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Application for
The Maxwell Public Utility District
Proposition 50
2004 Water Use Efficiency Grant

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PROPOSAL - PART TWO

PROJECT SUMMARY

This document presents a project proposal for the Maxwell Public Utility District (District) to install new water meters on all water connections in the District, and to create a consumption based rate structure for the District to use to encourage water conservation. Currently the District only meters several large commercial users and all others are on flat rates. The proposed project would allow the District to immediately begin metering customer water use and charge for water based on the amount used, which would provide an incentive for customers to conserve water and would improve the management of the Maxwell water system.

The District is located in Colusa County approximately 65 miles north of Sacramento along Interstate 5. The District has approximately 375 water connections. All customers are currently billed a flat rate for water service, except for several commercial customers. Water meters were installed on most water connections more than 20 years ago, but they were never read because of widespread meter failure. Therefore, most customers have simply been on flat rates.

The proposed project consists of seven tasks, which are as follows:

- Task one will be a field review of water connection locations and site conditions.
- Task two will be the completion of design plans and specifications.
- Task three will be to put the project out for bid.
- Task four will be the construction phase.
- Task five will be the closeout of the construction project.
- Task six will be to prepare and adopt a consumption based rate structure.
- Task seven will be to monitor and assess the results of the project
- Task eight will be to write a summary report and make presentation to the District Board
- Task nine will be administration of the grant, and
- Task ten will be quarterly reporting to the Department of Water Resources.

Estimates of water savings due to meter replacement vary depending on the service area characteristics, metered rate schedules, and overall water conservation programs and activities. The total water savings was conservatively estimated at 24.2 million gallons per year, based on previous studies and data from nearby communities. The associated wastewater flow reduction was estimated at 14.5 million gallons per year. The total project costs amount to $ 515,922, or $27,080 over the anticipated 30 year life of the project. The annual monetary project benefits amount to $11,161.

A-15c. STATEMENT OF WORK, SECTION 1: RELEVANCE & IMPORTANCE

The Maxwell Public Utility District (the District) is located in the California central valley in Colusa County approximately 65 miles north of Sacramento along Interstate 5. A vicinity map is presented as Figure A-15c-1 and a diagram showing the service area boundary is presented as Figure A-15c-2. The Maxwell Public Utility District is comprised of a residential community and has small commercial and industrial districts. Many of the residents work in agriculture and related industries.

The District also operates a wastewater treatment plant. According the Colusa County General Plan, the District's treated wastewater effluent is discharged to a drainage ditch, which leads to Lurline Creek. The Creek is channeled into the Colusa Drainage Trough. This canal serves as a source of irrigation water as well as flood control channel. Surplus water drains south, eventually entering the Sacramento River at the Knights Landing Ridge.

Goals and Objectives of the Project

The objective of this project is to improve the water use efficiency of the Maxwell Public Utility District water system. This will be accomplished with the proposed project through the installation of 375 water meters within the water service area and adoption of a consumption based water rate structure. Together, the installation of accurate water meters and the use of a consumption based rate structure are a proven best management practice to increase water conservation.

The goal of the project is to enhance the management of the Maxwell water system. This is achieved by enabling the District to propose effective metered water use, which would enable the District to charge for water according to the amount used and to provide an incentive for customers to conserve water. This system is inherently fair whereby each customer pays their fair share for the water they use.

The proposed water meter project would benefit the Bay-Delta water system by decreasing the amount of groundwater pumped from the area aquifer and decreasing the wastewater load. The reduction in water use would also allow for more growth in the future without tapping into new supplies.

Need for the Project

The Maxwell Public Utility District currently has approximately 375 water service connections, most of which are several decades old. The failure rate of the District's water meters is very high due to the poor quality of the meters and their age, consequently District Staff do not read all the water meters.

Currently, customers are billed a flat rate of $29.34 per month for a ¾ inch meter. The per connection water use in the District is high, partly as a result of the lack of consumption based water rates. It is estimated, based on previous studies and an evaluation of metered versus unmetered water use in communities near Maxwell, that the installation of water meters could reduce water use by more than 20%.

This project is needed to assist the District in reducing its water use, improving fairness in billing, and improving efficiency in staff efforts. The District does not have the resources to install new water meters at all their connections themselves, and the grant funds are needed for design and construction. This helps keep the Bay-Delta system healthy through water conservation, which provides water quality improvements through wastewater source reduction and reduction in groundwater pumping. This reduction improves Bay-Delta drinking water quality potential and reduces biological stress on the surface water system including reduced nutrient load, sediment load, and salt load.

The proposed modern radio read water meters to allow them to use existing staff to read monthly meter data without having to hire additional staff to read meters. Also a radio read system can be used to provide more regular feedback to customers to improve water use efficiency.

Consistency with Management Plans

The proposed project will support both state and regional water management plans, including the CALFED Bay- Delta Program, the California Water Plan, and the Colusa County General Plan.

The proposed project supports the mission of the CALFED Bay-Delta Program by instituting long-term improvements in water use efficiency and water management. It helps achieve the Program's objectives by improving the water quality of the Bay-Delta for beneficial uses by reducing wastewater discharge volumes. The reduction in groundwater pumping will also enhance the Bay-Delta System. The project also increases the available water supply through the reduction of existing uses. The proposed project provides a water efficiency improvement solution that is maintainable and feasible to implement, which reduces impacts on natural resources within the Bay-Delta.

The Department of Water Resources Bulletin 160-98, "The California Water Plan," supports increased water conservation. The Urban Water Conservation Options presented in the California Water Plan include conservation measures to reduce overall water demand, and metering with commodity rates for all connections is presented as an urban best management practice to achieve reduced demand.

The Colusa County General Plan goals of encouraging the conservation of the county's natural resources and promoting the assurance of adequate water supplies are furthered by the implementation of the proposed project.

Improvement in Water Management

The proposed project will allow the District to gather better information on water use through the radio read and computer database system. This will enable them to identify opportunities to improve water use efficiency and measure the effectiveness of conservation practices. The data collected by the District will improve the understanding of meter installation as a conservation measure.

The collection of accurate metered water data for each customer will allow the District to compare metered water use and total water pumped from groundwater sources. This comparison will allow the District to calculate unaccounted for water losses in the system. This provides the District with an incentive to initiate a program to identify, locate, and repair leaks in their water transmission, storage, and distribution systems.

A-15d. STATEMENT OF WORK, SECTION 2: TECHNICAL/SCIENTIFIC MERIT, FEASIBILITY

This section describes the approach the District will use to achieve the objectives and goals of the proposed water meter replacement project.

Methods, Procedures, Equipment, and Facilities

The Maxwell Public Utility District clearly has the need to begin the accurate metering of its water use. The overall goal is to enhance the management of the Maxwell water system, which improves the District's ability to analyze water use, charge customers for appropriate water use, encourage water conservation, better define water system losses, and benefit the Bay-Delta System. This project proposes to install 375 water meters within the service area.

Understanding system water use is a high priority for the Maxwell Public Utility District. The Maxwell Public Utility District is prepared to begin the water meter project as soon as the contract for the grant is approved and anticipates project completion within one year, after the contract is approved.

Task List and Schedule

This section will focus on the detailed tasks for completing the Maxwell Public Utility District Water Meter Project. The scope of services has been developed to meet the needs of the District and the requirements of the grant. A timetable is included in Table A-15d-1 that shows the start and stop dates of each of the project tasks, the final deliverables for each task are due at the stop date. None of the tasks are considered to be separable from the project. Detailed cost projections including a summary of the proposed project costs with a quarterly breakdown and a detailed breakdown of costs by personnel and task are contained in Section A-15i.

Task 1: Field Inspection

Maxwell Public Utility District personnel and other inspectors will walk the service area to develop the most practical plan for the installation of each of the water meters. Each location is unique. Some will only require meter replacement, others will require new fittings and a new box as well, and still others will require more extensive repairs. The final deliverable for this task will be the identification of the locations of meters to be replaced and the requirements for each replacement.

Task 2: Develop And Review Plans And Specifications

Based on the data collected in the above task, a set of project plans will be developed for contractor bidding. The Maxwell Public Utility District and Department of Health Services will be given an opportunity to review the plans throughout the development process. This submittal will include the location of water meters to be replaced and specifications for meter replacement. The cost estimate developed in the original proposal will be refined to incorporate the latest information during design. The final deliverable for this task will be a complete set of design plans and specifications that is ready for distribution during the bidding period.

Task 3: Bid Period Services

Once final plans and specifications are complete and approved, the project enters the bid phase. During the bid phase plans and specifications will be reproduced and distributed, pre-bid meetings and job site walks will be conducted, contractor questions during bidding, will be addressed, bid results will be evaluated, and contractor bonds and insurance will be reviewed prior to executing the construction contract. The final deliverable for this task will be the completion of all items listed above and contractor bids for the work.

Task 4: Construction Inspection And Management

One of the most critical steps in achieving the ultimate goal of the project is construction inspection and management. Qualified inspectors and construction managers will be used to ensure that the construction project runs smoothly, the client is properly represented in the field and that the work is constructed as intended. The engineering construction inspector will keep daily records of construction activities, inspection, and progress, including all significant oral and written communications with the contractor. The contractor will be notified of work not acceptable that must be corrected. A full time engineering construction inspector will be on site for the duration of the project. The engineering construction inspector will be supported by office staff for submittal review, project management, and document filing.

The construction period is estimated to be three months in length. This is based on the contractor replacing 125 meters in a month, which is an average of 5 meters a day. To accomplish this, the contractor will need to operate between one and two crews a day. One full time field inspector plus support from office will be sufficient to cover the project because the inspector will be able to rotate between contractor crews to inspect each installation before and after the work is done.

During construction, weekly meetings will be held with the District, the contractor, and the inspector. The project schedule, materials supply list, contractor payment requests, contractor log submittals, and payroll and manpower utilization reports will be reviewed and updated as necessary. Also included are surveys, and materials testing, administrative functions, tracking and monitoring the review process, preparing any recommended change orders, and maintaining accounts of commitments, expenditures, and forecasts of cash flows and costs to complete.

Task 5: Construction Project Closeout

Once the project is complete, it enters the closeout phase. During the close out phase, the inspector would establish that all work is substantially complete and prepare a list of any unfinished work. Copies of accumulated records and reports would be turned over to the District. A notice of completion would be prepared and recorded with the County Clerk, and recommendations concerning final payments to contractors and the release of retained percentages would be prepared.

Task 6: Develop Consumption Based Water Rate Structure

The District will need to develop a consumption based rate structure to provide customer incentive to conserve water. The development of a new rate structure will require the analysis of existing District water system operation data. As part of this task, available relevant background information will be reviewed and summarized, including the District's existing rate structure, utilities fees and ordinance, and billing software. Historic water use in the District and water use data from nearby communities will be used to estimate customer water use for input into a rate model.

A cost analysis will be conducted to determine necessary water system revenue. This will be based on recent actual costs and future budget projections from the District, and will include a consultation with the District about the level of accuracy of the information. The cost analysis will include an evaluation of operations and maintenance costs, an evaluation of administrative and support costs, and an evaluation of future capital costs.

A water rate model will be developed and calibrated based on water use data for the District and nearby communities and billing data to estimate future water system revenue. The model will be used to estimate potential monthly water system revenues under different water rate structures.

A long term economic model will be developed based on a cash flow analysis of revenues and expenditures and accounting for interest that can be earned through money in the reserve account. Capital improvements, operating costs, and administrative costs represent expenditures, while projected revenue from the water rate model represents revenue. The model will be developed so that different rate scenarios can be evaluated in terms of their overall affect on the long term reserve fund.

Working with District staff, up to four rate scenarios will be developed and evaluated. Rate scenarios will be created based on producing revenues sufficient to meet expenditures and long term reserve fund requirements, while balancing the costs between classes of customers.

Ultimately the District Board will decide how they wish to modify the rate structure. One formal presentation using graphics that summarize the needs, the process, the options and impacts, and the conclusions will be prepared. A final summary report will be prepared for the District. The body of the study and the rate and fee schedule will be provided in electronic format for the District to use and update as needed.

*Task 7: Monitoring and Assessmen*t

The monitoring and assessment of water reduction is an important part of the overall project to determine benefits to the Bay-Delta water system. Collected metered water data will be analyzed. The monitoring and assessment of project benefits is anticipated to take approximately one year after the meters have been installed. This will give the District preliminary information on how the water meter project impacts water use.

A simple spreadsheet form will be developed for the District to easily report back information to the Department of Water Resources Office of Water Use Efficiency on the benefits and costs of the project for the next five years.

Task 8: Summary Report and District Presentations

A summary report describing the project methods and the results of the monitoring and assessment will be prepared. The summary report will also include a description of the rate structure development and an electronic copy of model used to develop rates, so the District may update its model and or accounting assumptions if new rates are developed in the future.

One to three presentations will be made at the District's regularly scheduled board meetings to present the consumption based water rate analysis and results of the water meter replacement project. The summary report will be prepared at the conclusion of the construction project. The District will continue to report to DWR over a five year period as described under Task 7.

Task 9: Quarterly DWR Reporting

Quarterly progress reports shall be generated as requested by DWR. The quarterly report shall include a summary of the proposed project budget and schedule performance to date. The quarterly progress reports will be submitted after every three months throughout the duration of the project. The deliverables for this task are due quarterly to the Department of Water Resources.

Task 10: Grant Administration

The Maxwell Public Utility District as the applicant is the overall administrator of the Grant. The District will oversee the completion of the work and shall review and submit monthly reimbursement requests. The final deliverable for this task will be the completion of all project tasks.

Preliminary Plans and Specifications

The District has maps of the service area and existing distribution system that identify the existing service connections. Preliminary selection on appropriate radio read metering equipment has been made based on what has been successfully installed in similar communities. Preliminary details of service connections have also been prepared, and are included in Figure A-15d-1.

The Maxwell Public Utility District has recognized the need for water meters for many years, but it has been an issue of obtaining adequate funding to make the necessary improvements. Preliminary field reconnaissance has already been conducted with the Maxwell Public Utility District staff to provide further information on the amount of work required to replace various configurations of water meters. The replacement of water meters for the District will include a broad range of conditions. For the purposes of analysis, we have divided the conditions into Low Difficulty, Medium Difficulty, and High Difficulty.

A low difficulty replacement is a case where only the old meter needs to be removed and a new meter installed in its place. All fittings and valves entering the meter are in acceptable condition as is the meter box and the service line from the main to the meter. This type of replacement is estimated to cost $350 and there are approximately 150 low difficulty replacements.

Some situations require additional work such as replacement of valves and fittings that attach to the meter and the meter box itself may need to be replaced. This would be a medium difficulty installation which is estimated to cost $500 and there are estimated to be approximately 175 such installations.

High difficulty replacements will require more extensive work such as relocation of the meter box and replacement of sections of the service line in addition to replacement of valves, fittings and the meter itself. There are approximately 50 high difficulty replacements that are estimated to cost approximately $1,000 each.

The water meters, valves, fittings, and other features will be constructed per the Maxwell Public Utility District standard details, State of California Standard Plans and Specifications, and as per industry standards for water systems.

Environmental Documentation

Compliance with environmental regulations and local, county, State, and federal permitting requirements for the proposed water meter project was considered in the development of this grant application. Potential requirements under the following regulatory and permitting authorities were evaluated:

- California Environmental Quality Act
- National Environmental Policy Act
- Caltrans
- Colusa County
- Maxwell Public Utility District

The proposed water meter replacement project is exempt from CEQA under the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15301, Existing Facilities, which states,

> "Class 1 consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination. The types of "existing facilities" itemized below are not intended to be all-inclusive of the types of projects which might fall within Class 1. The key consideration is whether the project involves negligible or no expansion of an existing use."

This project falls under subsection (b) as the minor alteration and maintenance of an existing publicly owned Utility. No federal funding or lands are involved in the project and thus the project is not subject to NEPA requirements.

An encroachment permit may be needed from CalTrans of any component of the project is within their right-of-way. This is unlikely, however an investigation will be included as part of the field investigations and during the development of plans and specifications. An encroachment permit from Colusa County will be needed when installing meters within their lands. These will be obtained after the project has been bid and before construction begins. No permits are required to be issued by the Maxwell Public Utility District.

A-15e. STATEMENT OF WORK, SECTION 3: MONITORING AND ASSESSMENT

The results of this project can be determined through the monitoring of groundwater production and wastewater effluent. The baseline data for these two indicators comes from flow meters that the District already has in place.

The baseline data from the water system includes some losses to leaks in the distribution system. Customer metered water use data resulting from this project can be compared to the groundwater production data to determine the unaccounted for losses and this data will help the management of the District in the future.

The project monitoring methodology consists of continued data collection on groundwater production and wastewater effluent and electronic collection of metered water use data from the new water meters. The success of the project to reduce water use will be based on the comparison of pre-project and post project water and wastewater data.

External factors such changes in weather, cropping patterns, or social conditions are not expected to have an impact on this project. The only factor that could potentially impact monitoring and assessment of the project is changes in weather patterns. Changes in rainfall may affect the amount of outdoor water use and wastewater effluent flows because of the District's open ponds. Comparing data on both a monthly and annual basis will minimize the effects of rainfall on water and wastewater data used for assessing project goals.

The District with the implementation of this project could collect information on metered water use. Data on metered water use will be presented in the Maxwell Public Utility District's annual Public Water System Statistics which are submitted to the Department of Water Resources and are available to the public as well.

The estimated costs associated with the implementation of the monitoring and evaluation plan are anticipated to be $5973. The District will re-evaluate the project cost/benefit analysis as part of the final report. The District will also develop a simple form to use to report annually on the benefits and costs of the project for the five years after the completion of the project.

A-15f. QUALIFICATIONS OF THE APPLICANTS AND COOPERATORS

The proposed Project Manager is Steven X. McHaney. A copy of his resume is attached on the following pages. Steve McHaney works for Winzler & Kelly Engineers, who have experience in administering grant funds and project loans from both DWR and other agencies for projects. They will assist the Maxwell Public Utility District in administering grant funds.

Winzler & Kelly Consulting Engineers has completed the following projects utilizing grant funds from DWR:

1. City of Rio Dell – Urban Water Conservation Program Grant – Funded under Proposition 13. A $750,000 grant was awarded to the City of Rio Dell to replace all of the City's water meters. The construction was completed in April 2004 per the accepted schedule and under budget.
2. Gasquet Public Utilities District – Local Project Feasibility Study - Funded under Proposition 204. A $219,034 grant was awarded to the Gasquet Public Utilities District to complete a Water Supply Feasibility Study that has been submitted per the accepted schedule, in draft form, to DWR for review. This project is scheduled for completion in June 2004. The project was completed on budget.
3. City of Trinidad – Local Projects Feasibility Study – Funded under Proposition 204. A $239,182 grant was awarded to the City of Trinidad to complete a Water Supply Feasibility Study. The project was completed on budget and on time and submitted to DWR for review in draft form. In addition, a Proposition 13 Urban Water Conservation Feasibility Study was completed for the City in the amount of $100,000 from a grant from DWR. This study was completed on budget and on schedule.
4. City of Rio Dell - Local Projects Feasibility Study – Funded under Proposition 204. A $281,112 grant was awarded to the City of Rio Dell to complete a Water Supply Feasibility Study. The project was completed on budget and on time and submitted to DWR for review in draft form. A Proposition 13 Urban Water Conservation Feasibility Study Grant was awarded by DWR to the City of Rio Dell in the amount of $100,000 and was completed on budget and on time.

The Maxwell Public Utility District is a disadvantaged community. The 1999 MHI is $32,317, which is approximately 62% of the statewide MHI. Thus, the Maxwell PUD qualifies as a disadvantaged community. A map showing the geographic scope of the District and the census areas used to calculate the median household income is included as Figure A-15f-1

Steven X. McHaney
Project Manager

Proposed Responsibility
Project Manager
Civil Environmental Engineer

Education
B.S., Environmental Resource Engineering, 1986

Professional Registration
Professional Engineer -
California
Oregon
Idaho
Hawaii

California Grade 3 Water Treatment Plant Operator

Experience

- Mr. McHaney continues to serve as the District Engineer for the Palmer Creek Public Utilities District in Humboldt County. Mr. McHaney developed a conceptual plan for the water system, finalized low interest loan and grant funding through Rural Development from the federal government, and completed the assessment district process. His work included locating potential well and reservoir sites, negotiating with property owners, and permitting through the Department of Health Services and the County. Mr. McHaney managed the design of tanks, pump stations, transmission pipelines, wells, and control systems.
- Mr. McHaney serves as the District Engineer for the District of Trinidad, California. One of the main parts of the District infrastructure is the water treatment plant that takes raw water from Luffenholz Creek. This water supply is of very poor quality in the winter months and Mr. McHaney works with the water treatment plant operator and the District water commissioner to keep the plant operating throughout the year. Mr. McHaney is on call and responds during periods when water treatment plant operational assistance is needed and during emergency conditions.
- Mr. McHaney also serves as the District Engineer for the City of Rio Dell, California. The water system is of the main components of the District infrastructure. Mr. McHaney recently completed the design and construction administration of the 0.5 mgd Emergency Interim Water Supply System including water intake and treatment systems. Mr. McHaney is also completing a water supply feasibility study for the Maxwell Public Utility District that outlines the long term water management strategy for the District.
- For the District of Pittsburg, Mr. McHaney was the project engineer responsible for the development of a water system master plan for meeting the domestic, commercial and industrial water needs of the District over a 20 year planning horizon. No hydraulic modeling of the system had ever been completed previously and Mr. McHaney researched historical water consumption and projected future water needs. He developed a nearly 1,000 pipe hydraulic model using KYPIPE and calibrated it using field measurements. The model was used to size pipelines, reservoirs, and pump stations and to simulate fire flow conditions. Extended period simulations were used for modeling the diurnal effects of filling and drawing reservoirs under average and maximum day plus fire flow conditions.

  Mr. McHaney developed a detailed five year capital improvements program and a conceptual long term program based on finding from modeling and field investigations. His recommendations included improvements to the existing system to provide more reliable fire flows to commercial developments by providing a looped distribution system. Recommendations also included improvements to several areas of existing flow and pressure deficiencies as well as future facilities needed to serve master planned growth. Mr. McHaney also developed a modified water pricing schedule based on the actual cost to convey water to individual pressure zones.
- For the Dublin San Ramon Services District, Mr. McHaney developed hydraulic models for potable water, recycled water, and wastewater for a 5,000 unit and a 6,000 new development in the District's service area. He used CYBERNET to develop separate potable and recycled water models for each development and HYDRA to develop the wastewater models for the

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developments. The model was operated under Maximum day plus fire flow conditions to size 250,000 feet of pipelines, 10 reservoirs, and five pump stations in the new developments.

- In another project for the Dublin San Ramon Services District, Mr. McHaney modified the District's existing CYBERNET model to evaluate the six options for siting a new pressure zone 1 reservoir for serving Eastern Dublin. The CYBERNET model was also used for evaluating the effect of moving the District's main potable water turnout. An extended period simulation was developed to evaluate the effect on the reservoir storage capacity and the transmission main pressure under maximum day plus fire flow conditions. The results of the modeling were used for the development of long term reservoir siting plans and near term interim options that maximized the use of existing facilities and delayed the construction of new facilities.
- Mr. McHaney served as the discipline Engineer for development of the District of San Jose's Phase II Reclamation Facility Plan which was the initial planning for the South Bay Water Recycling Project. Mr. McHaney conducted a recycled water market assessment over a study area in excess of 150 square miles. In excess of 5,000 potential landscape and agricultural irrigation customers were identified by Mr. McHaney through consideration of water purveyor records, evaluation of aerial photographs and research of individual potential customers. Mail surveys and site investigations were conducted to screen the potential customers to over 550 selected customers with an average recycled water demand of 26 mgd. Monthly and daily demand variations were assessed along with storage and distribution requirements as well as irrigation management considerations.

  An additional phase of work involved the development of a master planned distribution network to serve the over 550 potential recycled water customers. Mr. McHaney evaluated the pressure zones, pump stations, and distribution mains needs of the system and assisted in the development and calibration of a CYBERNET computer model. The resulting system model was developed to serve these customers through five pressure zones, with 14 reservoirs, 21 pump stations and over one million feet of pipe up to 42 inches in diameter to serve a peak hour demand of over 200 million gallons per day. The results of the modeling were used to develop a several hundred million dollar capital improvements program.

  The initial market assessment and the CYBERNET model were integrated into a complete information management system to be used as a database for tracking individual customer's water use, for billing, for long trend analysis, and to provide a graphical interface for operators. The CYBERNET model and the information management system serve as the centerpiece of the long term planning for South Bay Water Recycling.
- As Project Engineer for the Sonoma Valley County Sanitation District, Mr. McHaney was responsible for the development of a comprehensive recycled water system project management plan and worker training program. He was responsible for interfacing between vineyard and pasture users of reclaimed water and regulatory agencies. Mr. McHaney negotiated permits with the RWQCB to meet user needs as well as the needs of the district.

Experience

He researched the water quality and quantity needs for each user. An additional important responsibility was the development of a worker training program that met the health related requirements as well as the agricultural application of reclaimed water. Mr. McHaney produced a professionally developed training videotape that also served as a public relations tool. Mr. McHaney conducted training sessions for management and oversaw training of workers.

- Mr McHaney was the Project Engineer for the development of three Plans of services for the Dublin San Ramon Services District. hese Plans of Services were developed to meet the developer projected needs of the Tassajara Valley Property Owners Association (TVPOA), the Windemere Ranch Partners portion of the Dougherty Valley, and the Schaefer Ranch development. Each of these Plans of Service included developing potable water, recycled water, and wastewater needs for each development and then developing the required infrastructure meeting District criteria to meet these needs.

  The approach to each of these projects was based on meeting the short term needs of the developers during construction and phasing infrastructure to meet the buildout schedule of the developer while minimizing the unused capacity of installed infrastructure. Separate CYBERNET potable water and recycled water models were developed along with HYDRA models for the wastewater system.

  Through an additional study, Mr. McHaney preliminarily evaluated integrating service for the Windemere project with Eastern Dublin and other area developments. Through this integration of service, there is the potential for saving on overall storage volume and the ability to develop shared transmission mains and looped distribution systems to provide greater reliability.

- As Project Manager for the Dublin San Ramon Services District, Mr. McHaney developed a detailed evaluation of providing potable water service to pressure zone 4 on the West Side including the previously evaluated Schaefer Ranch. Under this study Mr. McHaney evaluated potential developments in the region and resulting water demands. He also evaluated the potential requirements of the Wildfire Management Plan and how it could affect the fire storage and vegetation management requirements. Mr. McHaney considered six reservoir sites and developed an overall zone 4 distribution concept. He also developed several implementation scenarios that could accommodate various orders of development in the regions of the West Side.

- For Discovery Bay in Brentwood, California, Mr. McHaney served as the Project Engineer for the development of a potable water acquisition and treatment concept for a potential waterfront housing development. This work included locating water supply, developing a treatment system meeting Department of health Services Requirements and development of a transmission and storage system concept. Mr. McHaney developed conceptual plans and specifications and cost estimates including project phasing to meet developer anticipated construction schedule.

A-15g. OUTREACH COMMUNITY INVOLVEMENT, AND ACCEPTANCE

The Maxwell Public Utility District (the District) holds monthly Board meetings. Progress on the components included in this project, the installation of new water meters and development of a consumption based rate schedule, will be presented and discussed as appropriate at these meetings. The public is invited to attend the District's regularly scheduled board meetings.

A special presentation, during a regularly scheduled District Board meeting, will be made to review the consumption based water rate structure approach and to work with the public on refining the methods used to develop the rate structure. This special presentation will be publicly noticed in highly visibility locations.

Improving the Bay-Delta water system is important to the residents within the District. They are supportive of efforts to improve their natural environment.

A-15h. INNOVATION

The utilization of water meters is a proven best management practice to reduce water consumption. This project takes a step up in technology be employing the automatic radio read meters. This technological innovation will reduce the person-hours required to read water meters. It will also automate the electronic input of metered water data into the District's billing and water system management software. The data will be in electronic format, which allows for more efficient evaluation of the data and quantification of benefits.

A-15i. BENEFITS AND COSTS

Project Costs

A budget breakdown of project costs is included in Table C-1 using the format provided by the Department of Water Resources. More detailed cost breakdowns for person-hours involved with each project task are included in Tables C-1.a through C-1.d, details on material, equipment and construction costs are provided in Table C-1.e, and a summary of all costs and a quarterly expenditure estimate are provided in Table C-1.f, attached at the end of this section. The useful life of the water meters is estimated to be 30 years, and all work associated with the installation of new water meters was also assumed to have a useful life of 30 years. The cost justifications for the various project components are included below.

a. Total Administration Costs: Both the District and its engineering consultant will incur costs associated with grant administration and quarterly reporting. Tables C-1.a through C-1.d show a detailed cost breakdown for Tasks 8 and 9 covering administration costs. The personnel and time required for each of these tasks is a reasonable estimate based on past experience with projects of this type.
b. Planning/Design/Engineering: Tasks 1, 2, 3, and 6 were included as part of this category. Tables C-1.a through C-1.d show a detailed cost breakdown by tasks. The personnel and time required for each of these tasks is a reasonable estimate based on past experience with projects of this type given the difficulties in completing engineering designs in older communities.
c. Equipment Purchases/ Rentals: Equipment to automatically read the new electronic meters is included. Also included is new billing software to allow the District to automatically enter metered water use data for reporting purposes and for implementation of the consumption based rate structure. No equipment rentals will be required by the Maxwell Public Utility District to complete project. More details on the equipment costs can be found in Table C-1.e.
d. Materials and Installation: The costs for purchasing and installing the new water meters represent the materials and installation costs. The cost per meter varies depending on the difficulty of installation and the components required. This category also includes costs for construction mobilization and demobilization and any necessary site preparation. More details on the materials and installation costs can be found in Table C-1.e.
e. Implementation Verification: Implementation verification will be conducted through DWR Quarterly Reporting, District Council Meetings, and the Final Project Report. No separate cost is included for this category.
f. Project/ Legal/ License fees: A small figure of $5,000 for project legal and license fees is included to cover any legal costs the construction project may encounter.
g. Structures: No structures beyond the water meters included in item c will be required for this project
h. Land Purchase/ Easement: No land purchases or easements will be required for this project
i. Environmental Mitigation/ Enhancement: This project replaces existing infrastructure. It is expected that the CEQA process will result in a categorical exemption. The project will not be subject to NEPA requirements.

j. Construction: Tasks 4 and 5 were included as part of this category, and more detailed information can be found in Tables C-1.a through C-1.d. The personnel and time required for each of these tasks is a reasonable estimate based on past experience with projects of this type. Further justification for this cost can be found in the Task 4 construction inspection and management description in Section A-15.d under the task list.

k. Other: No additional costs are included under the other category

l. Monitoring and Assessment: Task 7 was included as part of this category. Tables C-1.a through C-1.d show a detailed cost breakdown by tasks. This task includes data collection and analysis that will be presented in the final project report. The personnel and time required for this task is a reasonable estimate based on past experience with projects of this type.

m. Report Preparation: Task 8 was included as part of this category. Tables C-1.a through C-1.d show a detailed cost breakdown by tasks. The personnel and time required for this task is a reasonable estimate based on past experience with projects of this type.

n. TOTAL: A summary of all the project costs is presented in Table C-1.

o. Cost Share Percentage: The proposed project does not include additional funding sources outside this grant application. Maxwell Public Utility District is a disadvantaged community whose annual median household income is $32,317, which is less than 80% of the statewide median household income.

Contingency: A 10% contingency is included in the project costs. This is a reasonable value based on the degree of possible underestimation of the cost of new meter installation and equipment and software setup.

Annual Operations and Maintenance Costs

The operations and maintenance costs associated with this project are anticipated to be $5,000 per year, and can be seen in Table C-2. This includes public works staff time to read and maintain water meters. This will be a new cost for the District since their current flat rate billing system does not require meters to be read. Staff time for printing and mailing water bills is not expected to increase as a result of the implementation of new billing software with the consumption based rate structure.

Total Annual Project Costs

Table C-3 shows the estimated annual project costs. These costs are based on Table C-1 and C-2.

Project Annual Physical Benefits (Qualitative and Quantitative)

This proposed project will result in the replacement of 375 water meters within the service area. There are two quantifiable physical project benefits relating to the reduction in water use. There are also non-quantifiable project benefits that are also described in this section. The project annual physical benefits are shown in Table C-5.

The quantifiable project physical benefits consist of the reduction in raw water pumped from the area aquifer and the reduction in wastewater flow. Estimates of water savings due to meter replacement vary depending on the service area characteristics, metered rate schedules, and overall water conservation programs and activities. The water use within the Maxwell service area is expected to decrease from existing levels due to meter replacement.

Published estimates of the amount of water savings due to metering vary greatly. It is estimated that the proposed project will reduce raw water demand by 20%, although higher savings are possible for some areas. Several sources were used to estimate the percent decrease in water use including a comparison between metered and unmetered water providers in the area and two published sources.

A comparison of water use was conducted for municipalities near Maxwell, some with metered water rates and some with flat rates. The municipalities with metered water rates included Arbuckle, Colusa, Dunsmuir, Red Bluff, Redding, and Shasta Lake. The municipalities with flat rates included Maxwell and Williams. This data showed an average of 18% reduction in water use for communities with metered water rates.

A Study entitled " Do Water Meters Reduce Wastage?" in the March 2001 Issue of Environmental Engineering and Science by Ken Sharratt investigated the use of water meters to reduce water use. This study concluded that for small communities water use was 30% less where water costs were based on metered usage.

The most recent update to the "Memorandum of Understanding Regarding Urban Water Conservation in California" published by the California Urban Water Conservation Council estimated that water metering could decrease water use by 20%. For this analysis a conservative figure of 20% was used.

The estimated annual water reduction is shown in Table A-15i-1. As can be seen in the Table the annual reduction is anticipated to be 24.2 million gallons per year gallons. The associated reduction in wastewater flow was estimated to be 60% of the water reduction. The annual reduction in wastewater flow is 14.5 million gallons per year is also shown in Table A-15i-1.

Table A-15i-1: Quantifiable Physical Project Benefits
Maxwell Public Utility District Water Meter Replacement Project

Current Maxwell Per Connection Water Use	884 gallons/connection/day
Estimated Percent Water Savings as a Result of Project Implementation	20%
Monthly per Connection Water Savings	176.8 gallons/connection/day
Estimated Annual Water Savings	**24.2 million gallons/ year**
Estimated Annual Wastewater Flow Reduction (60% of Water Savings)	**14.5 million gallons/ year**

There are also qualitative benefits associated with the reduction in both raw water demand and wastewater flow. These benefits are described below and include:

- Reduction in overall local water demand
- Conservation of local and Bay-Delta natural resources
- Decreased demand on groundwater aquifer
- Improved recharge of local streams
- Reduced biological stress on Bay-Delta System
- Customer ability to reduce water bill through conservation
- Improved District Management
- Improved Water Use data provided to State Agencies
- Improved water use analysis

The proposed water meter project would benefit the Bay-Delta water system by decreasing the amount of groundwater pumped from the area aquifer. Encouraging water conservation through consumption based water rates will minimize the demands on the District's groundwater aquifer, which may improve recharge to local streams that feed the Bay-Delta system. The proposed project provides a water efficiency improvement solution that is maintainable and feasible to implement, which reduces impacts on natural resources within the Bay-Delta. The reduction in water use would also increase the available water supply for future development without tapping into new supplies.

This project also benefits Bay-Delta water quality improvement through wastewater source reduction. Wastewater source reduction improves Bay-Delta drinking water quality potential and reduces biological stress on the surface water system including reduced nutrient load, sediment load, and salt load.

Water metering provides an incentive for customers to improve water conservation. When water customers are being charged for their actual water use, there will be a better correlation between water use and water cost. Customers will directly benefit from conserving water when they reduce their monthly water bill. Water conservation also benefits Colusa County and state water management plans by reducing overall water demand, conserving natural resources, and promoting adequate water supplies.

Improved management of the Maxwell Public Utility District water system is another qualitative benefit of the project. This is considered primarily an applicant benefit although metered water data is also used at the regional and state level. The ability to accurately meter water uses will give the District the ability to track its water use. In the past, data on District water use was very limited. This made it more difficult for the District to plan its water use, system upgrades, and rate structure.

Project Annual Local Monetary Benefits

The local monetary benefits consist of the additional revenue the Maxwell Public Utility District will receive with reduced water system and wastewater system operating costs due to conservation. The additional revenue to the District is estimated at $11,161 per year. Details of this estimate are presented in Table A-15i-2, and summarized in Table C-6. The estimate is

based on water savings calculated in the previous section and annual production and costs for the water and wastewater systems.

Table A-15i-2: Project Annual Local Monetary Benefits Maxwell Public Utility District Water Meter Replacement Project	
Annual Water Treatment Costs	$ 30,790/year
Annual Raw Water Volume	120.96 million gallons/year
Water Cost	$ 255 million gallons/year
Annual Water Savings	24 million gallons/year
Annual Water Treatment Cost Savings	**$ 6,160/year**
Annual Wastewater Treatment Costs	$ 25,000/year
Annual Wastewater Volume	72.576 million gallons/year
Wastewater Cost	$ 255 million gallons/year
Annual Wastewater Savings	15 million gallons/year
Annual Wastewater Treatment Cost Savings	**$ 5,002/year**
TOTAL SAVINGS	**$ 11,161/year**

Project Local Monetary Benefits and Project Costs

The local monetary benefits as identified in Table C-6 are $11,161 per year and the project costs as identified in Table C-3 are $503,668. This information is also contained in Table C-7.

Applicant's Cost Share and Description

The Maxwell Public Utility District is a disadvantaged community whose annual median household income is $32,317, which is less than 80% of the statewide median household income. Disadvantaged communities are not required to provide a local match.

2004 Water Use Efficiency Proposal Solicitation Package

APPENDIX A: Project Information Form

Applying for: X Urban ❑ Agricultural

1. (Section A) **Urban or Agricultural Water Use Efficiency Implementation Project**

   X (a) implementation of Urban Best Management Practice, #_____iv._____

   ❑ (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): Maxwell Public Utility District

4. Project Title: 2005 Water Meter Replacement Project

5. Person authorized to sign and submit proposal and contract:

Name, title	Randy Vessels, General Manager
Mailing address	Maxwell PUD
	P.O. Box 294
	Maxwell, CA 95955
Telephone	(530) 438-2505
Fax.	(530) 438-2902
E-mail	maxpud@mako.com

6. Contact person (if different):

Name, title.	Steve McHaney, Managing Principal, Winzler & Kelly

Mailing address. 633 Third Street
Eureka, CA 95501
Telephone (707) 443-8326
Fax. (707) 444-8330
E-mail stevemchaney@w-and-k.com

7. Grant funds requested (dollar amount): **$ 515,922**
   (from Table C-1, column VI)
8. Applicant funds pledged (dollar amount): $ 0
9. Total project costs (dollar amount): **$ 515,922**
   (from Table C-1, column IV, row n)
10. Percent of State share requested (%) 100%
    (from Table C-1)
11. Percent of local share as match (%) 0%
    (from Table C-1)
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.
    (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.)

    ❑ (a) yes
    X (b) no

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

    ❑ (a) yes
    X (b) no

12. Duration of project (month/year to month/year): **12/05 to 12/07**

13. State Assembly District where the project is to be conducted:	**District 2**
14. State Senate District where the project is to be conducted:	**District 4**
15. Congressional district(s) where the project is to be conducted:	District 2
16. County where the project is to be conducted:	Colusa
17. Location of project (longitude and latitude)	39.275 North 122.193 West NAD 83
18. How many service connections in your service area (urban)?	375
19. How many acre-feet of water per year does your agency serve?	371.2 Acre-Feet Raw Water

20. Type of applicant (select one):

- ❑ (a) City
- ❑ (b) County
- ❑ (c) City and County
- ❑ (d) Joint Powers Authority
- **X** (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.)

X (a) yes, _$32,317_ median household income

❑ (b) no

Based on 2000 Census for Maxwell Public Utility District

Table C-1.d: Scope of Engineering Services, Summary
Maxwell Public Utility District Water Meter Replacement Project

Project Manager: Steve McHaney
Prepared by: Rebecca Crow
Reviewed by: Steve McHaney
Reviewed Date: 1/5/2005

SUMMARY
COST ESTIMATING SHEET

Task Name	City Staff	Direct Labor	Reimbur-sables	TOTAL COST
Task 1: Field Inspection	$3,620	$10,590	$0	$14,210
Task 2: Develop and Review Plans and Specifications	$1,120	$23,400	$0	$24,520
Task 3: Bid Period Services	$1,240	$3,480	$500	$5,220
Task 4: Construction Inspection and Management	$2,020	$48,360	$0	$50,380
Task 5: Construction Project Closeout	$400	$5,080	$0	$5,480
Task 6 Develop Consumption Based Water Rate Structure	$1,580	$7,480	$0	$9,060
Task 7: Monitoring And Assessment	$3,400	$2,070	$0	$5,470
Task 8: Summary Report and District Presentations	$340	$9,120	$0	$9,460
Task 9: Quarterly DWR Reporting	$620	$3,280	$0	$3,900
Task 10: Grant Administration	$1,240	$5,080	$0	$6,320
SUB-TOTAL	$15,580	$117,940	$500	$134,020
PROJECT CONTINGENCY			10%	$13,402
TOTAL				$147,422

Summary

District Administration	$1,860
W&K Administration	$8,360
Monitoring and Assessment	$5,470
Report Preparation and Presentations	$9,460
Planning Design and Engineering	$53,010
Construction Inspection and Management	$55,860
Sub-Total	$134,020

Applicant: Maxwell Public Utility District

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY

Section A projects must complete Life of investment, column VII and Capital Recovery Factor Column VIII. Do not use 0.

Table C-1: Project Costs (Budget) in Dollars)

	Category (I)	Project Costs $ (II)	Contingency % (ex. 5 or 10) (III)	Project Cost + Contingency $ (IV)	Applicant Share $ (V)	State Share Grant $ (VI)	Life of investment (years) (VII	Capital Recovery Factor (VIII)	Annualized Costs $ (IX)
	Administration[1]								
	Salaries, wages	$1,395	10	$1,535	$0	$1,535	30	0.0726	$111
	Fringe benefits	$465	10	$512	$0	$512	30	0.0726	$37
	Supplies	$0	10	$0	$0	$0	0	0.0000	$0
	Equipment	$0	10	$0	$0	$0	0	0.0000	$0
	Consulting services	$8,360	10	$9,196	$0	$9,196	30	0.0726	$668
	Travel	$0	10	$0	$0	$0	0	0.0000	$0
	Other	$0	10	$0	$0	$0	0	0.0000	$0
(a)	Total Administration Costs	$10,220		$11,242	$0	$11,242			$816
(b)	Planning/Design/Engineering	$53,010	10	$58,311	$0	$58,311	30	0.0726	$4,233
(c)	Equipment Purchases/Rentals/Rebates/Vouchers	$110,000	10	$121,000	$0	$121,000	0	0.0000	$0
(d)	Materials/Installation/Implementation	$220,000	10	$242,000	$0	$242,000	30	0.0726	$17,569
(e)	Implementation Verification	$0	10	$0	$0	$0	0	0.0000	$0
(f)	Project Legal/License Fees	$5,000	10	$5,500	$0	$5,500	0	0.0000	$0
(g)	Structures	$0	10	$0	$0	$0	0	0.0000	$0
(h)	Land Purchase/Easement	$0	10	$0	$0	$0	0	0.0000	$0
(i)	Environmental Compliance/Mitigation/Enhancement	$0	10	$0	$0	$0	0	0.0000	$0
(j)	Construction	$55,860	10	$61,446	$0	$61,446	30	0.0726	$4,461
(k)	Other (Specify)	$0	10	$0	$0	$0	0	0.0000	$0
(l)	Monitoring and Assessment	$5,470	10	$6,017	$0	$6,017	0	0.0000	$0
(m)	Report Preparation	$9,460	10	$10,406	$0	$10,406	0	0.0000	$0
(n)	**TOTAL**	$469,020		$515,922	$0	$515,922			$27,080
(o)	Cost Share -Percentage				0	100			

1- excludes administration O&M.

Applicant: **Maxwell Public Utility District**

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY

Table C-2: Annual Operations and Maintenance Costs

Operations (1) (I)	Maintenance (II)	Other (III)	Total (IV) (I + II + II)
$4,000	$1,000	$0	$5,000

(1) Include annual O & M administration costs here.

Table C-3: Total Annual Project Costs

Annual Project Costs (1) (I)	Annual O&M Costs (2) (II)	Total Annual Project Costs (III) (I + II)
$27,080	$5,000	$32,080

(1) From Table C-1, row (n) column (IX)
(2) From Table C-2, column (IV)

Table C- 4: Capital Recovery Table (1)

Life of Project (in years)	Capital Recovery Factor
1	1.0600
2	0.5454
3	0.3741
4	0.2886
5	0.2374
6	0.2034
7	0.1791
8	0.1610
9	0.1470
10	0.1359
11	0.1268
12	0.1193
13	0.1130
14	0.1076
15	0.1030
16	0.0990
17	0.0954
18	0.0924
19	0.0896
20	0.0872
21	0.0850
22	0.0830
23	0.0813
24	0.0797
25	0.0782
26	0.0769
27	0.0757
28	0.0746
29	0.0736
30	0.0726
31	0.0718
32	0.0710
33	0.0703
34	0.0696
35	0.0690
36	0.0684
37	0.0679
38	0.0674
39	0.0669
40	0.0665
41	0.0661
42	0.0657
43	0.0653
44	0.0650
45	0.0647
46	0.0644
47	0.0641
48	0.0639
49	0.0637
50	0.0634

(1) Based on 6% discount rate.

Applicant: **Maxwell Public Utility District**

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY

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

	Qualitative Description - Required of all applicants[1]				**Quantitative Benefits - where data are available [2]**
	Description of physical benefits (in-stream flow and timing, water quantity and water 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	Conservation of Bay-Delta natural resources, decreased demand on area aquifers, reduced biological stress on the Bay-Delta System. Additional information on local benefits can be found in the grant text under Section A-15i	Benefits will be occur throughout the year. The location will include improved water quality and recharge to local streams feeding the Bay-Delta.	30 years or more	The project directly benefits the Bay-Delta system by improving water quality, and improving rechrage to local streams that drain to the Bay-Delta. The project also includes an indirect benefit, whereby reduced water use results in reduced dependence on the bay-Delata System	Reduced groundwater pumping by 24.2 million gallons per year and reduced wastewater discharge by 14.5 million gallons per year
Local	Reduction in overall local water demand, improved customer water billing, improved District management, improved water use analysis. Additional information on local benefits can be found in the grant text under Section A-15i	Benefits will occur through out the year	30 years or more	**Not applicable.**	

[1] The qualitative benefits should be provided in a narrative description. Use additional sheet.

[2] Direct benefits are project outcomes that contribute to a CALFED objective within the Bay-Delta system during the life of the project.

[3] Indirect benefits are project outcomes that help to reduce dependency on the Bay-Delta system. Indirect benefits may be realized over time.

[4] The project benefits that can be quantified (i.e. volume of water saved or mass of constituents reduced) should be provided.

Applicant: **Maxwell Public Utility District**

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY

Table C-6 Project Annual Local Monetary Benefits

ANNUAL LOCAL BENEFITS	ANNUAL QUANTITY	UNIT OF MEASUREMENT	ANNUAL MONETARY BENEFITS
(a) Avoided Water Supply Costs (Current or Future Source)	0		$6,160
(b) Avoided Energy Costs	0		$0
(c) Avoided Waste Water Treatment Costs	0		$5,002
(d) Avoided Labor Costs	0		$0
(e) Other (describe)	0		$0
(f) Total [(a) + (b) + (c) + (d) + (e)]			$11,161

(note avoided water and and wastewater energy costs are included with 'a' and 'b' respectively)

Table C-7 Project Local Monetary Benefits and Project Costs

(a) Total Annual Monetary Benefits [(Table C-6, row (f)]		$11,161
(b) Total Annual Project Costs (Table C-3, column III)		$32,080

Table C-8 Applicant's Cost Share and Description

Applicant's cost share %: (from Table C-1, row o, column V)	**0**
Applicant is a disadvantaged Community, no match is required.	