

*Presented to: Bureau of Reclamation*

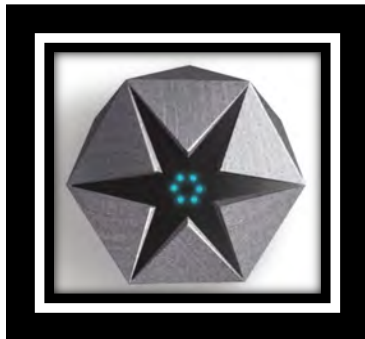


City of Corona  
Department of Water & Power

2016

# Centralized Irrigation Controllers for Targeted District Schools Final Project Report

Agreement# R12AP35340



*Presented by:*

City of Corona  
Department of Water & Power  
755 Public Safety Way  
Corona, CA 92880

March 30, 2016

# Final Progress Report

---

## Table of Contents

	Page
Cover Letter and Report Approvals.....	3
1. Recipient Number.....	4
2. Final Funding Information.....	4
3. One Paragraph Project Summary.....	5
4. Final Project Description.....	5
5. Accomplishment of Project Goals.....	7
6. Discussion of Amount of Water Conserved, Marketed or Better Managed.....	8
7. Discussion of Amount of Renewable Energy Added.....	11
8. Description of any Collaboration, Stakeholder Involvement or the Formation of Partnerships.....	11
9. Pertinent Issues Regarding the Project.....	11
10. Feedback to Reclamation regarding the WaterSMART Program.....	12
11. Attachments: .....	13
A – Map of Project Area	
B – Total Expenditures	
C – SF425 Federal Financial Report	
D – Project Schedule, Original/Revised/Actual	
E – Corona City Council and Corona Utility Authority Action	
F – Resolution	
G – Release of Claims	
H – Photographs	
I – Preliminary Water Data (if applicable)	
J – Product Data Specification Sheet(s), not available	
K – Water Conservation Field Services Program Project Benefits	



City of Corona  
Department of Water and Power  
*"Protecting Public Health"*

Office: 951.736.2234  
Fax: 951.735.3786

755 Public Safety Way  
Corona, CA 92880 – [www.discovercorona.com](http://www.discovercorona.com)

March 28, 2016

U.S. Department of the Interior  
Bureau of Reclamation  
Attn: Debra Whitney  
27708 Jefferson Avenue, Suite 202  
Temecula CA 92590

**Subject: Final Project Report (Closeout) for Agreement# R12AP35340,  
Centralized Irrigation Controllers for Targeted District Schools**

Dear Ms. Whitney:

The City of Corona Department of Water & Power (DWP) is proud to present the final project closeout report for Agreement# R12AP35340 Centralized Irrigation Controllers for Targeted District Schools in the Corona-Norco Unified School District or CNUSD (Project). The original agreement was executed on 8/31/12. Upon the last approved modification# 005, the Project completion date was extended to 12/31/15.

The agreement's project budget was \$100,062.64 with a 50% fund match. The Project's final expenditures totaled \$100,866.26. After communication with our Bureau of Reclamation's Grant Management Specialist, an internal budget adjustment to the amount of the Grant share was reduced to \$43,584.85 (see Attachment B) to deduct costs associated with the purchase and installation of a sixth controller. Conflicting information was found under Section 3 Background and Objectives of the executed agreement which indicated the identification of five school sites but the budget showed a total of six school sites. A balance of \$6,415.15 remains under the Federal Share to be de-obligated for associated costs that would relate to a sixth school site.

Should you have any questions about this project, please contact Jacqueline Zukeran at (951) 739-4983 or by e-mail at [Jacqueline.zukeran@ci.corona.ca.us](mailto:Jacqueline.zukeran@ci.corona.ca.us).

Best regards,

  
Jonathan Daly  
General Manager

# Final Progress Report

## 1. Recipient Information

<b>Agreement Number:</b>	R12AP35340
<b>Project Name:</b>	Centralized Irrigation Controllers for Targeted District Schools
<b>Grant Administrator/Contact:</b>	Debra Whitney
	Bureau of Reclamation
	27708 Jefferson Avenue
	Suite 202
	Temecula, CA 92590
<a href="mailto:dwhitney@usbr.gov">dwhitney@usbr.gov</a>	or (951) 695-5310
<b>Grantee/Recipient:</b>	City of Corona – Department of Water & Power
<b>Grant Recipient Project Manager:</b>	Jacqueline Zukeran
<b>Phone:</b>	(951) 739-4983
<b>Email:</b>	Jacqueline.Zukeran@ci.corona.ca.us
<b>Date of Award:</b>	August 31, 2012
<b>Project Completion Date:</b>	December 31, 2015
	Corona Tracking# 47250000

## 2. Final Funding Information

Funding Amount	
<b>Non-Federal Entities</b>	
1) City of Corona	57,281.41
<b>Non-Federal Subtotal:</b>	<b>57,281.41</b>
<b>Other Federal Entities</b>	
1)	N/A
<b>Other Federal Subtotal:</b>	<b>\$0.00</b>
<b>Reclamation Funding</b>	
<b>Requested Reclamation Funding:</b>	<b>43,584.85</b>
<b>Total Project Funding:</b>	<b>\$100,866.26</b>

# Final Progress Report

## 3. One Paragraph Project Summary:

The City of Corona Department of Water & Power (DWP) Project included the installation and procurement of centralized weather-based irrigation controllers at five separate elementary school sites selected in the Corona-Norco Unified School District (CNUSD). Installation consisted of state-of-the art, wireless weather-based centralized controllers (also called evapotranspiration or “ET” controllers) to create a centralized network throughout an existing irrigation system. The upgrade to real-time ET controllers allows District staff to access the irrigation system from their personal computers and stop, start, adjust or even alert staff immediately when unusual increases in water flow occur. The ET controllers will automatically shut down the affected line until school (or District) staff can respond to save water, time, and resources. CNUSD is one of the City’s largest water customers; reducing their water consumption will help towards the City achieving its water conservation goals.

## 4. Final Project Description

*Briefly describe components of the project and the work completed, including each element of the scope of work and the work completed at each stage of the project. Please include maps, sketches, and/or drawing of the features of the completed project, as appropriate. In addition, please describe any changes in the project scope.*

The following tasks were completed during the project:

Task No.	High Level Activities/Milestones	Work Completed at each Stage of the Project
Tasks		
1	School Site Selection	Originally the project planned to include the top water using schools (Franklin, Jefferson, Orange, Stallings, and McKinley Elementary Schools). However, many of these schools were far from the District's Maintenance Headquarters, which would be a financial burden to the District to maintain. Through additional analysis and landscape audit reports by Water Wise Consulting, the schools selected were Jefferson, Lincoln, Parkridge, Vicentia, and Washington Elementary Schools. different schools were selected. Some of these schools use less water than the initial, proposed five; however, it was determined that these sites would provide additional benefits including easier maintenance management.
2	Develop RFP	Corona DWP staff prepared a request for proposal document.
3	Issue RFP	There were no bids received from the original request for proposal (RFP) the City released. Therefore, the City had to prepare a modified RFP and release a new version. This delayed the project by a few months. The bids received from

## Final Progress Report

Task No.	High Level Activities/Milestones	Work Completed at each Stage of the Project
<b>Tasks</b>		
		the second RFP released were far in excess of the project budget. As a result of the high bids, the City worked with CNUSD to identify work that could be done by CNUSD personnel, which in turn was a cost savings to the project. To that end, the CNUSD agreed to install the irrigation controllers and be reimbursed for their time.
4	Notice to Proceed	A notice to proceed was issued to the successful contractor.
5	Prepare Draft and Final Work Plan	The successful contractor prepared a draft and final work plan and it was approved by Corona DWP staff managing this project.
6	Procure and Install Centralized ET Controllers at selected schools	The ET Water Generation 4 system was procured and installed per manufacturer's specifications.
7	Conduct Performance Testing	Performance testing was conducted with City of Corona DWP staff and CNUSD staff, jointly.
8	Submit Final Report	This final report is submitted to meet this requirement.

# Final Progress Report

---

## 5. Accomplishment of Project Goals:

*Describe the goals and objectives of the project and whether each of these was met. Where appropriate, state the reasons why goals and objectives were not met, and describe any problems or delays encountered in completing the project. Please include whether or not the project was completed within cost.*

### Goals and objectives of the Project:

Goal: The primary goal was to reduce the District's water consumption to help the City reach its water conservation goals by purchasing and installing centralized evapotranspiration controllers at five elementary schools and creating a centralized network throughout an existing irrigation system.

Goal Met: The water usage at the school sites has decreased significantly as a result of the Governor's State mandated water use reduction standards. The City of Corona is mandated to reduce water production by 28%. As a result, the District has been diligent in helping the City reach its target and has decreased irrigation usage beyond the estimated reduction expected from the installation of the ET Water Controllers. In many cases CNUSD turned off irrigation at schools which would normally receive some watering based on ET weather data. If the drought conditions and further restrictions occur, it will be difficult to measure the water savings achieved specifically from the installation of the ET Water Controllers and not from efforts made to reach the State mandates.

Goal: Secondary was to identify five elementary schools that would incur the most water savings by implementing a system of centralized ET irrigation controllers using the criteria established in the scope of work.

Goal Met: Originally the project planned to include the top water using schools that were not close to the CNUSD Maintenance headquarters. Through additional analysis and landscape audit reports by Water Wise Consulting, different schools were selected. Some of the schools use less water, however it was determined that these sites would provide additional benefits including easier maintenance management. Some of the top schools required could easily be upgraded to the ET Water. Therefore, CNUSD utilized the Metropolitan Water District's SoCal Water Smart rebate program to convert these sites.

# Final Progress Report

## 6. Discussion of Amount of Water Conserved, Marketed or Better Managed:

*In responding to the questions set forth below, Recipients should rely on the best data or information available. Actual field measurements should be used whenever possible (e.g., baseline data or post-project data derived from measuring devices, diversion records, seepage tests, etc.) Where actual field measurements are not available, water savings (or amounts marketed or better managed) may be estimated based on studies, other similar improvement projects, or anecdotal evidence.*

### A. Recipient's total water supply (average, annual, available water supply in acre-feet per year):

The 2015 calendar year total water supply was approximately 29,198.12 acre-feet per year (AFY); comparably, the last three-year average was 32,746.23 AF (from 2013-15). Interestingly, ten years ago, in 2005, the City's total available water supply was 79,056 AFY.

Year	Water Supply in Acre Feet (AF)
2013	34,496.31
2014	34,544.27
2015	29,198.12
Average	32,746.23

Additionally, like CNUSD, Corona's other customers have also made improvements with reduced usage under Stage 2 of Corona's Water Conservation Ordinance since the original grant application in 2012. After recent additional State restrictions on usage, Corona urgently moved to Stage 3 in April 2015. This may have contributed in the reduced overall usage during this project for 2015 year-end total water supply during momentum of the conservation and drought news.

### B. Amount of water conserved, marketed or better managed as a result of the project (in acre-feet per year):

The Project is estimated to save 20 AF/year from the installation five (5) centralized ET controllers, with a lifetime savings of 400 AF based on a 20-year lifetime.

### C. Describe how the amounts stated in response to 6.B were calculated or estimated:

In responding to this question, please address (1) – (3) below.

**(1) Describe the information/data being relied on to calculate/estimate the project benefits. State how that data/information was obtained, if appropriate. Provide any other information necessary to explain how the final calculation/estimate of project benefits was made.**

The City of Corona evaluated the water usage of the CNUSD school sites from the Customer Information System (CIS) database. The top-five water consuming schools in Corona used 32,684,533 gallons (100.31 AF) of water for outdoor irrigation in 2011. The City of Corona utilized the findings from the "Summary of Smart Controller Water

## Final Progress Report

---

Savings,” by the Bureau of Reclamation (2008) and the “Evaluation of California Weather-Based “Smart” Irrigation Controller Programs,” by the California Department of Water Resources (2009) to estimate a 20 percent annual reduction from the installation of weather-based irrigation controllers in commercial sites. Therefore, based on a 20% water use reduction at the school sites, the City of Corona estimates an annual water savings of 20.06 AF from the installation of the ET Water controllers.

**(2) As appropriate, please include an explanation of any concerns or factors affecting the reliability of the data/information relied on.**

The water usage at the school sites has decreased significantly as a result of the Governor’s State mandated water use reduction standards. The City of Corona is mandated to reduce water production by 28%. As a result, the District has been diligent in helping the City reach its target and has decreased irrigation usage beyond the estimated reduction expected from the installation of the ET Water Controllers. In many cases CNUSD turned off irrigation at schools which would normally receive some watering based on ET weather data. If the drought conditions and further restrictions occur, it will be difficult to measure the water savings achieved specifically from the installation of the ET Water Controllers and not from efforts made to reach the State mandates.

Originally the project planned to include the top water using schools that were not close to the CNUSD Maintenance headquarters. Through additional analysis and landscape audit reports by Water Wise Consulting, different schools were selected. Some of the schools use less water, however it was determined that these sites would provide additional benefits including easier maintenance management. Additional schools may be converted in the future as other grant funds are identified and secured.

**(3) Attach any relevant data, reports or other support relied on in the calculation/estimate of project benefits, if available. Please briefly describe the data/information attached, if any.**

The estimated savings is based on the following two studies provided in Attachment I – Preliminary Water Data citing Appendix: “Summary of Smart Controller Water Savings,” by the Bureau of Reclamation (2008) and the “Evaluation of California Weather-Based “Smart” Irrigation Controller Programs,” by the California Department of Water Resources (2009).

An estimated projected savings of 20 AF each year was projected for 20 years. Current Preliminary water data was not included in this report as mere months would not provide accurate data and would be inconclusive. Though DWP previously stated that it would gather water usage reports in 6-month intervals and compare usage data to the baseline data from Tables 1 and 2 of the original grant application, we believe a period of at least one year would provide the best comparative data. Extracted table information can be found in Attachment I – Preliminary Water Data.

### **D. Use of Conserved Water:**

## Final Progress Report

---

### **D. Use of Conserved Water:**

**Please explain where the water saved, better managed, or marketed as a result of the project is going (e.g. used by the recipient, in stream flows, available to junior water users, etc.**

The water savings from this Project provides direct potable water supply for the City of Corona to help sustain current and ongoing growth within the service area. The saved water also helps in the City's effort to provide a longer term stable drought resilient water supply.

**E. Future tracking of project benefits: Please state whether and how the recipient plans to track the benefits of the project (water saved, marketed or better managed) in the future. If no actual field measurements are currently available to support the estimate of project benefits in 6.B., please state whether actual field measurements will become available in the future. If so, please state whether the Recipient is willing to provide such data to Reclamation on a voluntary basis once it is available.**

Each of the schools site's water usage is metered as a mixed meter that includes indoor domestic and outdoor irrigation usage on the same meter. Therefore indoor usage will be estimated based on the school enrollment and the number of faculty and staff. The estimated indoor usage can then be deducted from the total usage to determine water usage for irrigation. These meters are read on a monthly basis allowing for ongoing tracking of the water savings from the Project.

The City of Corona has also met with CNUSD regularly during the Project and on several occasions since implementation. This allows the City to track how the project has benefited CNUSD regarding irrigation maintenance and management as a result of the installed ET Water controllers.

Corona could voluntarily provide the project's summary data on an annual calendar basis to the Bureau of Reclamation for up to a total of three years, if requested in advance. The voluntary information would be submitted by February 15<sup>th</sup> for the prior calendar year.

# Final Progress Report

## 7. Discussion of Amount of Renewable Energy Added:

*If your project included the installation of a renewable component, please describe the amount of energy the system is generating annually. Please provide any data/reports in support of this calculation.*

Not applicable.

## 8. Describe how the project demonstrates collaboration, stakeholder involvement or the formation of partnerships, if applicable:

*Please describe the collaboration involved in the project, and the role of any cost-share or other types of partners. If there were any additional entities that provided support (financial or otherwise) please list them.*

From its inception, the Project was a collaboration and partnership between the City of Corona Department of Water and Power and the Corona-Norco Unified School District. The Project also enjoyed support from California Assemblyman Jeff Miller, the Western Municipal Water District, and the Santa Ana Watershed Project Authority. During the course of the Project and issues affecting it, additional collaboration was necessary with the Corona-Norco Unified School District (District) resulting in better problem-solving. The District provided additional capital for the computer software needed to run the controllers which was not reflected in the original budget; additionally, other in-kind costs were incurred by the District for their employee staff time on the Project.

## 9. Describe any other pertinent issues regarding the project:

Over the duration of the project, six pertinent issues occurred which impacted the project. These issues caused delays and changes to the grant budget allocation as well as a change in the scope of work. All issues were resolved and the Project was successfully completed.

The first issue was the reselection of the school sites for the project. Based on further evaluation by Water Wise Consulting, the City selected alternative schools that were best suited for the site. This may affect the actual total water savings from the project as schools using less water were selected. However, the schools selected were based on providing a greater maintenance and site management benefit for CNUSD.

During the project process, two issues occurred that resulted in the delay of the project moving forward. First, there were no bids received from the request for proposal (RFP) the City released. Therefore, the City had to prepare a modified RFP and release a new version. This delayed the project by a few months. The bids received from the second RFP released were far in excess of the project budget. As a result of the high bids, the City had to work with CNUSD to evaluate the scope of work and make modifications so that the work could be done within the allotted budget.

The fourth issue impacting the project, was the decision to have CNUSD staff complete most of the work and utilize their contractors for the concrete portion of the work. This required the City to revise the schedule and work closely with CNUSD to ensure the

## Final Progress Report

---

work was completed. This also required the City to develop a procedure for reimbursing CNUSD for their expenses including materials, contractors, and staff hours.

The final issue that arose during the project was the adjustment in the Project budget. As CNUSD was now completing the work, adjustments to the allocation of funds needed to be made. The City opted to minimize charging DWP staff hours to the project so that the funding could be used towards reimbursing CNUSD. Also, conflicting data in the project application versus the contract as to the number of schools original project scope resulted in a budget reduction at the end of the project due to the original estimated budget error. The irrigation timer purchased from Victress Bower could not be installed before the project deadline and the sixth school line scope item that was erroneously added was removed in its entirety. The City worked with the Bureau of Reclamation staff to make the adjustment to the budget and scope reduction for error and return the scope back to five schools.

### **10. Feedback to Reclamation regarding the WaterSMART Program:**

*Please let us know if there is anything we can do to improve the WaterSMART program in general, including the process for applying for or completing a WaterSMART project. Your feedback is important to us.*

When working on projects with another entity such as a school district, the specific budget of a project is likely to vary from the preliminary estimate and change as the project proceeds and unforeseen circumstances occur. The Bureau of Reclamation's flexibility in allowing budget allocation is crucial in ensuring these projects can reach completion even as the situation changes or obstacles occur.

## Final Progress Report

---

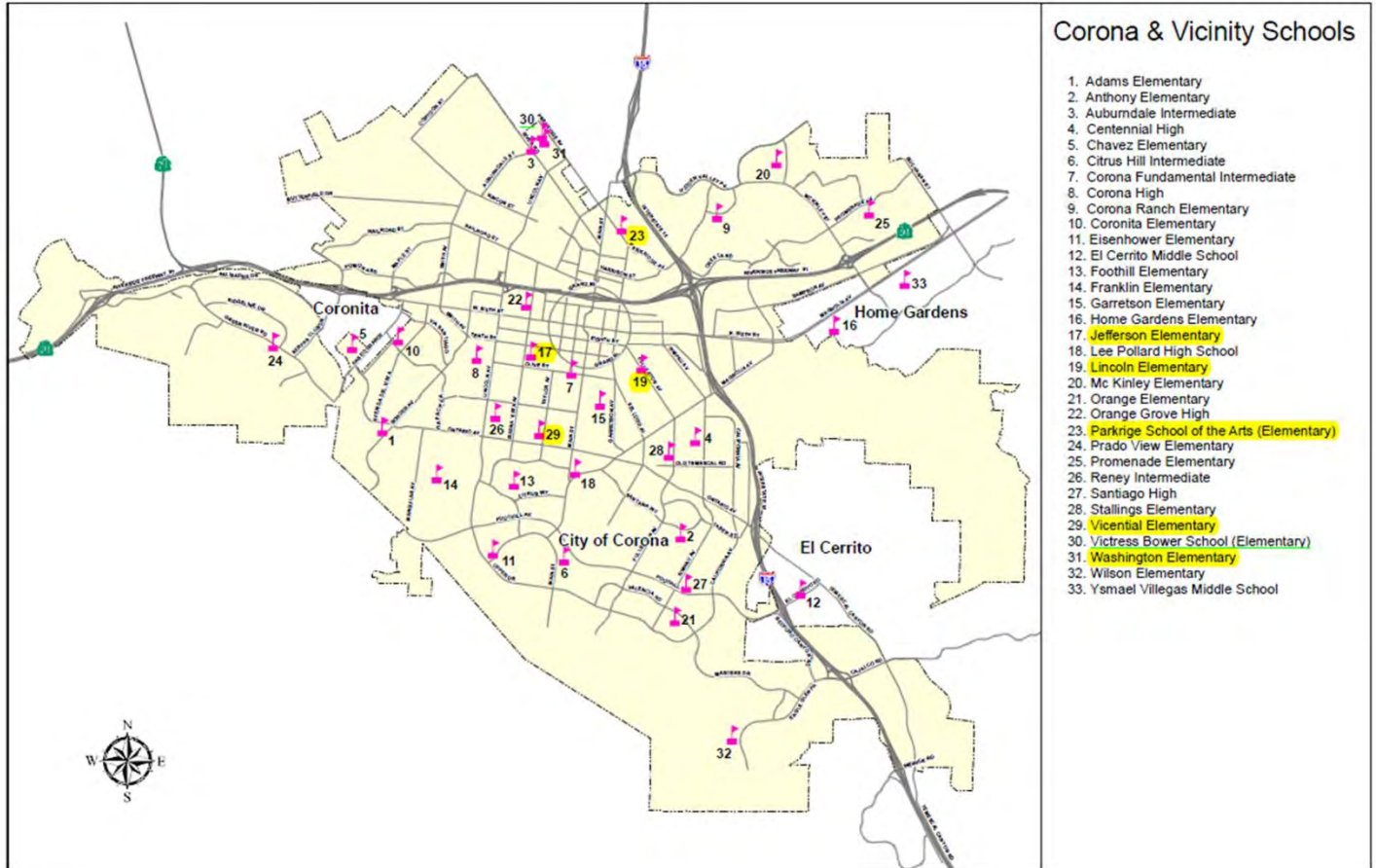
### **11. Attachments: Please attach the following**

- ☐ Any available data or information relied on in responding to paragraph 7, above;
- ☐ A map or illustration showing the location of the recipient's facilities (see paragraph 4, above);
- ☐ A table showing the total expenditures for the completed project;
- ☐ Representative before and after photographs, if available;
- ☐ Maps, sketches, and/or drawings of the features of the completed project, as appropriate (see paragraph 5, above);
- ☐ Other

# Final Progress Report

## Attachment A: Map of Project Area

The following five schools highlighted in yellow were updated from their antiquated controllers with more efficient technology:



Note: A sixth proposed school underlined in green was not included as part of this Project due to budgetary constraints; the original grant application was for five (5) schools but was inadvertently included as six (6) schools in the contract scope.

## Final Progress Report

### Attachment B: Total Expenditures (Actual)

#### Budget Estimate to Actual

Table: Budget Estimate						
Budget Item Description	Recipient Funding	Reclamation Funding	Total Cost (Est. Budget)	Actual (Cumulative)	% Used	Balance\$
<i>Salaries and Wages, Fringe Benefits</i>	\$4,605.93	\$4,605.93	<b>\$9,211.86</b>	\$2,233.59	24%	\$6,978.27
<i>Travel</i>	-	-	---	---	n/a	---
<i>Equipment (ET Controllers &amp; Accessories)</i>	\$25,253.79	\$25,253.79	<b>\$50,507.58</b>	\$23,738.76	47%	\$26,768.82
<i>Supplies/ Materials</i>	-	-	---	---	n/a	---
<i>Contractual /Construction</i>	\$20,171.60	\$20,171.60	<b>\$40,343.20</b>	\$74,893.91	186%	<\$34,550.71>
<i>Other</i>	\$31.32	-\$31.32	<b>\$0</b>	---	n/a	---
<b>Total Project/Activity Costs</b>	\$50,062.64	\$50,000.00	\$100,062.64	<b>\$100,866.26</b>	<b>100.8%</b>	<b>&lt;803.62&gt;</b>
Adjustments	\$8,417.93	<\$8,417.93>	<b>\$0</b>	<b>Actual Distribution:</b>		
Net Adjusted Budget	\$58,480.57	\$41,582.07	<b>\$100,062.64</b>	\$57,281.41 City Actual	56.7%	
Net Budget Percentage Contribution	50%	50%	<b>100%</b>	\$43,584.85 Reclamation (Net Grant Eligible)	43.3%	

# FEDERAL FINANCIAL REPORT

(Follow form instructions)

1. Federal Agency and Organizational Element to Which Report is Submitted  Bureau of Reclamation		2. Federal Grant or Other Identifying Number Assigned by Federal Agency (To report multiple grants, use FFR Attachment)  R12AP35340			Page <b>1</b> of  pages		
3. Recipient Organization (Name and complete address including Zip code)  City of Corona, Department of Water & Power 400 S. Vicentia Avenue Corona, CA 92882-2187							
4a. DUNS Number  088513155	4b. EIN  95-6000697	5. Recipient Account Number or Identifying Number (To report multiple grants, use FFR Attachment)		6. Report Type  <input type="checkbox"/> Quarterly <input type="checkbox"/> Semi-Annual <input type="checkbox"/> Annual <input checked="" type="checkbox"/> Final	7. Basis of Accounting  <input type="checkbox"/> Cash <input checked="" type="checkbox"/> Accrual		
8. Project/Grant Period From: (Month, Day, Year) 8/31/2012		To: (Month, Day, Year) 12/31/2015		9. Reporting Period End Date (Month, Day, Year) 12/31/2015			
10. Transactions					Cumulative		
(Use lines a-c for single or multiple grant reporting)							
<b>Federal Cash (To report multiple grants, also use FFR Attachment):</b>							
a. Cash Receipts					\$43,584.85		
b. Cash Disbursements					\$43,584.85		
c. Cash on Hand (line a minus b)					\$0.00		
(Use lines d-o for single grant reporting)							
<b>Federal Expenditures and Unobligated Balance:</b>							
d. Total Federal funds authorized					\$50,000.00		
e. Federal share of expenditures					\$43,584.85		
f. Federal share of unliquidated obligations					\$0.00		
g. Total Federal share (sum of lines e and f)					\$43,584.85		
h. Unobligated balance of Federal funds (line d minus g)					\$6,415.15		
<b>Recipient Share:</b>							
i. Total recipient share required					\$50,062.64		
j. Recipient share of expenditures					\$	57,281.41	
k. Remaining recipient share to be provided (line i minus j)					(\$7,218.77)		
<b>Program Income:</b>							
l. Total Federal program income earned					\$0.00		
m. Program income expended in accordance with the deduction alternative					\$0.00		
n. Program income expended in accordance with the addition alternative					\$0.00		
o. Unexpended program income (line l minus line m or line n)					\$0.00		
	a. Type	b. Rate	c. Period From	Period To	d. Base	e. Amount Charged	f. Federal Share
11. Indirect Expense	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A	N/A	N/A
g. Totals:					N/A	N/A	N/A
12. Remarks: Attach any explanations deemed necessary or information required by Federal sponsoring agency in compliance with governing legislation:							
13. Certification: By signing this report, I certify that it is true, complete, and accurate to the best of my knowledge. I am aware that any false, fictitious, or fraudulent information may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)							
a. Typed or Printed Name and Title of Authorized Certifying Official  Jonathan Daly General Manager City of Corona, Department of Water & Power					c. Telephone (Area code, number and extension) (951) 736-2477		
b. Signature of Authorized Certifying Official  					d. Email address <a href="mailto:Jonathan.Daly@ci.corona.ca.us">Jonathan.Daly@ci.corona.ca.us</a>		
					e. Date Report Submitted (Month, Day, Year)  3/24/2015		
14. Agency use only:							

Standard Form 425  
OMB Approval Number: 0348-0061  
Expiration Date: 10/31/2011

## Paperwork Burden Statement

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is 0348-0061. Public reporting burden for this collection of information is estimated to average 1.5 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0061), Washington, DC 20503.

# Final Progress Report

---

## **Attachment D: Project Schedule, Original/Revised Compared to Actual**

The original schedule submitted with the grant application proposed a start date of October 1, 2012 and an end date 12 months thereafter on October 1, 2013. The original grant agreement was executed on August 31, 2012, and our project was completed on December 31, 2015. Due to extenuating circumstances, our project was delayed and an extension was granted by the BOR through December 31, 2015. The original project schedule was 12 months. The actual project schedule was 40 months.

# Final Progress Report

## Attachment E: Corona City Council and Corona Utility Authority Action

Agenda Report No. 6.I.3



### AGENDA REPORT REQUEST FOR CITY COUNCIL AND CORONA UTILITY AUTHORITY ACTION

DATE: March 21, 2012  
TO: Honorable Mayor and City Council Members  
Honorable President and Board Members  
FROM: Department of Water & Power  
SUBJECT: CITY COUNCIL AND CORONA UTILITY AUTHORITY  
CONSIDERATION OF A RESOLUTION APPROVING AN  
APPLICATION FOR FEDERAL ASSISTANCE FROM THE  
UNITED STATES DEPARTMENT OF INTERIOR, BUREAU OF  
RECLAMATION WATER CONSERVATION FIELD SERVICES  
PROGRAM

#### **RECOMMENDED ACTION:**

That the:

1. City Council adopt Resolution No. 2012-020 approving an application for Federal Assistance from the United States Department of Interior, Bureau of Reclamation Water Conservation Field Services Program.
2. City Council authorize the Department of Water & Power General Manager and City Attorney to negotiate and execute any extensions and/or amendments related to this item.
3. City Council direct staff to apply for grant funds through the Water Conservation Field Services Program for Evapotranspiration (ET) Controllers at local school campuses.
4. Corona Utility Authority (CUA) review, ratify and to the extent necessary direct that the City Council take the above actions.

File No. CC - \_\_\_\_\_.

# Final Progress Report

---

## Attachment E: Corona City Council and Corona Utility Authority Action, Cont.

March 21, 2012

Resolution approving Application for Water Conservation Field Services Program

Page 2

---

### **ANALYSIS:**

In November 2009, the Senate passed Bill X7 (SBX7). SBX7 calls for a 20% reduction in per capita water use by 2020 for all Californians. This was a result of many years of historical drought conditions and legislative restrictions which have impacted water supplies for the State of California. California's water supply issues in turn affect the City of Corona. In response to these ongoing issues affecting imported water supplies, the Department of Water & Power (DWP) is working to improve water sustainability through better water management.

To help achieve water conservation goals, DWP has been actively working with the Corona-Norco Unified School District (CNUSD) to help increase water use efficiency at Corona's school sites. CNUSD is one of the City's largest water customers. Reducing CNUSD's water consumption will help the City reach its water conservation goals. CNUSD, like many school districts, has been especially hard hit by the recent economic recession. CNUSD lacks the staffing to do regular irrigation testing and repairs.

DWP proposes to install centralized evapotranspiration (ET) controllers at five local elementary schools. Installation of centralized ET controllers would provide a dual-benefit of decreased water consumption at CNUSD sites, and increased staffing efficiencies for CNUSD. The ET controllers would allow CNUSD staff to remotely monitor irrigation for school sites. These systems can be set up to send alerts or "flags" to the site manager if there are line breaks or leaks on site. Currently, CNUSD staff is required to physically test the irrigation to check for leaks and breaks. As a result, irrigation tests performed by CNUSD can be infrequent or occasional, leaving some leaks and breaks unrepaired or not immediately detected. Installation of centralized ET controllers would be mutually beneficial to both DWP and CNUSD.

### **FISCAL IMPACT:**

The proposed application will request \$50,000 in funds from the Water Conservation Field Services Program – Southern California Area Office. A local match of 50% of project costs is required for this grant program. DWP is prepared to contribute approximately \$55,000 from its proposed Fiscal Year 2012-13 Water Utility Fund's Operations budget in the form of project costs, employee time and resources, as well as to cover any additional costs associated with preparation of the plan, as a local match.

### **ENVIRONMENTAL ANALYSIS:**

No environmental review is required because the proposed action is exempt under the California Environmental Quality Act, or CEQA.

---

File No. CC – \_\_\_\_\_.

# Final Progress Report


---

## Attachment E: Corona City Council and Corona Utility Authority Action, Cont.

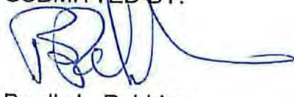
March 21, 2012  
Resolution approving Application for Water Conservation Field Services Program  
Page 3

---

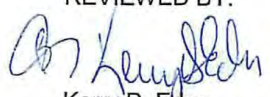
REVIEWED BY:

  
Greg Irvine  
Assistant City Manager

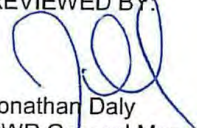
SUBMITTED BY:

  
Bradly L. Robbins  
City Manager & Executive Director

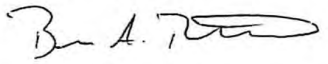
REVIEWED BY:

  
Kerry D. Eden  
Finance Director

REVIEWED BY:

  
Jonathan Daly  
DWP General Manager

PREPARED BY:

  
Brian A. Ritschel  
Finance and Customer Service Manager

---

File No. CC - \_\_\_\_\_

# Final Progress Report

---

## Attachment F: Resolution

### RESOLUTION NO. 2012-020

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CORONA,  
CALIFORNIA AND CORONA UTILITY AUTHORITY APPROVING AN  
APPLICATION FOR FEDERAL ASSISTANCE FROM THE UNITED  
STATES DEPARTMENT OF INTERIOR, BUREAU OF RECLAMATION  
WATER CONSERVATION FIELD SERVICES PROGRAM**

**WHEREAS**, the United States Department of Interior, Bureau of Reclamation makes financial assistance available to local agencies through the Water Conservation Field Services Program; and

**WHEREAS**, the City of Corona has a project which is eligible for financial assistance through the Water Conservation Field Services Program: Evapotranspiration Controllers for local school campuses; and

**WHEREAS**, if financial assistance is awarded through the Water Conservation Field Services Program, the City of Corona is required to provide 50% of the project costs as a local match; and

**WHEREAS**, the City Council and the Board of Directors of the Corona Utility Authority wish to seek financial assistance through the Water Conservation Field Services Program;

**NOW, THEREFORE, BE IT RESOLVED** by the City Council of the City of Corona, California, as follows:

**SECTION 1.** The City Council and Board of Directors of the Corona Utility Authority hereby authorize the submittal of an Application for Federal Assistance to the United States Department of Interior, Bureau of Reclamation for the Water Conservation Field Services Program.

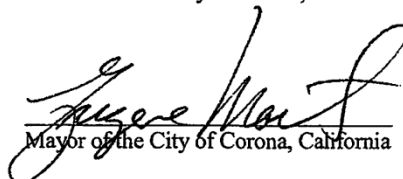
**SECTION 2.** The General Manager of the City of Corona Department of Water & Power, is hereby directed to deliver a copy of this resolution to the United States Department of Interior, Bureau of Reclamation, and is hereby authorized and empowered to execute, in the name of the City of Corona, all necessary documents to implement and carry out the purpose of this Resolution.

# Final Progress Report

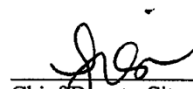
---

## Attachment F: Resolution, Continued

**PASSED, APPROVED AND ADOPTED** this 21st day of March, 2012.

  
Mayor of the City of Corona, California

**ATTEST:**

  
\_\_\_\_\_  
Chief Deputy City Clerk of the  
City of Corona, California

# Final Progress Report

---

## Attachment F: Resolution, Continued

### CERTIFICATION

I, Lisa Mobley, Chief Deputy City Clerk of the City of Corona, California, do hereby certify that the foregoing Resolution was regularly introduced and adopted by the City Council of the City of Corona, California, at an adjourned meeting thereof held on the 21st day of March, 2012, by the following vote:

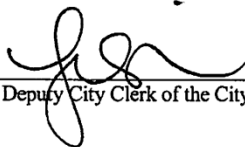
**AYES: MONTANEZ, NOLAN, SCOTT, SKIPWORTH, SPIEGEL**

**NOES: NONE**

**ABSENT: NONE**

**ABSTAINED: NONE**

**IN WITNESS WHEREOF**, I have hereunto set my hand and affixed the official seal of the City of Corona, California, this 21st day of March, 2012.

  
\_\_\_\_\_  
Chief Deputy City Clerk of the City of Corona, California

[SEAL]

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF RECLAMATION

Southern California Area Office

**RELEASE OF CLAIMS**

Agreement Number

R12AP35340

Agreement Date

08/31/12

WHEREAS, by the terms of the above-identified agreement for

**CENTRALIZED IRRIGATION CONTROLLERS FOR TARGETED DISTRICT SCHOOLS**

entered into by the United States of America, hereinafter also referred to as the United States, and the grant recipient whose name appears on the agreement as

**CITY OF CORONA**

it is provided that after completion of all work, the grant recipient will furnish the United States with a release of all claims;

NOW, THEREFORE, in consideration of the above premises and the payment by the United States to the recipient the total amount of

**\$43,584.85**

the grant recipient hereby remises, releases, and forever discharges the United States, its officers, agents, and employees, of and from all manner of debts, dues, liabilities, obligations, accounts, claims, and demands whatsoever, in law and equity, under or by virtue of the said agreement except:

IN WITNESS WHEREOF, the agreement recipient has executed this release this 24th day of March, 2016.

By



(Signature)

Jonathan Daly  
(Name -- Type or Print)

General Manager  
(Title)

City of Corona  
(Agreement Recipient)

## Final Progress Report

---

### Attachment H: Photographs



## Final Progress Report

---

### Attachment H: Photographs, Continued



## Final Progress Report

---

### Attachment H: Photographs, Continued



## Final Progress Report

---

### Attachment H: Photographs, Continued



# Final Progress Report

## Attachment I: Preliminary Water Data (if applicable)

Current Preliminary water data not applicable (1-year of post-project data is recommended for conclusive results). Base data from 2011 is included below for school sites selected.

**Table 1 (Extract)**

<b>WATER USAGE AT CORONA ELEMENTARY SCHOOLS, 2011</b>	
<b>Schools</b>	<b>2011 Usage (in millions of gallons)</b>
<b>1. Jefferson Elementary</b>	<b>7.152</b>
<b>2. Lincoln Alternative Elementary</b>	<b>5.726</b>
<b>3. Parkridge Elementary</b>	<b>1.750</b>
<b>4. Vicentia Elementary</b>	<b>0.888</b>
<b>5. Washington Elementary</b> <i>(Site recommended by Water Wise Consultant)</i>	<b>Data Not Available</b>

Original estimate of Project benefit water savings was taken from the following water table data and sources:

**Table 2**

<b>PROJECTED WATER SAVINGS FOR THE PROPOSED PROJECT</b>						
<b>Proposed Project</b>	<b>No. of Controller Units</b>	<b>2011 Outdoor Usage of the 5 Highest-Consuming Schools (in millions of gallons)</b>	<b>Annual Water Savings</b>		<b>20-Year Water Savings</b>	
			<b>Gallons (millions)</b>	<b>Acre-Feet</b>	<b>Gallons (millions)</b>	<b>Acre-Feet</b>
Purchase & Install ET Controllers	5	32.684	6.536	20.06	130.738	401.22
Sources: Savings based on an estimate of 20 percent annually for commercial sites, as supported by findings in two reports: 1) "Summary of Smart Controller Water Savings," Bureau of Reclamation, 2008; and 2) "Evaluation of California Weather-Based 'Smart' Irrigation Controller Programs," California Department of Water Resources, 2009.						

## Final Progress Report

---

### **Attachment J: Product Specification Sheet(s)**

**Not Available.**

# Final Progress Report

---

## Attachment K: Water Conservation Field Services Program Project Benefits

### WATER CONSERVATION FIELD SERVICES PROGRAM PROJECT BENEFITS

Please check the appropriate water management benefits for agricultural or urban measures that you anticipate addressing in your proposal. Where available, please provide an estimate of the benefit to units (i.e. Acre Feet, Dollars, Percentages)

It is essential to establish benefits of the Program. Please help us with your best estimate.

Reduces Leaks and Seepage	_____ Acre Feet/Year
Reduces System Spills	_____ Acre Feet/Year
Makes More Water Available	<u>20</u> Acre Feet/Year
Reduces Operation Costs	_____ \$ /Year
Reduces Energy Costs	_____ \$ /Year
Reduces Waste Treatment Costs	_____ \$ /Year
Improves Crop Yield	_____ Percent/Year
Reduces On-Farm Costs	_____ \$ /Year
Reduces Per Capita Use	_____ Gallons/Capita/Day
Provides Technical Training	_____ # of People
Provides Water Conservation Education	_____ # of People
Improves Water Supply Reliability	_____ Frequency (Years)*
* Estimate of how often the improvement will occur (i.e. 1 = each year)	
Delays Construction of New Supplies	_____ Years
Reduces Drainage/Erosion	_____ Tons
Improves Water Quality	_____ % reduction of _____
Enhances Aquatic/Riparian Habitat	_____ Years