Appendix A
Summary of Mitigation Commitments

Summary of Mitigation Commitments

No mitigation measures specific to environmental justice or 100-year floodplains are needed based on the discussion and analysis within this Environmental Assessment. CDOT will avoid and minimize negative adverse impacts to visual resources by incorporating I-70 Mountain Corridor Context Sensitive Solutions Aesthetic Guidance into the project design. The criteria describe mitigation measures for potential impacts on visual resources that could arise from future operations and construction activities. Mitigation strategies for direct and indirect impacts to the resources studied in the cumulative impacts analysis are addressed in their respective resource sections in Chapter 3 of this Environmental Assessment. With implementation of the mitigation strategies documented in Chapter 3 and Appendix A, the adverse cumulative impacts identified for the Proposed Action would be negligible to minor.

The attached table summarizes the potential activities and associated impacts that may occur with the Proposed Action, and the mitigation measures identified by the Colorado Department of Transportation (CDOT) and Federal Highway Administration (FHWA) to eliminate or minimize impacts of the Proposed Action.

Colorado Department of Transportation Mitigation Commitment Monitoring and Reporting

Project Information

Project Name:	**I-70 Twin Tunnels Environmental Assessment**
Environmental	**David Singer**
Project Number:	**C0703-379**
Document Type and	**EA/FONSI**
Project Phase:	**Planning**

											Mitigation Status		Agency Coordination			
Mitigation Commitment #	**Mitigation Category**	**Activity Triggering Mitigation**	**Location of Activity Triggering Mitigation**	**Impact from NEPA Document**	**Commitment From Mitigation Table In Source Document Use Exact Wording from Table in Source Document**	**Responsible Agency**	**Life Cycle Phase Mitigation to be Constructed**	**Source Document of Mitigation Commitment and Page Number**	**Location of Mitigation(s) in Plan Sheets/Specs Include All Page Numbers that Apply**	**Date Mitigation Completed (or Anticipated)**	**Name of Person Completing Mitigation**	**Agency Coordination Completed?**	**Name of Each Agency**	**Comments**	**Status**
1	Air Quality	Increase in I-70 Future Traffic Volumes.	Within Twin Tunnels project limits.	Re-entrained road dust (PM_{10}) will increase approximately in proportion to increased traffic volumes.	CDOT has a maintenance yard north of I-70 at the Hidden Valley Interchange (Exit 243) and will implement measures to minimize any trackout by CDOT vehicles at that location.	CDOT	Post-construction	Twin Tunnels Environmental Assessment Page 3.8-6							
2	Air Quality	Increase in I-70 Future Traffic Volumes.	Within Twin Tunnels project limits.	Re-entrained road dust (PM_{10}) will increase approximately in proportion to increased traffic volumes.	When road closures occur, CDOT maintenance crews may have an opportunity to clean the roadway, if this can safely be done in conjunction with the other activities at the site. CDOT can station and maintain a street sweeper at its Hidden Valley maintenance yard for this purpose.	CDOT	Post-construction	Twin Tunnels Environmental Assessment Page 3.8-6							
3	Air Quality	Increase in I-70 Future Traffic Volumes.	Within Twin Tunnels project limits.	Re-entrained road dust (PM_{10}) will increase approximately in proportion to increased traffic volumes.	In the I-70 Twin Tunnels area, CDOT will continue its ongoing practice of minimizing the use of road sanding as safety permits.	CDOT	Post-construction	Twin Tunnels Environmental Assessment Page 3.8-6							
4	Air Quality	Operation of eastbound I-70 detour during construction.	CR 314 between the Doghouse Rail Bridge and Hidden Valley interchange.	Emissions closer to nearby residences and immediately adjacent to a temporary shared use path.	CDOT will review the detour route and utilize Best Management Practices to minimize opportunities for fugitive dust to reach the roadway.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.8-7							
5	Air Quality	Operation of eastbound I-70 detour during construction.	CR 314 between the Doghouse Rail Bridge and Hidden Valley interchange.	Emissions closer to nearby residences and immediately adjacent to a temporary shared use path.	CDOT will ensure that roadside soils are stabilized and that the detour route is swept prior to opening CR 314 for detour use.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.8-7							
6	Air Quality	Construction activities involving earth moving and storage of fill and rock products.	Within Twin Tunnels project limits.	Fugitive dust and potential disturbance of mine tailings in the project area.	Require the contractor to prepare and implement a fugitive dust control plan that includes wetting of disturbed areas	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.8-7							
7	Air Quality	Construction activities involving earth moving and storage of fill and rock products.	Within Twin Tunnels project limits.	Fugitive dust and potential disturbance of mine tailings in the project area.	Require the contractor to minimize construction activities in or near tailing areas	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.8-7							
8	Air Quality	Commuting of construction workers.	Twin Tunnels project area.	Increased vehicle emissions.	Require the contractor to prepare a plan indicating where construction workers will park their personal vehicles and how they will shuttle or otherwise efficiently be transported to and from the work site to begin and end their shifts.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.8-7							
9	Air Quality	Tunnel blasting operations.	Twin Tunnels eastbound bore.	Increased risk of exposure of dust emissions to nearby residents and recreational users.	In accordance with Colorado Air Quality Regulation No. 1 (5CCR1001-3), CDOT will use all available practical methods which are technically feasible and economically reasonable in order to minimize fugitive dust emissions from blasting activities.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.8-7							
10	Air Quality	Tunnel blasting operations.	Twin Tunnels eastbound bore.	Increased risk of exposure of dust emissions to nearby residents and recreational users.	CDOT will conduct PM_{10} monitoring to assess the impacts of tunnel excavation, using the data for adaptive mitigation. See additional discussion above.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.8-7							
11	Aquatic Resources	Runoff (including sedimentation) from roadway during operations.	Twin Tunnels project area.	Impacts to aquatic resources as a result of water quality degradation.	Hazardous spill containment structure locations have been identified and BMPs will be installed to reduce hazardous waste discharge to Clear Creek.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.11-4							
12	Aquatic Resources	Runoff (including sedimentation) from roadway during operations.	Twin Tunnels project area.	Impacts to aquatic resources as a result of water quality degradation.	CDOT will implement the adaptive mitigation identified in the Clear Creek Sediment Control Action Plan, which allows for flexibility in the number, sizing, type, and locations of BMP structures, while controlling all drainage entering Clear Creek.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.11-4							
13	Aquatic Resources	Runoff (including sedimentation) from roadway during operations.	Twin Tunnels project area.	Impacts to aquatic resources as a result of water quality degradation.	Three different drainage inlet sediment trap concept designs have been developed to accommodate various drainage conditions anticipated for the Proposed Action. These traps will be installed as part of the drainage system in locations where surface water is discharged to Clear Creek. Locations for surface sediment basins have also been identified in the plan and will be constructed as part of the drainage system.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.11-4							
14	Aquatic Resources	Retaining wall construction during brown trout spawning (October through June).	Areas adjacent to and immediately upstream from brown trout redds.	Sedimentation from erosion of disturbed soils covering eggs incubating in the stream substrate.	CDOT will discuss with CPW the possibility of a spawning survey during the fall of 2012 to locate active redds within and immediately downstream from the Proposed Action.	CDOT/CPW	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.11-4							
15	Aquatic Resources	Retaining wall construction during brown trout spawning (October through June).	Areas adjacent to and immediately upstream from brown trout redds.	Sedimentation from erosion of disturbed soils covering eggs incubating in the stream substrate.	Erosion control BMPs will be established at each retaining wall location to avoid or minimize sedimentation within Clear Creek.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.11-4							
16	Aquatic Resources	Runoff from construction	Throughout the study area.	Impacts to aquatic resources as a result of water quality degradation.	CDOT will implement appropriate BMPs for erosion and sediment control according to the CDOT Erosion Control and Storm Water Quality Guide (CDOT, 2002), develop a stormwater management plan (which includes water quality monitoring) and use adaptive mitigation identified in the Clear Creek Sediment Control Action Plan. The latter allows for flexibility in the number, sizing, type, and locations of BMP structures, while controlling all drainage entering Clear Creek, where feasible.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.11-4							
17	Energy	Maintenance.	Twin Tunnels project area.	Fuel consumption and GHG emissions due to idling vehicles.	CDOT will conduct maintenance activities when feasible during periods of reduced traffic volumes to reduce idling vehicles.	CDOT	Post-construction	Twin Tunnels Environmental Assessment Page 3.19-5							
18	Energy	Maintenance.	Twin Tunnels project area.	Fuel consumption and GHG emissions due to maintenance vehicles and equipment.	CDOT will keep its maintenance equipment well-maintained and will use cleaner fuels, such as low-sulfur diesel, when possible.	CDOT	Post-construction	Twin Tunnels Environmental Assessment Page 3.19-5							
19	Energy	Operation of construction equipment.	Twin Tunnels project area and staging areas.	Fuel consumption and GHG emissions.	CDOT will require the contractor to use the cleanest fuels available at the time in construction equipment and construction vehicles to reduce emissions. CDOT will encourage the contractor to use fuel-efficient construction vehicles (for example, low sulfur fuel, biodiesel, or hybrid technologies).	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.19-5							
20	Energy	Operation of construction equipment.	Twin Tunnels project area and staging areas.	Fuel consumption and GHG emissions due to poorly performing construction equipment.	CDOT will require the contractor to keep construction equipment well maintained.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.19-5							
21	Energy	Operation of construction equipment.	Twin Tunnels project area and staging areas.	Fuel consumption and GHG emissions due to idling of construction equipment.	CDOT will require the contractor to prepare a cost/benefit analysis on retrofitting construction vehicles and equipment to reduce emissions and plan to minimize the idling of construction equipment.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.19-5							
22	Energy	Commuting of construction workers	Twin Tunnels project area and staging areas.	VMT due to workers commuting to construction staging areas.	CDOT will require the contractor to prepare a plan indicating where construction workers will park their personal vehicles and how they will shuttle or otherwise efficiently be transported to and from the work site to begin and end their shifts.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.19-5							
23	Energy	Travel between project area and staging areas.	Twin Tunnels project area and staging areas.	Construction equipment VMT.	Staging areas will be located as close as possible to the project area.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.19-5							
24	Energy	Hauling of construction materials and detritus.	Surrounding the Twin Tunnels project area.	Construction equipment VMT.	CDOT will encourage the use of closest source for aggregates and other materials, and the closest location for unloading of tunnel detritus.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.19-5							
25	Energy	Production of construction material.	Twin Tunnels project area and staging areas.	Fuel consumption and GHG emissions.	CDOT will encourage use of alternative fuels and asphalt binders.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.19-6							
26	Energy	Traffic management during construction.	I-70 approaching Twin Tunnels project area from east or west.	Fuel consumption and GHG emissions due to idling vehicles.	CDOT will implement traffic management techniques that minimize motorist delays and vehicle idling (see mitigation measures in Section 3.1, *Transportation and Safety*).	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.19-6							
27	Energy	Maintenance.	Project area.	Fuel consumption and GHG emissions due to idling vehicles.	CDOT will conduct maintenance activities when feasible during periods of reduced traffic volumes to reduce idling vehicles.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.19-6							

Colorado Department of Transportation Mitigation Commitment Monitoring and Reporting

Project Information

Project Name:	**I-70 Twin Tunnels Environmental Assessment**
Environmental	**David Singer**
Project Number:	**C0703-379**
Document Type and	**EA/FONSI**
Project Phase:	**Planning**

											Mitigation Status		Agency Coordination			
Mitigation Commitment #	**Mitigation Category**	**Activity Triggering Mitigation**	**Location of Activity Triggering Mitigation**	**Impact from NEPA Document**	**Commitment From Mitigation Table In Source Document Use Exact Wording from Table in Source Document**	**Responsible Agency**	**Life Cycle Phase Mitigation to be Constructed**	**Source Document of Mitigation Commitment and Page Number**	**Location of Mitigation(s) in Plan Sheets/Specs Include All Page Numbers that Apply**		**Date Mitigation Completed (or Anticipated)**	**Name of Person Completing Mitigation**	**Agency Coordination Completed?**	**Name of Each Agency**	**Comments**	**Status**
28	Geology	New rock cuts and widened tunnel portals.	New rock cuts along I-70 and CR 314.	Exposure to potential rockfall hazards can pose a safety risk to the public. Large failures can cause road closures and increased maintenance.	Incorporate permanent rockfall mitigation during construction and in the design of the new portals. Prior to blasting, the rock mass will be evaluated for the likelihood of rock fall occurring.	CDOT	Final Design, Construction Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.17-5								
29	Geology	New rock cuts and widened tunnel portals.	New rock cuts along I-70 and CR 314.	Exposure to potential rockfall hazards can pose a safety risk to the public. Large failures can cause road closures and increased maintenance.	Use proven techniques (such as rockfall catchments, mesh, cable netting, fences, scaling, and blasting) to address rockfall from cut slope areas.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.17-5								
30	Geology	Tunnel portal excavation and construction of new slopes and new retaining walls.	Excavations at proposed fill walls, temporary median walls, tiered cut wall along CR 314, and the Twin Tunnels portals. Fill slopes occur throughout the study area.	Erosion can increase sediment transport through stormwater runoff into Clear Creek.	Manage erosion and surface water away from water sources and ensure BMPs are in place to prevent migration of sediment from waste piles, slopes and excavations.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.17-6								
31	Geology	Tunnel portal excavation and construction of new slopes and new retaining walls.	Excavations at proposed fill walls, temporary median walls, tiered cut wall along CR 314, and the Twin Tunnels portals. Fill slopes occur throughout the study area.	Erosion can increase sediment transport through stormwater runoff into Clear Creek.	Implement BMPs for stormwater runoff.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.17-6								
32	Geology	New rock cuts.	New rock cuts along I-70 and CR 314.	Exposure to potential rockfall hazards can pose a safety risk to the public. Large failures during construction can cause road closures and maintenance.	Temporary construction BMPs will be utilized to minimize this potential.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.17-6								
33	Historic Resources	Tunnel expansion.	Twin Tunnels eastbound bore.	Adverse effect to the Twin Tunnels historic property.	Fulfill stipulations of the Memorandum of Agreement developed for the Twin Tunnels project	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.6-5								
34	Historic Resources	Ground-disturbing construction activities that result in unexpected discovery of cultural remains that could have historic significance or be important to Native American tribes.	Within Twin Tunnels project limits.	Inadvertent damage to historic properties.	Follow Section 107.23 of CDOT's Standard Specifications for Road and Bridge Construction regarding procedures for emergency discoveries during construction.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.6-5								
35	Historic Resources	Ground-disturbing construction activities that result in unexpected discovery of cultural remains that could have historic significance or be important to Native American tribes.	Within Twin Tunnels project limits.	Inadvertent damage to historic properties.	Follow process outlined in 36 CFR 800.12 regarding Section 106 compliance during emergency situations.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.6-5								
36	Historic Resources	Construction on I-70 and detour route.	CR 314 along detour route.	Damage to locally important sites.	Ahead of any construction activity, walk through project area with Clear Creek County historian(s) to identify sites that should be protected during construction.	CDOT	Phase 1	Twin Tunnels Environmental Assessment Page 3.6-5								
37	Historic Resources	Construction on I-70 and detour route.	CR 314 along detour route.	Damage to locally important sites.	Fence locally important sites to protect them from construction damage.	CDOT	Phase 1	Twin Tunnels Environmental Assessment Page 3.6-5								
38	Land Use and Right-of-Way	Property acquisition	Chain station reconstruction west of Twin Tunnels.	Acquisition of undevelopable property.	CDOT will comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.	CDOT	Phase 1	Twin Tunnels Environmental Assessment Page 3.4-6								
39	Land Use and Right-of-Way	Operation of detour on CR 314.	CR 314 between Doghouse Rail Bridge and Hidden Valley Interchange.	Loss of local access for local travelers on CR 314.	CDOT will provide a detailed construction and detour plan to residents and business owners in the surrounding area as far in advance as possible.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.4-6								
40	Land Use and Right-of-Way	Operation of detour on CR 314.	CR 314 between Doghouse Rail Bridge and Hidden Valley Interchange.	Loss of local access for local travelers on CR 314.	CDOT will provide safe, effective, well-placed, and highly visible directional signage for access to properties along CR 314 during the detour.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.4-6								
41	Noise	Capacity Improvements that meet the definition of a Type I Project.	I-70 adjacent to Scott Lancaster Bridge.	Continued noise levels in exceedance of CDOT noise abatement criteria.	Construct a noise wall proceeding west from the west portal of the eastbound tunnel to reduce noise levels at the Scott Lancaster Bridge.	CDOT	Phase 3	Twin Tunnels Environmental Assessment Page 3.9-6								
42	Noise	Nighttime construction.	Adjacent to residential receptors at Hidden Valley and west tunnel portal.	Nighttime construction noise at residential receptors.	Limit night work to areas away from residences at Hidden Valley and west portal when feasible.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.9-6								
43	Noise	Nighttime construction.	Adjacent to residential receptors at Hidden Valley and west tunnel portal.	Nighttime construction noise at residential receptors.	Require contractor to use well-maintained. equipment, particularly with respect to mufflers	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.9-6								
44	Noise	Nighttime construction.	Adjacent to residential receptors at Hidden Valley and west tunnel portal.	Nighttime construction noise at residential receptors.	Install temporary noise barriers where applicable.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.9-6								
45	Noise	Nighttime construction.	Adjacent to residential receptors at Hidden Valley and west tunnel portal.	Nighttime construction noise at residential receptors.	Provide residents hotel vouchers during periods of nighttime construction.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.9-6								
46	Noise	Tunnel blasting.	Twin Tunnels eastbound bore.	Noise impacts at nearby residences and recreation facilities.	Develop a communication protocol in coordination with Idaho Springs, Clear Creek County, and law enforcement agencies to inform local residents, businesses, and the traveling public about blasting schedules. Consider the use of Variable Message Signs and the use of websites and media outlets.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.9-6								
47	Noise	Tunnel blasting.	Twin Tunnels eastbound bore.	Noise impacts at nearby residences and recreation facilities.	During initial blasting at the entrance to the western portal the contractor should monitor the air blast overpressure at business structures susceptible to damage. At that time an engineer should make a determination of potential risks and need for additional mitigation.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.9-6								
48	Noise	Tunnel blasting.	Twin Tunnels eastbound bore.	Noise impacts at nearby residences and recreation facilities.	During initial blasting at the entrance to the western portal CDOT will consider monitoring 24-hour noise levels at sensitive receptors to determine if additional temporary mitigation is required.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.9-6								
49	Paleontology	Discovery of subsurface bones or other potential fossils.	Twin Tunnels project area.	Disturbance of paleontological resources.	Halt work and contact CDOT Staff Paleontologist to assess significance and make recommendations.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.0-1								
50	Recreation Resources	Realignment of I-70.	I-70 west of Hidden Valley Interchange.	Reduction in long-term recreational river access due to removal of "Below Box" Boating Access.	Do not preclude long-term use of other fishing and boating access locations in the study area to preserve adequate recreational river access	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.5-6								
51	Recreation Resources	SCAP improvements.	Kermitts Boating Access on Clear Creek near junction of US 6 and I-70.	Potential for reduced parking capacity.	Implement SCAP improvements so as not to preclude long-term use of the area for boating access to Clear Creek.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.5-6								
52	Recreation Resources	SCAP improvements.	Kermitts Trailhead (planned) near junction of US 6 and I-70	Potential for reduced parking capacity.	Implement SCAP improvements so as not to preclude long-term use of the area for trail access	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.5-6								

Colorado Department of Transportation Mitigation Commitment Monitoring and Reporting

Project Information

Project Name:	**I-70 Twin Tunnels Environmental Assessment**
Environmental	**David Singer**
Project Number:	**C0703-379**
Document Type and	**EA/FONSI**
Project Phase:	**Planning**

											Mitigation Status		Agency Coordination			
Mitigation Commitment #	**Mitigation Category**	**Activity Triggering Mitigation**	**Location of Activity Triggering Mitigation**	**Impact from NEPA Document**	**Commitment From Mitigation Table In Source Document Use Exact Wording from Table in Source Document**	**Responsible Agency**	**Life Cycle Phase Mitigation to be Constructed**	**Source Document of Mitigation Commitment and Page Number**	**Location of Mitigation(s) in Plan Sheets/Specs Include All Page Numbers that Apply**	**Date Mitigation Completed (or Anticipated)**	**Name of Person Completing Mitigation**	**Agency Coordination Completed?**	**Name of Each Agency**	**Comments**	**Status**
53	Recreation Resources	Operation of eastbound I-70 detour during construction.	On old US 40 between the Scott Lancaster Bridge and Doghouse Rail Bridge (game check area).	Resurfacing and closure of the game check area and Scott Lancaster Memorial Trail alignment for use as a temporary detour route for interstate traffic during construction.	Provide a temporary trail detour along CR 314 between the water treatment plant and the Doghouse Rail Bridge to maintain access for pedestrians and bicyclists during construction. Provide an anchored concrete barrier between the Scott Lancaster Bridge and detour traffic to protect the bridge from errant vehicles.	CDOT	Phase 1 and Phase 2	Twin Tunnels Environmental Assessment Page 3.5-7							
54	Recreation Resources	Operation of eastbound I-70 detour during construction.	On old US 40 between the Scott Lancaster Bridge and Doghouse Rail Bridge (game check area).	Resurfacing and closure of the game check area and Scott Lancaster Memorial Trail alignment for use as a temporary detour route for interstate traffic during construction.	Restore the game check area after construction so as not to preclude the trail connection or the planned recreational improvements for this site.	CDOT	Phase 3	Twin Tunnels Environmental Assessment Page 3.5-7							
55	Recreation Resources	Operation of eastbound I-70 detour during construction.	On old US 40 between the Scott Lancaster Bridge and Doghouse Rail Bridge (game check area).	Resurfacing and closure of the game check area and Scott Lancaster Memorial Trail alignment for use as a temporary detour route for interstate traffic during construction.	Continue coordination with Clear Creek County regarding the restoration of the game check area.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.5-7							
56	Recreation Resources	Operation of eastbound I-70 detour during construction.	On CR 314 between the Doghouse Rail Bridge and Hidden Valley Interchange.	Loss of recreational use of the Scott Lancaster Memorial Trail due to resurfacing of trail alignment for use as a temporary detour route for interstate traffic during construction.	Provide a barrier-separated, paved, 8-foot wide shared use path to maintain pedestrian and bicycle access during construction.	CDOT	Phase 1 and Phase 2	Twin Tunnels Environmental Assessment Page 3.5-7							
57	Recreation Resources	Operation of eastbound I-70 detour during construction.	On CR 314 between the Doghouse Rail Bridge and Hidden Valley Interchange.	Loss of recreational use of the Scott Lancaster Memorial Trail due to resurfacing of trail alignment for use as a temporary detour route for interstate traffic during construction.	After eastbound interstate traffic is returned to the I-70 corridor, CDOT will restore the Scott Lancaster Memorial Trail to existing conditions (which include I-70 Frontage Road Phase 1 improvements)	CDOT	Phase 3	Twin Tunnels Environmental Assessment Page 3.5-7							
58	Recreation Resources	Operation of eastbound I-70 detour during construction.	On CR 314 between the Doghouse Rail Bridge and Hidden Valley Interchange.	Temporary closure of Unnamed Fishing Access 400 feet east of the Doghouse Rail Bridge and Unnamed Boating Access 1,400 feet east of the Doghouse Rail Bridge.	Restore accesses after construction so as not to preclude long-term use of the area for fishing and boating access to Clear Creek. The Unnamed Boating Access, which will be formalized with six parking spaces during the Frontage Road Phase 1 improvements, will be restored to that condition.	CDOT	Phase 3	Twin Tunnels Environmental Assessment Page 3.5-7							
59	Recreation Resources	Construction and restoration of I-70 detour route and construction of retaining wall along CR 314	On CR 314 between Doghouse Rail Bridge and Hidden Valley Interchange	Resurfacing of trail alignment resulting in potential construction-related delays for pedestrians and bicycles on the Scott Lancaster Memorial Trail	Maintain pedestrian and bicycle access during construction and restoration of I-70 detour route and construction of retaining wall along CR 314. During these construction activities, one lane on the frontage road will be available for pedestrian, bicycle, and vehicular traffic and this lane will be managed using flaggers to direct two-way operation of traffic.	CDOT	Phase 1, Phase 3	Twin Tunnels Environmental Assessment Page 3.5-7							
60	Recreation Resources	Construction and restoration of grade changes on CR 314.	On CR 314 near Doghouse Rail Bridge and curve west of Hidden Valley Interchange.	Temporary impediment to recreational trail activities due to closure of Scott Lancaster Memorial Trail.	During construction and restoration of grade changes on CR 314, pedestrians and bicycles will be accommodated by shuttle through the project area to minimize disruption to recreational trail activities.	CDOT	Phase 1, Phase 3	Twin Tunnels Environmental Assessment Page 3.5-7							
61	Recreation Resources	Rock blasting; I-70 Clear Creek bridge demolition, girder, and deck work; Doghouse Rail Bridge rehabilitation.	Twin Tunnels vicinity and west of Hidden Valley Interchange	Temporary impediment to recreational river activities including boating and fishing due to periodic closures of Clear Creek.	Unless necessitated by safety concerns, river closures due to rock blasting, bridge demolition, or bridge rehabilitation, will not occur during rafting season (June through August).	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.5-8							
62	Recreation Resources	Rock blasting; I-70 Clear Creek bridge demolition, girder, and deck work; Doghouse Rail Bridge rehabilitation.	Twin Tunnels vicinity and west of Hidden Valley Interchange	Temporary impediment to recreational river activities including boating and fishing due to periodic closures of Clear Creek.	CDOT will coordinate with rafting companies prior to construction to develop communication protocols in the event of unanticipated river closures during rafting season. If river closures are necessary during rafting season, CDOT will communicate with rafting companies in accordance with previously agreed upon protocols	CDOT	Phase 1	Twin Tunnels Environmental Assessment Page 3.5-8							
63	Recreation Resources	Rock blasting; I-70 Clear Creek bridge demolition, girder, and deck work; Doghouse Rail Bridge rehabilitation.	Twin Tunnels vicinity and west of Hidden Valley Interchange	Temporary impediment to recreational river activities including boating and fishing due to periodic closures of Clear Creek.	Construction areas near the banks of the creek will be fenced off to prevent access by anglers or other pedestrians.	CDOT	Phase 1 and Phase 2	Twin Tunnels Environmental Assessment Page 3.5-8							
64	Recreation Resources	Rock blasting; I-70 Clear Creek bridge demolition, girder, and deck work; Doghouse Rail Bridge rehabilitation.	Twin Tunnels vicinity and west of Hidden Valley Interchange	Temporary impediment to recreational river activities including boating and fishing due to periodic closures of Clear Creek.	Temporary signage will be placed along Clear Creek to warn recreationalists of rock blasting activities and provide sources of information on the project and potential river closures.	CDOT	Phase 1 and Phase 2	Twin Tunnels Environmental Assessment Page 3.5-8							
65	Recreation Resources	Rock blasting; I-70 Clear Creek bridge demolition, girder, and deck work; Doghouse Rail Bridge rehabilitation.	Twin Tunnels vicinity and west of Hidden Valley Interchange	Temporary impediment to recreational river activities including boating and fishing due to periodic closures of Clear Creek.	A safety-critical zone will be established in the vicinity of rock blasting. Cyclists, pedestrians, and anglers will be evacuated from this zone before, during, and after rock blasting (approximately 30 minute durations).	CDOT	Phase 1 and Phase 2	Twin Tunnels Environmental Assessment Page 3.5-8							
66	Recreation Resources	Foundation work for I-70 bridge over Clear Creek.	I-70 bridge west of Hidden Valley Interchange.	Temporary inconvenience to recreational river activities including boating and fishing due to construction activities adjacent to and over Clear Creek.	Spotters will be stationed upstream of the bridge to alert boaters of the construction and alert construction crews of approaching boats.	CDOT	Phase 1 and Phase 2	Twin Tunnels Environmental Assessment Page 3.5-8							
67	Recreation Resources	Foundation work for I-70 bridge over Clear Creek.	I-70 bridge west of Hidden Valley Interchange.	Temporary inconvenience to recreational river activities including boating and fishing due to construction activities adjacent to and over Clear Creek.	Construction activities that present a safety risk to boaters will be stopped temporarily until the boaters have passed through the construction area. CDOT will coordinate with rafting companies regarding protocols for on-river communication between spotters and boaters during construction.	CDOT	Phase 1 and Phase 2	Twin Tunnels Environmental Assessment Page 3.5-8							
68	Recreation Resources	Foundation work for I-70 bridge over Clear Creek.	I-70 bridge west of Hidden Valley Interchange.	Temporary inconvenience to recreational river activities including boating and fishing due to construction activities adjacent to and over Clear Creek.	Construction areas near the banks of the creek will be fenced off to prevent access by anglers or other pedestrians.	CDOT	Phase 1 and Phase 2	Twin Tunnels Environmental Assessment Page 3.5-8							
69	Recreation Resources	Construction staging.	Kermitts Trailhead near US 6/I-70 Interchange.	Temporary construction-related delays and inconvenience and reduction in parking capacity.	Maintain trail access and some parking capacity.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.5-8							
70	Recreation Resources	Construction staging.	Kermitts Trailhead near US 6/I-70 Interchange.	Temporary construction-related delays and inconvenience and reduction in parking capacity.	Restore area after construction so as not to preclude long-term use of the area for trail access.	CDOT	Phase 3	Twin Tunnels Environmental Assessment Page 3.5-8							
71	Recreation Resources	Construction staging.	Kermitts Boating Access on Clear Creek near US 6/I-70 Interchange.	Temporary construction-related delays and inconvenience and reduction in parking capacity.	Maintain boating access and some parking capacity.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.5-8							
72	Recreation Resources	Construction staging.	Kermitts Boating Access on Clear Creek near US 6/I-70 Interchange.	Temporary construction-related delays and inconvenience and reduction in parking capacity.	Restore area after construction so as not to preclude long-term use of the area for boating access.	CDOT	Phase 3	Twin Tunnels Environmental Assessment Page 3.5-8							
73	Regulated Materials	Construction, including excavation associated with retaining walls and bridge abutments.	Throughout the study area.	Potential mine wastes located within areas of excavation.	Complete a project-specific Materials Management Plan (MMP) that details site-specific standard operating procedures regarding the identification, sampling, handling, and disposal of mine-related wastes that could be encountered during construction of this project.	CDOT	Phase 1	Twin Tunnels Environmental Assessment Page 3.18-5							

Colorado Department of Transportation Mitigation Commitment Monitoring and Reporting

Project Information

Project Name:	**I-70 Twin Tunnels Environmental Assessment**
Environmental	**David Singer**
Project Number:	**C0703-379**
Document Type and	**EA/FONSI**
Project Phase:	**Planning**

											Mitigation Status		Agency Coordination			
Mitigation Commitment #	**Mitigation Category**	**Activity Triggering Mitigation**	**Location of Activity Triggering Mitigation**	**Impact from NEPA Document**	**Commitment From Mitigation Table In Source Document Use Exact Wording from Table in Source Document**	**Responsible Agency**	**Life Cycle Phase Mitigation to be Constructed**	**Source Document of Mitigation Commitment and Page Number**	**Location of Mitigation(s) in Plan Sheets/Specs Include All Page Numbers that Apply**		**Date Mitigation Completed (or Anticipated)**	**Name of Person Completing Mitigation**	**Agency Coordination Completed?**	**Name of Each Agency**	**Comments**	**Status**
74	Regulated Materials	Construction, including excavation associated with retaining walls and bridge abutments.	Throughout the study area.	Potential mine wastes located within areas of excavation.	Complete a Health and Safety Plan (HSP) to address potential mine wastes that could be uncovered during construction.	CDOT	Phase 1	Twin Tunnels Environmental Assessment Page 3.18-5								
75	Regulated Materials	Construction, including excavation associated with retaining walls and bridge abutments.	Throughout the study area.	Potential mine wastes located within areas of excavation.	Implement BMPs to prevent potential mine wastes from being exposed in the air (dust suppression) or impacting surface waters, in particular Clear Creek (Stormwater Management Plan [SWMP])	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.18-5								
76	Regulated Materials	Construction, including excavation associated with retaining walls and bridge abutments.	Throughout the study area.	Potential mine wastes located within areas of excavation.	Workers on this project must follow CDOT Specification 250 – Environmental, Health, and Safety Management during excavation activities at this site.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.18-5								
77	Regulated Materials	Construction and maintenance of Twin Tunnels.	Groundwater drainage discharging into box culvert east of Twin Tunnels.	Groundwater containing naturally occurring metals that exceeds surface water standards continues to drain. The expanded bore may cause a change in discharge rate and chemistry of water.	Seek opportunities to utilize adaptive mitigation during design to eliminate daylight discharge, thus avoiding permitting.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.18-5								
78	Regulated Materials	Construction and maintenance of Twin Tunnels.	Groundwater drainage discharging into box culvert east of Twin Tunnels.	Groundwater containing naturally occurring metals that exceeds surface water standards continues to drain. The expanded bore may cause a change in discharge rate and chemistry of water.	If discharge cannot be eliminated, permitting through the CDPHE may be required, including a CDPHE Subterranean Permit.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.18-5								
79	Regulated Materials	Exposure of mineralized rock.	Tunnel excavation and subsequent handling of excavated rock.	Impacts to water resources due to the introduction of mineralized materials.	Encapsulate mineralized rock generated during blasting activities beneath the roadway pavement, away from groundwater, to prevent chemical reactions that could dissolve contaminants into the water. Such interactions could cause the release of contaminants and migration into Clear Creek. If encapsulation is not feasible, mineralized rock will be removed from the project area to an appropriate disposal site.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.18-5								
80	Regulated Materials	Blasting of Twin Tunnels.	Twin Tunnels expanded bore.	Excessive vibration resulting from blasting activities could damage underground storage tanks associated with the Idaho Springs Wastewater Treatment Plant.	Contractor will comply with project specifications for vibration thresholds at adjacent structures and complete appropriate monitoring during blasting activities to evaluate effects. Adjustments to blasting program may be necessary to eliminate impacts to those buried facilities.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.18-5								
81	Regulated Materials	Demolition or rehabilitation of bridge structures.	I-70 bridge west of Hidden Valley Interchange and Doghouse Rail Bridge.	Lead-based paint located on bridge components encountered by workers could cause adverse health effect.	Notify contractor that lead-based paint is located on the Hidden Valley Bridge over Clear Creek and the Doghouse Rail Bridge.	CDOT	Phase 1	Twin Tunnels Environmental Assessment Page 3.18-6								
82	Regulated Materials	Demolition or rehabilitation of bridge structures.	I-70 bridge west of Hidden Valley Interchange and Doghouse Rail Bridge.	Lead-based paint located on bridge components encountered by workers could cause adverse health effect.	If possible, components that will require demolition should be removed carefully and properly recycled.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.18-6								
83	Regulated Materials	Demolition or rehabilitation of bridge structures.	I-70 bridge west of Hidden Valley Interchange and Doghouse Rail Bridge.	Lead-based paint located on bridge components encountered by workers could cause adverse health effect.	The contractor will avoid sanding, cutting, burning, or otherwise causing the release of lead from paint on these structures. If this is not possible, the lead must be abated properly.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.18-6								
84	Regulated Materials	Demolition or rehabilitation of bridge structures.	I-70 bridge west of Hidden Valley Interchange and Doghouse Rail Bridge.	Lead-based paint located on bridge components encountered by workers could cause adverse health effect.	U.S. Department of Labor Occupational Safety and Health Administration (OSHA) Regulation 1926.62 should be consulted for worker protection prior to work on these structures. Worker health and safety precautions in compliance with OSHA must be followed to limit worker exposure to lead. Work should be completed on these structures in accordance with CDOT Specification 250.04, as well as the MMP and HSP.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.18-6								
85	Regulated Materials	Demolition or rehabilitation of bridge structures.	I-70 bridge west of Hidden Valley Interchange and Doghouse Rail Bridge.	Lead-based paint located on bridge components encountered by workers could cause adverse health effect.	Workers on this project must follow CDOT Specification 250 – Environmental, Health, and Safety Management during excavation activities at this site.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.18-6								
86	Regulated Materials	Demolition or rehabilitation of bridge structures	I-70 bridge west of Hidden Valley Interchange and Doghouse Rail Bridge.	Asbestos-containing materials located on bridge components encountered by workers.	Any disturbance to regulated asbestos-containing materials will require proper abatement in accordance with CDPHE and EPA regulations prior to disturbance of that material.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.18-6								
87	Regulated Materials	Demolition or rehabilitation of bridge structures	I-70 bridge west of Hidden Valley Interchange and Doghouse Rail Bridge.	Asbestos-containing materials located on bridge components encountered by workers.	Comply with CDOT Specification 250.07 – Asbestos-Containing Material Management.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.18-6								
88	Social and Economic Resources	Operation of eastbound I-70 detour during construction.	On CR 314 between the Doghouse Rail Bridge and Hidden Valley Interchange.	Loss of local access for adjacent properties and local travelers on CR 314.	CDOT will provide a detailed construction and detour plan to residents and business owners in the surrounding area as far in advance as possible.	CDOT	Phase 1	Twin Tunnels Environmental Assessment Page 3.2-7								
89	Social and Economic Resources	Operation of eastbound I-70 detour during construction.	On CR 314 between the Doghouse Rail Bridge and Hidden Valley Interchange.	Loss of local access for adjacent properties and local travelers on CR 314.	CDOT will provide safe, effective, well-placed, and highly visible directional signage for access to properties along CR 314 during the detour.	CDOT	Phase 1	Twin Tunnels Environmental Assessment Page 3.2-7								
90	Social and Economic Resources	Closure of eastbound lanes on I-70.	I-70 from west portal of eastbound tunnel to Hidden Valley Interchange.	Increase in emergency response travel times between Clear Creek County and hospitals in Jefferson County.	Contractor will maintain access for emergency vehicles through the project area at all times by providing a shoulder of adequate width for emergency access.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.2-7								
91	Social and Economic Resources	Closure of eastbound lanes on I-70.	I-70 from west portal of eastbound tunnel to Hidden Valley Interchange.	Increase in emergency response travel times between Clear Creek County and hospitals in Jefferson County.	Contractor will provide emergency responders traffic control contact information. In an emergency, responders will contact the traffic control office, provide their approximate arrival time at the construction zone, and traffic control will provide a clear path through the construction zone.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.2-7								
92	Social and Economic Resources	Closure of eastbound lanes on I-70.	I-70 from west portal of eastbound tunnel to Hidden Valley Interchange.	Increase in emergency response travel times between Clear Creek County and hospitals in Jefferson County.	CDOT and the contractor will notify emergency service providers (Colorado State Patrol, sheriff, police, fire dispatchers, ambulance providers, etc.) of the timing of impending closures.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.2-7								
93	Social and Economic Resources	Closure of eastbound lanes on I-70.	I-70 from west portal of eastbound tunnel to Hidden Valley Interchange.	Economic losses due to reduced through-traveler patronage at local businesses.	CDOT will develop a public information plan and will work with local public information officers to disseminate construction information to the traveling public.	CDOT	Phase 1	Twin Tunnels Environmental Assessment Page 3.2-7								
94	Social and Economic Resources	Closure of eastbound lanes on I-70.	I-70 from west portal of eastbound tunnel to Hidden Valley Interchange.	Economic losses due to reduced through-traveler patronage at local businesses.	CDOT will implement public information strategies such as media advisories, variable message signs, advance signs, a telephone hotline, real-time web cameras, the use of intelligent transportation systems and technology in construction work zones, a construction project website, and alternate route advisories to alert travelers to construction activities.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.2-7								
95	Social and Economic Resources	Closure of eastbound lanes on I-70.	I-70 from west portal of eastbound tunnel to Hidden Valley Interchange.	Economic losses due to reduced through-traveler patronage at local businesses.	CDOT will provide well-placed and highly visible signage to direct patrons to businesses.	CDOT	Phase 1	Twin Tunnels Environmental Assessment Page 3.2-7								
96	Social and Economic Resources	Closure of eastbound lanes on I-70.	I-70 from west portal of eastbound tunnel to Hidden Valley Interchange.	Increased commuting travel times between Idaho Springs and the Denver metropolitan area.	CDOT will work with Idaho Springs and Clear Creek County to identify community representatives who will partner in the construction traffic control program and provide assistance/ feedback to the traffic control team.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.2-7								

Colorado Department of Transportation Mitigation Commitment Monitoring and Reporting

Project Information

Project Name:	**I-70 Twin Tunnels Environmental Assessment**
Environmental	**David Singer**
Project Number:	**C0703-379**
Document Type and	**EA/FONSI**
Project Phase:	**Planning**

											Mitigation Status		Agency Coordination			
Mitigation Commitment #	**Mitigation Category**	**Activity Triggering Mitigation**	**Location of Activity Triggering Mitigation**	**Impact from NEPA Document**	**Commitment From Mitigation Table In Source Document Use Exact Wording from Table in Source Document**	**Responsible Agency**	**Life Cycle Phase Mitigation to be Constructed**	**Source Document of Mitigation Commitment and Page Number**	**Location of Mitigation(s) in Plan Sheets/Specs Include All Page Numbers that Apply**	**Date Mitigation Completed (or Anticipated)**	**Name of Person Completing Mitigation**	**Agency Coordination Completed?**	**Name of Each Agency**	**Comments**	**Status**
97	Social and Economic Resources	Closure of eastbound lanes on I-70.	I-70 from west portal of eastbound tunnel to Hidden Valley Interchange.	Increased commuting travel times between Idaho Springs and the Denver metropolitan area.	CDOT will hold public meetings at critical construction phases to provide information and discuss mitigation strategies. CDOT will provide a construction information exchange center near the construction area for public input and up-to-date construction information.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.2-7							
98	Social and Economic Resources	Closure of eastbound lanes on I-70.	West of Twin Tunnels and east of Hidden Valley Interchange.	Increase in travel times.	Work requiring closure of one lane will be conducted at night as much as possible. CDOT will work closely with the contractor to avoid all daytime construction during peak directional periods.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.2-7							
99	Social and Economic Resources	Construction of highway and retaining walls on I-70.	West of Twin Tunnels and east of Hidden Valley Interchange.	Increase in emergency response travel times between Clear Creek County and hospitals in Jefferson County.	Contractor will maintain access for emergency vehicles through the project area by providing a shoulder of adequate width for emergency access when possible.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.2-8							
100	Social and Economic Resources	Construction of highway and retaining walls on I-70.	West of Twin Tunnels and east of Hidden Valley Interchange.	Increase in emergency response travel times between Clear Creek County and hospitals in Jefferson County.	In areas with no shoulder access, contractor will provide emergency responders traffic control contact information. In an emergency, responders will contact the traffic control office, provide their approximate arrival time at the construction zone, and traffic control will provide a clear path through the construction zone when feasible.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.2-8							
101	Social and Economic Resources	Construction of highway and retaining walls on I-70.	West of Twin Tunnels and east of Hidden Valley Interchange.	Increase in emergency response travel times between Clear Creek County and hospitals in Jefferson County.	CDOT and the contractor will notify emergency service providers (Colorado State Patrol, sheriff, police, fire dispatchers, ambulance providers, etc.) of the timing of impending closures.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.2-8							
102	Social and Economic Resources	Closure of chain station facility.	Twin Tunnels project area.	Roadway widening requires reconstruction of chain station to adhere to design standards.	Construct temporary chain station facilities as necessary to maintain safe and effective chain station operations during winter months.	CDOT	Phase 1, Phase 3	Twin Tunnels Environmental Assessment Page 3.2-8							
103	Terrestrial Wildlife	Widening of I-70 eastbound lane and adding a through lane.	East portal of Twin Tunnels–riparian area that extends upgradient from Clear Creek.	Temporary loss of riparian habitat (trees and shrubs).	Riparian trees and shrubs removed during construction will be replaced as stipulated in CDOT's Guidelines for Senate Bill 40 Wildlife Certification, which state that trees removed during construction, whether native or non-native, shall be replaced with a goal of 1:1 replacement based on a stem count of all trees with diameter at breast height of two inches or greater. Shrubs removed during construction, whether native or non-native will be replaced based on their preconstruction areal coverage. In all cases, all such trees and shrubs will be replaced with native species.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.10-7							
104	Terrestrial Wildlife	Reconstruction of the bridge on I-70 over Clear Creek west of Hidden Valley Interchange. This area was identified in the Clear Creek Junction Linkage Interference Zone.	I-70 bridge west of Hidden Valley Interchange.	Potential to decrease wildlife connectivity if existing bench is not extended. In addition, the upstream side of the creek is steep and there is large rip rap on the south side of the existing bridge that is not favorable for wildlife movement.	When this bridge is replaced, the existing bench under the bridge will be extended to improve wildlife movement under the bridge. The approach on the upstream side of Clear Creek will be softened and large riprap will be replaced with smaller substrate to allow animals to move more freely.	CDOT	Phase 1, Phase 2	Twin Tunnels Environmental Assessment Page 3.10-7							
105	Terrestrial Wildlife	Widening eastbound I-70 west of the Twin Tunnels and adding a through lane.	North side of I-70 from the west tunnel portal to Clear Creek.	Widening I-70 creates a wider I-70 barrier for sheep movement and access to Clear Creek.	The existing barbed and woven wire fencing located north of I-70 between the west portal and Clear Creek will be replaced. The new fence will be a more wildlife-friendly per CPW's recommendations and publication- Fencing with Wildlife in Mind (Hanophy, 2009) and will consist of smooth wire and barbed wire. The new fence would continue to contain livestock.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.20-13							
106	Terrestrial Wildlife	Widening eastbound I-70 west of the Twin Tunnels and adding a through lane.	North side of I-70 from the west tunnel portal to Clear Creek.	Increase in animal/vehicle collisions. Sheep are attracted to deicer salts that have accumulated on the shoulder of the highway and to vegetation north of the roadway. On average, one sheep per year is hit by a vehicle at this location.	Upland (non-riparian) trees, primarily junipers and pines, will be removed in this area. This will improve westbound motorists' ability to detect sheep as they exit the tunnel.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.20-13							
107	Terrestrial Wildlife	Widening eastbound I-70 west of the Twin Tunnels and adding a through lane.	Concrete box culvert (CBC) near milepost 242.	Widening I-70 creates a wider I-70 barrier for sheep movement and access to Clear Creek	To encourage use by wildlife, a natural substrate will be placed along the bottom of the CBC and baffles will be installed to retain the substrate and prevent scour. Material will also be used to fill in the steep drop-off at the CBC discharge point.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.20-13							
108	Terrestrial Wildlife	Widening eastbound I-70 west of the Twin Tunnels and adding a through lane.	Concrete box culvert (CBC) near milepost 242.	The CBC currently has a concrete bottom and the discharge point at Clear Creek has a steep drop-off, which is not conducive to wildlife movement or use.	In addition, when the barbed and woven wire fence is replaced, this drainage will be left open, and instead of fencing across the drainage (like the existing condition), the fence will be tied into the CBC to encourage wildlife usage.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.20-13							
109	Terrestrial Wildlife	Construction-related disturbance between April 1 and August 31.	Twin Tunnels project area in the vicinity of active nests.	Potential loss of eggs or young of nesting migratory birds.	If construction is to commence between April 1 and August 31, to avoid impacts to nesting birds in accordance with the MBTA, a qualified biologist will conduct a nest survey prior to construction. If active nests are found during construction, coordination with CPW and USFWS is required to determine an appropriate course of action, which may include, but is not limited to, a delay in construction to avoid the breeding season.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.10-7							
110	Terrestrial Wildlife	Use of temporary erosion control blankets for erosion control.	Twin Tunnels project area, where BMPs will control erosion adjacent to Clear Creek.	Potential snake mortality from entanglement in plastic mesh deployed for erosion control.	Erosion control blankets will have flexible natural fibers to allow for safe passage of snakes through the erosion control blanket.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.10-7							
111	Terrestrial Wildlife	Widening of I-70 eastbound lane and adding a through lane.	Twin Tunnels project area–riparian and wetland habitat adjacent to Clear Creek.	Loss of vegetation and impacts to sensitive habitats.	Wetland/riparian areas not temporarily impacted by the project will be protected from construction activities by temporary and/or construction limit fencing.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.10-8							
112	Terrestrial Wildlife	Expansion of the eastbound tunnel bore, old US 40 (game check area), and CR 314 would carry eastbound I-70 traffic around the Twin Tunnels on a 1-mile detour route.	One segment of the eastbound I-70 detour will use the old US 40 alignment (game check area) for approximately 1,200 feet in the vicinity of the Twin Tunnels land bridge.	Potential for increased animal/vehicle collisions in the vicinity of the Twin Tunnels land bridge while the eastbound I-70 detour is in place. In addition, deicing liquids and salt placed on old US 40 (game check area) during the eastbound I-70 detour may attract big horn sheep down to the roadway in the vicinity of the Twin Tunnels land bridge.	A 10-foot-high temporary wildlife fence will be constructed along the north side of old US 40 (game check area). The fencing is intended to keep wildlife off the north side of old US 40 (game check area) and prevent big horn sheep from coming down to access the roadway while the eastbound I-70 detour is in place. The fence will be removed when the eastbound I-70 detour is no longer in place.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.10-8							

Colorado Department of Transportation Mitigation Commitment Monitoring and Reporting

Project Information

Project Name:	**I-70 Twin Tunnels Environmental Assessment**
Environmental	**David Singer**
Project Number:	**C0703-379**
Document Type and	**EA/FONSI**
Project Phase:	**Planning**

											Mitigation Status		Agency Coordination			
Mitigation Commitment #	**Mitigation Category**	**Activity Triggering Mitigation**	**Location of Activity Triggering Mitigation**	**Impact from NEPA Document**	**Commitment From Mitigation Table In Source Document Use Exact Wording from Table in Source Document**	**Responsible Agency**	**Life Cycle Phase Mitigation to be Constructed**	**Source Document of Mitigation Commitment and Page Number**	**Location of Mitigation(s) in Plan Sheets/Specs Include All Page Numbers that Apply**	**Date Mitigation Completed (or Anticipated)**	**Name of Person Completing Mitigation**	**Agency Coordination Completed?**	**Name of Each Agency**	**Comments**	**Status**
113	Terrestrial Wildlife	Expansion of the eastbound tunnel bore, old US 40 (game check area), and CR 314 would carry eastbound I-70 traffic around the Twin Tunnels on a 1-mile detour route.	One segment of the eastbound I-70 detour will use the old US 40 alignment (game check area) for approximately 1,200 feet in the vicinity of the Twin Tunnels land bridge.	Potential for increased animal/vehicle collisions in the vicinity of the Twin Tunnels land bridge while the eastbound I-70 detour is in place. In addition, deicing liquids and salt placed on old US 40 (game check area) during the eastbound I-70 detour may attract big horn sheep down to the roadway in the vicinity of the Twin Tunnels land bridge.	If an increase in animal/vehicle collisions is observed during operation of the eastbound I-70 detour, temporary fencing will be considered on the south side of the roadway.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.10-8							
114	Terrestrial Wildlife	Expansion of the eastbound tunnel bore, old US 40 (game check area), and CR 314 would carry eastbound I-70 traffic around the Twin Tunnels on a 1-mile detour route.	One segment of the eastbound I-70 detour will use the old US 40 alignment (game check area) for approximately 1,200 feet in the vicinity of the Twin Tunnels land bridge.	Potential for increased animal/vehicle collisions in the vicinity of the Twin Tunnels land bridge while the eastbound I-70 detour is in place. In addition, deicing liquids and salt placed on old US 40 (game check area) during the eastbound I-70 detour may attract big horn sheep down to the roadway in the vicinity of the Twin Tunnels land bridge.	Temporary lighting will be used on the eastbound I-70 detour to improve safety and detection of wildlife on the roadway.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.10-8							
115	Terrestrial Wildlife	During expansion of the eastbound tunnel bore, old US 40 (game check area) and CR 314 would carry eastbound I-70 traffic around the Twin Tunnels on a 1-mile detour route.	One segment of the eastbound I-70 detour will use the old US 40 alignment (game check area) for approximately 1,200 feet in the vicinity of the Twin Tunnels land bridge.	Deicing liquids and salt placed on old US 40 (game check area) during the eastbound I-70 detour may attract big horn sheep to the roadway in the vicinity of the Twin Tunnels land bridge. Potential for increase in animal-vehicle collisions.	Colorado Parks and Wildlife will place salt blocks on the north side of I-70 before blasting begins to keep sheep away from the tunnel and roadway during the eastbound I-70 detour.	CPW	Phase 1	Twin Tunnels Environmental Assessment Page 3.10-8							
116	Threatened and Endangered Species	Construction activities which can cause water depletions include water used for compaction, cement mixing, detention ponds, dust control and dewatering for access and construction in wetlands and riparian areas.	Twin Tunnels project area.	Platte River fish species could be impacted by construction activities and water depletions in tributaries such as Clear Creek.	Mitigation for impacts caused by water depletions on federally listed species will be addressed by FHWA and CDOT participation in the Platte River Recovery Implementation Program and South Platte Water Related Activities Program. Water used for this project will be reported to the USFWS at the completion of the project.	CDOT/FHWA	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.12-4							
117	Transportation and Safety	Drivers traveling on I-70 at night.	Locations on I-70 as determined by safety analyses.	Crashes at night	Existing lighting will be reviewed to make sure current light fixtures are operating as designed.	CDOT	Final Design	Twin Tunnels Environmental Assessment Page 3.1-9							
118	Transportation and Safety	Drivers traveling on I-70 at night.	Locations on I-70 as determined by safety analyses.	Crashes at night	Safety will be monitored closely after construction to see if nighttime crash patterns persist that could be addressed with localized lighting treatments.	CDOT	Post-construction	Twin Tunnels Environmental Assessment Page 3.1-9							
119	Transportation and Safety	Drivers traveling on I-70 at night.	Locations on I-70 as determined by safety analyses.	Crashes at night	Lighting will follow I-70 Mountain Corridor Aesthetics Guidance and the objectives of the Dark Sky Initiative.	CDOT	Final Design	Twin Tunnels Environmental Assessment Page 3.1-9							
120	Transportation and Safety	Operation of the managed lane at night.	Entrance to managed lane.	Crashes at entrance to managed lane.	Current approach is to not light the managed lane entrance because there is no physical gore, which would be a hazard. This will be reanalyzed during the final design process.	CDOT	Final Design	Twin Tunnels Environmental Assessment Page 3.1-9							
121	Transportation and Safety	Operation of the managed lane at night.	Entrance to managed lane.	Crashes at entrance to managed lane.	Lighting will follow I-70 Mountain Corridor Aesthetics Guidance and the objectives of the Dark Sky Initiative.	CDOT	Final Design	Twin Tunnels Environmental Assessment Page 3.1-9							
122	Transportation and Safety	Construction on or adjacent to I-70.	Between East Idaho Springs Interchange and base of Floyd Hill	Increased potential for crashes.	There will be extensive warning of the detour for eastbound traffic so that drivers to slow to the posted speed limit of 35 mph.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.1-10							
123	Transportation and Safety	Construction on or adjacent to I-70.	Between East Idaho Springs Interchange and base of Floyd Hill	Increased potential for crashes.	Colorado State Patrol and police will be encouraged to monitor speeds during off-peak periods when enforcement activities won't create traffic congestion.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.1-10							
124	Transportation and Safety	Construction on or adjacent to I-70.	Between East Idaho Springs Interchange and base of Floyd Hill	Increased potential for crashes.	Reducing crashes should also reduce the need of emergency response and attendant local costs to service providers.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.1-10							
125	Transportation and Safety	Construction on or adjacent to I-70.	Between East Idaho Springs Interchange and base of Floyd Hill	Traffic shifts from I-70 to less capable facilities such as SH 9 and US 285.	As feasible, CDOT will minimize I-70 construction activities on weekends that could shift travel to alternative routes (SH 9 and US 285, in particular).	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.1-10							
126	Transportation and Safety	Construction on or adjacent to I-70.	Between East Idaho Springs Interchange and base of Floyd Hill	Traffic shifts from I-70 to less capable facilities such as SH 9 and US 285.	No scheduled construction projects on US 285 and SH 9 are planned to involve weekend activities.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.1-10							
126	Transportation and Safety	Construction on or adjacent to I-70.	Between East Idaho Springs Interchange and base of Floyd Hill	Traffic shifts from I-70 to less capable facilities such as SH 9 and US 285.	CDOT will monitor signal operations and timing on these alternative routes during peak periods and will modify signal timing, if necessary.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.1-10							
127	Transportation and Safety	Construction on or adjacent to I-70.	Between East Idaho Springs Interchange and base of Floyd Hill	Disruption of emergency response.	Contractor will provide emergency responders traffic control contact information. In an emergency, responders will contact the CDOT traffic control office, provide their approximate arrival time at the construction zone, and traffic control will provide a clear path through the construction zone.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.1-10							
128	Transportation and Safety	Construction on or adjacent to I-70.	Between East Idaho Springs Interchange and base of Floyd Hill	Disruption of emergency response.	CDOT and the contractor will notify emergency service providers [Colorado State Patrol, sheriff, police, fire dispatchers, ambulance providers, etc.] of the timing of impending closures for blasting or other reasons.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.1-10							
129	Transportation and Safety	Construction on or adjacent to I-70.	Between East Idaho Springs Interchange and base of Floyd Hill	Reduced through-travel to local businesses.	CDOT will provide frequent and timely updates about construction activities and remind the public that the corridor is open except for necessary interruptions.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.1-10							
130	Transportation and Safety	Construction on or adjacent to I-70.	Between East Idaho Springs Interchange and base of Floyd Hill	Reduced through-travel to local businesses.	Signs notifying drivers of access to local business will be placed in both directions in advance of the East Idaho Springs Interchange (Exit 241).	CDOT	Phase 1	Twin Tunnels Environmental Assessment Page 3.1-10							
131	Transportation and Safety	Closure of eastbound lanes on I-70	West of Twin Tunnels and east of Hidden Valley Interchange.	Traffic backups due to lane restriction during construction in the peak direction during peak periods	Contractor will prepare a CDOT approved project-specific lane closure strategy that minimizes lane closures during peak weekend travel. Any variances will be developed in close coordination with the contractor and approved by CDOT.	CDOT	Phase 1	Twin Tunnels Environmental Assessment Page 3.1-10							
132	Transportation and Safety	Closure of eastbound lanes on I-70	West of Twin Tunnels and east of Hidden Valley Interchange.	Traffic backups due to lane restriction during construction in the peak direction during peak periods	CDOT will work with local communities to minimize impacts to local traffic.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.1-10							
133	Transportation and Safety	Roadway closures for blasting (anytime round the clock).	On I-70 westbound; on CR 314 for eastbound detour traffic.	Traffic backups.	Stoppages will be minimized to the greatest extent possible during peak periods (westbound Friday afternoon and Saturday morning, and eastbound Sunday afternoon).	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.1-10							
134	Transportation and Safety	Roadway closures for blasting (anytime round the clock).	On I-70 westbound; on CR 314 for eastbound detour traffic.	Traffic backups.	Advance signage along I-70 will give warning of impending closures.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.1-10							

Colorado Department of Transportation Mitigation Commitment Monitoring and Reporting

Project Information

Project Name:	**I-70 Twin Tunnels Environmental Assessment**
Environmental	**David Singer**
Project Number:	**C0703-379**
Document Type and	**EA/FONSI**
Project Phase:	**Planning**

											Mitigation Status		Agency Coordination			
Mitigation Commitment #	**Mitigation Category**	**Activity Triggering Mitigation**	**Location of Activity Triggering Mitigation**	**Impact from NEPA Document**	**Commitment From Mitigation Table In Source Document Use Exact Wording from Table in Source Document**	**Responsible Agency**	**Life Cycle Phase Mitigation to be Constructed**	**Source Document of Mitigation Commitment and Page Number**	**Location of Mitigation(s) in Plan Sheets/Specs Include All Page Numbers that Apply**	**Date Mitigation Completed (or Anticipated)**	**Name of Person Completing Mitigation**	**Agency Coordination Completed?**	**Name of Each Agency**	**Comments**	**Status**
135	Vegetation and Noxious Weeds	Construction activities in and adjacent to Clear Creek.	East of Twin Tunnels, and I-70 bridge west of Hidden Valley Interchange.	Previous impacts of I-70 roadway construction. Removal of riparian trees and shrubs. Temporary access and equipment footprints during construction of walls and bridge.	Enhance native vegetation along Clear Creek for wildlife habitat, water quality stabilization, and visual quality. Trees removed during construction shall be replaced with a goal of 1:1 replacement based on a stem count of all trees with diameter at breast height of two inches or greater. Shrubs removed during construction, whether native or non-native will be replaced based on their preconstruction areal coverage. In all cases, all such trees and shrubs will be replaced with native species.	CDOT	Phase 3	Twin Tunnels Environmental Assessment Page 3.13-5							
136	Vegetation and Noxious Weeds	Temporary grading for roadways, bridges and walls.	South edge of I-70 and north and south of detour route on CR 314.	Vegetation disturbance and ground clearing that creates potential noxious weed issues.	Reseed and protect temporary disturbance areas with CDOT approved BMPs and avoid disturbance to existing vegetation, to the maximum extent possible	CDOT	Phase 3	Twin Tunnels Environmental Assessment Page 3.13-5							
137	Vegetation and Noxious Weeds	Temporary grading for roadways, bridges and walls.	South edge of I-70 and north and south of detour route on CR 314.	Vegetation disturbance and ground clearing that creates potential noxious weed issues.	Seed, mulch and mulch tackifier will be applied in phases throughout construction.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.13-5							
138	Vegetation and Noxious Weeds	Temporary grading for roadways, bridges and walls.	South edge of I-70 and north and south of detour route on CR 314.	Vegetation disturbance and ground clearing that creates potential noxious weed issues.	Where permanent seeding operations are not feasible due to seasonal constraints (e.g., summer and winter months), disturbed areas will have mulch and mulch tackifier applied to prevent erosion.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.13-5							
139	Vegetation and Noxious Weeds	Temporary grading for roadways, bridges and walls.	South edge of I-70 and north and south of detour route on CR 314.	Vegetation disturbance and ground clearing that creates potential noxious weed issues.	Minimize the amount of disturbance and limit the amount of time that disturbed areas are allowed to remain non-vegetated.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.13-5							
140	Vegetation and Noxious Weeds	Temporary grading for roadways, bridges and walls.	South edge of I-70 and north and south of detour route on CR 314.	Vegetation disturbance and ground clearing that creates potential noxious weed issues.	An Integrated Noxious Weed Management Plan will be developed during final design and implemented during construction to prevent the spread of noxious weeds into temporary disturbance areas.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.13-5							
141	Water Quality	Runoff from roadway.	Twin Tunnels project area.	Impacts to water resources as a result of water quality degradation due to contaminant runoff.	Hazardous spill containment structure locations have been identified and the feasibility of BMPs will be evaluated to assess their potential effectiveness in reducing hazardous waste discharge to Clear Creek.	CDOT	Final Design	Twin Tunnels Environmental Assessment Page 3.16-8							
142	Water Quality	Runoff from roadway.	Twin Tunnels project area.	Impacts to water resources as a result of water quality degradation due to contaminant runoff.	CDOT will implement adaptive mitigation by utilizing the Clear Creek SCAP, which allows for flexibility in the number, sizing, type, and locations of BMP structures, while controlling contaminated drainage entering Clear Creek.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.16-8							
143	Water Quality	Runoff from roadway.	Twin Tunnels project area.	Impacts to water resources as a result of water quality degradation due to contaminant runoff.	Three different drainage inlet sediment trap concept designs have been developed to accommodate various drainage conditions anticipated for the Proposed Action. These traps will be installed as part of the drainage system in locations where surface water is discharged to Clear Creek. Locations for surface sediment basins have also been identified in the plan and will be constructed as part of the drainage system.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.16-8							
144	Water Quality	Winter roadway maintenance.	Twin Tunnels project area.	Elevated sediment and chloride levels in Clear Creek due to use of traction sand and liquid and solid deicer salts.	Structural BMPs, such as detention basins, will be constructed to capture winter roadway maintenance traction sand and other solid material. Non-structural BMPs will include ongoing training of maintenance staff in the application of winter roadway maintenance materials.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.16-8							
145	Water Quality	Ongoing water quality monitoring.	Twin Tunnels project area.	Ongoing changes to water quality of Clear Creek due to implementation of the Proposed Action. This includes impacts resulting from construction and roadway operations.	The I-70 Clear Creek water quality monitoring program (conducted from 2001-2005) in the Twin Tunnels/Hidden Valley reach will be re-started and operated before, during, and after construction to monitor water quality conditions. The duration of post-construction monitoring will be determined by CDOT. The water quality monitoring program will sample both ambient and runoff event (snowmelt or rainstorm) flows.	CDOT	Final Design, Construction Phase 1, Phase 2, Phase 3, Post-Construction	Twin Tunnels Environmental Assessment Page 3.16-8							
146	Water Quality	Runoff from construction.	Twin Tunnels project area.	Impacts to water resources as a result of water quality degradation.	CDOT will implement appropriate BMPs for erosion and sediment control according the CDOT Erosion Control and Storm Water Quality Guide (CDOT, 2002), and develop a stormwater management plan, which includes water quality monitoring.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.16-9							
147	Water Quality	Long-term erosion impacts from soil disturbance during construction.	Twin Tunnels project area.	Erosion, leading to increased sedimentation.	CDOT will achieve permanent stabilization through revegetation and permanent erosion controls measures and through maintenance of temporary erosion controls and plantings to stabilize non-rocky areas.	CDOT	Phase 3, Post-Construction	Twin Tunnels Environmental Assessment Page 3.16-9							
148	Water Quality	Exposure and handling of mineralized rock.	Tunnel excavation of naturally occurring mineralized rock near the west tunnel portal, and subsequent handling of excavated rock.	Impacts to water resources due to the introduction of mineralized materials, which can increase loading of metals, dissolved solids, and suspended solids.	Encapsulate mineralized rock generated during blasting activities beneath the roadway pavement, away from groundwater, to prevent chemical reactions that could mobilize contaminants into water. Such interactions could cause the release of contaminants and migration into Clear Creek. If encapsulation is not feasible, mineralized rock will be removed from the project area to an appropriate disposal site.	CDOT	Phase 2	Twin Tunnels Environmental Assessment Page 3.16-9							
149	Wetlands and Waters of the U.S.	General construction activities associated with the Twin Tunnels project.	Twin Tunnels project area.	Direct and/or indirect impacts to wetlands and other waters of the United States.	All wetlands delineated and mapped for the project will be protected from construction activities by properly installed construction limit fencing.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.14-8							
150	Wetlands and Waters of the U.S.	General construction activities associated with the Twin Tunnels project.	Twin Tunnels project area.	Direct and/or indirect impacts to wetlands and other waters of the United States.	CDOT will achieve permanent stabilization through revegetation and permanent erosion controls measures and through maintenance of temporary erosion controls and plantings to stabilize non-rocky areas	CDOT	Phase 3	Twin Tunnels Environmental Assessment Page 3.14-8							
151	Wetlands and Waters of the U.S.	General construction activities associated with the Twin Tunnels project.	Twin Tunnels project area.	Direct and/or indirect impacts to wetlands and other waters of the United States.	Fertilizers and/or hydro-mulching will not be allowed within 50 feet of wetlands.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.14-8							
152	Wetlands and Waters of the U.S.	Construction staging areas.	Twin Tunnels project area and staging areas.	Direct and/or indirect impacts to wetlands and waters of the United States.	Construction staging and materials stockpiling will be located greater than 50 feet from the edge of wetlands or the edge of Clear Creek, when possible, to avoid disturbance of vegetation and to prevent pollutant discharges into sensitive habitats. Specific locations will be determined during construction planning and, considering the narrowness of the corridor and limited areas available, this buffer may need to be reduced. If this buffer is not achievable, CDOT will consider the placement of materials closer to the edge of wetlands or the edge of water and identify appropriate additional best management practices (BMPs) that would be required to minimize disturbance of vegetation and prevent pollutant discharges into sensitive habitats. BMPs will be determined on a site-by-site basis and any modifications will require CDOT environmental staff approval.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.14-8							
153	Wetlands and Waters of the U.S.	Construction work and installation of retaining walls within the two-year floodplain.	Twin Tunnels project area.	Direct and/or indirect impacts to waters of the United States.	Prohibit construction equipment from entering the OHWM (2-year floodplain) except where identified on design plans.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.14-8							
154	Wetlands and Waters of the U.S.	Construction work and installation of retaining walls within the two-year floodplain.	Twin Tunnels project area.	Direct and/or indirect impacts to waters of the United States.	Replacement of rip-rap along Clear Creek will be closely monitored to ensure that additional fill is not placed into the 2-year floodplain. Any additional encroachment into the 2-year floodplain would need to be identified in the Section 404 permit.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.14-8							

Colorado Department of Transportation Mitigation Commitment Monitoring and Reporting

Project Information

Project Name:	**I-70 Twin Tunnels Environmental Assessment**
Environmental	**David Singer**
Project Number:	**C0703-379**
Document Type and	**EA/FONSI**
Project Phase:	**Planning**

											Mitigation Status		Agency Coordination			
Mitigation Commitment #	**Mitigation Category**	**Activity Triggering Mitigation**	**Location of Activity Triggering Mitigation**	**Impact from NEPA Document**	**Commitment From Mitigation Table In Source Document Use Exact Wording from Table in Source Document**	**Responsible Agency**	**Life Cycle Phase Mitigation to be Constructed**	**Source Document of Mitigation Commitment and Page Number**	**Location of Mitigation(s) in Plan Sheets/Specs Include All Page Numbers that Apply**	**Date Mitigation Completed (or Anticipated)**	**Name of Person Completing Mitigation**	**Agency Coordination Completed?**	**Name of Each Agency**	**Comments**	**Status**
155	Wetlands and Waters of the U.S.	Construction work and installation of retaining walls within the two-year floodplain.	Twin Tunnels project area.	Direct and/or indirect impacts to waters of the United States.	Refuel equipment within designated refueling containment area away from floodplain, Clear Creek, and wetlands.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.14-8							
156	Wetlands and Waters of the U.S.	Construction work and installation of retaining walls within the two-year floodplain.	Twin Tunnels project area.	Direct and/or indirect impacts to waters of the United States.	Ensure BMPs and containment structures are in place for work conducted within and adjacent to the 2-year floodplain to prevent concrete washout and other potential pollutants from reaching Clear Creek and wetlands.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.14-8							
157	Wetlands and Waters of the U.S.	Reconstruction of the bridge on I-70 over Clear Creek west of the Hidden Valley Interchange.	I-70 bridge west of the Hidden Valley Interchange.	Direct and/or indirect impacts to Clear Creek two-year floodplain.	This work will take place close to or within the 2-year floodplain. All identified mitigation commitments for work within the ordinary high water mark will need to be implemented in this location. Work in this location will need to be closely monitored to ensure compliance with the U.S. Army Corps of Engineers Section 404 permit.	CDOT	Phase 1, Phase 2, and Phase 3	Twin Tunnels Environmental Assessment Page 3.14-8							