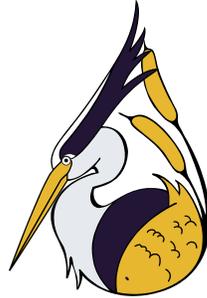


Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708

April 2011

FINAL REPORT

Grantee:



Inland Empire Waterkeeper
3741 Merced Drive, Unit F2
Riverside, CA 92503
(951) 689-6842

Garry Brown, Executive Director
Garry@coastkeeper.org
Rachael Hamilton, Project Manager
Rachael@iewaterkeeper.org

Project Number: PL05002
Agreement Number: 4600000576

Grant Name: Chino Creek Integrated Plan & Clean-Up Project

Reporting Period: July, 2009 through April, 2011

Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board. The contents of this document do not necessarily reflect the views and policies of the State Water Resources Control Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use. (Gov. Code, § 7550, 40 CFR § 31.20.)



THE 2009 WATERKEEPER TEAM

STAFF

Garry Brown, Executive Director
Autumn DeWoody, Programs Director
Rachael Hamilton, Project Manager
Eric Emerson, Field Technician

THE 2010 WATERKEEPER TEAM

STAFF

Garry Brown, Executive Director
Ray Hiemstra, Associate Director of Programs, OCCK
Autumn DeWoody, Programs Director
Rachael Hamilton, Project Manager
Colin Kelly, Staff Attorney, OCCK
Peter Pham, Media Coordinator, OCCK
Eric Emerson, Field Technician
Sabrina Kessler, Field Supervisor
Raul Gonzalez, Field Crew/Field Supervisor
Edward Torres, Field Crew
Brian Browne, Field Crew
Troy White, Field Crew
Thomas Carranza, Field Crew
Francisco Lopez, Field Crew
Michael Rodriguez, Field Crew
Roberto Alcala, Field Crew

THE 2011 WATERKEEPER TEAM

STAFF

Garry Brown, Executive Director
Ray Hiemstra, Associate Director of Programs, OCCK
Rachael Hamilton, Project Manager
Colin Kelly, Staff Attorney, OCCK
Raul Gonzalez, Field Supervisor
Michael Rodriguez, Field crew
Roberto Alcala, Field Crew

**OCCK: Orange County Coastkeeper staff*

NARRATIVE

Introduction

As a result of the Chino Creek Integrated Plan and Clean-Up Project (“Project”), Inland Empire Waterkeeper (“Waterkeeper”) implemented successful debris removal from the bed and bank of approximately three miles of targeted areas on Chino and Mill Creeks. From July 2009 through March 2011 Waterkeeper staff actively worked toward improving water quality in the Chino Basin by removing trash from Chino and Mill Creeks for the benefit of wildlife, the public, and downstream water consumers. The Project objectives for Waterkeeper were:

- To survey the targeted areas of Chino and Mill Creeks for information on access points, terrain, dumping locations, creek conditions, and other notable items relevant to conducting future debris removal
- To remove debris in the targeted areas of Chino and Mill Creeks by utilizing local volunteer groups
- To inventory removed debris in order to provide information to target future source control strategies

Over the length of the grant period, Waterkeeper increased their knowledge on the surrounding area due to surveying and data collection, on-the-ground clean-up restoration work, and inventory of the removed debris. Furthermore, community involvement and outreach were substantially increased; contributing to new partnerships and the strengthening of old relationships. In addition, with the aid of Project funding Waterkeeper was able to provide employment opportunities to nine local residents over the course of the Project. Great success and complex challenges were both a part of the Project for Waterkeeper as each objective was accomplished. The final outcomes were immediate visible improvements and long-term water quality progress within Chino and Mill Creeks.

Surveying

Waterkeeper staff embarked upon the Project in July 2009 by commencing concrete proposal development and participating in the process that resulted in the money being awarded. On October 23, 2009 Waterkeeper officially broke ground on the Project by hosting our first clean-up event at Mill Creek; targeting the area from the Hellman Avenue bridge to approximately 100 feet downstream. This first trash removal effort proved deceptively challenging, thanks to the malodorous stench, 12-24 inches of muck, and difficulties in coordinating with Waste Management for disposal services. The day’s events, however, were helpful in planning our future approach with regards to surveying objectives and clean-up event planning.

After extensive discussions with San Bernardino County Regional Parks Department, the Army Corps of Engineers,



Waterkeeper Project Signage along Mill Creek

and San Bernardino County Flood Control, Waterkeeper obtained permission to conduct activities for the Project and thus, the survey teams were dispatched to the creeks in December 2009. Concurrently, Waterkeeper staff prepared field notebooks and finalized mapping with our sub-contractor, Stantec, in order to assist with the initial surveying of the areas. The Project scope included the bed and bank of Chino Creek from Euclid Avenue to Big League Dreams Sports Park and Mill Creek from Hellman Avenue to McCarty Road. The final mapping shows each targeted area of creek broken up into 300 foot “grids” designated with coordinating points of latitude and longitude. This “grid” system facilitated an easy way in which to accurately track our progress during surveying and trash removal efforts.

From December 2009 through March 2010, Waterkeeper organized small volunteer teams to walk along Chino and Mill Creeks and document access points, terrain, dumping locations, creek conditions, and other notable items to help provide reconnaissance for future planning of the debris removal process. Under the supervision of Waterkeeper staff, nine core volunteers regularly assisted with the field work, amounting to a total of 93 donated hours for this phase of the Project. Seasonal rainfall resulting in increased water flow, combined with rigorous terrain, dense vegetation, and a general lack of access to the creeks made surveying efforts challenging. However, Waterkeeper’s objective was fully met on March 26, 2010 as the last grid was documented.

The results of the surveying confirmed that massive amounts of trash were present within Chino and Mill Creeks. Lightweight debris such as plastic bags and food wrappers were found accumulated and entwined on tree branches and brush, while heavier and larger items, such as tires and scrap metal were generally found lying within the channel bed. Illegal dumping was also a common issue along open spaces adjacent to the creeks, littering the surrounding landscape with large piles of discarded items, such as furniture, appliances, tires and construction debris. The width of the creeks bank-to-bank varied roughly from 40 to 100 feet. Both Chino and Mill Creek experienced constant water flow with rates varying significantly depending on precipitation. The depth of the creeks ranged on average from one to eight feet deep. Hellman Avenue and Chino-Corona Road were used as major access points to the northern portion of Mill Creek. Limited access to the southern half of Mill Creek was provided by the unpaved McCarty Road near Prado Airpark. The northern portion of Chino Creek, from Pine Avenue to Big League Dreams Sports Park had limited access from El Prado Road, which runs parallel to the creek. The southern half of Chino Creek, from Euclid Avenue to Pine Avenue was accessible through the El Prado Golf Course property. Access by foot was required for the majority of the Project area. However, extremely dense vegetation coupled with



Image of Chino Creek during surveying efforts

steep embankments made contact with the actual waters' edge unattainable in many stretches. Generally speaking, we found the easiest way in which to access the most remote stretches was to simply wade through the center line of the creek. While much of the terrain surrounding both Chino and Mill Creeks was rigorous, there were also some stretches of creek with relatively flat, inviting sandy banks. Overall, we found Chino and Mill Creeks supported a typical riparian community of cottonwoods, willows, mulefat, reeds, and wild rose. Non-native plant species such as arrundo, castor bean, eucalyptus, palms, and tree tobacco were also identified in the area. In the outer plant communities surrounding the creeks, we found numerous species including sycamores, sage, cacti, sunflowers, broom, thistles, stinging nettle, poison oak, California poppy, palm trees, wild gourds, buckwheat, and a multitude of grasses. The majority of wildlife observed at Chino and Mill Creeks consisted of a diverse collection of birds including: the endangered Least Bell's Vireo, Great Egrets, Great Blue Herons, Red-tailed Hawks, vultures, hummingbirds and a variety of water birds, such as ducks, stilts, and king fishers. The Waterkeeper survey teams also noted rabbits, squirrels, lizards, snakes, frogs, fish and coyotes. In addition to wildlife, people were also observed using the creeks for fishing and other passive recreational opportunities. The public was commonly seen fishing near Chino Corona Road at Mill Creek and at Pine Avenue on Chino Creek. Surrounding land uses also included a paintball course, a Golf course, shooting ranges, a wastewater treatment plant, dairy operations, a mulching plant, and some private residences.

Community Clean-Up Efforts

During the surveying efforts, Waterkeeper staff began preparation for conducting the debris removal process. Extensive time was spent on volunteer outreach, logistical planning, and deliberations with the Army Corps of Engineers and San Bernardino County Regional Parks Department regarding considerations for the endangered Least Bell's Vireo. Waterkeeper hosted the first large-scale community clean-up event on May 1 and May 2, 2010 at Mill Creek. Partnered with the nonprofit, Big Sunday, we had 100 volunteers participate over the weekend and removed approximately 2 tons of trash from a 900 foot section of Mill Creek.



Volunteer check-in for Big Sunday clean-up at Mill Creek

In the following months, Waterkeeper conducted volunteer outreach to other local nonprofit organizations, schools, businesses, city officials, and to our already established volunteer base. Our outreach consisted of the following: creating fliers and posting them on school campuses and distributing them to community groups, agencies, and businesses; including community clean-up information in Waterkeeper's monthly e-newsletters; consistently updating Waterkeeper's Web site and Facebook page; and posting volunteer opportunities through the Hands-on-Inland Empire Web site. To further our public participation and marketing, Waterkeeper also had an article about the Project featured in the 2010 issue of "Coastkeeper Magazine." Furthermore, Waterkeeper staff presented information to

the cities of Chino, Chino Hills, Ontario and at San Bernardino County’s monthly meeting of NPDES coordinators and to IEUA’s “First Thursday” meeting on how all of the stakeholders could participate. In the end, Waterkeeper successfully organized monthly community clean-up events from May 2010 through February 2011, with exceptions in October, November, December, and February due to inclement weather and consequent safety concerns, in addition to a lack of volunteer interest during those months. In addition, we hosted a private clean-up event at the request of local Bank of America associates in July 2010. The September 2010 clean-up was counted as part of the larger Annual Inner Coastal and Watershed Clean-Up event, organized by Trails-4-All, in coordination with the Annual California Coastal Clean-Up Day. Ultimately, 202 community members volunteered for the clean-up events, donating a total of approximately 808 hours for this phase of the Project. Volunteers were comprised of local university students from the University of California, Riverside, California State Polytechnic University, Pomona, The University of Redlands, California State University, San Bernardino and Riverside Community College’s Summer Work Experience Program (SWEP). Many of our volunteers were also local professionals representing businesses such as Bank of America, agencies such as Inland Empire Utilities Agency, and organizations such as the Santa Ana Watershed Association. In addition, we also had volunteers from various youth groups, including Boy Scouts and the California Conservation Corps. And finally, many of the volunteers consisted of average community members and residents looking for ways in which to get involved.



Volunteers pull out plastic debris from Mill Creek

up was counted as part of the larger Annual Inner Coastal and Watershed Clean-Up event, organized by Trails-4-All, in coordination with the Annual California Coastal Clean-Up Day. Ultimately, 202 community members volunteered for the clean-up events, donating a total of approximately 808 hours for this phase of the Project. Volunteers were comprised of local university students from the University of California, Riverside, California State Polytechnic University, Pomona, The University of Redlands, California State University, San Bernardino and Riverside Community College’s Summer Work Experience Program (SWEP). Many of our volunteers were also local professionals representing businesses such as Bank of America, agencies such as Inland Empire Utilities Agency, and organizations such as the Santa Ana Watershed Association. In addition, we also had volunteers from various youth groups, including Boy Scouts and the California Conservation Corps. And finally, many of the volunteers consisted of average community members and residents looking for ways in which to get involved.

Throughout the course of the public clean-up events, Waterkeeper developed deeper community partnerships with organizations, businesses, and agencies helping to support our efforts. During the Project we partnered with Big Sunday, Trails4All, the Santa Ana Watershed Association, Inland Empire Utilities Agency, Bank of America, Stater Brothers, Union Bank, Wal-Mart, and Albertsons. These local organizations provided additional volunteer, supply and/or financial support.



Bank of America associates volunteer at Chino Creek

Debris Removal Process

In addition to our volunteer-based events, Waterkeeper broadened the Project strategy to include a paid part-time field crew staff in order to successfully meet objectives within the Project timeframe. Thus, in June 2010 Waterkeeper hired four people (three crew members plus one supervisor) to work 20 hours each per week. Combined with efforts from the monthly community clean-ups, the field crew made progress at an average rate of one grid per week. From June 2010 through September 2010, the field crew removed debris from Mill Creek. The field crew commenced work on Chino Creek at the end of September 2010 and finished in February 2011. From June 2010 through February 2011, Waterkeeper provided employment opportunities for a total of nine people working as field crew staff.

The field crew was equipped with boots, chest waders, gloves, trash-grabbers, trash bags, GPS units, two-way radios, and field documents to facilitate removal and inventory of the debris. Inflatable rafts were also used when appropriate to float the removed lightweight trash as the crew progressed down the creek to various access points. Extendable tree pruning tools were used to grab plastic bags and other items entangled at otherwise unreachable heights in the surrounding vegetation. Work took place directly in the creek, as well as along the banks. The field crew successfully maneuvered and removed debris from the entire Project area, with the exception of the western banks of Grids 1-6 on Chino Creek. Because the water was exceptionally deep in this area with depths exceeding six feet, staff was unable to safely enter the centerline of creek and work was initially limited to cleaning from the eastern banks located on the El Prado Golf Course property. Plans were effectively made to enter the western side of Chino Creek through the Prado Olympic Shooting Park property. Unfortunately, due to circumstances beyond our control this route became inaccessible as well due to extensive flooding at the Shooting Park thanks to record rainfall that took place in December 2010.

In addition to the field crew, Waterkeeper explored options with the California Conservation Corps, the Chino Women's Prison, the Sheriff's Department, and the Fire Camp at the Chino Men's Prison (also known as CAL FIRE) as potential sources of labor for hire to perform trash removal services. Waterkeeper pursued a formal contract with CAL FIRE and on October 25, 2010 the men began work. The CAL FIRE crew was instrumental in quickly and efficiently creating trails to create access and facilitate debris removal in the heavily vegetated areas of Chino Creek where we were previously unable to enter from Pine Avenue to Big League Dreams Sports Park. These newly formed trails enabled future community clean-ups to take



Typical amount of debris removed in a 4- hour clean-up event

place in the area. In addition to creating trails, the CAL FIRE crew also assisted with debris removal work in the bed and bank of Chino Creek as we provided the crew with waders, gloves, and trash bags. We partnered with CAL FIRE for a total of eleven days over October and November 2010, engaging an average of two Fire Captains and 20 men each day. This partnership was extremely worthwhile in assisting Waterkeeper with meeting the project objectives and deadline.

Outcomes



Filling a 40 cubic yard dumpster

and volunteers did basic inventory on trash found in the creeks during the clean-up process. While the ubiquitous plastic bag was undoubtedly the most prevalent trash item removed from the creeks, other common items we found included: food wrappers, plastic bottles, aluminum cans, shopping carts, tires, plastic buckets, clothing, blankets, children's toys, car parts, and miscellaneous and unidentifiable scraps of plastic and metal. Other atypical items removed from the creeks included: street signs, wallets (complete with drivers license and credit cards), construction cones, plywood, plastic pipes, lawn chairs, storage bins, a hubcap, tractor tires, a mattress, old sofas, a horse trough, construction material (concrete rubble), tarps, a washing machine, vehicles, aerosol paint cans, paintball debris, golf balls, shoes, a dishwasher, corrugated culvert pipe, tennis balls, soccer balls, a rifle, a piano keyboard, a computer screen, and an antique camera. On a cursory level, our inventory showed that of the removed trash the most prevalent items found were plastic in origin (bags, bottles, etc.) with metal items coming in second (car parts, shopping carts, scrap metal, etc). A small amount of items were not removed by Waterkeeper staff or volunteers, including two identified vehicles in Chino Creek and a handful of shopping carts rooted deep within the channel bed.

At the completion of the Project, Waterkeeper staff and volunteers removed a total of roughly 14.7 tons of trash from the Project areas in Chino and Mill Creeks. Waterkeeper coordinated with Waste Management to have a combination of 40-cubic yard and three-cubic yard dumpsters placed strategically at Chino-Corona Road for work conducted at Mill Creek and at El Prado Road for work conducted at Chino Creek. Hazardous wastes, such as tires, were separated by Waterkeeper staff and taken to proper disposal sites and did not count in the final tonnage removed. Waterkeeper staff



Typical shopping cart removed from Chino Creek

These items would require heavy equipment in order to be removed, and further disruption to the natural habitat would have undoubtedly occurred in the removal process. Both the use of heavy equipment and the resulting disturbance to the creek environment were not permissible under our Project permit with San Bernardino County Regional Parks.

By engaging local volunteers, an additional outcome of the Project included increased support and interest in the long-term health of the creeks. Waterkeeper's goal was to inspire the local community in becoming caretakers of the creeks once our project was completed. The majority of volunteers that participated in the surveying and/or clean-up efforts consistently stated that they were previously unaware of the pure existence of the creeks and were appalled at the level of pollution found within the waterways. Several volunteers returned to multiple clean-ups, bringing friends and family to the next event in order to raise awareness on the situation. Moreover, many volunteers stated their new-found commitment to taking positive environmental action after participating in the clean-up events. Stated examples of commitment from volunteers included using reusable shopping bags to keep from contributing to the trash problem and attending city council meetings to speak out for the protection of the creeks.



Image of Chino Creek after clean-up efforts

As a result of the Chino Creek Integrated Plan and Clean-Up Project, Waterkeeper made great strides in improving the quality of Chino and Mill Creeks. The immediate visible improvements to the environment were exceptionally rewarding. Our biggest challenge during the Project, however, was dealing with rain which brought hazardous work

conditions as well as more trash back into the creeks. With record rainfall during December 2010, our debris removal efforts were dramatically impacted. On those days where the water was deemed too deep/fast to enter, either work was cancelled, or the field crew worked solely on the banks of the creek. The heavy rains also brought large amounts of trash back into the creeks. Many areas that were previously free of debris, thanks to Waterkeeper's efforts, were once again seen with plastic bags hanging from tree branches and miscellaneous items collected along the channel bed. During the months of January and February 2011, Waterkeeper tackled this challenge of reoccurring trash within our formerly cleaned areas. Waterkeeper staff and volunteers focused final clean-up efforts on Chino Creek along El Prado Road in grids #19-12, thanks to trails still intact from the CAL FIRE efforts. Despite the frustrating return of trash, Chino and Mill Creeks still showed improvement at the conclusion of the Project. Waterkeeper, however, recognizes the vital need for a more long-term solution that addresses the root of the problem.

Project Staff

The Project was managed primarily by Waterkeeper Programs Director, Autumn DeWoody and Project Manager, Rachael Hamilton under the direction of Executive Director, Garry Brown. Ms. DeWoody and Ms. Hamilton carried out all Project objectives with support from our field technician Eric Emerson from July 2009 through July 2010, and our field supervisor, Raul Gonzalez, from June 2010 through February 2011. The evolving field crew included Sabrina Kessler, Edward Torres, Brian Browne, Troy White, Thomas Carranza, Francisco Lopez, Michael Rodriguez, and Roberto Alcala. Waterkeeper staff also received assistance from our partner organization, Orange County Coastkeeper (OCCK): Associate Director of Programs, Ray Hiemstra, assisted with supervising the field crew; Media Coordinator, Peter Pham, helped with Web site development and media outreach; Staff Attorney, Colin Kelly, offered expertise on contract, legal, and policy issues. Ms. DeWoody began maternity leave on September 1, 2010 and Ms. Hamilton managed the Project for the remaining duration of the contract.

Next Phase

With on-the-ground surveying, debris removal, and inventory work concluded under this Project, Waterkeeper is now equipped to take the next steps in order to prevent the continued pollution of Chino and Mill Creeks. Waterkeeper staff is currently searching for funds to implement a public policy phase which will raise awareness about the chronic trash issue within the City of Chino and surrounding cities in the watershed. We will work toward implementation of upstream prevention measures; thus addressing the root of the problem and contributing to a long-term solution to keep trash and pollutants out of these critical waterways.

FINANCIAL

Table 1 provides the expenses for Waterkeeper incurred from July, 2009 through March, 2011.

Table 1: Waterkeeper Project Expenses

	Expenses
Salaries	\$68,176.43
Mileage	\$3,220.21
Project supplies/expenses*	\$5,792.19
Consultant fees/Contractual Services	\$8,271.29
<i>Mapping (Stantec)</i>	\$3,337.50
<i>CAL FIRE</i>	\$2,436.72
<i>Waste Management</i>	\$2,497.07
Overhead**	\$40,192.88
TOTAL	\$125,653

**Project supplies/expenses included: debris removal tools (boots, waders, trash bags, gloves, trash grabbers, hard hats, safety vests, etc.), volunteer supplies for community clean-ups (water, gloves, EZ-UP, portable toilet rentals, etc.), office supplies (paper, postage, printer cartridges, etc.), tire disposal costs, camera, printing costs for flyers, padlocks for gate access, etc.*

***Overhead included: monthly rent, utilities, phone, internet, and administration management*

Many volunteers gave their time toward the Project. Waterkeeper maintained a core group of nine volunteers for the survey phase of the Project, donating a total of 93 hours. Waterkeeper received help from 202 volunteers for clean-up events, donating a total of 808 hours. In sum, we estimate a total of 901 volunteer hours. The dollar value of a volunteer hour for California in 2009 was \$23.42. Thus, **\$21,101.42** was donated to the project from volunteers.

TIMELINE

Table 2 provides a timeline overview of the major tasks Waterkeeper completed during the Project.

Table 2: Timeline of Project tasks

Time Period	Task Description
July 2009 – Oct 2009	Proposal development initiated
Oct 2009 – Nov 2009	Project commenced with Mill Creek clean-up event at Hellman Bridge Permitting discussions with San Bernardino County Permitting discussions with Army Corps of Engineers Permitting discussions with San Bernardino County Flood Control Mapping with subcontractor, Stantec, initiated
Dec 2009 – March 2010	Surveyed Chino & Mill Creeks with Waterkeeper staff and volunteer groups Began planning large scale community clean-up for spring 2010
April 2010 – May 2010	Volunteer outreach Coordinated to ensure protection of Least Bell’s Vireo Clean-up planning
May 2010	Hosted 1 st large volunteer clean-up at Mill Creek Volunteer outreach
June 2010	Hosted one clean-up at Mill Creek with community volunteers Hired field crew to conduct debris removal Volunteer outreach
July 2010	Hosted one clean-up with Bank of America employees at Chino Creek Hosted one clean-up at Mill Creek with community volunteers Contracted with Waste Management to secure long-term 40 yd dumpster Field crew continued work on Mill Creek Volunteer outreach
Aug 2010	Hosted one clean-up at Mill Creek with community volunteers Field crew continued work on Mill Creek Volunteer outreach
Sept 2010	Hosted one clean-up at Mill Creek with community volunteers Field crew finished debris removal work on Mill Creek Field crew commenced debris removal work on Chino Creek
Oct 2010	Field crew continued work on Chino Creek

	Trail/debris removal work with subcontractor, CAL FIRE, began on Chino Creek
Nov 2010	Completed work with CAL FIRE Field crew continued work at Chino Creek
Dec 2010	Field crew continued work at Chino Creek Volunteer outreach
Jan 2011	Hosted one clean-up at Chino Creek with community volunteers Field crew continued work at Chino Creek Volunteer outreach
Feb 2011	Clean-up cancelled due to rain Contract finished with Waste Management Field crew finished work on Chino Creek
March -April 2011	Final invoicing and reporting

OTHER ITEMS

The following additional items are enclosed in hard copy and on CD (**unless otherwise noted*).

1. Chino and Mill Creek mapping (prepared by Stantec)
2. Example survey form
3. Example inventory form
4. Pictures from Chino & Mill Creek surveying, field work, and clean-up events (**not in hard copy*)

