

REASON(S) FOR DISCHARGE

Discharge of clean fill material into waters of the U.S. (including wetland habitat) will be required during the replacement of the bridge across the Eagle River, the construction of the commercial site, the relocation/piping of the lower reach of Nottingham Gulch, and the construction of various road fill/culvert, rip-rap apron and headwalls associated with road improvements and road crossings. Each distinct impact area is described below. Impact area locations are provided in Figure 2 and details are provided in Figure 3.

Eagle River Bridge Replacement: Impact Areas P1 and T1

The existing bridge that crosses the Eagle River will be removed and replaced by a larger capacity structure. The new bridge will free span the river (i.e., the abutments will be placed outside of and above the ordinary high water boundary). The new bridge will connect Nottingham Ranch Road to U.S. Highway 6 and serve as the southern access to the site. Refer to Figures 3-1, 3-2a and 3-2b.

Area T1 - During the removal of the existing bridge, 450 cubic yards (c.y.) of fill and structural material (over an area of 3035 square feet/0.06968 acre) will be removed from the Eagle River, including the north bank take-off ramp and pier in the river channel. This 3035 square foot area will be restored as riverine habitat (i.e., waters of the U.S.) and included as mitigation credit for the Project.

Area P1 - An area of 2490 square feet (0.05716 acres) of waters of the U.S. will be permanently impacted by the placement of 40 c.y. of riprap bank protection. The riprap will be placed (below the ordinary high water mark) adjacent to the new bridge abutments, along the north and south river banks.

Big Box Commercial Building Site: Impact Area P2

The lower reach of Nottingham Gulch currently discharges from a man-made ditch, fans out and infiltrates into the meadow of the Stolport parcel, creating a poor-quality, emergent wetland. This wetland is located in the middle of a parcel that is zoned for Regional Commercial use, and it is located directly adjacent to the proposed I-70 Interchange/Ranch Road. This entire lot will be graded for the construction of commercial buildings and associated facilities. The commercial building construction will directly impact the entire 8,294.69 square feet (0.19 acre) of wetland, as the area will be over-excavated for the placement of the structure. The water from Nottingham Gulch will be re-routed (refer to Impact P3 below). Refer to Figures 3-3 and 3-4.

Nottingham Gulch Relocation/Piping for Ranch Road and I-70 Eastbound Off-ramp: Impact Area P3

The lower reach of Nottingham Gulch is a water of the U.S. that discharges out of a culvert beneath I-70 and is conveyed in a man-made ditch. This reach will be piped and re-routed such that it discharges at the Eagle River (refer to Impact P13). The majority of the 2590 square foot (0.059 acre) area will be excavated to support the grades required for the proposed Ranch Road that connects to the new I-70 Interchange; and the remainder of the area will be filled with 73.48 c.y. of structural fill to support the grades required for the construction of the proposed eastbound I-70 off-ramp. Refer to Figures 3-5 and 3-6.

Culvert Inlet Modifications for Proposed I-70 Westbound On-ramp: Impact Area P4

The existing RCP culvert on the north side of I-70 (that conveys Nottingham Gulch) will be modified to support the grades required for the new westbound I-70 on-ramp. The entire 157 square foot (0.0036 acre)

wetland will be permanently impacted by the discharge of 2.3 c.y. of concrete to create a new concrete apron. Refer to Figures 3-7 and 3-8.

Proposed Swift Gulch Road Fill, Culvert and Rip-rap: Impact Areas P5, P6 and T2

A reach of Nottingham Gulch will be impacted to construct the extension of Swift Gulch Road along the north side of I-70. The new extension of Swift Gulch Road will serve as the northwest access to the Project, connect to the internal road system, and connect the new I-70 interchange to the existing Swift Gulch Road. Refer to Figures 3-9 and 3-10.

Area P5 – The construction of the road crossing culvert, fill and headwalls will permanently impact 261.63 square feet (0.006 acre) of wetland habitat with the discharge of 3.3 c.y. of bedding, 112.26 c.y. of structural backfill, and 1.1 c.y. of concrete.

Area P6 – 7.9 c.y. of riprap will be placed as a dissipation/outlet protection apron at the outfall on the downstream, southern side of the Swift Gulch Road culvert. The riprap will cause the permanent impact of 106.99 square feet (0.0025 acre) of wetland.

Area T2 – 135.97 square feet (0.0031 acre) of wetland/waters will be temporarily disturbed to facilitate the construction of the concrete headwall on the upstream side of Swift Gulch Road. Approximately 3 feet of material will be excavated during construction, then replaced and restored to pre-impact grades and conditions (including vegetation).

Proposed Road D Fill, Culvert and Rip-rap: Impact Areas P7, P8 and T3

A reach of Nottingham Gulch will be impacted to construct the Road D crossing. Road D will serve to connect to the internal road system with the new I-70 interchange. Refer to Figures 3-11 and 3-12.

Area P7 – The construction of the road crossing culvert, fill and headwalls will permanently impact 775.18 square feet (0.018 acre) of wetland habitat/waters with the discharge of 14.12 c.y. of bedding, 550.61 c.y. of structural backfill, and 1.84 c.y. of concrete.

Area P8 – 14.6 c.y. of riprap will be placed as a dissipation/outlet protection apron at the outfall on the downstream, southern side of the Road D culvert. The riprap will cause the permanent impact of 197.54 square feet (0.0045 acre) of wetland/waters.

Area T3 – 119.30 square feet (0.0027 acre) of wetland/waters will be temporarily disturbed to facilitate the construction of the concrete headwall on the upstream side of Road D. Approximately 3 feet of material will be excavated during construction, then replaced and restored to pre-impact grades and conditions (including vegetation).

Proposed Road D Fill, Culvert and Rip-rap: Impact Areas P9, P10 and T4

A reach of Nottingham Gulch will be impacted to construct the second Road D crossing. Road D will serve to connect to the internal road system with the new I-70 interchange. Refer to Figures 3-13 and 3-14.

Area P9 – The construction of the road crossing culvert, fill and headwalls will permanently impact 1452.07 square feet (0.033 acre) of wetland habitat/waters with the discharge of 6.94 c.y. of bedding, 978.0 c.y. of structural backfill, and 3.73 c.y. of concrete.

Area P10 – 21.2 c.y. of riprap will be placed as a dissipation/outlet protection apron at the outfall on the downstream, southern side of the Road D culvert. The riprap will cause the permanent impact of 286.71 square feet (0.0066 acre) of wetland/waters.

Area T4 – 457.24 square feet (0.0105 acre) of wetland/waters will be temporarily disturbed to

facilitate the construction of the concrete headwall on the upstream side of Road D. Approximately 3 feet of material will be excavated during construction, then replaced and restored to pre-impact grades and conditions (including vegetation).

Proposed Road D Fill, Culvert and Rip-rap: Impact Areas P11, P12 and T5

A headwaters reach of Traer Creek will be impacted to construct the third Road D crossing. Road D will serve to connect to the internal road system with the new I-70 interchange. Refer to Figures 3-15 and 3-16.

Area P11 – The construction of the road crossing culvert, fill and headwalls will permanently impact 1110.36 square feet (0.025 acre) of waters of the U.S. with the discharge of 20.56 c.y. of bedding, 61.69 c.y. of structural backfill, and 1.47 c.y. of concrete.

Area P12 – 9.1 c.y. of riprap will be placed as a dissipation/outlet protection apron at the outfall on the downstream, southern side of the Road D culvert. The riprap will cause the permanent impact of 122.71 square feet (0.0028 acre) of waters.

Area T5 – 163.99 square feet (0.0038 acre) of wetland/waters will be temporarily disturbed to facilitate the construction of the concrete headwall on the upstream side of Road D. Approximately 3 feet of material will be excavated during construction, then replaced and restored to pre-impact grades and conditions (including vegetation).

Nottingham Gulch Culvert Outfall at the Eagle River: Impact Area P13 and P13a

As previously described (in P3 above), the lower reach of Nottingham Gulch will be piped and re-routed such that it discharges at the Eagle River. 1440 square feet (0.03306 acre) of floodplain wetland habitat and 225 square feet (0.00517 acre) of waters will be permanently impacted for the construction of the outlet structure. 25.6 c.y. of concrete, 161.0 c.y. of structural backfill and 50.2 c.y. of riprap in wetland and 9.1 c.y. of riprap in waters, will be discharged for the construction of the outfall apron and dissipation/outlet protection structure. Refer to Figures 3-17 and 3-18.

Storm Sewer Outfall at Eagle River: Impact Area P14

A storm sewer outfall will be constructed along the north bank of the Eagle River adjacent to the existing Stonebridge Drive bridge. 173.98 square feet (0.0040 acre) of waters of the U.S. will be permanently impacted for the construction of the dissipation/outlet protection structure. 12.9 c.y. of riprap will be discharged for the construction of the dissipation/outlet protection structure. Refer to Figures 3-19 and 3-20.

Typical Details

The following Figures have been provided as typical details:

- Culvert Bedding Detail: Figure 3-21;
- Typical Road Section at Impact P3: Figure 3-22;
- Typical Road Section at Impacts P5 – P12: Figure 3-23;
- Riprap Culvert Outlet Protection: Figure 3-24; and
- CDOT Headwall Details: Figures 3-25 and 3-26.

~~Refer to the Block 21 attachment for a summary of the types and amounts of materials proposed to be discharged at each impact area, and to Block 22 for a summary of the surface area of waters of the U.S. proposed to be impacted.~~

TYPES & AMOUNTS OF MATERIALS BEING DISCHARGED
(Wetland and Waters of the U.S.)

IMPACT	WETLANDS		WATERS OF THE US	
	MATERIAL	VOLUME(CY)	MATERIAL	VOLUME(CY)
P1	-	-	RIPRAP	40
P2	STRUCTURE	NA	-	-
P3	-	-	STRUCTURAL FILL	73.48
P4	CONCRETE	2.3	-	-
P5	CONCRETE	1.1	-	-
	STRUCTURAL BACKFILL BEDDING	112.26 3.3	-	-
P6	RIPRAP	7.9	-	-
P7	CONCRETE	1.84	-	-
	STRUCTURAL BACFILL BEDDING	550.61 14.12	-	-
P8	RIRPAP	14.6	-	-
P9	CONCRETE	3.73	-	-
	STRUCTURAL BACKFILL BEDDING	978.0 6.94	-	-
P10	RIPRAP	21.2	-	-
P11	-	-	CONCRETE	1.47
	-	-	STRUCTURAL BACKFILL BEDDING	61.69 20.56
P12	-	-	RIPRAP	9.1
P13	CONCRETE	25.6	-	-
	STRUCTURAL BACKFILL RIPRAP	161 50.2	-	-
P13a	-	-	RIPRAP	9.1
P14	-	-	RIPRAP	12.9

TYPES & AMOUNTS OF MATERIALS BEING DISCHARGED
(continued)

IMPACT FILL MATERIALS AND QUANTITIES**
 (TEMPORARY IMPACTS)

WETLANDS			WATERS OF THE US	
IMPACT	MATERIAL	VOLUME(CY)	MATERIAL	VOLUME(CY)
T1	-	-	EXISTING CHANNEL BANK	(-450)
T2	EXISTING MATERIAL	0	-	-
T3	EXISTING MATERIAL	0	-	-
T4	EXISTING MATERIAL	0	-	-
T5	-	-	EXISTING MATERIAL	0

**T2-T5 BASED UPON REMOVE AND REPLACE MATERIAL FOR CONSTRUCTION OF HEADWALLS. T1 DENOTES MATERIAL REMOVED FROM EXISTING CHANNEL BANK DUE TO WIDENING RIVER CHANNEL BY REPLACING EXISTING BRIDGE WITH A WIDER SPAN PROPOSED BRIDGE

Please refer to Figures 2 and 3 for specific locations and details of impact areas.

**SURFACE AREA IN ACRES OF WETLANDS
OR OTHER WATERS FILLED**

IMPACT NO./WETLAND AREA	IMPACT TYPE	PERMANENT		CONSTRUCTION (temporary)	
		WETLANDS	WATERS OF THE US	WETLANDS	WATERS OF THE U.S.
P1/(a)	Bridge Abutments		2490 sf / 200 lf		
P2/(b)	Building Site	8295 sf			
P3/(b)	Relocation/Piping		2590 sf / 602 lf		
P4/(c)	Culvert Inlet	157 sf	-	-	
P5/(c)	Road Fill/Culvert	262 sf			
P6/(c)	Riprap	107 sf			
P7/(c)	Road Fill/Culvert	775 sf			
P8/(c)	Riprap	198 sf			
P9/(c)	Road Fill/Culvert	1452 sf			
P10/(c)	Riprap	287 sf			
P11/(d)	Road Fill/Culvert		1110 sf / 120 lf		
P12/(e)	Riprap		123 sf / 21 lf		
P13/(i)	Culvert Outfall	1440 sf			
P13a/(i)	Culvert Outfall		225 sf / 40 lf		
P14/(j)	Culvert Outfall		174 sf / 20 lf		
T1/(c)	Bridge Removal		(-3035 sf)*		
T2/(d)	Headwall Construction			136 sf	
T3/(e)	Headwall Construction			119 sf	
T4/(e)	Headwall Construction			457 sf	
T5(e)	Headwall Construction				164 sf / 21 lf
TOTALS			1003 lf		21 lf
TOTALS		12973 sf	3677 sf	712 sf	164 sf
TOTALS		0.298 ac	0.084 ac	0.016 ac	0.004 ac

* T1 includes 3035 sf of waters of the U.S. restoration.

APPENDIX 1

PRACTICABLE ALTERNATIVES ANALYSIS

Impact Avoidance and Minimization

Master planning and alternatives analyses for the Project have been under way for over nine years. Past studies have included environmental impact reports, evaluation of biotic conditions, geologic hazard studies, drainage plans, transportation studies, PUD development plans, water supply plans, etc. [REDACTED] [REDACTED]. These previous studies document the detailed review of impact avoidance and feasibility analyses that has occurred to date. This previous work has been incorporated into the alternatives analysis for this project as documented in the EA and in the proposed plans (i.e., preferred alternatives) contained in this permit application.

The Project has several primary goals which must be met in order to achieve successful and acceptable development over the 20-year build-out period. These goals include supporting approximately 30 percent of the expected Eagle County growth needs during the build-out period, as well as addressing the expected traffic growth that will result regardless of the Project. The detailed analyses of these issues have also been factored into the preferred alternatives presented in the EA and this application.

The historic and current alternatives analyses performed have greatly maximized avoidance of impacts to waters of the U.S., as well as other site-specific resources. However, unavoidable permanent and temporary impacts to jurisdictional waters of the U.S. (including wetlands) will occur as a result of the proposed Project. These unavoidable (proposed) impacts have been analyzed on an-impact area specific level, and have been minimized to the maximum extent possible.

Each prospective development site on the Project property was evaluated for waters/wetland habitat quality to determine the development scenario that would result in the least adverse environmental impacts. Every effort was made to avoid areas containing wetlands/waters of high quality (i.e. connected to other waterbodies, unique habitat types, relatively pristine or undisturbed). In proposed development areas with low quality wetlands/waters, every effort has been made to re-orient or re- design site plan configurations to minimize impacts. Given these efforts, permanent impacts have been limited to 0.298 acre of wetlands and 0.084 acre of waters; and temporary impacts have been limited to 0.016 acre of wetlands and 0.004 acre of waters.

Preferred Alternatives Analysis

Eagle River Corridor – Impacts to the Eagle River corridor are very minimal, and in fact this area is proposed to be improved over existing conditions.

New Bridge (Impact Area P1 & T1) – Several bridge alternatives were analyzed, ranging from free-span configurations to those with piers in the river. The preferred alternative is proposed to free span the river, with the abutments placed outside of, and above, the ordinary high water mark.

A minimal amount of riprap (Impact P1) will be required to ensure the bank stability adjacent to the new piers. This bridge replacement will result in a net benefit, however, as the fill associated with the old bridge will be removed from the river corridor (Impact T1). The T1 area will be fully restored to a riverine habitat type that is consistent with upstream and downstream features.

Outfall Structures – Alternative outfall configurations and locations were investigated based upon presence of wetland habitat, property ownership and design/engineering feasibility. The preferred alternatives for the Nottingham Gulch outfall (Impact P13) and the storm sewer outfall (P14) have been located in minimal impact areas and designed such that they are limited to the minimal amount of fill material required to ensure the long-term stability of the river banks.

Nottingham Gulch, Lower Reach – The lower reach of Nottingham Gulch, downstream of I-70, had been severely impacted from historic ranch operations. The gulch was contained within a man-made irrigation ditch that historically traversed the Stolport parcel in a westward direction. Currently, the gulch flow spills out of a failed portion of the irrigation ditch and dissipates/infiltrates into a weedy meadow.

Relocation/Piping – Avoiding impact to the “ditch reach” (Impact P3) of the gulch was not feasible, given stormwater management requirements and the grades required for the new I-70 interchange, the Ranch Road and the commercial development on the south side of I-70. Therefore, the only alternative investigated was the “no build” alternative. The “no-build” alternative is not a financially feasible option for this Project. It should be noted that current design plans are investigating the feasibility of splitting a portion of the flow from the piped gulch (i.e., the base or normal flow) from the storm flows to support water features between the two Big Box buildings.

Commercial Site – The location of the commercial site was driven by zoning and the location of the new I-70 interchange. These parameters limited site selection and financial feasibility and dictated the size of the buildings required. The low-quality wetland habitat in this area (Impact P2) was artificially supported by a ditch breach. This wetland was of questionable jurisdictional status during the pre-application conference with the Army Corps, however it was later decided (by the Corps) that it is jurisdictional. Given the extremely low value and the fact that avoidance of the wetland would place severe constraints on site development (and an undue financial burden on the Project), it was decided that this area would be impacted under the preferred alternative. The only alternative investigated was the “no build” alternative. The “no-build” alternative is not a financially feasible option for this Project.

New I-70 Interchange – The location of the interchange was driven by CDOT and FHWA design standards, as well as by available space and grading requirements. The preferred alternative design includes roundabouts, which have allowed the total impact area (i.e., the width between ramp termini) to be minimized. Impact P4 on the north side of the proposed interchange has been further minimized with the installation of a retaining wall, upslope of the culvert, to minimize side slope grading impacts.

Internal Road Alignments – All internal road alignments were laid out to Town of Avon standards,

Internal Road Alignments – All internal road alignments were laid out to Town of Avon standards, which include maximum grades of 10% for all road surfaces and maximum grades of 6% at intersections. These grade standards and the topography of the site created unique challenges, which added to the difficulty and cost of impact avoidance. The original plan for the roads north of I-70 attempted to minimize retaining walls and grading. This original road plan lead to five wetland crossings, none of which occurred at an existing crossing site. The preferred alternative plans include grading and retaining walls, such that the wetland crossings have been minimized to a total of four (one of which was placed at an existing crossing site).

Swift Gulch Road – This road alignment proposes one crossing of Nottingham Gulch on the north side of I-70 (Impact Areas P5, P6 & T2). The preferred alignment of the crossing was shifted to the south, into the existing (at grade) crossing that has been used historically by the Nottingham Ranch. This crossing site is the least environmentally damaging location as it is devoid of vegetation and lacking habitat characteristics.

Roads D and E – The preferred alternative moved Road E from the east to the west side of Nottingham Gulch to avoid an additional wetland crossing (as Road E must access the Open Space parcel north of the pond). This alternative has created a difficult and costly grading and retaining wall requirement, but it has reduced wetland impact. In response to the Road E relocation, Road D has been designed as a loop that requires two wetland crossings over Nottingham Gulch (Impacts P7, P8 & T3 and P9, P10 & T4). These road crossings have been located at narrow points in the wetland boundary, as grading and road grades would allow. Road D also traverses the entire property to the east and results in one crossing of Traer Creek (Impact P11, P12 & T5). This crossing was placed at a narrow area that had no wetland habitat, therefore, only minimal impact will occur to a non-vegetated waters reach.

APPENDIX 2

CONCEPTUAL MITIGATION PLAN

Conceptual Mitigation Options

Final mitigation planning has not yet been completed for the project, however, the applicant fully intends to prepare a comprehensive mitigation plan that compensates for proposed, onsite impacts. The plan will address the in-place restoration of all temporary, construction-related impacts as well as the mitigation of permanent impacts. Permanent impacts will be mitigated onsite via the restoration and/or creation of habitat. The mitigation will be completed at the ratio defined by the Army Corps of Engineers in the Section 404 permit.

Feasible mitigation options exist along the Eagle River corridor, the Nottingham Gulch corridor (upstream of I-70), the Traer Creek corridor, and potentially along the un-named drainages. Some conceptual mitigation alternatives are discussed below:

Eagle River Corridor

New Bridge (Impact Area P1 & T1) – This bridge replacement will result in a net benefit, as the fill and structures associated with the old bridge will be removed from the river corridor (Impact T1). The T1 area will be fully restored to a riverine habitat type that is consistent with upstream and downstream features. The applicant will also investigate the feasibility of planting a portion of the riprap areas with willow live stakes or other similar vegetation method to assist in improving the aesthetics and naturalizing these impact areas.

Outfall Structures – The applicant will investigate the feasibility of planting these areas with willow live stakes or other similar vegetation method to assist in improving the aesthetics and naturalizing these impact areas.

Out-Parcel - A separate “out-parcel” exists along the north side of the Eagle River, just south of wetland area (g) and the railroad tracks. Potential in-stream and streambank restoration options may be investigated at this location, including bio-engineered bank stabilization, vegetative restoration and fishery habitat. Please refer to Figure 2.

Nottingham Gulch, Upstream of I-70

Numerous mitigation opportunities exist along Nottingham Gulch and the upstream pond, including bank stabilization, in-stream habitat creation, and restoration of degraded wetland and riparian habitat. Examples include: 1) the proposed road crossing locations may be utilized to create backwater pools that raise local ground water and support an expanded wetland/riparian vegetation zone; 2) streambanks that are degraded may be stabilized using bio-engineering techniques and vegetation; and 3) the pond fringe

may be planted with native wetland and riparian species.

Traer Creek and Un-named Drainages

The mitigation opportunities listed above for Nottingham Gulch may also be applicable to this drainage. Simple in-stream structures may be utilized to create aquatic habitat, while raising local groundwater and supporting wetland/riparian vegetation zones.