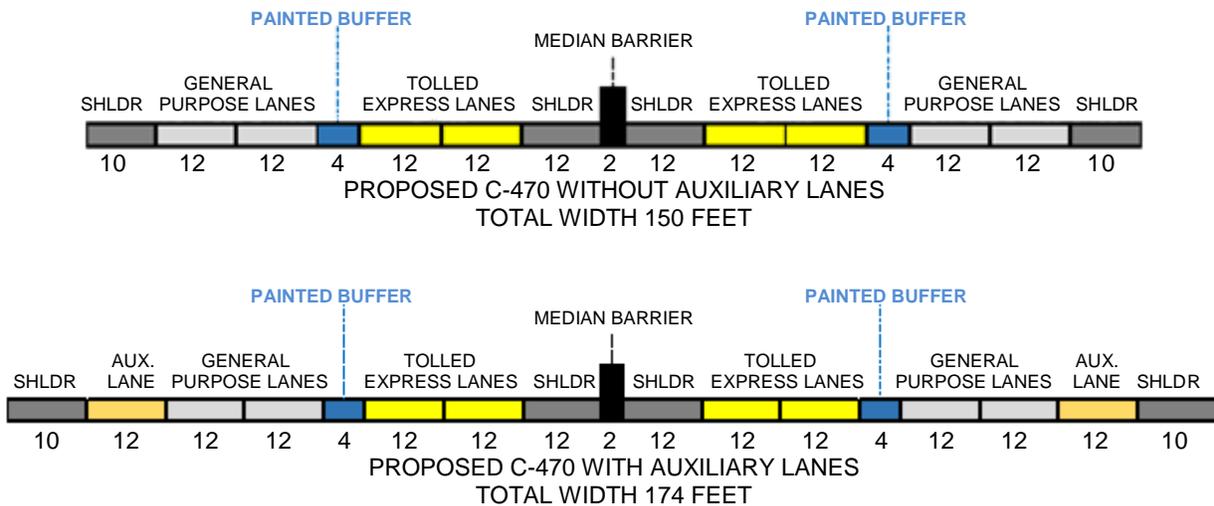
Figure 2-2 shows preliminary locations for auxiliary lanes and express lane access.

New direct-connect ramps would be provided to serve some movements at the C-470/I-25 interchange, as shown in **Figure 2-3**.

In conjunction with the construction of added lanes, the project would also reconstruct existing pavement to address known structural deficiencies. This would be a major reconstruction effort, amounting to roughly one-third the overall project cost.

Concept design plans for the Proposed Action have been developed to the degree necessary to allow assessment of likely environmental impacts. Some operational details such as toll rates and express lane access locations will be finalized based on further revenue studies.

**Figure 2-1
2015 Proposed Action Typical Sections**



**Figure 2-2
Preliminary Locations for Auxiliary Lanes and Express Lane Access**

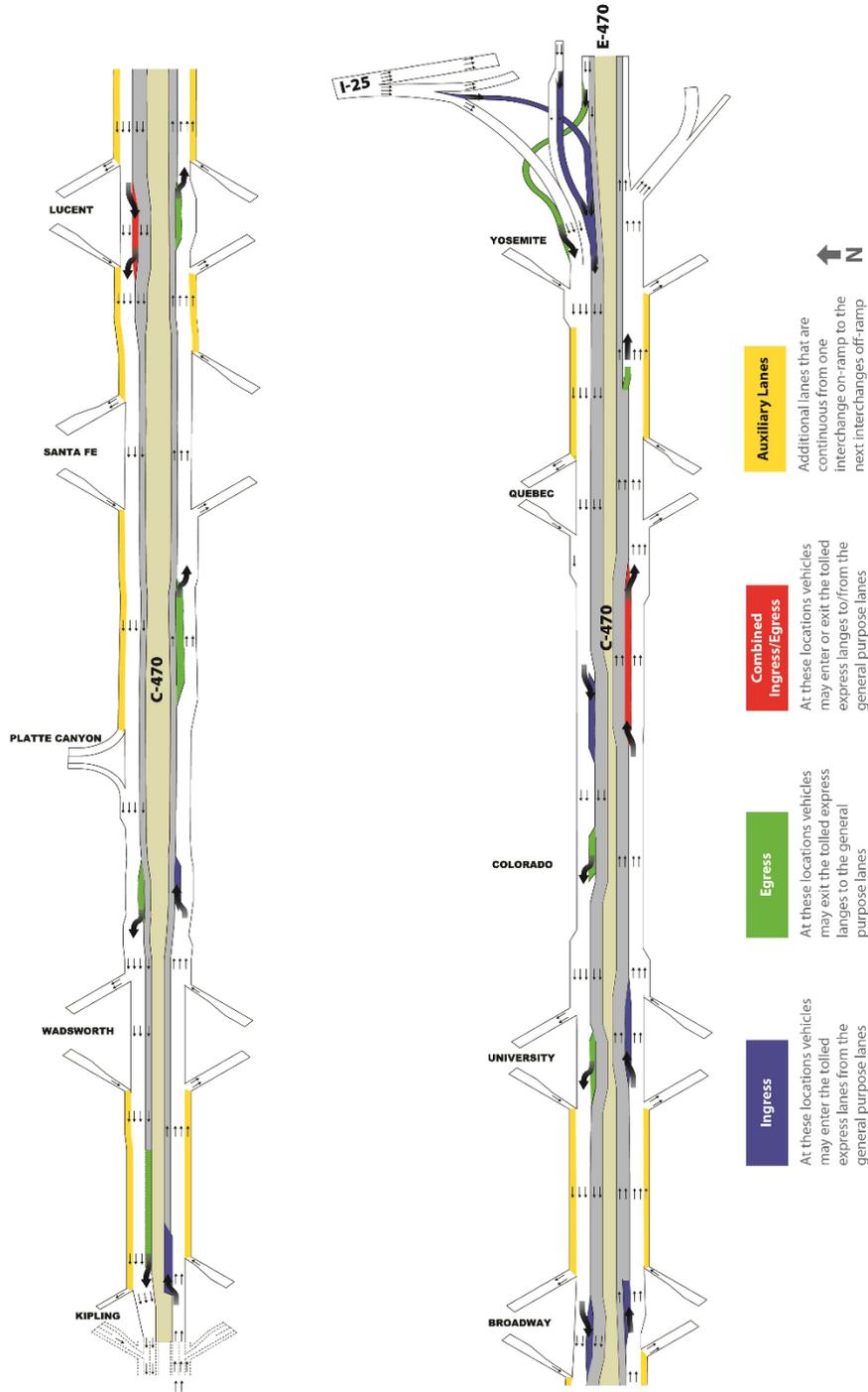


Figure 2-3
Proposed Configuration of C-470/I-25 Direct Connect Ramps

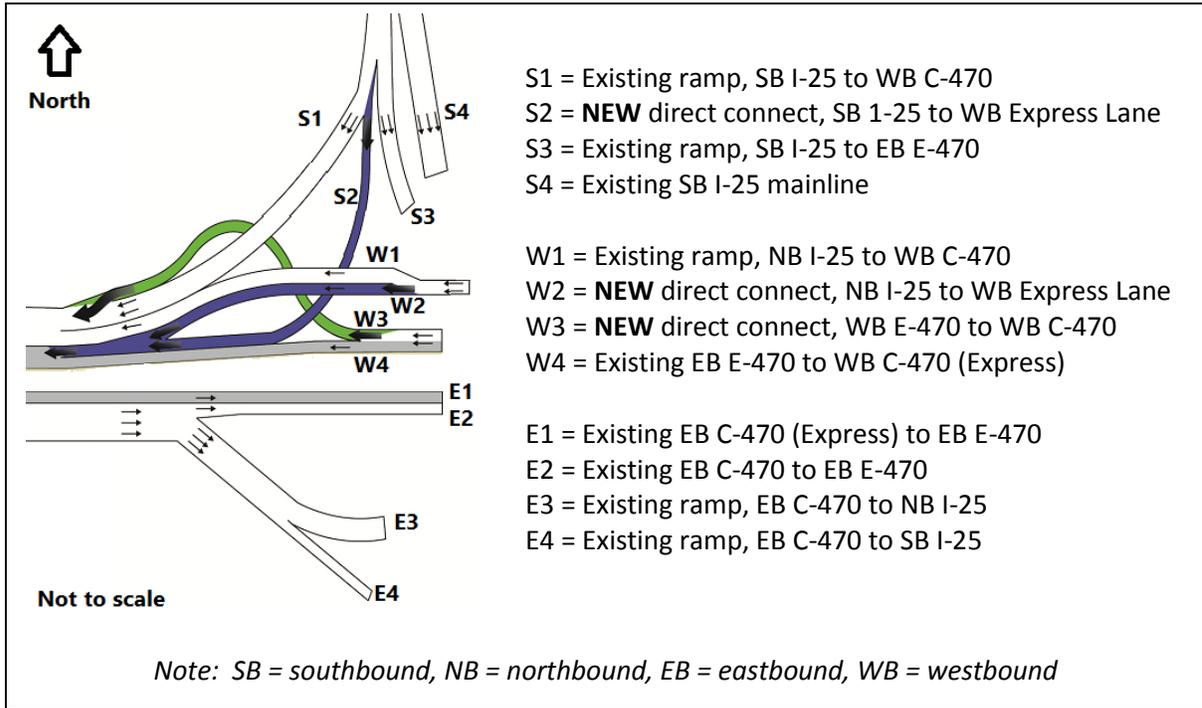


Table 2-1 provides additional details regarding the Proposed Action.

Many engineering details will be decided in the subsequent design-build phase of the project. Unlike conventional project delivery, where the final design is completed and then presented to a construction contractor to build, under design-build delivery the contractor receives preliminary plans which the contractor finalizes in conjunction with the construction process. This can reduce overall costs and delivery time by providing the contractor flexibility to develop time- or money-saving solutions.

Toll rates have not been determined at this stage of project development, but some conceptual information has been developed. At public meetings for this Revised EA, CDOT indicated that peak period toll costs for the full length of the Proposed Action were anticipated to be in the \$4 to \$6 range. Tolls would be lower in off-peak periods.

Another project detail that the Revised EA reported as undecided is the question of whether or not high-occupancy vehicles (HOVs) would be allowed to use the proposed Express Lanes without paying a toll. On October 15, 2015, the Colorado Transportation Commission adopted a resolution indicating that HOV toll exemptions will not be provided on C-470. Updated information on this issue is provided in **Chapter 5, Clarifications to the Revised EA**.

Project Phasing

A phased construction approach will be used. The first phase will construct the Interim configuration in the immediate future. A \$100 million allocation of RAMP funding constitutes the bulk of the available public funding for the first phase. Future toll revenues would pay to complete the ultimate configuration of the Proposed Action.

The first-phase Interim project would provide managed express lanes as follows:

- Westbound, two express lanes from I 25 to Colorado Boulevard (no freeway access there), and one lane from Colorado Boulevard to Wadsworth Boulevard
- Eastbound, one express lane from Platte Canyon Road to I-25

The Ultimate configuration would extend and add lanes to achieve two express lane in each direction between I-25 and Kipling Parkway.

Non-tolled alternatives were carefully considered in both the 2006 EA (CDOT, 2006) and the 2015 Revised EA (CDOT, 2015a), but remain infeasible due to lack of available public funding.

**Table 2-1
Proposed Action Additional Details**

Project Element	Proposed Treatment
Bridges	Most existing C-470 bridges will be widened to accommodate the expanded project lanes and width. However, the two parallel C-470 bridges crossing the South Platte River will need to be fully replaced.
Pavement	All existing pavement will be replaced. Pavement substructure will be improved where necessary.
Ramps	New direct-connect ramps will link I-25 to the westbound express lanes. C-470 improvements will tie into existing interchange on- and off-ramps. No reconstruction will be needed at ramp terminal intersections, except for the Santa Fe Drive westbound onramp to westbound C-470.
Signage	New signage will be needed to provide advance notice of express lane ingress and egress locations. Some signage will be needed outside of the basic project area (i.e., along I-25 northbound and southbound, E-470 eastbound, and eastbound C-470 west of Kipling Parkway).
Electronic tolling equipment	Devices for transponder detection and license plate video surveillance will be installed. There will be no tollbooths and no physical handling of any money onsite.
Variable message signs (VMS)	Several VMS exist along C-470 now and more likely will be added. Congestion information will help motorists decide whether or not to enter or exit the tolled express lanes. Motorists also need to know the currently effective toll rates.
Intelligent transportation systems (ITS)	Various technologies exist on C-470 for traffic management purposes and will also be provided under the Proposed Action, being replaced, relocated or upgraded as necessary.
Ramp metering	Ramp metering exists and is currently used at all C-470 on-ramps except Kipling Parkway. Continued use of ramp metering corridor-wide is anticipated. The Proposed Action does not call for ramp metering at Kipling Parkway, but the Proposed Action would not preclude its installation in the future when warranted.
C-470 trail	Some portions of the existing C-470 trail will need to be relocated outward away from the existing highway. Grade separations will be constructed to take the trail under two arterial cross-streets, Colorado Boulevard and Quebec Street.
Environmental impact mitigation	Stormwater management and water detention facilities will be added. Noise barriers may be installed where deemed to be feasible and reasonable. The project will provide other mitigation as needed (e.g., replacement of impacted wetlands or mature trees). Mitigation commitments are detailed in the Table 2-2 of this Decision Document.

Table 2-2 summarizes the environmental impacts of the Proposed Action and identifies the associated mitigation commitments, together with a determination of the significance of the net impact after mitigation.

**Table 2-2
Summary of Proposed Action Environmental Impacts and Mitigation Commitments**

#, Resource	Impact	Mitigation Commitment
1. Transportation	C-470 congestion due to construction activity	CDOT will maintain at least two through lanes in each direction open for public travel throughout the construction process.
2. Transportation	C-470 temporary closure	Any necessary roadway closures (e.g., possibly for Santa Fe bridge replacement) would be limited to night time and extensive media notice would be provided, with safe detours identified and marked.
3. Transportation	Relocation of 5.8 miles of the C-470 Trail	New sections of trail will be constructed prior to closing any portion of the existing C-470 trail, to avoid disruption. However, closure and detour will be unavoidable where the C-470 Trail and High Line Canal Trail cross C-470 through a shared culvert. See commitment #5, Parks and Recreation, below.
4. Right-of-Way	CDOT would need to acquire 3.48 acres of right-of-way, 31.14 acres of permanent easement, and 15.42 acres of temporary easement.	All right-of-way transactions will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended. A CDOT ROW specialist will be assigned to each property owner to provide assistance with the ROW process.
5. Right-of-Way	Construction activity on temporary easement property may result in damage to that property.	Any temporary easement property disturbed during construction would be restored to its prior condition, or appropriate compensation will be provided.
6. Parks and Recreation	Temporary closure of Mary Carter Greenway Trail, High Line Canal Trail, and Willow Creek Trail	A minimum two-week advance notice would be provided to the South Suburban Parks and Recreation District and the Highlands Ranch Metropolitan District prior to any temporary trail closure. CDOT has identified available detour routes for each closure and would provide signage for trail users to inform them of the detour routes.
7. Parks and Recreation	Temporary closure of the Mary Carter Greenway Trail could conflict with major bicycle events planned by SSPRD.	CDOT's contractor will be required to obtain SSPRD's schedule of major bicycle events scheduled for the Mary Carter Greenway Trail, with the goal of minimizing any construction conflicts with planned major events.
8. Highway Noise	A number of neighborhoods would experience noise impacts (> 66 decibels)	Noise barriers will be constructed where they are found to be reasonable and feasible, and where the majority of benefitted households voting on mitigation favor its installation. In final design, the actual lengths and locations of the recommended mitigation may vary for reasons such as terrain, utilities, property owner desires or easements.

Table 2-2 (continued)
Summary of Proposed Action Environmental Impacts and Mitigation Commitments

#, Resource	Impact	Mitigation Commitment
9. Highway Noise	Construction activities would result in noise and vibration.	CDOT will require its contractor to prepare a mitigation plan for noise and vibration, to consider a number of options identified in Section 4.3.1 of the July 2015 C-470 Revised EA.
10. Air Quality	Construction activities would cause fugitive dust emissions	CDOT would require contractor implementation of dust control practices in accordance with Colorado Air Quality Control Commission Regulation No. 1 on fugitive emissions.
11. Water Quality	Increased runoff due to 120 acres of additional impervious surface	Permanent water quality features will be incorporated into the project's conceptual design to comply with CDOT's MS4 Permit for water quality treatment.
12. Water Quality	Construction activity poses risks for spills, erosion, and other water quality problems during construction.	CDOT will prepare and implement a Stormwater Management Plan (SWMP) detailing how and where temporary BMPs will be used before, during and after construction, including rigorous compliance monitoring.
13. Hydrology and Hydraulics	Increased stormwater runoff could increase flows under C-470.	To prevent flooding, CDOT will replace an existing, undersized 72-inch culvert east of Spring Creek with a larger, 84-inch reinforced concrete pipe culvert to safely convey the estimated 100-year frequency design flow.
14. Floodplains	Replacing C-470 bridges over South Platte may trigger need for a FEMA map revision.	CDOT will prepare a more detailed analysis to determine if a FEMA map revision is required based on the final design of the new bridges. CDOT will prepare a FEMA map revision if needed.
15. Archaeological Resources	Excavation could unearth archaeological resources	If archaeological remains are exposed during any phase of construction, work will be halted in the vicinity and the CDOT Senior Staff Archaeologist will be contacted to evaluate the discovery and coordinate appropriate Section 106 compliance actions with the SHPO and other agencies or entities, as necessary.
16. Paleontological Resources	Excavation could unearth paleontological resources	CDOT will ensure that a qualified paleontologist is on site during major construction excavation to monitor for buried paleontological resources where known fossil-bearing deposits are mapped, but not currently exposed at the ground surface. If any potential fossils are unearthed during construction, work will be halted until the paleontologist can assess the significance of the find and make recommendations regarding resource protection.
17. Geology and Soils	Known conditions along C-470 require consideration in project design.	Geologic and soil conditions will be taken into consideration during final design in accordance with ordinary due diligence in engineering practice. Appropriate design features and construction methods will be used as needed in response to such conditions.
18. Hazardous Materials	During construction, especially excavation, contaminated soil or groundwater could be encountered.	CDOT will require its contractor to develop of a site-specific Materials Handling Plan, in accordance with CDOT's Standard Specifications for Road and Bridge Construction.

Table 2-2 (continued)
Summary of Proposed Action Environmental Impacts and Mitigation Commitments

#, Resource	Impact	Mitigation Commitment
19. Hazardous Materials	Demolition of bridges and other structures may result in exposure to asbestos materials or lead paint.	CDOT will require its contractor to conduct an asbestos hazardous materials survey and a lead paint survey prior to alteration or demolition of bridges, guardrails or sign structures. If found, proper handling and disposal of these materials would be required.
20. Visual and Aesthetic Character	C-470 visual character will become more urban due to new lanes, signage, noise barriers and toll equipment.	CDOT will design corridor improvements in accordance with Region 1 design standards to improve design consistency. If local governments desire to fund localized upgrades above the corridor standards, CDOT will work with them to pursue these possibilities.
21. Utilities	Numerous utility lines under, over or near C-470 would need to be relocated.	The owners of private utility lines within CDOT ROW pay for relocation of their utilities. If utilities are on land newly being acquired for ROW, CDOT pays for the relocation.
22. Common Wildlife	Adding lanes would increase the difficulty of wildlife movement across C-470.	At the South Platte River, existing parallel C-470 bridges will be replaced and the new bridges have been designed specifically to enhance wildlife movement, providing a 10-foot wildlife movement corridor separated from the adjacent Mary Carter Greenway Trail.
23. Common Wildlife	Adding lanes would increase the difficulty of wildlife movement across C-470.	The existing chain link fence that extends from the South Platte River along the north and south side of C-470 would also be replaced to serve as deer fence, directing large mammals to safely cross under C-470 at the South Platte River.
24. Common Wildlife	Adding lanes would increase the difficulty of wildlife movement across C-470.	After construction, re-vegetation near the bridge would include native riparian shrubs such as skunk brush and willow in attempt to attract deer to cross under C-470.
25. Common Wildlife/ Migratory Bird Treaty Act	Construction would occur within 1/3 mile from active nests of Red-Tailed Hawks and possibly other raptors, disturbing their breeding and foraging behaviors.	Prior to construction, CDOT will conduct additional field surveys to confirm the location of active raptor nests. Seasonal construction restrictions and exclusion areas will be established as necessary to comply with CPW buffer recommendations. If restricting construction within nest buffers during the breeding season is not practicable, prior to construction CDOT would coordinate with USFWS and CPW to develop a mitigation strategy to offset potential lost productivity.
26. Common Wildlife/ Migratory Bird Treaty Act	Nests of MBTA-protected birds may be disturbed during construction	Prior to construction, CDOT would survey areas proposed for disturbance for the presence of migratory bird nests. CDOT would avoid disturbing active nests by removing trees and shrubs during the non-nesting season and timing construction activity to avoid active nests during the nesting season.
27. Common Wildlife/ Migratory Bird Treaty Act	Swallow nests on CDOT bridges and in culverts would be disturbed during construction	Bird nests found under existing bridge structures would be removed after August 15, but prior to April 25 for MBTA compliance. To prevent new nest establishment, netting would be installed under bridges and culverts during the non-breeding season or new nests under construction would be visited every three to four days to clear away any initial nest construction and thus prevent new nests from being completed, unless construction activity is continuous on a daily basis during active nesting season.

Table 2-2 (continued)
Summary of Proposed Action Environmental Impacts and Mitigation Commitments

#, Resource	Impact	Mitigation Commitment
28. Common Wildlife/ Aquatic Species	Construction activity would increase turbidity downstream from bridges or culverts, affecting aquatic species.	Construction in riparian areas will be minimized and mitigated in accordance with SB 40 requirements and the SB 40 permit to be obtained from CPW when final design is completed. In compliance with the SB 40 memorandum of agreement, CDOT would apply to CPW for SB 40 Certification at least 60 days prior to construction. Water quality temporary BMPs will be implemented during construction, and permanent BMPs will be incorporated in the project design, improving long-term water quality.
29. Threatened/ Endangered Species	The Proposed Action would displace an estimated 14.3 acres of black-tailed prairie dog colonies.	Colonies in the areas that would be impacted by construction would be re-surveyed for any changes in activity. CDOT would follow the 2009 <i>CDOT Impacted Black-tailed Prairie Dog Policy</i> .
30. Threatened/ Endangered Species	The Proposed Action would displace an estimated 14.3 acres of black-tailed prairie dog colonies.	For colonies that would be only partially affected, prior to construction a visual barrier would be installed between the burrows that would be impacted and undisturbed portions of the colony. Following barrier installation, burrow openings in the construction area would be collapsed. The visual barrier and collapsed burrows encourage abandonment of burrows that would be affected, which would reduce the likelihood of direct effects to individual prairie dogs.
31. Wetlands and Waters of the U.S.	0.70 acres of permanent wetland impacts and 1.30 acres of temporary impacts may occur.	CDOT has already minimized wetland impacts in conceptual design and will strive for further minimization during final design. Clean Water Act Section 401 and 404 permits will be obtained as appropriate. All impacts will be mitigated under CDOT's "no net loss" policy. Wetland replacement within the corridor will be considered but most likely an offsite wetland mitigation bank will be used.
32. Vegetation – Riparian Area	Temporary and permanent impacts to riparian areas could total up to 2.77 acres.	CDOT will develop mitigation plans and submit them to CPW for SB 40 Certification at least 60 days prior to construction.
33. Vegetation – Trees	Loss of hundreds of trees.	Trees not being removed would be protected by erecting plastic barricade fencing to prevent damage. In riparian areas, removed native trees at least two inches in diameter at breast height would be replaced on-site on a one-to-one basis. Trees four or more inches in diameter removed from non-riparian areas would be replaced elsewhere in the project area.
34. Vegetation	Construction of the Proposed Action would damage roadside vegetation	Areas temporarily disturbed during construction would be seeded after construction with a native seed mix reviewed and approved by a CDOT landscape architect. Seeding would occur during appropriate seasons to ensure that seeds take root and germinate during the next growing season. If out of season, the earth would be protected from erosion with mulch and mulch tackifier. Permanent seeding would occur throughout the project.

Table 2-2 (continued)
Summary of Proposed Action Environmental Impacts and Mitigation Commitments

#, Resource	Impact	Mitigation Commitment
35. Vegetation – Noxious Weeds	Soil disturbance and importation of construction equipment would enable the spread of noxious weeds, already a problem along C-470.	Prior to construction, CDOT will update its weed mapping of the project area and prepare a current Integrated Noxious Weed Management Plan. The plan will include a variety of species-specific control methods based on the size of the weed populations and the surrounding landscape. The plan will be implemented throughout project construction as appropriate. Following construction, mitigated sites will be monitored at least twice over the first growing season and follow-up weed control will be provided where needed.
36. Section 4(f) Resources	Construction of Proposed Action would involve reconstruction of Mary Carter Greenway Trail (transportation enhancement exception), plus temporary closure (temporary occupancy exceptions) for High Line Canal Trail and Willow Creek Trail.	CDOT will work with its contactor to minimize closure durations. CDOT has identified available detour routes for each closure and would provide signage for trail users to inform them of the detour routes. These signs will be posted at least two weeks in advance of any trail closure. CDOT and the contractor will coordinate with the entities that operate these trails (HRMD and SSPRD) to confirm route and sign locations. The contractor will be required to obtain SSPRD’s schedule of major events on the Mary Carter Greenway Trail for use in planning to minimize conflicts.