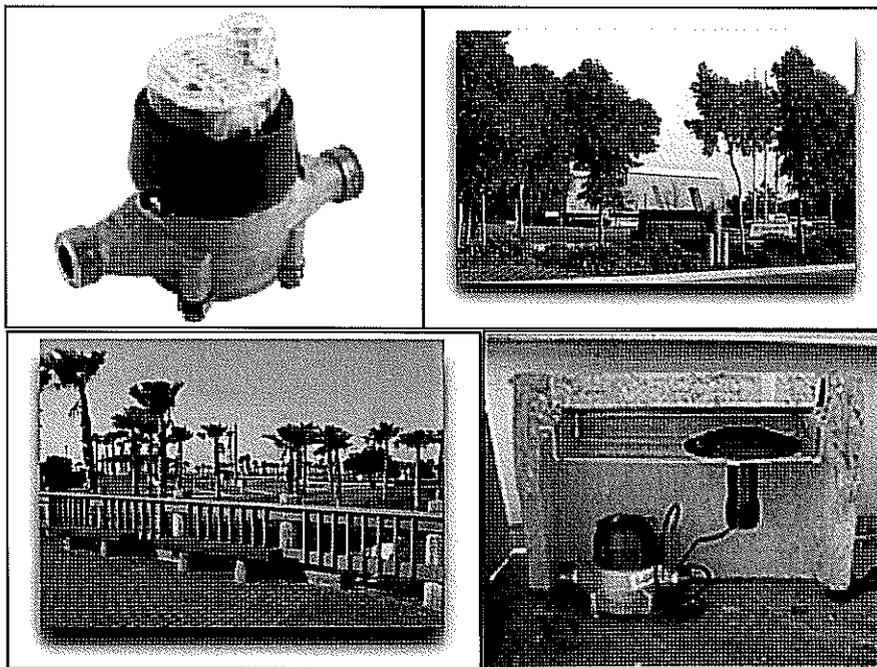


CITY OF PORT HUENEME

**CITYWIDE METER RETROFIT AND
SYSTEM AUDIT PROGRAM**

**PROPOSAL FOR PROPOSITION 50 FUNDING
2004 WATER USE EFFICIENCY GRANT PROGRAM
SECTION A: AGRICULTURAL AND URBAN WATER
USE EFFICIENCY IMPLEMENTATION PROJECTS**

CALIFORNIA DEPARTMENT OF WATER RESOURCES



January 2005

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14. Duration of project (month/year to month/year):	01/06 – 12/08
15. State Assembly District where the project is to be conducted:	35, 37, 38
16. State Senate District where the project is to be conducted:	18, 19
17. Congressional district(s) where the project is to be conducted:	23, 24
18. County where the project is to be conducted:	Ventura
19. Location of project (longitude and latitude)	Long: N 34° 08.967' Lat: W 119° 11.715'
20. How many service connections in your service area (urban)?	5,200
21. How many acre-feet of water per year does your agency serve?	3,200

22. 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 _____

23. Is applicant a disadvantaged community? If 'yes' include annual median household income.
- (a) yes, _____ median household income
- (b) no

(Provide supporting documentation.)

2004 Water Use Efficiency Proposal Solicitation Package
APPENDIX 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.

_____	<u>Bob Hunt, City Manager</u>	_____
Signature	Name and title	Date

Statement of Work, Section 1: Relevance and Importance

Project Background

The City of Port Hueneme (City) is located midway between the Cities of Santa Barbara and Los Angeles, on the Pacific Coast in western Ventura County. The City encompasses an incorporated area of 4.7 square miles and a population of 24,000. Currently, the City purchases all potable water supplies, approximately 3,200 acre-feet, from the Port Hueneme Water Agency (PHWA). The PHWA receives local groundwater from United Water Conservation District (UWCD) and imported surface water (Delta water) from the Calleguas Municipal Water District (CMWD). Approximately 67 percent of the PHWA/City water demands are met with local groundwater from UWCD and the remaining 33 percent are received as treated Delta water from CMWD.

The City has approximately 5,200 accounts in the service area. Approximately 1,340 accounts have meters, although these meters do not contain electronic reading capability. Approximately 340 irrigation and commercial accounts have meters, which are manually read and billed bi-monthly based on the volume of water use. The remaining metered accounts (approximately 1,000) are not read, with customers paying a flat rate. The remaining approximately 3,860 accounts (mostly residential) are not metered, with customers paying a service charge and flat rate for volume.

Table 1 presents the types and quantities of meters the City is proposing to install.

**TABLE 1
 TYPES AND QUANTITIES OF EXISTING ACCOUNTS**

Type of Account	Number of Accounts	Meter Size (inches)	Number of Metered Accounts	Number of Unmetered Accounts
Single Family Residential	4,813	5/8 or 3/4	1,000	3,813
Multifamily Residential	50	1 to 3	50	0
Commercial/Industrial	173	1 to 10	129	44
Irrigation	164	3/4 to 4	162	2
Total	5,200		1,341	3,859

Project Description

The City desires to implement a Citywide Meter Retrofit and System Audit Program (Program) for the installation of 5,200 new water meters with "radio-read" and datalogging capabilities. This Program includes both the installation of meters on unmetered accounts and replacement of aging existing conventional meters. This

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Program could be completed in three years (December 2008) with Proposition 50 funding. Following full implementation of the meter installation Program, the City plans to conduct a year-long system-wide water audit, and prepare a summary report by December 2009. With the new metering system, the City will be able to revise the rate structure to include a conservation rate to encourage water conservation. In addition, the new meters will provide "real-time" water use data to customer to empower customers to make better water use decisions.

Based on the results of other agencies that have implemented similar meter replacement Program and equipment, the City estimates that the Program will result in an estimated water savings of up to 25 percent. This Program will result in water demand savings of approximately 800 acre-feet (260,000,000 gallons) per year based on the following assumptions:

- Metering all accounts will allow the City to develop an equitable conservation rate for all customers. Installation of meters combined with conservation pricing is anticipated to result in a water savings of at least 320 acre-feet per year, assuming a minimum of 10 percent water savings. Installation of meters in other communities has resulted in savings of 14 percent to 30 percent due to metering alone, with summer consumption dropping up to 43%. The California Urban Water Conservation Council identifies a savings of 20 percent for the combination of metering and commodity rates.
- Reduction in unaccounted water due to inaccurate meters from 10 percent to 5 percent, resulting in a water savings of approximately 160 acre-feet per year.
- Repair of leaks identified during installation of the new meters and laterals, resulting in a water savings of 160 acre-feet per year, assuming a leak rate of 5 percent.
- Residential water customers will be able to obtain "real-time" data on water consumption patterns from the datalogger upon request. In conjunction with existing public education programs, data from the new meters will allow customers to become aware of opportunities to save money by making more informed decisions regarding water use. Sharing of this data from the meters could yield water savings (primarily outdoor use) of up to 160 acre-feet per year, assuming 5 percent water savings.

Approximately 67 percent of the City's water supply, in an average year, is obtained from local supplies. Implementation of this Program could avoid purchasing approximately 534 acre-feet (87,000,000 gallons) of water per year from local water supplies. Approximately 33 percent of the City's water supply, in an average year, is obtained indirectly from the Delta through CMWD. Implementation of this Program could avoid diversion of approximately 266 acre-feet (87,000,000 gallons) of water per year from the Delta to supply City water needs.

This Program is consistent with the objectives of the City's Urban Water Management Plan (2000 Update), which recommends installation of meters within the City. The City also has water conservation programs including public education and large landscape water audits in place that will support the water conservation objectives of the CAL-FED Program. The City also participates in a Toilet Replacement Program, in conjunction with Metropolitan Water District and CMWD. The City plans to maintain funding for these programs in forthcoming years.

Additionally, implementation of this program will also result in compliance with AB 2572. This Bill, signed by the Governor September 2004, requires urban water suppliers to install water meters on all municipal and industrial water service connections located in its service area by January 2025. This Bill also requires water suppliers to charge based on actual volume of water delivered for each customer with a meter by January 2010.

The total Program cost is estimated to be \$4,149,893 (2004 dollars) with contingencies included. The City requests Proposition 50 funding in the amount of \$1,360,800 (33%). The City will provide its cost-share in the amount of \$2,789,093 (67%) using reserves, inter-fund loans, and in-kind services (i.e., pre-installation inspection, public outreach, Program monitoring, and inspection services during meter installation).

Statement of Work, Section 2: Technical/Scientific Merit, Feasibility

Scope of Work

The City proposes to execute the Program through the seven tasks described below.

- Task 1 - Finalize Engineering Plans
- Task 2 - Competitive Bidder and Contractor Selection
- Task 3 - Customer Outreach
- Task 4 - Implement Phase I of Meter Installations
- Task 5 - Implement Phase II of Meter Installations
- Task 6 - Implementation of Phases III and IV of Meter Installations
- Task 7 - Conduct System-wide Audit

Each task is defined below.

Task 1 - Finalize Engineering Plans

Following funding of the Program, the City will finalize the engineering plans and specifications and the work plan for the phased implementation of the meter installations. The City is proposing to execute the meter retrofit component of the Program in four phases, starting in January 2006 and ending in December 2008, as shown in Table 2. A City engineering evaluation indicates that some of the service lines

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will need to be replaced when the meters are installed, because of incompatible equipment, advanced age, and deteriorating condition.

Required equipment on each new meter installation will include: a 5/8 inch or larger positive-displacement type meter, which meets all applicable standards of the AWWA for residential meter use. Each meter will include an encoded register-type electronic

**TABLE 2
 PROPOSED PROGRAM SCHEDULE**

Task	Deliverables	Projected Cost (a)	Scheduled Start	Scheduled Completion
Award of Grant Funding	-	-	-	May 2005
Contract Executed	Contract	-	June 2005	December 2005
Planning, Design, Engineering	Final Plans and Specs	\$37,000	October 2005	November 2005
Purchase Meters	-	\$1,296,000	December 2005	November 2008
Administration, Monitoring, Assessment, and Community Outreach, Reports	Meetings, Reports	\$272,000	November 2005	December 2008
Select Contractors	Contract	-	November 2005	December 2005
Meter Installations – Phase 1	340 meters	\$47,000	January 2006	March 2006
Meter Installations – Phase 2	2,295 meters	\$314,000	April 2006	March 2007
Meter Installations – Phase 3	1,815 meters	\$1,074,000	April 2007	December 2007
Meter Installations – Phase 4	750 meters	\$750,000	January 2008	December 2008
System Audit	Final Report	\$60,000	January 2009	December 2009

Notes:

a) Projected cost (2004 dollars) without contingency, rounded up to nearest \$1,000.

reading capability and an electronic Meter Interface Unit (MIU) that has the ability to electronically query the register of the meter at periodic intervals of one hour or less and retain the returned meter reading in electronic memory. The MIU will have the ability to store the readings as a water usage profile over the billing cycle. The MIU will have the ability to download the usage profile and the final total reading to the meter reading

computer through existing and currently licensable Radio Reading technology. The City will also purchase one vehicle mounted mobile receiving unit. The City will utilize an existing vehicle for receiving the data.

The City desires to utilize the radio-read technology for meter reading due the data available from the electronic memory, but also to minimize the labor required to eventually read the City's 5,200 meters each billing period. Data from the current meters is manually read and hand-keyed into the City's billing system. This manually operated system is labor intensive and prone to errors in reading or data entry, resulting in meter re-reads, billing delays, and customer complaints. It is anticipated that the City will be able to read all of the meters using the radio-read technology within one day. This would allow the City to utilize existing staff to conduct the meter reading and data entry without increasing labor levels.

The new meters will meet California Proposition 65 requirement for lead content. The Program will also provide the City with leak detection, meter tampering detection, and reverse flow detection.

Task 2 - Competitive Bidder and Contractor Selection

Once plans, specifications and schedules are finalized, the City will issue a Request for Proposal (RFP) to obtain competitive bids from qualified contractors to perform meter installations. The bidding and bid award process for this Program will be performed by phases in accordance with standard City procurement policy, which meets all State requirements for bidding and awarding of public entity contracts.

Task 3 - Customer Outreach

The City will conduct customer outreach using a variety of methods including newsletters, participation in local events, public meetings, responding to customer issues, and sharing data with customers from the new meters.

The City will provide announcements via direct mailings, door hangers, the semi-annual "Hueneme Magazine", Association of Water Agencies - Ventura County quarterly news magazine, and bill stuffers. The City will also include information at local events such as "Hueneme Days" and "Harbor Days". The City anticipates conducting at least one public meeting regarding the Program prior to implementation of Phase 1 of the meter installation work. Customer concerns regarding the Program will be documented and addressed. Customer feedback and concerns during Program implementation will be tracked, and used by the City as part of its evaluation and improvement of remaining Phases.

The City will provide educational material and workshops to customers on how they can request datalogger information generated by the newly installed meters and how this information can be used to aid them in making better water use decisions. The City will also follow-up with customers who have requested datalogger information to inquire on what water conservation measures they have taken in response to water use

information discussed at the time the datalogger information was presented to the customer.

Task 4 - Implement Phase I of Meter Installations

Phase 1 includes replacement of all existing meters for accounts that are currently metered, read, and billed via a commodity rate (approximately 340) over a three month period, starting in January 2006.

The contractor performing meter installations will provide the City with a list of meter installations and their condition as they are finished. The contractor will be required to inspect the installation and electronic reading ability of each meter installation at the end of each phase of meter installation. City construction inspectors will spot check approximately two percent of the completed installations to ensure compliance with City standards. In addition, the City Water Department and Engineering Department will periodically use the Radio-Read system to determine the condition and reading of the finished meter installations as the Program progresses. The contractor will correct any defects in the system.

Once inspected, the City will update its billing system with the meter number. The City will establish a trial period for each new meter for a period of one to three months to ensure proper operation of the new meter. During the trial period, the City will bill customers using the existing billing system (either flat rate or commodity rate). In addition, the City will collect usage and operation data for all new meters. The City will inspect and correct all meters that do not appear to be operate correctly. Following the trial period, the City will begin billing the new metered connections with a commodity rate instead of a flat rate.

Task 5 - Implement Phase II of Meter Installations

Phase 2 includes the installation of approximately 2,295 meters including replacement of approximately 1,000 existing meters and approximately 1,295 new meters. This Phase will occur over a 9 month period, beginning in April 2006 with completion by December 2006 as noted in Table 2. The documentation and verification process described in Task 4 will be followed for the meters installed during this Phase.

Task 6 - Implementation of Phase III and IV of Meter Installations

Phases III and IV include the installation of approximately 2,565 new meters over a 24-month period January 2007 to December 2008 as noted in Table 2. The documentation and verification process described in Task 4 will be followed.

Task 7 - Conduct System Audit

Following full implementation of this Program, the City plans to conduct a year-long system-wide water audit, and prepare a summary report by December 2009 as noted in Table 2. This audit will evaluate water demand savings, reduction of leaks from meters, and reduction in unaccounted water. This audit will assess the City demands from pre-

meter installation to post-meter installation. Total water demands for the metered accounts will be assessed for the previous three years, while total water demands from the 3,841 unmetered accounts will be estimated for the same period. The water demands from previous years will be averaged to reduce the effect of anomalies, and graphed on a chronological chart by billing cycle. The incremental difference in the pre-meter installation and post-meter installation billings will be summed to evaluate changes in water demand. Success will be measured by several methods including reduction of individual and total water sales, which will reflect in overall reduction of demands by the City. Also, once the City is metered, staff will be able to track water sales compared to water demands and develop an accounting for water loss. This will assist in finding water leaks within the City's water distribution system

A copy of the final report will be made available upon written request to City customers, DWR, and CALFED.

Preliminary Plans and Specifications and Certification Statements

Specific plans are currently in development. The final bid document will include proposed metering equipment, shown on the Preliminary Specifications and Drawings in Attachment B. New water service connections will be installed in accordance with Draft City Standard Detail No. 104. For existing water service connections, meter boxes, angle meter stops, new meters, and backflow prevention devices will be installed as applicable to each account, in accordance with Draft City Standard Detail No. 110, 117, 119, 121, and 123, contained in Attachment B.

The final bid document will also include the following certification:

Sample engineering feasibility certification statement

I, Kit Nell, a California registered civil engineer, have reviewed the information presented in support of this application. Based on this information, and any other knowledge I have regarding the proposed Program, I find that it can be designed, constructed, and operated to accomplish the purpose for which it is planned. There is a sufficient water supply for the Program. The information I have reviewed to document this statement is included within this application and the files of the City of Port Hueneme including but not limited to (*provide list, e.g., feasibility studies, engineering design studies, water rights permits, etc.*)

(Original signature and stamp with expiration date)

The City anticipates selection of a contractor(s) through competitive bidding to perform the actual installation of the meters. It is anticipated that installation will require crews of at least 2 people. The City will provide construction inspection during meter installation, including installation of new water lines and meter boxes if necessary. The City will require the contractor to confirm installation and operation of each meter before completion of the contract. The City will spot check operation of up to 10 percent of the

meters to enforce the contract and City standards. The contractor will correct any defects in the meter operation.

Environmental Documentation

This Program is not subject to the requirements of National Environmental Protection Act because no Federal funding is involved. The Program is exempt from CEQA because the service lines that will be replaced will serve the same existing development. The replacement lines and new meters will have substantially the same purpose and capacity as the replaced water service lines. The metering will have a positive environmental effect by reducing water consumption and waste.

This project will be categorically exempt from CEQA provisions, based on the following language contained in Article 19 Categorical Exemptions, Section 15301, Existing Facilities - "Class I consists of the operation, repair, maintenance or minor alteration of existing public or private structures, facilities, mechanical equipment or topographical features involving negligible or no expansion of use beyond that previously existing...The key consideration is whether the Program involves negligible or no expansion of an existing use, including, but not limited to... (b) Existing facilities of both investor and publicly-owned utilities used to provide electric power, natural gas, sewage, or other public utility services."

Compliance with Local, County, State, and Federal Permitting

All meters will be installed in full accordance with City engineering specifications. City department managers will be invited to a planning workshop for City staff prior to initiating meter installation. A notification will be submitted to applicable public safety, mass transportation, and utility agencies prior to initiating meter installation. No County, State, or Federal permitting requirements are anticipated, except as noted below.

Licensing of the AMR Radio-Read equipment may or may not be required under the FCC Code, Part 15 depending on the system selected by the public bid process. If the system requires licensing, the City will either apply for the appropriate FCC license or will utilize an appropriate existing FCC license in order to operate its personal radio communication equipment. No additional licenses or permits are anticipated.

Statement of Work, Section 3: Monitoring and Assessment

The City will monitor the effectiveness of this Program by the following:

- Assess changes in City water demand for all accounts after installation of meters and conservation pricing.
- Assess reductions in unaccounted water following installation of meters.
- Assess the reduction in leaks from meters. The City will repair leaks identified during replacement of service lines and installation of new meters.
- Assess the number of customer requests for datalogger information and water conservation actions taken after the data is discussed with customers.

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- Prepare monitoring reports for DWR
- Inspect the installation of all new meters. Quantify the number of meters installed on a monthly and quarterly basis.

Success will be measured by several methods including reduction of individual and total water sales, which will reflect in overall reduction of demands by the City. Also, once the City is metered, staff will be able to track water sales compared to water demands and develop an accounting for water loss. This will assist in finding water leaks within the City's water distribution system. Currently, staff does not have the ability to account for water loss within the system. In addition, customers can use as much water as they want without paying any more for their water bill. There is no incentive for customers to prevent or fix leaks. Meters allow for the direct tracking of water sales within different sections of the City and if there is greater than an acceptable variance between sales and production, then leaks can be detected and repaired.

The City will conduct a water demand audit for the entire City system for one year following completion of the meter installations. This audit will compare the City demands from pre-meter installation to post-meter installation. Total water demands for the metered accounts will be assessed for the previous three years, while total water demands from the 3,841 unmetered accounts will be estimated for the same period. The water demands from previous years will be averaged to reduce the effect of anomalies, and graphed on a chronological chart by billing cycle. For example the billing records of January-February for 2004, 2003, and 2002 will be averaged to yield an estimated City water demand prior to installation of meters for the months of January and February. Similar averages will be made for the other five bi-monthly billing cycles. The incremental difference in the pre-meter installation and post-meter installation billings will be summed to evaluate changes in water demand.

Data from the new meters will provide "real-time" information that will help customers makes better water use decisions and reduce water demands. Output from the newly installed meters will provide what is technically called "Diurnal Demand Curves" to each customer that requests this information. The computer chip in each upgraded meter can store enough data to be able to track the water usage for the previous 35 to 70 days. The data is available from the meter each time it is cued by the Radio Controller. Whenever there is a question or comment from a customer's bill, the water use pattern can be shown and discussed with the customer. The City will summarize the number of customers requesting the monitoring data and the type of information requested.

If awarded Proposition 50 funding, the City will prepare quarterly fiscal and programmatic report to the DWR throughout the Program and a comprehensive final report at the end of the Program. If awarded Proposition 50 funding, the City will prepare an annual report due by 31 December which re-evaluates benefits and costs for five years after the completion of the Program.

The City anticipates conducting a pre-installation inspection of all meter locations. The

City (or contractor) will open each meter box and check for anything out of the ordinary and record the observations. If a meter box is not available, details of the location will be recorded. The City will provide construction inspection during meter installation, including including quantification of the number of meters installed on a monthly and quarterly basis. The City will conduct spot checks of the new meters during installation. The City will require the contractor to confirm installation and operation of each meter before completion of the contract. The City will spot check operation of up to 10 percent of the meters to enforce the contract and City standards. The contractor will correct any defects in the meter operation.

Qualifications of the Applicants and Cooperators

Resumes for the following key City personnel, are contained in Attachment A.

- Gary Haggin, Water Superintendent, will be the City's overall Program Manager, coordinate contract requirements, coordinate community outreach, and prepare monitoring and assessment.
- Kit Nell, City Engineer, will approve the final plans and specifications
- Luis Luna, Inspector, will inspect construction and coordinate permits.

The City anticipates selection of a contractor(s) through competitive bidding to perform the actual installation of the meters. The City does not have the internal resources to undertake such an extensive Program as proposed. The City will follow "Public Agency - Request for Proposals" and the City's established bid process to identify qualified contractors to complete the work. Contractors have not been selected at present. No additional external cooperators are anticipated for this Program.

The City has not participated in previous water use efficiency grants.

The City acknowledges that its median household income of \$42,246 (2000 United States Census) is slightly above the value to be designated a "Disadvantaged Community" for this application. However, the City desires to receive consideration as a community with a median household income well below the State and local values. For the purposes of this application a "Disadvantaged Community" has a median household income of less than \$38,000 (80% of the 2002 statewide median of \$47,500, DWR). The 2003 estimated median household income for the City is \$45,246 (2004 Ventura County Economic Outlook, UCSB) which is less than the 2002 statewide median of \$47,500 (DWR) and the 2003 estimated statewide median household income of \$50,220 (US Census, 2003 American Community Survey). In addition, the estimated 2003 City median household income is significantly less than the 2003 Ventura County value of \$65,725 (2004 Ventura County Economic Outlook, UCSB).

Outreach, Community Involvement, and Acceptance

The City will incorporate a wide variety of public outreach and community involvement including the following:

- prepare newsletters
- purchase construction signage
- participate in local events
- conduct public meetings
- respond to customer issues
- share data with customers from the new meters.

Upon notification that our grant application is approved for funding, the City will begin a public outreach program to inform all customers of the schedule for meter installations and the water conservation benefits of the Program. Information will be provided to customers explaining the City Program, why it is being done, and how to get more information. The City anticipates purchasing construction signage for the immediate area of construction and meter installation. Additional information will explain how the new meters work, how to detect leaks, and how changes in water use can conserve water and save customers money. .

The City will provide announcements via direct mailings, City web site, door hangers, the semi-annual "Hueneme Magazine", Association of Water Agencies - Ventura County quarterly news magazine, and bill stuffers. The City will also include information at local events such as "Hueneme Days" and "Harbor Days". The City anticipates conducting at least one public meeting regarding the Program prior to implementation of Phase 1 of meter installation work. Customer concerns regarding the Program will be documented and rapidly addressed. Customer feedback and concerns during Program implementation will be tracked, and used by the City as part of its evaluation and improvement of remaining Phases.

Direct communication with the customers will include door hangers and a letter (see sample below), delivered to customers in advance of the meter installation.

Sample Letter

Dear Customer:

Your business/residence has a new water meter today!

As stewards of one of our precious natural resources, we are always looking for ways to prevent leaks and more accurately measure water use. One step along the path of continual improvement is to periodically inspect and maintain our equipment so it meets the standards set by the American Water Works Association (AWWA). AWWA recommends replacing commercial and residential water meters

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every ten years. At this time, many of the City commercial/residential water meters are approaching the suggested replacement standard.

During the next three years, the City will replace all of the meters in the City with new meters that more accurately measure the water use. The new meters will provide information that will help customers track their own water use and identify ways to save money through water conservation.

For More Information

If you would like more information about your water service, we are available to answer your questions by phone at (805) 986-6566, and frequently asked questions and answers are available on our City webpage (<http://www.ci.port-hueneme.ca.us>).

The City will provide educational material and workshops to customers on how they can request datalogger information generated by the newly installed meters. Customers can use this information to better understand how changes in their water use can conserve water and save money. The City will also follow-up with customers who have requested datalogger information to inquire on what water conservation measures they have taken in response to water use information discussed at the time the datalogger information was presented to the customer. There will be information about average water usage rates so customers can compare and contrast their rates with the average. Whenever there is a question or comment from a customer's bill, the water use pattern can be shown and discussed with the customer

A letter of support from Robert Hunt, Executive Director, Port Hueneme Water Agency is provided in Attachment C. On 19 May 2004 the City Council approved the Director of Utility Services to pursue Proposition 50 funding. A copy of the Council Meeting Minutes and Staff Report is provided in Attachment C. Prior to execution of a contract with DWR, the City will provide a resolution from the City Council accepting the funds and designating a representative authorized to execute the contract and sign requests for disbursement.

The City is not aware of any opposition to the Program. However, the City will document and rapidly address customer concerns regarding the Program should opposition occur.

This Program achieves the goals of the City's 2000 Urban Water Management Plan. This Program also achieves the objectives of California-Federal Bay-Delta Program (CALFED) for Metering (IV) and System Water Audits, Leak Detection, and Repair (III).

Innovation

This Program provides the following significant innovations:

- Empowers customers by providing them access to "real-time" information that will help them make better water use decisions.
- Assessment of the City water demands for pre-meter and post-meter periods to identify water savings.
- An opportunity to collect data that will help justify metering in other smaller cities in California.
- Meters will meet Proposition 65 requirement for lead content. Meter Program will provide the City with leak detection, meter tampering detection, and reverse flow detection.

In conjunction with existing City water conservation efforts, this Program will allow customers to become aware of opportunities to save money by making more informed decisions regarding water use. The City will provide educational material and workshops to customers on how they can request data generated by the newly installed meters. Data from the new meters will provide "real-time" information that will help customers make better water use decisions and reduce water demands. Output from the newly installed meters will provide "Diurnal Demand Curves" to each customer that requests this information. The computer chip in each meter can store enough data to be able to track the water usage for the previous 35 to 70 days. The data is available from the meter each time it is cued by the Radio Controller. Whenever there is a question or comment from a customer's bill, the water use pattern can be shown and discussed with the customer. For example, a customer changes his irrigation schedule on September 10th and requests information on how it has affected water use. At the end of the billing cycle, the City can provide the customer with a graphical record of 60 days of water use in the billing cycle (40 days prior to the schedule change and the 20 days after the schedule change). The customer can witness the results of his conservation effort graphically for each watering day. The City will also follow-up with customers who have requested meter data to inquire on what water conservation measures they have taken in response to water use information discussed at the time the data was presented to the customer. The City is considering including information on water bills about average City water usage rates, so customers can compare and contrast their rates with the City average. Water savings may result of up to 160 acre-feet per year, assuming 5 percent water savings. The primary savings will result from reduction of outdoor water demand.

The City will conduct a water demand audit for the entire City system for one year following completion of the meter installations. This audit will summarize water demand savings, reduction of leaks from meters, and reduction in unaccounted water. This audit will compare the City demands from pre-meter installation to post-meter installation. Total water demands for the metered accounts will be assessed for the previous three years, while total water demands from the 3,841 unmetered accounts will be estimated

for the same period. The water demands from previous years will be averaged to reduce the effect of anomalies, and graphed on a chronological chart by billing cycle. For example the billing records of January-February for 2004, 2003, and 2002 will be averaged to yield an estimated City water demand prior to installation of meters for the months of January and February. Similar averages will be made for the other five bi-monthly billing cycles. The incremental difference in the pre-meter installation and post-meter installation billings will be summed to evaluate changes in water demand.

The City will provide DWR with annual reports which will summarize benefits and costs associated with the Program. This information can be shared with smaller communities that may be considering a metering program. Once smaller communities like the City produce significant water savings in metering projects, then the difficult challenge of financing metering will be made easier to justify. As such, the City believes the results of this Program can assist many small communities in California struggling to balance the cost of meter installations with achieving water conservation objectives.

City Program will include installation of state of the art meter equipment. The proposed meters will meet the Proposition 65 requirement for lead content. Meter Program will also provide the City with leak detection, meter tampering detection, and reverse flow detection.

Benefits and Costs

This Program will achieve a variety of benefits including the following:

- Achieve annual water demand savings of approximately 800 acre-feet, including 266 acre-feet from Delta supplies.
- Metering all accounts will allow the City to develop an equitable conservation rate for all customers resulting in approximately 10 percent savings.
- Reduce unaccounted water due to inaccurate meters will result in approximately 5 percent savings.
- Reduce leaks from meters will result in approximately 5 percent savings.
- Provide meter data to aid customers in making better water use decisions will result in approximately 5 percent savings.
- Conduct system audit to identify savings from Program.
- Perform meter reading of entire City using the radio-read technology without increasing labor levels.
- Meters will meet Proposition 65 requirement for lead content.

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- Meter Program will provide the City with leak detection, meter tampering detection, and reverse flow detection.
- Program will reduce wastewater discharges by 720 acre-feet per year.

The City estimates that total water demand savings of 25 percent will be achieved with full implementation of the proposed Program. Annual total water demand for the City is approximately 3,200 acre-feet. Annual water demand savings associated with the City Program will be approximately 800 acre-feet (260,000,000 gallons) with full Program implementation. An average of 33 percent of the City's demand is met by supplies from the Delta. Therefore, up to 266 acre-feet (87,000,000 gallons) of water per year from the Delta will not need to be diverted to supply City water needs. In addition, an average of 67 percent of the City's demand is met by local supplies, thus up to 534 acre-feet (173,000,000 gallons) of local water will be saved.

Metering all accounts will allow the City to develop an equitable conservation rate for all customers. Currently, only 340 accounts pay based on volume pricing. Installation of meters and conservation pricing is anticipated to yield a water savings of at least 320 acre-feet per year, assuming a conservative 10 percent water savings. Installation of meters in other communities has resulted in savings of 14 percent to 30 percent due to metering alone, with summer consumption dropping up to 43 percent. The California Urban Water Conservation Council identifies a savings of 20 percent for the combination of metering and commodity rates. The City anticipates savings from the combination of new meters and conservation pricing will result in savings greater than 10 percent.

Installation of new meters will assist City to meet its goal to reduce unaccounted water from 10 percent to 5 percent. The City estimates that replacement of inaccurate meters will result in a water savings of approximately 160 acre-feet per year. Repair of leaks identified during installation of the new meters and laterals, will result in water savings of 160 acre-feet per year, assuming a leak rate of 5 percent.

The City will conduct a water demand audit for the entire City system for one year following completion of the meter installations. This audit will evaluate water demand savings, reduction of leaks from meters, and reduction in unaccounted water. This audit will compare the City demands from pre-meter installation to post-meter installation. Total water demands for the metered accounts will be assessed for the previous three years, while total water demands from the 3,841 unmetered accounts will be estimated for the same period. The water demands from previous years will be averaged to reduce the effect of anomalies, and graphed on a chronological chart by billing cycle. This data will be compared to the total City water demand following meter installation. The incremental difference in the pre-meter installation and post-meter installation billings will be summed to evaluate changes in water demand.

The City will provide educational material and workshops to customers on how they can request data generated by the newly installed meters. Data from the new meters will

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provide "real-time" information that will help customers make better water use decisions and reduce water demands. The computer chip in each meter can store enough data to be able to track the water usage for the previous 35 to 70 days. If there is a question or comment regarding a customer's bill, the water use pattern can be shown and discussed with the customer. Additional details are provided in the Innovation Section of this application. The customer can witness the results of his conservation effort graphically for each watering day. The City will also follow-up with customers who have requested meter information to inquire on what water conservation measures they have taken in response to water use information discussed at the time the data was presented to the customer. In conjunction with existing City water conservation efforts, this Program will allow customers to become aware of opportunities to save money by making more informed decisions regarding water use. Water savings of up to 160 acre-feet per year are anticipated, assuming 5 percent water savings. Primary savings will result from reduction of outdoor water demand.

The City desires to utilize the radio-read technology for meter reading due the data available from the electronic memory, but also to minimize the labor required to eventually read the City's 5,200 meters each billing period. Data from the current meters is manually read and hand-keyed into the City's billing system. This manually operated system is labor intensive and prone to errors in reading or data entry, resulting in meter re-reads, billing delays, and customer complaints. It is anticipated that the City will be able to read all of the meters using the radio-read technology within one day. This would allow the City to utilize existing staff to conduct the meter reading and data entry without increasing labor levels.

City Program will include installation of state of the art meter equipment. The proposed meters will meet the Proposition 65 requirement for lead content. These meters will also provide the City with leak detection, meter tampering detection, and reverse flow detection.

This Program will reduce wastewater flows by approximately 720 acre-feet per year. This value is based 800 acre-feet of water saved and a City average of 90 percent of return flows to sewer.

This Program achieves the goals of the City's 2000 Urban Water Management Plan. This Program also achieves the objectives of California-Federal Bay-Delta Program (CALFED) for Metering (No. IV) and System Water Audits, Leak Detection, and Repair (No. III).

Appendix C – Project Costs and-Benefits Tables

Table C-1

See Table C-1 attached. Components of Table C-1 are defined below. The total Program cost is estimated to be \$4,149,893 (2004 dollars). The City requests Proposition 50 funding in the amount of \$1,360,800 (33%). The City will provide its cost-share \$2,789,093 (67%) using reserves, inter-fund loans, and in-kind services (i.e., pre-installation inspection and inspection services during meter installation).

The cost of \$125,580 for "Administration – Salaries and Wages" is comprised of two Project elements. First, the City anticipates a cost of approximately \$109,200 (2004 dollars) for administration of the Project from 2005 to 2008. This will include finalizing the Project drawings and specifications, preparing a proposal, contractor selection, contractor contract administration, grant administration, and communication with City Council and staff. Second, the City anticipates a cost of approximately \$16,380 (2004 dollars) for administration of the System Audit in 2009. This will include preparing a proposal, engineer selection, engineer contract administration, collection of data from City billing system, and communication with City Council and staff. The combined cost of \$125,580 was increased with a contingency of 5 percent for a Project Cost + Contingency of \$131,859. The City will include this cost within its cost-share.

The value of \$15,000 for "Administration – Supplies" includes costs for Project related construction signage, door hangers, and reproduction for the period 2005 to 2008. These items will be necessary for community outreach. The cost of \$15,000 (2004 dollars) was increased with a contingency of 5 percent for a Project Cost including contingency of \$15,750. The City will include this cost within its cost-share.

The value of \$3,150 for "Administration – Other" includes costs for Project related postage for the period 2005 to 2008. This postage will be necessary for community outreach including one to two newsletters planned during the Project. The cost of \$3,150 (2004 dollars) was increased with a contingency of 5 percent for a Project Cost including contingency of \$3,308. The City will include this cost within its cost-share.

The cost of \$97,000 for "Planning, Design, and Engineering" is comprised of two Project elements. First, the City anticipates a cost of approximately \$37,000 (2004 dollars) for a consultant to prepare preliminary and final project drawings and specifications, prepare a metering program, and assist with preparation of the grant application. These Project tasks will be completed in 2005. Second, the City anticipates a cost of approximately \$60,000 (2004 dollars) for a consultant to conduct the System Audit in 2009. The combined cost of \$97,000 was increased with a contingency of 5 percent for a Project Cost + Contingency of \$101,850. The City will include this cost within its cost-share.

The cost of \$1,296,000 for "Equipment Purchases, Rentals, Rebates, Vouchers" is for the purchase of 5,200 new water meters with "radio-read" and datalogging capabilities and one vehicle mounted mobile receiving unit. The City will utilize an existing vehicle for receiving the data. The meters will be purchased over the period 2005 to 2008. The

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cost of \$1,296,000 (2004 dollars) was increased with a contingency of 5 percent for a Project Cost + Contingency of \$1,360,800. The City requests this amount in State funding for the Program.

The cost of \$1,790,820 for "Materials, Installation, and Implementation" is for the construction and installation of 5,200 new water meters. The meters will be installed over the period 2006 to 2008. This cost is for construction and installation of 5,200 meters including approximately 1,340 meter replacements and 3,860 new meter locations. The cost of \$1,790,820 (2004 dollars) was increased with a contingency of 10 percent for a Project Cost + Contingency of \$1,969,902. The City will include this cost within its cost-share.

The cost of \$393,120 for "Implementation and Verification" is for construction inspection during installation of 5,200 new meters. Construction inspection will be completed over the period 2006 to 2008. This cost will be for one full-time City construction inspector. The cost of \$393,120 (2004 dollars) was increased with a contingency of 10 percent for a Project Cost + Contingency of \$432,432. The City will include this cost within its cost-share.

The cost of \$54,600 for "Other" is for community outreach over the period 2005 to 2008. This cost will be for preparation of newsletters, purchase of construction signage, participation in local events, conducting public meetings, responding to customer issues, and sharing meter data with customers. The cost of \$54,600 (2004 dollars) was increased with a contingency of 5 percent for a Project Cost + Contingency of \$57,330. The City will include this cost within its cost-share.

The cost of \$49,140 for "Monitoring and Assessment" is for Project monitoring and assessment costs during the period 2006 to 2008. The City anticipates conducting a pre-installation inspection of all meter locations. The City will conduct spot checks of the new meters during installation, including checking up to 10 percent of the meters to enforce the contract and City standards. The City will assess changes in City water demand after installation of meters, assess reductions in unaccounted water following installation of meters, and assess the number of customer requests for datalogger information. The cost of \$49,140 (2004 dollars) was increased with a contingency of 5 percent for a Project Cost + Contingency of \$51,597. The City will include this cost within its cost-share.

The cost of \$23,872 "Report Preparation" is for preparation of fiscal and programmatic reports for the Department. These reports will include quarterly reports from 2006 to 2008, annual reports from 2009 to 2013, and a comprehensive final report. The cost of \$23,872 (2004 dollars) was increased with a contingency of 5 percent for a Project Cost + Contingency of \$25,066. The City will include this cost within its cost-share. As instructed by DWR staff, all Program costs were given a life of investment value. The City selected 20 years. The associated Capital Recovery Factor for 20 years is 0.0872. The total Annualized Costs for the Program are \$361,871.

Table C-2

See Table C-2 attached. Components of Table C-2 are defined below. The City will be responsible for reading, operating, and maintenance of the new meters. However, the City does not currently own or operate AMR meters. Therefore, the City does not have experience with annual operation and maintenance costs associated with these meters. Preliminary estimates indicated that annual operation and maintenance for AMR meters is approximately \$12 to \$20 per meter per year. There were other estimates that approached \$100 per meter per year. The City selected the more conservative estimate of \$20 per meter per year (2004 dollars) which results in an annual operation and maintenance cost of approximately \$104,000. This value was split evenly (50%-50%) between operation and maintenance in the Table C-2. Therefore, the estimated operation cost is \$52,000, while the maintenance cost is also \$52,000. The City anticipates installing approximately 340 meters (6.5%) in Phase 1. Installation of these meters will provide the City with critical information such as installation costs, construction issues, and operation and maintenance costs. This information will be instrumental in managing remaining phases of meter installation and operation and maintenance.

Table C-3

See Table C-3 attached. Components of Table C-3 are defined below. The Annual Project Costs (Table C-1, column IX) are \$361,871, while the annual O&M costs are \$104,000 (Table C-2, column IV) Therefore, the Total Annual Project Costs are \$465,871.

Table C-4

Table for reference only. Table C-4 not attached.

Table C-5

See Table C-5 attached. Components of Table C-5 are defined below. Total City annual water demand is approximately 3,200 acre-feet. The City estimates water demand savings of 800 acre-feet per year (260,000,000 gallons) with full Program implementation.

This Program will reduce annual City water demand by 266 acre-feet of Delta water.
[3,200 AFY (total City demand) * 0.333 (Delta water) * 0.25 (savings) = 266 AFY]
An average of 33 percent of the City's demand is met by supplies from the Delta.
Therefore, up to 266 acre-feet (87,000,000 gallons) of water per year from the Delta will not need to be diverted to supply City water needs.

Program will reduce annual City water demand by 534 acre-feet of local water supplies.
[3,200 AFY (total City demand) * 0.667 (local water) * 0.25 (savings) = 534 AFY]. An average of 67 percent of the City's demand is met by local supplies, thus up to 534 acre-feet (173,000,000 gallons) of local water will be saved.

The Program will reduce City water demand by a total of approximately 800 acre-feet.

Table C-6

See Table C-6 attached. Components of Table C-6 are defined below. The City estimates water demand savings of 800 acre-feet per year. The City is charged \$695 per acre-foot of Delta water. Estimated Delta water saved is 266 acre-feet per year for a subtotal of \$184,870 of avoided water costs. Cost for local supplies is \$557 per acre-foot. Estimated local water saved is 534 acre-feet per year for a subtotal of \$297,438 of avoided water costs. Total avoided water costs is \$482,308 per year.

The City estimates that approximately 90 percent of customer water demand results in wastewater. The meter Program is estimated to result in an annual water demand savings of 800 acre-feet. Due to full implementation of the Program, the City will avoid the wastewater treatment cost of 90 percent of 800 AF which is 720 AF (235 million gallons). The City is charged approximately \$450 per million gallons of wastewater. Thus, the avoided wastewater treatment cost is approximately \$105,600. This savings estimate does not include the following long term benefits of reductions in wastewater generated: extended lives of trunk sewers and pump stations, delayed expansion of treatment plant processes, or extended life of treated wastewater disposal system.

The Total Project Annual Local Monetary Benefits will be approximately \$587,900.

Table C-7

See Table C-7 attached. Components of Table C-7 are defined below.

The Total Project Annual Monetary Benefits (Table C-6, row f) will be approximately \$587,900. The Total Annual Project Costs (Table C-3, column 3) will be approximately \$222,662.

Table C-8

See Table C-8 attached. Components of Table C-8 are defined below. The total project cost is estimated to be \$4,149,893 (2004 dollars). The City requests Proposition 50 funding in the amount of \$1,360,800 (33%). The City will provide its cost-share \$2,789,093 (67%) using reserves, inter-fund loans, and in-kind services (i.e., pre-installation inspection and inspection services during meter installation).

The City's cost-share for this application is 67 percent while the State's cost share is 33 percent. These cost-share percentages are based on the relative Program benefits derived by the City and State. In Table C-5, the City demonstrates that the Program will reduce water demand by approximately 800 acre-feet per year. This Program will reduce annual City water demand by 534 acre-feet (67 percent) from local water supplies and 266 acre-feet (33 percent) from Delta water.

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	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	\$126,580	5	\$131,859	\$131,859	\$0	20	0.0872	\$11,498
Fringe benefits	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Supplies	\$15,000	5	\$15,750	\$15,750	\$0	20	0.0872	\$1,373
Equipment	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Consulting services	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Travel	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Other	\$3,150	5	\$3,308	\$3,308	\$0	20	0.0872	\$288
(a) Total Administration Costs	\$143,730		\$150,917	\$150,917	\$0			\$13,160
(b) Planning/Design/Engineering	\$97,000	5	\$101,850	\$101,850	\$0	20	0.0872	\$8,881
Equipment								
Purchases/Rentals/Rebates/Vouchers	\$1,296,000	5	\$1,360,800	\$0	\$1,360,800	20	0.0872	\$118,662
(c) Materials/Installation/Implementation	\$1,790,820	10	\$1,969,902	\$1,969,902	\$0	20	0.0872	\$171,775
(d) Implementation Verification	\$393,120	10	\$432,432	\$432,432	\$0	20	0.0872	\$37,708
(e) Project Legal/License Fees	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
(f) Structures	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
(g) Land Purchase/Easement	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
Environmental								
(h) Compliance/Mitigation/Enhancement	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
(i) Construction	\$0	0	\$0	\$0	\$0	0	0.0000	\$0
(j) Other (Specify) - Community Outreach	\$54,600	5	\$57,330	\$57,330	\$0	20	0.0872	\$4,999
(k) Monitoring and Assessment	\$49,140	5	\$51,587	\$51,587	\$0	20	0.0872	\$4,499
(l) Report Preparation	\$23,872	5	\$25,066	\$25,066	\$0	20	0.0872	\$2,186
(m) TOTAL	\$3,848,282		\$4,149,893	\$2,789,093	\$1,360,800			\$361,871
(n) Cost Share -Percentage			67		33			

¹- excludes administration O&M.

Applicant:

City of Port Hueneme

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 + III)
\$52,000	\$52,000	\$0	\$104,000

(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)
\$361,871	\$104,000	\$465,871

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

(2) From Table C-2, column (IV)

Applicant:

City of Port Hueneme

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 Indirect ⁴ or Both	Quantified Benefits (in-stream flow and timing, water quantity and water quality)	
Bay Delta	Program will reduce City water demand by 266 acre-feet of Delta water	Annual savings in Delta water	20 years	Approximately 33 percent of City demand met with Delta water	3,200 AFY (total City demand) * 0.333 (Delta water) * 0.25 (savings) = 266 AFY	
Local	Program will reduce City water demand by 534 acre-feet of local water supplies	Annual savings in local water	20 years	Not applicable.	3,200 AFY (total City demand) * 0.667 (local water) * 0.25 (savings) = 534 AFY	

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:

City of Port Hueneme

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	MEASUREMENT	UNIT OF MEASUREMENT	ANNUAL MONETARY BENEFITS
(a) Avoided Water Supply Costs (Current or Future Source)	800		AF	\$482,308
(b) Avoided Energy Costs	0			\$0
(c) Avoided Waste Water Treatment Costs	720		AF	\$105,592
(d) Avoided Labor Costs	0			\$0
(e) Other (describe)	0			\$0
(f) Total [(a) + (b) + (c) + (d) + (e)]				\$587,900

Table C-7 Project Local Monetary Benefits and Project Costs

(a) Total Annual Monetary Benefits [(Table C-6, row (f))]	\$587,900
(b) Total Annual Project Costs (Table C-3, column III)	\$465,871

Table C-8 Applicant's Cost Share and Description

Applicant's cost share %: (from Table C-1, row o, column V)	67
Describe how the cost share (based on relative balance between Bay-Delta and Local Benefits) is derived. (See Appendix C - Costs and Benefits Tables for description.)	
Provide Description in a narrative form.	