Residential ET Controller Rebate Program

Proposition 50 Urban Grant Proposal

January 4, 2005

SUBMITTED BY:

Newhall County Water District

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Section A. Project Information Form

Applying for:	☒ Urban	❑ Agricultural
1. (Section A) **Urban or Agricultural Water Use Efficiency Implementation Project**	❑(a) implementation of Urban Best Management Practice, #_____ ❑ (b) implementation of Agricultural Efficient Water Management Practice, #_____ ❑ (c) implementation of other projects to meet California Bay-Delta Program objectives, Targeted Benefit # or Quantifiable Objective #, if applicable _____ ❑ (d) Specify other: _____	
2. (Section B) **Urban or Agricultural Research and Development; Feasibility Studies, Pilot, or Demonstration Projects; Training, Education or Public Information; Technical Assistance**	❑ (e) research and development, feasibility studies, pilot, or demonstration projects ❑ (f) training, education or public information programs with statewide application ❑ (g) technical assistance ❑ (h) other	
3. Principal applicant (Organization or affiliation):	Newhall County Water District (NCWD)	
4. Project Title:	Residential ET Controller Rebate Program	
5. Person authorized to sign and submit proposal and contract:	Name, title	Karin Russell
	Mailing address	23780 North Pine Street P.O. Box 220970 Santa Clarita, CA 91322-0970
	Telephone	(661) 259-3610
	Fax.	(661) 259-2117
	E-mail	krussell@ncwd.org
6. Contact person (if different):	Name, title.	Melinda Weinrich Resource Conservation Specialist
	Mailing address.	23780 North Pine Street P.O. Box 220970 Santa Clarita, CA 91322-0970
	Telephone	(661) 259-3610

Fax.	(661) 259-8498
E-mail	mweinrich@ncwd.org

7. Grant funds requested (dollar amount): *(from Table C-1, column VI)*	**$71,874**
8. Applicant funds pledged (dollar amount):	**$149,459**
9.Total project costs (dollar amount): *(from Table C-1, column IV, row n)*	**$221,330**
10. Percent of State share requested (%) *(from Table C-1)*	**32.5%**
11. Percent of local share as match (%) *(from Table C-1)*	**67.5%**

12. Is your project locally cost effective?

Locally cost effective means that the benefits to an entity (in dollar terms) of implementing a program exceed the costs of that program within the boundaries of that entity.

❑ (a) yes

☒ (b) no

(If yes, provide information that the project in addition to Bay-Delta benefit meets one of the following conditions: broad transferable benefits, overcome implementation barriers, or accelerate implementation.)

11. Is your project required by regulation, law or contract?
If no, your project is eligible.

❑ (a) yes
☒ (b) no

If yes, your project may be eligible only if there will be accelerated implementation to fulfill a future requirement and is not currently required.

Provide a description of the regulation, law or contract and an explanation of why the project is not currently required.

_____N/A_____

12. Duration of project (month/year to month/year):	**7/2005 – 6/2008**
13. State Assembly District where the project is to be conducted:	**38**

14. State Senate District where the project is to be conducted: **17**

15. Congressional district(s) where the project is to be conducted: **25**

16. County where the project is to be conducted: **Los Angeles**

17. Location of project (longitude and latitude)

18. How many service connections in your service area (urban)? **8,914 meter connections**

19. How many acre-feet of water per year does your agency serve? **10,507.16 AF**

20. Type of applicant (select one):

- ❑ (a) City
- ❑ (b) County
- ❑ (c) City and County
- ❑ (d) Joint Powers Authority
- ☒ (e) Public Water District
- ❑ (f) Tribe
- ❑ (g) Non Profit Organization
- ❑ (h) University, College
- ❑ (i) State Agency
- ❑ (j) Federal Agency
- ❑ (k) Other
- ❑ (i) Investor-Owned Utility
- ❑ (ii) Incorporated Mutual Water Co.
- ❑ (iii) Specify _____

21. Is applicant a disadvantaged community? If 'yes' include annual median household income.

(Provide supporting documentation.)

- ❒ (a) yes, $49,795 median household income
- ☒ (b) no*

* The are several neighborhood areas (within the 91321 zip code) with an annual median household income less than $38,000; however such areas are not qualified separately to receive disadvantaged community status, but will be targeted for the proposed program.

Section B. Signature Page

By signing below, the official declares the following:

The truthfulness of all representations in the proposal;

The individual signing the form has the legal authority to submit the proposal on behalf of the applicant;

There is no pending litigation that may impact the financial condition of the applicant or its ability to complete the proposed project;

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant;

The applicant will comply with all terms and conditions identified in this PSP if selected for funding; and

The applicant has legal authority to enter into a contract with the State.

_____	_____	_____
Signature	Karin Russell, Chief Financial Officer	Date

Section C. Statement of Work

C-1 Relevance and Importance

The Santa Clarita Valley is one of the fastest growing areas in California with over 220,000 residents. As the valley grows, NCWD and other valley retailers are faced with a growing need to generate new water supply and increase the water use efficiency of current customers.

NCWD is dedicated to addressing the growing issues of water supply, quality, reliability and supply flexibility that affect not just the local valley but also the Bay-Delta Program and the entire state of California. As part of a multi-faceted campaign to increase customer water use efficiency, NCWD evaluates each customer sector to identify where the most cost-effective water conservation opportunities exist and what the type of BMP or other program would be most successful at achieving potential water savings. Initial results show that 90 percent of NCWD's customers are residential and use over 65 percent of the district's total water usage. Over half of the water use in the residential sector is for landscape irrigation and irrigation runoff is a significant source of the Santa Clarita Valley's urban runoff. Based on these clear findings, NCWD identified that residential landscape irrigation offers the greatest opportunity for generating multiple benefits locally, regionally and for the Bay-Delta System.

Studies by Irvine Ranch Water District (IRWD), Santa Barbara County and Lake Arrowhead have shown that weather-based ET Controllers reduce residential water usage by an average of 25 to 33%. IRWD's 1998 and 2000 Runoff Study shows average residential runoff reduction of 64 – 71 percent as a result of the ET controllers. Moreover, the savings from ET Controllers are significantly more than results shown from ULFT rebate, residential plumbing retrofits and clothes washer rebate programs. Although considerable efforts have been implemented to promote ULFTs and low flow devices in the Santa Clarita Valley, little effort has been made to promote residential irrigation focused programs. NCWD's Residential ET Controller Rebate Program offers water savings and urban runoff reduction benefits and will be a positive catalyst in transforming the focus of community conservation programs to irrigation.

C-1a Program Goals

The main goal of NCWD's Residential ET Controller Program is to reduce water use from landscape irrigation by installing "real time" ET Controllers (5,040 connected valves). Based on consistent and proven water savings results from residential ET controller studies completed by Irvine Ranch Water District (IRWD), the city of Lake Arrowhead and Santa Barbara County, an annual water savings of 150.29 acre-feet per year and irrigation runoff reduction of 65% is set for the program's goal. The water savings for the project will be a valuable source of additional water supply for new developments in the District and will provide essential flexibility in the Santa Clarita Valley local water supply. Any reduction in NCWD water use directly reduces the demand for state water supply from the Santa Clarita Valley. The supply from the State Water Program received through Castaic Lake Water Agency (CLWA) is also more costly and less reliable than local groundwater supply available. In fact, a reduction in water usage by NCWD provides several direct benefits to the Bay-Delta project including a decrease in demand for state water supply, reduction in summer peak demand (and peak hours), and reduction of existing irrecoverable losses (runoff waste). The water savings from the proposed residential ET controller rebate program will also allow NCWD to purchase less water and/or minimize the impact of future developments on the Bay-Delta System.

C-1b Program Description

The proposed ET Controller Rebate Program will utilize up to three different types of "real time" ET controllers for residential sites. The three controllers were selected based on proven success in pilot studies and rebate programs. The selected controllers are:

1. HydroPoint's ET Everywhere Residential ET Controller
2. Weathermatic ET Controller and Weather Monitor (SL1-600, SLW-10)
3. Weatherset Company Residential Controller (WSR-8 & WSR-12)

The three options are provided so that the broad range of customers within NCWD can select the level of technical service assistance that best suits their needs. The cost of the controllers ranges from $138 to $400 with an additional cost of $100 for installation. Participants will be provided a rebate of $20 per connected valve on the controller for a maximum of 12 valves or a $240 rebate.

The 2.5 to 3 year Residential ET Controller Rebate Program will include the marketing, distribution and installation of 5,040 connected valves to ET controllers in residential sites with the highest irrigation water demand and potential water savings. The controllers will be distributed over the program timeline based on customer demand and/or until the maximum budget allocation has been met. In order to maximize the project's lifetime water savings and annual savings, the program will be designed to install more than half the controllers within the first year.

C-1c Program Objectives

The main objective of this program is to achieve a long-term reduction in average residential landscape water use of 25 percent through the installation and use of "real time" ET Controllers. The reduction will provide essential local water supply to reduce NCWD's reliance on state water and increase local flexibility, improve management and efficient use of the State water, and will increase the water supply reliability within the Bay-Delta. The ET Controller Program also fulfills a portion of the requirements of the California Urban Water Conservation Council's (CUWCC) Memorandum of Understanding under Best Management Practices (BMP) 1, 5 and 15.

Another key objective of the program is to reduce residential irrigation runoff that contributes to nuisance summer flows causing noncompliance of stormwater discharge requirements within the Santa Clarita Valley. Significant reduction in residential irrigation runoff will also reduce waste water treatment costs, prevent green waste contamination of the local watershed and will reduce irrecoverable losses (water lost that could not be reused).

A secondary objective is to promote water efficient technologies like the ET Controller in the Santa Clarita Valley. The District's promotion of the ET Controller technology will help move this water efficient product into the Santa Clarita retail market making it more accessible to residential customers. Increased market availability will benefit all the local water retailers in the Santa Clarita Valley and encourage the acceptance and widespread use of the ET Controllers and other such water efficient technologies wide spread throughout the community. The achieved water savings from the program will also provide a natural catalyst to further encourage installation of the ET Controller technology even without the District's financial incentive.

C-1d Project Necessity for Water Issues

There are several critical issues that demonstrate the importance of the Residential ET Controller Rebate Program including limited local water supply, periodic droughts and seasonal wild fires, excessive urban runoff, lack of any current BMP program targeting residential irrigation, and a high proportion of improperly maintained and irrigated residential landscapes.

Limited Local Water Supplies in a Growing Valley

With a growing population comes an increase in the demand for water supply and increased pressure to generate alternative water sources. Although NCWD is a smaller water district with only 8,900 connections and a staff of 34, it is located in one of the fastest growing regions in California. Projected future projects could increase the number of residential customers by over 3,500 within the next 5 to 10 years. In order to facilitate this steep increase, NCWD must seek additional reliable and cost effective water supply. Therefore the most critical issue driving the need for a Residential ET Controller Program is the limited local water supplies and high dependency on the State Water Program resources.

An average of 45 to 50 percent of the District's water supply comes from local groundwater sources with the remaining supply obtained through the State Water Program (purchased through CLWA). Currently several groundwater wells in the Santa Clarita Valley are contaminated with perchlorate which has further limited local water resources and increased the pressure to find alternative water supply demand. The Stetson Water Supply Report completed in fall of 2005 recommended NCWD seek alternative water supplies to sustain the growing population and the district's long term sustainability. Alternative supplies from water banking, reclamation and clean-up wells were all necessary in meeting long term goals. The report stated that reduction in water demand through water conservation is a reliable and necessary method in meeting the immediate and long term water supply goals. The Residential ET Controller Rebate Program will provide critical water supply to help facilitate the growing district and minimize the District's reliance on the State Water Program.

Climate Extremes and Wild Fire Threats

NCWD has a diversity of sub-climates that are similar to conditions in Orange County, Santa Barbara and the foothills of San Bernardino County. The temperature ranges from over 110 degrees to less than 20 degrees requiring residents to adjust their irrigation schedule regularly. Summers are extremely warm and dry with average temperatures over 90 degrees during several months on the year. As a result of these extreme summer conditions, residents compensate by over watering and often irrigate during the high temperature hours of the day when water loss to evaporation is greatest.

The winter climate varies throughout NCWD's service area. The foothills of Castaic and Pinetree have winter weather similar to that of mountain areas such as the San Bernardino and Los Angeles County (lower elevation) mountains. The central service areas including Newhall and Santa Clarita have a more Mediterranean like climate; however temperatures can commonly drop into the low 30s. Annual precipitation in the proposed project area averages from 15" to 18". The shifting weather conditions cause inefficient irrigation, as residents do not regularly adjust their timers to the changes. An ET Controller automatically adjusts to the changing conditions to reduce excess water use and negative runoff flows.

The Santa Clarita Valley also experiences periodic droughts, which further strain the water supply and can increase the risk of devastating wild fires throughout the district's foothill areas. A high percent of customers in the foothills are required by the County to maintain and irrigate large slope areas around their home to help prevent wild fires. As a result, sharp rises in water usage and irrigation runoff occurs at these

residents due to inefficient irrigation. The City of Santa Clarita and the Los Angeles County Department of Public Works have regularly reported excessive stormwater discharge above regulatory levels in these areas due to significant runoff from residential landscape irrigation. The ET Controller Program is designed to target these customers to improve irrigation efficiency and prevent runoff so regulatory compliance is achieved.

Inefficient Residential Landscape Irrigation

Due to the dry climate of the Santa Clarita Valley, many new homes built after the 1980s have irrigation timer systems installed by the developer or homeowner. These new homes were built into the foothills along the district's border with steep irrigated slopes that were created to offset the residential lots. Most of the older homes in the District also have irrigation timer systems or clocks installed to maintain their larger property sizes. Several older neighborhoods in the Newhall service area have 1 to 2 acre size lots with over 80 percent landscaped area. These customers use from 90 to over 300 hundred cubic feet (ccf) per month in the summer with as much as 75% of the water used for irrigation.

Preliminary surveys of residential customers show that very few residents have weather-based controllers and those with simple timer systems do not change the irrigation schedules to the seasonal or weather changes. The historical water use data shows the most significant watering inefficiency occurs during the summer months when water usage increases an average of over 300 percent. Many customers surveyed were not aware of weather-based controllers and many relied on the gardener or landscaper to schedule their systems. Furthermore, local professional gardeners and landscapers contacted the district to learn about ET controllers and other irrigation technologies they were not aware of or using. The ET Controller Rebate Program will be the first program in the valley to target residential irrigation and will help educate the public on these water efficient irrigation technologies. The program will also be a catalyst for other local agencies to follow with similar or regional programs.

Many customers and gardeners also stated that they did not have the time to regularly adjust and properly manage the landscape irrigation schedules. In most cases, gardeners over watered to ensure a green lawn because it was faster and easier than constantly readjusting the schedule. The ET Controller Rebate Program will address both the issue of time and scheduling accuracy with professionally trained installers and the use of "real time" ET Controllers.

Based on this evidence, NCWD determined that an ET Controller Rebate Program is critical in addressing the problems associated with inefficient landscape irrigation, changing and severe weather conditions, lack of customer and gardener knowledge and time, and overall limited public awareness. With an average of 55-65 percent of residential water use for irrigation, the ET Controller Rebate Program has a significant potential for water savings. It is estimated that an annual water savings of 150.08 acre-feet per year will be achieved at the completion of the 3-year program (based on an average savings achieved from IRWD, Santa Barbara County and Lake Arrowhead programs). The program will conserve valuable water supplies by providing an effective means for creating water efficient irrigation schedules that are based on the local weather and the vegetation's water needs. Most significantly, the program will increase available water supply for the growing Santa Clarita Valley and reduce NCWD's need to supplement local water supply with State Water. The result, an increase in the water supply reliability within the Bay-Delta and a long term demand decrease on the entire State Water System.

C-1e Integrating ET Program to Achieve Current and Future Water Management Plans

NCWD has joined with Castaic Lake Water Agency (CLWA) and the other local water purveyors in the Santa Clarita Valley to create an Updated Urban Water Management Plan for 2005-2010. Given the fast growing nature of the valley, water conservation programs such as the ET Controller Rebate Program will be an essential aspect in water supply and demand management. In addition, NCWD has generated a base 10 year conservation plan to meet the BMP requirements, provide long term reliable water supply to the district, and minimize the demand impact of new developments on the State Water Project.

Given limited budget resources and available staff, NCWD has selected programs that meet the requirements of multiple BMPs and generate the maximum water savings such as the Residential ET Controller Rebate Program. The program meets requirements under several BMPs including 1, 5, 8 and 15 which is an essential part of NCWD's conservation plan to reach full compliance of the CUWCC's MOU within 10 years. The ET Controllers are also shown to generate the greatest water savings per dollar invested compared to ULFTs, clothes washers and residential plumbing retrofits.

Currently, CLWA coordinates a residential ULFT rebate program in May and provides low flow plumbing devices; however a program targeting residential irrigation is lacking. The ET Controller rebate program would greatly encourage the implementation of a regional program and would provide a usable program plan and procedures that can be easily expanded to a regional scale. It also allows for any program failure and inefficiencies to be resolved before implementing a regional program at significant cost. The program will also help to bring awareness to the City's urban water runoff campaign that educates the community on the affects of urban runoff and how to reduce the impact from the residential sector. The results from the rebate program can also be used to justify a valley-wide program with all the local retailers.

Another aspect of the District's Plan is to increase the efficiency of new developments in the district. The water savings data collected will provide validation for requiring the installation of ET Controllers in all new residential developments within the district. Currently, only portion of new developments are considering installing ET controllers. Proven water and cost savings from the rebate program will justify adding the installation of ET Controllers as a requirement in the District's Water Service Agreement. This will provide a valuable means for reaching the water efficiency goals for new developments. The ET controller program and associated benefits like the above mentioned, will potentially impact over 3,500 new residential connections planned within the District (in the next 5 to 10 years).

C-2 Technical/Scientific Merit, Feasibility

C-2a Program Methods, Tasks and Procedures

Given NCWD is a smaller District with limited staff and resources the Residential ET Controller Rebate program was designed to minimize District efforts while still implementing a successful program.

The first decision to help reduce needed staff and District resources was to select a rebate based program rather than a direct install and equipment distribution program. The limited annual budget, storage area and staff resources at NCWD make a direct install or distribution program impractical.

A direct install program requires highly trained installers to install and correctly program the ET controllers. Although NCWD staff will be trained in understanding how the ET controller technology works and how ET valves are calculated, it would require a significant amount of training to have staff install and program the ET controllers. The Santa Barbara County study showed that proper installation of controllers by professionally trained installers (or properly trained county staff) greatly increased the percent water savings. Since NCWD does not have the available staff and resources to give such necessary and extensive training, the District will use professional installers improved by each ET controller manufacturer or supplier company. This will reduce staff time and effort and improve programming accuracy of the installed controllers.

With limited storage area for the ET controllers and limited hours of operation (Monday through Friday office hours), it is not cost effective to directly supply the ET controllers to the participating customers. Municipal Water District of Orange County's ET controller rebate program results showed that the rebate voucher program method was more efficient than relying on the District to purchase and provide the ET controllers to the customers. Based on NCWD's limitations and MWDOC's program findings, a rebate program would best fit NCWD's staff and resource capabilities and meet the program goals. A rebate program eliminates the need for equipment storage and staff involvement in the equipment (ET controller) purchasing process. To further minimize planning and implementation efforts, NCWD has modeled the proposed ET Controller Rebate program on the residential ULFT rebate program that has been implemented in the Santa Clarita Valley since 2003.

District staff have already been trained and experienced with the procedures of the ULFT rebate program. Using the same procedures (that are applicable) as the ULFT rebate program will reduce time and effort necessary to train the staff for the ET controller rebate program. The established rebate voucher forms, participant log sheets and documentation procedures will be used as templates for the ET controller rebate program. This will reduce program planning and implementation efforts. This will also minimize training efforts for a regional program since staff from all the local retailers (in the Santa Clarita Valley) have been trained on the ULFT rebate program procedures and protocol. The details of the program tasks and procedures are provided in Table C-1.

C-2b Program Planning and Flexibility

The District staff from all the various departments will be greatly involved in the planning and implementation of the proposed program. This will ensure that important staff input from their specific experience and knowledge will be incorporated into the program design. Designated Staff Group Meetings will be scheduled for each phase of the program so staff is aware of all the elements of the rebate program. To increase program flexibility and success, all participating staff will be cross-trained (as appropriate) on all aspects of the rebate program. This will also allow flexibility of District staff resources to change and

adjust according to program demands. For example, if a high volume of rebate forms are submitted to the District in a single week, staff from other departments who have been crossed trained will be able to easily assist. This will reduce the lag time and other potential problems caused. It will also prevent the waste of essential time for training the staff at the time of high demand.

Program planning will begin once the District is notified of DWR grant approval. A minimum of 6 months will be allocated to program planning and implementation. This will allow NCWD time to evaluate the results from the District's Residential ET Controller Pilot Study and make necessary adjustments to the program operations and marketing plan (Refer to Table C-1 below for specific details). Marketing and outreach will begin approximately 2 to 3 months prior to actual program implementation. This allows NCWD enough time to implement a multi-media marketing campaign that includes direct mailing, newspaper releases, public events and more.

Table C-1 Task List and Schedule

Tasks	Schedule
Confirm Program Production Targets, Goals, and Objectives	6/2005
Contract Negotiations between DWR and NCWD	6/2005
Contract Executed by DWR with NCWD	12/2005
Program Operations, Monitoring Assessment Plan Finalized	Program initiation finalized by 10/2005, quarterly monitoring reports and procedures by 2/2006
Program Equipment – ET Controller Specifications	
Review Pilot Study Results for product performance results	9/2005 -12/2005
Evaluate product performance (in pilot study) against program specifications and performance objectives	6/2005 – 9/2005
Confirm ET Controller selection for program (from the following): HydroPoint Weathermatic Weatherset	9/2005
Generate Eligible ET Controller List for rebate Program	9/2005
Negotiate product (standard price for ET controllers for NCWD customer, specifications, added features and delivery or availability schedule	9/2005 – 10/2005
Product manufacturer/distributor company to create and provide NCWD with product information and specification packet	10/2005 – 12/2005
District staff training on approved products (controllers)	10/2005, and as needed throughout the program
Program Database and Information Systems	
Create list of required Inhance specifications for program database and records.	7/2005
Centralized computer tracking system and database	7/2005 – 9/2005

developed and tested for: Inhance Systems Excel	
Security protocols for staff use developed and tested (i.e. staff access and use of databases)	9/2005
Data transfer, report generations and database updating procedures tested and confirmed	9/2005 – 10/2005
Staff Group Meetings (I) reviewing and providing recommendations for changes, upgrades or deletions to program database and IT Systems (as needed)	9/2005 – 10/2005
Management review of program database and IT systems and final approval	10/2005
Program Memo included in District Board Meeting packets to all Board of Directors (Board approval not required) on program database and IT elements	11/2005
District (program) staff training on the program database and IT system functions	10/2005, and as needed throughout the program (over 3-years)
Program Forms, Reports and Rebate Vouchers and Invoices	
Program staff review of ULFT Rebate program forms and invoice documentation	6/2005 – 7/2005
Update of all forms and rebate voucher documents to reflect the requirements of the ET controller Rebate program	9/2005
Standardization of all program forms and documents from all District departments including: Conservation Customer Service Accounting and Finance Warehouse/Store Room (facility)	9/2005, and streamline or update forms as needed throughout the 3-year program (9/2005 – 6/2008)
Staff Group Meetings (II) reviewing and revising all program documents and forms (as needed)	9/2005 – 10/2005
Management review of all program documents and forms and final approval	10/2005
All forms and program documents provided in District Board Meeting packets to all Board of Directors (Board approval not required)	10/2005
All program forms and documents finalized	10/2005 – 11/2005
District staff training on all forms and documents	10/2005, and as needed throughout 3-year program
Program Marking and Production Planning	
CIMIS weather station installed at Castaic site (pending DWR and NCWD's Legal Counsel approval)	Spring 2005
NCWD Pilot Study – ET controllers installed	5/2005
Staff Group Meetings (III) – marketing strategizing and planning (create program slogan) and budget	7/2005
Productivity and Outreach goals set for program	7/2005

Outreach and marketing calendar created	7/2005
Management Review and approval of marketing plan, objectives and calendar	8/2005
Itemized budget for marketing and outreach efforts	8/2005
Management approval of budget (marketing and outreach)	9/2005
Planning of Water Conservation Workshop (includes ET controller info and program outreach)	9/2005 – 12/2005, as well as necessary planning and implementation efforts leading up to each workshop (up to 3 months prior to each workshop)
Workshop Dates finalized and approved by Management and Board of Directors	12/2005
Development of Marketing material including: 1. Newsletter article 2. Monthly Bill by-line 3. Press Release 4. Information Flyer 5. Customer Interest form *Additional marketing forms to be added to schedule as determined in Staff Group Meetings (IV) for the program's marketing plans.	8/2005 – 10/2005
Create Participant Packets with program information, product specifications and programming requirements, voucher forms, etc.	11/2005 – 12/2005
NCWD's Residential ET Controller Pilot Study's 6 months assessment	10/2005 – 11/2005
Staff training on marketing plan and created outreach tools (and workshop training)	10/2005
Board Memo included in District's Monthly Board Meeting packet	10/2005
Public notification (including press) regarding ET controller rebate program	10/2005
Program Standards, (Parameter) Controls and Operations	
Staff Group Meetings (V) to develop operations policy and procedures for program	7/2005 – 9/2005
Set controls and standards for: 1. Customer Service (customer response, database maintenance, etc. 2. Rebate voucher processing and turn-around timeline requirements 3. Installation verifications 4. Data collection 5. Fiduciary Processes 6. Data reports, accuracy, confidence levels and timeline	7/2005 – 8/2005
Develop procedures and evaluation techniques for the following: 1. Sampling Plan (water savings, runoff	9/2005 – 12/2005

reduction) 2. Collection of Pre-installation water use and runoff data and other applicable data 3. Program sampling procedures (type of statistical analysis) 4. Daily and monthly weather data for applicable micro-climates in the NCWD service area. 5. Create cost-benefit modeling for program evaluation	
Input applicable changes/adjustments to rebate program based on Pilot Study results	11/2005
Create calendar for program review and audit (for performance and success assessments)	11/2005
Management approval of program operations, controls and standards	11/2005
District staff training on program operations, controls and standards	11/2005
Program Monitoring and Assessment	
Review of monitoring and assessment plan (input of necessary adjustment and changes accordingly)	6/2005 – 7/2005
District staff training of monitoring and assessment procedures and protocol including: 6. Conducting evaluation of program processes 7. Interview procedures for Customer Input and results 8. Data collection and analysis (from database and field collection) 9. Generating Performance and Program Success Reports 10. Dissemination of results and reports to necessary District staff, community representatives, other applicable entities and DWR	8/2005
Report to management outlining monitoring and assessment plans, procedures and responsible staff	8/2005
Create impact evaluations and reports on the following areas of impact: 1. Environmental 2. Social 3. Economic 4. Other *Impact of each area will be evaluated at the local, regional and state level as well as impacts on Bay-Delta system.	10/2005 – 2/2006
Submit impact evaluation templates for	2/2006

management approval	
Creation of quarterly and annual evaluation reports	1/2006 – 3/2006
Program modifications based on evaluation and performance report results	Throughout the 3-year program (3/2006 – 6/2008)
Customer questionnaire forms (input on program) released to participants	1/2006 – 6/2008
Customer questionnaires logged into database and evaluation report generated	1/2006 – 6/2008
Program modification based on customer input results	1/2006 – 6/2008
Quarterly and annual Program Evaluation Reports released to the following: 1. District Management 2. NCWD Board of Directors 3. City of Santa Clarita 4. County of Los Angeles (Dept. of Public Works) 5. Castaic Lake Water Agency (CLWA) and local water retailers 6. DWR 7. Other necessary entities	Create each year in July, October, January and April for previous quarter 1. Delivered first week of following quarter 2. Provided in the following month's Board Meeting packet 3. Delivered fourth week of following quarter 4. Delivered fourth week of following quarter 5. Delivered fourth week of following quarter 6. Delivered fourth week of following quarter 7. As needed/or requested
Program Implementation	
Program Marketing Begins	Winter 2005
First quarterly report and invoice submitted to DWR	April 2006
Program operations (until 5,040 valves or $20 rebates have been processed and released to participants)	January 2005 through June 2007

A detail table of the programs itemized (by tasks and cost source) budget is provided in Appendix A, Table 1.

C-2c Program's ET Controller Technology (Equipment)

The program does not require any maintenance and operational equipment. The proposed program offers rebates for ET controller technologies to increase residential irrigation efficiency. Details of each controller type and estimated costs are provided in Appendix A.

C-2d Environmental Documentation

Environmental Impacts

The proposed Residential ET Controller Rebate Program has several positive environmental impacts to the local and regional areas. It will also positively affect the Bay-Delta System and its surrounding watershed by reducing the current demand and minimizing the increase in future water demand (from district growth) from the state water program. The expected reduction in residential irrigation runoff will also generate multiple benefits at the local, regional and state level.

Obvious environmental impacts from the reduction in residential irrigation runoff from the proposed program include:

- Reduction in green waste into local streams and habitat
- Reduction of fertilizers and other harmful chemicals into the local habitat
- Improved watershed health
- Decrease of nuisance summer flow and high winter flow in flood plains
- Reduce stream widening and erosion due to high discharge flows
- Increased local river and stream stability
- Improved stream and river substrate quality
- Improvement in local stormwater quality
- Helps the City and County reach stormwater runoff compliance levels

This reduction of State Water demand will improve water use flexibility so the unused water supply can be used to restore essential streams and rivers to improve and maintain local fish and other species populations.

Social Impacts

The program has several beneficial social impacts to the local community, Santa Clarita Valley and the Bay Delta System. The local and regional impacts include:

- Reduction in customer's monthly water costs (water savings)
- Increase in public awareness of water efficiency, runoff problems and general waste
- Catalyst for the implementation of a regional ET controller rebate program
- Helps Landscapers and Gardeners to produce green and healthy landscape with significant less water (resulting in happy customers/homeowners)
- Positive publication of water conservation programs and how it can benefit the customer and the entire public
- Helps to further publicize the city of Santa Clarita and the County of Los Angeles runoff reduction outreach programs

Economic Impacts

The proposed program will provide positive economic impact including:

- Allowance for necessary growth and new development in the Santa Clarita Valley (new water supply created)
- Provides new water supply to generate higher revenue value for water (water purveyor benefit)
- Reduces customer's monthly water bill
- Reduces the amount of state water needed to purchase (higher cost than groundwater supply)
- Increases the efficiency of water supply
- Reduce seasonal peak water usage (highest energy costing water supply)
- Reduces peak load (high usage hours during the day) and associated energy costs
- Reduces or minimizes the City stormwater compliance fess (save city and tax money)

Compliance with Local, regional, state and federal regulations

Although beneficial residential irrigation runoff data will be collected that could be useful for the City's and County's stormwater management plan, the program does not require any environmental compliance documentation and/or approval. Studies completed by IRWD shows ET controllers in residential sites can reduce irrigation runoff by an average of 50 to 71 percent. Currently, the stormwater is not treated through any sewer system given the high costs and limitations on local wastewater treatment plants' capacity. As a result, this stormwater which includes residential irrigation runoff is released directly into local streams, river and wetland areas or is directly released into the ocean. The ET Controller rebate program can help

to reduce irrigation runoff and prevent fertilizers, green waste and other harmful material from entering these local water ways, thereby helping the city and county to meet their regulatory requirements.

C-3 Monitoring and Assessment

A key element of a successful program is the ongoing monitoring and assessment of the program's performance and success. The four major elements of NCWD's program monitoring and assessment include:

1. Developing and maintaining a centralized database incorporated into the customer billing and history records
2. Performance & success reports to confirm goals and objectives are being met
3. Customer follow up surveys, feedback input and continual communication (logged)
4. Regular and project-end procedural reviews and analysis

The information obtained through these 4 categories will be used by NCWD to continually upgrade the program to maximize effectiveness and ensure successful regional implementation within the entire Santa Clarita Valley. The following sections detail each of the 4 essential elements to NCWD's monitoring and assessment plan.

C-3a Pre-Project Conditions and Data Baselines and Assumptions

NCWD has extensively evaluated its residential customers based on water usage patterns and has completed GIS mapping of 3 major service areas. This data has allowed NCWD focus efforts to the customers with the greatest water savings potential. Such data as parcel or lot size, usage history or high tier water usage volumes can be pulled from the residential customer database to rank participants based of need, potential savings, cooperation and any other necessary factors. Furthermore, as a small district the Customer Service has a great deal of direct customer contact to successfully identify compliant customers, continual water waste violators (runoff into stormwater drains) and other ideal customers for the rebate program. The extra attention and effort to customer service at NCWD has also built a trust between the customers and district staff that will be beneficial in encouraging participation.

Previously, residential landscape irrigation has not been a focus of water conservation efforts in the valley and the water savings opportunities have not been realized. In evaluating the distribution of the District water usage, NCWD determined that a significant portion of water was used for residential irrigation and that water savings opportunities were significant. In 2004, NCWD began a public information campaign to promote and educate District customers on irrigation technologies to increase water use efficiency and prevent nuisance runoff. The proposed ET controller rebate program will help the District to tap into this valuable water savings source to help reach District, regional and Bay-Delta goals.

Assumptions

For the proposed project NCWD is using the following listed assumptions.

<u>Landscape Irrigation</u>

(1) The average square footage of landscaped area per installed controller (with 12 valves per controller) for this project is 2,000 to 2,500 based on the overall average irrigated areas tabulated from the IRWD (1,500 to 1,795sqft) and Santa Barbara County programs (2,500 sqft).
(2) This represents the irrigated landscape areas only and not the entire parcel area.

(3) Larger properties will also be included in the program, however a maximum rebate value of 12 valves per residence will apply to the program unless water savings is hindered or reduced due to such limitations.
(4) The average estimated water savings per controller (used to calculate the cost and benefit values) in gallons per day (gpd) is 319 or 13-ccf/month, based on the overall average water savings value tabulated from the IRWD (47gpd), Lake Arrowhead (200-350gpd) and Santa Barbara County programs (322-402gpd).
(5) Irrigation water savings will vary throughout the year and potentially zero savings will occur during wet months. The assumed monthly average water savings (13-ccf or 319gpd) is based on an annual average with summer month savings above 13-ccf and winter savings less than 13-ccf or even zero.
(6) Avoided Cost of Water for this project (all state water) is $181/AF which represents the cost to NCWD to purchase state water from CLWA.
(7) The minimum area of irrigated landscape for program qualification is 1,200 square feet.

Residential Irrigation Runoff

(1) Residential runoff savings of 65 percent or (see MWDOC/IRWD study) 0.65 is assumed for the proposed program.
(2) Urban runoff dry season benefit period of 9 months of the year.
(3) Annual rate of service termination (percent of remaining active accounts that are expected to be terminated by the customer) is estimated at zero (0%) given the high percent increase in customer connection expected in the next 5 years.

Customer Co Pays

(1) Individual customer co-payment will vary depending on the Controller selected and the number of valves installed.
(2) Customers are responsible for the entire cost of the controller and installation. After the customer has submitted the rebate form and installation verification form, they will be given a rebate based on the number of connected valves (to the controller).
(3) Given a total of 5,040 valves installed with a $20/valve, customers are responsible for payment (customer co-pay) of the remaining balance.
(4) Customers must install one of the approved ET controllers to qualify for the rebate program.

ET Controllers

1. The project (cost and benefits) assume a 20-year usable lifetime for the 3 selected ET Controllers.

The water savings and size of landscaped area were weighed to the conditions in NCWD's service area. The average residential landscaped area in NCWD's service area is larger than residential areas included in the IRWD study. There are several older and custom built neighborhoods in the District with 1 to 2 acre size lots as well. Based on these conditions and collected GIS data of the district, an average (range) area of 2,000 to 2,500 square-feet are assumed for the proposed program. These conditions are most similar to the Santa Barbara County's program and therefore their data has been given greater weight compared to the results from the other two studies. Customers with larger landscaped areas will be priority targets for the program to maximize water and runoff reduction results.

C-3b ET Controller Rebate Program Database

Although, NCWD is small district, there are several different departments that must cooperatively work together and share data results to ensure the overall success of the ET Controller Rebate Program. A centralized database will allow the different departments to easily track and maintain collected data and information efficiently as well as immediately identify data discrepancies or errors that a single department might not identify. The central database will be incorporated into the Customer Billing System (Inhance) so that data is tracked on multiple levels as each department desires. For example, Field Staff and Surveyors generally identify customers by location, address or parcel number, while Customer Service and Billing use a customer's name and account number.

Furthermore, this database can eventually be applied for a regional program that incorporates all the local water retailers in the Santa Clarita Valley.

An extensive Excel database will also be maintained with detailed participant data, survey results and applicable monthly, quarterly and annual report data. The Excel data will be crossed referenced with the participating customer's Inhance records to ensure that their water usage values are consistent with the District's billing records and can easily be updated into the system. The project team will develop detailed specifications for the Excel database during the project planning and start-up phase.

At minimum the database will include the following:

- Service area of participant (as required for the cost-share)
- Individual participant information (account/parcel number, name, address, phone, etc.)
- Date participant contacted NCWD with interest in rebate program
    - Type of marketing that interested participants (i.e. letter, flyer, phone call, etc.)
    - Contact method (phone, fax, in person, email, etc.)
- Qualification survey date, ID number and approving staff
- Installation date and name of professional installer
- Controller type/model and number of valves installed
- Rebate identification number, amount and approval date
- Total area of irrigated area (type – turf, shrubs, drought tolerant, etc.)
- Follow up communication
- Noted issues/problems and results (and name of assisting staff)

C-3c Performance and Success Reports

NCWD will use the proven methods and procedures used by other district's and agencies to implement the ET Controller Program, however continual assessment of the program will be completed to assure that optimal results are achieved and specific issues and concerns of our service area are resolved. This includes quarterly performance reports on the following:

4. Operational and program maintenance logistics
5. Participation distribution (within the 4 service areas)
6. Water savings and runoff reduction results
7. Program marketing response and customer & staff feedback
8. Status of project targets

Detailed reports of the 5 key areas above will be designed based on the specifications developed during the planning phase. Additional reports will be developed, as necessary to facilitate successful program implementation, maintenance and evaluation.

D. Qualifications of the Applicants and Cooperators

As a small District, NCWD will use the expertise of various departments and outside consultants to implement an effective Residential ET Controller Rebate Program. A rebate program was selected to reduce the burden on NCWD's limited staff resources. In addition, NCWD staff has proven able and successful at implementing rebate programs. For example, the district has been cooperatively working with the local wholesaler (CLWA) and other local retailers to implement a residential ULFT rebate program since 2003. NCWD will utilize this direct experience in rebate programs to maximize staff effectiveness.

D-1 District Staff

Melinda Weinrich (Resource Conservation Specialist)

As the Water Conservation Specialist, Melinda Weinrich oversees the development and implementation of NCWD's Water Conservation Programs and Public Outreach to support long-term water supply and demand management objectives. Currently, Ms. Weinrich manages the (NCWD) retailer portion of the ULFT Rebate and the Residential Plumbing Retrofit programs. Ms. Weinrich also runs NCWD's Residential and CII Water Use Survey and Audit efforts, and coordinates the District's Public Outreach and Education projects. Ms. Weinrich is currently the Project Manager for NCWD's 2005 Residential ET Controller Pilot Study that is evaluating 75 installed ET Controllers (3 types) in residential sites for water savings, runoff reduction and customer response and preference. Since joining NCWD, Ms. Weinrich has implemented programs under the requirements of BMP 1, 3, 5, 9, 13 and 15, and maintains District compliance with BP 2, 4, 7, 8, 11, 12 and 13.

In addition to her efforts related to the CUWCC's BMP requirements, Ms. Weinrich generates the Districts quarterly newsletter. She also assisted with the implementation and PR campaign for the new tiered rate structure, and facilitated in the development of the District's Water Use Efficiency (112) and Water Waste (113) Ordinances.

Prior to joining NCWD, Ms. Weinrich worked with a leading consulting firm working on projects with the City of Gardena, City of Lakewood, California Polytechnic University Pomona, and the Santa Clara Valley Water District (CSCVWD) and leading industry corporations including Tyco Electronics, Textron, Smurfit-Stone, Novellus and Pacific Title and Arts Studio. As a consultant, she completed Water Use and EH & S Audits of numerous large industrial facilities throughout California in such industries as electronics, metal finishing, paperboard production and food processing and packaging.

Ms. Weinrich is on the Santa Clarita Chamber of Commerce Environmental Committee, and is the District representative for the CUWCC.

Paula Forsberg (Customer Service Manager)

Paula Forsberg has been an employee of Newhall County Water District for approximately 23.5 years. During the past 10 years, she has served as the Customer Service Manager. Ms. Forsberg's department is responsible for meter reading, billing, customer water accounts, various repairs, meter installations, etc. The department is currently in the process of retrofitting all manual read meters to radio read technology, in which Ms. Forsberg was instrumental in getting started.

Ms. Forsberg's experience has been varied during her career at NCWD and includes but is not limited to the following:

- In charge of participation at community events

- Best Management Practices for the CUWCC
- All aspects of customer service including water usage, billing, complaints, record keeping, investigations, etc.
- Accounts payable
- Inventory
- Human resources and payroll
- Three billing program conversions

Being a small district has allowed Ms. Forsberg and her staff to build relationships with many of the customers. Ms. Forsberg and her staff can easily identify many of the customers; whether they are easy to work with or difficult; issues they have faced with billing or problems with there water use; the size and types of yards in different areas. Ms. Forsberg and her customer service staff will be working on assisting customers (phone calls and front desk inquiries) with general program questions, helping processing rebate vouchers and logging customer participation in the database.

Rochelle Patterson (Programming Accounting)

Rochelle Patterson has worked at Newhall County Water District for 6 ½ years in the Finance Department. She is responsible for preparing, balancing, and maintaining financial reports and records and providing direction to other accounting staff. Mrs. Patterson's essential duties include analyzing the financial statement; evaluating changes in working capital; preparation and distribution of the District's budget; analyzing revenue and expense accounts and make projections; develop schedules for year-end closing; construction in progress; donated facilities; fixed asset and depreciation; oversee bidding process for large contracts and assist in writing construction contracts and agreements. A portion of her duties are designated for special projects. Last year the District introduced a tiered rate billing structure. Mrs. Patterson was given the responsibility to collect and analyze the customer's current usage to establish the proper tier limits to meet the District's goals.

Mrs. Patterson's assistant, Liza Moncada, is an Accounting Clerk II and is responsible for preparing and maintaining financial records and reports and for the processing and payment of invoices. Ms. Moncada has been with the District for nearly 5 years. She started in the customer service department and is fully trained for both positions. Mrs. Moncada is also bi-lingual, well organized, and efficient and was involved in the District's ULFT program.

D-2 Technical and Program Consultants

NCWD will be relying on professional installers to ensure that the ET controllers are programmed correctly to maintain healthy landscapes and to maximize water reduction. The use of professional installers will assure a standard level of installation and programming expertise that the NCWD staff cannot provide. A cost-effectiveness analysis also shows that it is more cost-effective for NCWD to require professional installation given the high amount of staff time and resources that would be needed to train the staff to a professional level. Previous studies of residential ET Controller programs shows that higher water savings are achieved with professionally installed and programmed controllers compared to installed by customers or minimally trained purveyor staff. NCWD will use the experience and knowledge of the controller manufacturers to select the installers that best understand their technology and can deliver consistent programming accuracy. The use of these professionally trained installers will also allow District staff to focus on their specific tasks for the program

The controller companies selected have products that have proven effective in multiple studies and in rebate program s by several California water purveyors. The controller manufacturing companies (or wholesaler and technical assistance corporations) used for the program are:

1. HydroPoint
2. Weathermatic (AquaFlo Wholesaler Distributions)
3. Weatherset Company

These companies and their sales and technical staff have extensive experience with weather-based irrigation technology and have worked with such water retailers and wholesalers as IRWD, MWDOC, Santa Barbara County (including the city of Santa Barbara, Goleta Water District), and the city of Lake Arrowhead. NCWD will rely on the expertise of these experienced representatives to provide necessary technical assistance for the District and the participating customers. The key Technical Expert for the proposed program will be Tom Ash of HydroPoint.

Tom Ash (Technical Expert/ Program Consultant)
Tom Ash has over 20 years of experience in the fields of water use efficiency, public education and horticulture. As the water conservation coordinator for the Irvine Ranch Water District and a horticulture advisor for the University of California Cooperative Extension, he has helped create successful water savings programs for homeowners, homeowner associations, property managers, landscapers, the building industry and public agencies across the country, including the Atlanta Regional Planning Commission, Georgia Conservancy, the Santa Fe Water Coalition, the Utah Department of Water Resources, the Metropolitan Water District of Southern California and landscape associations in Oregon, Colorado, Idaho, Texas, Georgia, California, Hawaii and Nevada

In 2000, Tom was the recipient of the first “Excellence in Water Conservation” Award presented by the California Urban Water Conservation Council. He is past president of the AWWA Cal/Nevada Conservation Section, an advisor to Sunset Magazine on water and landscape publications, a frequent speaker on incentive water rate structures, urban runoff, evapotranspiration (ET) and weather data use for conservation, and has conducted the first studies using ET controller technology to reduce water demand and urban runoff starting in 1997. He is the author of Landscape Management for Water Savings, published by the U.S. Bureau of Reclamation.

Tom is the Director of Conservation Alliances for HydroPoint Data Systems and assists public agencies, the landscape and building industries on the efficient use of water, urban runoff, conservation, drought management planning, water rates and establishing effective water conservation programs.

Tom is the author of Landscape Management for Water Savings published by the California Landscape Contractors Association and the U.S. Bureau of Reclamation. The book described how landscape contractors can increase business opportunity in a limited water future.

E. Outreach, Community Involvement and Acceptance

E-1 Outreach

NCWD staff and Marketing Staff from the selected ET Controller Suppliers and/or Manufacturers will work cooperatively to develop a multi-media outreach program to obtain the ideal participants for the project. To maximize the efficiency of outreach efforts, specific neighborhoods with high sloped irrigated areas, installed timer and/or controller systems and high summer water usage will be selected for the first round of outreach efforts. This targeted outreach plan will help to reduce the candidate pool and allow for NCWD's program marketing and outreach efforts to be best focused. Residential customers with high water usage and/or water usage in the top tiers of the District's tiered rate structure will also be targeted first to further reduce efforts and to ensure the highest water and cost savings potential. These customers are easily identified and tagged through the District's Inhance database.

Many residential neighborhoods in the District have an associated Homeowners Association (HOA) that regulates neighborhood landscape and maintenance requirements, maintains common landscape areas and other neighborhood concerns. The HOAs will be used as an outreach tool to effectively promote the ET Controller Rebate program to an entire neighborhood at once. Program information sheets, survey forms and other material will be provided to the HOAs to promote the program and when applicable NCWD will provide a small presentation on the ET Controller Rebate program at HOA meetings and events.

Outreach efforts will include but are not limited to the following efforts:

- Direct mailings to potential participants
  - Letters or postcard notices to customers (high water using residents or residents with usage in top tier levels)
  - By-line in customer's monthly water bill
  - Bill stuffer notice or flyer
  - Customer Surveys (to qualify for rebate program)
- NCWD Newsletter articles about the program and ET controller technology
  - Included with customers bill, at front desk, the District's Board Room and on the website
- Direct phone calls to customers
- Onsite survey visits (discussion of rebate program as part of residential survey)
- Local newspaper article and press releases
- Promotion items and giveaways (rain meter, or soil probe)
- Information and promotion of program at local community events (NCWD attends)

There are four major events in the community that NCWD will attend that can provide an opportunity to reach a large number of customers. The public events include:

1. Santa Clarita Valley River Rally
2. Castaic Lake Agency Open House
3. Santa Clarita Valley Emergency Expo
4. Newhall/Santa Clarita Street Fair

The ET Controller Suppliers and/or Manufactures will be responsible for providing at least 2 professional installers for the ET Controller. The Suppliers/Manufacturers and selected Professional Installers will be responsible for all matters and liability related to the installation of the ET Controllers. Contact information on the approved installers will be provided in the rebate packets so customers can easily schedule the installation of their ET Controller.

E-1a Water Conservation Workshops

The Board of Directors requested public workshops to educate customers on the new tiered rate structure and to promote water conservation. Information on ET Controller technologies and the proposed rebate program will be key components of the workshop. The workshops will explain how the ETo values are generated and how the values are used to generate water efficient irrigation schedules. Technical specialist from each of the ET controller manufacturer and/or supplier companies will be at the workshop to further describe and provide information on their specific ET controller technology. Part of the workshop will include a customer survey and irrigation scheduling task to help customers identify if the ET controllers will benefit their property by helping to reduce water use for irrigation. This information will also be used by NCWD to identify ideal participants for the Residential ET Controller Rebate Program. Those customers who do not qualify for the rebate program (i.e. too small of landscape area, repairs to irrigation system needed, etc.) will still be encouraged to invest in the technology and will be given necessary information. Two workshops are scheduled during the 3-year rebate program. The project timeline (Table C-1) details the planning and implementing steps for the workshop.

The program will be designed to encourage participation by all social and economic levels of residents within NCWD service area. This includes several disadvantaged communities and neighborhoods with annual household incomes less than $38,000. NCWD will provide specific marketing and outreach to ensure that these disadvantaged areas are fairly represented in the proposed rebate program.

After the initial outreach effort of high priority customers, NCWD program staff will evaluate the initial success of the outreach process and confirm if the water and cost savings values are on target with the program goals. Furthermore, customers were periodically be surveyed to review the customer's response to the outreach efforts and any necessary changes and/or additions will be made.

E-2 Community Involvement and Acceptance

In addition to customer support of the ET Controller Rebate Program, many community developers, organizations and local government entities support the rebate program (see Appendix B with included letters of support from the community). The program was specifically designed to benefit the district and its' customers, as well as provide comprehensive local, regional and state benefits.

Both the City of Santa Clarita and the County of Los Angeles have aggressively targeted wastewater runoff to meet the stormwater discharge compliance requirements; however there continues to be significant nuisance runoff from residential irrigation. The Residential ET Controller Rebate Program will specifically address the City's and County's runoff issues and NCWD will cooperatively work with these entities by sharing data and results so that all goals are reached. The reduction in irrigation runoff will also help reduce the County's stormwater management costs and will reduce green waste entering the stormwater drainage system. HOAs will also benefit from the runoff and water use reduction achieved by participating residents and will be involved in promoting the rebate program within their neighborhood.

Several local environmental organizations support the program for the potential positive impacts the program will have on the local watershed. Their support will be beneficial in encouraging public opinion

to support and participate in the rebate program. Many customers in the district have drought tolerant and native plants thanks to the campaigns of local environmental organizations; however the plants are set on the same irrigation schedule as the turf lawns and high water using plants. A combined effort between NCWD and the local environmental groups will ensure that customers generate the expected water savings from planting water efficient plants and using an ET controller.

In fall of 2005, NCWD released a Customer Water Use Questionnaire to learn more about customer's water usage and interest in water conservation programs. Over 68 percent of surveyed customers were interested in a water use survey of their residence and a majority of their irrigation schedules were set greatly over the necessary watering needs of the plants. In the written surveys and customer service calls, most customers stated that irrigation was their greatest concern and many would be interested in learning more about ET controllers and how to install them in their residence.

Furthermore, of the local water retailers, NCWD has the highest percent of customer participation (participation per total number of customers) in most Santa Clarita Valley water conservation programs. In 2003 NCWD had over 100 customers on a waiting list to receive ULFT rebates and nearly 200 listed in 2005. The District also has to continually restock the low flow showerheads, faucet aerators and garden hose spray nozzles nearly every month due to high customer interest. The participation in the residential plumbing retrofit (BMP 2) and other programs continues to grow as more customers become interested in water conservation to reduce their costs. Based on these trends, highly positive community response to the proposed ET Controller program is expected with many customers interested and willing to participate.

Response from articles released on ET Controller technology in the District's newsletter showed additional positive customer interest and response to ET controllers. The District has received letters, emails and phone calls inquiry about ET controllers and incentive programs. This all supports the District assumption that the customers will accept and participate in the ET Controller Rebate program. The proposed program will fill an important niche in the Santa Clarita Valley's water conservation efforts by meeting customer needs, and improving the water use efficiency and reducing runoff reduction within the District.

F. Program Innovation

Little effort has been made in the Santa Clarita Valley to address water use in landscape irrigation, specifically residential. Many customers fear reducing their watering will cause brown spots, wilting or even dead plants and turf. Gardeners and landscapers have been conditioned to create beautiful lush green lawns and landscapes at all cost so the homeowners remain happy. That same happy homeowner continually calls the water district complaining about their high water bills and reminding everyone that they have already installed low flow showerheads, faucet aerators and even a water efficient washing machine. So where has all their water gone?

Based on preliminary surveys of residential sites, an average of 60 to 70 percent of the residential water usage is for landscape irrigation. Most customers and even gardeners are unaware of the new water efficient technologies such as ET Controllers. That can help maintain healthy and beautiful landscapes with significantly less water. Most garden supply stores and nurseries in the Santa Clarita do not even carry weather-based irrigation systems as if it were a technology only reserved for the high tech agricultural industry.

NCWD developed a multi-step plan to change the community perception of what is efficient and necessary landscape irrigation. The first step in the process was to educate the customer on weather based irrigation technologies starting with installing a CIMIS Weather Station. The station will be used to promote NCWD's efforts to help customers reduce their water usage and to introduce the community to weather-based irrigation technology. The District hopes to eventually install a CIMIS stations within each of its four service areas. The first CIMIS station is tentatively set to be installed in NCWD's Castaic service areas. The second step is a Residential ET Controller Pilot Study to show the water savings achieved from this innovative technology and to encourage residents to upgrade their current clocks.

The ET Controller Program is the third and key step in promoting weather-based irrigation technology to the residence and gardeners in the valley. The rebate incentive will help encourage many residents to install this new technology at their residence. The long-term result of the District's efforts is a shift in conservation efforts to irrigation where the highest water savings opportunities exist. The Evapotranspiration (ET) controllers offered through the proposed rebate program will replace outdated and common "clock type" controllers that require manual adjustments and have very limited capabilities. This innovative technology will be specifically beneficial in the Santa Clarita Valley where the temperature varies by as much as 90 degrees throughout the year and where over-watering is highly common.

Evapotranspiration (ET) is the combined process of water evaporating from the soil and water transpiring from plants. ETo, or reference evapotranspiration, is based on calculation of several factors, including solar radiation, temperature, moisture in the air and wind speed. ET values can vary considerably from week to week and even day to day. To maximize water use efficiency with standard clock timers biweekly re-programming of the irrigation schedules must be completed. This is extremely time consuming that most residents and even gardeners do not adjust the clock timers more than 2 to 4 times a year. In comparison the "real time" ET controllers update the irrigation schedules for each valve on a daily basis resulting in highly water efficient irrigation. This daily adjustment to the changing weather produces a highly efficient irrigation system with minimal water use.

Many ET controller rebate programs allow for historical based ET Controllers to be installed. Historical based ET relies on past weather conditions and cannot vary its schedule to match the actual weather conditions. For example, if there was no rain in previous years during early May, the historical based ET

controller would irrigate even though it is currently raining. To maximize efficiency and water savings, rebates will only be applied to three types of "real time" ET controllers with rain gauges and automatic shutoff functions. The "real time" controllers selected also offer more features and landscape specifications than historical based controllers to further improve irrigation efficiency. Additional site-specific variables that can be added to the controller programming include:

- Soil type
- Sun/shade exposure
- Type of irrigation system (drip, bubbler, sprinkler, etc)
- Slope of terrain
- Zip code location (for weather of immediate microclimate)

The HydroPoint ET controller uses an "ET Everywhere" technology based on multiple weather stations weather data and modeling formula to generate an ET value for each residential site. Weatherset Company does not use weather station. Weatherset Company's controller uses solar radiation, wind, temperature, air moisture in the direct area of the controller to calculate an ET value for each residential site. Lastly, the Weathermatic controller uses a weather monitoring device installed at the residence to collect the necessary data to calculate a site-specific ET value. All three controllers' ET value is calculated from "real time" data to produce the most water efficient irrigation schedule for that residential site.

The second key element in the programming of the irrigation schedule is the type of vegetation set on each valve. All three controllers use several categories of plants with average crop coefficients and/or a manual input option if a plant's specific crop coefficient is known. The types of vegetation include:

- Turf or lawn (warm or cold season)
- Shrubs and bushes
- Trees
- Groundcover
- Drought tolerant plants
- Flowers
- Manual input options

The crop coefficient category can also be designated as high, moderate and low water using plants.

Previously, central controller system and 48 valve ET controllers were the only available "real time" technology and were not cost effective to the average residential customers. These new innovative ET controllers incorporate the advanced "real time" ET values with a more user friendly control panel at significantly less cost. Although professional installation and initial programming is required for the program, all three controllers have simple control panels so customers can adjust the program as needed. The HydroPoint's WeatherTRAK offers technical service assistance 7 days a week at $4/month for customers that need additional technical assistance. Alternatively, the Weatherset controller is designed for complete customer programming and maintenance for hands on customers who are technically savvy or interested in irrigation.

The proposed program will offer 3 cost-effective product/technologies for residents to select that most beneficial controller for their needs and that maximizes water savings. It is the first and only program in the Santa Clarita Valley to specifically target residential irrigation water use and can be successfully replicated (or expanded) on the regional level to further reduce the Santa Clarita Valley's dependency on state water.

G. Benefits and Costs

The program will provide several benefits at the local, regional and state levels. Appendix C includes the following required Costs and Benefit Tables (with correlating Prop 50 Application Table identification numbers) and the detailed benefit descriptions for the proposed Residential ET Controller Rebate Program (Tables 1-8):

1. Project Costs (Budget)
2. Annual Operations and Maintenance (Table C-2)
3. Total Annual Project Costs (Table C-3)
4. Capital Recovery Factor – for the project only (Table C-4)
5. Project Annual Physical Benefits (Qualitative and Quantitative)
6. Project Annual Local Monetary Benefits (Table c-6)
7. Project Local Monetary Benefits and Project Costs (C-7)
8. Applicant's Cost Share Description (C-8)

Appendix A: Project Budget and ET Controller Equipment Costs

Table A-1 ET Controller Costs

Item	Amount *	Units	Qty.	Total Cost	Contingency	Life (years)	Annualized Value	Local Share	Customer Share	Prop 50 Request
Weather TRAK ET Controller *(includes 3-year service fee of $144)*	*$432.00*	$/controller	140	$60,480.00	10%	*20*	*$66,528.00*	*$13,002.00*	*$29,568.00*	*$23,958.00*
Weathermatic SL1600 4 Sta. Smartline Controller (expandable to 16 valves)	*$78.73*	*$/controller*	*140*	*$11,022.48*	10%	*20*	*$12,124.73*	*$4,682.02*	*-$1,184.57*	*$8,627.28*
Weathermatic SLM4 4-Station Exp. Module (for SL1600/SL4800)	*$23.30*	*$/module*	*420*	*$9,784.15*	10%	*20*	*$10,762.57*	*$1,384.71*	*$6,826.33*	*$2,551.53*
Weathermatic SLW10 On-site Weather Monitor (W.M...)	*$116.61*	*$/W.M...*	*140*	*$16,325.52*	10%	*20*	*$17,958.07*	*$6,935.27*	*-$1,756.39*	*$12,779.20*
Total Weathermatic ET Controller and Equipment Costs	*$265.23*	$/controller	140	$37,132.15	10%	*20*	*$40,845.36*	*$13,002.00*	*$3,885.36*	*$23,958.00*
Weatherset WSR8 & WSR12 ET Controller	*$115.56*	$/controller	140	$16,178.40	10%	*20*	*$17,796.24*	*$13,002.00*	*-$19,163.76*	*$23,958.00*
Professional Installation (of ET Controllers)	*$100.00*	*$/controller*	*420*	*$42,000.00*	10%	*n/a*	*$46,200.00*	*$0.00*	*$46,200.00*	*$0.00*
h. Total Estimated Costs				$155,790.55			*$171,369.60*	*$39,006.00*	*$60,489.60*	*$71,874.00*
Average Cost Per Controller (includes installation)				*$311.58*				*$78.01*	*$120.98*	*$143.75*
Annual Cost				*$51,930.18*			*$57,123.20*	*$13,002.00*	*$20,163.20*	*$23,958.00*

* Los Angeles County sales tax has been incorporated in the listed cost

** Actual total cost of ET Controllers may vary due to customer preference and distribution of ET Controllers selected; however the local share and grant amount is constant at a total of $20/valve for 6,000 valves (or approximately 500 controllers)

Table A – 2 Project Budget by Task

Item	Amount *	Units	Qty.	Total Cost	Units	Life (years)	Present Value	Local Share	Prop 50 Request
(a) Administrative (for initiation of project)									
1. Salaries, Wages									
Resource Conservation Specialist	$39.98	$/hour	1,000	$39,980.00	$	3		$39,980.00	$0.00
Customer Service Supervisor	$42.87	$/hour	288	$12,346.56	$	3		$12,346.56	$0.00
Customer Service Lead/Database Manager	$27.90	$/hour	360	$10,044.00	$	3		$10,044.00	$0.00
Customer Service Staff	$25.26	$/hour	200	$5,052.00	$	3		$5,052.00	$0.00
General Manager/Chief Financial Officer	$59.43	$/hour	30	$1,782.90		3		$1,782.90	
Accounting Supervisor	$41.53	$/hour	72	$2,990.16	$	3		$2,990.16	$0.00
Accounting/Finance Assistant	$27.90	$/hour	36	$1,004.40	$	3		$1,004.40	$0.00
2. Fringe Benefits									
Includes insurance, worker's compensation, employee benefits, etc.	$5.05	$/hour	1,986	$10,029.30	$	3		$10,029.30	0
3. Supplies									
Outreach Materials in Packet to Customers									
How to Water Your Garden (Sunset)	$0.25	$/booklet	750	$187.50	$	3		$187.50	$0.00
Water and Energy Efficient Irrigation in California (Sunset)	$0.25	$/brochure	750	$187.50	$	3		$187.50	$0.00
Miscellaneous Landscape Irrigation Mini=brochures	$0.75	$/booklet	750	$562.50	$	3		$562.50	$0.00
4. Equipment									
Not applicable (n/a)	NA	NA	NA	NA	$	NA	NA	NA	NA
5. Consulting Services	NA	NA	NA	NA					
Marketing and Technical Assistance	$75.00	$/hour	60	$4,500.00	$	3	NA	$4,500.00	$0.00
6. Travel									
None Requested	NA	NA	NA	NA	$	NA	NA	NA	NA

Item	Amount *	Units	Qty.	Total Cost	Units	Life (years)	Present Value	Local Share	Prop 50 Request	Item
	***7. Other** (marketing)*	NA	NA	NA	NA					
	ET Controller & Water Efficiency Workshop	$800.00	$/workshop	2	$1,600.00	$			$1,600.00	$0.00
	Printing ET Info Sheets, Program forms, and Brochures	$0.30	$/brochure	4,000	$1,200.00	$			$1,200.00	$0.00
Total Administration Costs					***$91,466.82***	***$***			***$91,466.82***	***$0.00***
(b) Planning/Design/Engineering										
	***1. Planning** (included in Administration costs)*	NA	NA	NA	NA	$	NA	NA	NA	NA
	***2. Design** (included in Administration costs)*	NA	NA	NA	NA	$	NA	NA	NA	NA
	***3. Engineering** (not applicable)*	NA	NA	NA	NA	$	NA	NA	NA	NA
(c) Equipment Purchases/Rentals/Rebates/Vouchers										
	1. Residential ET Controller Rebates	$20.00	$/valve	5,040	$110,800.00	$	3		***$39,006.00***	***$71,874.00***
(d) Materials/Installation/Implementation										
	Not applicable	NA	NA	NA	NA	$	NA	NA	NA	NA
(e) Implementation Verification										
	2. Postage Costs	$0.37	$/notice	500	$185.00	$	*3*		*185.00*	$0.00
(f) Project Legal /License Fees										
	Legal Counsel Review of program & documents	$200.00	$/hour	20	$4,000.00	$	***3***		***$4,000.00***	$0.00
(g) Monitoring and Assessment										
	Inhance Database Technical Assistance	$85.00	$/hour	20	$1,700.00	$	***3***		***$1,700.00***	$0.00
(h) Report Preparation										
	Inhance Database Technical Assistance	$85.00	$/hour	36	$3,060.00	$	***3***		***$3,060.00***	$0.00
(i) Structures										
	Not applicable	NA	NA	NA	NA	$	NA	NA	NA	NA

Item	Amount *	Units	Qty.	Total Cost	Units	Life (years)	Present Value	Local Share	Prop 50 Request	
(j) Land Purchase/Easement										
Not applicable		NA	NA	NA	NA	$	NA	NA	NA	NA
(k) Environmental Compliance/Mitigation/ Enhancement										
Not applicable		NA	NA	NA	NA	$	NA	NA	NA	NA
(l) Construction										
Not applicable		NA	NA	NA	NA	$	NA	NA	NA	NA
(m) Other										
Not applicable		NA	NA	NA	NA	$	NA	NA	NA	NA
h. Total Estimated Costs *(a -m)*					***$211,211.82***				***$139,417.82***	***$71,874.00***
Cost Share Percentage		***NA***	***NA***	***NA***	***100.0%***				***66.0%***	***34.0%***

* Salary includes the employer paid payroll tax, worker compensation insurance, employer paid PERS compensation (26%)
** Fringe Benefits include Deferred Workers compensation, medical, dental, life and vision insurance, long-term disability insurance and added medical for 17 employees at $1.57/hour)
*** Los Angeles County sales tax has been incorporated in the listed cost

Appendix B: Letters of Support for NCWD Residential ET Controller Rebate Program

- *See attached letters of support*

Appendix C: Cost Benefit Tables

- *See attached Table C-1 with Project Costs*

Table 2 - Annual Operations and Maintenance Costs

Operations (1)	Maintenance (II)	Other (III)	Total (IV) (I + II + III)
$0.00	$0.00	$0.00	$0.00

(1) Annual O & M Administration Costs are included in Table 1 Project Costs (Budget) as appropriate.

Table 3 - Total Annual Project Costs

Annual Project Costs (1) (I)	Annual O & M Costs (2) (II)	Total Annual Project Costs (III) (I + II)
$82,800.68	**$0.00**	**$82,800.68**

(1) Annual O & M Administration Costs are included in Table 1 Project Costs (Budget) as appropriate.

Table 4 – Capital Recovery Factor (for discount rate of 6%) Information

3-year project lifetime = 0.3741
20-year project lifetime = 0.0872

Table 5 Project Annual Physical Benefits (Quantitative and Qualitative Description of Benefits)

Table 5a – Reduction on Residential Water Use (Increase in Irrigation Efficiency)

QUALITATIVE DESCRIPTION – REQUIED BY APPLICANTS[1]				QUANTITATIVE BENEFITS – (when data are available[2])
Description of Physical Benefit (in-stream flow and timing, water quantity and quality) for:	Time Pattern and Location of Benefit	Project Life: Duration of Benefits	State Why Project Bay-Delta benefit is Direct[3], Indirect[4] or Both	Quantified Benefits (in stream flow and timing, water quantity and water quality)
Bay Delta: Water supply available for water transfer to help restore Bay-Delta System, A reduction in residential usage will reduce NCWD's need for state water and will minimize the growth of water demand as new development occurs. The available water supply can be used to restore Bay-Delta streams and watersheds, increase supply flexibility and help reduce the impact of low summer flows.	The Highest Reduction in water usage (and resulting benefit) will occur in the Summer months when the need for state water (for Bay-Delta watershed programs) is highest. It will benefit the local and streams, rivers and surrounding habitat that will be potentially allocated the un-purchased (or unused) state water from NCWD's program.	20-Years minimum benefit The program is expected to generating water savings (and thus Bay-Delta benefits) for the lifetime of the installed ET controllers estimated at 20 years. However, given customer approval, the benefit could be extended or grow as customers update their controllers and new controllers are installed at new sites.	Direct Benefit to the Bay-Delta is achieved given NCWD can directly reduce the amount of state water purchased from CLWA. CLWA only provides state water to NCWD. Therefore, all decreases in water purchases can be determined to be 100% state water reduction (or benefit).	Quantifiable Water Supply Transfer Benefit unknown. An estimated 150.09 AF state water savings from NCWD will be reduced from the Santa Clarita Valley's demand on the state water (or will offset future demand increase due to growth). This un-used water can be transferred as needed for restoring the Bay-Delta system. Cost savings and system benefit will vary depending on the transferred use. Estimated cost to transfer state water $$82/AF (NCWD's estimated cost from Edison bills) or approximately $12,300/year. Energy cost savings will be generated for the State Water Program given a decrease in summer demand to irrigation efficiency. Specific cost unknown.

Table 5a – Reduction on Residential Water Use (Increase in Irrigation Efficiency) - continue

QUALITATIVE DESCRIPTION – REQUIED BY APPLICANTS[1]				QUANTITATIVE BENEFITS – (when data are available[2])
Description of Physical Benefit (in-stream flow and timing, water quantity and quality) for:	Time Pattern and Location of Benefit	Project Life: Duration of Benefits	State Why Project Bay-Delta benefit is Direct[3], Indirect[4] or Both	Quantified Benefits (in stream flow and timing, water quantity and water quality)
Local: The program will reduce water supply demand in the Santa Clarita Valley Specific Benefits are: 1.This will allow for necessary growth 2. Reduce irrecoverable water supply losses (runoff) 3. Reduce valley dependence on state water 4. Increase flexibility of local groundwater supply 4. Reduce water treatment cost associated with state water treatment processes	The project will provide time benefits by: 1. Reducing peak summer water usage for irrigation 2. Reduce peak load hours (morning and evening hours) 3. Increase flexibility of local storage supplies Location Benefits: 1. Local residential neighborhoods (runoff waste) 2. Minimize runoff into watershed and Castaic and Newhall flood plains 3. Help promote regional conservation programs (entire valley) 4. Encourage public awareness of irrigation runoff problems (throughout city and county)	20-year benefit The project will generate up to 150.09AF/year of water savings (based on installation of 5,040 valves) and correlating benefits for 20 years, the lifetime of the ET controller technology. Savings and benefits could be extended beyond 20 years given implementation of a subsequent regional program and by the replacement/retrofitting of installed controllers by program participants.	NA	The quantitative benefits for NCWD include: NCWD's Water Savings- $27,165.75/yr *(cost to purchase state water from CLWA)* NCWD's Avoided Energy Costs - $12,488.48/yr Operational & Maintenance Savings - $8,499.60/yr Total Annual Cost Savings - $48,153.83 *Project Lifetime Cost Benefit (20 yrs)* - $963,076.60 Quantifiable benefits for other local entities District Customers – Average of 25% reduction in commodity charges, or more given the tiered rate structure. CLWA – avoided annual state water purchasing costs for 150.09/AF ($ savings amount unknown) City/County – Minimization of stormwater fees

Table 5b – Residential Irrigation Runoff Reduction Benefits *(Reducing Burden on Wastewater-Sewer Treatment Plants)*

QUALITATIVE DESCRIPTION – REQUIED BY APPLICANTS[1]				QUANTITATIVE BENEFITS – (when data are available[2])
Description of Physical Benefit (in-stream flow and timing, water quantity and quality) for:	Time Pattern and Location of Benefit	Project Life: Duration of Benefits	State Why Project Bay-Delta benefit is Direct[3], Indirect[4] or Both	Quantified Benefits (in stream flow and timing, water quantity and water quality)
Bay Delta: Reduction in state water demand and minimization of future demand growth (due to new development) provides more flexibility of State Water.	Benefit – most significant during the summer as a result of a reduction in irrigation water use.	20- Years or more	Indirect – Promote/educate the public on stormwater runoff problems and burdens of wastewater treatment plans at capacity.	Although quantitative benefits exist, an actual value is unknown

Table 5b – Residential Irrigation Runoff Reduction Benefits *(Reducing Burden on Wastewater-Sewer Treatment Plants)*

QUALITATIVE DESCRIPTION – REQUIED BY APPLICANTS[1]				QUANTITATIVE BENEFITS – (when data are available[2])
Description of Physical Benefit (in-stream flow and timing, water quantity and quality) for:	Time Pattern and Location of Benefit	Project Life: Duration of Benefits	State Why Project Bay-Delta benefit is Direct[3], Indirect[4] or Both	Quantified Benefits (in stream flow and timing, water quantity and water quality)
Local: Reduction in pressure/burden to LA County wastewater (sewer) treatment plants With the rain and excess residential irrigation runoff (which composes over 50% of urban runoff), the runoff water rapidly drains from paved and landscaped areas into the flood control (stormwater) system and flows to the ocean or local rivers and streams. However, the contaminants require this water to sometimes be sent to existing sewage treatment plants causing the plant's to exceed their treatment capacity and overload. With the proposed program, residential irrigation is reduced helping to reduce the burden to these sewer treatment plants.	Year round benefit : 1. Reduction in summer irrigation runoff 2. Minimization of stormwater contamination in wet season due to excessive irrigation runoff that could overload treatment plants Location of Benefits: 1. The local Santa Clarita River and 2. Surrounding watershed habitats 3. Pacific Ocean (where stormwater is released).	20- Years or more	Not Applicable	County Benefits – Reduces sewer treatment costs The Sanitation Districts' wastewater system is critically dependent on reducing stormwater runoff into the sewer treatment system. The majority of the Sanitation Districts' effluent is discharged to the Pacific Ocean, with a smaller portion being reused. The tunnel and outfall system currently operates near capacity. Therefore, the County's Sanitation Districts are constructing a new tunnel and ocean outfall system to ensure the overall reliability of the wastewater system. These facilities are expected to cost approximately$750 million. The reduction in runoff from this project will help reduce the burden on the County's system.

Table 5c – Residential Irrigation Runoff Reduction Benefit *(Improving the Health of Watersheds and Waterways)*

QUALITATIVE DESCRIPTION – REQUIED BY APPLICANTS[1]				QUANTITATIVE BENEFITS – (when data are available[2])
Description of Physical Benefit (in-stream flow and timing, water quantity and quality) for:	Time Pattern and Location of Benefit	Project Life: Duration of Benefits	State Why Project Bay-Delta benefit is Direct[3], Indirect[4] or Both	Quantified Benefits (in stream flow and timing, water quantity and water quality)
Bay Delta: The reduction in runoff will not only reduce water demand, but quality of the state water program by reducing demand in low summer flow seasons. This will improve the health of the Bay-Delta System and provide greater flexibility. The program will also help promote state wide efforts to encourage urban runoff reduction and protection of local and state watersheds. The proposed program will promote several elements of the Bay-Delta's mission statement and will locally promote the program's goals and objectives.		20 years or more	Provides both indirect and direct benefit Direct Benefit – Reduction in current state water supply demand from the SCV (or offset of future demand from valley growth) Indirect – 1. Reduction in irrigation runoff pollution into the ocean will positively impact the entire California coast and the connecting waterways such as those in the Bay-Delta System. The program will reduce fertilizer and vector control chemicals from entering the Pacific ocean. 2. Program promotes a positive regional view on reducing runoff and improving irrigation efficiency. Will also help promote healthy watershed conditions that can be transferred through public awareness and outreach throughout the state.	More specific data is needed to confirm quantifiable benefits. An estimated 150.09 AF of water supply will be saved from the state water program with as much as 391.07 AF of residential irrigation runoff prevented.

Table 5d – Residential Irrigation Runoff Reduction Benefit *(Improving the Health of Watersheds and Waterways)*

QUALITATIVE DESCRIPTION – REQUIED BY APPLICANTS[1]				QUANTITATIVE BENEFITS – (when data are available[2])
Description of Physical Benefit (in-stream flow and timing, water quantity and quality) for:	Time Pattern and Location of Benefit	Project Life: Duration of Benefits	State Why Project Bay-Delta benefit is Direct[3], Indirect[4] or Both	Quantified Benefits (in stream flow and timing, water quantity and water quality)
Local: Most of the stormwater runoff (which includes residential irrigation runoff) is released into the ocean and local rivers and streams. This polluted water contains fertilizer, vector control chemicals and other hazardous contaminants that can negatively impact the local ecology of the local waterways. Benefits include: 1. Return of natural water balance 2. Reduction in flood peaks and less occurrence of flooding 3. Decreased bankful 4. Help stop or further prevent flood plain widening 5. The proposed program reduces polluted irrigation runoff and overall stormwater runoff that helps prevent these negative impacts.	Benefits: 1. Reduction in lower dry weather flows 2. Reduction of peak season runoff (due to irrigation) 3. Reduction of irrecoverable water losses during winter months	20 years or more	Not Applicable	Estimated Irrigation runoff Reduction – 33.8ccf/month/customer (65% reduction) or 391.07 AF/year for the total project The City and LA County noncompliance of stormwater runoff fees would be reduced, however specific costs savings benefits are unknown.

Table 6 - Project Annual Local Monetary Benefits

Annual Local Benefits	**Annual Quantity[4]**	**Unit of Measurement**	**Annual Monetary Benefits (Thousands $/yr)**
(a) Avoided Water Supply Costs *(Current or Future Sources)*	150.09AF	$181/AF	**$27,165.75**
(b) Avoided Energy Costs	150.09AF	$82.76/AF	**$12,488.48**
(c) Avoided Waste Water Treatment Costs *(*Savings generated from irrigation runoff reduction)*	390AF	Unknown Cost	**$0.00**
(d) Avoided Labor Costs	NA	NA	**$0.00**
(e) Other : Operation and Maintenance	150.09AF	$56.63/AF	**$8,499.60**
(f) Total [(a)+(b)+(c)+(d)+(e)+(f))]			**$48,153.83**

Table 7 Project Local Monetary Benefits and Project Costs

(a) Total Annual Monetary Benefits (Table 6, row (f)	**$48,153.83**
(b) Total Annual Project Costs (Table 3, column III)	**$82,800.68**

Table 8 Applicant's Costs Share Description

Applicant's cost share (%): (from Table 1, row o, column V)	**67.53%**

Cost Share Description (see below):

As a small public water district, NCWD's most limited factors in implementing BMP and other conservation programs are staff resources and budgetary limitations. Even if unlimited funds were available, the District has a limited staff available to implement a program. In addition, as a public entity NCWD is strictly accountable for all public funds used, even for cost-effective programs.

In developing the Residential ET Controller Rebate Program, NCWD had to first consider the staff and budget limitation is setting the size and scope of the project. The needed staff and available hours for the rebate program were first determined to set a limit on the total time and staff resources for the budget. Secondly, the available budget for conservation programs was evaluated to determine the maximum amount of annual funds that could be used for the proposed rebate program. The third and other key element in setting the scope and overall budget of the program was determining the amount of controllers to install that would maximize water savings and still not exceed the limits of staff and budget resources. The budget would also have to generate a cost share ratio less than 50% to increase competitiveness of the proposal.

Originally, a total of 6,000 valves (or 500 controller) installed were desired through the rebate program; however the costs exceeded the District's available budget and required a higher cost share of Proposition 50 funds. A total of 5,040 valves (420 controller) installed will generate high water savings and only requires the staff resources and budget available. The total estimated savings from 5,040 valves is estimated at 150.07 AF per year or $48,977/year avoided cost. Although the project is expected to generate significant water savings, it is not locally cost effective.

The total cost share amount requested through Prop 50 was based on the remaining costs of the project (beyond NCWD' budget). NCWD's maximum available budget of $49,814 and the total estimated project cost is $221,333. An estimated 23,958 per year ($71,874 is requested for Prop 50 assistance. Based on the cost benefit value, additional funds could be added with out exceeding a 50% cost share value or making the project locally cost-effective. Approximately $34,000 a year ($102,000 for project total) of funding would make the project cost effective. However, NCWD is not requesting these additional funds as the project is already set at the maximum size and scope to be implemented efficiently. The proposal only asks for the necessary 32.5% cost-share for Proposition 50 funding to implement the project.

NCWD Residential ET Controller Rebate Program

Estimated ET Controller Cost Breakdown

Item	Amount *	Units	Qty.	Total Cost	Contingency	Life (years)	Annualized Value	Local Share	Customer Share	Prop 50 Request
Weather TRAK ET Controller *(includes 3-year service fee of $144)*	*$432.00*	$/controller	140	$60,480.00	10%	*20*	*$66,528.00*	*$13,002.00*	*$29,568.00*	*$23,958.00*
Weathermatic SL1600 4 Sta. Smartline Controller (expandable to 16 valves)	*$78.73*	*$/controller*	*140*	*$11,022.48*	10%	*20*	*$12,124.73*	*$4,682.02*	*-$1,184.57*	*$8,627.28*
Weathermatic SLM4 4-Station Exp. Module (for SL1600/SL4800)	*$23.30*	*$/module*	*420*	*$9,784.15*	10%	*20*	*$10,762.57*	*$1,384.71*	*$6,826.33*	*$2,551.53*
Weathermatic SLW10 On-site Weather Monitor (W.M...)	*$116.61*	*$/W.M...*	*140*	*$16,325.52*	10%	*20*	*$17,958.07*	*$6,935.27*	*-$1,756.39*	*$12,779.20*
Total Weathermatic ET Controller and Equipment Costs	*$265.23*	$/controller	140	$37,132.15	10%	*20*	*$40,845.36*	*$13,002.00*	*$3,885.36*	*$23,958.00*
Weatherset WSR8 & WSR12 ET Controller	*$115.56*	$/controller	140	$16,178.40	10%	*20*	*$17,796.24*	*$13,002.00*	*-$19,163.76*	*$23,958.00*
Professional Installation (of ET Controllers)	*$100.00*	*$/controller*	*420*	*$42,000.00*	10%	*n/a*	*$46,200.00*	*$0.00*	*$46,200.00*	*$0.00*
h. Total Estimated Costs				$155,790.55			*$171,369.60*	*$39,006.00*	*$60,489.60*	*$71,874.00*
Average Cost Per Controller (includes installation)				*$311.58*				*$78.01*	*$120.98*	*$143.75*
Annual Cost				*$51,930.18*			*$57,123.20*	*$13,002.00*	*$20,163.20*	*$23,958.00*

* Los Angeles County sales tax has been incorporated in the listed cost

NCWD Residential ET Controller Rebate Program

Estimated ET Controller Cost Breakdown

** Actual total cost of ET Controllers may vary due to customer preference and distribution of ET Controllers selected; however the local share and grant amount is constant at a total of $20/valve for 6,000 valves (or approximately 500 controllers)

NCWD Residential ET Controller Rebate Program

Table 2 - Annual Operations and Maintenance Costs

Operations (1)	Maintenance (II)	Other (III)	Total (IV) (I + II + III)
$0.00	$0.00	$0.00	$0.00

(1) Annual O & M Administration Costs are included in Table 1 Project Costs (Budget) as appropriate.

Table 3 - Total Annual Project Costs

Annual Project Costs (1) (I)	Annual O & M Costs (2) (II)	Total Annual Project Costs (III) (I + II)
$82,800.68	**$0.00**	**$82,800.68**

(1) Annual O & M Administration Costs are included in Table 1 Project Costs (Budget) as appropriate.

NCWD Residential ET Controller Rebate Program

Table 4 - Project Annual Physical Benefits

Refer to Report Summary Section

NCWD Residential ET Controller Rebate Program

Table 6 - Project Annual Local Monetary Benefits

Annual Local Benefits	Annual Quantity[4]	Unit of Measurement	Annual Monetary Benefits (Thousands $/yr)
(a) Avoided Water Supply Costs *(Current or Future Sources)*	150.09AF	$181/AF	**$27,165.75**
(b) Avoided Energy Costs	150.09AF	$82.76/AF	**$12,488.48**
(c) Avoided Waste Water Treatment Costs	390AF	Unknown Cost	**$0.00**
(d) Avoided Labor Costs	NA	NA	**$0.00**
(e) Other : Operation and Maintenance	150.09AF	$56.63/AF	**$8,499.60**
(f) Total [(a)+(b)+(c)+(d)+(e)+(f))]			**$48,153.83**

Table 7 Project Local Monetary Benefits and Project Costs

(a) Total Annual Monetary Benefits (Table 6, row (f)	**$48,153.83**
(b) Total Annual Project Costs (Table 3, column III)	**$82,800.68**

Table 8 Applicant's Costs Share Description

NCWD Residential ET Controller Rebate Program

Applicants's cost share (%): (from Table 1, row o, column V)	**67.53%**

Cost Share Description

See Table 8 - Cost Share Determination document

NCWD Residential ET Controller Rebate Program

Estimated ET Controller Cost Breakdown

Item	Amount *	Units	Qty.	Total Cost	Contingency	Life (years)	Annualized Value	Local Share	Customer Share	Prop 50 Request
Weather TRAK ET Controller *(includes 3-year service fee of $144)*	*$432.00*	$/controller	140	$60,480.00	10%	*20*	*$66,528.00*	*$13,002.00*	*$29,568.00*	*$23,958.00*
Weathermatic SL1600 4 Sta. Smartline Controller (expandable to 16 valves)	*$78.73*	*$/controller*	*140*	*$11,022.48*	10%	*20*	*$12,124.73*	*$4,682.02*	*-$1,184.57*	*$8,627.28*
Weathermatic SLM4 4-Station Exp. Module (for SL1600/SL4800)	*$23.30*	*$/module*	*420*	*$9,784.15*	10%	*20*	*$10,762.57*	*$1,384.71*	*$6,826.33*	*$2,551.53*
Weathermatic SLW10 On-site Weather Monitor (W.M...)	*$116.61*	*$/W.M...*	*140*	*$16,325.52*	10%	*20*	*$17,958.07*	*$6,935.27*	*-$1,756.39*	*$12,779.20*
Total Weathermatic ET Controller and Equipment Costs	*$265.23*	$/controller	140	$37,132.15	10%	*20*	*$40,845.36*	*$13,002.00*	*$3,885.36*	*$23,958.00*
Weatherset WSR8 & WSR12 ET Controller	*$115.56*	$/controller	140	$16,178.40	10%	*20*	*$17,796.24*	*$13,002.00*	*-$19,163.76*	*$23,958.00*
Professional Installation (of ET Controllers)	*$100.00*	*$/controller*	*420*	*$42,000.00*	10%	*n/a*	*$46,200.00*	*$0.00*	*$46,200.00*	*$0.00*
h. Total Estimated Costs				$155,790.55			*$171,369.60*	*$39,006.00*	*$60,489.60*	*$71,874.00*
Average Cost Per Controller (includes installation)				*$311.58*				*$78.01*	*$120.98*	*$143.75*
Annual Cost				*$51,930.18*			*$57,123.20*	*$13,002.00*	*$20,163.20*	*$23,958.00*

* Los Angeles County sales tax has been incorporated in the listed cost

NCWD Residential ET Controller Rebate Program

Estimated ET Controller Cost Breakdown

** Actual total cost of ET Controllers may vary due to customer preference and distribution of ET Controllers selected; however the local share and grant amount is constant at a total of $20/valve for 6,000 valves (or approximately 500 controllers)

NCWD Residential ET Controller Rebate Program

Table 2 - Annual Operations and Maintenance Costs

Operations (1)	Maintenance (II)	Other (III)	Total (IV) (I + II + III)
$0.00	$0.00	$0.00	$0.00

(1) Annual O & M Administration Costs are included in Table 1 Project Costs (Budget) as appropriate.

Table 3 - Total Annual Project Costs

Annual Project Costs (1) (I)	Annual O & M Costs (2) (II)	Total Annual Project Costs (III) (I + II)
$82,800.68	**$0.00**	**$82,800.68**

(1) Annual O & M Administration Costs are included in Table 1 Project Costs (Budget) as appropriate.

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Table 4 - Project Annual Physical Benefits

Refer to Report Summary Section

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Table 6 - Project Annual Local Monetary Benefits

Annual Local Benefits	Annual Quantity[4]	Unit of Measurement	Annual Monetary Benefits (Thousands $/yr)
(a) Avoided Water Supply Costs *(Current or Future Sources)*	150.09AF	$181/AF	**$27,165.75**
(b) Avoided Energy Costs	150.09AF	$82.76/AF	**$12,488.48**
(c) Avoided Waste Water Treatment Costs	390AF	Unknown Cost	**$0.00**
(d) Avoided Labor Costs	NA	NA	**$0.00**
(e) Other : Operation and Maintenance	150.09AF	$56.63/AF	**$8,499.60**
(f) Total [(a)+(b)+(c)+(d)+(e)+(f))]			**$48,153.83**

Table 7 Project Local Monetary Benefits and Project Costs

(a) Total Annual Monetary Benefits (Table 6, row (f)	**$48,153.83**
(b) Total Annual Project Costs (Table 3, column III)	**$82,800.68**

Table 8 Applicant's Costs Share Description

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Applicants's cost share (%): (from Table 1, row o, column V)	**67.53%**

Cost Share Description

See Table 8 - Cost Share Determination document