



**Planning and Community  
Development Department**  
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# DEVIATION REQUEST AND DECISION FORM

Updated: 6/26/2019

## PROJECT INFORMATION

Project Name :	Eagle Rising
Schedule No.(s) :	52290-00-034
Legal Description :	See Attached

## APPLICANT INFORMATION

Company :	MyPad, Inc., General Partner, Casas Limited Partnership #4	
Name :	Steven J. Jacobs, Jr., President	
	<input checked="" type="checkbox"/> Owner	<input type="checkbox"/> Consultant <input type="checkbox"/> Contractor
Mailing Address :	P.O. Box 2076 Colorado Springs, CO 80901	
Phone Number :	(719) 359-1473	
FAX Number :		
Email Address :	stripejacobs@gmail.com	

## ENGINEER INFORMATION

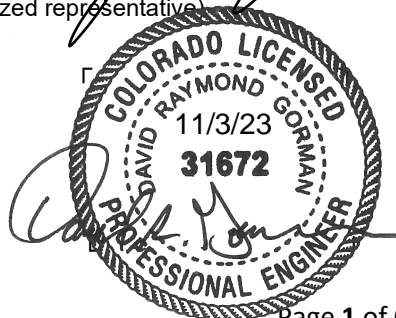
Company :	M.V.E., Inc.	Colorado P.E. Number :	31672
Name :	David Gorman		
Mailing Address :	1903 Lelaray St, Ste 200		
Phone Number :	(719) 635-5736		
FAX Number :			
Email Address :	daveg@mvecivil.com		

## OWNER, APPLICANT, AND ENGINEER DECLARATION

To the best of my knowledge, the information on this application and all additional or supplemental documentation is true, factual and complete. I am fully aware that any misrepresentation of any information on this application may be grounds for denial. I have familiarized myself with the rules, regulations and procedures with respect to preparing and filing this application. I also understand that an incorrect submittal will be cause to have the project removed from the agenda of the Planning Commission, Board of County Commissioners and/or Board of Adjustment or delay review until corrections are made, and that any approval of this application is based on the representations made in the application and may be revoked on any breach of representation or condition(s) of approval.

Signature of owner (or authorized representative) \_\_\_\_\_ Date 11/3/2023

Engineer's Seal, Signature  
And Date of Signature



**DEVIATION REQUEST** (Attach diagrams, figures, and other documentation to clarify request)

A deviation from the standards of or in Section **6.5.2 & Table 10-4** of the Engineering Criteria Manual (ECM) is requested.

3.3.3 B, C, K: Conformance with DCM1... ;  
DCM Sections 6.5.2, 6.5.3...

Identify the specific ECM standard which a deviation is requested:

Section 6.5.2. Channel Velocity

Concrete, riprap, or soil cement linings as approved by the City/County shall be used where channel bottom velocities exceed 6.0 ft/sec. Grass lined channels shall not be used where velocity exceeds permissible velocities in Table 10-4 or the Froude number is greater than 0.9 for the 100-year storm. .

State the reason for the requested deviation:

Adequate stream stabilization exists within the subject reach of Cottonwood Creek consisting of mature dense vegetation (grasses, reeds, willows, brush and trees), pond embankments which support wetland vegetation and provide storwater storage, and,large boulder grade check and pond bank lining. The owner has for many years nurtured and enhanced the natural conditions of stream and riparian corridor within the site and wishes to maintain the creek in the existing condition. Additional stabilaton is not necessary.

Explain the proposed alternative and compare to the ECM standards (May provide applicable regional or national standards used as basis):

The proposed alternative is to consider the stabilizaing value of the existing established pond embankments, vegetation and boulder placements and not require additional stabilzaton where hydraulic analysis indicates velocity and Froude Number values exceed the criteria in Section 6.5.2.

Eagle Rising Preliminary Plan

See PDR comments and memo

The Cottonwood Creek channel within the area designated as the "Reinstated Preliminary Plan" for Eagle Rising contains two constructed ponds with stabilized embankments that have created conditions within the creek that function as Constructed Wetlands Channel (CWC) which is described in the El Paso County Drainage Criteria Manual as an authorized BMP. The two ponds constitute stabilizing features and provide the added benefits of supporting wetland vegetation and controlling flow rates in the creek under most conditions. The existing pond spillway at DP 104 will require riprap installation at time of final plat as noted on the Drainage Plan to protect the spillway during storm water overflows from the pond to the downstream creek drainageway. The Spillway at DP 126 has existing riprap in place and no further installation is required. The ponds have withstood repeated significantly sized rainfall events throughout decades of existence.

regrade the riprap spillway?

The creek bed, wetland areas and riparian overstory of Cottonwood Creek throughout the site are well vegetated native grasses, brush and trees as illustrated by the photos contained in the appendix of this report. The Natural Resources Assessment by ERO Resources Corporation lists the various plants found. The ERO report also contains photographic documentation of the plants and site conditions. Wetland areas feature native grasses such as Nebraska Sedge, Baltic Rush, Redtop and Broadleaf Cattail. The wetlands also contain mature, dense and well-established willows which serve to anchor the soil of the creek bed throughout the site. Specific willow species include Sandbar Willow, Strapleaf Willow, Park Willow and Shining Willow. The riparian overstory is described as containing Peachleaf Willow and Plains Cottonwood trees. Shrubs present in the riparian corridor through the site include Snowberry, Wood's Rose, Golden Current, and Chokecherry. All these species act together to preserve the existing creek alignment and grades that are observed at the site and documented by the photographic evidence.

Supplemental information concerning permissible velocities and permissible shear stresses for channel lining materials is included in the appendix. The information includes suggested permissible values for the native grasses, willows and trees that grow in the project reach. Live willow stakes are included and listed to have permissible velocities of 3 to 10 f/sec with permissible shear stress of 2.10 to 3.10 lbs/sf. However, the supplemental information assumes that the vegetation is newly planted, as in Reed Plantings, Hardwood Tree Plantings and Live Willow Stakes. In this case, the vegetative cover throughout the site are not plantings or stakes, but well established, robust and dense cover that has served to stabilize the creek bed and banks. The upper end of the permissible value range applies in this project reach.

The results of the hydraulic analysis contained in this report indicate eight locations that exhibit channel flow velocities that approach or exceed 6 fps or have Froude Number values that equal or exceed 1.0. Five of those locations are the pond emergency spillways which are protected with riprap as indicated on the Drainage Map. The other three locations are within the natural creek which exhibit the established vegetative protection discussed above. The most upstream location, upstream of the pond at DP 104, has Froude Number of 0.87, Channel Velocity of 5.88 ft/sec and shear stress of 1.90 lbs/sf. The next downstream location is upstream of the pond at DP 126 and has Froude Number of 1.01, Channel Velocity of 6.57 ft/sec and shear stress of 3.08 lbs/sf. The final location, just downstream of the previous has Froude Number of 1.00, Channel Velocity of 6.92 ft/sec and shear stress of 1.10 lbs/sf. The presence of dense vegetation in the reach provides established stabilization for these locations. An existing boulder structure, located upstream of the pond at DP 104 provides stabilization. Portions of the banks inside the DP 104 pond are lined with large boulders. The boulders have been in place for many years and are well embedded and incorporated into the creek terrain. No further improvements are needed in the creek.

Assuming the existing vegetation is maintained.(?)

Explain the proposed alternative and compare to the ECM standards (May provide applicable regional or national standards used as basis):

The allowances in Section 6.5.2 and Table 10-4 do not account for the types and condition of the vegetation present in the creek channel and are not applicable to this case. Furthermore, hydraulic analysis results for the vast majority of the channel reach comply with the provision of Section 6.5.2. There are only select and intermitant locations that do not and these locations present with the existing dense vegetation discussed above or are armored with existing or proposed rip rap (pond emergency spillways).

This does not answer the question. Provide alternative hydraulic analysis methods/information for the vegetation proposed to be maintained.

#### LIMITS OF CONSIDERATION

(At least one of the conditions listed below must be met for this deviation request to be considered.)

- The ECM standard is inapplicable to the particular situation.
- Topography, right-of-way, or other geographical conditions or impediments impose an undue hardship and an equivalent alternative that can accomplish the same design objective is available and does not compromise public safety or accessibility.
- A change to a standard is required to address a specific design or construction problem, and if not modified, the standard will impose an undue hardship on the applicant with little or no material benefit to the public.

Provide justification:

The allowances in Section 6.5.2 and Table 10-4 do not account for the types and condition of the vegetation present in the creek channel and are not applicable to this case. Furthermore, hydraulic analysis results for the vast majority of the channel reach comply with the provision of Section 6.5.2. There are only select and intermitant locations that do not and these locations present with the existing dense vegetation discussed above or are armored with existing or proposed rip rap (pond emergency spillways).

The supplimental information with allowable flow velocities and shear stresses are more closely applicable to the type of vegetation found within the subject creek reach and site.

The U.S. Army Core of Engineers has, after staff viewing if the site, recommended that the existing wetlands and natural features not be disturbed, seeing no beneficial outcomes to further structrural stabilization. The application of the requested data to this project will preserve the existing stabilizing vegetation and natural terrain for the benefit of thje site, natural aesthetics and future lot owners.

#### CRITERIA FOR APPROVAL

Per ECM section 5.8.7 the request for a deviation may be considered if the request is **not based exclusively on financial considerations**. The deviation must not be detrimental to public safety or surrounding property. The applicant must include supporting information demonstrating compliance with **all of the following criteria**:

The deviation will achieve the intended result with a comparable or superior design and quality of improvement.

The requested deviation allows the existing terrain and vetation, which provides the current stabilizatokin of the creek bed and banks, to remain in place Current features of the creek including the two ponds and boulder placements were installed prior to the time of current ownership. The owners do not wish to see the creek further disturbed which will serve to destabilize the creek and harm the existing terrain, plantings and natural beauty of the creek

The deviation will not adversely affect safety or operations.

The existing vegetation will fulfill the stabilization requirements for creek. The allowance of the deviaton will not adversely affect safety or operations. Allowance of the deviation does not decrease the level of stabilizatoin available compared to other stabilization options.

The deviation will not adversely affect maintenance and its associated cost.

All maintenance of the creek and riparian corridor throughout within th Drainage Easement will be undertaken by the Homeowners Association. The deviatoin will not adversely affect maintenance or maintenance costs. El Paso County will not bear creek maintenace costs in this prioject. .

As noted in Table 10-4, "\*Grass lined channels are dependent upon assurances of continuous growth and maintenance of grass."

The deviation will not adversely affect aesthetic appearance.

The natural aesthetic appearance of the site will remain intact and in place. Conversely, The requirement for additioanal constructed stabilization would harm the site aesthetic appearance.

The deviation meets the design intent and purpose of the ECM standards.

The supporting documentation provided in this deviation request and the MDDP/Preliminary Drainage Report shows that the existing vegeation has served and will serve as the required stabilization within the creek. The purpose of the ECM standard is met.

The deviation meets the control measure requirements of Part I.E.3 and Part I.E.4 of the County's MS4 permit, as applicable.

- The proposed deviation request meets the control measure requirements specified by the County's MS4 Permit.
- The allowance fo this deviation will disturbance of the creek bed and banks and therefor prevent erosion and sedimentation within the creek.
- Stormwater quality treatmen for the developmet site will be provided as required.
- Appropriate stormwater control measures will be implemented for any land disturbance as required in accordance with an approved Grading and Erosion Control Plan

avoid(?)

**REVIEW AND RECOMMENDATION:**

**Approved by the ECM Administrator**

This request has been determined to have met the criteria for approval. A deviation from Section \_\_\_\_\_ of the ECM is hereby granted based on the justification provided.

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**Denied by the ECM Administrator**

This request has been determined not to have met criteria for approval. A deviation from Section \_\_\_\_\_ of the ECM is hereby denied.

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**ECM ADMINISTRATOR COMMENTS/CONDITIONS:**

## **1.1. PURPOSE**

The purpose of this resource is to provide a form for documenting the findings and decision by the ECM Administrator concerning a deviation request. The form is used to document the review and decision concerning a requested deviation. The request and decision concerning each deviation from a specific section of the ECM shall be recorded on a separate form.

## **1.2. BACKGROUND**

A deviation is a critical aspect of the review process and needs to be documented to ensure that the deviations granted are applied to a specific development application in conformance with the criteria for approval and that the action is documented as such requests can point to potential needed revisions to the ECM.

## **1.3. APPLICABLE STATUTES AND REGULATIONS**

Section 5.8 of the ECM establishes a mechanism whereby an engineering design standard can be modified when if strictly adhered to, would cause unnecessary hardship or unsafe design because of topographical or other conditions particular to the site, and that a departure may be made without destroying the intent of such provision.

## **1.4. APPLICABILITY**

All provisions of the ECM are subject to deviation by the ECM Administrator provided that one of the following conditions is met:

- The ECM standard is inapplicable to a particular situation.
- Topography, right-of-way, or other geographical conditions or impediments impose an undue hardship on the applicant, and an equivalent alternative that can accomplish the same design objective is available and does not compromise public safety or accessibility.
- A change to a standard is required to address a specific design or construction problem, and if not modified, the standard will impose an undue hardship on the applicant with little or no material benefit to the public.

## **1.5. TECHNICAL GUIDANCE**

The review shall ensure all criteria for approval are adequately considered and that justification for the deviation is properly documented.

## **1.6. LIMITS OF APPROVAL**

Whether a request for deviation is approved as proposed or with conditions, the approval is for project-specific use and shall not constitute a precedent or general deviation from these Standards.

## **1.7. REVIEW FEES**

A Deviation Review Fee shall be paid in full at the time of submission of a request for deviation. The fee for Deviation Review shall be as determined by resolution of the BoCC.

**NORTH PORTION – ( 10195 KURIE ROAD)**

LEGAL DESCRIPTION:

THAT PORTION OF SECTION 29, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6<sup>TH</sup> P.M., EL PASO COUNTY, COLORADO DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF THE NORTHEAST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER OF SAID SECTION 29, SAID POINT BEING ON THE SOUTHERLY BOUNDARY OF PARK FOREST ESTATES FILING NO 2 (PLAT BOOK B-2 AT PAGE 52); THENCE S 00° 13'40"E ON THE WEST LINE OF THE EAST HALF OF SAID SECTION 29, A DISTANCE OF 1413.98 FEET TO THE TRUE POINT OF BEGINNING; THENCE N 00° 13'40"W, 1413.98 FEET; THENCE N89° 14'16"E, ON THE SOUTHERLY BOUNDARY OF SAID PARK FOREST ESTATES, A DISTANCE OF 375.32 FEET TO THE SOUTHEAST CORNER OF LOT 14, BLOCK 18 OF SAID PARK FOREST ESTATES; THENCE N89° 13'46"E ALONG SAID SOUTHERLY BOUNDARY, A DISTANCE OF 60.00 FEET TO THE EAST LINE OF KURIE ROAD; THENCE N89°33'17"E ALONG SAID SOUTHERLY BOUNDARY, A DISTANCE OF 237.50 FEET; THENCE N89°20'43"E ALONG SAID SOUTHERLY BOUNDARY, A DISTANCE OF 149.96 FEET; THENCE S00°39'26"E, DEPARTING SAID SOUTHERLY BOUNDARY OF PARK FOREST ESTATES, A DISTANCE OF 231.57 FEET; THENCE S43°12'03"E, A DISTANCE OF 433.08 FEET; THENCE S43°12'03"E, A DISTANCE OF 56.61 FEET; THENCE N88°33'24"E, A DISTANCE OF 0.10 FEET TO THE NORTHWEST CORNER OF LOT 1 POCO SUBDIVISION ACCORDING TO THE TO THE OFFICIAL MAP THEREOF FILED IN THE OFFICE OF THE COUNTY RECORDER OF EL PASO COUNTY, COLORADO, AS RECEPTION NO. 2406425; THENCE SOUTHERLY ALONG THE WESTERLY LINE OF SAID LOT 1 THE FOLLOWING SIX (6) COURSES:

S16°04'20"E, 158.01 FEET;

S02°43'41"W, 265.73 FEET;

N84°46'48"W, 71.67 FEET;

S00°11'34"W, 147.46 FEET;

N88°32'26"E, 150.00 FEET;

S01°27'34"E, 275.63 FEET;

THENCE S89°45'28"W DEPARTING SAID WESTERLY LINE OF SAID LOT 1, A DISTANCE OF 766.08 FEET; THENCE N00°14'32"W, 100.00 FEET; THENCE S89°45'28"W, 152.00 FEET; THENCE S00°14'32"E, 200.00 FEET; THENCE S89°45'28"W, 152.00 FEET; THENCE N00°14'32"W, 100.00 FEET; THENCE S89°45'28"W, 201.18 FEET TO A POINT ON SAID WEST LINE OF THE EAST HALF OF SAID SECTION 29, SAID POINT BEING THE TRUE POINT OF BEGINNING.

DESCRIPTION PREPARED BY:

M & S CIVIL CONSULTANTS, INC.  
102 EAST PIKES PEAK AVE. STE.306  
COLORADO SPRINGS, COLORADO

**SOUTH PORTION –(10115 KURIE ROAD)**

LEGAL DESCRIPTION:

THAT PORTION OF SECTION 29, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6<sup>TH</sup> P.M., EL PASO COUNTY, COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF THE NORTHEAST ONE-QUARTER OF THE NORTHWEST ONE-QUARTER OF SAID SECTION 29, SAID POINT BEING ON THE SOUTHERLY BOUNDARY OF PARK FOREST ESTATES FILING NO. 2 (PLAT BOOK B-2 AT PAGE 52), THENCE N89°14'16"E, ON THE SOUTHERLY BOUNDARY OF SAID PARK FOREST ESTATES, A DISTANCE OF 375.32 FEET TO THE SOUTHEAST CORNER OF LOT 14, BLOCK 18 OF SAID PARK FOREST ESTATES; THENCE N89°13'46"E ALONG SAID SOUTHERLY BOUNDARY, A DISTANCE OF 60.00 FEET TO THE EAST LINE OF KURIE ROAD; THENCE N89°33'17"E ALONG SAID SOUTHERLY BOUNDARY, A DISTANCE OF 237.50 FEET; THENCE N89°20'43"E ALONG SAID SOUTHERLY BOUNDARY, A DISTANCE OF 149.96 FEET; THENCE S00°39'26"E, DEPARTING SAID SOUTHERLY BOUNDARY OF PARK FOREST ESTATES, A DISTANCE OF 231.57 FEET; THENCE S43°12'03"E, A DISTANCE OF 433.08 FEET; THENCE S43°12'03"E, A DISTANCE OF 56.61 FEET; THENCE N88°33'24"E, A DISTANCE OF 0.10 FEET TO THE NORTHWEST CORNER OF LOT 1 POCO SUBDIVISION ACCORDING TO THE TO THE OFFICIAL MAP THEREOF FILED IN THE OFFICE OF THE COUNTY RECORDER OF EL PASO COUNTY, COLORADO, AS RECEPTION NO. 2406425; THENCE SOUTHERLY ALONG THE WESTERLY LINE OF SAID LOT 1 THE FOLLOWING SIX (6) COURSES:

S16°04'20"E, 158.01 FEET;

S02°43'41"W, 265.73 FEET;

N84°46'48"W, 71.67 FEET;

S00°11'34"W, 147.46 FEET;

N88°32'26"E, 150.00 FEET;

S01°27'34"E, A DISTANCE OF 275.63 FEET TO THE TRUE POINT OF BEGINNING;

THENCE S01°27'34"E, A DISTANCE OF 178.87 FEET; THENCE S34°54'56"W, A DISTANCE OF 563.22 FEET; THENCE S00°00'00"E, A DISTANCE OF 344.55 FEET; THENCE N90°00'00"E, A DISTANCE OF 87.56 FEET; THENCE S00°00'00"E, A DISTANCE OF 459.65 FEET; THENCE S89°59'26"W, A DISTANCE OF 1035.05 FEET TO A POINT ON THE WEST LINE OF THE EAST HALF OF SAID SECTION 29; THENCE N00°13'40"W, ALONG SAID WEST LINE, A DISTANCE OF 1439.98 FEET TO A POINT WHICH IS DRAWN S 89° 45'28" W FROM THE POINT OF BEGINNING; THENCE N 89°45'28"E, A DISTANCE OF 201.18 FEET; THENCE S00°14'32"E, 100.00FEET; THENCE N89°45'28"E, 152.00 FEET; THENCE N00°14'32"W, 200.00 FEET; THENCE N89°45'28"E, 152.00 FEET; THENCE S00°14'32"E, 100.00 FEET; THENCE N89°45'28"E, 766.08 FEET, MORE OR LESS TO THE TRUE POINT OF BEGINNING.

DESCRIPTION PREPARED BY:

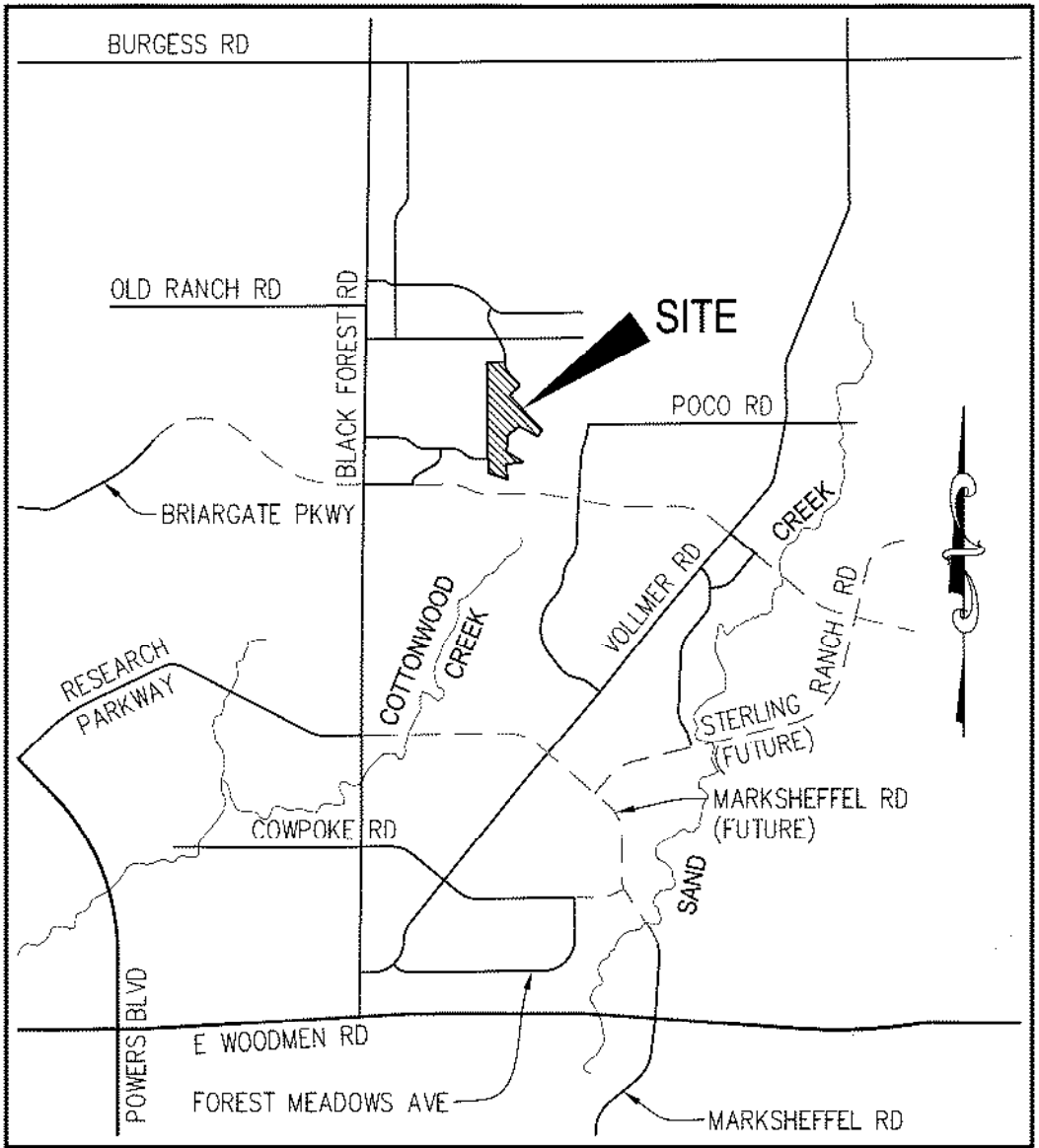
M & S CIVIL CONSULTANTS, INC.

102 EAST PIKES PEAK AVE. STE 306

COLORADO SPRINGS, COLORADO

80903





VICINITY MAP

N.T.S.

**Table 2. Permissible Shear and Velocity for Selected Lining Materials<sup>1</sup>**

Boundary Category	Boundary Type	Permissible Shear Stress (lb/sq ft)	Permissible Velocity (ft/sec)	Citation(s)
<u>Soils</u>	Fine colloidal sand	0.02 - 0.03	1.5	A
	Sandy loam (noncolloidal)	0.03 - 0.04	1.75	A
	Alluvial silt (noncolloidal)	0.045 - 0.05	2	A
	Silty loam (noncolloidal)	0.045 - 0.05	1.75 – 2.25	A
	Firm loam	0.075	2.5	A
	Fine gravels	0.075	2.5	A
	Stiff clay	0.26	3 – 4.5	A, F
	Alluvial silt (colloidal)	0.26	3.75	A
	Graded loam to cobbles	0.38	3.75	A
	Graded silts to cobbles	0.43	4	A
	Shales and hardpan	0.67	6	A
<u>Gravel/Cobble</u>	1-in.	0.33	2.5 – 5	A
	2-in.	0.67	3 – 6	A
	6-in.	2.0	4 – 7.5	A
	12-in.	4.0	5.5 – 12	A
<u>Vegetation</u>	Class A turf	3.7	6 – 8	E, N
	Class B turf	2.1	4 - 7	E, N
	Class C turf	1.0	3.5	E, N
	Long native grasses	1.2 – 1.7	4 – 6	G, H, L, N
	Short native and bunch grass	0.7 - 0.95	3 – 4	G, H, L, N
	Reed plantings	0.1-0.6	N/A	F, N
	Hardwood tree plantings	0.41-2.5	N/A	E, N
<u>Temporary Degradable RECPS</u>	Jute net	0.45	1 – 2.5	E, H, M
	Straw with net	1.5 – 1.65	1 – 3	E, H, M
	Coconut fiber with net	2.25	3 – 4	E, M
	Fiberglass roving	2.00	2.5 – 7	E, H, M
<u>Non-Degradable RECPS</u>	Unvegetated	3.00	5 – 7	E, G, M
	Partially established	4.0-6.0	7.5 – 15	E, G, M
	Fully vegetated	8.00	8 – 21	F, L, M
<u>Riprap</u>	6 – in. d <sub>50</sub>	2.5	5 – 10	H
	9 – in. d <sub>50</sub>	3.8	7 – 11	H
	12 – in. d <sub>50</sub>	5.1	10 – 13	H
	18 – in. d <sub>50</sub>	7.6	12 – 16	H
	24 – in. d <sub>50</sub>	10.1	14 – 18	E
<u>Soil Bioengineering</u>	Wattles	0.2 – 1.0	3	C, I, J, N
	Reed fascine	0.6-1.25	5	E
	Coir roll	3 - 5	8	E, M, N
	Vegetated coir mat	4 - 8	9.5	E, M, N
	Live brush mattress (initial)	0.4 – 4.1	4	B, E, I
	Live brush mattress (grown)	3.90-8.2	12	B, C, E, I, N
	Brush layering (initial/grown)	0.4 – 6.25	12	E, I, N
	Live fascine	1.25-3.10	6 – 8	C, E, I, J
	Live willow stakes	2.10-3.10	3 – 10	E, N, O
<u>Hard Surfacing</u>	Gabions	10	14 – 19	D
	Concrete	12.5	>18	H

<sup>1</sup> Ranges of values generally reflect multiple sources of data or different testing conditions.

A. Chang, H.H. (1988).	F. Julien, P.Y. (1995).	K. Sprague, C.J. (1999).
B. Florineth. (1982)	G. Kouwen, N.; Li, R. M.; and Simons, D.B., (1980).	L. Temple, D.M. (1980).
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[www.wes.army.mil/el/emrrp](http://www.wes.army.mil/el/emrrp)

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Temple, D.M. (1980). "Tractive force design of vegetated channels," *Transactions of the ASAE*, 23:884-890.

TXDOT (1999). "Field Performance Testing of Selected Erosion Control Products," TXDOT / TTI Hydraulics and Erosion Control Laboratory, Bryan, TX.

USACE TR EL 97-8



1

Looking downstream  
from 250 feet  
downstream of  
Cottonwood Creek  
DBPS Design Point  
82.

September 27, 2022



2

Looking upstream  
from 250 feet  
downstream of  
Cottonwood Creek  
DBPS Design Point  
82.

September 27, 2022



3

Looking upstream  
from Cottonwood  
Creek DBPS Design  
Point 84.

September 27, 2022



4

Looking downstream  
from 200 feet  
downstream of  
Cottonwood Creek  
DBPS Design Point  
84.

September 27, 2022



5

Looking upstream  
from Cottonwood  
Creek DBPS Design  
Point 102.

September 27, 2022



6

Looking upstream  
from Cottonwood  
Creek DBPS Design  
Point 102.

September 27, 2022



7

Looking upstream  
from Cottonwood  
Creek DBPS Design  
Point 102.

September 27, 2022



8

Looking upstream of  
tributary , from  
Cottonwood Creek  
DBPS Design Point  
102.

September 27, 2022



9

Looking downstream  
from Cottonwood  
Creek DBPS Design  
Point 102.

September 27, 2022



10

Looking northeast  
from 100 feet  
downstream of  
Cottonwood Creek  
DBPS Design Point  
102.

September 27, 2022





11

Looking downstream from 200 feet downstream of Cottonwood Creek DBPS Design Point 102. Emergency spillway on left corner of pond.

September 27, 2022



12

Looking upstream from 200 feet downstream of Cottonwood Creek DBPS Design Point 102.

September 27, 2022



13

Buried and partially buried riprap at emergency overflow, from Cottonwood Creek DBPS Design Point 104.

September 27, 2022



14

Looking at heavy vegetation downstream, from Design Point 6C.

September 27, 2022



15

Looking at riprap  
upstream tributary  
flow, from Design  
Point 6B.

September 27, 2022



16

Looking southwest  
across stream from  
450 feet downstream  
of Cottonwood Creek  
DBPS Design Point  
104.

September 27, 2022



17

Looking up stream  
from 450 feet  
downstream of  
Cottonwood Creek  
DBPS Design Point  
104.

September 27, 2022



18

Looking upstream  
from 300 feet  
upstream of  
Cottonwood Creek  
DBPS Design Point  
124.

September 27, 2022



19

Looking west  
across channel from  
100 feet upstream  
of Cottonwood  
Creek DBPS  
Design Point 124.

September 27, 2022



20

Looking  
downstream at the  
upper banks from  
100 feet upstream of  
Cottonwood Creek  
DBPS Design Point  
124.

September 27, 2022



21

Looking upstream  
from Design Point 8.

September 27, 2022



22

Looking downstream  
from Design Point 8.

September 27, 2022



23

On the east side of the creek looking west from 200 feet downstream of Design Point 9.

September 27, 2022



24

Looking southwest towards pond embankment from 400 feet downstream of Design Point 10.

September 27, 2022



25

Looking downstream towards offsite pond and riprap from Cottonwood Creek DBPS Design Point 126.

September 27, 2022



26

Looking upstream from Cottonwood Creek DBPS Design Point 126.

September 27, 2022





27

Looking upstream towards riprap for Pond 2 emergency overflow from east bank 550 feet downstream of Design Point 10.

September 27, 2022



28

Looking across channel, from east bank 550 feet downstream of Design Point 10.

September 27, 2022



29

Looking upstream from the west bank 500 feet downstream of Design Point 10.

September 27, 2022



30

Looking north at culverts, on the east side of the road from 100 feet south of Design Point 8A.

September 27, 2022



31

Riprap lining  
downstream from  
DP8A, from 100 feet  
north of Design Point  
12.

September 27, 2022



32

Looking northwest  
up tributary stream  
from 100 feet  
northwest of Design  
Point 9.

September 27, 2022



33

Looking east, on west bank of creek 100 feet northwest of Design Point 9.

September 27, 2022



34

Riprap lined swale from barn area to creek, in need of additional riprap. Just west of Design Point 104.

September 27, 2022



35

Looking west,  
existing riprap lined  
swale in need of  
additional riprap in  
area of Design Point  
6A.

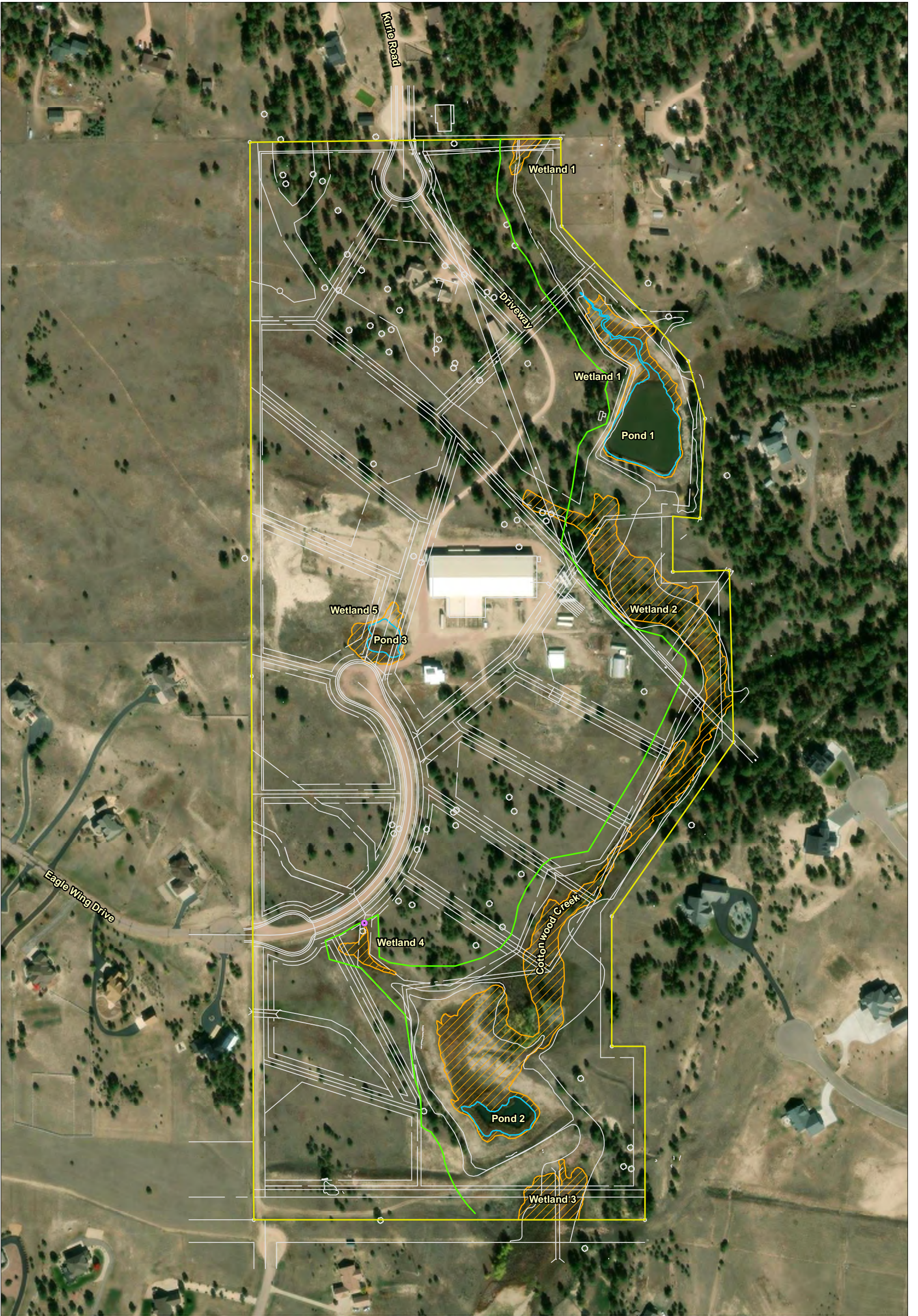
September 27, 2022



36

Looking at riprap on  
tributary flow  
upstream of DP6B,  
from Design Point  
6A.

September 27, 2022



Eagle Rising 2022 Natural Resources Assessment






-  Culvert
-  Construction/Disturbance Limit
-  Open Water
-  Project Area Boundary
-  Wetland

Image Source: Maxar Technologies©, October 14, 2022

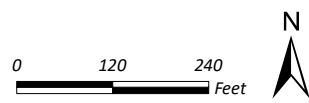


Figure 3  
Proposed Subdivision

Prepared for: Steve Jacobs  
File: 22\_113 Figure 3.mxd (GS)  
August 25, 2023



be impacted by development of the project area and to identify any significant changes in natural resources since the assessment conducted in 2012.

The project area has been continually influenced by human activities for more than 100 years. Timber was a major industry in the Black Forest in the late 1800's with numerous lumber mills scattered through the area. Grazing and agriculture dominated the land use in the early 1900's, eventually giving way to summer homes, and full-time residences (El Paso County Land Use Department 1987).

## Methods

During the 2022 site visits, ERO conducted an updated natural resources assessment of the project area. In addition to the information gathered during the 2022 site visits, natural resource information was obtained from existing databases and sources such as aerial photography, the Colorado Natural Diversity Information Source (NDIS), U.S. Fish and Wildlife Service (Service) National Wetlands Inventory database, U.S. Geological Survey (USGS) National Hydrography Dataset (NHD), and other sources ("Google, Inc." 2022; Natural Diversity Information Source 2021; U.S. Fish and Wildlife Service, n.d.; U.S. Geological Survey 2022). Based on the information gathered from existing sources and the initial site visit, ERO verified existing vegetation communities and identified important wildlife attributes of the project area.

## Project Area Description

The National Land Cover Database maps five land cover types in the project area (U.S. Geological Survey 2016). Grassland/Herbaceous is the most dominant and occurs throughout the majority of the western portion of the project area. The other land cover types in the project area include evergreen forest, scrub/shrub, open water, and barren land.

The project area is on the southern edge of the Black Forest, northeast of Colorado Springs (Figure 1). Vegetation in the project area consists of upland grasslands, patches of ponderosa pine (*Pinus ponderosa*) and upland shrubs, and wetland/riparian vegetation along drainages. Three tributaries to Cottonwood Creek converge at the eastern project area boundary. In the project area, Cottonwood Creek generally flows from north to south and primarily consists of wetlands throughout the channel (Figure 2; Photos 5a through 7a, 5b, 6b). Two ponds (Ponds 1 and 2) occur along Cottonwood Creek in the project area that are contained behind earthen dams (Photos 1a through 4a). As a result of water rights negotiations and drought, the wetlands along Cottonwood Creek and the two ponds were drier in 2022 than what was observed in 2012 (Photos 1b through 4b). A third pond (Pond 3), that was excavated in uplands occurs in the west, central portion of the project area (Figure 2; Photos 6a and 6b)). Wetlands occur in the channel and on benches and terraces along Cottonwood Creek and as small fringes along the ponds. A depression area and swale consisting of wetland vegetation (Wetland 4) occurs downstream of a culvert in the project area northwest of Pond 2 (Figure 2). Wetlands in the project area are dominated by Nebraska sedge (*Carex nebrascensis*), Baltic rush (*Juncus balticus*), redtop (*Agrostis gigantea*), broadleaf cattail (*Typha angustifolia*), sandbar willow (*Salix exigua*), strapleaf willow

(*Salix ligulifolia*), park willow (*Salix monticola*), and shining willow (*Salix lucida* subsp. *caudata*). The riparian overstory along Cottonwood Creek is dominated by peachleaf willow (*Salix amygdaloides*) and plains cottonwood (*Populus deltoides* subsp. *monilifera*) trees. Upland shrubs in the riparian corridor include snowberry (*Symphoricarpos occidentalis*), Woods' rose (*Rosa woodsii*), golden currant (*Ribes aureum*), and chokecherry (*Padus virginiana*) (Photo 10). The soils in the project area primarily consist of Pring coarse sandy loam, 3 to 8 percent slopes (Natural Resources Conservation Service 2022).

The project area is one of the last remaining nonresidential tracts of land along Cottonwood Creek. Rural residential development (2- to 5-acre lots) surrounds the entire project area. Two existing homes are located in the northwest corner of the project area and a large barn, corral, and disturbed area occurs in the north-central portion of the project area (Photo 8a). The uplands in the project area are a mixture of native grassland and disturbed areas (Photos 9a and 9b). The project area has historically been used for cattle grazing, and some limited grazing continues in the southeast corner of the project area. The native upland areas are dominated by blue grama (*Bouteloua gracilis*), sand dropseed (*Sporobolus cryptandrus*), threeawn (*Aristida* sp.), soapweed yucca (*Yucca glauca*), Canada wildrye (*Elymus canadensis*), intermediate wheatgrass (*Thinopyrum intermedium*), sideoats grama (*Bouteloua curtipendula*), muhly (*Muhlenbergia* sp.), and ponderosa pine (Photos 9a and 9b). The disturbed uplands are dominated by smooth brome (*Bromus inermis*), diffuse knapweed (*Centaurea diffusa*), Canada thistle (*Cirsium arvensis*), musk thistle (*Carduus nutans*), common mullein (*Verbascum thapsus*), common teasel (*Dipsacus fullonum*), and kochia (*Bassia scopara*).



## Conclusions

On behalf of the project proponent, ERO is requesting an approved JD for the old stock pond and upland vegetated swale in the northeastern portion of the project area, Pond 3 and associated Wetland 5, and Wetland 4. Based on the information in this report, if the Corps determines that the wetlands and waters are not jurisdictional, ERO would appreciate a written determination of this request confirming that no further consultation under Section 404 is required.

If you have any questions or need additional information, please do not hesitate to contact me at 303-830-1188 or by email at [cmarne@eroresources.com](mailto:cmarne@eroresources.com). I look forward to hearing from you.

Sincerely,



Courtney Marne  
Biologist/Associate

cc: David Jones - Land Resource Associates  
Stephen Jacobs - MyPad, Inc.

Attachments: Figures 1 and 2; Photo Log; Routine Wetland Determination Forms; JD Form

## References

- Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual." Wetlands Research Program Technical Report Y-87-1. Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station.  
<https://www.lrh.usace.army.mil/Portals/38/docs/USACE%2087%20Wetland%20Delineation%20Manual.pdf>.
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- U.S. Army Corps of Engineers. 2010. "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)." Vicksburg, Mississippi. <https://usace.contentdm.oclc.org/utis/getfile/collection/p266001coll1/id/7646>.
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- U.S. Department of Agriculture, Natural Resources Conservation Service. 2022b. "Web Soil Survey." 2022. <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
- U.S. Geological Survey. 2016. "National Land Cover Database." 2016. <https://www.usgs.gov/node/279743>.

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Weber, William A., Ronald C. Wittmann, and Linna Weber Müller-Wille. 2012. *Colorado Flora: Eastern Slope, Fourth Edition. A Field Guide to the Vascular Plants*. University Press of Colorado.

EAGLE RISING SUBDIVISION  
PHOTO LOG  
MARCH 19, 2012 AND APRIL 27, 2022



**Photo 1a** - Cottonwood Creek at the southern boundary of the project area. View is to the south.



**Photo 1b** - Cottonwood Creek at the southern boundary of the project area. View is to the south.



**Photo 2a** - Wetlands along Cottonwood Creek in the project area. View is to the south.



**Photo 2b** - Wetlands along Cottonwood Creek in the project area. View is to the south.



**Photo 3a** - Pond 1 in the project area. View is to the east.



**Photo 3b** - Immediately upstream of Pond 1 in the project area. View is to the east.

EAGLE RISING SUBDIVISION  
PHOTO LOG  
MARCH 19, 2012 AND APRIL 27, 2022



**Photo 4a** - Pond 2 in the project area.  
View is to the northwest.



**Photo 4b** - Pond 2 in the project area.  
View is to the northwest.



**Photo 5a** - Vegetated swale upstream of Cottonwood Creek  
in the project area. View is to the northwest.



**Photo 5b** - Vegetated swale upstream of Cottonwood Creek  
in the project area. View is to the northwest.



**Photo 6a** - Pond 3 in the project area.  
View is to the northwest.



**Photo 6b** - Pond 3 and associate Wetland 5 in the project area.  
View is to the northwest.

EAGLE RISING SUBDIVISION  
PHOTO LOG  
MARCH 19, 2012 AND APRIL 27, 2022



**Photo 7a** - Wetland 9 in the project area.  
View is to the southeast.



**Photo 7b** - Wetland 9 in the project area.  
View is to the southeast.



**Photo 8a** - Disturbed uplands and barn in the project area.  
View is to the northeast.



**Photo 8b** - Disturbed uplands and barn in the project area.  
View is to the northeast.



**Photo 9a** - Native uplands in the project area.  
View is to the northeast.



**Photo 9b** - Native uplands in the project area.  
View is to the northeast.

EAGLE RISING SUBDIVISION  
PHOTO LOG  
MARCH 19, 2012 AND APRIL 27, 2022



**Photo 10a** - Riparian corridor in the project area.  
View is to the southeast.



**Photo 10b** - Riparian corridor in the project area.  
View is to the southeast.

Add a title or cover sheet with description of this document and what it's for.

 <p><b>Date Created:</b> April 10, 2002 <b>Revised:</b> April 1, 2005 <b>Author:</b> Mindy Wheeler <b>Parks Affected:</b> Most</p>	<p align="center"><b>COLORADO STATE PARKS</b> <b>STEWARDSHIP PRESCRIPTION</b></p>  <p align="center"><b>Cottonwood and Willow Management</b> <i>Stewardship</i> <b>Rx</b></p>
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## NWP 29 PCN, PJD Request &amp; Mitigation Plan

Is this needed?

September 1, 2022

Kara Hellige, Chief  
Southern Colorado Branch  
U.S. Army Corps of Engineers  
Albuquerque District  
1970 E. 3rd Avenue, #109  
Durango, CO 81301

**RE: Clean Water Act, Nationwide Permit 29 Pre-Construction Notification, Request for Preliminary Jurisdictional Determination & Mitigation Plan for Cornerstone Estates Project in El Paso County, Colorado**

Dear Ms. Hellige:

**1.0 Introduction**

On behalf of William Guman & Associates, Ltd. (Applicant), Ecosystem Services, LLC (Ecos or ecos) is herein submitting a Pre-Construction Notification (PCN) for Clean Water Act (CWA), Section 404, Nationwide Permit 29 (NWP 29); a Request for Preliminary Jurisdictional Determination (PJD); and a Compensatory Mitigation Plan (Onsite Restoration Plan) to the U.S. Army Corps of Engineers (USACE) for the Cornerstone Estates project (Project) in El Paso County, Colorado (Project).

The contact information for the Applicant and their Agent is provided below:

**APPLICANT**

William Guman, PLA, ASLA, APA  
William Guman & Associates, Ltd.  
731 North Weber Street, Suite 10  
Colorado Springs, CO 80903  
Office Phone: (719) 633-9700  
bill@guman.net

**AGENT**

Grant E. Gurnée, P.W.S.  
Ecosystem Services, LLC  
1455 Washburn Street  
Erie, Colorado 80516  
Mobile Phone: (303) 746-0091  
grant@ecologicalbenefits.com

Until further notice, the Applicant herein authorizes Ecosystem Services, LLC to act as their Agent for all submittals and agency correspondence related to the Cornerstone Estates Project.

  
For William Guman & Associates, Ltd.

09/01/2022  
Date



## 1.1 Background Information

Ecosystem Services, LLC (Ecos or ecos) was retained by the Applicant to perform a delineation of wetland habitat and other waters of the U.S. (WOTUS) on the site. Ecos conducted a wetland delineation of the site on June 8, 2022. JR Engineering was retained by the Applicant to prepare the Site Plan for the proposed residential development. Utilizing the data ecos collected during the WOTUS delineation, we worked with JR to avoid and minimize impacts to WOTUS during the design development of the final Site Plan.

## 1.2 Site Location

The Site address is 11340 Goodson Road. It is located on the southeast edge of the Black Forest, approximately five miles north of Falcon, and 20 miles northeast of Colorado Springs. The sparsely forested northwest corner slopes down into native grasslands to the south and east. The surrounding land use is predominantly rural residential. An existing long, dirt driveway leads to the developed northwest corner of the Site where there is a small, man-made pond, a house, and two out-buildings. The eastern side of the Site consists of a 225-foot wide power line easement with multiple transmission lines (Figure 1).

Geographically, the Site is located within the northeast  $\frac{1}{4}$  of Section 23, Township 12 South, Range 65 West in El Paso County, Colorado. The center of the Site is situated at approximately Latitude  $38.993533^\circ$ , Longitude  $-104.628067^\circ$ . Refer to Figure 1, USGS Site Location Map.

## 2.0 Ecological Setting

The Site is located in the UESPA Level III Ecoregion: 26 Southwestern Tablelands (Chapman et al, 2006). More specifically, the Site spans across two Level IV Ecoregions. The northwest half of the Site is within Pine-Oak Woodlands (26i). This is a slightly elevated area comprised of a mosaic of grasslands, dense oak brush, and ponderosa pine woodlands, including the pine dominated Black Forest. The southeast portion is within Foothill Grasslands (26j), which encompasses a diverse mix of grasslands types, including small areas of tallgrass prairie that are rare in Colorado. Most of Colorado's eastern plains are vegetated with less diverse and less productive shortgrass prairie. However, the more diverse foothill grasslands persist due to slightly lower temperatures and more moisture (runoff, springs, and precipitation). Soils are loamy, gravelly, moderately deep, and mesic. Rangeland and pasture uses are common. Urban and suburban development has increased in recent years, expanding out from the City of Colorado Springs and Town of Monument.

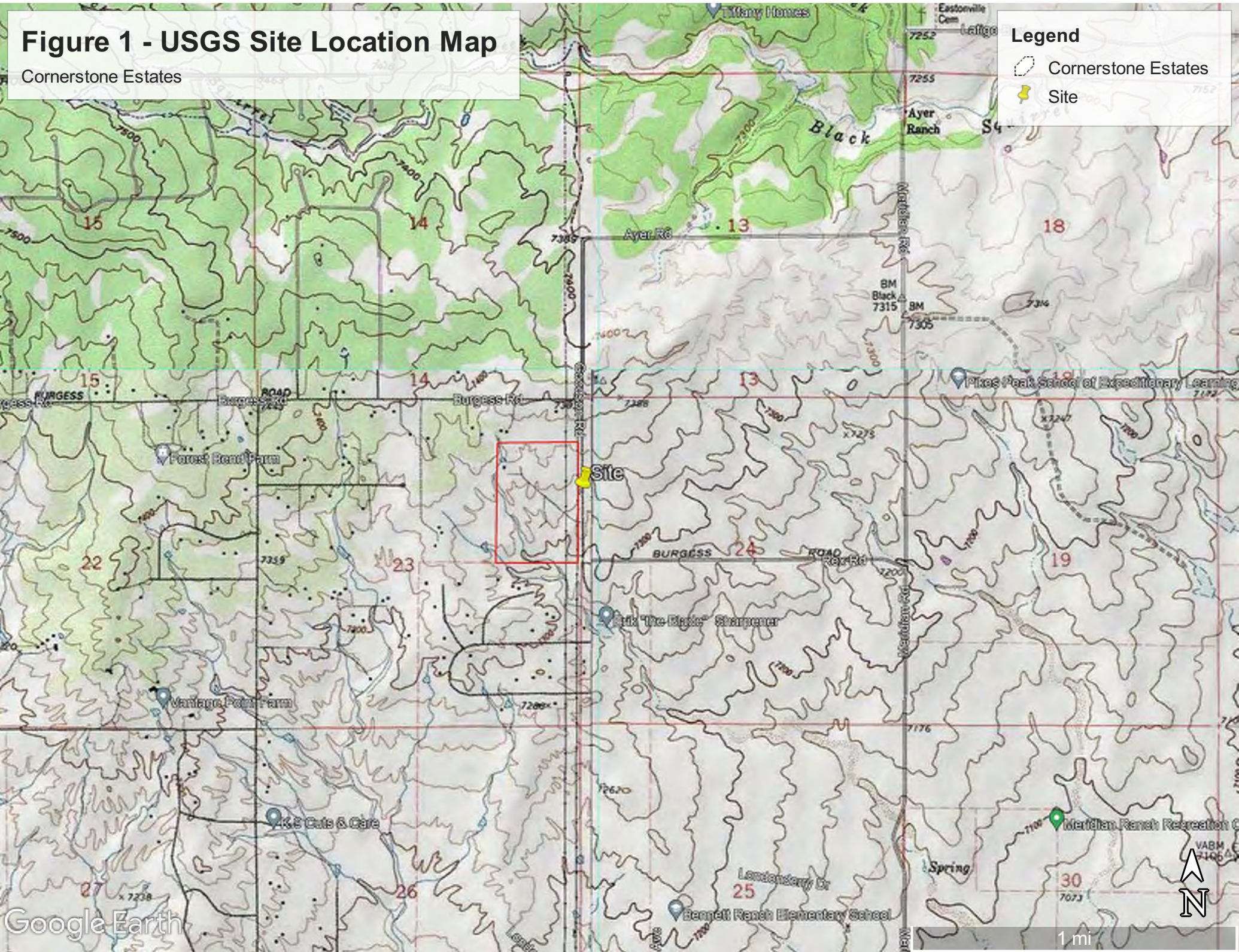
The Site contains no Colorado Natural Heritage Program (CNHP) Conservation Areas or Potential Conservation Areas (CNHP, 2021) and no Critical Habitat, Wildlife Refuges or Hatcheries according to the USFWS IPaC Trust Resources Report (USFWS, 2022) (Appendix D).

# Figure 1 - USGS Site Location Map

Cornerstone Estates

## Legend

- Cornerstone Estates
- Site





Grant E. Gurnee  
Ecosystem Services  
11712 Montgomery Circle  
Longmont CO 80504

August 30, 2022

Re: Cornerstone Estates Residential Development/2021-17-1  
File Search No. 24896

At your request, the Office of Archaeology and Historic Preservation has conducted a search of the Colorado Inventory of Cultural Resources based on your specified search criteria (the area shown in the provided shapefiles), located in the following areas:

<u>PM</u>	<u>T</u>	<u>R</u>	<u>S</u>
6th	12S	65W	23

0 sites and 1 surveys were located in the search area(s).

If any site, district, building, structure, object, or survey area was identified within the search area, a spreadsheet of detailed information\* accompanies this letter. Our records may not represent all cultural resources in Colorado, nor can they be considered comprehensive, as most of the state has not been surveyed for cultural resources. There is the possibility that as yet unidentified cultural resources exist within the proposed impact area.

This letter is not considered formal consultation under Section 106 of the National Historic Preservation Act (36 CFR 800) or the Colorado Register of Historic Places (CRS 24-80.1). In the event that there is federal or state agency involvement, please note that it is the responsibility of the agencies to meet the requirements of these regulations.

We look forward to consulting with you regarding the effect of the proposed project on significant cultural resources in accordance with the Advisory Council on Historic Preservation regulations titled "Protection of Historic Properties" or the Colorado Register of Historic Places, as applicable (<http://www.historycolorado.org/consultation-guidance>).

If you have any questions, please contact the Office of Archaeology and Historic Preservation at (303) 866-3392. Thank you for your interest in Colorado's cultural heritage.

Dawn DiPrince  
State Historic Preservation Officer

\*Information regarding significant archaeological resources is excluded from the Freedom of Information Act. As such, legal locations of these resources must not be included in documents for public distribution.

# RESTORING STREAM BANKS WITH WILLOWS



Willows along a stream serve many important functions. They provide shade and cover for stream life and improve water quality by absorbing and storing chemicals. Their ability to withstand flooding, to stabilize soils, and to grow quickly in saturated areas make them ideal for revegetating stream banks.

Establishing willow cuttings, stakes, and/or wattles on a stream bank will benefit you and the stream. The most appropriate material and method to use will depend upon stream size and planting location.

Willows growing in a nearby area, with

similar soil and moisture conditions as your problem area, should be used as planting stock to help increase tree survival.

If plants are purchased from a nursery, you should buy cuttings and not rooted seedlings. Also, select a native species to enhance survival and decrease competition with other plants.

Recommended species include black willow (*Salix nigra*), sand bar willow (*S. interior*), meadow willow (*S. petiolaris*), heart-leaved willow (*S. rigida*) and Ward's willow (*S. caroliniana*).

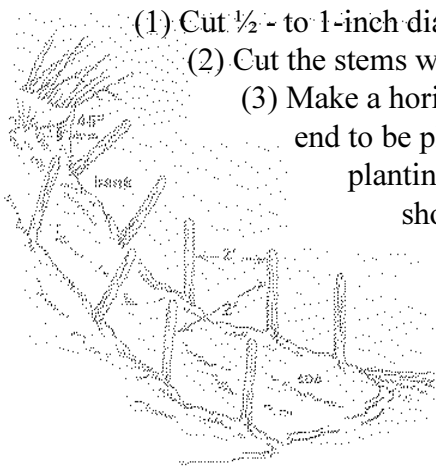


Collect and plant the willows during the dormant season. Willows planted in the spring before the buds swell seem to do the best. When storing or transporting plants, keep them cool and slightly moist.

## Willow Cuttings

Cuttings are used on small streams where flooding and erosion is minimal. This material is easy to obtain, requires few tools and little labor to plant.

- (1) Cut  $\frac{1}{2}$  - to 1-inch diameter plants or stems and remove all lateral branches.
- (2) Cut the stems with a knife or pruning shears into 12- to 24-inch lengths.
- (3) Make a horizontal cut on the end which will remain exposed and a 45° angle cut on the end to be planted. This will prevent you from planting them upside down. Note: Buds on plant should face up.
- (4) Push cutting directly into soil or produce a pilot hole by pounding a piece of metal rebar into the soil and then push the cutting into the hole. A planting (dibble) bar may also be used. Plant so that only a few inches remain exposed.



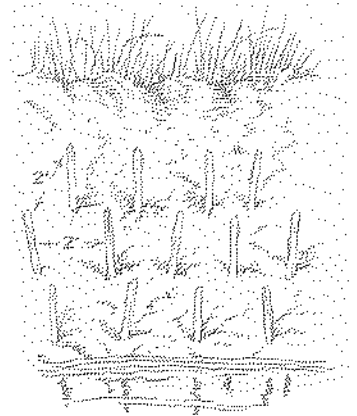
### Willow Stakes



Use stakes where materials need to be driven deeper to improve moisture supply to the stakes.

(1) Cut 1- to 3-inch diameter stems into 18- to 36-inch lengths with a hand saw or chainsaw and remove all lateral stems. (Note: Using an axe or knife to cut the stems may damage the plant.)

(2) Use dibble bar or drive stake with mallet until approximately 3 to 6 inches remain exposed or to refusal. **Do not force and split stake.**



### Willow Posts

Posts can also be used to revegetate stream banks. They are most appropriate in situations where a stable moisture supply is deep in the soil and willow materials need to be driven deeper to reach it. This is a very labor intensive method, but posts can withstand relatively high flows.

(1) Cut 3- to 6-inch diameter trees into 6- to 8-foot lengths with a chainsaw and remove all lateral branches. Sharpen bottom end to ease planting and score 12 to 14 inches.

(2) Set posts in post holes or drive with post driver so that at least half of the post is buried. Posts must be set deep enough to maintain contact with the water table, but not so deep that they are completely submerged in water year-round.

(3) The damaged top few inches of each post should be cut after planting if posts were driven.



### Wattles

Use wattles in slow-moving water areas to trap sediments and revegetate banks. This method is more labor intensive than planting cuttings or stakes.

- (1) Cut 1 1/2-inch or less diameter stems into a minimum of 3-foot lengths and remove all lateral branches.
- (2) Bundle stems with ends alternated. The bundle should be 1 to 2 feet longer than the longest stem cut.
- (3) Tightly compress bundle to a diameter of 8 to 10 inches and tie with two wraps of twine every 10 - 15 inches.
- (4) Beginning at the toe, dig a horizontal trench 8 to 10 inches wide by 5 inches deep. Do not dig the trench more than one hour prior to planting the wattle to minimize soil drying.
- (5) Drive a vertical stake (2 to 3 feet long) on done-hill side of trench every 2 feet.
- (6) Place wattles in trench and drive 2- to 3-foot long stakes through the bundle every 3 feet.
- (7) Cover with soil and tamp wattle so that no more than 20 percent of the wattle is exposed.

A combination of these methods may be needed based on the characteristics of the stream and its banks.



Proper maintenance will be needed to attain long-term success. Protect young, growing willows from livestock. Also, avoid herbicide treatment on planted areas.

Planting willows along and on stream banks provides a number of benefits to the fragile stream environment and the surrounding land. However, this technique does not replace the need for responsible stream corridor management such as maintaining a permanent corridor of trees along streams. It is merely a tool to help mend problem areas. If you have further questions,

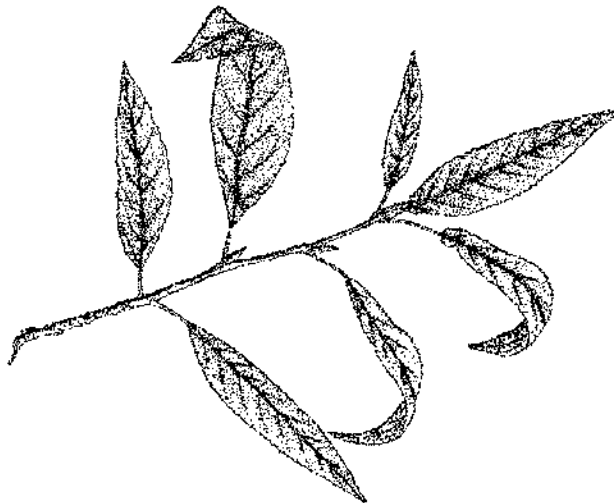
please contact your local Missouri Department of Conservation Regional Office.

**Wetland / Riparian Plant Finder 6:  
Riparian – Foothills and Canyons**

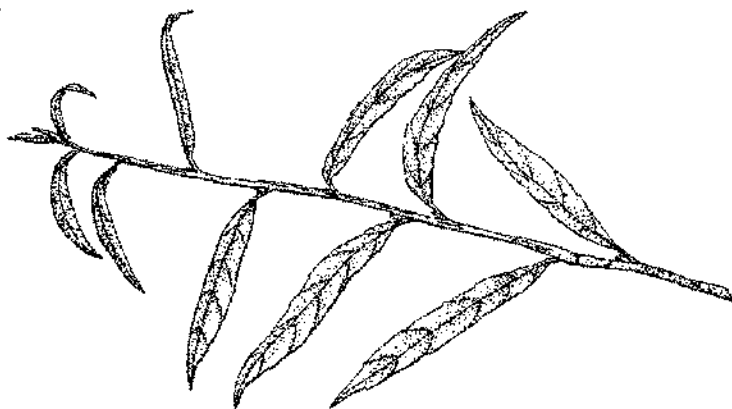
(dominant species in bold type)

**TREES AND SHRUBS (continued)**

<i>Rubacer parviflorum</i>	thimbleberry
<i>Salix amygdaloides</i>	peachleaf willow
<i>Salix bebbiana</i>	Bebb willow
<i>Salix drummondiana</i>	Drummond's willow
<i>Salix geyeriana</i>	Geyer's willow
<i>Salix irrorata</i>	bluestem willow
<i>Salix lucida</i>	shining willow
<i>Salix monticola</i>	mountain willow
<i>Swida sericea</i>	red-osier dogwood

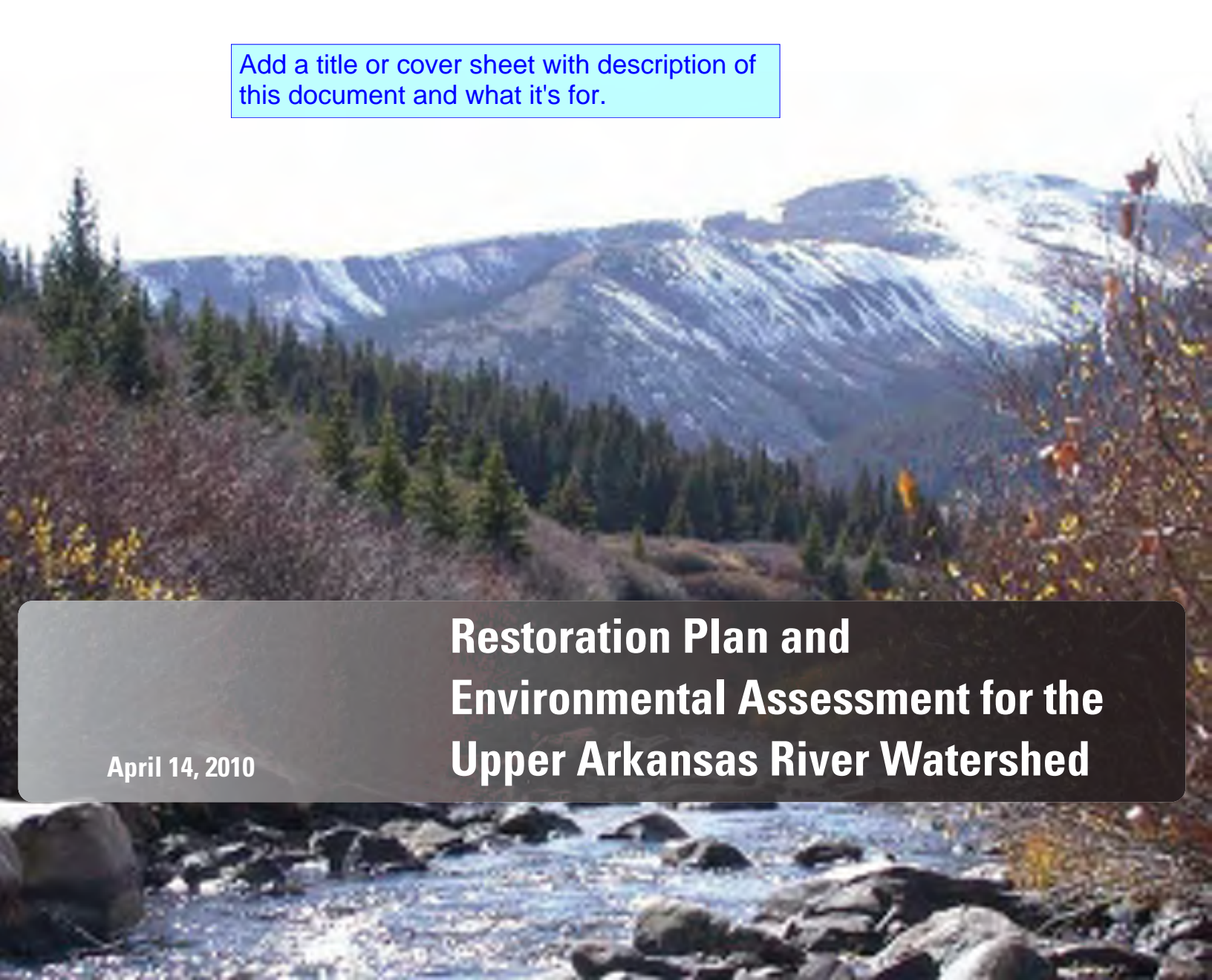


*Populus angustifolia*



*Salix exigua*

Add a title or cover sheet with description of this document and what it's for.



**Restoration Plan and  
Environmental Assessment for the  
Upper Arkansas River Watershed**

April 14, 2010

**PREPARED FOR**

U.S. Department of the Interior  
U.S. Fish and Wildlife Service  
U.S. Bureau of Land Management  
U.S. Bureau of Reclamation

State of Colorado  
Department of Natural Resources  
Department of Public Health and Environment  
Department of Law

**PREPARED BY**

Stratus Consulting Inc.  
PO Box 4059  
Boulder, CO 80306-4059  
303-381-8000  
Contact: Diana R. Lane, PhD  
or Allison Ebbets, MS

# List of Authorities and Responsible Agency Point of Contact

## Natural Resource Trustees:

- U.S. Department of the Interior
  - U.S. Fish and Wildlife Service
  - U.S. Bureau of Land Management
  - U.S. Bureau of Reclamation
- State of Colorado
  - Department of Natural Resources
  - Department of Public Health and Environment
  - Department of Law

## Legal Authority:

- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (as amended), 42 U.S.C. § 9601, et. seq.
- Federal Water Pollution Control Act (Clean Water Act) (as amended), 33 U.S.C. § 1251, et. seq.
- Natural Resource Damage Assessment Regulation, 43 C.F.R. Part 11

## Lead Federal Agency for Restoration Plan:

- U.S. Department of the Interior (Region 6, U.S. Fish and Wildlife Service)

## Lead Federal Agency for Environmental Assessment:

- U.S. Department of the Interior (Region 6, U.S. Fish and Wildlife Service)

## Participating State Agencies:

- Colorado Department of Natural Resources
  - Division of Wildlife, Division of Reclamation Mining and Safety
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# Acronyms and Abbreviations

AHRA	Arkansas Headwaters Recreation Area	FONSI	Finding of No Significant Impact
ALAD	delta-aminolevulinic acid dehydratase	GPS	global positioning system
AO	authorized official	LCCD	Lake County Conservation District
BLM	U.S. Bureau of Land Management	LCOSI	Lake County Open Space Initiative
BMP	best management practice	MOU	Memorandum of Understanding
BOR	U.S. Bureau of Reclamation	NEPA	National Environmental Policy Act
CDPHE	Colorado Department of Public Health and Environment	NHPA	National Historic Preservation Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	NRCS	Natural Resource Conservation Service
CMC	Colorado Mountain College	NRDA	Natural Resource Damage Assessment
CWA	Clean Water Act	O&M	operation and maintenance
DNR	Department of Natural Resources	OSHA	Occupational Safety and Health Act
DOI	U.S. Department of the Interior	RP	Restoration Plan
DOL	Department of Law	SHPO	State Historic Preservation Office
DOW	Division of Wildlife	T&E	threatened and endangered
DRMS	Division of Reclamation, Mining, and Safety	Trustees	Collectively, the U.S. Department of the Interior represented by the U.S. Fish and Wildlife Service; the U.S. Bureau of Land Management and the Bureau of Reclamation; and the State of Colorado represented by the Colorado Department of Natural Resources, Colorado Department of Public Health and Environment, and Colorado Department of Law
EA	Environmental Assessment	USDA	U.S. Department of Agriculture
EDRR	early detection/rapid response	USFS	USDA Forest Service
EE/CA	Engineering Evaluation and Cost Analysis	USFWS	U.S. Fish and Wildlife Service
EIS	Environmental Impact Statement	USGS	U.S. Geological Survey
EPA	U.S. Environmental Protection Agency		

# Executive Summary

## Overview of the California Gulch Superfund Site

The California Gulch Superfund Site (the “Site”) encompasses more than 15 square miles, including the town of Leadville, Colorado, and surrounding areas where historic mining activities took place. The Site contains more than 2,000 mine waste piles, as well as the Yak Tunnel which discharges drainage from numerous underground mines into California Gulch. Heavy metals and acid released at or from the Site as a result of historic mining activities are hazardous substances that have caused injuries to natural resources. Because of this extensive contamination, the Site was placed on the National Priorities List in September 1983. Emergency response actions and remediation by the U.S. Environmental Protection Agency began in 1986 and continue to this day. The Natural Resource Trustees (the “Trustees”), including agencies of the U.S. Department of the Interior and the State of Colorado, prepared a preliminary estimate of natural resource damages for the Site (Industrial Economics, 2006). In that document, the Trustees determined that releases of hazardous substances from the Site have resulted in injuries to surface water, terrestrial, and groundwater resources, including injuries to brown trout and other aquatic and riparian resources in the upper Arkansas River.

## What is the plan to restore injured natural resources?

The purpose of the restoration activities described in this Restoration Plan/Environmental Assessment (RP/EA) is to compensate the public by implementing restoration actions that restore, replace, or acquire the equivalent of the injured natural resources. Federal and state natural resource trustees prepared this RP/EA to plan their restoration actions and obtain public input. The Trustees seek input from the public on the proposed restoration plan contained in this RP/EA and will respond to written comments.

The Trustees previously published an RP/EA for restoration actions at the Tiger and Dinero tunnels. That document proposed two restoration projects as partial compensation for groundwater injuries in California Gulch. Those projects began implementation in 2009.

## Where has funding for these restoration activities come from?

Resurrection Mining Company<sup>1</sup> and Newmont USA Limited have agreed to pay \$10.5 million to settle allegations that the companies injured natural resources (under the natural resource damage assessment provisions of the Comprehensive Environmental Response, Compensation, and Liability Act) as a result of discharges of hazardous substances from historical mining operations at the Site. In addition, the Trustees have received a \$10 million settlement plus interest from ASARCO LLC in bankruptcy proceedings. The proposed restoration projects will be funded from the settlement funds received from these responsible parties.

## How were restoration alternatives developed and evaluated?

The Trustees solicited a broad range of potential restoration projects from agencies and the public. The Trustees evaluated the projects against their stated selection criteria to screen out projects that did not meet minimum acceptability standards and to determine which projects best provided cost-

<sup>1</sup> Resurrection Mining Company is wholly owned by Newmont USA Limited.