Water Conservation Field Services Program

City of Anaheim
Water Use Efficiency Master Planning Grant
Final Report

Agreement No. R11AP35300
201 S. Anaheim Blvd., Suite 601
Anaheim, CA 92805
April 30, 2014

1. Recipient Information:
Recipient Name: City of Anaheim Rick Shintaku 201 S. Anaheim Blvd., Suite #601 Anaheim, CA 92805 714-765-4181
Project Name: City of Anaheim Water Use Efficiency Master Planning Grant
Assistance Agreement No.: R11AP35300
Date of Award: September 6, 2011
Estimated Completion Date: February 1, 2014
Actual Completion Date: February 1, 2014

2. Final Funding Information:	**Funding Amount**
Non-Federal Entities	
1. City of Anaheim	$74,099
Other Federal Entities	
1. N/A	$0
Other Federal Subtotal:	$0
Requested Reclamation Funding:	$72,000
Total Project Funding:	$146,099

3. One Paragraph Project Summary:
The City of Anaheim Water Use Efficiency Master Plan (Master Plan) builds upon existing water conservation program achievements, which are essential for reaching its goal of a 20 percent reduction in urban per capita water use by 2020. The Master Plan identifies potential conservation program concepts for specific customer sectors (i.e. residential, commercial, industrial and landscape-irrigation) and recommends a viable program mix with several implementation options focusing on landscape efficiency and innovative water use efficiency projects. In essence, the Master Plan is based on the most cost-effective approach for implementing short- and long-term (2020 and beyond) water use efficiency measures and programs for businesses, residents, and the City. The estimated water savings is projected to be 23 gallons/capita/day once the Master Plan is implemented.

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.*
Project Completion Overview

All the tasks identified in the Scope of Work per the Agreement were completed successfully. A summary of the tasks and deliverables is provided in Attachment A. A map of the City's water service area is presented in Attachment B. The Master Plan was presented to the Public Utilities Board on March 26, 2014.

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.*

From the start of the Agreement, September 6, 2011, to the completion end date of February 1, 2014, Anaheim successfully completed the Bureau's reporting requirements. The Master Plan was completed and presented to the Public Utilities Board on March 26, 2014. This Master Plan will help Anaheim achieve 20X2020 water saving targets. The study was completed within the Reclamation funding and indicated in Attachment C.

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):

Anaheim's average annual supply in the past five years was 67,000 acre-feet.

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

The estimated water savings is projected at approximately 6,500 acre-feet per year for Program B by 2040 as indicated on Figure 6-2 of the Master Plan. Program B is the most cost-effective program.

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

(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 DSS Model, which is endorsed by the California Urban Water Conservation Council (CUWCC), was used to calculate the water savings that result from the

project. Historical water use and population data were used in the Model. For the future, the model provided a flexible program (Program B) using the demand forecasting data from a multiple demand scenario analysis and population forecast provided by the Metropolitan District of Southern California (MWD). It also incorporated the potential effects of economic recovery and drought.

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

The estimated water savings is based on the projected population and economic conditions. These factors can affect the results if they deviate substantially from those used in the DSS Model.

(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 data used in calculating Project benefits are provided in the Appendix B of the Master Plan. The historical population data used in the study was provided by the Center for Demographic Research at California State University, Fullerton (see Attachment D). Another source of data was the City's 2010 Urban Water Management Plan, which is available at:
http://www.anaheim.net/articlenew2222.asp?id=4400

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 saved by implementing the Master Plan would reduce the need for both imported water and groundwater by Anaheim making more of it available for other uses in the region and the State. Currently, Anaheim's water supply consists of approximately 70 percent groundwater and 30 percent imported water. The reduction in imported water would allow more water to remain in the natural watercourses that are the sources of imported water, i.e., the Sacramento-San Joaquin Bay Delta and Colorado River. MWD delivers the imported water from these sources to its member agencies in Southern California including Anaheim. The water conserved as a result of the Master Plan would also reduce pumping from the Orange County Groundwater Basin, the source of Anaheim's groundwater 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.*

The benefits of the Master Plan's water efficiency measures will be tracked by monitoring of program participation and effectiveness. Anaheim will use the DSS Model to monitor progress on demand reductions and associated costs on an annual basis. Anaheim will continue its monitoring program to review the program participation, projected water savings, and expected per capita water use reductions to gauge success of the Master Plan. Monthly data of each water use efficiency measure and monthly rebate program data will be transferred into the CUWCC's Best Management Practices (BMP) database for reporting purposes to track and monitor the current level of compliance. The program tracking will incorporate customer information (name, address, account number, type of business), water use efficiency measure or device (type, quantity, unit water savings, life expectancy), and cost information.

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.*

N/A

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.*

Anaheim reviewed the proposed water use efficiency measures with MWD, Municipal Water District of Orange County (MWDOC), and the City customers and incorporated their inputs in the Master Plan. Anaheim coordinates its water use efficiency priorities, messaging and outreach activities with MWD and MWDOC to ensure consistency throughout the region. Anaheim has been actively participating in various MWD rebate programs and has developed and implemented various local water use efficiency programs both on its own and in partnership with the MWDOC.

Anaheim participates in MWDOC's Choice Program, which provides a range of water use efficiency programs and a school education program on behalf of many agencies in Orange County.

Anaheim will continue partnering with other public agencies and local stakeholder groups who could provide cost-sharing or in-kind program support for the Project. Detailed information on possible partnerships is provided in Appendix D of the Master Plan.

A key component of the Project development was stakeholder meetings. Four meetings were held with various Anaheim water customers, providing the opportunity to review and discuss the proposed conservation measures and

strategies. A total of 20 customers attended and contributed valuable feedback on existing rebate programs, proposed new programs, and need for technical assistance.

9. Describe any other pertinent issues regarding the Project:

The City intends to utilize this Master Plan for future years to implement cost-effective water efficiency programs and achieve the 20x2020 water saving targets.

10. Feedback to Reclamation regarding the Water Conservation Field Services Program (WCFSP): *Please let us know if there is anything we can do to improve the WCFS Program in general, including the process for applying for or completing a WCFS Program Project. Your feedback is important to us.*

The *WCFS Program* is very beneficial to retail water agencies like the City of Anaheim, in that it helps facilitate water saving projects essential to our long-term water supply goals. We encourage the Bureau to continue funding the *WCFS Program*.

11. Attachments:

A. Summary of the Tasks Completed
B. Project Site Location Map
C. Historical Population
D. Project Costs Table

Attachment A

SUMMARY OF WORK COMPLETED

Task 1 - Consultant Preparatory Work and Research

Task Number	Work Description	Deliverable	Deliverable Status
Task 1.1	Kick Off Meeting	Kick Off Meeting Minutes	100% Complete
Task 1.1	Project Work Plan & Timeline	Project Work Plan & Timeline	100% Complete
Task 1.2	Literature Review	Literature Review Summary	100% Complete
Task 1.3	Demand Team Work Plan	Demand Team Work Plan	100% Complete
Task 1.3	Demand Team Avoided Costs	Finalized Avoided Cost	100% Complete
Task 1.3	Demand Team Methodology Discussion / Meetings with APU Staff	Multiple meetings / emails with APU staff to discuss methodology and obtain data for demand factors	100% Complete
Task 1.3	Demand Factor Analysis	Demand factors	100% Complete
Task 1.3	DSS Model for Demands	DSS Model for Demands	100% Complete

Task 2 - Master Plan Public Outreach and Stakeholder Involvement

Task Number	Work Description	Deliverable	Deliverable Status
Task 2.1	Develop Stakeholder Teams	List of Stakeholders & Approach for meetings	100% Complete
Task 2.2	Meet with Metropolitan and Other Agency Water Conservation Staff	Meeting Agenda & Meeting Attendance & Meeting Minutes	100% Complete
Task 2.3	Tabulate 100 Largest Water Consumer's Demand	Work with APU staff to develop a list of Top 100 Largest Water Users	100% Complete
Task 2.4	Conduct Working Group Meetings	Hold working group meetings with customers	Completed by APU staff in January 2014
Task 2.5	Distribute Meeting Notices	Hold working group meetings with customers	Completed by APU staff

	Task 3 - Water Use Efficiency Projects, Programs & Policy Identification and Prioritization			
	Task Number	**Work Description**	**Deliverable**	**Deliverable Status**
	Task 3.0	Conservation Data Collection	Conservation Data for the Master Plan	100% Complete
	Task 3.1	ID and Rank WUE Programs and Projects	DSS Model with conservation benefit cost analysis	100% Complete
	Task 3.2	Review City Statutes, Ordinances, and Regulations	Incorporate information into conservation analysis	100% Complete
	Task 3.3	Analyze BMPs and UWMP's DMMs	DSS Model with BMPs, UWMPs and DMMs	100% Complete
	Task 3.4	Recommend Financing Mechanisms	Provide financing ideas for recommended conservation measures	100% Complete
	Task 3.5	Develop an Appreciation/Reward Program	Review ideas provided by APU staff	100% Complete
	Task 3.6	Evaluate Current Public Outreach Program	Review text and ideas provided by APU staff	100% Complete
	Task 4 - Performance Measures Identification			
	Task 4	Identify Quantitative and Qualitative Performance Measures	Reviewed with Consultant and approved by APU staff	100% Complete
	Task 5 - Water Use Efficiency Plan Development			
	Task Number	**Work Description**	**Deliverable**	**Deliverable Status**
	Task 5.1	Prepare Draft Master Plan	Provide Draft Plan for Comment by APU staff	100% Complete
	Task 5.2	Review Draft Master Plan and Provide Feedback	Plan review by APU Staff	100% Complete
	Task 5.3	Prepare Final Master Plan	Revised Draft Plan based on APU comments	100% Complete
	Task 5.4	Prepare Master Plan Presentation to APU Board	Presentation was prepared by APU staff	APU Task

SUMMARY OF WORK COMPLETED DETAILED DESCRIPTION

Task 1 – Consultant Preparatory Work and Research

Task 1.1

- Work Plan and Schedule completed.
- Kick-off Meeting with staff via phone held on May 16, 2012.
- Work Plan revised and finalized following kick-off meeting.

Task1.2

- Literature review – finished table with individual report summaries. Literature review file submitted to APU.

Task1.3

- Demand Team call on May 31st to discuss Demand Team Work Plan.
- Demand Team Work Plan finalized.
- Demand methodology discussed with APU staff.
- Demand data reviewed and analysis of demand factors almost complete.
- Demand Team Meeting on June 28th to discuss demand factors.
- Demand Team Meeting on October 10th to discuss DSS Model preliminary results with MWM staff.
- Demand Team Meeting on October 23rd to discuss / train demand factor tool use with Arcadis staff.
- Demand Team Meetings to review DSS Model incorporating demand scenarios.
- Demand Team finalization of Demand Factors.
- Demand Team draft final of Demand Tool.
- Multiple meetings with APU Staff to review requested modifications to Demand Tool.
- Demand Team respond to APU comments on Demand Tool.
- Last round of changes to Demand Tool planned in January 2014.

Task 2 Master Plan Public Outreach and Stakeholder Involvement

Task 2.1

- Worked with APU Staff to provide recommendations & review stakeholder list.
- Stakeholder list and approach is finalized.

Task 2.3

- Worked with APU Staff to discuss the Top 100 Users List compilation and appropriate customer categories (hotel, restaurants, etc.).
- Reviewed the final list once it was compiled and sent by APU staff.

Task 3 Water Use Efficiency Projects, Programs & Policy Identification and Prioritization

Task 3.1

- Review conservation program summary provided by APU staff. Discuss data with APU staff and provided list of questions plus request for additional conservation data.
- Create list of measures for the "Measure Screening Analysis".
- Provided MS Excel table for entry of individual conservation measure design information – will be Appendix 1 from the report.
- Work with APU staff on entry of information for individual conservation measures into Appendix 1. QA/QC of Appendix 1.
- Run DSS Model with information from Appendix 1.

Task 3.2

- Review City Statues, Ordinances and Regulations for incorporation into measure list and analysis.

Task 3.3

- Review CUWCC Best Management Plan Reports submitted by APU staff. Review 2010 UWMP Conservation section information.
- Set up and analyze conservation measures DSS Model with information from Appendix 1.

Task 3.4

- Discussed financing options, appreciation / reward program / public outreach program with APU staff. APU staff will take lead on these tasks.

Task 3.5 / 3.6

- Develop an Appreciation/Reward Program.
- Evaluate Current Public Outreach Program including suggestions such as using social media such as Twitter, Facebook, Website, etc.

Task 4 - Performance Measures Identification

- Identify Quantitative and Qualitative Performance Measures.

Task 5 - Water Use Efficiency Plan Development

Task 5.1

- Create Draft WUE Efficiency Master plan for review by APU staff complete with budgets, water savings, per capita analysis, historical data and public information/finance options information from Task 3.

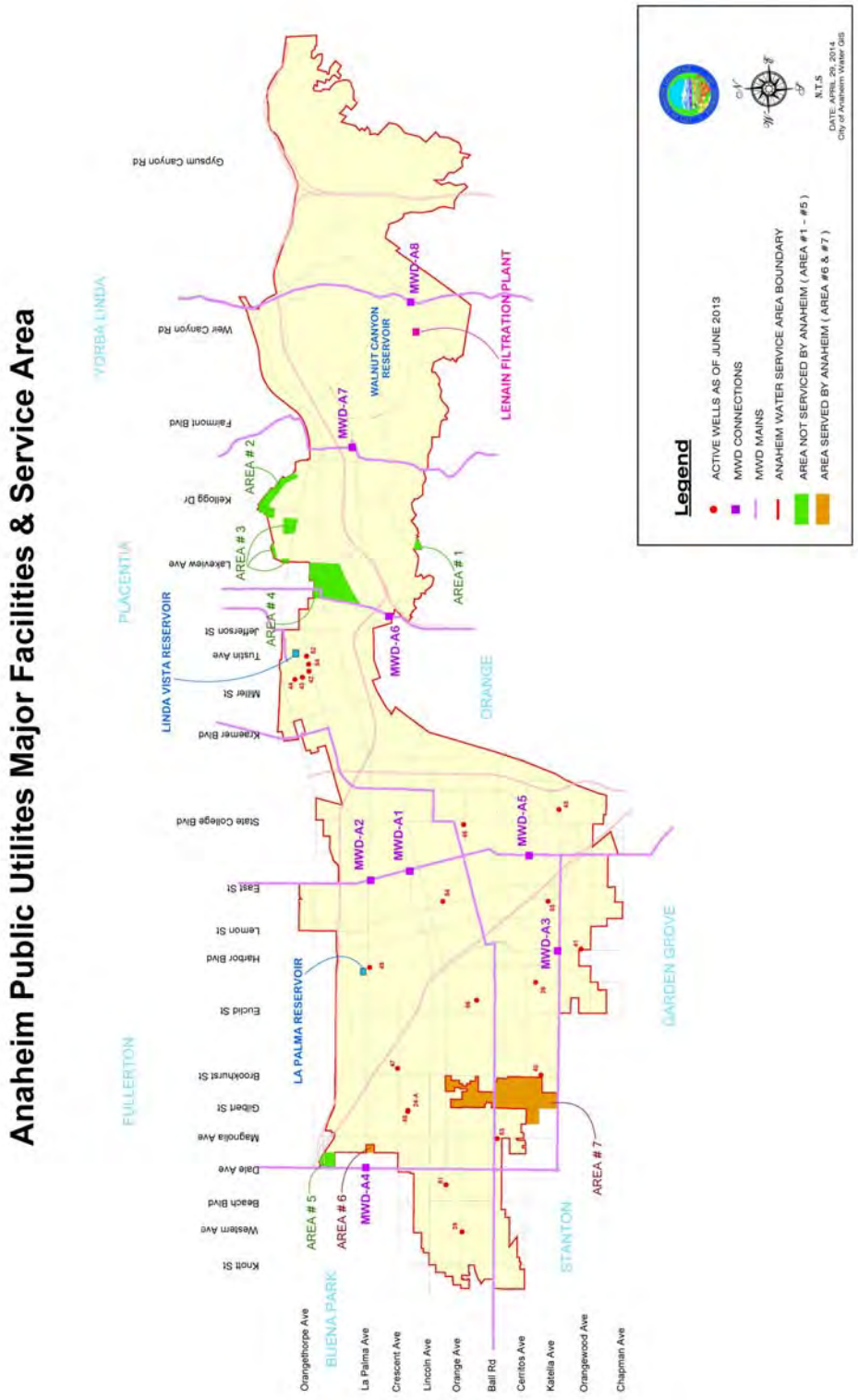
Task 5.3

- Create Final WUE Efficiency Master plan for review by APU staff complete with budgets, water savings, per capita analysis, historical data and public information/finance options information from Task 3.
- Rerun model for program B per request of APU staff.
- Delivery of DSS model and user manual to APU staff.

Project Management

Multiple project discussion / coordination calls and emails with APU staff. Notes and project action items provided following check in calls.

Attachment B



Attachment C

WATER USE EFFICIENCY MASTER PLAN GRANT
FINAL PROJECT COSTS

BUDGET ITEM DESCRIPTION	TOTAL COSTS	RECIPIENT FUNDING	RECLAMATION FUNDING
PERSONNEL COSTS:			
Salaries and Wages	$54,240.94	$46,940.94	$7,300.00
Fringe Benefits	$42,576.97	$36,876.97	$5,700.00
SUPPLIES AND MATERIALS:			
Office Supplies	$851.47	$851.47	
Mailings	$317.35	$317.35	
CONTRACTUAL:			
Consultant Contract	$118,321.44	$59,321.44	$59,000.00
TOTAL PROJECT COSTS	**$216,308.17**	**$144,308.17**	**$72,000.00**

Population of OC Water Suppliers, for their Area of Actual Service

Numbers for the 2000s decade were revised by CDR in May 2012 to reflect the findings of the 2010 Census

Water Supplier	Jan-90	Jan-91	Jan-92	Jan-93	Jan-94	Jan-95	Jan-96	Jan-97	Jan-98	Jan-99	Jan-00	Jan-01	Jan-02	Jan-03	Jan-04	Jan-05	Jan-06	Jan-07	Jan-08	Jan-09	Jan-10
Anaheim, City of, Includ. SW	270,218	275,469	282,706	289,365	294,015	297,942	303,051	309,953	317,468	324,968	333,052	337,177	338,599	339,297	340,602	338,408	336,345	336,729	337,642	339,133	343,704

Source: Center for Demographic Research (CDR) at CSU Fullerton. 2001 through 2010 are based on the 2010 Census. 1990 estimates were re-based by MWDOC.

Attachment D