

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

2014 MAR 17 PM 12:55

IN THE MATTER OF:)
)
CITY OF AURORA)
15151 E. Alameda Parkway)
Aurora, Colorado 80012)
)
and)
)
EDGE CONTRACTING, INC.)
1453 Brickyard Road)
Golden, Colorado 80403)
)
Respondents.)
_____)

FILED
EPA REGION VIII
HEARING CLERK

**ADMINISTRATIVE ORDER
ON CONSENT**

Docket No. CWA-08-2014-0017

I. INTRODUCTION

This Administrative Order on Consent (Consent Order) is entered into voluntarily by the United States Environmental Protection Agency (EPA) and Respondents City of Aurora (City of Aurora) and Edge Contracting, Inc. (Edge Contracting). The Consent Order concerns the implementation and completion of actions required to restore the environmental damage caused by allegedly illegal discharges of dredged and/or fill material into wetlands adjacent to Piney Creek within the Saddle Rock Golf Course in Aurora, Colorado (the Site).

II. STATUTORY AUTHORITY

This Consent Order is issued pursuant to the authority vested in the Administrator of the EPA by sections 308 and 309 of the Clean Water Act (CWA), 33 U.S.C. §§ 1318 and 1319, and by the Administrator delegated to the Regional Administrator of the EPA Region 8 and redelegated by the Regional Administrator of the EPA Region 8 to the Assistant Regional Administrator, Office of Enforcement, Compliance and Environmental Justice. The Consent Order is based on the findings of

violation of section 301(a) of the CWA, 33 U.S.C. § 1311(a) which, among other things, prohibits the discharge of pollutants into waters of the United States except as in compliance with section 404 of the CWA, 33 U.S.C. § 1344.

III. PARTIES BOUND

This Consent Order shall apply to and be binding upon the EPA and upon Respondents, their officers, directors, agents, successors, and assigns. The signatories to this Consent Order certify that they are authorized to execute and legally bind the party they represent to this Consent Order. No change in the ownership or corporate status of Respondents or of the Site shall alter Respondents' responsibilities under this Consent Order unless the EPA, Respondents, and the transferee agree in writing to allow the transferee to assume such responsibilities. Additionally, at least 30 calendar days prior to such transfer, Respondents shall notify the EPA at the address specified in paragraph 29 of this Consent Order.

IV. STATEMENT OF PARTIES

The following FINDINGS OF FACT AND OF VIOLATION are made solely by the EPA. In signing this Consent Order, Respondents neither admit nor deny the FINDINGS OF FACT AND OF VIOLATION. As such, and without any admission of liability, Respondents consent to issuance of this Consent Order and agree to abide by all of the conditions herein. Respondents waive any and all claims for relief and otherwise available rights or remedies to judicial or administrative review which Respondents may have with respect to any issue of fact or law set forth in this Consent Order, including, but not limited to, any right of judicial review of this section 309(a)(3) Consent Order under the Administrative Procedure Act, 5 U.S.C. §§ 701-708. Respondents further agree not to challenge the jurisdiction of the EPA or the FINDINGS OF FACT AND OF VIOLATION below in any proceeding to enforce this Consent Order or in any action under this Consent Order.

V. FINDINGS OF FACT AND OF VIOLATION

1. Respondent City of Aurora was at all times relevant to the Consent Order a home-rule municipality located in Adams, Arapahoe, and Douglas Counties, Colorado. The City of Aurora maintains its principal offices at 15151 E. Alameda Parkway, Aurora, Colorado 80012.
2. Respondent Edge Contracting was at all times relevant to the Consent Order a corporation organized under the laws of Colorado. Edge Contracting maintains its principal offices at 1453 Brickyard Road, Golden, Colorado 80403.
3. In a letter dated April 29, 2012, through its consultant ERO Resources Corp. (ERO Resources), the City of Aurora advised the U.S. Army Corps of Engineers (ACOE) that it intended to undertake a project to remove sediment from a stretch of Piney Creek flowing through the Saddle Rock Golf Course. The City advised the ACOE that it intended to use excavation techniques that would not result in the discharge of dredged or fill material, or the placement of temporary material stockpiles into Piney Creek or its adjacent wetlands.
4. In a responsive letter dated May 11, 2012, the ACOE advised the City of Aurora that it understood that all excavated material would be disposed of in upland areas and that no materials would be placed below the ordinary high water mark or in adjacent wetlands abutting Piney Creek, and based upon this understanding, the City of Aurora would not be required to obtain a permit to discharge dredged or fill material under section 404 of the CWA, 33 U.S.C. § 1344. The ACOE further advised the City of Aurora that if the work required the placement of dredged or fill material either temporarily or permanently into Piney Creek or its adjacent wetlands, a section 404 permit would be required.
5. On November 28, 2012, an inspector from the ACOE inspected the Site and observed that the top layer of wetland soil and vegetative matting had been removed and placed back into wetlands

abutting Piney Creek in order to facilitate revegetation, and this activity had resulted in a regulated discharge.

6. Approximately .80 acres of wetlands were impacted by the discharge of dredged and fill material.
7. The work had been conducted by Edge Contracting under contract with the City of Aurora.
8. The impacted wetlands at the Site directly abut and are hydrologically connected to Piney Creek. Piney Creek is a perennial tributary to Cherry Creek, which flows into Cherry Creek Reservoir and then to the South Platte River, a traditionally navigable water.
9. The wetlands adjacent to and abutting Piney Creek, referenced in paragraphs 5, 6 and 8 of this Consent Order, are and were at all relevant times “waters of the United States” within the meaning of 33 C.F.R. § 328.3(a) and therefore “navigable waters” within the meaning of section 502(7) of the CWA, 33 U.S.C. § 1362(7).
10. The discharges of fill material described in paragraphs 5 - 6 of this Consent Order resulted from the use of common earthmoving vehicles and equipment, which were operated by Edge Contracting acting on behalf of the City of Aurora.
11. Respondents are “persons” within the meaning of section 502(5) of the CWA, 33 U.S.C. § 1362(5).
12. The discharged dredged and/or fill material referenced in paragraph 5 of this Consent Order is and was at all relevant times “dredged material” and “fill material” within the meaning of 33 C.F.R. § 323.2(c) and (e), respectively, and “pollutants” within the meaning of section 502(6) of the CWA, 33 U.S.C. § 1362(6).
13. The vehicles and equipment referenced in paragraph 10 of this Consent Order are and were at all relevant times each a “point source” within the meaning of section 502(14) of the CWA, 33 U.S.C. § 1362(14).

14. The placement of dredged and/or fill material into wetlands adjacent to and abutting Piney Creek constitutes the “discharge of pollutants” within the meaning of section 502(12) of the CWA, 33 U.S.C. § 1362(12).
15. Section 301(a) of the CWA, 33 U.S.C. § 1311(a), prohibits, among other things, the discharge of pollutants by any person into waters of the United States except as in compliance with section 404 of the CWA, 33 U.S.C. § 1344.
16. Section 404 of the CWA, 33 U.S.C. § 1344, sets forth a permitting system authorizing the Secretary of the Army, acting through the Chief of Engineers of the ACOE, to issue permits for the discharge of dredged or fill material into navigable waters, which are defined as waters of the United States.
17. 33 C.F.R. § 323.3(a) specifies that, unless exempted pursuant to 33 C.F.R. § 323.4, a permit issued by the ACOE is required for the discharge of dredged or fill material into waters of the United States.
18. Respondents were not authorized by a permit issued pursuant to section 404 of the CWA, 33 U.S.C. § 1344, to conduct any of the activities described in paragraph 5 of this Consent Order.
19. The activities conducted by the City of Aurora and Edge Contracting as described in paragraph 5 of this Consent Order violate section 301 of the CWA, 33 U.S.C. § 1311.
20. Activities to be carried out under this Consent Order are remedial, not punitive, and are necessary to achieve the CWA’s objective “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters,” as specified in section 101(a) of the CWA, 33 U.S.C. § 1251(a). Restoration is appropriate and required to address the actual and potential harm to water quality, aquatic habitat, and wildlife habitat, as well as other functions and values, caused by Respondents’ unpermitted activities.

21. These preceding FINDINGS OF FACT AND OF VIOLATION and the ORDER FOR COMPLIANCE below have been made after consultation and coordination with the ACOE's Omaha District.

VI. ORDER FOR COMPLIANCE

Based upon the foregoing FINDINGS OF FACT AND OF VIOLATION and pursuant to the authority vested in the Administrator of the EPA under CWA sections 308 and 309(a), 33 U.S.C. §§ 1318 and 1319(a), as properly delegated to the Assistant Regional Administrator of the Office of Enforcement, Compliance and Environmental Justice, it is hereby ORDERED and AGREED:

22. Respondents shall immediately terminate all discharges of dredged and fill material at the Site, now and in the future, into waters of the United States unless specifically authorized by the ACOE under a valid permit issued pursuant to section 404 of the CWA, 33 U.S.C. § 1344. This prohibition includes all mechanical land clearing, dredging, filling, grading, leveling, installation of utilities, construction, and any other activities that result in the discharge of dredged or fill material into waters of the United States.
23. Respondents shall conduct removal and restoration activities for impacts to waters of the United States resulting from the unauthorized discharges of dredged and/or fill material at the Site in accordance with the schedule and other requirements set forth in the Removal, Restoration, and Mitigation Plan, Piney Creek at Saddle Rock Golf Course, (Plan) appended herein as Attachment A.
24. This Consent Order is not a permit or an authorization to discharge dredged or fill material, storm water, or any other pollutant into waters of the United States. The City of Aurora shall consult with the ACOE at the address and telephone number below to determine if any work to be performed pursuant to this Consent Order requires a permit from the ACOE under section 404 of the CWA, 33 U.S.C. § 1344. If any such permit is required, the City of Aurora shall obtain such permit(s) and

provide a copy or copies to the EPA pursuant to paragraphs 25 and 29 of this Consent Order prior to initiating any work that is to be performed pursuant to this Consent Order.

U.S. Army Corps of Engineers
Denver Regulatory Office
9307 S. Wadsworth Blvd.
Littleton, CO 80128
Telephone: 303-979-4120

25. The City of Aurora must make a timely application for each permit necessary to implement the Plan and for conducting removal and restoration activities in accordance with the Plan, including the schedule specified therein, with all granted permits, and with all applicable laws. If any permits are necessary, the City of Aurora shall demonstrate that all permits have been granted by providing copies of all such permits, and any amendments thereto, to the EPA within seven calendar days of issuance of each permit.
26. In addition to the notification requirements set forth in paragraph 24 of this Consent Order, after issuance of any ACOE authorization for work required under this Consent Order, the City of Aurora shall submit all notifications and correspondence to the ACOE in accordance with the terms and conditions in the ACOE permit.
27. Respondents shall implement the Plan and conduct all required activities in accordance with the Plan, including the time frames specified therein, and all granted permits.
28. ERO Resources shall supervise all work performed pursuant to the Plan and shall be present at the Site during all critical times unless otherwise approved in advance by the EPA.
29. The City of Aurora shall submit two copies of the Plan, all permits, notifications, and related correspondence to:

Richard Clark, 8ENF-W
U.S. Environmental Protection Agency, Region 8
1595 Wynkoop St.
Denver, CO 80202-1129
Telephone: 303-312-6748

A copy of the Plan also shall be provided to the ACOE at the address noted in paragraph 24 of this Consent Order.

30. All plans, deliverables, reports, specifications, schedules, and attachments required by this Consent Order are, upon approval by the EPA, incorporated into this Consent Order. Any noncompliance with such EPA-approved plans, deliverables, reports, specifications, schedules, and attachments shall be deemed a failure to comply with this Consent Order and subject to EPA enforcement.
31. A lease, sublease, or transfer of the Site shall not relieve Respondents, their officers, directors, agents, successors, and assigns of any responsibility in the Consent Order unless the EPA, Respondents, and the lessee, sublessee, or transferee agree in writing to allow the lessee, sublessee, or transferee to assume such responsibility. Additionally, at least 30 calendar days prior to such lease, sublease, or transfer, Respondents shall notify the EPA regarding the details of the lease, sublease, or transfer at the address specified in paragraph 29 of this Consent Order.
32. Respondents shall allow, or use its best efforts to allow, access by any authorized representative of the EPA or its contractors and the ACOE to the Site and to all records relevant to this Consent Order for any of the following purposes:
 - a. To inspect and monitor progress of the activities required by this Consent Order;
 - b. To inspect and monitor compliance with this Consent Order; and
 - c. To verify and evaluate data and other information submitted to the EPA.
33. This Consent Order shall in no way limit or otherwise affect the EPA's authority, or the authority of any other governmental agency, to enter the Site, conduct inspections, have access to records, issue

notices and orders for enforcement, compliance, or abatement purposes, or monitor compliance pursuant to any statute, regulation, permit, or court order.

34. This Consent Order shall be effective upon the date Respondents receive a fully executed copy of this Consent Order.
35. Issuance of this Consent Order shall not be deemed an election by the United States to forego any civil or criminal action to seek penalties, fines, or other appropriate relief under the CWA for violations giving rise to this Consent Order.
36. The EPA agrees to submit all notifications and correspondence related to the Consent Order to:

Vern Adam
City of Aurora
Water Department
15151 E. Alameda Parkway
Suite 4400
Aurora, CO 80012

Christine McKenney
City of Aurora
City Attorney's Office
15151 E. Alameda Parkway
Suite 5300
Aurora, CO 80012

Jeffrey Davis
Edge Contracting, Inc.
1453 Brickyard Road
Golden, CO 80403

37. Any party hereto may, by notice, change the address to which future notices shall be sent or the identities of the persons designated to receive notices hereunder.
38. If an event causes or may cause delay in the achievement of the requirements of this Consent Order, Respondents shall notify the EPA by telephone or via e-mail as soon as possible and in writing within ten working days from the date Respondents first knew of such event or should have known

of such event by exercise of due diligence, whichever is earlier. Respondents' written notice shall specify the length of the anticipated delay, the cause(s) of the delay, the measures taken or to be taken by Respondents to minimize the delay and a timetable by which those measures will be or have been implemented. Notification to the EPA pursuant to this paragraph of any anticipated delay, by itself, shall not excuse the delay or the obligation of Respondents to comply with requirements and deadlines of this Consent Order, unless the EPA grants in writing an extension of the applicable requirement or deadline.

39. If Respondents demonstrate to the EPA's satisfaction that the delay or anticipated delay has been or will be entirely caused by circumstances beyond Respondents' control (or the control of any of Respondents' agents) that Respondents could not have foreseen and prevented despite due diligence, and that Respondents have taken all reasonable measures to prevent or minimize such delay, the EPA may excuse performance or extend the time for performance of such requirement for a period not to exceed the actual delay resulting from such circumstances. The EPA's determination on these matters shall be made as soon as possible and in writing within ten working days after the receipt of Respondents' written notification of the event. The parties agree that changed economic circumstances shall not be considered circumstances beyond the control of Respondents.
40. Respondents understand and acknowledge the following:
 - a. Compliance with the terms and conditions of this Consent Order shall not be construed to relieve Respondents of their obligations to comply with any applicable Federal, state, or local law or regulation.
 - b. Failure by Respondents to complete the tasks described herein in the manner and time frame specified pursuant to this Consent Order may subject Respondents to a civil action under section 309 of the CWA, 33 U.S.C. § 1319, for violation of this Consent Order.

IN THE MATTER OF: THE CITY OF AURORA AND EDGE CONTRACTING, INC.
ADMINISTRATIVE ORDER ON CONSENT

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, REGION 8
Complainant

03/12/2014
Date

for Eddie A. Sierra
Andrew M. Gaydosh
Assistant Regional Administrator
Office of Enforcement, Compliance and
Environmental Justice

CITY OF AURORA
Respondent

FEB 20 2014
Date

Charles Richardson
Charles Richardson
City Attorney
City of Aurora

EDGE CONTRACTING, INC.
Respondent

2-5-2014
Date

Jeffrey Davis / JOLE D. CATTOOR
Jeffrey Davis
Edge Contracting, Inc.

CERTIFICATE OF SERVICE

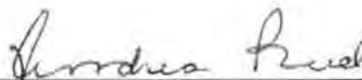
I hereby certify that on March 17, 2014, the foregoing Administrative Order on Consent in the matter of the City of Aurora, Colorado and Edge Contracting, Inc. was served via certified mail upon the following persons:

Vern Adam
City of Aurora
Water Department
15151 E. Alameda Parkway
Suite 4400
Aurora, CO 80012

Christine McKenney
City of Aurora
City Attorney's Office
15151 East Alameda Parkway
Suite 5300
Aurora, CO 80012

Jeffrey Davis
Edge Contracting, Inc.
1453 Brickyard Road
Golden, CO 80403

Albert Wolf
Wolf Slatkin & Madison P.C.
44 Cook St.
Suite 701
Denver CO 80206



ATTACHMENT A

*Consultants in
natural
resources and
the environment*

Denver • Boise • Durango • Western Slope

**REMOVAL, RESTORATION, AND MITIGATION PLAN
PINEY CREEK AT SADDLE ROCK GOLF COURSE
SEDIMENT REMOVAL
ARAPAHOE COUNTY, COLORADO
CORPS FILE NO. NWO-2011-01098**

Prepared for—

City of Aurora
15151 East Alameda Avenue, Suite 4400
Aurora, Colorado 80012

For submission to—

U.S. Environmental Protection Agency, Region 8
999 18th Street, Suite 300
Denver, Colorado 80202-2466

Prepared by—

ERO Resources Corporation
1842 Clarkson Street
Denver, Colorado 80218
(303) 830-1188

ERO Project #4958

October 18, 2013



ERO Resources Corp.
1842 Clarkson Street
Denver, CO 80218
(303) 830-1188
Fax: (303) 830-1199
www.eroresources.com
ero@eroresources.com

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**REMOVAL AND RESTORATION PLAN AND MITIGATION PLAN
PINEY CREEK AT SADDLE ROCK GOLF COURSE SEDIMENT REMOVAL
ARAPAHOE COUNTY, COLORADO
CORPS FILE NO. NWO-2011-01098**

OCTOBER 18, 2013

Background and Summary of Project

In June 2011, the City of Aurora (City) determined it was necessary to remove sediment along a section of Piney Creek within the Saddle Rock Golf Course in Aurora, Colorado (project area). Recent surveys of the project area showed that the creek drainage was 2.5 feet higher than shown on the current Federal Emergency Management Agency 100-year floodplain mapping. The City was concerned the reduced channel capacity resulting from sediment deposition would adversely affect certain properties at the edge of the mapped floodplain. The proposed project included removing sediment along 1,200 linear feet of Piney Creek between two existing pedestrian trail crossings (Figure 2). As work was underway, in some areas, mats of cattail vegetation were stripped and set aside and replaced after sand was excavated from the channel. The intent of replacing the cattail mats was to reduce sediment carried from the site and to help reestablish vegetation as quickly as possible.

Based on correspondence with the U.S. Army Corps of Engineers (Corps), the City undertook the project as an excavation-only project, believing the work did not require authorization under Section 404 of the Clean Water Act. On November 28, 2012, the Corps notified the City that at least some project activities undertaken to that date, including repositioning the cattail mats, required a Corps permit. The City stopped work upon notification.

As part of a settlement agreement with the Environmental Protection Agency (EPA), the City is implementing a restoration and mitigation plan to compensate for impacts associated with the sediment removal project.

The City has not removed any of the fill because the fill within Piney Creek was wetland vegetation and topsoil that has reestablished within the channel. The mitigation

plan will mitigate for remaining adverse effects on the aquatic ecosystem, including the loss of shrub cover along the channel.

Each of the activities is described below in sections that generally follow EPA Region 8 Clean Water Act Section 404 Enforcement: Removal/Restoration Plans and Habitat Mitigation/Monitoring Proposals guidelines.

Location

The project area is along Piney Creek at the Saddle Rock Golf Course in Aurora, Colorado and is surrounded by the golf course and residential development. The project area is in the northwest $\frac{1}{4}$ of Section 25, Township 5 South, Range 66 West of the 6th Principal Meridian in Arapahoe County, Colorado (Figure 1). The UTM coordinates of the approximate center of the project area are 522992mE, 4382490mN, Zone 13N. The latitude/longitude of the project area is 39.591825°N/104.732229°W.

Removal and Restoration Plan

Subsequent to receiving the notice from the Corps to stop work, and in consultation with the Corps, the City documented the physical conditions in the sediment removal project area prior to and following the project. The information was used to determine the types and extent of regulated areas disturbed by the project. The assessment of preconstruction conditions was used by the City to develop a removal and restoration plan for the area. The following summary of conditions is based on a report prepared by ERO Resources Corporation (ERO), on behalf of the City, that includes details of the physical conditions and methods used to determine them (ERO 2013).

Physical Conditions

On June 7, 2012, ERO delineated wetlands and waters of the U.S. in the project area (2012 site visit). The boundaries of waters of the U.S., including adjacent wetlands, prior to the disturbance are shown on Figure 2.

Streams and Open Water

Piney Creek is shown on the Piney Creek U.S. Geological Survey (USGS) topographic quadrangle (Figure 1) as an intermittent stream that flows to Cherry Creek, which has a surface connection to the South Platte River. The Corps has previously

determined that the South Platte River is a jurisdictional water of the U.S. The Piney Creek channel is 5 to 10 feet wide in the project area.

Wetlands

Piney Creek contains large benches of adjacent wetlands throughout the project reach. Wetlands have developed along the accumulated sediment in the project area. ERO mapped a total of 2 acres of wetlands in the project area prior to project activities.

Vegetation

The wetlands in the project area are dominated by broadleaf cattail (*Typha latifolia*, obligate wetland species); sandbar willow (*Salix exigua*, facultative wetland species); Baltic rush (*Juncus arcticus*, facultative wetland species); and spikerush (*Eleocharis palustris*, obligate wetland species). At data points 1 and 3, the vegetation met either the dominance test or prevalence test for the hydrophytic vegetation indicator.

Soils

The Natural Resource Conservation Service (NRCS) mapped the soils in the project area as Bresser loamy sand, terrace, 0 to 3 percent slopes and Sandy alluvial land (NRCS 2012). The Bresser loamy sand complex occurs along stream terraces with a typical profile of loamy sand to sandy clay loam soils. The sandy alluvial soil occurs along streams and drainageways with a typical profile of sand to fine sand or loamy sand. Field observations indicated the soils in the project area are sand to sandy clay. Soil data from DP1 and DP3 (collected within the delineated wetlands) revealed sandy clay and sandy loam soils with a soil matrix chroma of 2.5 3/2 and 10YR 4/2 with common mottles below 4 to 6 inches in the soil profile of 7.5YR 5/8. The soils met the sandy redox hydric soil indicator.

Hydrology

The main source of hydrology for all of the wetlands was surface and ground water. Hydrologic indicators in the wetlands were a high water table, sediment deposits, hydrogen sulfide odor, drift deposits, and a successful FAC-neutral test.

Jurisdictional Areas Filled

Based on the wetland delineation, ERO determined that approximately 0.80 acre of wetlands were impacted by project activities (0.757 acre from excavation of sediment and 0.046 acre from disturbance along the north bank) (Figure 3).

Proposed and Actual Physical Conditions

In consultation with the Corps, the City has reseeded the upland access areas with a native upland seed mix. As a consequence of immediately placing the topsoil and cattail vegetation mats over excavated areas, the wetland vegetation has been restored in place and is anticipated to fully reestablish, eventually resulting in no net loss of wetland acreage.

Monitoring/Measures of Success

The restored areas will be monitored as described in the *Monitoring Plan* section of this report. Restoration will be considered successful when wetlands similar in species composition, extent, and cover to adjacent undisturbed areas become established and self-sustaining adjacent to the low-flow channel through the restored area.

Inspections and Schedule

The Corps and EPA have field reviewed the restoration work undertaken by the City. Monitoring will begin with the 2014 growing season.

Mitigation Plan

To offset the loss of ecological functions along Piney Creek, the City will plant 10 native plains cottonwood trees along the north bank of Piney Creek in the project area (Figure 4). The trees will be 1-inch-diameter deep-planted ball-and-burlap trees. The trees will be planted at locations most likely to result in successful establishment and survival. The City has developed a planting plan, specifications, and details for the proposed mitigation (Figure 4; Appendix A).

Goal of Mitigation

The goals of the mitigation plan are to increase structural diversity of vegetation in the vicinity of the project area. The cottonwood plantings will increase species diversity, increase habitat for birds and small mammals, and support food chain functions.

The trees will be planted in fall 2013 if the weather allows, otherwise plantings will occur in spring 2014. The City expects that the plants will be well established after five years following planting. Monitoring will continue until the success criteria (defined below) have been met.

Success Criteria

The tree plantings will be considered successful when 100 percent of the trees have survived for three consecutive years without replacement or additional watering.

Proposed Mitigation Site

The plantings will occur in the project area (Figure 4). Planting areas for the cottonwood trees are on the north bank of Piney Creek. Approximate locations for the tree plantings have been identified; however, specific planting locations will be determined based on microsite conditions such as depth to ground water, suitable substrate, and slope.

The mitigation area is in dedicated open space maintained by the Saddle Rock Golf Course and the City. The area will continue to be managed as open space because it is in the 100-year floodplain, within which development is restricted. Residential communities surround the mitigation area, but all of the communities are at full build-out and current uses and levels of use of the open space are anticipated to continue indefinitely.

Implementation Plan

ERO (the project consultant) will field stake the planting locations and will be present when the trees are planted. The City anticipates the work will be initiated and completed in one to two days. A small backhoe or excavator will be necessary to dig the holes for the deep-planted cottonwood trees. The equipment will access the planting areas from the north through uplands.

Following planting, the locations of the trees will be documented and a figure with the locations will be included with the annual monitoring reports to be submitted to the EPA.

The City has successfully planted trees in similar settings throughout the City. Based on that experience, the City believes the proposed mitigation will be successfully implemented. The City will submit an as-built report and maps of the mitigation and restoration project to the EPA within six weeks of completion of the site preparation and planting.

Maintenance During Monitoring Period

The City will maintain the compensatory mitigation site until the mitigation success criteria have been determined by the EPA to have been met without intervention in the form of irrigation, removal of undesirable vegetation, or replanting of desirable vegetation for a five-consecutive-year period or other time period determined by the EPA. The City will review the compensatory and mitigation site at least annually during the growing season and submit an annual monitoring report to the EPA on the status and progress of the compensatory mitigation and restoration site including needed remedial actions. Any maintenance measures implemented will be reported to the EPA in the annual monitoring report. The plantings may require some maintenance during the first one or two growing seasons, including replacement plantings and supplemental watering. Dead trees will be replaced until success criteria are met.

Monitoring

The trees will be monitored as described in the *Monitoring Plan* section of this document.

Monitoring Plan

The restored area and mitigation plantings will be monitored annually for a minimum of five years to determine the success of the activities. The Compensatory Mitigation Rule requires a monitoring period of not less than five years (33 CFR Section 332.6(2)(b)). The City commits to no less than five years of monitoring for the project, but may request that the EPA waive the remaining monitoring requirements if the compensatory mitigation project has met the success criteria for three consecutive years. The Compensatory Mitigation Rule allows the EPA to waive or extend the monitoring period (33 CFR Section 332.6(2)(b)).

The City will monitor the area annually. Successes, problems, and concerns will be discussed in an annual monitoring report. Permanent photo points will be established to document annual changes. The annual monitoring reports will be submitted to the EPA by December 31 of each year until monitoring is determined to be complete. The first annual report will be submitted in December 2014, after the first growing season following planting.

The mitigation success criteria for each activity will allow the EPA to objectively evaluate if the compensatory mitigation is developing as proposed and will provide the area and function intended. Annual monitoring and reporting on the progress of meeting the success criteria and any remedial measures taken will allow the City and EPA to assess the expected stages of aquatic resource development, identify potential problems early in the monitoring phase, and develop appropriate adaptive management.

Monitoring Requirements

The annual monitoring report will have the following information:

- Permit number and county where the project is located;
- A discussion of successes, failures, and problems;
- A discussion of hydrology ensuring success of plantings;
- Percent of ground surface area that is vegetated, percent of the vegetated area that contains wetland species, and a list of prevalent plant species;
- Maps and/or drawings as needed for illustration; and
- Photographs of the mitigation and restoration site (to be taken from the same location each year and submitted with each report).

Completion of Mitigation

When the City believes the plantings have met the success criteria, the City will provide the final monitoring report to the EPA with a request for confirmation that monitoring is complete.

Long-term Management Plan

The City agrees that once the trees have been planted, proper precautions will be taken to prevent domestic animals and human activity from adversely affecting them, and there will be no mowing or other detrimental effects to the planting areas.

The mitigation is intended to be self-sustaining once the mitigation success standards have been achieved. The City will be the party responsible for all long-term management of the compensatory mitigation project.

Contingency Measures

The City proposes that if, during the first two years after planting, the site conditions indicate the success criteria are not likely to be achieved, the City will undertake remedial actions after consulting with the Corps and EPA. Remedial actions may include replanting trees in new locations or replanting with peachleaf willows instead of plains cottonwoods. The City believes that this is the most effective process for adaptive management and ensures that any needed corrections in the compensatory mitigation project are coordinated with the Corps and then implemented by the City.

Responsible Parties

Applicant:

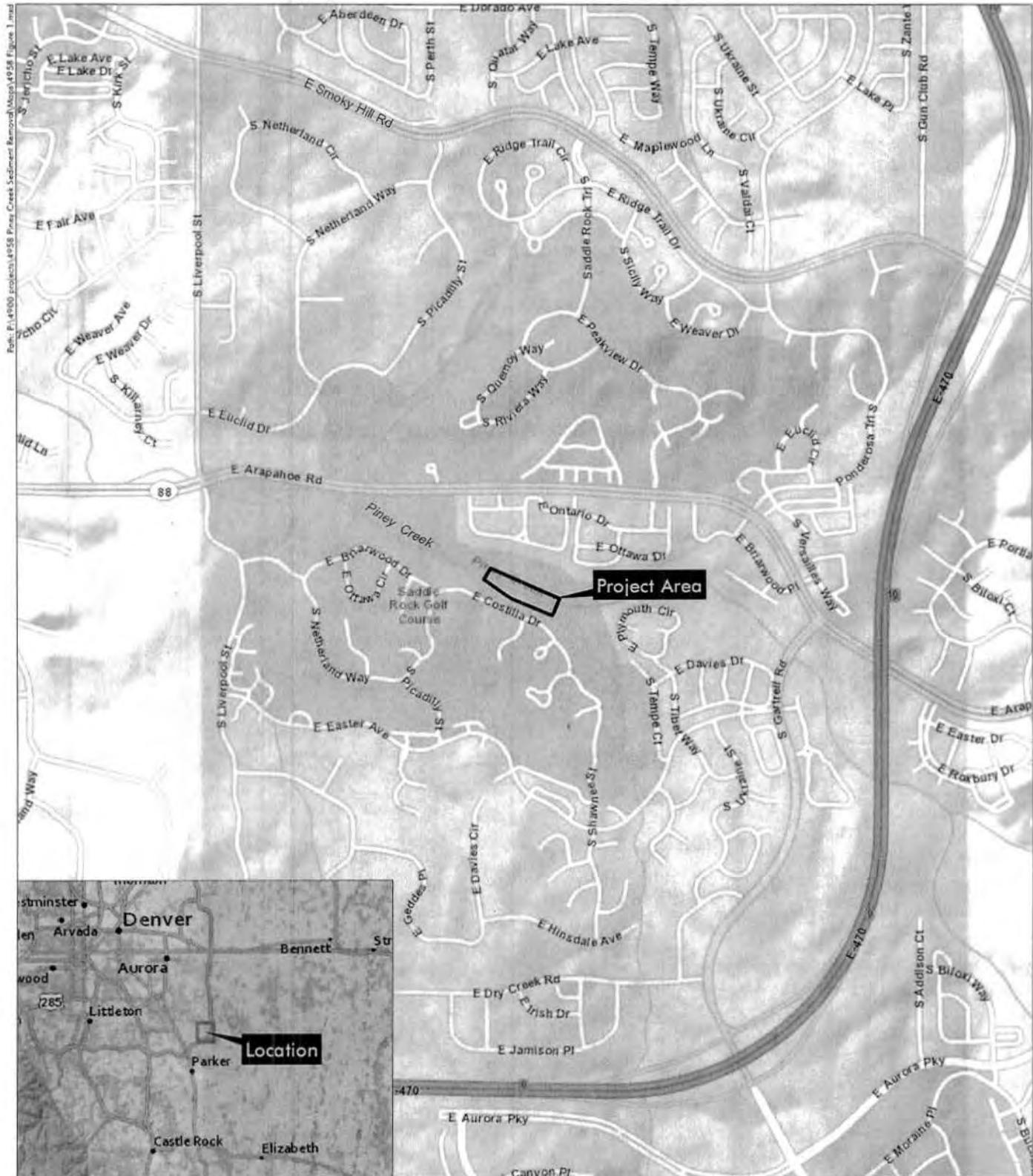
Vern Adam
City of Aurora
15151 E. Alameda Avenue, Suite 400
Aurora, CO 80012
Ph: 720-859-4324

Mitigation Plan Prepared by:

Moneka Worah
ERO Resources Corporation
1842 Clarkson Street
Denver, CO 80218
Ph: 303-830-1188

References

- ERO Resources Corporation (ERO). 2013. Piney Creek at Saddle Rock Golf Course Sediment Removal, Arapahoe County, Colorado. Corps File No. NWO-2011-01098-DEN. Submitted to U.S. EPA Region 8. January 4.
- Natural Resource Conservation Service (NRCS). 2012. Soil Survey of Arapahoe County, Colorado. Department of Agriculture. Available at: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Last accessed: April 24, 2012.



Path: F:\4958 projects\4958 Piney Creek Sediment Removal\Map\4958 Figure 1.mxd

Piney Creek Sediment Removal

Section 25, T5S, R66W; 6th PM

UTM NAD 83: Zone 13N; 522992mE, 4382490mN

Latitude, Longitude: 39.591825°N, 104.732229°W

USGS Piney Creek, CO Quadrangle

Arapahoe County, Colorado

Figure 1
Vicinity Map

0 750 1,500
Feet



Prepared for: City of Aurora
File: 4958 Figure 1.mxd (WH)
October 3, 2013



ERO Resources Corp.



Piney Creek Sediment Removal

- Data Point
- Wetland
- Study Area

Image Source: Landsat®; August 2009

Figure 2
Wetlands



Prepared for: City of Aurora
File: 4159 Figure 2 Wetlands.mxd [0]
July 2011

ERG
Environmental Resources Group



Piney Creek Sediment Removal

-  Wetland
-  Area of Excavated Sediment (0.757 acre)
-  Study Area
-  Wetland Disturbed by Excavation/Grading Bank (0.046 acre)

Image Source: Landsat®/8, August 2009



Figure 3
Actions Completed in
Waters of the U.S.

Prepared for: City of Irvine
 File: 4552 Figure 3 Actions Completed.mxd [05]
 December 2012
ERG
 Environmental Resources Group



Piney Creek Sediment Removal

- Proposed Tree Planting
- ▨ Area of Excavated Sediment (0.757 acre)
- ☁ Wetland
- ☁ Wetland Disturbed by Excavation/Grading Bank (0.046 acre)
- Study Area

Image Source: Landsat®/August 2009

**Figure 4
Mitigation Plan**



Prepared for: City of Aurora
 File: 4958 Figure 4 Mitigation Plan.mxd (50)
 October 3, 2013



APPENDIX A
SPECIFICATIONS AND DETAILS

Installing Cottonwood Deep-Planted Trees

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This work consists of furnishing all plants, labor, materials, and equipment and performing all work necessary and incidental to installing cottonwood deep-planted trees in accordance with landscape plans, other contract documents, and on-site instructions.

PART 2 - MATERIALS

2.01 COTTONWOOD TREES

- A. Cottonwood Trees – Cottonwood trees will be 1-inch-diameter ball-and-burlap trees obtained from a commercial grower.

PART 3 - EXECUTION

3.01 TRANSPORTATION

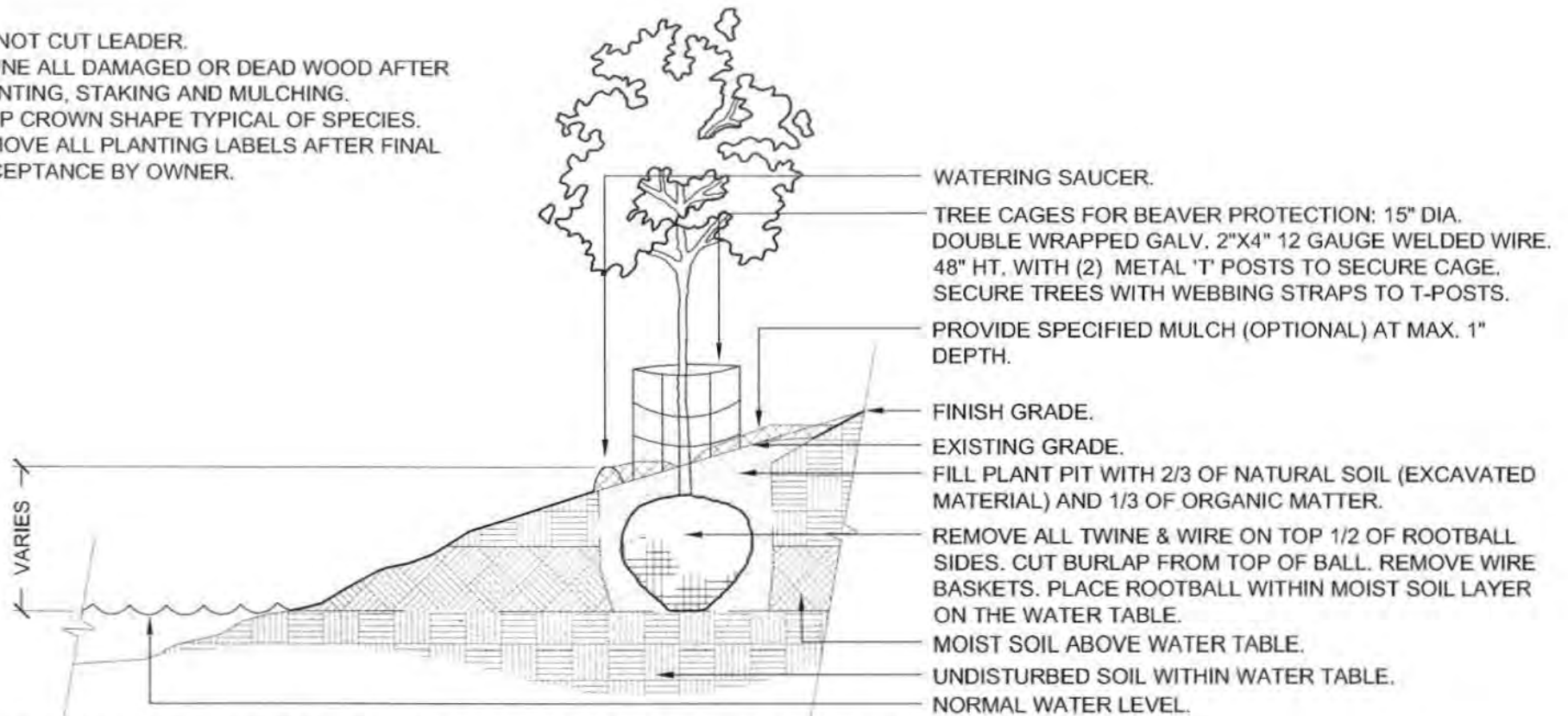
- A. Cottonwood trees will be covered with a tarp when being transported from the grower.
- B. Upon arrival at the construction site, trees will be inspected for acceptability. Only healthy undamaged material will be accepted.

3.02 DEEP-PLANTED COTTONWOOD TREE INSTALLATION

- A. For deep-planted cottonwood trees, using a backhoe, excavate a hole 1.5 times the diameter of the root ball and deep enough to extend to the water table (depth will vary).
- B. Remove all twine and wire from the top half of the rootball sides. Cut burlap from the top of the ball. Remove wire baskets.
- C. Place rootball within moist soil layer on the water table.
- D. Fill planting pit with two-thirds natural soil (excavated material) and one-third organic matter.

NOTE:

1. DO NOT CUT LEADER.
2. PRUNE ALL DAMAGED OR DEAD WOOD AFTER PLANTING, STAKING AND MULCHING.
3. KEEP CROWN SHAPE TYPICAL OF SPECIES.
4. REMOVE ALL PLANTING LABELS AFTER FINAL ACCEPTANCE BY OWNER.



1

DEEP TREE PLANTING FOR B&B COTTONWOOD SPECIES

N.T.S.

329350-20

