

SUBMISSION OF WATER DEVELOPMENT PROJECTS

		FOR AGENCY USE ONLY
Through the development of scientific studies defining the aquifer within the Cedar Basin it has been documented that additional water resources will be necessary to sustain the growth and further development of the area. Without water for the future economic development will be impacted by the availability and cost of existing water supplies to accommodate only the growth capable within our current water budget. This template is being developed for the purpose of helping to document additional water supply sources that could be utilized to further alleviate the deficit of water that we currently have and provide water for the future residents of the valley. This form will be evaluated for completeness of content. Please ensure that the proposed project is fully defined and information to substantiate the claim is submitted for a complete evaluation.		Application Number
		Date Filed
Name and address of applicant (<i>include zip code</i>) Central Iron County Water Conservancy District 88 E. Fiddlers Canyon Rd. Suite A Cedar City, Utah 84721	Name, title, and address of authorized agent if different from item 1 (<i>include zip code</i>)	Telephone (area code)
		Applicant
		Authorized Agent

- A. Provide names, addresses, phone numbers and email addresses of those who filled out this form.
Kelly Crane, PE, District Engineer, Ensign Engineering and Land Surveying, 1870 North Main Street, Suite 104, Cedar City, Utah 84721, 435-865-1453
Paul Monroe, General Manager, CICWCD, 88 E. Fiddlers Canyon Rd. Suite A, Cedar City, Utah 84721, 435-865-9901

B. Project Description (Details are Vital)

1. Scope of Work and Project Description
2. Type of System or Facility
3. Quantity of Water Anticipated
4. Scientific Analysis of Water Resource
5. Uses (irrigation, culinary, industrial etc.)
6. Years Resource is Available
7. Constructability
8. Additional information to describe resource and availability (utilize additional sheets as necessary)

Scope of Work - Aquifer Recharge

This project focuses on utilizing flows from Coal Creek to recharge and recover the aquifer during and includes 3 different parts. This includes creating settling basins in Coal Creek Channel at higher elevations, constructing recharge pits and settling basins at the bottom of the mountain and near one of the many diversions, and lastly, utilizing the area near Quichipa Lake to create diversions and dikes to recharge and recover.

Type of System of Facility

The Central Iron County Water Conservancy District has been working closely with irrigation companies and Cedar City to determine the most effective ways to preserve water in Coal Creek. CICWCD decided that to best utilize water in Coal Creek, widening of the coal creek channel and detention ponds located higher in the channel near Right Hand Canyon would slow flows which would reduce sediment in the water and provide cleaner irrigation water and cleaner water to percolate into soil at recharge and recovery sites. Reducing sediment would provide better water for irrigation, which would minimize the amount of water drawn from the underground aquifer and would provide more water for recharge and recovery of the aquifer levels.

Creating recharge pits and detention pits is the next part. The best locations determined were near I-15 and Coal Creek Road. This location is the prime location for recharge due to its location next to large gravel pits and their location in the alluvial fan. Coal Creek Irrigation Company owns the property where these are to be located and is willing to use it as a recharge site.

The final part to recharge the aquifer would include constructing diversions and dikes east of Quichipa Lake to; this would allow the water to percolate and recharge the aquifer and help restore water levels to the well field utilized by Cedar City. This part would be constructed last and only used in times of flood years.

CICWCD has been working close with the Utah National Guard to help with construction of these sites. Estimates that were put together were done based on hiring contractors to come in and construct the diversions and pits but the National Guard offers to come and construct these for their summer camp and training. These pits will allow the irrigators to utilize clean water from Coal Creek rather than pumping and depleting the aquifer and the excess water will help with the recovery and recharge of the aquifer.

Quantity of Water Anticipated

CICWCD anticipates that an average of 3,000 acre-feet will be recharged annually and during high flow years more water could be made available. Flow in Coal Creek depends on the snowpack and rainfall of the year.

Scientific Analysis of Water Resource

The flows of Coal Creek vary from year to year. During high flow years there will be greater opportunity to recharge and provide cleaner water for the irrigation companies to use. In extremely high flow years when the irrigators and recharge pits are over capacity, the natural flow will take the excess water to Quichipa Lake. Once it reaches Quichipa Lake, the sediment can continue to settle before being pumped or diverted to recharge areas. Coal Creek flows from Cedar Mountain and is considered to be a young mountain. Water that flows down the mountain is loaded with sediments such as gravel, sand, and very fine clay. If this water is used for irrigation purposes or recharge purposes, the clay will seal off the ground and will not allow water to percolate to recharge and recover the aquifer.

Uses

The primary use for the water coming from Coal Creek is for agricultural purposes. CICWCD filed on excess flow water rights in 2006 that would

be used for recharge and recovery purposes. The use for the water in this project would primarily be cleaning water for irrigation purposes and for recharge and recovery purposes when the water rights for irrigation have been met.

Years Resource is Available

The water flows would be available annually. The water available for recharge would vary depending on quantity of water available each year.

Constructability

CICWCD has coordinated with the Utah National Guard to widen and construct the detention areas in the upper part of the channel as well as the detention and recharge areas near I-15. Preliminary designs have been completed by Ensign Engineering for all of the proposed parts. Existing material on site will be used to create the basins and diversions necessary to slow the flow.

C. Attach a map covering the area of development and location of proposed project.

1. Identify Property Ownership
2. Identify Potential Conflicts
3. Provide Details of the Area and Necessary Changes to the Area
See Attached Exhibits

D. Identify any Federal, State or Local Government Issues

1. Federal
 - a. Army Corp of Engineers
 - b. Bureau of Land Management
 - c. Fish and Wildlife
 - d. Forest Service
 - e. Other

Army Corp of Engineers will be included in the design of the detention ponds along Coal Creek. A waiver has been submitted to allow the construction to occur without having to do a delineation report for other creeks and tributaries that could be affected.

2. State
 - a. Department of Environmental Quality
 - b. Division of Water Rights
 - c. Other

CICWCD will coordinate with Division of Water Rights on stream alteration permits and dam safety issues. However, CICWCD does not anticipate constructing structures that will become a dam safety issue. The sedimentation pits will be largely be constructed below the current stream bed and CICWCD will file a R-69 Form to apply for a dam not requiring submission of formal plans.

3. Local
 - a. County
 - b. Municipal
 - c. Other

Cedar City owns the property that the higher retention basin is located. Coordination and agreements will need to be done to allow CICWCD and the National Guard to widen the channel in that area. Private land owners will be affected for the other parts of the project and coordination has begun with them.

E. Provide cost estimates of project

The estimated cost to widen coal creek and create settling basins is \$439,000. This estimate includes excavation of the channel and settling basins/detention ponds, box culvert construction, and other miscellaneous work. The estimated cost to drain water from Quichipa Lake is \$92,900, which includes 21,000 linear feet of 4" pipe, a 5 hp pump, and other valves and fittings.

F. Describe additional evaluated alternatives, if any

Click here to enter text.

G. Describe any environmental effects the proposed project would have on wildlife and/or plant species

Only plants in the immediate vicinity of the detention ponds will have to be removed for construction. Plants native to the area will be used to revegetate the detention areas that are disturbed after construction is complete.

H. Provide cultural resource evaluations of proposed area

Will request a waiver from the Army Corp of Engineers for a delineation report.

-
- I. Provide any additional information deemed necessary in the evaluation of this project to provide future sustainable water resources to the Cedar Basin

The aquifer levels are lowering, and any influence we can have on recharging the aquifer will help to ensure more water for the future. As water remains on the surface of the ground more and more water will be evaporated. Detention basins will create areas for more water to percolate and minimize the amount of water to be evaporated. Detention basins and channel widening will also provide areas for particles in the water to settle and create better water for irrigation. The areas discussed for the detention ponds are undeveloped so they would not have large community impacts on residential areas. The area where water from Lake Quichipa would be pumped to percolate is also undeveloped.



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SALT LAKE CITY
 Phone 801.255.0526

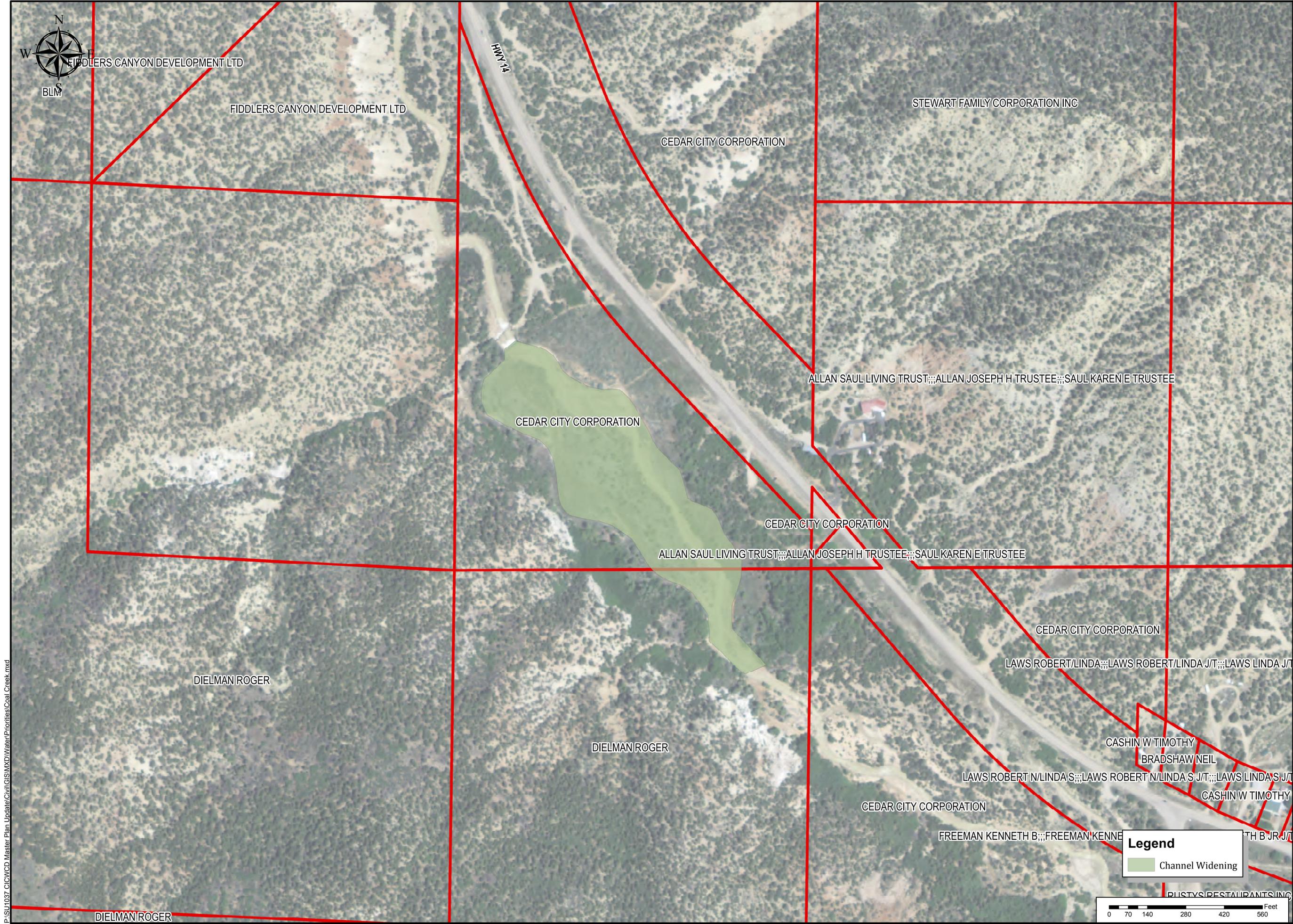
LAYTON
 Phone 801.547.1100

TOOELE
 Phone 435.843.3590

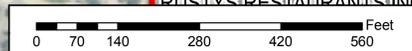
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CENTRAL IRON COUNTY WCD
PROJECT PRIORITIES
FEBRUARY 2014



Legend
 Channel Widening



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COAL CREEK CHANNEL

PROJECT NUMBER: 9/1/2013
 PRINT DATE:
 DRAWN BY: JFN
 CHECKED BY: CLN
 PROJECT MANAGER: CLN

C 5.0



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CENTRAL IRON COUNTY WCD
PROJECT PRIORITIES
FEBRUARY 2014

COAL CREEK CHANNEL

PROJECT NUMBER: 512013
 PRINT DATE: 2/12/2013
 DRAWN BY: JTN
 CHECKED BY: CLN
 PROJECT MANAGER: CLN

C 5.1

FIDDLERS CANYON DEVELOPMENT LTD

8 MILE L C

BLM

UTAH POWER & LIGHT CO

RUSTYS RESTAURANTS INC

ROUNDY THORA ESPLIN FAM TRUST;; ROUNDY THORA E TRUSTEE

HWY 14

FIDDLERS CANYON DEVELOPMENT LTD

SOUTHWEST WILDLIFE FOUNDATION

ROUNDY THORA ESPLIN FAM TRUST;; ROUNDY THORA E TRUSTEE

FIDDLERS CANYON DEVELOPMENT LTD

DETTAMANTI MITCHELL O/JANA J;; DETTAMANTI MITCHELL O/JANA J JT;; DETTAMANTI JANA J JT

BRADY LINDA MCCONNEL

Legend

 Channel Widening





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CENTRAL IRON COUNTY WCD
PROJECT PRIORITIES
FEBRUARY 2014

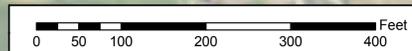
SETTLING AREAS

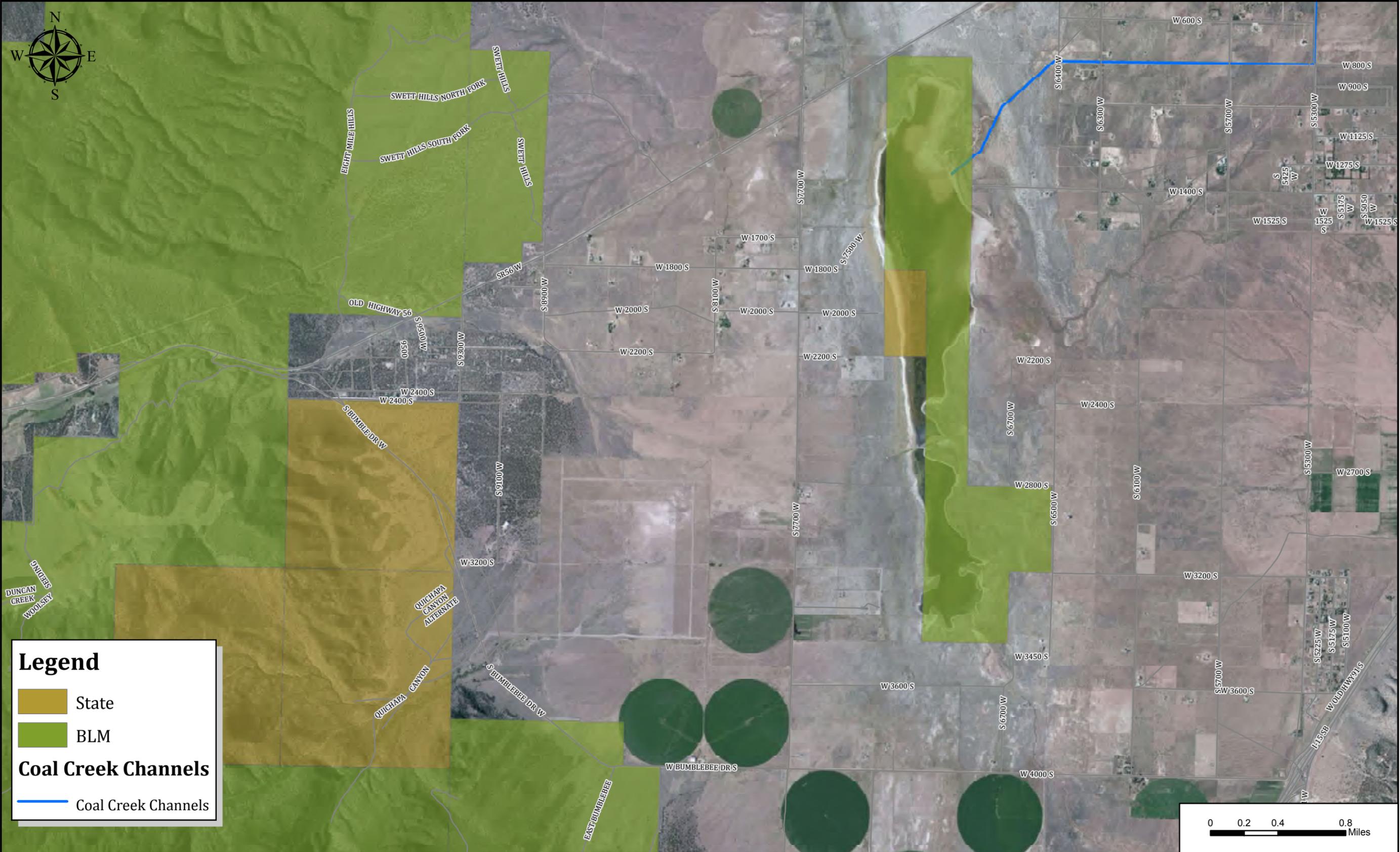
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 PRINT DATE: 9/2/2013
 DRAWN BY: JFN
 CHECKED BY: CLN
 PROJECT MANAGER:
 CLN

C 6.0



Legend
 Settling Area





Legend

- State
- BLM

Coal Creek Channels

- Coal Creek Channels



FILENAME: DATE: 4/9/2010

CENTRAL IRON COUNTY WATER CONSERVANCY DISTRICT
QUICHIPA LAKE OWNERSHIP MAP
 SUBMITTAL DATE: 2011

