



**SPECIAL MEETING OF THE  
 ARAPAHOE COUNTY PLANNING COMMISSION  
 TUESDAY, JUNE 14, 2016 @ 6:30 P.M.**

**REGULAR ITEMS**

<b>ITEM 1:</b>	<b>CASE NO. L16-004, DOVE VALLEY V #02 [ACWWA / CWSD JOINT WATER PURIFICATION PLANT] / LOCATION AND EXTENT PLAN – MAJOR AMENDMENT</b>	
<b>LOCATION:</b>	8501 S. Jordan Road	<b>VOTE:</b>
<b>ACREAGE:</b>	Total 21.54 acres (Lot 2 – 7.07 ac; Tract C 13.93 ac; Tract A 0.54 ac)	<b>IN FAVOR</b>
<b>EXISTING ZONING:</b>	MU	<b>OPPOSED</b>
<b>PROPOSED USE:</b>	Water Purification Plant - Expansion	<b>ABSENT</b>
<b>APPLICANT:</b>	ACWWA/CWSD and Dove Valley Business Park Assoc Ltd	<b>ABSTAIN</b>
<b>CASE MANAGERS:</b>	Planner, Molly Orkild-Larson; Engineer, Spencer M Smith	
<b>REQUEST:</b>	Expansion of the Water Purification Plant	<input type="checkbox"/> <b>CONTINUED TO:</b>
<b>MOTION SUMMARY:</b>		<b>Date:</b> _____

**ANNOUNCEMENTS:**

- The next regular Planning Commission meeting is scheduled for June 21, 2016 and will be held at a special location due to the primary election. The June hearing is schedule to be held at the Colorado State University Extension Office, 6934 S. Lima St., Ste B, East Entrance, Centennial, CO 80112.
- Planning Commission agendas, Board of County Commissioner agendas, and other important Arapahoe County information may be viewed online at [www.arapahoegov.com](http://www.arapahoegov.com) or you may contact the Planning Division at 720-874-6650.

**PLANNING COMMISSION MEMBERS:**

<b>Mark Brummel -</b>	<b>Richard Rader -</b>	<b>Paul Rosenberg, Chair -</b>
<b>Diane Chaffin -</b>	<b>Jane Rieck -</b>	<b>Richard Sall -</b>
<b>Brian Weiss, Chair Pro-Tem -</b>		

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**ARAPAHOE COUNTY PLANNING COMMISSION**

**PUBLIC HEARING**

June 14, 2016

6:30 P.M.

**SUBJECT: L16-004 – DOVE VALLEY V#02, ACWWA-CWSD JOINT WATER PURIFICATION PLANT LOCATION & EXTENT**

Molly Orkild-Larson, Senior Planner

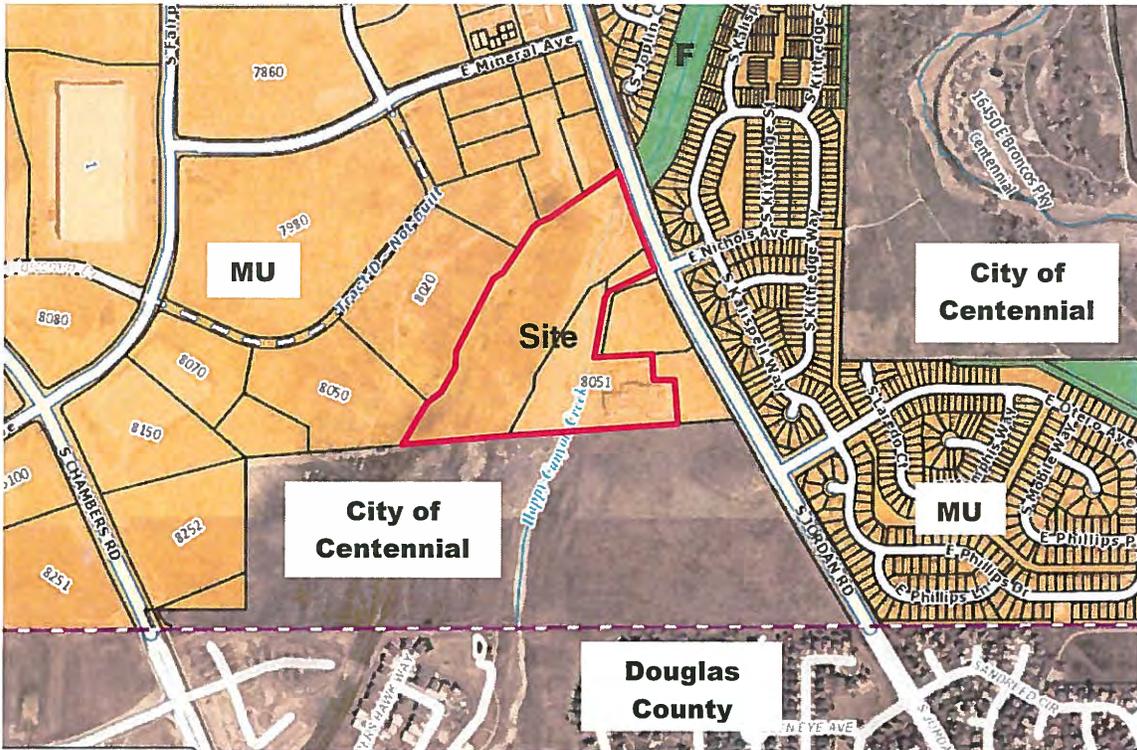
June 6, 2016

**VICINITY MAP:** The subject parcels include Lot 2, Tract A and Tract C and are located west of S. Jordan Road.



**Vicinity Map**

**LOCATION:** This proposal is in Commissioner District #2.



**Zoning Map**

**ADJACENT SUBDIVISIONS, ZONING, AND LAND USES:**

- North - Dove Valley V; Mixed Use (MU); Commercial/Industrial.
- South - City of Centennial; Vacant.
- East - Southcreek Subdivision; MU; Residential.
- West - Dove Valley V; MU; Commercial/Industrial.

**PROPOSAL:**

The applicant, Mulhern MRE, Inc., on behalf of the Arapahoe County Water and Wastewater Authority/Cottonwood Water and Sanitation District (district) and Dove Valley Business Park Associates Ltd., are requesting approval of a Location and Extent for the expansion of an existing water treatment facility to reduce selenium levels using the Reverse Osmosis (RO) purification process.

Initially, the existing plant used the RO method to treat the district’s alluvial well water and deep groundwater to deliver purified drinking water. This process is known to produce discharge water (also known as “reject water”) which is required to meet Colorado Department Public Health and Environment (state) water quality standards before being released back into adjacent waterways. The district found that the initial discharge water from the plant exceeded the state’s allowable selenium levels. While selenium is a naturally occurring element, it can be toxic to fish and waterfowl at relatively low levels. As a result

of high levels of selenium, the state required that the discharge of the reject water of the plant be terminated resulting in the shutdown of the RO process. To resolve this problem, the district converted the plant to a microfiltration water treatment system. While this technique meets all state requirements for safe drinking water, the microfiltration process leaves more dissolved solids in the water increasing water “hardness” which can result in mineral deposits on water fixtures, glassware, etc.

The applicant wishes to treat their water again through the RO process which delivers far better water in clarity, taste, and removal of dissolved minerals. This expansion proposes to install an underground biological treatment system that the plant’s discharge water will be filtered through in order to decrease selenium levels and meet the state’s required levels. The treatment system is to be located on approximately six acres on portions of Lot 2 and Tract C. A gravel road is also proposed to access the new treatment area and will be located on Tracts A and C.

State law (CRS 30-28-110 (1)) provides the authority for Counties to review and approve the location and extent of public improvements. A public water treatment facility is considered a public improvement per state statute.

**RECOMMENDATION:**

Staff: Staff is recommending approval of this case with conditions, based on the findings listed in the staff report.

**I. BACKGROUND**

Zoning: The parcels are zoned MU as part of the Dove Valley Business Park Master Development Plan.

**II. DISCUSSION**

Staff review of this application included a comparison of the project to policies and goals outlined in the Comprehensive Plan, a review of pertinent zoning regulations, background activity, and analysis of referral comments.

**1. The Comprehensive Plan**

The Comprehensive Plan designation for this property is “Employment Centers.” The “Employment Centers” include workplace uses such as research and development offices, major service and office center complexes, warehousing and light industrial uses, and major educational facilities. The expansion of this facility is consistent with the light industrial and service center uses described in the Comprehensive Plan.

This application also supports the Comprehensive Plan goal GOAL PFS1 - Plan for Adequate Public Facilities and Services, which states “As development occurs, Arapahoe County will facilitate and ensure adequate public facilities and services (including functional water and wastewater lines, fire protection, police

protection and other government services) for current and future residents in a fiscally responsible manner and under consistent standards.”

2. Regulatory Review and Additional Background Information

Chapter 13, Section 13-700 of the Land Development Code, covers the policy and regulatory aspects of a Location and Extent. This includes a specific review of – Location and Extent, Section 13-702 – General Requirements and Procedure. A Location and Extent does not have specific approval criteria but may be approved upon the finding that:

13-702.01A No road, park, public way, ground, or space, no public building or structure, and no major facility of a public utility shall be constructed or authorized in the unincorporated areas of Arapahoe County unless and until the proposed location and extent thereof has been submitted to and approved by the Arapahoe County Planning Commission.

13-702.05 The Planning Commission and the Board of County Commissioners, when applicable, may approve the facilities as submitted, approve it with conditions, or deny the facility. The conditions to be imposed are those necessary, in the discretion of the Planning Commission and Board of County Commissioners, to mitigate or eliminate any adverse impacts of the proposed facility on the surrounding area, and may include the posting of sufficient performance guarantees with the County to guarantee the construction of any improvements.

SUBMITTAL REQUIREMENTS - The applicant is in compliance with Section 13-703, sub-section 13-703.01, by submitting all of the required materials.

3. Referral Comments

The following chart is an overview of the comments. A copy of all referral comments follows the staff report.

Engineering Services	Staff is working with the applicants to address all engineering comments.
Mapping	Staff is working with the applicants to address all mapping comments.
Zoning	Trees shown on the plan was from a past approval and isn't applicable to this review. Applicant will not fence the proposed facility expansion since its all underground. Zoning finds this response acceptable.

Open Space	Open Spaces' (OS) questions on the proposed access road to serve the plant's expansion area have been answered and provided staff with another referral letter stating this. OS is currently in negotiations to take over the maintenance of the Happy Canyon Trail. If the trail maintenance becomes the responsibility of OS, an access agreement with the applicants will be pursued. The applicant is amenable to granting an access easement.
Sheriff	No comments.
Weed Control	No response received.
Dove Valley Business Park Architectural Review	No response received.
City of Centennial	No response received.
Colorado Parks and Wildlife	No response received.
Douglas County	No comments.
South Metro Fire Rescue District	No comments.
Dove Valley Metro District	No response received.
Arapahoe Park and Recreation District	No comments.
Tri-County Health	Recommends a long-term operation be carefully planned. Applicant is willing to comply.
West Arapahoe Conservation District	No response received.
E-470 Authority	No response received.
Centurylink	No response received.
Xcel Energy	The existing natural gas and electric facilities are located along S. Jordan Road. The applicant believes the proposed driveway connection will not impact these utilities. If conflicts occur with the building of the access drive and utility lines, the applicant will work with Xcel Energy to resolve any issues that may arise.
U.S. Army Corp of Engineers	General information on Section 404 of the

	Clean Water Act given to staff, nothing specific to the project. The applicant states they will comply.
Cherry Creek Basin Water Quality Authority	No comments on this project provided BMPs are implemented. BMPs are required for this application. The applicant will provide further information with the Construction Drawings on BMPs.
SEMSWA	Staff is working with the applicants to address all SEMSWA comments.
Urban Drainage and Flood	This agency has no objections to this application. Applicant will need to work with this agency to obtain all necessary permits in the drainage channel.
Ladera (Southcreek) HOA	No comments received.
Southcreek Townhome HOA	No comments received.
Southcreek Paired Home HOA	No comments received.

### **III. STAFF FINDINGS**

Staff has visited the site and has reviewed the plans and supporting documentation and referral comments. Based upon review of applicable policies and approval standards in the Land Development Code and analysis of referral comments, our findings include:

1. The submitted Location and Extent application is in conformance with the Arapahoe County Comprehensive Plan.
2. The submitted Location and Extent application is in conformance with submittal and processing requirements of the Arapahoe County Land Development Code.
3. The proposed application is expected to mitigate adverse impacts of the water purification plant's discharge water and meet all Colorado Department of Public Health and Environment's regulations.
4. Staff finds that the request for approval of a Location and Extent for an expansion of the water purification plant is in conformance with policies and goals outlined in the Land Development Code for a Location and Extent.

**IV. RECOMMENDATION:**

Considering the findings and other information provided herein, the staff recommends approval of the Arapahoe County Water and Wastewater Authority/Cottonwood Water and Sanitation District Joint Water Purification Plant Location and Extent (Case No. L16-004), subject to the following conditions:

1. The applicants will make modifications to plans, as requested by the Public Works and Development Department.
2. Place a note on the site plan that indicates that a future SEMSWA detention facility is to be placed in Tract C.

This is based upon:

- The proposed use is acceptable and consistent with the standards as determined by the Land Development Code.
- The proposed use benefits and serves the interest of the citizens of Arapahoe County.

**V. DRAFT MOTIONS:**

In the case of L16-004, Arapahoe County Water and Wastewater Authority/Cottonwood Water and Sanitation District Joint Water Purification Plant Location and Extent (Case No. L16-004), we have read the staff report and received testimony at the public hearing. We find ourselves in agreement with staff findings including all plans and attachments as set forth in the staff report dated June 6, 2016, and move to approve this case, subject to the following conditions:

1. The applicant will make modifications to plans, as requested by the Public Works and Development Department.
2. Place a note on the site plan that indicates that a future Southeast Metro Stormwater Authority (SEMSWA) detention facility is to be placed on Tract C.

**A. Other Alternate Motions:**

Any alternate motion must include new findings and conditions where those differ from the staff-recommended findings and conditions.

1. State new or amended findings to support Planning Commission recommendation of “Denial” or, if needed, for a motion of “Approval, With Changes.”
2. State any new or amended conditions if the motion is for “Approval, with Changes.”

Attachments:      Application  
                         Response Letter  
                         Referral Letters  
                         Location and Extent Exhibit  
                         Neighborhood Meeting Material



**Public Works and Development**  
 6924 S. Lima Street  
 Centennial, Colorado 80112  
 Phone: 720-874-6650  
[www.arapahoegov.com](http://www.arapahoegov.com)

**Land Development Application**  
 Form must be complete

Land Development Application materials received after 2pm shall be date stamped received the following working day.

<b>APPLICANT/REPRESENTATIVE:</b> Cottonwood Water and Sanitation District	<b>ADDRESS:</b> c/o 2 Inverness Drive East, #200, Englewood, CO 80112 <b>PHONE:</b> 303-649-9857 <b>FAX:</b> 303-414-0671 <b>EMAIL:</b> pat@mulhernmre.com	<b>SIGNATURE:</b> <b>NAME:</b> Patrick F. Mulhern General Manager <b>TITLE:</b>
<b>OWNER(S) OF RECORD:</b> Arapahoe County Water a	<b>ADDRESS:</b> c/o 13031 E. Caley Ave, Centennial, CO 80111 <b>PHONE:</b> 303-790-4830 <b>FAX:</b> <b>EMAIL:</b> switter@arapanoewater.org	<b>SIGNATURE:</b> <b>NAME:</b> Steve Witter General Manager <b>TITLE:</b>
<b>ENGINEERING FIRM:</b> Mulhern MRE, Inc.	<b>ADDRESS:</b> 2 Inverness Drive East, #200, Englewood, CO 80112 <b>PHONE:</b> 303-649-9857 <b>FAX:</b> 303-414-0671 <b>EMAIL:</b> pat@mulhernmre.com	<b>CONTACT PERSON:</b> Patrick F. Mulhern

Pre-Submittal Case Number: \_\_\_\_\_ Pre-Submittal Planner: \_\_\_\_\_ Pre-Submittal Engineer: \_\_\_\_\_

Parcel ID no. (AIN no.)	2073-32-3-11-002
Parcel Address or Cross Streets:	8051 South Jordan Road
Subdivision Name & Filing No.:	Lot 2 Dove Valley V 2nd Filing
Related Case Numbers: (Preliminary/Final Development Plan, Rezoning, and / or Plat )	Dove Valley Master Development Plan Case No. Z00-021; Final Plat Case No. P02-007

	EXISTING	PROPOSED
<b>Zoning:</b>	MDP-055	Biological Treatment System MU-MDP
<b>Case/Project/Subdivision Name:</b>	Dove Valley V 2nd Filing	Biological Treatment System/Dove Valley V
<b>Site Area (Acres):</b>	7.21	21.16
<b>Floor Area Ratio (FAR):</b>	NA	NA
<b>Density (Dwelling Units/Acre):</b>	NA	NA
<b>Building Square Footage:</b>	NA	NA
<b>Disturbed Area (Acres):</b>		

**CASE TYPE (Administrative Case types are shaded in Gray)**

<input type="checkbox"/> Preliminary Development Plan or Major Amendment <input type="checkbox"/>	<input type="checkbox"/> Location & Extent or Major Amendment <input checked="" type="checkbox"/>	<input type="checkbox"/> Administrative Site Plan	<input type="checkbox"/> Preliminary Plat
<input type="checkbox"/> Master Development Plan or Major Amendment <input type="checkbox"/>	<input type="checkbox"/> Rezoning - Conventional	<input type="checkbox"/> Administrative Amendment to _____ (PDP, FDP, etc.)	<input type="checkbox"/> Final Plat
<input type="checkbox"/> Final Development Plan or Major Amendment <input type="checkbox"/>	<input type="checkbox"/> Land Development Code Amendment	<input type="checkbox"/> Technical Amendment to _____ (PDP, FDP, etc.)	<input type="checkbox"/> Minor Subdivision
<input type="checkbox"/> Planned Sign Program or Major Amendment <input type="checkbox"/>	<input type="checkbox"/> Use by Special Review or Major Amendment <input type="checkbox"/>	<input type="checkbox"/> Commercial Mobile Radio Service (CMRS/cellular antennas)	<input type="checkbox"/> Subdivision Exemption
<input type="checkbox"/> Vacation of Right of Way/Easement/Plat	<input type="checkbox"/> Use by Special Review - Oil and Gas	<input type="checkbox"/> Plat Correction	<input type="checkbox"/> Replat (Major)
<input type="checkbox"/> 1041 - Areas & Activities of State Interest - Use by Special Review <input type="checkbox"/>	<input type="checkbox"/> Special District Title 30 <input type="checkbox"/> Title 32 <input type="checkbox"/>	<input type="checkbox"/> Administrative Oil & Gas Use by Special Review (AOGUSR)	<input type="checkbox"/> Administrative Replat
<input type="checkbox"/> Comprehensive Plan	<input type="checkbox"/> Rural Cluster	<input type="checkbox"/> Street Name Change	<input type="checkbox"/> _____

**THIS SECTION FOR OFFICE USE ONLY**

Case No: \_\_\_\_\_ Planning Manager: \_\_\_\_\_ Engineering Manager: \_\_\_\_\_

Planning Fee: Y N \$ \_\_\_\_\_ Engineering Fee: Y N \$ \_\_\_\_\_ TCHD Fee?  \$ \_\_\_\_\_

This application shall be submitted with all applicable application fees. Submittal of this application does not establish a vested property right in accordance with C.R.S. 24-68-105(1). Processing and review of this application may require the submittal of additional information, subsequent reviews, and/or meetings, as outlined in the Arapahoe County Land Development Code.



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<b>OWNER(S) OF RECORD:</b> Dove Valley Business Park	<b>ADDRESS:</b> 1360 South Clarkson St. Denver, CO 80210 <b>PHONE:</b> 303-861-7682 <b>FAX:</b> <b>EMAIL:</b> gtsandier@aol.com	<b>SIGNATURE:</b>  <b>NAME:</b> Glen Sandler General Manager <b>TITLE:</b>
<b>ENGINEERING FIRM:</b> Mulhern MRE, Inc.	<b>ADDRESS:</b> 2 Inverness Drive East, Suite 200 Englewood, CO 80112 <b>PHONE:</b> 303-649-9857 <b>FAX:</b> 303-414-0671 <b>EMAIL:</b> pat@mulhernmre.com	<b>CONTACT PERSON:</b>  Patrick Mulhern

<b>Pre-Submittal Case Number:</b>	<b>Pre-Submittal Planner:</b>	<b>Pre-Submittal Engineer:</b>
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<b>Parcel ID no. (AIN no.)</b>	2073-32-3-10-010
<b>Parcel Address or Cross Streets:</b>	East Nichols Ave and Jordan Rd
<b>Subdivision Name &amp; Filing No.:</b>	Tract C Blk 12 Dove Valley V Sub
<b>Related Case Numbers: (Preliminary/Final Development Plan, Rezoning, and / or Plat)</b>	Dove Valley Master Development Plan Case No. Z00-021; Final Plat Case No. P02-007

	EXISTING	PROPOSED
<b>Zoning:</b>	MDP Drainage Tract	MDP Drainage Tract and Biological Treatment
<b>Case/Project/Subdivision Name:</b>	Dove Valley V Sub	?/Biochemical Reactor/Dove Valley V Sub
<b>Site Area (Acres):</b>	13.935	13.935
<b>Floor Area Ratio (FAR):</b>	NA	NA
<b>Density (Dwelling Units/Acre):</b>	NA	NA
<b>Building Square Footage:</b>	NA	NA
<b>Disturbed Area (Acres):</b>		

**CASE TYPE (Administrative Case types are shaded in Gray)**

<input type="checkbox"/> Preliminary Development Plan or Major Amendment <input type="checkbox"/>	<input type="checkbox"/> Location & Extent or Major Amendment <input checked="" type="checkbox"/>	<input type="checkbox"/> Administrative Site Plan	<input type="checkbox"/> Preliminary Plat
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<input type="checkbox"/> Planned Sign Program or Major Amendment <input type="checkbox"/>	<input type="checkbox"/> Use by Special Review or Major Amendment <input type="checkbox"/>	<input type="checkbox"/> Commercial Mobile Radio Service (CMRS/cellular antennas)	<input type="checkbox"/> Subdivision Exemption
<input type="checkbox"/> Vacation of Right of Way/Easement/Plat	<input type="checkbox"/> Use by Special Review - Oil and Gas	<input type="checkbox"/> Plat Correction	<input type="checkbox"/> Replat (Major)
<input type="checkbox"/> 1041 - Areas & Activities of State Interest - Use by Special Review <input type="checkbox"/>	<input type="checkbox"/> Special District Title 30 <input type="checkbox"/> Title 32 <input type="checkbox"/>	<input type="checkbox"/> Administrative Oil & Gas Use by Special Review (AOGUSR)	<input type="checkbox"/> Administrative Replat
<input type="checkbox"/> Comprehensive Plan	<input type="checkbox"/> Rural Cluster	<input type="checkbox"/> Street Name Change	<input type="checkbox"/> _____

**THIS SECTION FOR OFFICE USE ONLY**

<b>Case No:</b>	<b>Planning Manager:</b>	<b>Engineering Manager:</b>
<b>Planning Fee:</b> Y N \$	<b>Engineering Fee:</b> Y N \$	<b>TCHD Fee?</b> <input type="checkbox"/> \$

This application shall be submitted with all applicable application fees. Submittal of this application does not establish a vested property right in accordance with C.R.S. 24-68-105(1). Processing and review of this application may require the submittal of additional information, subsequent reviews, and/or meetings, as outlined in the Arapahoe County Land Development Code.

**COTTONWOOD**  
**WATER AND SANITATION DISTRICT**  
C/O Mulhern MRE, Inc.  
2 Inverness Drive East, #200  
Englewood, CO 80112  
303-649-9857      Fax 303-414-0671

April 8, 2016

Arapahoe County Public Works & Development  
Planning Division  
6924 S. Lima St.  
Centennial, CO 80112

Re:    Natural Biologic Treatment Process at the Joint Water Purification Plant  
      Location and Extent

Dear Public Works and Development:

Our company, Mulhern MRE, Inc., on behalf of the Arapahoe Water and Wastewater Authority (ACWWA) and Cottonwood Water and Sanitation (Cottonwood) is proposing a project in unincorporated Arapahoe County. The project is located at 8051 S. Jordan Road, near the intersection of Jordan Rd. and Nichols Ave. The property is currently owned by Dove Valley Business Park Associates. The legal description of the 13.93 acre parcel is Tract C Block 12 Dove Valley V Subdivision (“Tract C”). Approximately 4 acres is needed for the proposed biological treatment processes. Additionally, some small area of the adjacent property, Lot 2 Dove Valley V Filing No. 2 (“Lot 2”), already owned by ACWWA/Cottonwood may also be utilized for the treatment process. Following approval of the Location & Extent, Tract C will be purchased from the Dove Valley Business Park Associates and combined with Lot 2 through a replat of Lot 2. The extent of the proposed facilities and the exact land area required for them is currently being finalized.

The entities proposing the biological treatment are Cottonwood Water and Sanitation District and Arapahoe County Water and Wastewater Authority. The project is Biological Treatment to Remove Selenium from Water Treatment Plant Concentrate. A description of the project follows.

**Background** - Cottonwood and ACWWA are two South Metro Area water providers whose initial water supplies were largely Non-Tributary Ground Water (“NTGW”) from the Denver Basin. In 2004, following completion of the South Metro Water Supply Study that concluded that NTGW was not a viable long term water source for urban development, both entities acted to replace their use of NTGW. A primary means of replacing NTGW was to fully use and reuse all available renewable water from Cherry Creek. This required treatment of water that is high in Total Dissolved Solids (“TDS”) and has treated wastewater effluent as a large component of the source water.

Cottonwood and ACWWA designed, permitted, funded and constructed a high technology water plant that included Reverse Osmosis (“RO”) as the process treatment and an Advanced Oxidation Reactor (“AOR”) for disinfection. This provided a high quality supply with low TDS and removed or eliminated Chemicals of Emerging Concern (“CEC”)s from treated wastewater. This plant allowed safe use of first use alluvial water rights and reuse of the supply to depletion resulting in about 2 gallons of ultimate use for every gallon pumped.

The plant operated very successfully but the RO process concentrated selenium to levels exceeding the MCL. To eliminate the MCL violation, the RO treatment was discontinued and the plant was converted to microfiltration. The result has been water high in TDS without treatment of CECs. ACWWA has limited use of the supply due to quality complaints, and Cottonwood has ceased taking the water because of the high TDS and the lack of CEC treatment. As a result, after substantial investment in a treatment facility to fully use and reuse its renewable supply, these entities have returned to higher reliance on NTGW. This has also resulted in Cottonwood and ACWWA greatly reducing their planned reuse.

**The Project** - The key issue is that in order to treat high TDS water supply and safely reuse treated wastewater, RO is the desired treatment process. The RO process concentrates selenium and other constituents in the concentrate and in this case, the concentration of selenium violates the discharge permit. While a solution currently being used by others is to discharge the concentrate into deep wells, the solution is costly and results in the loss of the concentrate water, which is a portion of the scarce resource that we are trying to preserve and use.

The solution is a biological treatment system (“BTS”) to remove selenium. CH2M has completed the conceptual design of a treatment system that will remove selenium to below 4 ppb. The treatment system also removes other constituents such as nitrates and sulfates and produces a discharge that will meet the requirements of the discharge permit. The system will also remove selenium load from water tributary to Cherry Creek Reservoir where there are concerns regarding the effects of selenium on fish populations including the Walleye Fishery in Cherry Creek Reservoir.

This project is to add a new treatment process to remove selenium in RO concentrate generated from the JWPP. In order to allow for discharge of the concentrate from RO to the natural stream, this BTS will remove selenium and other undesirable constituents to levels required through the State’s discharge permit system. This system could be constructed on about 6 acres of vacant land behind the JWPP.

The BTS is proposed based upon a study of natural treatment alternatives by CH2M (“Biological Treatment of Selenium in Concentrate”, Technical Memorandum dated November 12, 2015.) The following is an excerpt from this study regarding natural treatment systems. While both BTSs and wetland treatment are discussed, the recommended alternative is a BTS given large land requirements and less treatment flexibility if wetlands were utilized.

“Natural treatment systems are constructed or modified ecosystems that use natural biological, physical and chemical processes to improve water quality. They encompass the general category of engineered wetlands, both constructed and natural, but also include biochemical reactors that may operate passively, or may be intensified through the addition of commercial carbon and nutrient feeds to enhance biological treatment. Both active and passive biological treatment technologies have been shown to provide effective treatment of concentration ranges of selenium (CH2M HILL, 2010).

Typically more land-intensive than active treatment systems, passive biological systems can be less expensive to operate and manage because of lower or negligible energy or chemical inputs (Ziemkiewicz et al., 2003). In passive treatment systems designed to treat selenium, a naturally occurring element with significant ecotoxicological properties, oxidized forms of the element (i.e., selenite, selenate) can be reduced to selenite, elemental selenium, and selenides through microbial reduction, followed by sequestration in soil and sediments (Gusek et al. 2009). Labile organic carbon released from the substrate serves as an electron donor (i.e., an energy source for the microbes providing the treatment). Common electron acceptors (e.g., dissolved oxygen (DO) and nitrate) are removed first or concurrently.

Engineered wetlands designed for selenium removal have spanned the size range of pilot systems on the order of 100 feet square or less, up to full-scale marshes covering 90 acres or more (CH2M HILL, 2012). In these systems, water moves slowly through a vegetated shallow marsh, coming in contact with decomposing vegetation and anaerobic (low oxygen) sediments. Studies of wetlands treating selenium have indicated that the oxidized forms (i.e., selenate, selenite) are rarely found in wetland sediment. Instead, selenide, elemental selenium and organic selenium are more typically found, indicating that selenium has been transformed biologically. Because constructed wetlands attract birds, and selenium intake through food chain bioaccumulation can lead to physical abnormalities, the use of open water wetlands for selenium treatment is often limited to treat concentrations in the range of 15 µg/L or less.

More commonly, passive treatment systems designed for selenium reduction consist of a vertical or horizontal subsurface flow of water through a reducing organic substrate. This achieves microbial and chemical reduction of selenium naturally, with shorter hydraulic residence times and smaller areas than constructed wetlands. Termed biochemical reactors (BCRs), these passive systems have been employed previously for treatment of a variety of mine-impacted waters (e.g., ITRC, 2008) and in a variety of forms. The organic substrate utilized has been composed of wood chips, saw dust, mushroom compost, horse manure, field hay, yard wastes, and limestone granules in varying proportions.

The geochemistry of BCRs relies on a staged approach for trace metal removal. Sulfate-reducing BCRs precipitate trace metals with biogenic sulfide (i.e., natural chemical reduction of selenate to elemental selenium), while selenate-reducing BCRs remove selenium as elemental precipitates (CH2M HILL, 2010). Because selenium compounds are more readily reduced than sulfur compounds and reduced sulfur compounds can act as a chemical reductant, any sulfides precipitated in the BCR (e.g., acid volatile sulfides) provide additional reducing capacity within the substrate. As additional selenium-bearing water passes through this substrate, there is not only the benefit of biological reduction, but also the potential for chemical reduction.

Other removal processes occurring in passive treatment systems include volatilization and adsorption. Volatilization of selenium through bacterial, fungal, or algal-mediated methylation of selenium has been shown to be a significant loss of selenium in wetlands through the conversion to organic forms such as dimethyl selenide (Hanson et al., 1998; Lin et al., 2003). Physical adsorption of selenate to iron, aluminum, or manganese oxyhydroxides present within soil or sediments and to organic matter, readily occurs in passive treatment systems (Kadlec and Wallace, 2009).

Because the BCR is comprised of organic media, secondary parameters (e.g., biochemical oxygen demand [BOD], color, sulfide, and reduced nitrogen) are generated that require treatment before discharge. Across different projects, post-BCR treatment has varied widely, including aerated and non-aerated ponds, surface flow constructed wetlands, and subsurface flow gravel beds, singly or in combinations. Frequently described as aerobic polishing cells, these treatment units function by trapping

particulate organic particles, increasing the DO content of the BCR effluent, as well as oxidizing chemical oxygen demand (COD) or BOD present.

Recent advances in passive biological treatment of selenium have come through the implementation by mining companies and the US Bureau of Reclamation (Reclamation) of treatability pilot studies, full-scale systems, and additional projects discovered through professional contacts and continued review of the literature (Bays et al. 2012). Pilot studies have indicated consistently that total selenium can be reduced to  $<5 \mu\text{g/L}$ , even to method detection limits. These projects have demonstrated that passive treatment can be a practical, cost effective, and technologically appropriate way to manage selenium low influent soluble selenium concentrations ( $<50 \mu\text{g/L}$ ), even in cold weather locations such as Canada. Similar cost-effective solutions are expected for selenium removal in other regions where siting and sizing constraints can be met.” (CH2M, “Biological Treatment of Selenium in Concentrate”, technical memorandum dated November 12, 2015)

The proposed layout of the BTS proposed for this project is shown on Figure 1, and the process drawing is shown in Figure 2. Data from previous pilot studies and installations indicate that selenium can be reduced to concentrations between 1 and 3 ppb which is below the aquatic protection level of 4.6 ppb.

FIGURE 1

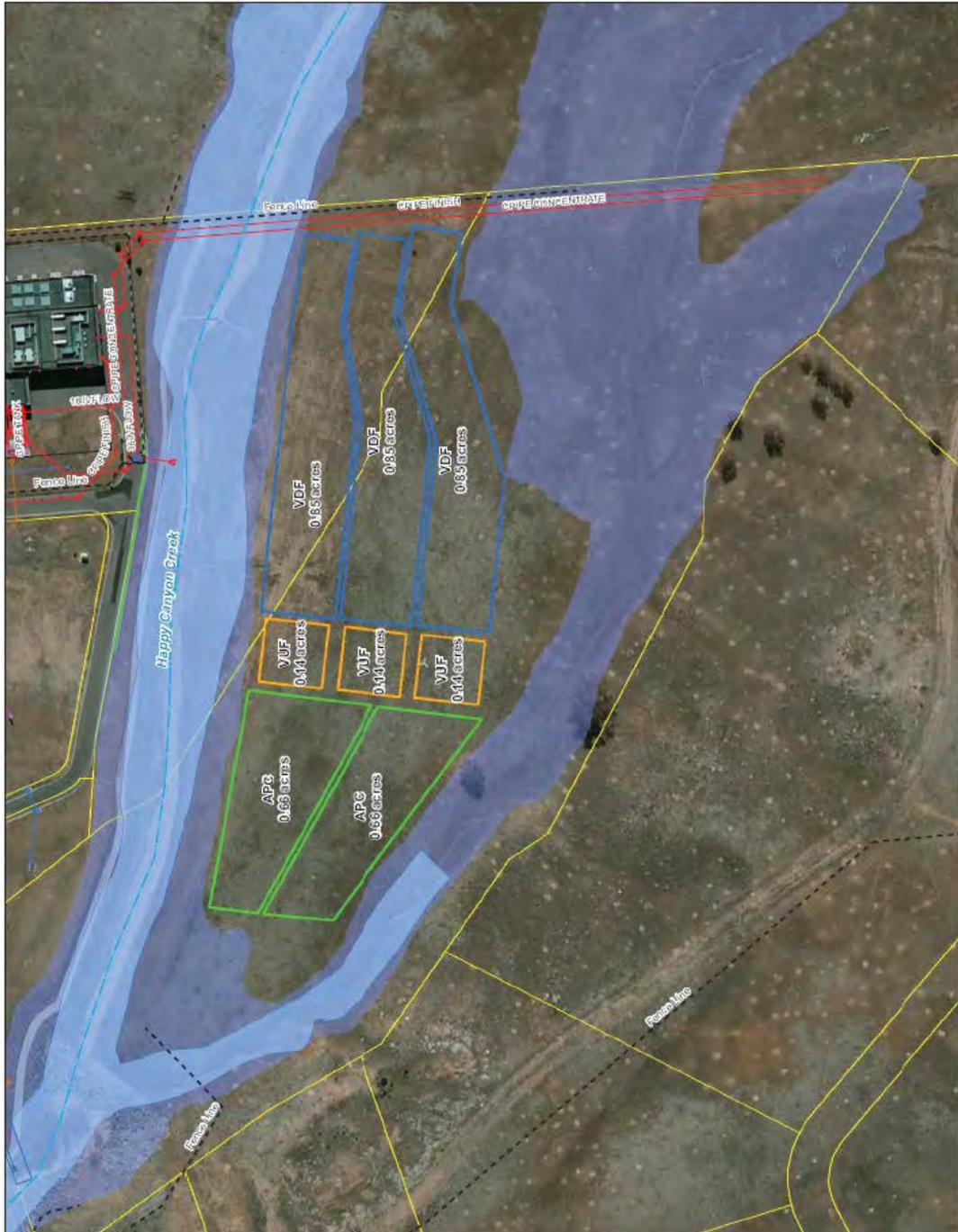
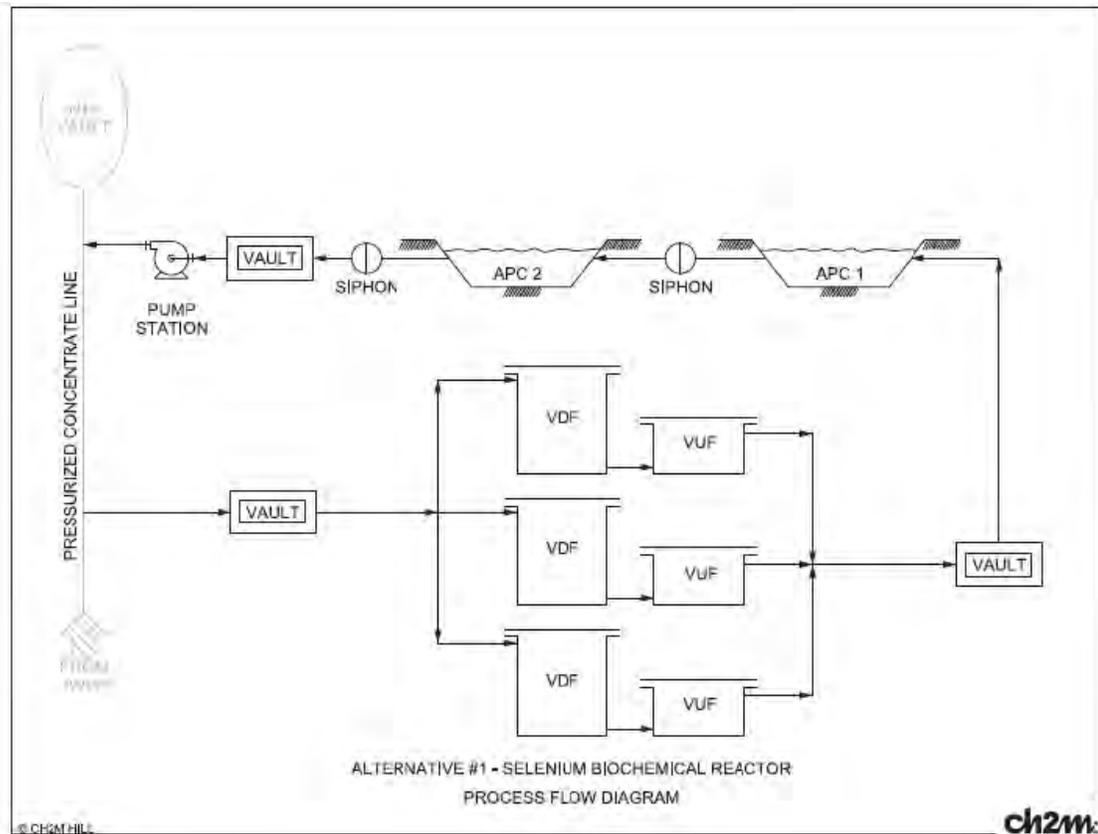


FIGURE 2



Cottonwood and ACWWA propose to purchase additional land adjacent to the JWPP and construct this BTS to reduce the selenium in the concentrate discharge from the JWPP. This will allow full use of the RO treatment process which is now proposed to treat one-half of the flow with the other half treated using microfiltration. The flow will then be blended and disinfected using the AOP. This reconfiguration will produce a high quality treated water with reduced total dissolved solids, hardness, and contaminants of emerging concern. Any modifications within the plant will be completed as a separate project by the Applicants. The plant capacity will be 6 MGD resulting in the treatment of approximately 3,000 acre-feet of alluvial water and return flows that are not currently being utilized.

The cost for construction of the BTS is estimated at a total of \$4 million per the attached study by CH2M and as provided in the budget section to follow. Cottonwood and ACWWA have retained CH2M to complete a pilot study of the proposed facility. The pilot study will confirm selenium removal efficiencies and will establish final design parameters for the BTS. This pilot study is underway with operation of the pilot unit expected to begin by February 1, with study completion in May, 2016.

For ACWWA, this project will provide for reuse of an estimated 1,900 acre-feet of water from the ACWWA Flow importation project. For Cottonwood, this will allow for use and reuse of Cherry Creek and WISE return flows amounting to an estimated 1,100 acre-feet.

**Water Benefits** - The project will result in use of some 1,500 acre-feet of first use water from Cherry Creek, and approximately 1,500 acre-feet of reuse. This will result in reduction of a like amount, i.e., 1,500 acre-feet of NTGW. This will meet approximately 25% of the water supply need for these water providers. The project also may result in environmental benefits to the Cherry Creek Reservoir and the Walleye Fishery by removing selenium loading.

**Summary** - This project is an important part of implementing one of the Metro Roundtable's IPPs and helping ACWWA and Cottonwood successfully implement their reuse plans so as to not further increase the Metro area's M&I gap. These entities have invested heavily in this plant through treatment of high TDS from effluent returns and through treatment of phosphorous in the concentrate to protect Cherry Creek Reservoir. Now treatment for selenium must be added, the removal of which will allow use of the plant and may provide environmental benefits to the local streams and the reservoir.



May 24, 2016

Molly Orkild-Larson  
Arapahoe County Public Works and Development  
6924 S. Lima Street  
Centennial, Colorado 80112

Re: L16-004, Location and Extent – Amendment No. 2  
ACWWA/CWSD Joint Water Purification Plant  
Tract C, Dove Valley V and Dove Valley V, Filing No. 2

Dear Ms. Orkild-Larson,

On behalf of the Cottonwood Water and Sanitation District and ACWWA we are providing the point-by-point responses to the referral comments received for the above referenced project.

**Arapahoe County Zoning**

1. Pine Trees along Jordan Road need to be 8' in height.  
**Response: No new landscaping is required or proposed with this project that is essentially below grade and set back several hundred feet from Jordan Road.**
2. Deciduous trees along Jordan Road to be 2" caliper size.  
**Response: Please see #1.**
3. Fencing – Safety or security fencing around ponds? If so, need fence details, height, etc.  
**Response: No fencing is proposed. This project is essentially below grade, will be finished with soil layer cover and dryland grasses.**

**Arapahoe County Planning**

**Responses to the redline comments on the plan sheets are reflected in the revised L&E plans that address these items.**

Sheet 1 – Cover Sheet

1. See comments on Standard and Specific Notes.
2. Add Planning Commission Approval Signature Block.
3. Be more specific of what the amendment involves.

Sheet 2 – Overall Site Plan

1. This sheet needs more information such as lot lines, lines defining tract, creek locations, trail location etc. See more specific notes on and redlines on this sheet.
  2. Remove sheet boundaries.
  3. What lots and tracts does this Location and Extent involve?
-

#### Sheet 3 – Site Plan

1. You need to decide which sheet you want to use and expand upon. Neither sheets 3 or 4 explain what you are proposing clearly. Please show the entire parcels which are being reviewed.
2. See other redline comments on this sheet.

#### Sheet 4 – Site Plan

1. See comment under Sheet 3.

#### Sheet 5 –Utility Plan and Grading

1. Sheet 5 and 6 have the same problem as 3 and 4.
2. See other redline comments on this sheet.

#### Sheet 6 – Utility Plan and Grading

1. See comment under Sheet 5.
2. See other redline comments on this sheet.

#### Sheet 7 – Landscape Plan

1. The site plan needs to be enlarged. What are you trying to show with the enlargement on this sheet?
2. Missing landscape information, layers not turned on.
3. Specify the seed mix you are using.
4. See other redline comments.

### Arapahoe County Open Space

4. Open Spaces is actively involved in maintaining the Happy Canyon Trail north east of Jordan Road. The south west portion of the trail that runs through the applicant's property is planned to be connected in June 2016. Currently, Open Spaces is in negotiations to take over maintenance of this portion of the Happy Canyon Trail South East of Jordan Road once the construction is complete. Open Spaces currently has a lot of difficulty accessing the currently managed section and replacing panels is difficult because concrete trucks cannot access the trail under Jordan Road because of clearance issues. The proposed development plan shows a span across the Happy Canyon Trail without providing an elevation drawing in the submitted site plan. Therefore, Open Spaces does not know the clearance over the trail for access by maintenance equipment and concrete trucks for repairing broken panels. Open Spaces does not want the clearance issues associated with the Jordan Road crossing mentioned above to continue down the Happy Canyon Trail. Open Spaces is requesting a minimum of 12' tall and an elevation drawing to be added to the submittal.

**Response: The maintenance Access Road to the Biological Treatment System (BTS) buried vaults will be a gravel road that is generally at grade with the adjacent ground. It will cross the existing Regional Trail and follow the upstream edge of the existing boulder drop structure across Happy Canyon Creek to the BTS vaults.**

5. Open Spaces currently mows the section of the Happy Canyon trail South East of Jordan Road that runs through the applicant's property and experiences difficulty accessing this portion of the trail for maintenance. Open Spaces would like to work with the applicant to

gain maintenance access to this portion of the trail in the form of an agreement or access easement.

**Response: Agree. An Access Easement or Agreement can be granted to Arapahoe County Open Spaces by the Owner.**

### Arapahoe County Public Works

#### GENERAL INFORMATION

1. Applicant submitted payment for ESD review fees of \$5,500 as required: (L&E-\$5,000 and Drainage Letter-\$500).  
**Response: Acknowledged.**
2. Applicant will need to submit the following documents and fees for approval by the Engineering Services Division: Construction Documents-\$1,500 and GESC Plan/Report-No County Fee, prior to commencing construction. The following permits and associated fees will need to be obtained prior to construction: GESC and Floodplain Development permits.  
**Response: Acknowledged.**
3. Applicant will need to coordinate design of sub-regional water quality pond and channel improvements in Tract 'C' (by others) with the water purification plant project.  
**Response: Acknowledged.**

#### LOCATION AND EXTENT AMENDMENT PLANS

4. The plans need some significant work to make it clear what is being proposed with this amendment and what is existing. Please include legends on all sheets to help clarify what linework, symbols and hatching is representing. Please show existing improvements consistently and faded and dashed. Show only proposed improvements as dark, solid linetypes. Show and call out all existing and proposed improvements, as well as easements.  
**Response: Revisions reflected on the revised L&E Plan sheets.**
5. Show the regulated floodplain, not existing and proposed. Also label the Happy Canyon Creek and Green Acres Tributary, both.  
**Response: Revisions reflected on the revised L&E Plan sheets.**
6. There is an access shown to the existing pond in Tract 'A' on some sheets and not others. Is this access exists, please show it as an existing access.  
**Response: Access To existing pond in Tract A is now shown as existing.**
7. There is a lot of text and linework clean-up needed so that all text is readable. Please move or mask text as necessary.  
**Response: Revisions reflected on the revised L&E Plan sheets.**
8. Please make all sheets the same size. One (Sheet 5) was a different size from the rest.  
**Response: Revisions reflected on the revised L&E Plan sheets.**

9. SEMSWA's GIS database shows some different storm sewer alignments on the site. Please ensure that you are showing what is existing correctly.  
**Response: Revised plan should now depict correct storm sewer alignments.**
10. Please show the sub-regional water quality pond in Tract 'C' as a future improvement on these plans.  
**Response: The Proposed Water Quality Pond is in the process of being defined and will be shown on the Construction Drawings when more definitive information is available from SEMSWA and the design engineer.**
11. See redlines for additional comments.  
**Response: Revisions reflected on the revised L&E Plan sheets.**

#### DRAINAGE LETTER OF CONFORMANCE

**Response (Items 12-15): Revisions reflected on the revised L&E Plan sheets.**

12. Please address letter to Arapahoe County.
13. Add the Arapahoe County Case Number: L16-004 to the cover page.
14. The drainage letter needs to contain more detail and information about the project. Please reference the enclosed examples that are being provided with the County's comments.
15. See redlines for additional comments.

#### SEMSWA

##### General Comments:

1. This project is located within the Happy Canyon Creek drainage basin. System Development Fees (SDFs) have been established for development in this drainage basin. Please note SDFs will be assessed at the time of approval and are based on added impervious area. The SDF fee for this basin is \$8,388.00 per added impervious acre. This fee shall be paid prior to any permits being issued by SEMSWA.  
**Response: It is understood that Basin Fees are typically required. The final Agreement between SEMSWA and ACWWA/CWSD will define the location and area of the proposed Water Quality Pond and other particulars of that project that may impact the fee amount.**
2. Please note that permits are required prior to construction commencing on this site. Permits necessary for construction may include the Grading, Erosion and Sediment Control (GESC) Permit and the Floodplain Development Permit (FPDP). There are permit fees and collateral required for these permits which are assessed at the time of approval. All fees and collateral shall be paid prior to any permits being issued by SEMSWA.  
**Response: Acknowledged.**
3. Additional documents are required. Please provide the following documents with the resubmittal. Some of these requirements do differ from the pre-submittal notes and this difference is caused by additional information provided and the work proposed within the floodplain.

- a. Small Site Grading, Erosion and Sediment Control Plan and Report with review fee of \$1,135.00.  
**Response: A GESC Plan and review fees will be provided with the submittal of the Construction Drawings. Construction details have not yet been finalized, however work within the floodplain will be minimized.**
  - b. Floodplain No Impact Letter with a review fee of \$450.00.  
**Response: A Letter with applicable fee will be submitted.**
  - c. Construction Drawings with review fee of \$825.00.  
**Response: Construction Drawings with applicable fee will be submitted when the design of the BTS has progressed to the appropriate level of detail.**
4. Please submit a response letter to the comments with the re-submittal. Response letter is required for further review.  
**Response: Acknowledged.**

Location and Extent Plan Comments:

5. The floodplains need to be located in a floodplain/drainage easement; please show, label and revise accordingly throughout the Plan set.  
**Response: Floodplain areas will be shown within an appropriate easement to be defined on Lot 2 and Tract C with the replat of those parcels.**
6. Please label Green Acres Tributary and Happy Canyon Creek throughout the Plan set.  
**Response: The plans have been revised.**
7. The Plans show an existing floodplain and a proposed floodplain. Are these delineations the current floodplain delineations or the floodplain delineations associated with the previous project? Please ensure the plans show the current FEMA floodplain/floodway and FHAD floodplain/floodway. The FEMA label should include the FIRM panel number and the FHAD delineation should specific that it is from the Happy Canyon FHAD. Please revise throughout the Plan set.  
**Response: The plans have been revised.**
8. Please label the low flow crossing on the Site Plan sheets and on the Grading and Utility Plan sheets.  
**Response: The plans have been revised.**
9. The embankment for the treatment facilities is along the floodplain. Please provide, show and label stabilization that will be along these embankments.  
**Response: The plans reflect grading outside of the floodplain limits. The slopes will be revegetated with dryland grasses. Any additional stabilization and the specific seed mix will be determined in collaboration with SEMSWA at the time of Construction Drawing review.**
10. Please refer to redlines and make the necessary corrections and revisions.  
**Response: Plans revised as described and shown on the L&E sheets.**

Drainage Report Comments:

11. Please include the SEMSWA case number DPR16-00033 and the Arapahoe County case number L16-004 on the Drainage letter.  
**Response: Letter revised.**
12. Please refer to the provided pre-submittal notes that included a Drainage Letter outline and provide/address the following:  
**Response: The letter has been revised to address Items a. through h.**
  - a. State where this project is located.
  - b. Expand on the description of what is proposed on this site.
  - c. How much new impervious surface will be proposed? Additionally, include any calculations showing the increased flow rate from this new impervious area.
  - d. Discuss the design of the low flow channel and include the necessary design information and calculations.
  - e. Expand of the discussion describing what work will be proposed within the floodplain.
  - f. The embankment for the treatment facilities is along the floodplain. Please provide, show and label stabilization that will be along these embankments.
  - g. Provide a water quality statement.
  - h. Provide an exhibit showing the proposed work, floodplain and floodways, contours and drainage arrows.
13. There are access roads proposed, what material are the access roads?  
**Response: Proposed as gravel. Construction Drawings and that review may require some other appropriate material.**
14. Per the pre-submittal notes a Small Site GESC Plan and Report is required, this letter refer to a Low Impact GESC. This project does not meet the Low Impact GESC requirements. Please revise accordingly.  
**Response: The Letter has been revised to refer to Small Site GESC that will be submitted with the Construction Drawings for review.**
15. Please refer to redlines and make the necessary corrections and revisions.  
**Response: Plans revised as described and shown on the L&E sheets.**

Xcel Energy

Public Service Company of Colorado's (PSCo) Right of Way & Permits Referral Desk has reviewed the location and extent plans for Dove Valley V Filing No. 2 – ACWWA / CWSD Joint Water Purification Plant. Please be aware PSCo owns and operates existing natural gas and electric distribution facilities within the subject property along South Jordan Road and requests they be shown on the plans.

**Response: Existing gas and electric lines are along Jordan Road and within the JWPP developed area. The proposed project lies to the west of those existing facilities. Utilities will be located in the field as the design is finalized.**

The property owner/developer/contractor must contact the Builder's Call Line at 1-800-628-2121 or <https://xcelenergy.force.com/FastApp> (Register so you can track your application) and complete the application process for any new gas or electric service, or modification to existing facilities. It is then the responsibility of the developer to contact

the Designer assigned to the project for approval of design details. Additional easements may need to be acquired by separate document for new facilities.

**Response: Any new gas or electric service, or modification to existing facilities will be coordinated with Xcel Energy. He project will require some low head pumps, but it is anticipated that the existing electrical service to the JWPP facility and/or wells will be sufficient.**

As a safety precaution, PSCo would like to remind the developer to call the Utility Notification Center, at 1-800-922-1987 to have all utilities located prior to any construction.

**Response: The Construction Drawings will clearly state the Contractor will call for locates prior to beginning construction.**

### Tri County Health

TCHD recommends that a long-term operational procedure to recharge the Biological Treatment System and remove any accumulated selenium be carefully planned and executed.

**Response: The final design of the BTS will include operational procedures and an expected schedule for maintenance, including media disposal and replacement. The BTS will be reviewed by CDPHE as appropriate.**

### Cherry Creek Basin Water Quality Authority

Control Regulation No. 72 requires that all new development provide construction Best Management Practices (BMPs) and post-construction BMPs for any Tier 3 land disturbance greater than one acre and which results in more than 5,000 square feet, of new or increased imperviousness. From the submitted documents, it appears the Project will increase imperviousness by more than 5,000 square feet and disturb more than 1 acre, such that the Project is classified as a Tier 3 development. Tier 3 development requires construction BMPs<sup>3</sup> and post construction BMPs<sup>4</sup> *"..that provide WQCV designed to capture and treat, at a minimum, the Both percentile runoff event..." for the increased imperviousness area.*

1. An Erosion and Sediment Control Plan describing proposed construction BMPs for land disturbance is required. The referral packet didn't include this plan or address construction BMPs.

**Response: To be included with the Construction Drawings when they are submitted for review/approval.**

2. The Location and Extent Plan identifies an area for a proposed detention pond; however, no detail plans or drainage report was included with the referral packet addressing the required post construction BMPs.

**Response: To be included with the Construction Drawings when they are submitted for review/approval.**

## Army Corps of Engineers

6. In accordance with Section 404 of the Clean Water Act, the Corps of Engineers regulates the discharge of dredged or fill material, and any excavation associated with a dredged or fill project, either temporary or permanent, into waters of the United States (WOUS). You should notify this office if the project proposed falls within these regulated activities because the project may require a Department of the Army Section 404 permit.

**Response: Acknowledged.**

7. A WOUS may include ephemeral and/or perennial streams, wetlands, lakes, ponds, drainage ditches and irrigation ditches. A wetland delineation must be conducted, and verified by the Corps of Engineers, using the methods outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual*: (using applicable Regional Supplement) to determine wetlands based on the presence of three wetland indicators: hydrophytic vegetation, hydric soils, and wetland hydrology. Wetland delineations must be conducted in the field by a qualified environmental consultant and any aquatic resource boundaries must be identified accordingly. Once the aquatic resources have been identified, only this office can determine if they are WOUS. Please note that development of the upland areas, avoiding stream and wetland resources, does not require authorization from this office.

**Response: Acknowledged.**

8. Nationwide Permits (NWP) authorize common types of fill activities in WOUS that will result in a minimal adverse effect to the environment. Descriptions of the 52 types of nationwide permit activities and their general conditions can be found on our website: <http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/Colorado.aspx>. Some fill activities require notifying the Corps before starting work. Also, some types/sizes of work may require additional information or mitigation.

**Response: The work will be coordinated with the COE.**

9. Regional General Permits (RGP) authorize specific types of fill activities in WOUS that will result in a minimal adverse effect to the environment. Descriptions of the 4 types of regional general permit activities and their general conditions can be found on our website:

<http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/Colorado/RegionalGeneralPermits.aspx>. These fill activities require notifying the Corps before starting work, and possibly other local or state agencies. Also, some types/sizes of work may require additional information or mitigation. Please note several of the RGP's are applicant and location specific.

**Response: The work will be coordinated with the COE.**

10. Individual permits may authorize fill activities that are not covered under the NWP or Regional General Permits (RGP's). This permit will be processed through the public interest review procedures, including public notice and receipt of comments. An alternative analysis (AA) must be provided with this permit action. The AA must contain an evaluation of environmental impacts for a range of alternatives. These alternatives should include the preferred action, no action alternative, and other

action alternatives that would be the identified project purpose. Other action alternatives should include other practicable (with regards to cost, logistics, and technology) that meet the overall project purpose. The alternatives could include offsite alternatives and alternative designs. When evaluating individual permit applications, the Corps can only issue a permit for the least environmentally damaging practicable alternative (LEDPA). In some cases, the LEDPA may not be the applicant's preferred action. The individual permit application form and form instructions can be found on our website:

<http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/ObtainPermit.aspx>.

**Response: The work will be coordinated with the COE.**

11. If the activity requires a Department of the Army permit as a result of any impacts to WOUS or any earth disturbances within that resource, a federal action will occur. For the Corps to make a permit decision, the applicant must provide enough information to demonstrate compliance with Section 106 of the National Historic Preservation Act (NHPA) and Section 7 of the Endangered Species Act (ESA).

**Response: Acknowledged.**

12. The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to WOUS to the maximum extent practicable at the project site. Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal. Any loss of an aquatic site may require mitigation. Mitigation requirements will be determined during the Department of the Army permitting review.

**Response: Acknowledged.**

13. If the information that was submitted could impact WOUS, which are jurisdictional resources, this office should be notified. If a section 404 permit is required, work in an aquatic site should be identified by the proponent of the project and be shown on a map identifying the Quarter Section, Township, Range and County, Latitude and Longitude, Decimal Degrees (example 39.55555; -104.55555) and the dimensions of work in each aquatic site.

**Response: The work will be coordinated with the COE as required.**

This L&E is prepared to provide assurances that the intended project is acceptable to Arapahoe County and the other referral agencies and meets their requirements for the proposed Biological Treatment System project. When approved, ACWWA-CWSD will proceed with the purchase of Tract C in Dove Valley V and continue coordination with SEMSWA on their water quality pond. Construction Drawings for the proposed BTS will be submitted at a later date.

Please do not hesitate to contact me with any questions you may have at 303-649-9857.

Sincerely,  
For Cottonwood Water & Sanitation District



Ronald L. Lambert, P.E.

Cc: Pat Mulhern, CWSD  
Kevin McBrien, ACWWA  
Sarah Foster, CH2M

# Planning Commission Summary Report

**Date:** June 6, 2016 *SMS*  
**To:** Arapahoe County Planning Commission  
**Through:** Molly Orkild-Larson  
Planning Division, Case Planner  
**Through:** Chuck Haskins, PE  
Engineering Services Division, Manager  
**From:** Spencer M. Smith, PE  
Engineering Services Division, Case Engineer

**Case name:** L16-004 – Dove Valley V#02, ACWWA-CWSD Joint Water Purification Plant

## **Purpose and Recommendation**

The purpose of this report is to communicate the Engineering Staff findings, comments, and recommendations regarding the land use application identified above.

## **Engineering Staff has reviewed the land use application and has the following findings:**

1. The applicant will be required to submit for review and approval, construction documents and GESC plan/report prior to construction. The site access design will need to be detailed as part of these plans, as well as any proposed grading.
2. A floodplain development permit will be required prior to construction. The permit application shall meet the requirements of section 5.6.3 of the Arapahoe County Stormwater Management Manual.
3. A note or some other means to identify that there are future plans for a water quality pond and channel improvements within Tract 'C' should be included on these plans (as commented on in the initial L&E review). The construction documents will be required to show more detailed design and coordination with the water quality pond and channel design by others.

## **Engineering Staff is recommending the land use application(s) favorably subject to the following conditions:**

1. Applicant addresses all Arapahoe County Engineering Services Division comments.
2. Applicant obtains all necessary approvals and permits.



RECEIVED

APR 19 2016

Public Works and Development  
6924 S. Lima Street Centennial, Colorado 80112 Phone: 720-874-6650; FAX 720-874-6611  
www.co.arapahoe.co.us

ARAPAHOE COUNTY  
PLANNING DIVISION

Planning Division  
Referral Routing

Case Number / Case Name: L16-004, Dove Valley V #02 [ACWWA / CWSD Joint Water Purification Plant] / Location and Extent Plan - Major Amendment

Planner: Molly Orkild-Larson  
Engineer: Spencer Smith  
Date sent: April 18, 2016  
Date to be returned: May 2, 2016

Arapahoe County Agencies		Citizen's Organizations	
<input type="checkbox"/>	Assessor / Arapahoe County (Residential)	Beverly Reynolds	
<input type="checkbox"/>	Attorney / Arapahoe County	Robert Hill	<input type="checkbox"/> CCNA-Cherry Creek Neighborhoods Ass.
<input type="checkbox"/>	Building / Arapahoe County	Steve Byer	<input type="checkbox"/> CECON-(Within Centennial)
<input checked="" type="checkbox"/>	Engineering / Arapahoe County	Spencer Smith	<input type="checkbox"/> Four Square Mile Neighborhood
<input checked="" type="checkbox"/>	Mapping / Arapahoe County	Pat Hubert	<input type="checkbox"/> South Metro Chamber of Commerce
<input type="checkbox"/>	Oil & Gas / Arapahoe County	Diane Kocis	<b>Conservation District</b>
<input checked="" type="checkbox"/>	Open Space / Arapahoe County	Raymond Winn	<input type="checkbox"/> Deer Trail Conservation District
<input checked="" type="checkbox"/>	Planning / Arapahoe County	Molly Orkild-Larson	<input checked="" type="checkbox"/> West Arapahoe Conservation District
<input checked="" type="checkbox"/>	Sheriff / Arapahoe County	1 to Brian McKnight 1 to Glenn Thompson	<b>Transportation</b>
<input checked="" type="checkbox"/>	Weed Control / Arapahoe County	Russell Johnson	<input type="checkbox"/> CDOT / State Highway Dept- Region 1
<input checked="" type="checkbox"/>	Zoning / Arapahoe County	Tammy King	<input checked="" type="checkbox"/> E-470 Authority
<b>Referral Agencies</b>			<input type="checkbox"/> RTD
<input type="checkbox"/>	Architectural Review Committee		
<input type="checkbox"/>	Arapahoe Library District		<b>Utilities: Gas, Electric &amp; Phone</b>
<input type="checkbox"/>	CGS Colorado Geological Survey-Soils		<input checked="" type="checkbox"/> Centurylink/Phone
<input checked="" type="checkbox"/>	City / Town - Centennial		<input type="checkbox"/> Conoco Phillips / Gas Pipeline
<input checked="" type="checkbox"/>	Colorado Parks and Wildlife	Travis Harris	<input checked="" type="checkbox"/> XCEL
<input checked="" type="checkbox"/>	County - Douglas	Chris Boyd	<input type="checkbox"/> IREA
<input type="checkbox"/>	DRCOG		<b>Water / Sanitation / Stormwater / Wetlands</b>
<input checked="" type="checkbox"/>	South Metro Fire Rescue District	Amanda Silva	<input type="checkbox"/> ACWWA
<input checked="" type="checkbox"/>	Metro District - Dove Valley Metro District	Lisa Jacoby	<input checked="" type="checkbox"/> U.S. Army Corp. of Engineer
<input checked="" type="checkbox"/>	Post Office Growth Coordinator	J. Hernandez	<input checked="" type="checkbox"/> Cherry Creek Basin Water Quality Authority
<input type="checkbox"/>	Reap I-70 Regional Economic Advancement Partnership	Matt Reay and Jack Keever	<input type="checkbox"/> Colorado Division of Water Resources
<input type="checkbox"/>	Recreation District / Park District (External)		<input checked="" type="checkbox"/> SEMSWA
<input type="checkbox"/>	School District		<input type="checkbox"/> ECCVW&S
<input type="checkbox"/>	Special District		<input checked="" type="checkbox"/> Urban Drainage & Flood
<input checked="" type="checkbox"/>	Tri-County Health Department	Sheila Lynch	<input type="checkbox"/> Other / 5 Sets East End Adv. Committee
<input checked="" type="checkbox"/> HOMEOWNER'S ASSOCIATIONS			
LADERA (SOUTHCREEK) HOA			

The enclosed case has been submitted to the Arapahoe County Planning Office for consideration. Because of the possible effect of the proposed development upon your area, the case is being referred for your comment. Please examine this request and, after review, check the appropriate line and return to the Arapahoe County Planning Office on or before the date indicated above.

COMMENTS:	SIGNATURE
<input type="checkbox"/> Have NO Comments to make on the case as submitted	
<input checked="" type="checkbox"/> Have the following comments to make related to the case:	AJS 4-19-16
PINE TREES ALONG JORDAN Rd NEED TO BE 8' IN HEIGHT	
DECIDUOUS TREES ALONG JORDAN Rd TO BE 2" CALIPER SIZE	
FENCING - SAFETY OR SECURITY AROUND PONDS? IF SO NEED FENCE DETAILS, HEIGHT ETC	



ARAPAHOE COUNTY  
PROTECT. CONNECT. ENJOY.

June 2, 2016

Molly Orkild-Larson  
Public Works and Development  
6924 S. Lima Street  
Centennial CO, 80112

RE: Planning Case # L16-004 Dove V #2 ACWA/CWSD Joint Water Purification Plant, Location and Extend Plan – Major Amendment.

Dear Ms. Orkild-Larson:

The Arapahoe County Open Spaces Dept. has met with the applicant and has a better understand of the project. Open Spaces Staff understands that the trail crossing is at grade and will not pose an access issue. Open Spaces Staff has met with the applicant and they have verbally agreed to consider an access agreement in the future if the Open Spaces Department is contracted for future trail maintenance.

Thank you for the opportunity to comment on this application.

Ray Winn  
Open Spaces Planner



RECEIVED

MAY 02 2016

ARAPAHOE COUNTY  
PLANNING DIVISION

May 2, 2016

Molly Orkild-Larson  
Public Works and Development  
6924 S. Lima Street  
Centennial CO, 80112

RE: Planning Case # L16-004 Dove V #2 ACWA/CWSD Joint Water Purification Plant, Location and Extend Plan – Major Amendment.

Dear Ms. Orkild-Larson:

The Arapahoe County Open Spaces Dept. has reviewed the submittal by Cottonwood Water and Sanitation District for the Location and Extent Plan, Major Amendment. Open Spaces has the following comments and condition for approval:

Open Spaces is actively involved in maintaining the Happy Canyon Trail north east of Jordan Road. The south west portion of the trail that runs through the applicant's property is planned to be connected in June 2016. Currently, Open Spaces is in negotiations to take over maintenance of this portion of the Happy Canyon Trail South East of Jordan Road once the construction is complete. Open Spaces currently has a lot of difficulty accessing the currently managed section and replacing panels is difficult because concrete trucks cannot access the trail under Jordan Road because of clearance issues. The proposed development plan shows a span across the Happy Canyon Trail without providing an elevation drawing in the submitted site plan. Therefore, Open Spaces does not know the clearance over the trail for access by maintenance equipment and concrete trucks for repairing broken panels. Open Spaces does not want the clearance issues associated with the Jordan Road crossing mentioned above to continue down the Happy Canyon Trail. Open Spaces is requesting a minimum of 12' tall and an elevation drawing to be added to the submittal.

Open Spaces currently mows the section of the Happy Canyon trail South East of Jordan Road that runs through the applicant's property and experiences difficulty accessing this portion of the trail for maintenance. Open Spaces would like to work with the applicant to gain maintenance access to this portion of the trail in the form of an agreement or access easement.

Open Spaces Dept. is willing to further discuss these conditions with the applicant and assist in any way we can.

Thank you for the opportunity to comment on this application.

Ray Winn  
Open Spaces Planner

RECEIVED

APR 20 2016



Public Works and Development  
 6924 S. Lima Street Centennial, Colorado 80112 Phone: 720-874-6650; FAX 720-874-6611  
 www.co.arapahoe.co.us

ARAPAHOE COUNTY  
 PLANNING DIVISION

Planning Division  
 Referral Routing

**Case Number / Case Name:** L16-004, Dove Valley V #02 [ACWWA / CWSD Joint Water Purification Plant] / Location and Extent Plan - Major Amendment

**Planner:** Molly Orkild-Larson  
**Engineer:** Spencer Smith  
**Date sent:** April 18, 2016  
**Date to be returned:** May 2, 2016

Arapahoe County Agencies		Citizen's Organizations	
<input type="checkbox"/>	Assessor / Arapahoe County (Residential)	Beverly Reynolds	
<input type="checkbox"/>	Attorney / Arapahoe County	Robert Hill	<input type="checkbox"/> CCNA-Cherry Creek Neighborhoods Ass.
<input type="checkbox"/>	Building / Arapahoe County	Steve Byer	<input type="checkbox"/> CECON-(Within Centennial)
<input checked="" type="checkbox"/>	Engineering / Arapahoe County	Spencer Smith	<input type="checkbox"/> Four Square Mile Neighborhood
<input checked="" type="checkbox"/>	Mapping / Arapahoe County	Pat Hubert	<input type="checkbox"/> South Metro Chamber of Commerce
<input type="checkbox"/>	Oil & Gas / Arapahoe County	Diane Kocis	<b>Conservation District</b>
<input checked="" type="checkbox"/>	Open Space / Arapahoe County	Raymond Winn	<input type="checkbox"/> Deer Trail Conservation District
<input checked="" type="checkbox"/>	Planning / Arapahoe County	Molly Orkild-Larson	<input checked="" type="checkbox"/> West Arapahoe Conservation District
<input checked="" type="checkbox"/>	Sheriff / Arapahoe County	1 to Brian McKnight 1 to Glenn Thompson	<b>Transportation</b>
<input checked="" type="checkbox"/>	Weed Control / Arapahoe County	Russell Johnson	<input type="checkbox"/> CDOT / State Highway Dept- Region 1
<input checked="" type="checkbox"/>	Zoning / Arapahoe County	Tammy King	<input checked="" type="checkbox"/> E-470 Authority
<b>Referral Agencies</b>			<input type="checkbox"/> RTD
<input type="checkbox"/>	Architectural Review Committee		
<input type="checkbox"/>	Arapahoe Library District		<b>Utilities: Gas, Electric &amp; Phone</b>
<input type="checkbox"/>	CGS Colorado Geological Survey-Sols		<input checked="" type="checkbox"/> Centurylink/Phone
<input checked="" type="checkbox"/>	City / Town - Centennial		<input type="checkbox"/> Conoco Phillips / Gas Pipeline
<input checked="" type="checkbox"/>	Colorado Parks and Wildlife	Travis Harris	<input checked="" type="checkbox"/> XCEL
<input checked="" type="checkbox"/>	County - Douglas	Chris Boyd	<input type="checkbox"/> IREA
<input type="checkbox"/>	DRCOG		<b>Water / Sanitation / Stormwater / Wetlands</b>
<input checked="" type="checkbox"/>	South Metro Fire Rescue District	Amanda Silva	<input type="checkbox"/> ACWWA
<input checked="" type="checkbox"/>	Metro District - Dove Valley Metro District	Lisa Jacoby	<input checked="" type="checkbox"/> U.S. Army Corp. of Engineer
<input checked="" type="checkbox"/>	Post Office Growth Coordinator	J. Hernandez	<input checked="" type="checkbox"/> Cherry Creek Basin Water Quality Authority
<input type="checkbox"/>	Reap I-70 Regional Economic Advancement Partnership	Matt Reay and Jack Keever	<input type="checkbox"/> Colorado Division of Water Resources
<input type="checkbox"/>	Recreation District / Park District (External)		<input checked="" type="checkbox"/> SEMSWA
<input type="checkbox"/>	School District		<input type="checkbox"/> ECCVW&S
<input type="checkbox"/>	Special District		<input checked="" type="checkbox"/> Urban Drainage & Flood
<input checked="" type="checkbox"/>	Tri-County Health Department	Shella Lynch	<input type="checkbox"/> Other / 5 Sets East End Adv. Committee
<input checked="" type="checkbox"/> HOMEOWNER'S ASSOCIATIONS			
LADERA (SOUTHCREEK) HOA			

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COMMENTS:	SIGNATURE
<input checked="" type="checkbox"/> Have NO Comments to make on the case as submitted	
<input type="checkbox"/> Have the following comments to make related to the case:	



RECEIVED

MAY 02 2016

Public Works and Development  
 6924 S. Lima Street Centennial, Colorado 80112 Phone: 720-874-6650; FAX: 720-874-6691  
 www.co.arapahoe.co.us

ARAPAHOE COUNTY  
 PLANNING DIVISION

Planning Division  
 Referral Routing

**Case Number / Case Name:** L16-004, Dove Valley V #02 [ACWWA / CWSD Joint Water Purification Plant] /  
 Location and Extent Plan - Major Amendment

**Planner:** Molly Orkild-Larson  
**Engineer:** Spencer Smith  
**Date sent:** April 18, 2016  
**Date to be returned:** May 2, 2016

Arapahoe County Agencies		Citizen's Organizations	
<input type="checkbox"/>	Assessor / Arapahoe County (Residential)	Beverly Reynolds	
<input type="checkbox"/>	Attorney / Arapahoe County	Robert Hill	<input type="checkbox"/> CCNA-Cherry Creek Neighborhoods Ass.
<input type="checkbox"/>	Building / Arapahoe County	Steve Byer	<input type="checkbox"/> CECON-(Within Centennial)
<input checked="" type="checkbox"/>	Engineering / Arapahoe County	Spencer Smith	<input type="checkbox"/> Four Square Mile Neighborhood
<input checked="" type="checkbox"/>	Mapping / Arapahoe County	Pat Hubert	<input type="checkbox"/> South Metro Chamber of Commerce
<input type="checkbox"/>	Oil & Gas / Arapahoe County	Diane Kocis	<b>Conservation District</b>
<input checked="" type="checkbox"/>	Open Space / Arapahoe County	Raymond Winn	<input type="checkbox"/> Deer Trail Conservation District
<input checked="" type="checkbox"/>	Planning / Arapahoe County	Molly Orkild-Larson	<input checked="" type="checkbox"/> West Arapahoe Conservation District
<input checked="" type="checkbox"/>	Sheriff / Arapahoe County	1 to Brian McKnight 1 to Glenn Thompson	<b>Transportation</b>
<input checked="" type="checkbox"/>	Weed Control / Arapahoe County	Russell Johnson	<input type="checkbox"/> CDOT / State Highway Dept- Region 1
<input checked="" type="checkbox"/>	Zoning / Arapahoe County	Tammy King	<input checked="" type="checkbox"/> E-470 Authority
<b>Referral Agencies</b>			<input type="checkbox"/> RTD
<input type="checkbox"/>	Architectural Review Committee		<input type="checkbox"/>
<input type="checkbox"/>	Arapahoe Library District		<b>Utilities: Gas, Electric &amp; Phone</b>
<input type="checkbox"/>	CGS Colorado Geological Survey-Soils		<input checked="" type="checkbox"/> Centurylink/Phone
<input checked="" type="checkbox"/>	City / Town - Centennial		<input type="checkbox"/> Conoco Phillips / Gas Pipeline
<input checked="" type="checkbox"/>	Colorado Parks and Wildlife	Travis Harris	<input checked="" type="checkbox"/> XCEL
<input checked="" type="checkbox"/>	County - Douglas	Chris Boyd	<input type="checkbox"/> IREA
<input type="checkbox"/>	DRCOG		<b>Water / Sanitation / Stormwater / Wetlands</b>
<input checked="" type="checkbox"/>	South Metro Fire Rescue District	Amanda Silva	<input type="checkbox"/> ACWWA
<input checked="" type="checkbox"/>	Metro District - Dove Valley Metro District	Lisa Jacoby	<input checked="" type="checkbox"/> U.S. Army Corp. of Engineer
<input checked="" type="checkbox"/>	Post Office Growth Coordinator	J. Hernandez	<input checked="" type="checkbox"/> Cherry Creek Basin Water Quality Authority
<input type="checkbox"/>	Reap I-70 Regional Economic Advancement Partnership	Matt Reay and Jack Keever	<input type="checkbox"/> Colorado Division of Water Resources
<input type="checkbox"/>	Recreation District / Park District (External)		<input checked="" type="checkbox"/> SEMSWA
<input type="checkbox"/>	School District		<input type="checkbox"/> ECCVW&S
<input type="checkbox"/>	Special District		<input checked="" type="checkbox"/> Urban Drainage & Flood
<input checked="" type="checkbox"/>	Tri-County Health Department	Sheila Lynch	<input type="checkbox"/> Other / 5 Sets East End Adv. Committee
<input checked="" type="checkbox"/>	HOMEOWNER'S ASSOCIATIONS		
	LADERA (SOUTHCREEK) HOA		

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COMMENTS:	SIGNATURE
<input checked="" type="checkbox"/> Have NO Comments to make on the case as submitted	
<input type="checkbox"/> Have the following comments to make related to the case:	<i>Matthew A. Johnson</i>

**Project Name:** L16-004, Dove Valley V #02 [ACWWA/CWSD Joint Water Purification Plant]/Location and Extent Plan - Major Amendment

**Project Number:** L16-004

**Date Received:** 2016-04-19 00:00:00

**Jurisdiction:** Arapahoe County

**Due Date:** 2016-05-02 00:00:00

**Addressing Comments:**

No Comments

**Engineering Comments:**

No Comments

**Planner Comments:**

No Comments

RECEIVED

MAY 02 2016

ARAPAHOE COUNTY  
PLANNING DIVISION

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APR 27 2016

ARAPAHOE COUNTY  
PLANNING DIVISION



REFOTH/6-00043

Public Works and Development  
6924 S. Lima Street Centennial, Colorado 80112 Phone: 720-874-6650; FAX 720-874-6611  
www.co.arapahoe.co.us

Planning Division  
Referral Routing

Case Number / Case Name: L16-004, Dove Valley V #02 [ACWWA / CWSD Joint Water Purification Plant] / Location and Extent Plan - Major Amendment

Planner: Molly Orkild-Larson  
 Engineer: Spencer Smith  
 Date sent: April 18, 2016  
 Date to be returned: May 2, 2016

Arapahoe County Agencies		Citizen's Organizations		
<input type="checkbox"/>	Assessor / Arapahoe County (Residential)	Beverly Reynolds		
<input type="checkbox"/>	Attorney / Arapahoe County	Robert Hill	<input type="checkbox"/> CCNA-Cherry Creek Neighborhoods Ass.	
<input type="checkbox"/>	Building / Arapahoe County	Steve Byer	<input type="checkbox"/> CECON-(Within Centennial)	
<input checked="" type="checkbox"/>	Engineering / Arapahoe County	Spencer Smith	<input type="checkbox"/> Four Square Mile Neighborhood	
<input checked="" type="checkbox"/>	Mapping / Arapahoe County	Pat Hubert	<input type="checkbox"/> South Metro Chamber of Commerce	
<input type="checkbox"/>	Oil & Gas / Arapahoe County	Diane Kocls	<b>Conservation District</b>	
<input checked="" type="checkbox"/>	Open Space / Arapahoe County	Raymond Winn	<input type="checkbox"/> Deer Trail Conservation District	
<input checked="" type="checkbox"/>	Planning / Arapahoe County	Molly Orkild-Larson	<input checked="" type="checkbox"/> West Arapahoe Conservation District	Tasha Chevarria
<input checked="" type="checkbox"/>	Sheriff / Arapahoe County	1 to Brian McKnight 1 to Glenn Thompson	<b>Transportation</b>	
<input checked="" type="checkbox"/>	Weed Control / Arapahoe County	Russell Johnson	<input type="checkbox"/> CDOT / State Highway Dept- Region 1	Rick Solomon
<input checked="" type="checkbox"/>	Zoning / Arapahoe County	Tammy King	<input checked="" type="checkbox"/> E-470 Authority	Peggy Davenport
<b>Referral Agencies</b>			<input type="checkbox"/> RTD	Chris Quinn
<input type="checkbox"/>	Architectural Review Committee		<input type="checkbox"/>	
<input type="checkbox"/>	Arapahoe Library District		<b>Utilities: Gas, Electric &amp; Phone</b>	
<input type="checkbox"/>	CGS Colorado Geological Survey-Soils		<input checked="" type="checkbox"/> Centurylink/Phone	Charles Place
<input checked="" type="checkbox"/>	City / Town - Centennial		<input type="checkbox"/> Conoco Phillips / Gas Pipeline	
<input checked="" type="checkbox"/>	Colorado Parks and Wildlife	Travis Harris	<input checked="" type="checkbox"/> XCEL	Donna George
<input checked="" type="checkbox"/>	County - Douglas	Chris Boyd	<input type="checkbox"/> IREA	Brooks Kaufman
<input type="checkbox"/>	DRCOG		<b>Water / Sanitation / Stormwater / Wetlands</b>	
<input checked="" type="checkbox"/>	South Metro Fire Rescue District	Amanda Silva	<input type="checkbox"/> ACWWA	
<input checked="" type="checkbox"/>	Metro District - Dove Valley Metro District	Lisa Jacoby	<input checked="" type="checkbox"/> U.S. Army Corp. of Engineer	Kiel Downing
<input checked="" type="checkbox"/>	Post Office Growth Coordinator	J. Hernandez	<input checked="" type="checkbox"/> Cherry Creek Basin Water Quality Authority	Chuck Reid
<input type="checkbox"/>	Reap I-70 Regional Economic Advancement Partnership	Matt Reay and Jack Keever	<input type="checkbox"/> Colorado Division of Water Resources	Joanne Williams
<input type="checkbox"/>	Recreation District / Park District (External)		<input checked="" type="checkbox"/> SEMSWA	Paul Danley
<input type="checkbox"/>	School District		<input type="checkbox"/> ECCVW&S	Chris Douglass
<input type="checkbox"/>	Special District		<input checked="" type="checkbox"/> Urban Drainage & Flood	David Mallory
<input checked="" type="checkbox"/>	Tri-County Health Department	Sheila Lynch	<input type="checkbox"/> Other / 5 Sets East End Adv. Committee	
<input checked="" type="checkbox"/> HOMEOWNER'S ASSOCIATIONS				
LADERA (SOUTHCREEK) HOA				

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COMMENTS:	SIGNATURE
<input checked="" type="checkbox"/> Have NO Comments to make on the case as submitted	<i>Amanda Silva</i>
<input type="checkbox"/> Have the following comments to make related to the case:	

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APR 19 2016

ARAPAHOE COUNTY  
PLANNING DIVISION



ARAPAHOE  
PARK & RECREATION DISTRICT

Public Works and Development

1624 S. Lima Street Centennial, Colorado 80112 Phone: 720-874-6650; FAX 720-874-6611

www.co.arapahoe.co.us

Planning Division

Referral Routing

Case Number / Case Name: L16-004, Dove Valley V #02 [ACWWA / CWSD Joint Water Purification Plant] / Location and Extent Plan - Major Amendment

Planner: Molly Orkild-Larson  
 Engineer: Spencer Smith  
 Date sent: April 18, 2016  
 Date to be returned: May 2, 2016

Arapahoe County Agencies		Citizen's Organizations	
<input type="checkbox"/>	Assessor / Arapahoe County (Residential)	Beverly Reynolds	
<input type="checkbox"/>	Attorney / Arapahoe County	Robert Hill	
<input type="checkbox"/>	Building / Arapahoe County	Steve Byer	<input type="checkbox"/> CCNA-Cherry Creek Neighborhoods Ass.
<input checked="" type="checkbox"/>	Engineering / Arapahoe County	Spencer Smith	<input type="checkbox"/> CECON-(Within Centennial)
<input checked="" type="checkbox"/>	Mapping / Arapahoe County	Pat Hubert	<input type="checkbox"/> Four Square Mile Neighborhood
<input type="checkbox"/>	Oil & Gas / Arapahoe County	Diane Kocis	<input type="checkbox"/> South Metro Chamber of Commerce
<input checked="" type="checkbox"/>	Open Space / Arapahoe County	Raymond Winn	Conservation District
<input checked="" type="checkbox"/>	Planning / Arapahoe County	Molly Orkild-Larson	<input type="checkbox"/> Deer Trail Conservation District
<input checked="" type="checkbox"/>	Sheriff / Arapahoe County	1 to Brian McKnight 1 to Glenn Thompson	<input checked="" type="checkbox"/> West Arapahoe Conservation District Tasha Chevarria
<input checked="" type="checkbox"/>	Weed Control / Arapahoe County	Russell Johnson	Transportation
<input checked="" type="checkbox"/>	Zoning / Arapahoe County	Tammy King	<input type="checkbox"/> CDOT / State Highway Dept- Region 1 Rick Solomon
Referral Agencies		<input checked="" type="checkbox"/> E-470 Authority	<input type="checkbox"/> RTD Peggy Davenport
<input type="checkbox"/>	Architectural Review Committee		<input type="checkbox"/> Chris Quinn
<input type="checkbox"/>	Arapahoe Library District		
<input type="checkbox"/>	CGS Colorado Geological Survey-Soils		Utilities: Gas, Electric & Phone
<input checked="" type="checkbox"/>	City / Town - Centennial		<input checked="" type="checkbox"/> Centurylink/Phone Charles Place
<input checked="" type="checkbox"/>	Colorado Parks and Wildlife	Travis Harris	<input checked="" type="checkbox"/> Conoco Phillips / Gas Pipeline Donna George
<input checked="" type="checkbox"/>	County - Douglas	Chris Boyd	<input type="checkbox"/> XCEL Brooke Kaufman
<input type="checkbox"/>	DRCOG		
<input checked="" type="checkbox"/>	South Metro Fire Rescue District	Amanda Silva	Water / Sanitation / Stormwater / Wetlands
<input checked="" type="checkbox"/>	Metro District - Dove Valley Metro District	Lisa Jacoby	<input type="checkbox"/> ACWWA
<input checked="" type="checkbox"/>	Post Office Growth Coordinator	J. Hernandez	<input checked="" type="checkbox"/> U.S. Army Corp. of Engineer Kiel Downing
<input type="checkbox"/>	Reap I-70 Regional Economic Advancement Partnership	Matt Reay and Jack Keever	<input checked="" type="checkbox"/> Cherry Creek Basin Water Quality Authority Chuck Field
<input type="checkbox"/>	Recreation District / Park District (External)		<input type="checkbox"/> Colorado Division of Water Resources Joanne Williams
<input type="checkbox"/>	School District		<input checked="" type="checkbox"/> SEMSWA Paul Danley
<input type="checkbox"/>	Special District		<input type="checkbox"/> ECCVW&S Chris Douglaes
<input checked="" type="checkbox"/>	Tri-County Health Department	Sheila Lynch	<input checked="" type="checkbox"/> Urban Drainage & Flood David Mallory
<input checked="" type="checkbox"/>	HOMEOWNER'S ASSOCIATIONS		<input type="checkbox"/> Other / 5 Sets East End Adv. Committee
<input checked="" type="checkbox"/>	LADERA (SOUTHCREEK) HOA		

The enclosed case has been submitted to the Arapahoe County Planning Office for consideration. Because of the possible effect of the proposed development upon your area, the case is being referred for your comment. Please examine this request and, after review, check the appropriate line and return to the Arapahoe County Planning Office on or before the date indicated above.

COMMENTS:	SIGNATURE
<input checked="" type="checkbox"/> Have NO Comments to make on the case as submitted	<i>John A. Conwell</i> DISTRICT MANAGER
<input type="checkbox"/> Have the following comments to make related to the case:	



May 4, 2016

RECEIVED

Molly Orkild-Larson  
Arapahoe County Planning Division  
6924 S Lima St  
Centennial CO 80112

MAY 04 2016

ARAPAHOE COUNTY  
PLANNING DIVISION

RE: Dove Valley V #02 – Joint Water Purification Plant, #L16-004  
TCHD Case 3893

Dear Ms. Orkild-Larson:

Thank you for the opportunity to review and comment on the Location and Extent Plan Major Amendment for the Dove Valley V #02 – Joint Water Purification Plant at 8051 S. Jordan Road, Englewood, CO 80112. Tri-County Health Department (TCHD) staff has reviewed the application for compliance with applicable environmental and public health regulations.

**Sustainable Water Supplies & Treated Water Quality**

Providing a sustainable supply of water while meeting increasingly demanding water quality discharge parameters requires innovative strategies. TCHD commends the applicant for a project designed to reduce dependence on groundwater supplies. In addition this project has the added benefit of being able to once again use Reverse Osmosis (RO) treatment and the Advanced Oxidation Reactor. The overall result of the proposed system will be a reduction of selenium concentrations in RO brine and Chemicals of Emerging Concern (CECs). CECs include personal care products, pharmaceuticals, endocrine disruptors and industrial chemicals that can impact aquatic life and human health. These chemicals are not easily removed by conventional water treatment systems. Selenium is toxic and can accumulate through the food chain. Reducing concentrations of selenium and CECs will be beneficial to both human health and the environment.

TCHD recommends that a long-term operational procedure to recharge the Biological Treatment System and remove any accumulated selenium be carefully planned and executed.

Please feel free to contact me at 720-200-1583 or [ehassinger@tchd.org](mailto:ehassinger@tchd.org) if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Elaine Hassinger". The signature is written in a cursive, flowing style.

Elaine Hassinger  
Water Quality Specialist

cc: Sheila Lynch, Steve Chevalier, TCHD



Right of Way & Permits

1123 West 3<sup>rd</sup> Avenue  
Denver, Colorado 80223  
Telephone: 303.571.3306  
Facsimile: 303.571.3284  
donna.l.george@xcelenergy.com

May 2, 2016

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MAY 02 2016

Arapahoe County Public Works and Development  
6924 South Lima Street  
Centennial, CO 80112

ARAPAHOE COUNTY  
PLANNING DIVISION

Attn: Molly Orkild-Larson

**Re: Dove Valley V Filing No. 2 – ACWWA / CWSD Joint Water Purification Plat  
Case # L16-004**

Public Service Company of Colorado's (PSCo) Right of Way & Permits Referral Desk has reviewed the location and extent plans for **Dove Valley V Filing No. 2 – ACWWA / CWSD Joint Water Purification Plat**. Please be aware PSCo owns and operates existing natural gas and electric distribution facilities within the subject property along South Jordan Road and requests they be shown on the plans.

The property owner/developer/contractor must contact the **Builder's Call Line at 1-800-628-2121 or <https://xcelenergy.force.com/FastApp> (Register so you can track your application)** and complete the application process for any new gas or electric service, or modification to existing facilities. It is then the responsibility of the developer to contact the Designer assigned to the project for approval of design details. Additional easements may need to be acquired by separate document for new facilities.

As a safety precaution, PSCo would like to remind the developer to call the **Utility Notification Center, at 1-800-922-1987** to have all utilities located prior to any construction.

Should you have any questions with this referral response, please contact me at 303-571-3306.

Donna George  
Contract Right of Way Referral Processor  
Public Service Company of Colorado

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APR 22 2016

ARAPAHOE COUNTY  
PLANNING DIVISION



Public Works and Development  
6924 S. Lima Street Centennial, Colorado 80112 Phone: 720-874-6650; FAX 720-874-6611  
www.co.arapahoe.co.us

Planning Division  
Referral Routing



**Case Number / Case Name:** L16-004, Dove Valley V #02 [ACWWA / CWSD Joint Water Purification Plant] / Location and Extent Plan - Major Amendment

**Planner:** Molly Orkild-Larson  
**Engineer:** Spencer Smith  
**Date sent:** April 18, 2016  
**Date to be returned:** May 2, 2016

Arapahoe County Agencies		Citizen's Organizations	
<input type="checkbox"/>	Assessor / Arapahoe County (Residential)	Beverly Reynolds	
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<input type="checkbox"/>	Oil & Gas / Arapahoe County	Diane Kocis	<b>Conservation District</b>
<input checked="" type="checkbox"/>	Open Space / Arapahoe County	Raymond Winn	<input type="checkbox"/> Deer Trail Conservation District
<input checked="" type="checkbox"/>	Planning / Arapahoe County	Molly Orkild-Larson	<input checked="" type="checkbox"/> West Arapahoe Conservation District
<input checked="" type="checkbox"/>	Sheriff / Arapahoe County	1 to Brian McKnight 1 to Glenn Thompson	<b>Transportation</b>
<input checked="" type="checkbox"/>	Weed Control / Arapahoe County	Russell Johnson	<input type="checkbox"/> CDOT / State Highway Dept- Region 1
<input checked="" type="checkbox"/>	Zoning / Arapahoe County	Tammy King	<input checked="" type="checkbox"/> E-470 Authority
<b>Referral Agencies</b>			<input type="checkbox"/> RTD
<input type="checkbox"/>	Architectural Review Committee		
<input type="checkbox"/>	Arapahoe Library District		<b>Utilities: Gas, Electric &amp; Phone</b>
<input type="checkbox"/>	CGS Colorado Geological Survey-Soils		<input checked="" type="checkbox"/> Centurylink/Phone
<input checked="" type="checkbox"/>	City / Town - Centennial		<input type="checkbox"/> Conoco Phillips / Gas Pipeline
<input checked="" type="checkbox"/>	Colorado Parks and Wildlife	Travis Harris	<input checked="" type="checkbox"/> XCEL
<input checked="" type="checkbox"/>	County - Douglas	Chris Boyd	<input type="checkbox"/> IREA
<input type="checkbox"/>	DRCOG		<b>Water / Sanitation / Stormwater / Wetlands</b>
<input checked="" type="checkbox"/>	South Metro Fire Rescue District	Amanda Silva	<input type="checkbox"/> ACWWA
<input checked="" type="checkbox"/>	Metro District - Dove Valley Metro District	Lisa Jacoby	<input checked="" type="checkbox"/> U.S. Army Corp. of Engineer
<input checked="" type="checkbox"/>	Post Office Growth Coordinator	J. Hernandez	<input checked="" type="checkbox"/> Cherry Creek Basin Water Quality Authority
<input type="checkbox"/>	Reap I-70 Regional Economic Advancement Partnership	Matt Reay and Jack Keever	<input type="checkbox"/> Colorado Division of Water Resources
<input type="checkbox"/>	Recreation District / Park District (External)		<input checked="" type="checkbox"/> SEMSWA
<input type="checkbox"/>	School District		<input type="checkbox"/> ECCVW&S
<input type="checkbox"/>	Special District		<input checked="" type="checkbox"/> Urban Drainage & Flood
<input checked="" type="checkbox"/>	Tri-County Health Department	Sheila Lynch	<input type="checkbox"/> Other / 5 Sets East End Adv. Committee
<input checked="" type="checkbox"/> HOMEOWNER'S ASSOCIATIONS			
LADERA (SOUTHCREEK) HOA			

The enclosed case has been submitted to the Arapahoe County Planning Office for consideration. Because of the possible effect of the proposed development upon your area, the case is being referred for your comment. Please examine this request and, after review, check the appropriate line and return to the Arapahoe County Planning Office on or before the date indicated above.

COMMENTS:	SIGNATURE
<input type="checkbox"/> Have NO Comments to make on the case as submitted	
<input type="checkbox"/> Have the following comments to make related to the case:	

RECEIVED

APR 22 2016

ARAPAHOE COUNTY  
PLANNING DIVISION



DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, OMAHA DISTRICT  
DENVER REGULATORY OFFICE, 9307 SOUTH WADSWORTH BOULEVARD  
LITTLETON, COLORADO 80128-6901

**RE: Section 404 of the Clean Water Act Initial Comments**

To whom it concerns:

In accordance with Section 404 of the Clean Water Act, the Corps of Engineers regulates the discharge of dredged or fill material, and any excavation associated with a dredged or fill project, either temporary or permanent, into waters of the United States (WOUS). You should notify this office if the project proposed falls within these regulated activities because the project may require a Department of the Army Section 404 permit.

A WOUS may include ephemeral and/or perennial streams, wetlands, lakes, ponds, drainage ditches and irrigation ditches. A wetland delineation must be conducted, and verified by the Corps of Engineers, using the methods outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual*: (using applicable Regional Supplement) to determine wetlands based on the presence of three wetland indicators: hydrophytic vegetation, hydric soils, and wetland hydrology. Wetland delineations must be conducted in the field by a qualified environmental consultant and any aquatic resource boundaries must be identified accordingly. Once the aquatic resources have been identified, only this office can determine if they are WOUS. Please note that development of the upland areas, avoiding stream and wetland resources, does not require authorization from this office.

Nationwide Permits (NWP) authorize common types of fill activities in WOUS that will result in a minimal adverse effect to the environment. Descriptions of the 52 types of nationwide permit activities and their general conditions can be found on our website: <http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/Colorado.aspx>. Some fill activities require notifying the Corps before starting work. Also, some types/sizes of work may require additional information or mitigation.

Regional General Permits (RGP) authorize specific types of fill activities in WOUS that will result in a minimal adverse effect to the environment. Descriptions of the 4 types of regional general permit activities and their general conditions can be found on our website: <http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/Colorado/RegionalGeneralPermits.aspx>. These fill activities require notifying the Corps before starting work, and possibly other local or state agencies. Also, some types/sizes of work may require additional information or mitigation. Please note several of the RGP's are applicant and location specific.

Individual permits may authorize fill activities that are not covered under the NWP or Regional General Permits (RGP's). This permit will be processed through the public interest review procedures, including public notice and receipt of comments. An alternative analysis (AA) must be provided with this permit action. The AA must contain an evaluation of environmental impacts for a range of alternatives. These alternatives should include the preferred action, no action alternative, and other action alternatives that would be the identified project purpose. Other action alternatives should include other practicable (with regards to cost, logistics, and technology) that meet the overall project purpose. The alternatives could include offsite alternatives and alternative designs. When evaluating individual permit applications, the Corps can only issue a permit for the least environmentally damaging practicable alternative (LEDPA). In some cases, the LEDPA may not be the applicant's preferred action. The individual permit application form and form instructions can be found on our website: <http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/ObtainPermit.aspx>.

If the activity requires a Department of the Army permit as a result of any impacts to WOUS or any earth disturbances within that resource, a federal action will occur. For the Corps to make a permit decision, the applicant must provide enough information to demonstrate compliance with Section 106 of the National Historic Preservation Act (NHPA) and Section 7 of the Endangered Species Act (ESA).

The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to WOUS to the maximum extent practicable at the project site. Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal. Any loss of an aquatic site may require mitigation. Mitigation requirements will be determined during the Department of the Army permitting review.

If the information that was submitted could impact WOUS, which are jurisdictional resources, this office should be notified. If a section 404 permit is required, work in an aquatic site should be identified by the proponent of the project and be shown on a map identifying the Quarter Section, Township, Range and County, Latitude and Longitude, Decimal Degrees (example 39.55555; -104.55555) and the dimensions of work in each aquatic site.

If there are any questions, please call the Denver Regulatory Office at 303-979-4120.

Sincerely,

A handwritten signature in black ink, appearing to read "Kiel Downing", with a long horizontal flourish extending to the right.

Kiel Downing  
Chief, Denver Regulatory Office

Enclosures:  
-PCN Requirements



## Pre-Construction Notification (PCN) Requirements

(Nationwide Permit General Condition No. 31  
from the February 21, 2012 Federal Register)

**US Army Corps of Engineers,  
Omaha District, Denver Regulatory Office  
9307 South Wadsworth Blvd,  
Littleton, CO 80128  
Phone: (303) 979-4120**

**Website: <http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/Colorado.aspx>**

### Contents of Pre-Construction Notification:

The PCN must be in writing and include the following information:

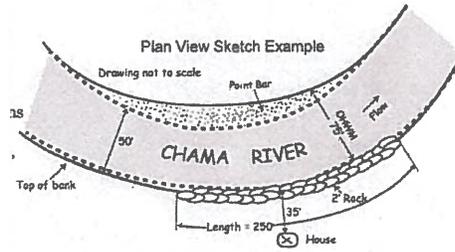
- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed project;
- (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);
- (4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;
- (5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.
- (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and
- (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(8) Attach map and sketches- examples shown here.

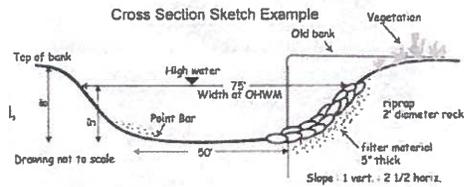
**Location Map:** Photocopy from road or topo map; indicate site location, any landmarks, etc.



**Plan View Sketch:** "Bird's-eye view"; include all features- distances, length and width; dimensions of features and stream/wetlands.



**Cross Section Sketch:** "Cut away view"; include heights, widths of structures, channel, wetland, bank slopes, etc.







May 2, 2016

Ms. Molly Orkild-Larson, Senior Planner  
Arapahoe County  
6924 S. Lima Street  
Centennial, Colorado 80112

Subject: Dove Valley V #02, Location and Extent Plan. (Case Number: L16-004)

Dear Ms. Molly Orkild-Larson:

The Cherry Creek Basin Water Quality Authority (Authority) has reviewed the subject project for point and non-point source pollutant impacts and water quality considerations in the Cherry Creek watershed. The Authority reviews land disturbance referrals for compliance with Control Regulation No. 72<sup>1</sup> and the Authority's CR-72.7 Guidance Document<sup>2</sup>.

**Project Description:**

The Dove Valley V #02 (ACWWA / CWSD Joint Water Purification Plant) is a request by the Arapahoe Water and Wastewater Authority (ACWWA) and Cottonwood Water and Sanitation (CWSD) for approval of the Location and Extent for a proposed biological treatment process that allows for biological treatment to remove selenium in the RO concentrate generated from the joint water purification plant. The proposed location of the facility is at 8051 S. Jordan Road.

**Considerations:**

The proposed project warrants review by the Authority because of its location within the Cherry Creek basin and the proposed change in land use that can impact runoff quantity and quality.

Control Regulation No. 72 requires that all new development provide construction Best Management Practices (BMPs) and post-construction BMPs for any Tier 3 land disturbance greater than one acre and which results in more than 5,000 square feet, of new or increased imperviousness. From the submitted documents, it appears the Project will increase imperviousness by more than 5,000 square feet and disturb more than 1 acre, such that the Project is classified as a Tier 3 development. Tier 3 development requires construction BMPs<sup>3</sup> and post construction BMPs<sup>4</sup> "...that provide WQCV designed to capture and treat, at a minimum, the 80<sup>th</sup> percentile runoff event..." for the increased imperviousness area.

1. An Erosion and Sediment Control Plan describing proposed construction BMPs for land disturbance is required. The referral packet didn't include this plan or address construction BMPs.
2. The Location and Extent Plan identifies an area for a proposed detention pond; however, no detail plans or drainage report was included with the referral packet addressing the required post construction BMPs.

<sup>1</sup> Colorado Department of Public Health and Environment, Water Quality Control Commission November 30, 2012. *Cherry Creek Reservoir Control Regulation 5 CCR 1002-72.*

<sup>2</sup> Cherry Creek Basin Water Quality Authority. April 27, 2011. *Control Regulation 5 CCR 1002-72 Stormwater Permit Requirements Guidance Document.*

<sup>3</sup> CR 5CCR 1002-72, specifically 72.7.2(b)(5)(i)

<sup>4</sup> CR 5CCR 1002-72; specifically, 72.7.2(c)(6)(i)(A)

Cherry Creek Basin Water Quality Authority  
8390 East Crescent Parkway, Suite 500  
Greenwood Village, Colorado 80111  
(P) 303.779.4525 (F) 303.773.2050

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ARAPAHOE COUNTY  
PLANNING DIVISION

**Review Comments**

The Authority takes no exception to this land use referral (location and extent), provided construction and post-construction BMPs are implemented in accordance with Control Regulation No. 72. The Authority reserves the right to comment on future project referrals, including any modifications to the Colorado Department of Public Health and Environment's Colorado Discharge Permit System permit (CO0047589, currently administratively continued). This project will also require additional CDPHE approvals, including CDPHE facility design approvals.

If you have any questions, please contact me at (303) 726-5577.

Respectfully submitted,



James R. "Jim" Swanson, PE  
For the Cherry Creek Basin Water Quality Authority

cc: Chuck Reid, Manager, CCBWQA

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MAY 9 2 2016

ARAPAHOE COUNTY  
PLANNING DIVISION



7437 South Fairplay Street  
Centennial, CO 80112-4486

May 2, 2016

Mr. Spencer Smith  
Arapahoe County Land Development Services  
Public Works and Development  
6924 S Lima Street  
Centennial, Colorado 80112

RE: ACWWA-CWSD Water Purification Plant  
SEMSWA No. DPR16-00033, County Case No. L16-004

Dear Mr. Smith,

Thank you for your referral request to the Southeast Metro Stormwater Authority (SEMSWA) regarding the proposed ACWWA-CWSD Water Purification Plant Project. SEMSWA appreciates the opportunity to review the Location and Extent Plant and the Drainage Letter and offers the following comments:

General Comments:

1. This project is located within the Happy Canyon Creek drainage basin. System Development Fees (SDFs) have been established for development in this drainage basin. Please note SDFs will be assessed at the time of approval and are based on added impervious area. The SDF fee for this basin is \$8,388.00 per added impervious acre. This fee shall be paid prior to any permits being issued by SEMSWA.
2. Please note that permits are required prior to construction commencing on this site. Permits necessary for construction may include the Grading, Erosion and Sediment Control (GESC) Permit and the Floodplain Development Permit (FPDP). There are permit fees and collateral required for these permits which are assessed at the time of approval. All fees and collateral shall be paid prior to any permits being issued by SEMSWA.
3. Additional documents are required. Please provide the following documents with the resubmittal. Some of these requirements do differ from the pre-submittal notes and this difference is caused by additional information provided and the work proposed within the floodplain.
  - a. Small Site Grading, Erosion and Sediment Control Plan and Report with review fee of \$1,135.00.

7437 South Fairplay Street, Centennial, CO 80112-4486  
Phone: 303-858-8844 Fax: 303-649-2149 [www.semswa.org](http://www.semswa.org)

- b. Floodplain No Impact Letter with a review fee of \$450.00.
  - c. Construction Drawings with review fee of \$825.00.
4. Please submit a response letter to the comments with the re-submittal. Response letter is required for further review.

Location and Extent Plan Comments:

5. The floodplains need to be located in a floodplain/drainage easement; please show, label and revise accordingly throughout the Plan set.
6. Please label Green Acres Tributary and Happy Canyon Creek throughout the Plan set.
7. The Plans show an existing floodplain and a proposed floodplain. Are these delineations the current floodplain delineations or the floodplain delineations associated with the previous project? Please ensure the plans show the current FEMA floodplain/floodway and FHAD floodplain/floodway. The FEMA label should include the FIRM panel number and the FHAD delineation should be specific that it is from the Happy Canyon FHAD. Please revise throughout the Plan set.
8. Please label the low flow crossing on the Site Plan sheets and on the Grading and Utility Plan sheets.
9. The embankment for the treatment facilities is along the floodplain. Please provide, show and label stabilization that will be along these embankments.
10. Please refer to redlines and make the necessary corrections and revisions.

Drainage Report Comments:

11. Please include the SEMSWA case number DPR16-00033 and the Arapahoe County case number L16-004 on the Drainage letter.
12. Please refer to the provided pre-submittal notes that included a Drainage Letter outline and provide/address the following:
  - a. State where this project is located.
  - b. Expand on the description of what is proposed on this site.
  - c. How much new impervious surface will be proposed? Additionally, include any calculations showing the increased flow rate from this new impervious area.
  - d. Discuss the design of the low flow channel and include the necessary design information and calculations.
  - e. Expand on the discussion describing what work will be proposed within the floodplain.
  - f. The embankment for the treatment facilities is along the floodplain. Please provide, show and label stabilization that will be along these embankments.
  - g. Provide a water quality statement.
  - h. Provide an exhibit showing the proposed work, floodplain and floodways, contours and drainage arrows.
13. There are access roads proposed, what material are the access roads?
14. Per the pre-submittal notes a Small Site GESC Plan and Report is required, this letter refers to a Low Impact GESC. This project does not meet the Low Impact GESC requirements. Please revise accordingly.
15. Please refer to redlines and make the necessary corrections and revisions.

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Phone: 303-858-8844 Fax: 303-649-2149 [www.semswa.org](http://www.semswa.org)

Thank you for the opportunity to review and comment on this application. We look forward to continued coordination on this project. Please feel free to contact me if you have any questions.

Sincerely,

Tiffany Clark, PE, CFM  
Land Development Engineer

cc: John McCarty, P.E., PWLF, Executive Director, SEMSWA  
Paul Danley, P.E., Director, Engineering & Construction Division, SEMSWA  
Dan Olsen, Stormwater Inspector Manager, SEMSWA  
Carrie Mugglestone, Business Support Specialist, SEMSWA  
Case File

7437 South Fairplay Street, Centennial, CO 80112-4486  
Phone: 303-858-8844 Fax: 303-649-2149 [www.semswa.org](http://www.semswa.org)

**SEMSWA RESUBMITTAL PROCEDURE  
THIS SHEET MUST BE ATTACHED TO THE RESUBMITTAL  
TO THE CASE ENGINEER**

SEMSWA No: DPR16-00033  
Case No: L16-004

Case Engineer: Tiffany Clark

In order to expedite this case in an efficient manner, the following procedure for resubmitting information to Arapahoe County be followed.

**Incomplete resubmittal packages should not be forwarded to the SEMSWA case engineer for review until all of the information requested on this form has been provided.**

**RESUBMITTAL CHECKLIST**

The items checked below have been identified in the SEMSWA referral letter as requiring revision and or resubmittal.

	SEMSWA Documents Required with Resubmittal	# of
<input checked="" type="checkbox"/>	<b>A copy of this Resubmittal Checklist</b>	<b>1</b>
<input checked="" type="checkbox"/>	Construction Plans	1
<input checked="" type="checkbox"/>	GESC Plan and Report	1
<input type="checkbox"/>	Phase I Drainage Study	
<input type="checkbox"/>	Phase II Drainage Study	
<input type="checkbox"/>	Phase III Drainage Study /Letter of no impacts	
<input checked="" type="checkbox"/>	Drainage Letter of Compliance/Technical Letter	1
<input type="checkbox"/>	Engineering Cost Estimate for Public Improvements	
<input type="checkbox"/>	SIA	
<input checked="" type="checkbox"/>	Redlines sent electronically	1
<input checked="" type="checkbox"/>	Letter of point by point response	1
<input type="checkbox"/>	O/M Manual	
<input type="checkbox"/>	Maintenance Agreement	
<input checked="" type="checkbox"/>	Floodplain Documents	1
<input checked="" type="checkbox"/>	Location and Extent	1
<input checked="" type="checkbox"/>	Fees as listed above	1
<input type="checkbox"/>		



## URBAN DRAINAGE AND FLOOD CONTROL DISTRICT

Paul A. Hindman, Executive Director  
2480 W. 26th Avenue, Suite 156B  
Denver, CO 80211-5304

Telephone 303-455-6277  
Fax 303-455-7880  
www.udfcd.org

May 27, 2016

### UDFCD Maintenance Eligibility Program Referral Review Comments

Project: **Joint Water Purification Plant Amendment No. 2**

Stream: **Happy Canyon Creek**

UDFCD MEP Phase: **Design**

UD ID: **106193**

Dear Molly,

This letter is in response to the request for our comments concerning the referenced project. We appreciate the opportunity to review this proposal. We have reviewed this proposal only as it relates to major drainage features, in this case:

- Happy Canyon Creek

We have the following comments to offer:

1. In general, we have no objections to this proposal. We have a vested interest in Happy Canyon Creek because drainage improvements were completed with the Joint Water Purification Plan construction approved in 2011 as part of the UDFCD Maintenance Eligibility Program.
2. From the conceptual plans provided, it appears that our primary interest in the project will be with the trail crossing of Happy Canyon Creek. We would like to review construction plans as they become available. It appears that the current trail alignment is crossing a portion of the existing grouted boulder drop structure. Please note that we don't recommend modifying the drop structure and the alignment of the trail should be routed around the drop structure.
3. Please be aware that since the construction of the channel improvements, a newer floodplain study has been completed. The study identified that the footprint of Happy Canyon Creek and Green Acres Tributary floodplain is wider than previously mapped. In the figure below, the light blue is the mapped hazard area as shown on the FEMA FIRM. The dark blue is from the latest study and currently being incorporated into a FEMA FIRM update. Affects from any grading within the boundary of the darker floodplain limits should be examined for the floodplain development permit.



Please feel free to contact me with any questions or concerns.

Sincerely,  
**Urban Drainage and Flood Control District**

*Teresa L. Patterson*

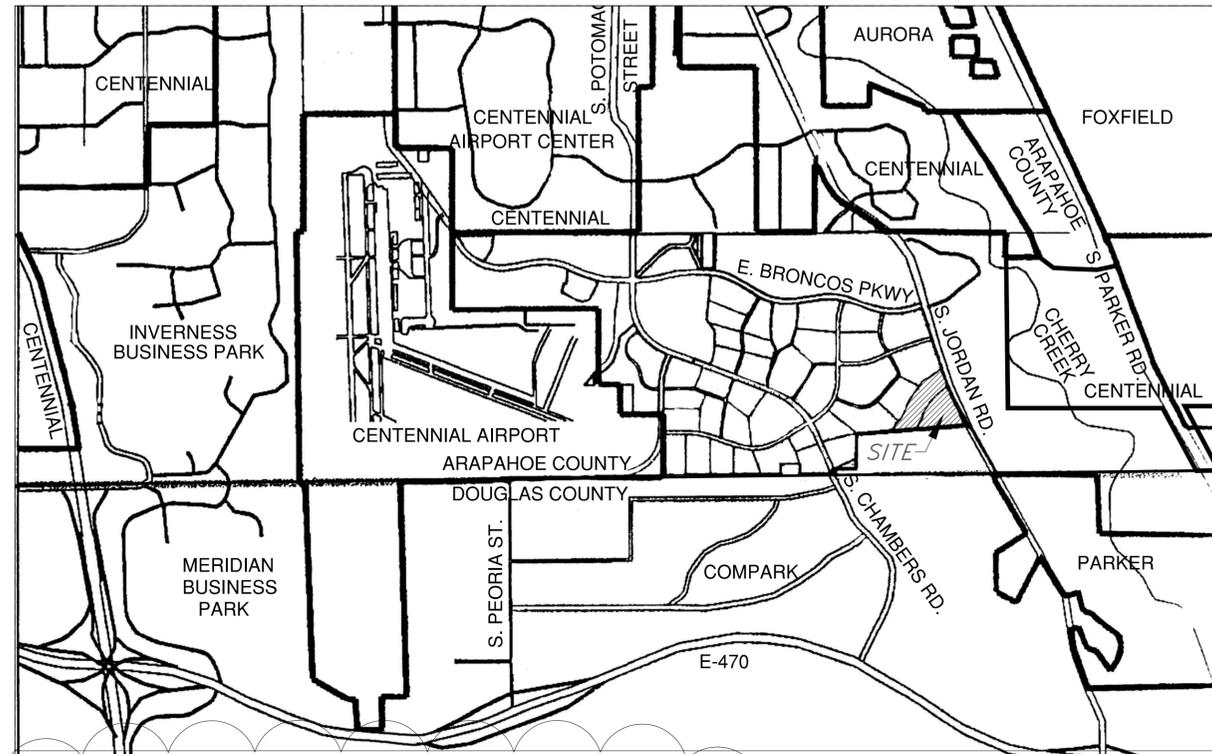
**Teresa L. Patterson, P.E., CFM**  
Floodplain Management Program

# LOCATION AND EXTENT- AMENDMENT NO. 2

## ACWWA/ CWSD JOINT WATER PURIFICATION PLANT

### TRACT C, DOVE VALLEY V, AND DOVE VALLEY V, FILING NO. 2

LOCATED IN THE SOUTHWEST 1/4 OF SECTION 32,  
TOWNSHIP 5 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN  
COUNTY OF ARAPAHOE, STATE OF COLORADO



**VICINITY MAP**  
1" = 2000'

#### CERTIFICATE OF OWNERSHIP

I \_\_\_\_\_ HEREBY AFFIRM THAT I AM THE OWNER OR AUTHORIZED AGENT OF ALL INDIVIDUALS HAVING OWNERSHIP INTEREST IN THE PROPERTY DESCRIBED HEREIN, KNOWN AS ACWWA/CWSD JOINT WATER PURIFICATION PLANT TRACT C, DOVE VALLEY V AND DOVE VALLEY V, FILING NO. 2 LOCATION AND EXTENT PLAN AMENDMENT NO. 2 (CASE NO. L16-004)

OWNER OF RECORD OR AUTHORIZED AGENT

STATE OF \_\_\_\_\_ }  
COUNTY OF \_\_\_\_\_ } S.S.

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ A.D., 20\_\_ BY \_\_\_\_\_ AS \_\_\_\_\_ OF \_\_\_\_\_ AN AUTHORIZED SIGNATORY.

BY \_\_\_\_\_ NOTARY PUBLIC WITNESS MY HAND AND SEAL.  
MY COMMISSION EXPIRES \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

#### LEGAL DESCRIPTION

A PARCEL OF LAND LYING IN THE SOUTHWEST ONE-QUARTER OF SECTION 32, TOWNSHIP 5 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN AND BEING DESCRIBED AS LOT 2 AND TRACT A DOVE VALLEY V FILING NO. 2, AS RECORDED UNDER RECEPTION NO. B4116480, BOOK 266, PAGES 62-63 OF THE ARAPAHOE COUNTY RECORDS, COUNTY OF ARAPAHOE, STATE OF COLORADO, CONTAINING 12.8901 ACRES MORE OR LESS.  
AND: TRACT C, BLOCK 12, DOVE VALLEY V, AS RECORDED UNDER RECEPTION NO. 83160646, BOOK 245, PAGE 6 COUNTY OF ARAPAHOE, STATE OF COLORADO,  
SITUATE IN THE SOUTHWEST ONE-QUARTER OF SEC 110N 32, TOWNSHIP 5 SOUTH, RANGE 66 WEST OF THE 6TH P.M., COUNTY OF ARAPAHOE, STATE OF COLORADO, CONTAINING 13.935 ACRES.

#### AMENDMENT HISTORY

THE ORIGINAL LOCATION AND EXTENT PLAN FOR DOVE VALLEY V FILING NO. 2, CASE NO. L04-002, WAS APPROVED ON JUNE 1ST, 2004.

THIS FIRST AMENDMENT TO THE LOCATION AND EXTENT, CASE NO. A07-012, APPROVED ON MARCH 10, 2008 FOR DOVE VALLEY V FILING NO. 2, SETS FORTH THE FOLLOWING CHANGES AS DESCRIBED:

1. REDUCED BUILDING SIZE, AN INCREASE OF BUILDING HEIGHT BY 4 FEET.
2. MODIFICATIONS TO BUILDING DOOR LOCATIONS AND THE BUILDING LIGHTING.
3. RELOCATION AND ENLARGEMENT OF THE PROPOSED TRANSFORMER AND GENERATOR PADS.
4. ADDITIONAL AND/OR MODIFIED UNDERGROUND UTILITIES.
5. REVISED MAIN ENTRY FROM A 16' WALK TO AN 8' WALK; REVISED PATIO SIZE.
6. MODIFICATIONS TO THE PROPOSED HAPPY CANYON CREEK IMPROVEMENTS AND THE DETENTION POND OUTLET LOCATION.

THIS SECOND AMENDMENT TO THE LOCATION AND EXTENT, CASE NO. L16-004, APPROVED ON \_\_\_\_\_, 2016 FOR DOVE VALLEY V FILING NO. 2, SETS FORTH THE FOLLOWING CHANGES AS DESCRIBED:

1. PROPOSED MODIFICATIONS TO TRACT C, INCLUDING:  
BELOW GRADE PIPING  
BIOLOGICAL TREATMENT SYSTEM  
SYSTEM VAULTS
2. PROPOSED ADDITION OF LOW WATER CROSSING TO TRACT C.

#### TERMS AND CONDITIONS

ALL OTHER ORIGINAL TERMS AND CONDITIONS, AND NOTES OF THE LOCATION AND EXTENT PLAN, ORIGINAL DOCUMENT CASE NUMBER L04-002, APPROVED JUNE 1ST, 2004, WILL REMAIN IN FULL FORCE AND EFFECT AS PREVIOUSLY EXECUTED BY OWNER AND ARAPAHOE COUNTY.

#### 1. STANDARD NOTES

THE OWNER(S), DEVELOPER(S) AND/OR SUBDIVIDER(S) OF THE LOCATION AND EXTENT KNOWN AS DOVE VALLEY V FILING NO. 2, ARAPAHOE COUNTY WATER AND WASTEWATER AUTHORITY AND COTTONWOOD WATER AND SANITATION DISTRICT JOINT WATER PURIFICATION PLANT, THEIR RESPECTIVE SUCCESSORS, HEIRS, AND/OR ASSIGNS AGREE TO THE FOLLOWING NOTES:

##### A. STREET MAINTENANCE

IT IS MUTUALLY UNDERSTOOD AND AGREED THAT THE DEDICATED ROADWAYS SHOWN ON THIS PLAT PLAN WILL NOT BE MAINTAINED BY THE COUNTY UNTIL AND UNLESS THE STREETS ARE CONSTRUCTED IN ACCORDANCE WITH THE SUBDIVISION REGULATIONS IN EFFECT AT THE DATE CONSTRUCTION PLANS ARE APPROVED, AND PROVIDED CONSTRUCTION OF SAID ROADWAYS IS STARTED WITHIN ONE YEAR OF THE CONSTRUCTION PLAN APPROVAL. THE OWNERS, DEVELOPERS, AND/OR SUBDIVIDERS, THEIR SUCCESSORS AND/OR ASSIGNS IN INTEREST, SHALL BE RESPONSIBLE FOR STREET MAINTENANCE UNTIL SUCH TIME AS THE COUNTY ACCEPTS THE RESPONSIBILITY FOR MAINTENANCE AS STATED ABOVE.

##### B. DRAINAGE MAINTENANCE

THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL DRAINAGE FACILITIES INSTALLED PURSUANT TO THE SUBDIVISION AGREEMENT. REQUIREMENTS INCLUDE, BUT ARE NOT LIMITED TO, MAINTAINING THE SPECIFIED STORM WATER DETENTION/RETENTION VOLUMES, MAINTAINING OUTLET STRUCTURES, FLOW RESTRICTION DEVICES AND FACILITIES NEEDED TO CONVEY FLOW TO SAID BASINS. ARAPAHOE COUNTY SHALL HAVE THE RIGHT TO ENTER PROPERTIES TO INSPECT SAID FACILITIES AT ANY TIME. IF THESE FACILITIES ARE NOT PROPERLY MAINTAINED, THE COUNTY MAY PROVIDE NECESSARY MAINTENANCE AND ASSESS THE MAINTENANCE COST TO THE OWNER OF THE PROPERTY.

##### C. EMERGENCY ACCESS

EMERGENCY ACCESS IS GRANTED HEREWITH OVER AND ACROSS ALL PAVED AREAS FOR POLICE, FIRE AND EMERGENCY VEHICLES.

##### D. DRIVES, PARKING AREAS, AND UTILITY EASEMENTS MAINTENANCE

THE OWNERS OF THIS PLAN OR PLAT, THEIR SUCCESSORS, AND/OR ASSIGNS IN INTEREST, THE ADJACENT PROPERTY OWNER(S), HOMEOWNERS ASSOCIATION OR OTHER ENTITY OTHER THAN ARAPAHOE COUNTY, IS RESPONSIBLE FOR MAINTENANCE AND UPKEEP OF ANY AND ALL DRIVES, PARKING AREAS, AND EASEMENTS, I.E.: CROSS ACCESS EASEMENTS, DRAINAGE EASEMENTS, ETC.

##### E. PRIVATE STREET MAINTENANCE

IT IS MUTUALLY UNDERSTOOD AND AGREED THAT THE PRIVATE ROADWAYS SHOWN ON THIS PLAT PLAN ARE NOT IN CONFORMANCE WITH ARAPAHOE COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS AND WILL NOT BE MAINTAINED BY THE COUNTY UNTIL AND UNLESS THE STREETS ARE CONSTRUCTED IN CONFORMANCE WITH THE SUBDIVISION REGULATIONS IN EFFECT AT THE DATE OF THE REQUEST FOR DEDICATION. THE OWNERS, DEVELOPERS, AND/OR SUBDIVIDERS, THEIR SUCCESSORS AND/OR ASSIGNS IN INTEREST, SHALL BE RESPONSIBLE FOR STREET MAINTENANCE UNTIL SUCH TIME AS THE COUNTY ACCEPTS RESPONSIBILITY FOR MAINTENANCE AS STATED ABOVE.

##### F. DRAINAGE LIABILITY

IT IS THE POLICY OF ARAPAHOE COUNTY THAT IT DOES NOT AND WILL NOT ASSUME LIABILITY FOR THE DRAINAGE FACILITIES DESIGNED AND/OR CERTIFIED BY MULHERN MRE, INC.. ARAPAHOE COUNTY REVIEWS DRAINAGE PLANS PURSUANT TO COLORADO REVISED STATUTES TITLE 30, ARTICLE 28, BUT CANNOT, ON BEHALF OF DOVE VALLEY BUSINESS PARK ASSOCIATES, LTD., A COLORADO LIMITED PARTNERSHIP, GUARANTEE THAT FINAL DRAINAGE DESIGN REVIEW WILL ABSOLVE THE DOVE VALLEY BUSINESS PARK ASSOCIATES, LTD., A COLORADO LIMITED PARTNERSHIP, AND/OR THEIR SUCCESSORS AND/OR ASSIGNS OF THE FUTURE LIABILITY FOR IMPROPER DESIGN. IT IS THE POLICY OF ARAPAHOE COUNTY THAT APPROVAL OF THE FINAL PLAT AND / OR FINAL DEVELOPMENT PLAN DOES NOT IMPLY APPROVAL OF MULHERN MRE, INC.'S DRAINAGE DESIGN.

##### G. LANDSCAPE MAINTENANCE

THE OWNERS OF THIS PLAN OR PLAT, THEIR SUCCESSORS AND/OR ASSIGNS IN INTEREST, THE ADJACENT PROPERTY OWNER(S), HOMEOWNER'S ASSOCIATION OR OTHER ENTITY OTHER THAN ARAPAHOE COUNTY IS RESPONSIBLE FOR MAINTENANCE AND UPKEEP OF PERIMETER FENCING, LANDSCAPED AREAS AND SIDEWALKS BETWEEN THE FENCE LINE/PROPERTY LINE AND ANY PAVED ROADWAYS. THE OWNERS OF THIS PLAN, THEIR SUCCESSORS AND/OR ASSIGNS IN INTEREST, OR SOME OTHER ENTITY OTHER THAN ARAPAHOE COUNTY, AGREE TO THE RESPONSIBILITY OF MAINTAINING ALL OTHER OPEN SPACE AREAS ASSOCIATED WITH THIS DEVELOPMENT.

##### H. SIGHT TRIANGLE MAINTENANCE

THE OWNERS OF PRIVATE PROPERTY CONTAINING A TRAFFIC SIGHT TRIANGLE ARE PROHIBITED FROM ERECTING OR GROWING ANY OBSTRUCTIONS OVER THREE FEET IN HEIGHT ABOVE THE ELEVATION OF THE LOWEST POINT ON THE CROWN OF THE ADJACENT ROADWAY WITHIN SAID TRIANGLE.

##### I. PUBLIC IMPROVEMENTS NOTE

AFTER FINAL DEVELOPMENT PLAN /FINAL PLAT APPROVAL, ISSUANCE OF INDIVIDUAL BUILDING PERMITS WILL BE SUBJECT TO THE FOLLOWING STIPULATIONS AND/OR CONDITIONS PRECEDENT, WHICH OWNER AGREES TO IN CONJUNCTION WITH APPROVAL OF THE FINAL DEVELOPMENT PLAN AND/OR FINAL PLAT. SUCH BUILDING PERMITS WILL BE ISSUED ONLY AFTER THE OWNERS GUARANTEE PUBLIC IMPROVEMENTS IN A FORM ACCEPTABLE TO THE BOARD OF COUNTY COMMISSIONERS PURSUANT TO STATE STATUTE.

##### J. DRAINAGE MASTER PLAN

THE POLICY OF THE COUNTY REQUIRES THAT ALL NEW DEVELOPMENT AND REDEVELOPMENT SHALL PARTICIPATE IN THE REQUIRED DRAINAGE IMPROVEMENTS AS SET FORTH BELOW:

1. DESIGN AND CONSTRUCT THE LOCAL DRAINAGE SYSTEM AS DEFINED BY THE PHASE III DRAINAGE REPORT AND PLAN.

2. DESIGN AND CONSTRUCT THE CONNECTION OF THE SUBDIVISION DRAINAGE SYSTEM TO A DRAINAGEWAY OF ESTABLISHED CONVEYANCE CAPACITY SUCH AS A MASTER PLANNED OUTFALL STORM SEWER OR MASTER PLANNED MAJOR DRAINAGEWAY. THE COUNTY WILL REQUIRE THAT THE CONNECTION OF THE MINOR AND MAJOR SYSTEMS PROVIDE CAPACITY TO CONVEY ONLY THOSE FLOWS (INCLUDING OFFSITE FLOWS) LEAVING THE SPECIFIC DEVELOPMENT SITE. TO MINIMIZE OVERALL CAPITAL COSTS, THE COUNTY ENCOURAGES ADJACENT DEVELOPMENTS TO JOIN IN DESIGNING AND CONSTRUCTING CONNECTION SYSTEMS. ALSO, THE COUNTY MAY CHOOSE TO PARTICIPATE WITH A DEVELOPER IN THE DESIGN AND CONSTRUCTION OF THE CONNECTION SYSTEM.

3. EQUITABLE PARTICIPATION IN THE DESIGN AND CONSTRUCTION OF THE MAJOR DRAINAGEWAY SYSTEM THAT SERVES THE DEVELOPMENT AS DEFINED BY ADOPTED MASTER DRAINAGEWAY PLANS (SECTION 3.4 OF THE ARAPAHOE COUNTY STORMWATER MANAGEMENT MANUAL) OR AS REQUIRED BY THE COUNTY AND DESIGNATED IN THE PHASE III DRAINAGE REPORT.

#### 2. SPECIFIC NOTES

##### A. AIRPORT INFLUENCE AREA (OFF-SITE IMPROVEMENTS)

TO CARRY OUT ONE OR MORE OF THE FOLLOWING AS MAY BE REQUIRED BY THE BOARD OF COUNTY COMMISSIONERS:

- 1) TO INCLUDE SAID DEVELOPMENT WITHIN A SPECIAL DISTRICT FOR THE PURPOSE OF PARTICIPATION IN THE CONSTRUCTION OF NECESSARY OFF-SITE IMPROVEMENTS AT THE TIME OF APPROVAL OF FINAL DEVELOPMENT PLANS.
- 2) TO COOPERATE WITH OTHER OWNERS OF OTHER PARCELS AND/OR OTHER SPECIAL DISTRICTS IN OFF-SITE ROADWAY IMPROVEMENTS AS NECESSITATED BY THE DEVELOPMENT IMPACTS AS MAY BE DETERMINED BY THE BOARD OF COUNTY COMMISSIONERS.
- 3) TO COMPLETE SUCH OTHER IMPROVEMENTS TO PUBLIC ROADWAYS BROUGHT ABOUT OR IMPACTED BY THIS DEVELOPMENT AS MAY BE DETERMINED BY THE BOARD OF COUNTY COMMISSIONERS.
- 4) TO PARTICIPATE AND COOPERATE IN ANY TRANSPORTATION MANAGEMENT PROGRAM AS SPECIFIED IN THE AIRPORT INFLUENCE AREA TRANSPORTATION STUDY, IF SUCH A PROGRAM IS APPROVED AND/OR ADOPTED BY THE BOARD OF COUNTY COMMISSIONERS.

##### B. AIRPORT INFLUENCE AREA (EASEMENT/HAZARD EASEMENT)

AN AVIGATION AND HAZARD EASEMENT AFFECTING ALL PROPERTY CONTAINED WITHIN THIS LOCATION AND EXTENT HAS BEEN LEGALLY EXECUTED. SAID EASEMENT DOCUMENT CAN BE FOUND IN RECEPTION NO. B3073837 OF THE RECORDS OF THE ARAPAHOE COUNTY CLERK AND RECORDER. THE LANDS CONTAINED WITHIN THIS LOCATION AND EXTENT LIE WITHIN THE AIRPORT INFLUENCE AREA, AN AREA WHICH IS LIKELY TO BE AFFECTED BY AIRCRAFT OPERATIONS AND THEIR POTENTIAL NOISE AND/OR CRASH HAZARDS TO A GREATER DEGREE THAN LANDS SITUATED OUTSIDE OF THE INFLUENCE AREA. ALL LANDS CONTAINED WITHIN THIS LOCATION AND EXTENT SHALL COMPLY WITH F.A.R. PART 77, "HEIGHT AND OBSTRUCTIONS CRITERIA".

##### C. STREET LIGHTING

ALL LOTS ARE SUBJECT TO AND BOUND BY TARIFFS WHICH ARE NOW AND MAY IN THE FUTURE BE FILED WITH THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO RELATING TO STREET LIGHTING IN THIS PLAN OR PLAT, TOGETHER WITH RATES, RULES, AND REGULATIONS THEREIN PROVIDED AND SUBJECT TO ALL FUTURE AMENDMENTS AND CHANGES THERETO. THE OWNER OR OWNERS, THEIR SUCCESSORS AND/OR ASSIGNS IN INTEREST, SHALL PAY AS BILLED, A PORTION OF THE COST OF PUBLIC STREET LIGHTING IN THE PLAN OR PLAT ACCORDING TO APPLICABLE RATES, RULES, AND REGULATIONS, INCLUDING FUTURE AMENDMENTS AND CHANGES ON FILE WITH THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO.

#### GENERAL NOTES:

1. ○ SET 5/8" IRON PIN W/CAP, L.S. 16828 (ORIGINAL FROM 2004 ATAL SURVEY, NOT FOUND IN FIELD)
2. PRESENT ZONING CLASSIFICATION: PROPERTY IS IN USE AREA D OF THE HEREON REFERENCED "MASTER DEVELOPMENT PLAN". ZONING IS MU-PUD.
3. NO CHANGE FOR SHEETS 5 THRU 11. SAME AS PROPOSED IN CASE NO. A07-012.
4. NEW SHEET NUMBERING FOR THIS CASE NO. L16-004.

#### SHEET INDEX

SHEET #	DRAWING NAME
1	COVER SHEET
2	OVERALL SITE PLAN
3	SITE PLAN
4	SITE PLAN
5	UTILITY AND GRADING PLAN
6	UTILITY AND GRADING PLAN
7	LANDSCAPE PLAN

**ACWWA/CWSD JOINT WTP  
LOCATION AND EXTENT  
AMENDMENT NO. 2**

## COVER SHEET

REVISIONS				
NO	DATE	BY	CHK'D	DESCRIPTION
1	1/11/08	M.S.	R.L.	ARAPAHOE COUNTY PLANNING INITIAL REVIEW COMMENTS
2	2/1/08	M.S.	R.L.	FINAL MYLAR SET
3	3/28/16	J.W.	S.R.	AMENDMENT 2

**MULHERN MRE**  
2 Inverness Drive East, Suite 200  
Englewood, CO 80112  
(303) 649-9857

DESIGNED	M.S.	DATE	3/28/2016
DRAWN	M.S.	DWG. NAME	COVER.dwg
CHECKED	R.L.	PROJECT NAME	03116-ACWWA WTP
SCALE	AS SHOWN	SHEET	1 OF 11

# LOCATION AND EXTENT - AMENDMENT NO. 2

## ACWWA/ CWSD JOINT WATER PURIFICATION PLANT

### TRACT C, DOVE VALLEY V, AND DOVE VALLEY V, FILING NO. 2

LOCATED IN THE SOUTHWEST 1/4 OF SECTION 32,  
TOWNSHIP 5 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN  
COUNTY OF ARAPAHOE, STATE OF COLORADO

LEGEND	
PARCEL LINE	- - - - -
PROPOSED STRUCTURE	—————
SHEET BOUNDARY	—————



SHEET 4 & 6 BOUNDARY

SHEET 3 & 5 BOUNDARY



REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
1	4/5/16			SHEET ADDED

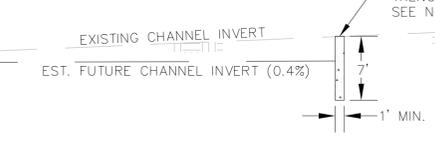
**ACWWA/CWSD JOINT WTP  
LOCATION AND EXTENT  
AMENDMENT NO. 2**

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**OVERALL SITE PLAN**

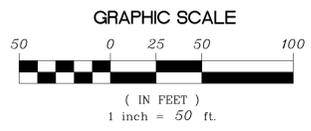
# LOCATION AND EXTENT - AMENDMENT NO. 2 ACWWA/ CWSO JOINT WATER PURIFICATION PLANT TRACT C, DOVE VALLEY V, AND DOVE VALLEY V, FILING NO. 2

LOCATED IN THE SOUTHWEST 1/4 OF SECTION 32,  
TOWNSHIP 5 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN  
COUNTY OF ARAPAHOE, STATE OF COLORADO



**NOTES:**  
1. WALL TO FOLLOW CHANNEL CROSS SECTION AND EXTEND TO THE 5-YR FLOODPLAIN WSE (5712.90).  
2. THIS DETAIL TO BE USED TO CONTROL STREAM GRADE. ASSUMES A MAX. OF 3' DEGRADATION OF STREAM BED ON THE DOWSTREAM FACE OF THE CHECK.  
3. CONCRETE WALL TO BE POURED IN A TRENCH WITHOUT FORMS IN ORDER TO MINIMIZE CHANNEL DISTURBANCE. IF WALL CAN NOT BE POURED WITHOUT FORMS, SHEET PILE SHALL BE USED INSTEAD.

CHECK STRUCTURE  
N.T.S.



DOVE VALLEY V  
TRACT C  
13.935 ACRES  
2073-32-3-10-010

LOT 2 UNDEVELOPED  
OPEN SPACE AREA  
4.2635 ACRES  
(HATCHED AREA)

NOTE: THE EXISTING 100-YR FLOODPLAIN SHOWN IS PER A FEMA FLOOD INSURANCE STUDY DATED AUGUST 1995, PREPARED FOR ARAPAHOE COUNTY AND INCORPORATED AREA VOLUME 1 OF 3.

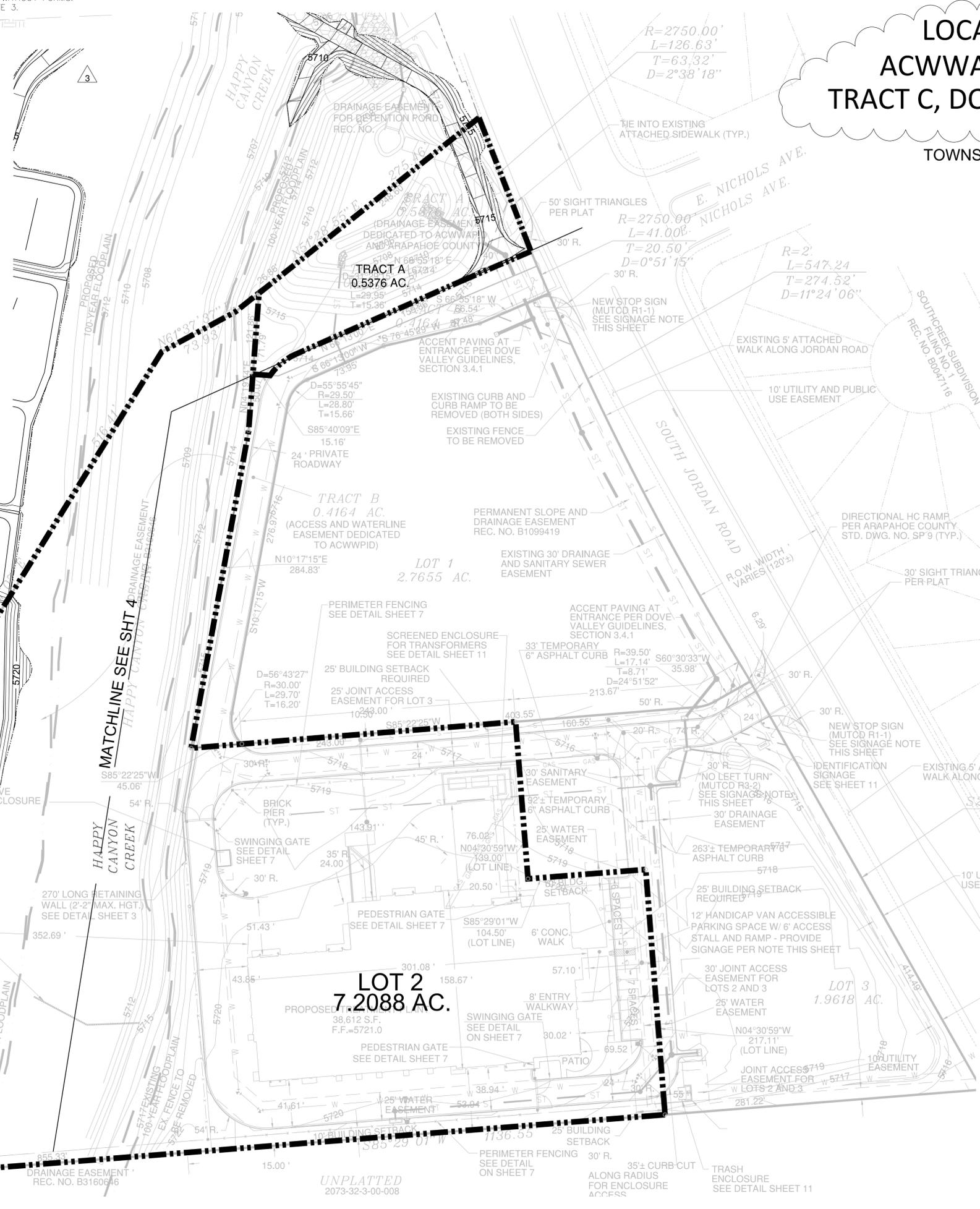
PROPOSED GRADE CHECK STRUCTURE SEE DETAIL ON THIS SHEET

270' LONG RETAINING WALL (2'-2" MAX. HGT.) SEE DETAIL SHEET 3

EXISTING 100-YEAR FLOODPLAIN

PROPOSED 100-YEAR FLOODPLAIN

CASE No. L16-004



NOTE: REFER TO SHEET 5 (LANDSCAPE PLAN) FOR DESIGNATED BICYCLE PARKING AREA.

**DEVELOPMENT CRITERIA TABLE  
(FOR LOT 2 ONLY)**

CRITERIA	REQUIRED PER MDP - CASE NO. 200-021	PROVIDED PER L&E - CASE NO. L04-002	PROVIDED PER AMENDMENT - CASE NO. A07-012	PROVIDED PER AMENDMENT - CASE NO. L16-004
ZONING	MU-PUD (AREA "D" OF MDP)	MU-PUD	MU-PUD	N/A
BUILDING USES		INDUSTRIAL	INDUSTRIAL	N/A
ON-SITE PARKING SPACES	15 *	15	15	N/A
SETBACKS				N/A
BUILDING SETBACKS:				
FRONT	25'	57.82'	57.10'	
SIDES	10'	30.34'	20.50'(N), 53.94'(S)	
REAR	0'	341.97'	352.69'	
PARKING SETBACKS:				
FRONT	0'	0'	0'	
NORTH SIDE	0'	4.83'	4.83'	
SOUTH SIDE	10'	14.50'	14.50'	
REAR	0'	0'	0'	
MAXIMUM BUILDING HEIGHT **	100'	31'	35'	N/A
MIN. DISTANCE BETWEEN STRUCTURES-LIKE USES	20'	N/A	N/A	N/A
MIN. DISTANCE BETWEEN STRUCTURES-UNLIKE USES	35'	N/A	N/A	N/A
LOT COVERAGES (FOR LOT 2 ONLY)				
LOT 2 TOTAL		314,014 S.F.	314,014 S.F.	
LOT 2 DEVELOPED AREA		128,297 S.F.	128,297 S.F.	
BUILDING COVERAGE	51,319 S.F. (40% NET LAND)	39,700 S.F. (30.9% DEVELOPED AREA)	38,612 S.F. (30.1% DEVELOPED AREA)	N/A
PAVEMENT-PARKING/DRIVEWAYS		50,810 S.F.	49,892 S.F.	
DEVELOPED OPEN SPACE	25,660 S.F. (20% DEVELOPED AREA)	37,787 S.F. (29.5% DEVELOPED AREA)	39,793 S.F. (31.0% DEVELOPED AREA)	

\* 5 EMPLOYEES MAX. SHIFT + 10 VISITOR  
\*\* INCLUDES ROOFTOP MOUNTED MECHANICAL EQUIPMENT

SIGNAGE NOTE:  
EACH HANDICAP SIGN TO BE CENTERED IN FRONT OF EACH PARKING SPACE, 0.5' BEHIND THE BACK OF WALK. STOP SIGN TO BE LOCATED AT THE RADIUS RETURN, 2' OFF THE BACK OF CURB. ALL SIGNAGE SHALL BE INSTALLED PER THE LATEST MUTCD STANDARDS.

LOCATION NOTE:  
LOT 1 NOT AFFECTED BY PROPOSAL.

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
1	1/11/08	M.S.	R.L.	ARAPAHOE COUNTY PLANNING INITIAL REVIEW COMMENTS
2	2/1/08	M.S.	R.L.	FINAL MYLAR SET
3	3/25/16	J.W.	S.R.	AMENDMENT 2

**ACWWA/CWSO JOINT WTP  
LOCATION AND EXTENT  
AMENDMENT NO. 2**

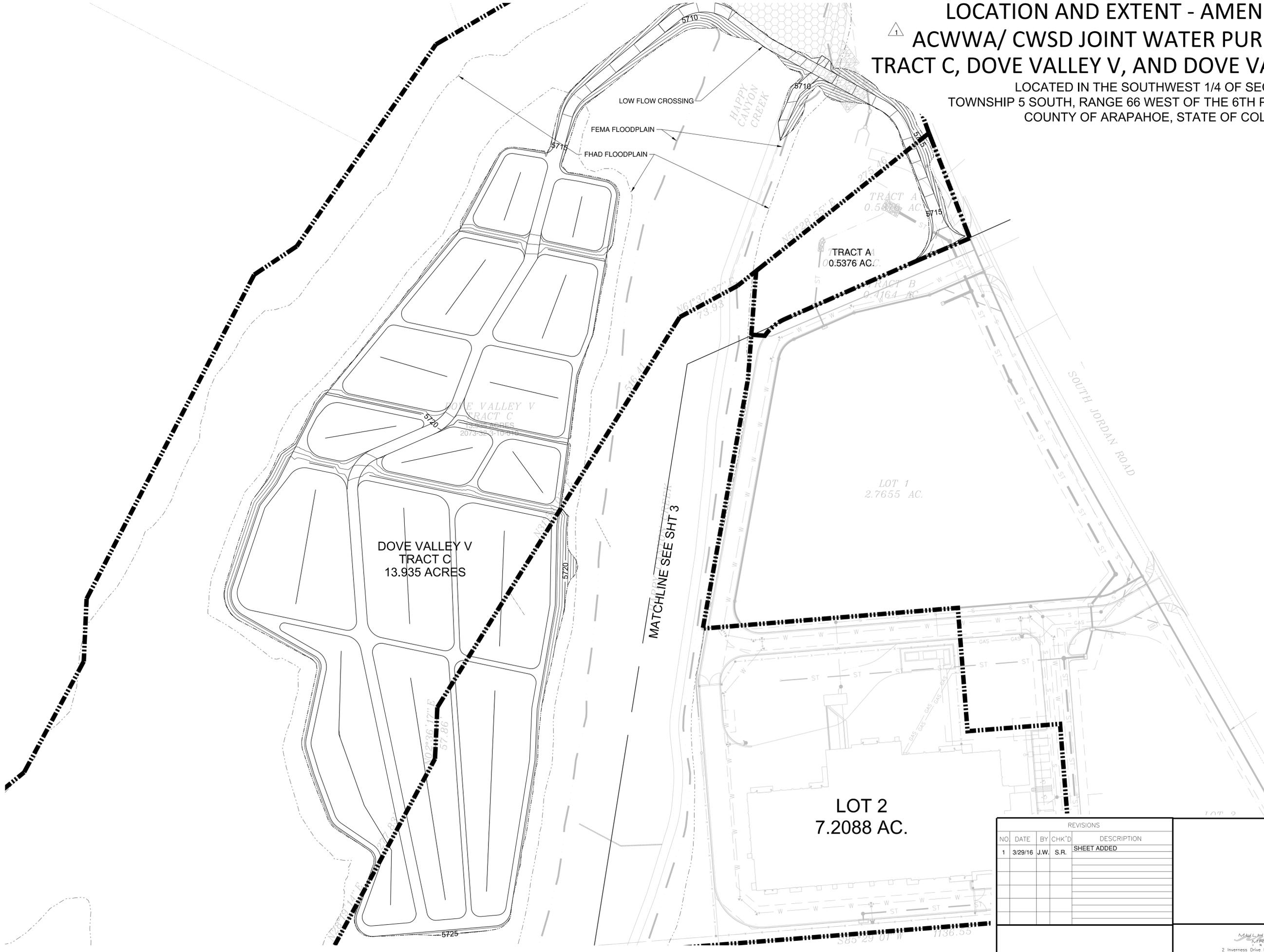
**SITE PLAN**

DESIGNED	M.S.	DATE	03/28/16
DRAWN	M.S.	DWG. NAME	03116SD.dwg
CHECKED	R.L.	PROJECT NAME	03116-ACWWA WTP
SCALE	AS SHOWN	SHEET	3 OF 7

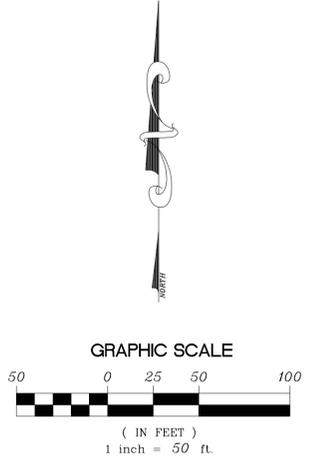
**MALVERN**  
ENGINEERS  
2 Inverness Drive East, Suite 200  
Englewood, CO 80112  
(303) 649-9857

**LOCATION AND EXTENT - AMENDMENT NO. 2**  
**ACWWA/ CWSO JOINT WATER PURIFICATION PLANT**  
**TRACT C, DOVE VALLEY V, AND DOVE VALLEY V, FILING NO. 2**

LOCATED IN THE SOUTHWEST 1/4 OF SECTION 32,  
 TOWNSHIP 5 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN  
 COUNTY OF ARAPAHOE, STATE OF COLORADO



MATCHLINE SEE SHT 3



REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
1	3/29/16	J.W.	S.R.	SHEET ADDED

**ACWWA/CWSO JOINT WTP**  
**LOCATION AND EXTENT**  
**AMENDMENT NO. 2**

**SITE PLAN**

**LEGEND**

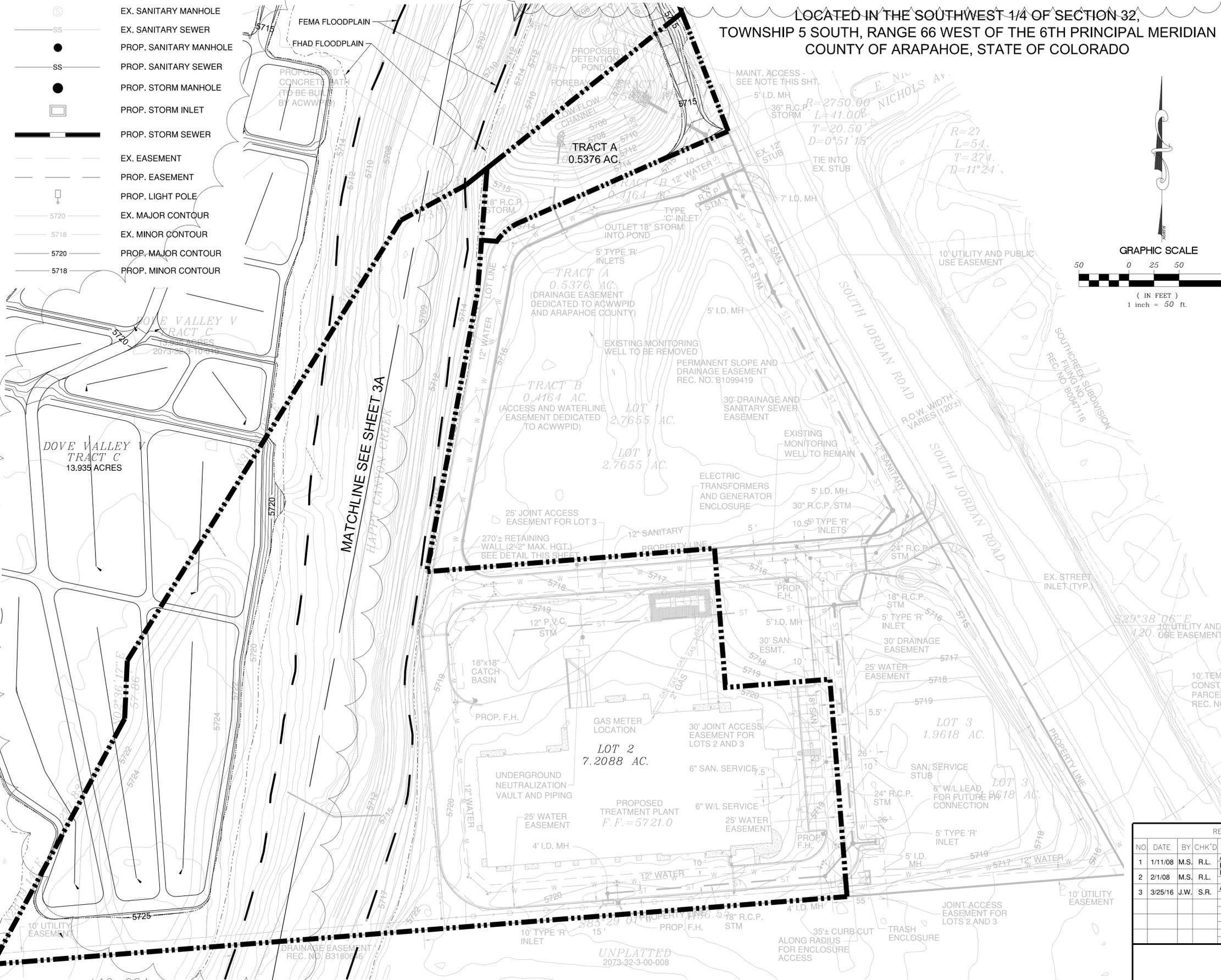
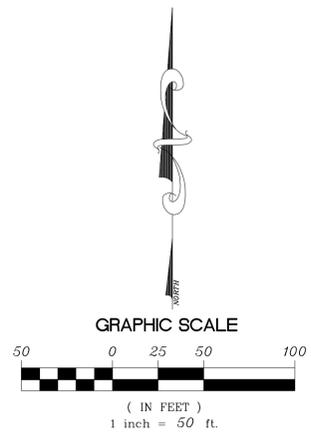
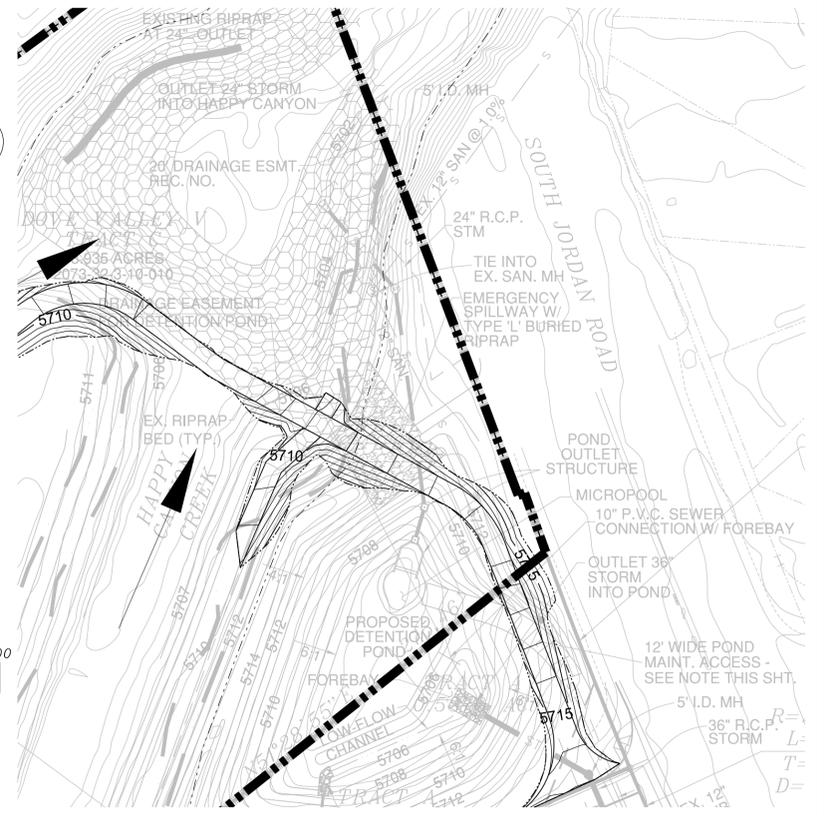
- EX. FIRE HYDRANT
- PROP. FIRE HYDRANT
- EX. WATERLINE
- PROP. WATERLINE
- EX. SANITARY MANHOLE
- EX. SANITARY SEWER
- PROP. SANITARY MANHOLE
- PROP. SANITARY SEWER
- PROP. STORM MANHOLE
- PROP. STORM INLET
- PROP. STORM SEWER
- EX. EASEMENT
- PROP. EASEMENT
- PROP. LIGHT POLE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- PROP. MAJOR CONTOUR
- PROP. MINOR CONTOUR

# LOCATION AND EXTENT - AMENDMENT NO. 2

## ACWWA/ CWSD JOINT WATER PURIFICATION PLANT

### TRACT C, DOVE VALLEY V, AND DOVE VALLEY V, FILING NO. 2

LOCATED IN THE SOUTHWEST 1/4 OF SECTION 32,  
TOWNSHIP 5 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN  
COUNTY OF ARAPAHOE, STATE OF COLORADO



**POND MAINTENANCE ACCESS NOTE:**  
THE PROPOSED 12' WIDE ACCESS SHALL CONSIST OF AGGREGATE TURF BASE, PER UDFCD STANDARDS.

CASE No. L16-004

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
1	1/11/08	M.S.	R.L.	ARAPAHOE COUNTY PLANNING INITIAL REVIEW COMMENTS FINAL MYLAR SET
2	2/1/08	M.S.	R.L.	AMENDMENT 2
3	3/25/16	J.W.	S.R.	

**ACWWA/CWSD JOINT WTP  
LOCATION AND EXTENT  
AMENDMENT NO. 2**

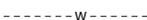
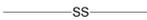
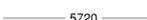
**UTILITY AND  
GRADING PLAN**

DESIGNED	M.S.	DATE	11/20/07
DRAWN	M.S.	DWG. NAME	03116UT.dwg
CHECKED	R.L.	PROJECT NAME	03116-ACWWA WTP
SCALE	AS SHOWN	SHEET	5 OF 7

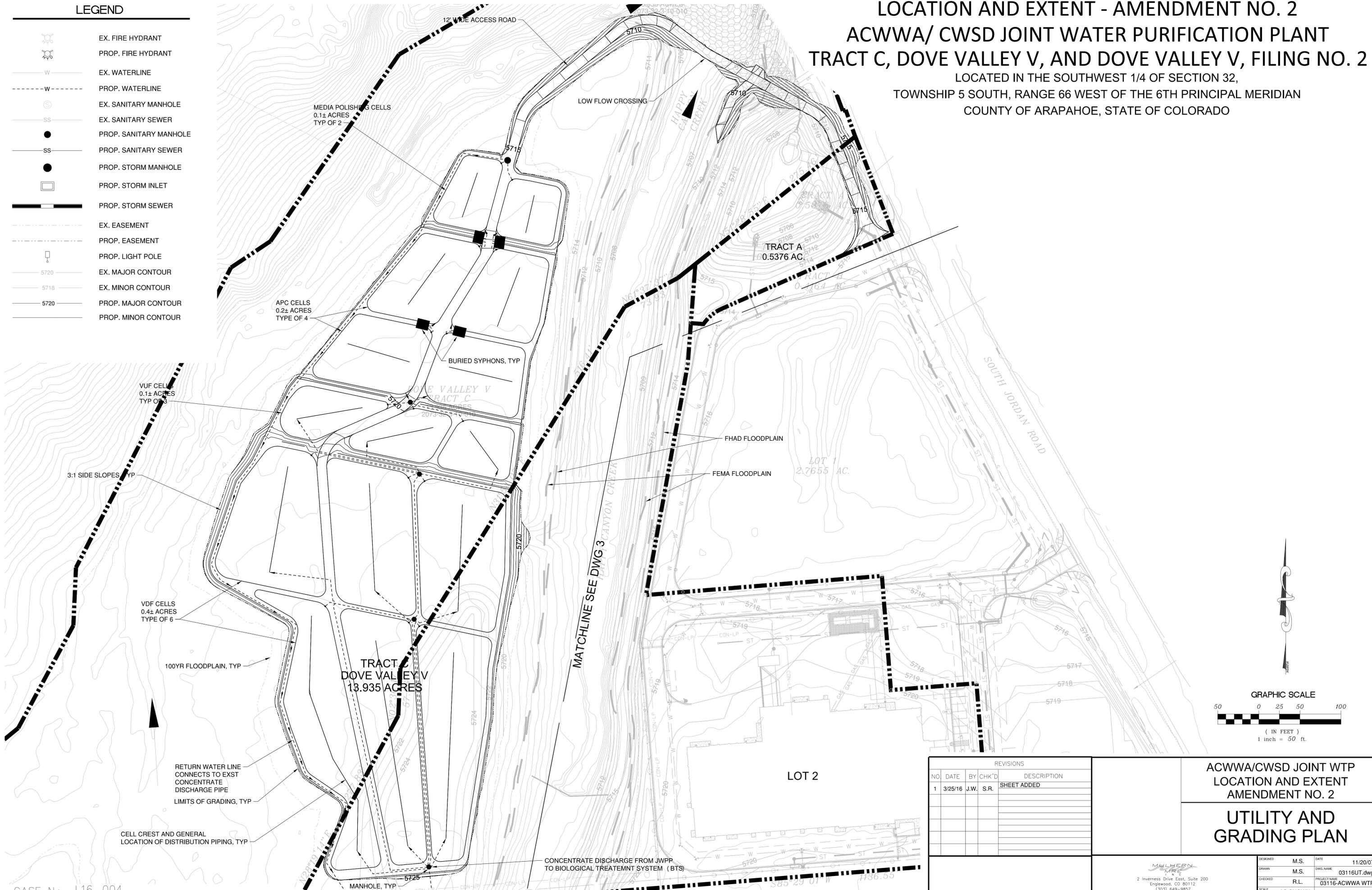
MILLER  
ENGINEERS & ARCHITECTS  
2 Inverness Drive East, Suite 200  
Englewood, CO 80112  
(303) 649-9857



**LEGEND**

-  EX. FIRE HYDRANT
-  PROP. FIRE HYDRANT
-  EX. WATERLINE
-  PROP. WATERLINE
-  EX. SANITARY MANHOLE
-  EX. SANITARY SEWER
-  PROP. SANITARY MANHOLE
-  PROP. SANITARY SEWER
-  PROP. STORM MANHOLE
-  PROP. STORM INLET
-  PROP. STORM SEWER
-  EX. EASEMENT
-  PROP. EASEMENT
-  PROP. LIGHT POLE
-  EX. MAJOR CONTOUR
-  EX. MINOR CONTOUR
-  PROP. MAJOR CONTOUR
-  PROP. MINOR CONTOUR

**LOCATION AND EXTENT - AMENDMENT NO. 2**  
**ACWWA/ CWSO JOINT WATER PURIFICATION PLANT**  
**TRACT C, DOVE VALLEY V, AND DOVE VALLEY V, FILING NO. 2**  
 LOCATED IN THE SOUTHWEST 1/4 OF SECTION 32,  
 TOWNSHIP 5 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN  
 COUNTY OF ARAPAHOE, STATE OF COLORADO



CASE No. 116-004

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
1	3/25/16	J.W.	S.R.	SHEET ADDED

**ACWWA/CWSO JOINT WTP**  
**LOCATION AND EXTENT**  
**AMENDMENT NO. 2**

**UTILITY AND**  
**GRADING PLAN**

DESIGNED	M.S.	DATE	11/20/07
DRAWN	M.S.	DWG. NAME	03116UT.dwg
CHECKED	R.L.	PROJECT NAME	03116-ACWWA WTP
SCALE	AS SHOWN	SHEET	6 OF 7

MILLER ENGINEERS  
 2 Inverness Drive East, Suite 200  
 Englewood, CO 80112  
 (303) 649-9857



COTTONWOOD  
WATER AND SANITATION DISTRICT

C/O Mulhern MRE, Inc.  
2 Inverness Drive East #200  
Englewood, CO 80112  
303-649-9857 Fax 303-414-0671

May 24, 2016

Molly Orkild-Larson, Senior Planner  
Arapahoe County Public Works and Development  
Arapahoe County Lima Plaza  
6924 South Lima Street  
Centennial, CO 80112

Ms. Orkild-Larson,

Representatives of the Cottonwood Water and Sanitation District, Pat Mulhern, Luis Tovar and Sarah Foster, a consultant with CH2M Hill, attended meetings for the surrounding Home Owner's Associations as detailed below.

1. SouthCreek Master Home Owner's Association on March 22, 2016 at 6:00pm at Firehouse #42, 7320 S. Parker Road, Parker, CO 80138, and attendance sheet is attached.
2. Cottonwood Neighborhood Meeting on April 10, 2016 at 3:00pm at 8334 Sandreed Circle, Parker, CO 80134, attendance sheet attached.
3. Dove Ridge Home Owner's Association on April 11, 2016 at 6:00pm at Denver Jet Center East, 13000 E. Control Tower Rd., Englewood, CO 80112, attendance sheet has not been provided to date.
4. SouthCreek Townhomes on April 27, 2016 at 6:30 p.m. at Cheddars 15775 E. Briarwood Cir., Aurora CO 80016, an attendance sheet is attached.
5. SouthCreek Paired Homes is tentatively set for July 6, 2016 at 7:00am.
6. Ladera Homeowner's Association declined to meet formally and will direct resident questions to the District contacts.

3/22/16

Southcreek Master HOA

Sign In Sheet

Southcreek  
Master

NAME	ADDRESS	TOPIC
JUNE SEDYTON NATHANIEL SHERIFF MARK HADDER TED MENENDEZ	BOARD MEMBERS - SOUTHCREEK MASTER HOA	
CRYSTAL MENENDEZ	SOCIAL COMMITTEE CHAIR	
PACITA HANSTON	8149 S. MOBILE WY	HOME PAINTING
ERIC PLOUFFE ELIZABETH WOOD	JRK LANDSCAPE	
CARMELO STEFANO	4 SEASONS MANAGEMENT	GROUP

RECORD OF PROCEEDINGS

MINUTES OF COMMUNITY INFORMATIONAL MEETING OF THE COTTONWOOD WATER & SANITATION DISTRICT

April 10, 2016

at 3:00 p.m. at 8334 Sandreed Circle, Parker, Colorado

ATTENDEES Directors present: Steve Wasiecko and Susan Romani. Others present: Pat Mulhern, Luis Tovar, and Kelly Conover, Mulhern MRE, Inc.; Public Present; Tim & Carol Woodward 8436 Wheatgrass Cir, Suzy Herbison 8460 Wheatgrass Cir, Clint Schaeffer, 8787 Apache Plume Dr. , John Dickens, 8828 Clover Meadow Lane, Ralmi Vermiglio 16735 Blue Mist Cir, Robin Abbott 8551 Willows Place, Chris Zander 8551 Willows Place, and Marty Widmark 8857 Prickly Pear Cir.

PRESENTATION ON DISTRICT PROJECTS

Pat Mulhern reviewed the recent development projects in process and those that are expected to occur in the near future.

Pat provided a presentation to update the community on efforts to reinstate the Joint Water Purification Plant using a biological treatment system, provide information on the brown water events and to inform the neighbors about 2 new wells and a non-potable irrigation line that would be installed in the Metro Park along Cherry Creek.

PUBLIC COMMENT

The public had an opportunity to address questions to staff regarding the projects, District development, rates, tap fees, brown water, and alternative treatment solutions.

ADJOURNMENT The meeting was adjourned. The next regular meeting of the Board of Directors is scheduled for April 21, 2016, beginning at 6:30p.m. to be held at 8334 Sandreed Circle, Parker, CO.

Date: 4/21/2016 READ AND APPROVED BY THE BOARD: Adam Perez, Secretary

**Ron Lambert**

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**From:** Sandy Teigen <STeigen@msiho.com>  
**Sent:** Monday, May 09, 2016 8:07 AM  
**To:** Kelly Conover  
**Subject:** RE: Southcreek HOA

The following attendees at the South Creek HOA Meeting were:

Larissa Slauson  
Jessica Honesto  
Melinda Vance  
And myself

*Thank you,*

**Sandy Teigen, CAM**  
Community Manager  
MSI, LLC  
6892 S. Yosemite Ct.  
Suite 2-101  
Centennial, CO 80112  
(720) 974-4259  
[steigen@msiho.com](mailto:steigen@msiho.com)

[www.msihoa.com](http://www.msihoa.com)



Professionals In Association Management

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**From:** Kelly Conover [mailto:kelly@mulhernmre.com]  
**Sent:** Friday, May 06, 2016 4:25 PM  
**To:** Sandy Teigen <STeigen@msiho.com>  
**Subject:** RE: Southcreek HOA

Sandy,

Can I get a copy of the attendees list for the HOA meeting on the 27<sup>th</sup>?  
Thanks so much!

Kelly Conover  
 **Mulhern  
MRE, Inc.**  
Managing Resources thru Engineering  
2 Inverness Drive East #200  
Englewood, CO 80112  
303-649-9857  
303-414-0671

**From:** Sandy Teigen [<mailto:STeigen@msiho.com>]  
**Sent:** Wednesday, April 20, 2016 12:15 PM  
**To:** Kelly Conover <[kelly@mulhernmre.com](mailto:kelly@mulhernmre.com)>  
**Subject:** RE: Southcreek HOA

Thank you Kelly,

Yes I do have a Board meeting with SouthCreek Townhomes on April 27, 2016 at 6:30 p.m. at Cheddars 15775 E. Briarwood Cir., Aurora CO 80016.

Would you be able to attend and give a brief presentation ? I will have 15 minutes available. Please let me know so I can add you to the agenda.

**Sandy Teigen, CAM**  
Community Manager  
MSI, LLC  
6892 S. Yosemite Ct.  
Suite 2-101  
Centennial, CO 80112  
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[steigen@msiho.com](mailto:steigen@msiho.com)



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 **Please consider the environment before printing this email.**

**From:** Kelly Conover [<mailto:kelly@mulhernmre.com>]  
**Sent:** Wednesday, April 20, 2016 9:15 AM  
**To:** Sandy Teigen <[STeigen@msiho.com](mailto:STeigen@msiho.com)>  
**Subject:** RE: Southcreek HOA

Ms. Teigen,

I am looking to touch base with you regarding a project adjacent to the Joint Water Purification Plant at 8051 South Jordan Rd.

The treatment plant is proposing to install a biological treatment system to address the selenium concentrations in the discharge water at the plant.

I have attached a flyer that we have made to provide information to homeowners in the area.

I am wondering if you have an HOA meeting scheduled in the near future that we would be able to attend and provide a brief presentation?

Please let me know if you have any questions or concerns.

Thank you.

Kelly Conover  
**Mulhern**  
**MRE, Inc.**  
Managing Resources thru Engineering

2 Inverness Drive East #200  
Englewood, CO 80112

303-649-9857  
303-414-0671

**From:** Lana Whitehead [<mailto:lwhitehead@msiho.com>]  
**Sent:** Wednesday, April 20, 2016 7:37 AM  
**To:** Kelly Conover <[kelly@mulhernmre.com](mailto:kelly@mulhernmre.com)>; Sandy Teigen <[STEigen@msiho.com](mailto:STEigen@msiho.com)>  
**Subject:** RE: Southcreek HOA

Kelly, I have included Sandy Teigen in on your email, she manages the townhomes. Sandy, please see below. Thanks!

**Lana Whitehead, CAM, CMCA**  
Community Manager  
MSI, LLC  
6892 S Yosemite Court  
Suite 2-101  
Centennial, CO 80112  
(720) 974-4226  
Fax (720) 974-4426  
[lwhitehead@msiho.com](mailto:lwhitehead@msiho.com)

**From:** Kelly Conover [<mailto:kelly@mulhernmre.com>]  
**Sent:** Tuesday, April 19, 2016 3:34 PM  
**To:** Lana Whitehead <[lwhitehead@msiho.com](mailto:lwhitehead@msiho.com)>  
**Subject:** RE: Southcreek HOA

Lana,  
I wanted to see if you had any contacts for the Southcreek Townhome HOA?  
Thanks for any help you can.

Kelly Conover  
  
Managing Resources. Not Engineering  
2 Inverness Drive East #200  
Englewood, CO 80112  
303-649-9857  
303-414-0671

**From:** Lana Whitehead [<mailto:lwhitehead@msiho.com>]  
**Sent:** Monday, April 04, 2016 11:21 AM  
**To:** Kelly Conover <[kelly@mulhernmre.com](mailto:kelly@mulhernmre.com)>  
**Cc:** Pat Mulhern <[pat@mulhernmre.com](mailto:pat@mulhernmre.com)>; Ron Lambert <[ron@mulhernmre.com](mailto:ron@mulhernmre.com)>  
**Subject:** RE: Southcreek HOA

Thank you Kelly I will bring this up at the next Board Meeting. It will take place in May, usually they do meet the first week of May, so please check back with me at the very end I may have a date and time for you. Thanks!

**Lana Whitehead, CAM, CMCA**  
Community Manager  
MSI, LLC  
6892 S Yosemite Court  
Suite 2-101  
Centennial, CO 80112  
(720) 974-4226

Fax (720) 974-4426  
[lwhitehead@msiho.com](mailto:lwhitehead@msiho.com)

**From:** Kelly Conover [<mailto:kelly@mulhernmre.com>]  
**Sent:** Thursday, March 31, 2016 11:28 AM  
**To:** Lana Whitehead <[lwhitehead@msiho.com](mailto:lwhitehead@msiho.com)>  
**Cc:** Pat Mulhern <[pat@mulhernmre.com](mailto:pat@mulhernmre.com)>; Ron Lambert <[ron@mulhernmre.com](mailto:ron@mulhernmre.com)>  
**Subject:** Southcreek HOA

Lana,

Thank you for speaking with me on the phone about reaching out to the homeowners in Southcreek.

Attached is the flyer that we have regarding the work we propose to do on the land to the west of the Joint Water Purification Plant at 8051 South Jordan Road.

The Plant is jointly owned by the Cottonwood Water and Sanitation District and the Arapahoe County Water and Wastewater Authority.

The goal is to get the plant back into operation and improve water quality. The biologic treatment system proposed is underground which is a new and unusual system. This requires us to go through a land use process with Arapahoe County.

If you have any questions or concerns please give us a call to discuss.

We are happy to attend the HOA meeting if you would like us to discuss the project further. I understand that the date has not been set yet but you anticipate it to be the first week of May?

Just let me know what you decide.

Thank you.

Kelly Conover

 **Mulhern  
MRE, Inc.**

Managing Resources thru Engineering

2 Inverness Drive East #200

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Ladera

## Ron Lambert

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**From:** Robyn Levine <rlevine@denverprotection.com>  
**Sent:** Tuesday, March 29, 2016 2:11 PM  
**To:** Kelly Conover  
**Cc:** kbacon@coloradomanagement.com; Pat Mulhern; Luis Tovar; Ron Lambert  
**Subject:** Re: Ladera HOA Meeting

Hello Kelly,

We have reviewed the provided document, and it appears it would have little impact to homeowners. The Ladera HOA will include your brochure on our next distributed newsletter and direct any questions our residents may have to the water board. We don't have enough homeowner attendance/interest to justify having a water board rep out to discuss the project at our Board meetings, but if you have any meetings at your location, please let us know and we will utilize our monthly newsletter to communicate project details to our residents.

I hope this adequately addresses your concerns.

Best Regards,

Robyn M. Levine  
Principal



**Denver Protection Services LLC**  
M/WBE, SBE, DBE Certified Company  
1550 Larimer St # 470  
Denver, CO 80202  
Cell: (303) 587-3106  
Office: (303) 562-2422  
Email: [rlevine@denverprotection.com](mailto:rlevine@denverprotection.com)  
Website: [www.denverprotection.com](http://www.denverprotection.com)

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**From:** Kelly Conover <kelly@mulhernmre.com>  
**Sent:** Tuesday, March 29, 2016 10:32 AM  
**To:** Robyn Levine  
**Cc:** [kbacon@coloradomanagement.com](mailto:kbacon@coloradomanagement.com); Pat Mulhern; Luis Tovar; Ron Lambert  
**Subject:** Ladera HOA Meeting

Ms. Levine,

Thank you for speaking with me on the phone yesterday afternoon.

Attached is the flyer that we have regarding the work we propose to do on the land to the west of the Joint Water Purification Plant.

The Plant is jointly owned by the Cottonwood Water and Sanitation District and the Arapahoe County Water and Wastewater Authority.

The goal is to get the plant back into operation and improve water quality. The biologic treatment system proposed is underground which is a new and unusual system which requires us to go through a land use process with Arapahoe County.

If you have any questions or concerns please give us a call to discuss.

We are happy to attend the April meeting on the 19<sup>th</sup> if you would like us to discuss the project further.  
Just let me know what you decide.

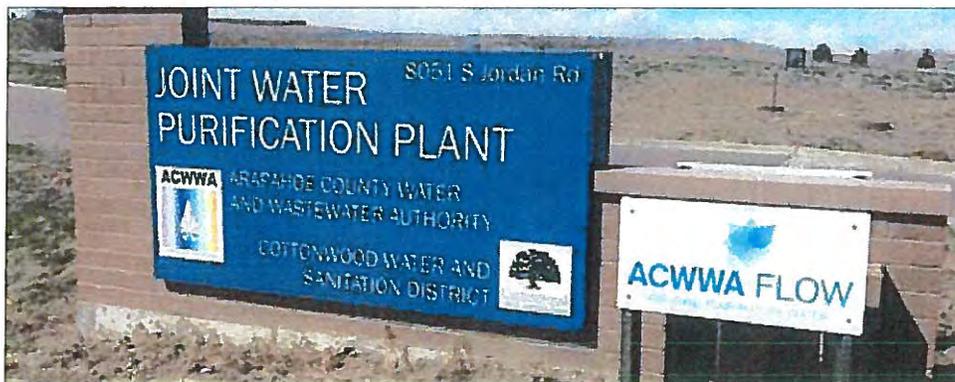
Thank you.

Kelly Conover  
 **Mulhern**  
**MRE, Inc.**  
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# Enhancing Water Quality

## ARAPAHOE COUNTY WATER AND WASTEWATER AUTHORITY AND COTTONWOOD WATER AND SANITATION DISTRICT



The Arapahoe County Water and Wastewater Authority (“ACWWA”) and the Cottonwood Water and Sanitation District (“Cottonwood”) are proposing to install a treatment system to remove selenium biologically from the reject water at the water treatment plant known as the Joint Water Purification Plant (“JWPP”), located at 8051 South Jordan Road (Figure 1).



Figure 1

Figure 2



The treatment system would be installed on 6 acres of land located directly west of the JWPP between Happy Canyon Creek and the Green Acres Tributary (Figure 2).

The project will undergo a typical land use application review by Arapahoe County. There will be a public process, including a hearing before the Arapahoe County Planning Commission. We anticipate presenting this proposal at meetings of the local homeowners’ and neighborhood associations.

## DESCRIPTION AND PURPOSE

The JWPP is a cooperative facility owned by ACWWA and Cottonwood. ACWWA and Cottonwood have valuable water rights in Cherry Creek that they both wish to fully utilize.

In order to provide customers with high quality water, ACWWA and Cottonwood designed and built an advanced technology filtration process at the JWPP called Reverse Osmosis, or “RO”, which is the technology commonly used for bottled water. The RO process produces a safe, high quality drinking water by filtering virtually everything from the water which ends up in reject water that is discharged back to the stream. In this case, the reject water was discharged to Windmill Creek near Dove Valley Park. In order to protect the environment, the Colorado Department of Public Health and Environment requires a discharge permit to monitor and limit constituents in this discharge. The concentrate from the JWPP exceeded the allowable level for one constituent, selenium. Selenium is limited to protect fish and other aquatic invertebrates in the stream.



*RO Treatment Equipment*

Because ACWWA and Cottonwood could not operate the RO filtration system without meeting the limit for selenium, the JWPP treatment process was converted to microfiltration in 2012 which eliminated the need to discharge reject water to the creek. Water treated by microfiltration meets the State of Colorado’s safe drinking water requirements, but the water quality is not nearly as good as that from RO treatment. Microfiltration leaves more dissolved solids in the water, which are minerals and other substances that contribute to water “hardness”. All water has dissolved solids, but at a certain concentration it becomes noticeable to many people and leaves a mineral deposit on water fixtures, glassware and dishwashers. There may also be an undesirable taste to the water. Because the JWPP must use microfiltration, neither ACWWA nor Cottonwood is able to supply the amount or quality of water that the partners envisioned from this plant.

## PROPOSED SOLUTION

In order to improve water quality, ACWWA and Cottonwood have been researching solutions that would allow substantial use of the RO process once again. For that to happen, the selenium in the reject water must be lowered to discharge to the stream. The challenge has been to find a method of selenium removal that works and is economically viable since selenium needs to be removed to the very low level of 4.6 parts per billion (ppb)!

A recent study completed by James Bays of the nationally and internationally recognized engineering firm, CH2M, proposes to remove selenium from the concentrate using natural biological treatment. The treatment system is made of materials commonly used in yard landscaping, wood chips, sawdust, hay, peat moss, and a small amount of horse manure, less than 5% of the total materials.

## PROPOSED SOLUTION CONT'D

These materials are layered together in excavated rectangular treatment basins, or “cells”, and are then covered under 18 inches of soil that will be seeded to grow with native vegetation. After installation, the only items visible will be some housings for the pump stations that move the flow between cells and manhole covers that provide access to underground tanks. The adjacent figure 3 shows a preliminary layout of the treatment cells.

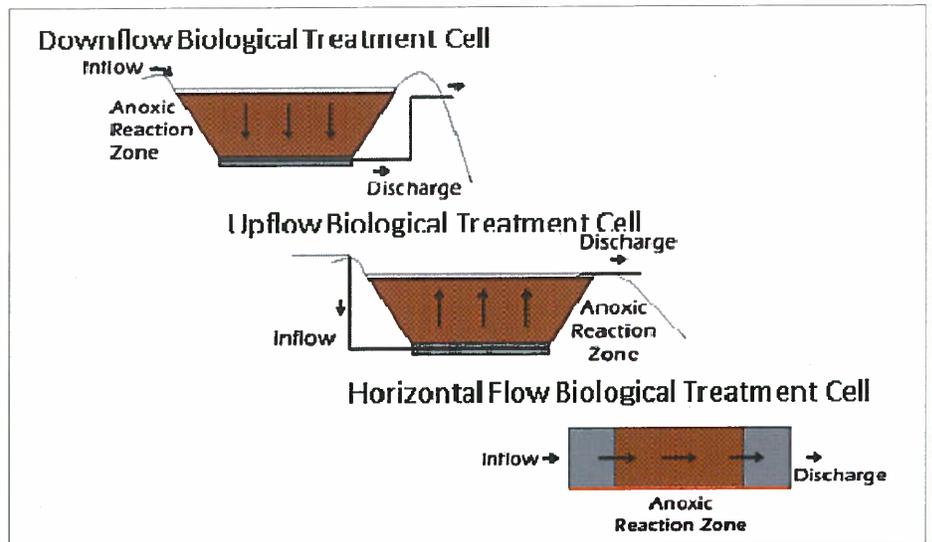


Figure 3

The RO concentrate would be discharged through the buried treatment beds. The treatment activity binds the selenium safely to the woody material in the cells and releases a small amount of selenium in gas vented to air. Previous projects have shown that this treatment system has lowered selenium to between 1 and 3 parts per billion (ppb) which would allow the discharge back to the stream. Small amounts of hydrogen sulfide gas (“rotten egg smell”) are produced by this process but are vented through biologic filters that neutralize the gas and eliminate its odor. The treatment cells pump to polishing cells that remove color and other undesirable byproducts of the process to clear the water for discharge to the stream.

Currently, a pilot unit (small scale biological treatment system in Figure 4) is operating at the JWPP. This pilot will confirm the predicted selenium removal and define the size and configuration of the treatment components. During this pilot study, we are also testing the venting and biological treatment technology to capture and neutralize any odors associated with this biological activity. This pilot study is to be complete by May of this year.

As the facility is being constructed, wood chips, sawdust, hay, peat moss and horse manure will be brought on site in a dry condition for placement in these treatment cells. During this time, the site may have the smell of a new landscaping project or like a neighboring horse barn. We expect that the actual hauling and placement of materials will take between 10 and 15 days.

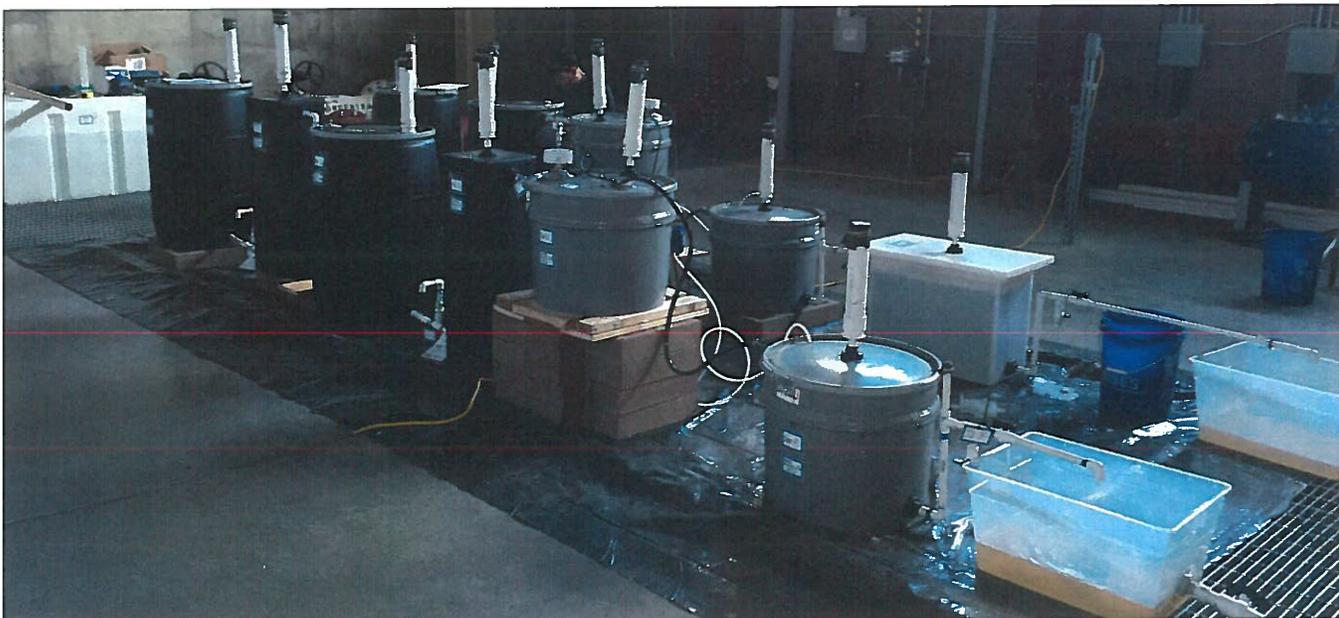


Figure 4

Since the biological treatment process depends on the natural carbon that leaches from the wood chips and organic material, the treatment beds will need to be replaced periodically. CH2M estimates that the biologic treatment beds will need to be replaced in a time frame of every 10 to 20 years. Hence, every 10 to 20 years, these materials will be excavated and hauled away in trucks to a landfill. During this time, some odor is expected to be produced that will be similar to that of muck in a wetland or marshy area. In order to minimize any smell, the material will be drained and dried, and control methods will be used to minimize any off-site odors. Some of the polishing cells will need to have material removed and replaced every few years, but these materials do not typically generate noticeable odors.

The figures below show an example of the typical method of construction of these cells. With this treatment in place, the RO process will be in operation again at the water treatment plant, hardness will be removed, and this important source of water supply for ACWWA and Cottonwood will be restored.



### Further Information

This project has received a substantial grant from the Colorado Water Conservation Board. Please visit our website, [www.cottonwoodwater.org](http://www.cottonwoodwater.org) for further information on the status of this project and please call our customer service phone number, 303-792-9509 with questions or comments.

*Cottonwood Water & Sanitation District  
2 Inverness Drive East #200 Englewood, CO 80112  
303-649-9857 phone*

*Arapahoe County Water & Wastewater Authority  
13031 E. Caley Ave., Centennial, CO 80111  
303-790-4830 phone*