TO:	James L. App, City Manager		
FROM:	Doug Monn, Public Works Director Recycled Water Master Plan December 21, 2010		
SUBJECT:			
DATE:			
NEEDS:	For City Council to consider a contract to develop a Recycled Water Master Plan.		
FACTS:	1. The City has historically relied on ground water (ground water wells plus Salinas River underflow) to meet the community's potable water needs.		
	2. Meeting the City's seasonal potable water demand has posed challenges in recent years. The Paso Robles Groundwater Basin includes areas of chronic and distinct water level decline, especially along the Highway 46 corridor east of Highway 101. Several studies point to the merits of recharging or offsetting pumping in this vicinity.		
	3. Long-term water demand and supply analyses indicate that additional sources will be needed to maintain water supply reliability.		
	4. Nacimiento water was secured to help maintain an adequate, quality water supply. Likewise, a community-wide water conservation program was implemented to preserve and sustain supply.		
	5. Recycled water is the next most reliable and cost-effective option. It can provide 3300 to 5400 acre-feet per year (depending on the size of the recycled system constructed).		
	6. In September 2006, Boyle Engineering (now AECOM) examined potential recycled water use sites, developed a list of potential recycled water customers, and identified possible locations for recharge/percolation.		
	7. In March 2007, Boyle presented a conceptual recycled water system. The concept included delivery of recycled water for irrigation on large east side parcels, and to the south for recharge of the Salinas River underflow.		
	 On August 5, 2010, the City issued a Statement of Qualifications (SOQ)/Request for Proposal (RFP) to ten firms for preparation of a Recycled Water Master Plan and Financial Plan. Two firms responded – AECOM and Kennedy Jenks. 		
	9. The recycled water master plan scope of work includes:		
	a) Estimating the recycled water customer base at build-out.		
	b) Examining seasonal customer demand compared against available treated effluent volumes.		
	c) Performing geotechnical evaluation to quantify hydraulic conductivity, percolation rates, and required pond sizes for river recharge.		

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	d) Analyzing percolation site environmental constraints.	
	e) Preparing preliminary distribution pipeline and facility plans including potential pipeline alignments and sizes, storage tank volumes and locations, pump station locations and sizes – in short, a recycled water distribution system.	
	f) Preparing cost estimates for all infrastructure.	
	Note: It is presumed that the system will be constructed in phases as development occurs.	
	9. AECOM is the most qualified firm.	
ANALYSIS & CONCLUSION:	Recycled water is needed to maintain a reliable water supply. AECOM (formerly Boyle) has prepared the attached Scope of Work in response to the City's request, and is best qualified to complete the plan.	
Policy Reference:	General Plan; Integrated Water Master Plan	
FISCAL IMPACT:	The Recycled Water Master Plan will be funded 50/50 from Sewer and Water Enterprise Funds. The total "not to exceed" cost is: AECOM fee\$194,489 20% for reproductions and blueprints <u>40,000</u> \$234,489	
Options:	a) Adopt Resolution No. 10-xx authorizing a one time budget appropriation of \$117,300 to Budget No. 600.910.5235.686, and \$117,300 to Budget No. 601.910.5235.686, and authorizing the City Manager to enter into an agreement with AECOM to prepare a Recycled Water Master Plan for a not-to-exceed fee of \$234,489.	
	b) Amend, modify, or reject the above option.	
Prepared by:	Ditas Esperanza, P.E., Capital Projects Engineer	
Attachments:	 Resolution Scope of Work 	

RESOLUTION NO. 10-xxx

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASO ROBLES APPROPRIATING FUNDS AND AWARDING A CONTRACT TO PREPARE A RECYCLED WATER MASTER PLAN

WHEREAS, the City of Paso Robles has historically relied on well water (groundwater plus Salinas River underflow) to meet the community's potable water needs; and

WHEREAS, meeting the City's seasonal potable water demand has posed challenges in recent years; and

WHEREAS, long-term water demand and supply analyses indicate that additional sources will be needed to maintain water supply reliability; and

WHEREAS, Nacimiento water was secured to help maintain an adequate, quality water supply, and a community-wide conservation program was implemented to preserve and sustain supply; and

WHEREAS, recycled water is the next most reliable and cost-effective option, providing 3300 to 5400 acre-feet per year (depending on the size of the recycled system constructed); and

WHEREAS, in September 2006, Boyle Engineering (now AECOM) examined potential recycled water use sites, developed a list of potential recycled water customers, and identified possible locations for recharge/percolation; and

WHEREAS, in March 2007, Boyle Engineering presented a conceptual recycled water system, which included delivery of recycled water for irrigation on large east side parcels, and to the south for recharge of the Salinas River underflow; and

WHEREAS, on August 5, 2010 the City issued a Statement of Qualifications/Request for Proposal to ten firms for preparation of a Recycled Water Master Plan; and

WHEREAS, two firms responded, AECOM and Kennedy Jenks; and

WHEREAS, staff determined that AECOM is the most qualified firm to prepare the plan; and

WHEREAS, the recycled water master plan will be funded 50/50 from Water and Sewer Treatment Enterprise Funds.

NOW, THEREFORE, BE IT RESOLVED AS FOLLOWS:

<u>SECTION 1.</u> The City Council of the City of El Paso de Robles does hereby authorize a one time budget appropriation of \$117,300 to Budget No. 600.910.5235.686 and \$117,300 to Budget No. 601.910.5235.686.

<u>SECTION 2.</u> The City Council does hereby authorize the City Manager to enter into an agreement with AECOM to prepare a Recycled Water Master Plan for a not-to-exceed fee of \$234,489.

PASSED AND ADOPTED by the City Council of the City of Paso Robles this 21st day of December, 2010, by the following vote:

AYES: NOES: ABSTAIN: ABSENT:

ATTEST:

Duane Picanco, Mayor

Caryn Jackson, Deputy City Clerk

AECOM

AECOM 1194 Pacific Street, Suite 204 San Luis Obispo CA 93401

805.542.9840 tel 805.542.9991 fax

Ditas Esperanza Capital Projects Engineer CITY OF PASO ROBLES 1000 Spring Street Paso Robles CA 93446

November 17, 2010

Paso Robles Recycled Water Master Plan and Financial Plan – Scope of Work

Project Understanding and Approach

The Recycled Water Master Plan and Financial Plan will build on the City's previous recycled water planning efforts and will involve conceptual layouts of a recycled water system, development of a phased Capital Improvement Program (CIP), and development of a financial model for the City's use in forecasting system costs (i.e. engineering, construction, staffing, O&M) and estimating necessary funding for the implementation of the recycled water system.

We have developed our proposed scope of work recognizing the unique challenges of the City's prospective recycled water use projects and to consider the available information, past studies, and local knowledge. Since the major components of a recycled water system (treatment facilities, pumping and piping systems, and storage facilities) are driven by end user criteria such as water quality, use locations, and demand quantity and variations, an updated evaluation of recycled water uses will be an important component of system development. This evaluation will precede planning of the recycled water system's back-bone infrastructure. The updated uses during the initial phase and refining use data once major customers (including City facilities) have been identified and prioritized.

Previously, with the 2006 AIWRP Recycled Water Study Update, the City evaluated several recycled water projects in terms of project cost and consistency with the City's goals and objectives, and concluded the following:

- Irrigation was the most viable direct reuse option
 Surface discharge of highlight
- Surface discharge of highly treated wastewater to the Salinas River, though representing the lowest cost project, would have limited success relative to the City's water resources goals
- Groundwater recharge (indirect reuse) could represent an economical means of reusing plant effluent while meeting many of the City's water resources goals

Using the AIWRP Recycled Water Study Update as a starting point, and recognizing specific challenges and issues associated with the City's previously developed conceptual recycled water use projects, we have identified tasks and approaches for validating recycled water and developing candidate recycled water projects. Task Group 2 of our proposed Recycled Water Master Plan tasks includes the following:

- Updating and validating the City's prospective recycled water uses
- Confirming the feasibility (from a technical, regulatory, and permitting/administrative perspective) of the City's conceptual groundwater recharge project
 Identifying environmental constraints are said to be a supervised and the super
- Identifying environmental constraints associated with the project

Following this assessment of prospective uses of recycled water, uses will be further evaluated and prioritized for recycled water service during the early stages of the Conceptual Plan phase of our work. We anticipate collaborating with the City's team following review of the Use Assessment Technical Memorandum to incorporate input on the identified uses and their priority. Subsequent tasks closely match the City's scope of work and include a Conceptual Plan for the recycled water system, development of the Recycled Water Master Plan, and Financial Plan.

The following scope of work has been developed to address the City's needs for the Recycled Master Plan and Financial Plan.

Scope of Work

Task Group 1 – Project Meetings

1.1 Progress meetings

AECOM's Project Team will work closely with City staff throughout the project. In addition to taskrelated meetings included in Task Groups 2 through 5, we anticipate hosting monthly conference call meetings to discuss issues pertaining to task work, administrative draft submittals, and development of project deliverables. We have budgeted for monthly conference calls (up to nine conference calls, total).

1.2 Project Kick-off Meeting

AECOM will prepare and attend the project kick-off meeting with the City's team to review the project scope of work, schedule, responsibilities of project team members, and review any recent developments or newly identified information that could affect the project. It is assumed the Principal in Charge, Project Director, and Project Manager will attend the Project Kick-off Meeting.

1.3 Meetings with City Council

Following completion of the Recycled Water Master Plan deliverable, AECOM will participate in 3 separate meetings, held over the course of one day (also known as a 2-2-1 briefing), with City staff and City Council members to assist City staff in understanding the Recycled Water Master Plan project. It is assumed the Project Director and Project Manager will attend this workshop meeting.

Task Group 2 – Assessment of Prospective Uses

2.1 Background Information for Prospective Users and Demand Characterization

AECOM will coordinate with the City to collect and review information on prospective recycled water users and City use projects, including those recently developed, and to identify users from the existing user list that may no longer be viable. AECOM will update the existing recycled water users list and

categorize prospective recycled water users (landscape irrigation, agriculture, industrial) based on land uses, or specific information provided by the City's team. It is assumed AECOM will use the AIWRP Recycled Water Study Update as our starting-point for this evaluation.

Updated demand estimates and general demand characterizations (seasonal or other variation in demand) will be developed for each existing use and for new uses. Only large irrigation uses (parks and recreational complexes, golf courses, agricultural areas, long medians, etc.) will be included with this assessment. Irrigation demand estimates will be based upon data made available by the City for each use, or calculated using irrigated area, land use, and assumptions for general crop category and irrigation method for each use. For industrial uses, it is assumed City staff will provide water demands based on recent billing records, or other means of quantifying industrial user demands. Estimated demands, use locations, demand variability, recycled water quality required for each use, and relative sensitivity to water quality parameters will be tabulated for prospective uses. It is assumed the number of demands and uses will be the same or less than the number identified in the AIWRP.

2.2 Regulatory, Permitting and Implementation Requirements

AECOM will review and document CDPH requirements pertaining to general reuse categories for prospective recycled water users, and will investigate implementation requirements for the City's conceptual Groundwater Recharge and Reuse Project (GRRP). As part of this work, AECOM will investigate the availability of Percolation Site F, and will identify benefits and challenges in implementing prospective use projects. Findings specific to the GRRP and other uses will be documented and relative ratings for complexity of implementation will be tabulated for each prospective use project.

2.3 Technical Assessment of Percolation Sites F and G

AECOM's subconsultant, Cleath Harris Geologists, Inc. will perform a hydrologic assessment of available percolation sites to determine compatibility of site conditions with the conceptual GRRP, and estimate percolation rates and capacity of percolation facilities if located at these sites (see attached Scope of Work). Following this technical assessment, and with consideration of implementation requirements for the project, our team will develop recommendations for percolating recycled water at the identified sites.

2.4 Deliverable: Draft Recycled Water Users and GRRP Assessment Technical Memorandum

AECOM will prepare the Draft Recycled Water Users and GRRP Assessment Technical Memorandum (TM #1) which will summarize work conducted to update the list of recycled water users, characterize uses, estimate demands and demand variability, document regulatory requirements pertaining to general use categories, and summarize implementation requirement for these uses and the conceptual GRRP. The memorandum will include findings from the technical assessment of percolation sites, estimated percolation capacities of available sites, and findings pertaining to the City's ability to improve groundwater pumping rights as a result of the conceptual GRRP. Five copies of the draft technical memorandum (TM #1) will be submitted for review and comment by City staff. It is assumed a consolidated set of comments will be provided by the City following our meeting with the City to discuss recycled water uses and requirements (Task 2.5).

2.5 Meeting with City on Uses and Requirements

AECOM will prepare for and attend one meeting with the City's team to review identified uses, requirements, findings, and recommendations for the GRRP and other use projects. The purpose of this meeting will be to examine and discuss use projects and requirements with the City, determine

which reuse projects may best meet the City's goals, and receive a consolidated set of the City's comments on the Draft Recycled Water Users and GRRP Assessment Technical Memorandum.

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2.6 Preliminary Environmental Analysis for Percolation Sites

If technical conditions, regulatory requirements, and the City's outlook for the GRRP are favorable, AECOM's team will perform a screening-level environmental analysis for the available percolation sites. Available percolation sites will be evaluated relative to biological and cultural resources, geological hazards, aesthetics, agriculture, and site access. The findings of this analysis and general permitting requirements for construction of percolation beds at the proposed sites would be evaluated and incorporated into the Technical Memorandum.

2.7 Deliverable: Final Recycled Water Users and GRRP Assessment Technical Memorandum AECOM will update the Draft Recycled Water Users and GRRP Assessment Technical Memorandum (TM #1, Task 2.4) to address the City's comments and include the findings from the Preliminary Environmental Analysis for available sites, if the City's team chooses to purse implementation of the GRRP. Five copies of the finalized memorandum will be provided.

Task Group 3 – Conceptual Planning

3.1 Review WWTP Upgrade Plans and Evaluation of Prospective Uses

AECOM will review the WWTP upgrade design report (Black and Veatch) to determine projected effluent water quality and flow parameters for the recycled water source. Treatment processes and projected water quality will be compared with CDPH Title 22 requirements for specific uses, and general requirements anticipated for prospective recycled water use categories (electrical conductivity, total dissolved solids, SAR, etc.) to determine the suitability of the planned recycled water supply for prospective uses. Recycled water quantities (average and peak) documented in WWTP upgrade plans and water quality comparisons will be used to forecast the extent to which water quality and demand requirements of recycled water uses can be met, and a list of viable recycled water use projects will be compiled. Using this list, information on project implementation (Task Group 2), and design considerations, AECOM will develop a preliminary prioritization of recycled water projects.

3.2 Deliverable: Draft Evaluation and Prioritization of Recycled Water Uses Technical Memorandum

AECOM will prepare a draft Technical Memorandum (TM #2) summarizing our review of the WWTP upgrade design report, the comparison of source water flow and water quality parameters with recycled water demands from prospective uses, and our recommended prioritization of uses. Five copies of the draft TM #2 will be provided for review and comment by City staff. It is assumed a consolidated set of comments will be provided by the City following our meeting with the City's team to review and discuss the uses prioritization (Task 3.3).

3.3 Meeting with City on Use Prioritization

AECOM will prepare for and attend one meeting with the City's team to review the City's comments on the draft TM #2, discuss prioritization of recycled water use projects, and identify which priority uses will be incorporated into the Conceptual Recycled Water Plan and served by the recycled water distribution system.

3.4 Deliverable: Final Evaluation and Prioritization of Recycled Water Uses Technical Memorandum AECOM will revise the draft TM #2 to address the City's comments and include the final prioritized recycled water users list that will be incorporated into the Conceptual Recycled Water Plan. Five copies of the final technical memorandum will be submitted to the City.

3.5 Conceptual Recycled Water Plan

Using the technical evaluation of percolation sites and demand characterizations for priority uses identified in TM #2, AECOM will prepare a conceptual plan incorporating groundwater recharge, seasonal discharge, and recycled water distribution and reuse. As part of this plan, AECOM will outline operational criteria and will perform a conceptual analysis of pressure zones, pumping, and storage facility requirements for development of a conceptual recycled water distribution system. AECOM will develop a layout of the recycled water distribution system and will identify alternative transmission main corridors, pressure zones, and pump stations that would be required to serve priority recycled water use projects. Known constraints and opportunities will be accounted for in developing alignments and siting recycled water system facilities. Our team will consider potential constraints such as environmental, legal, permitting, constructability, or other implementation challenges during development of the conceptual plan.

3.6 Deliverable: Draft Conceptual Recycled Water Plan

AECOM will prepare a draft Conceptual Recycled Water Plan for the City's review and comment. The deliverable will include a conceptual design memorandum outlining system operation, distribution system alternatives and facilities, operational parameters, and priority uses served. The draft conceptual plan will also include graphical representations (mapping) of the conceptual distribution system components. It is assumed a consolidated set of comments on the draft will be provided by the City following our meeting with the City's team (Task 3.7).

3.7 Meeting with City on Draft Conceptual Recycled Water Plan

Following development of the Draft Conceptual Plan, AECOM will conduct a workshop with the City's team to review the conceptual plan and alternative distribution system components, and to receive the City's input on the proposed system. During this workshop, AECOM will also work with the City to develop phases for the recycled water system.

3.8 Deliverable: Final Conceptual Recycled Water Plan

AECOM will incorporate the City's input, preferred alternatives, and phasing developed through review of the conceptual plan into recommendations for the final Conceptual Recycled Water System Plan. The Conceptual Recycled Water System Plan will be the basis of developing the Recycled Water Master Plan. Five copies of the finalized plan will be submitted to the City.

Task Group 4 – Recycled Water Master Plan

4.1 Distribution System Planning-level Design and Phasing

AECOM will develop a hydraulic model (WaterCAD) of the conceptual recycled water system and populate the model with demands from users identified for recycled water service. Up to ten recycled water use projects will be incorporated into the model. It is assumed components from the City's existing Potable Water Distribution System Model will be suitable for base-mapping and topography.

Using the recycled water system model, our team will evaluate recycled water delivery scenarios and conduct planning-level design for transmission mains, booster stations, and storage facilities.

AECOM will identify infrastructure and facilities needed for recycled water distribution and will document system parameters and operational criteria for the planned system. Based on this work and collaboration with the City's team, AECOM will develop a phasing plan for recycled water project components. An administrative draft of the Phasing Plan will be submitted to the City's team for review and comment before proceeding.

4.2 Capital Improvement Plan

Once recommended phasing has been vetted with the City, AECOM will develop planning-level cost opinions for the construction of recycled water system components and facilities. Estimates of operation and maintenance costs, staffing requirements, design costs, and contingencies for environmental work and other uncertainties will be developed and included with the phased Capital Improvement Plan.

4.3 Recycled Water Master Plan Deliverable

AECOM will incorporate work conducted in support of the Use Assessment and Conceptual Design (Task Groups 2 and 3) with system mapping, descriptions of recycled water facilities, recommended improvement projects, phasing, and planning-level cost opinions into the Draft Recycled Water Master Plan. Draft and final versions of the Recycled Water Master Plans will include a concise executive summary, limited to six pages. Five copies of the Draft Recycled Water Master Plan will be submitted for the City's review and comment.

AECOM will prepare for and attend one meeting to receive the City's final, consolidated comments on the draft plan. AECOM will address the City's comments on the draft report and prepare and issue the Final Recycled Water Master Plan. Up to fifteen copies of the final Recycled Water Master Plan will be submitted to the City, upon the City's request, and one electronic copy (PDF format) will be provided.

Task Group 5 – Recycled Water Financial Plan

5.1 Meeting with City

AECOM will meet with the City to review revenue needs associated with the recycled water system and gather input on the financial modeling and funding alternatives.

5.2 Financial Modeling and Scenarios

AECOM will develop an Excel-based financial model to facilitate financial analysis of the Recycled Water Master Plan Capital Improvements Program. The model will incorporate cost information such as project construction costs and operation, maintenance, and replacement costs from the Recycled Water Master Plan, projected annual recycled water deliveries based on Master Plan project phasing, and will include assumptions for parameters such as interest rates, loan terms, rate of inflation, construction cost escalation, debt reserve, potable water rates (for margin calculations relative to recycled water price ranges), and rates of operation, maintenance, and replacement cost inflation. The model will allow evaluation of the net cost of recycled water delivery, costs per unit delivered, and margin or loss relative to potable water prices. AECOM will review financial model parameters with the City before proceeding with development of model scenarios.

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Using the financial model, two fee scenarios (fixed City-wide base fee plus variable usage fee, and flat customer rate without City-wide base fee) will be developed, and evaluated for average year, multiple wet-year and multiple dry-year assumptions. An administrative draft of results for these scenarios will be submitted to the City's team for review and comment, prior to proceeding with development of the Draft Financial Plan.

5.3 Recycled Water System Financial Plan Deliverable

AECOM will develop the Draft Recycled Water System Financial Plan, documenting assumptions for operational and financial parameters. Our deliverable to the City will include the Excel-based Recycled Water System Financial Model (electronic format) and documentation; the initial 10-year Recycled Water System Master Plan Budgetary Forecast; a description of assumptions; qualitative and quantitative community benefits; summary of findings; and brief recommendations for proceeding with financial planning for the recycled water program. AECOM will provide five copies of the draft for the City's review, and will address comments in the Final Recycled Water System Financial Plan. AECOM will submit five copies of the Recycled Water System Financial Plan, and two electronic copies of the financial model on CD-ROM.

Project Budget

The estimated budget for consulting services described here-in is \$194,489 per the attached project budget and fee schedule. Progress payments would be requested monthly on a time-and-materials basis, with a total budget not to exceed \$194,489.

Task Group 1 – Project Meetings	\$8,827
Task Group 2 – Assessment of Prospective Uses	
Use Assessment (AECOM)	\$27,214
Percolation Site Assessment (Subconsultant tasks)	\$69,465
Task Group 3 – Conceptual Planning	\$21,669
Task Group 4 – Recycled Water System Master Plan	\$46,643
Task Group 5 – Recycled Water Financial Plan	\$13,835
Task Group 6 – Project Management and Quality Control	\$6,363
Total	\$194,489

Project Schedule

The attached Project Schedule details projected durations of major task groups and subtasks. Our schedule has been developed to complete the Recycled Water Master Plan and Financial Plan within approximately nine months of notice-to-proceed, as requested by the City.

We hope this proposal meets your expectations and look forward to continuing our work with the City on this project. If you have any questions or comments, please contact me at 805-542-9840 x114.

Sincerely,

Childrigh,

Kirk Gonzalez, PE Project Manager

City of Paso Robles Signed: Date: Title:

Jon Hanlon, PE Managing Engineer

Enclosures: Project Budget, Fee Schedule, Draft Project Schedule, Subconsultant Proposals.