TDS/NITROGEN MANAGEMENT PLAN FOR THE SANTA ANA RIVER BASIN

GROUNDWATER MONITORING REQUIREMENTS

REQUEST FOR PROPOSAL

FOR

CONSULTING SERVICES

FOR

RECOMPUTATION OF AMBIENT WATER QUALITY IN THE SANTA ANA RIVER WATERSHED FOR THE PERIOD 1993-2012

FEBRUARY 20, 2013

REQUEST FOR PROPOSAL FOR CONSULTING SERVICES

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1. INTRODUCTION

The Santa Ana Watershed Project Authority (SAWPA) requests proposals from qualified consultants to compute the current-ambient water quality (AWQ) for nitrate and TDS for all groundwater management zones in the Santa Ana River watershed. This effort satisfies groundwater monitoring requirements in the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan).

The work will be performed under the supervision of the Basin Monitoring Program Task Force (Task Force) which was formed to implement the monitoring requirements of the Basin Plan. The Task Force is comprised of representatives from a number of key watershed stakeholders, including staff from the Regional Water Quality Control Board (Regional Board). SAWPA will serve as administrator of the project. Proposals are due to SAWPA by 5:00 pm on March 14, 2013.

2. BACKGROUND

The Santa Ana River watershed is located in southern California and is approximately 2,800 square miles in size. The tributaries of the Santa Ana River begin in the San Bernardino, San Gabriel, San Jacinto, and Santa Ana Mountains. The tributaries merge with the Santa Ana River which flows to the Pacific Ocean. The watershed includes portions of San Bernardino County, Riverside County, Orange County, and a small portion of Los Angeles County.

As part of the agreement to adopt the 2004 Basin Plan Amendment (Resolution No. R8-2004-0001), affected parties are required to complete a recomputation of ambient water quality for all groundwater management zones within the Santa Ana River Watershed once every three years. Specifically, the Basin Plan Amendment contains the following requirements:

> Groundwater monitoring requirements for TDS and nitrogen are as follows:
>
> 1. No later than June 23, 2005, Orange County Water District, Irvine Ranch Water District, Inland Empire Utilities Agency, Chino Basin Watermaster, City of Riverside, City of Corona, Elsinore Valley Municipal Water District, Eastern Municipal Water District, City of Colton, City of San Bernardino Municipal Water Department, City of Redlands, Jurupa Community Services District, Western Riverside County Regional Wastewater Authority, Lee Lake Water District, Yucaipa Valley Water District, City of Beaumont, the San Timoteo Watershed Management Authority and the City of Rialto shall submit to the Regional Board for approval, a proposed watershed-wide TDS and nitrogen monitoring program that will provide data necessary to review and update the TDS/nitrogen management plan. Data to be collected and analyzed shall

> address, at a minimum: (1) determination of current ambient quality in groundwater management zones; (2) determination of compliance with TDS and nitrate-nitrogen objectives for the management zones; (3) evaluation of assimilative capacity findings for groundwater management zones; and (4) assessment of the effects of recharge of surface water POTW discharges on the quality of affected groundwater management zones. The determination of current ambient quality shall be accomplished using methodology consistent with that employed by the Nitrogen/TDS Task Force (20-year running averages) to develop the TDS and nitrogen water quality objectives included in this Basin Plan. [Ref. 1] The determination of current ambient groundwater quality throughout the watershed must be reported by July 1, 2005, and, at a minimum, every three years thereafter.
>
> In lieu of this coordinated monitoring plan, one or more of the parties identified in the preceding paragraph may submit an individual or group monitoring plan…

The recomputation of ambient water quality was last performed for the period of 1990-2009. This scope of work is for the recomputation of ambient water quality for the period of 1993-2012.

3. OBJECTIVE

The primary objective of this project is to compute current-ambient groundwater quality for TDS and nitrate-nitrogen in all 40 groundwater management zones in the Santa Ana River watershed for the period 1993-2012, and to interpret the results.

4. SCOPE OF WORK

Task 1 – Compute Ambient Water Quality for the Period of 1993 to 2012

The following sub-tasks are necessary to compute ambient water quality for the period of 1993 to 2012, according to the methodology described in the Basin Plan:

Task 1a – Data Collection

In order to perform the computation, the existing database—which contains the well information, groundwater-level data, and groundwater-quality data used for the previous computation of ambient water quality (WEI, 2011)—must be updated to include newly constructed wells and new groundwater data collected for the period 2010-12. SAWPA will provide the existing database to the Consultant as a Microsoft Access database file. Hereafter, the existing database is referred to as the "AWQ database."

The Consultant shall contact each agency listed below and collect the requisite data to perform the computation:

Beaumont, City of
Beaumont-Cherry Valley Water District
Chino Basin Watermaster
Colton, City of
Corona, City of
East Valley Water District
Eastern Municipal Water District
Elsinore Valley Municipal Water District

Elsinore Water District
Home Gardens County Water District
Lee Lake Water District
Loma Linda, City of
Muscoy Mutual Water Company
Orange County Water District
Redlands, City of
Rialto, City of
Riverside, City of
Riverside, County of (Landfill Monitoring)
Riverside-Highland Water Company
Rubidoux Community Service District
San Bernardino, City of
San Bernardino, County of (Landfill Monitoring)
San Bernardino Valley Municipal Water District
San Gorgonio Pass Water Agency
South Mesa Water Company
West Valley Water District
Western Heights Water Company
Western Municipal Water District
Yucaipa Valley Water District

The data types and data fields to be collected include:

Well Information (for new wells)

Well Name
Well Type
Well Status
Well X Coordinate
Well Y Coordinate
Ground Surface Elevation
Distance from Reference Point to Ground Surface
Reference Point Type (*e.g.*, top of casing)
Depth of Well Casing
Depth Intervals of Well Perforations

Groundwater-Level Data

Well Name
Measurement Date/Time
Depth from Reference Point to Water Level
Activity of Well During Measurement (e.g. static, pumping)
Measurement Method

Groundwater-Quality Data

Well Name
Sample Date/Time
Analyte Name
Result
Detection Limit
Unit

Groundwater-Quality Data Described Above will be Collected for the Following Analytes:

Alkalinity, Total (as CaCO3)
Bicarbonate
Calcium
Carbonate
Chloride
Electrical Conductivity (Specific Conductance)
Fluoride
Magnesium
Nitrate as NO_3 or Nitrate as Nitrogen (N)
pH
Potassium
Silica
Sodium
Sulfate
Total Dissolved Solids

If necessary, the Consultant will meet with agency staff to verify the well information and collect the data.

Task 1b – Process and Upload Historical Data

The objective of this task is to convert the well information, groundwater-level, and groundwater-quality data into a normalized format, quality control check and upload the data to the AWQ database. This is typically accomplished in one of two ways:

Some agencies will provide their data in a database format. This requires the reformatting and normalization of data prior to incorporation into the AWQ database. This involves identifying necessary database fields in the agency's database and mapping those fields to the AWQ database. This process often requires performing chemical conversions (*e.g.*, NO_3 as NO_3 to NO_3 as N) and unit conversions (*e.g.*, µg/L to mg/L) to preserve the structure and accuracy of the AWQ database.

Some agencies will provide data in customized spreadsheet files and/or hard copy. Hard copy lab reports and water-level measurements will need to be manually entered into a normalized electronic file. Spreadsheets or other electronic data deliverables will need to be reformatted and normalized into the same format as the keypunched hardcopy data. This process often requires performing chemical conversions (*e.g.*, NO_3 as NO_3 to NO_3 as N) and unit conversions (*e.g.*, µg/L to mg/L) to preserve the structure and accuracy of the AWQ database.

The Consultant must describe its procedures for checking the data prior to upload to the AWQ database to ensure that (i) the data accurately reflect the data deliverable received from the agency and (ii) that no duplicated data are uploaded to the AWQ database.

Task 1b Deliverable. Following the upload of the data to the AWQ database, the Consultant will produce well-location maps and well-by-well time-series charts of the groundwater-level data, TDS data, and nitrate data. The Consultant will use the maps and time-series charts to perform a visual check of the data for obvious errors. The period for the time-series charts should be no shorter than the period of the computation (1993-2012). The Consultant will provide the maps and time-series charts to the Task Force for review and comment. If data errors are identified by the Consultant and/or the Task Force, the Consultant will work with the data provider to correct the error or agree to delete the data

from the AWQ database. The Consultant will not proceed with Task 1c until the Task Force agencies have had at least two weeks to review and comment upon the AWQ database.

Task 1c – Develop Groundwater-Quality Point Statistics for Nitrate and TDS

The Consultant will perform the following steps to compute groundwater-quality point statistics for nitrate-nitrogen and TDS at each well in the watershed in a manner that is identical to the methods used to develop the objectives for the groundwater management zones (WEI, 2000a):

1. *Define the period of analysis.* A 20-year period with the latest complete set of data is required by the Basin Plan. For this effort the 20-year period is January 1, 1993 to December 31, 2012.

2. *Apply appropriate statistical tests for data-quality and reject data*. The Consultant will perform a series of tests for data-quality based on the general mineral results for each sample, if the requisite data are available. If a specific sample fails all four of the tests for data-quality, then those sample results are excluded from the process of computing statistics for TDS and nitrate-nitrogen. These tests are described in *Standard Methods for the Examination of Water and Wastewater* (Greenberg *et al.*, 1992) 1030 F. Checking Correctness of Analyses:

a. Anion-Cation Balance

$$\%\ difference = 100 \cdot \frac{\sum cations - \sum anions}{\sum cations + \sum anions}$$

with the following acceptance criteria:

Anion Sum (milliequivalents per liter [meq/L])	Acceptable % Difference
0 – 3	±0.2 meq/L
3 – 10	±2%
10 - 800	±2-5%

b. Measured TDS = Calculated TDS

$$1.0 < \frac{measured\ TDS}{calculated\ \ TDS} < 1.2$$

where:

calculated TDS = 0.6 (alkalinity) + Na + K + Ca + Mg + Cl + SO_4 + SiO_3 + NO_3 + F

c. Measured EC and Ion Sums

$$0.9 \cdot EC < 100 \cdot anion\ (or\ cation)\ sum, meq/L < 1.1 \cdot EC$$

d. TDS to EC Ratios

$$0.55 < \frac{measured\ TDS}{EC} < 0.7$$

and

$$0.55 < \frac{calculated\ \ TDS}{EC} < 0.7$$

3. *Compute statistics*. The Consultant will compute the mean and standard deviation statistics for each well for both TDS and nitrate-nitrogen.

4. *Annualize the data*. The Consultant will average the sample results of TDS or nitrate-nitrogen for each calendar year where more than one observation occurred during that year. Thus, only one value per year, the annual average, will be used in the computation of ambient water quality. A well may have a maximum of 20 annualized averages where data exist for each year of the recomputation period but must have a minimum of three annualized average values to continue to the statistical tests for normality and outliers.

5. *Apply appropriate statistical tests for normality and outliers*. The assumption of the "mean + t times the standard error of the mean" approach is that data are normally distributed or that a transformation can approximate a normal distribution. The use of the Shapiro-Wilk test for both normality and outlier testing was recommended and adopted by the Task Force at the June 15, 1999 meeting. (Shapiro and Wilk [1965] developed a test for normality based on normal order statistics.) In the Shapiro-Wilk test, a value for the variable W is calculated with the formula below. The calculated value of W is then compared with a critical W found in reference tables (*e.g.*, Gibbons, 1994).

$$W = \left(\sum_{i=1}^{n} a_{i,n} \cdot x_i \right)^2 \Big/ \sum_{i=1}^{n} \left(X_i - X_{avg} \right)^2$$

where: $a_{i,n}$ = coefficients based on the order of the observation, i, and the number of observations, n. (see for example, Gibbons [1994]).

X_i = $i^{\underline{th}}$ observation

X_{avg} = mean of n observations

6. *Compute the following statistics for both TDS and nitrate-nitrogen: standard error of the mean, and mean plus t times the standard error of the mean*. Mean plus t times the standard error of the mean is the statistic that will be plotted and used to define current-ambient water quality in groundwater management zones.

Task 1c Deliverable. The Consultant will prepare tables that will describe (i) the results of the tests for normality, outliers, and data quality and (ii) the statistics by well for TDS and nitrate-nitrogen of the mean, standard deviation, standard error of the mean, and mean plus t times the standard error of the mean. The Consultant will provide the tables to the Task Force for review and comment. If errors are identified by the Consultant and/or the Task Force, the Consultant will rectify the errors and re-compute the statistics. The Consultant

will not proceed with Task 1d until the Task Force agencies have had at least two weeks to review and comment upon tables.

Task 1d – Estimate Regional TDS and Nitrate-Nitrogen in Groundwater

The Consultant will follow these steps to estimate regional nitrate-nitrogen and TDS in groundwater:

1. *For both TDS and nitrate, map the location of wells where statistics have been computed.* These locations will be annotated with the computed statistic. In addition, wells with mean values (but where statistics could not be computed [*e.g.*, less than the required three data points]) will also be plotted. For each management zone, the following maps will be developed:

    - TDS statistic – current ambient (1993 to 2012)
    - Nitrate-nitrogen statistic – current ambient (1993 to 2012)

    For regions with multi-layered aquifers, the Consultant will compare well construction data to the hydrostratigraphy prepared in the Phase 2A Study (WEI, 2000a) to identify which aquifers are tributary to each well, and the water-quality maps listed above will be developed for each aquifer layer.

2. *Develop and digitize contours of TDS and nitrate statistics.* The Consultant will contour the statistics for TDS and nitrate-nitrogen for each management zone and for each aquifer layer, if appropriate, taking into account:

    - management zone boundaries;
    - ancillary water quality data (mean values). Ancillary water quality data will be given less weight when contouring than wells with computed statistics; however, they will be used to help guide contours in areas where there is a paucity of point statistics; and
    - past contouring efforts.

    The consultant will digitize the contours into ESRI line shapefiles.

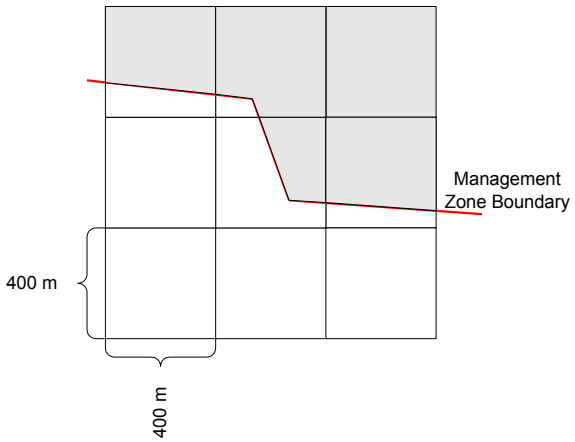
Task 1d Deliverable. The Consultant will meet with and review the contoured maps of TDS and nitrate-nitrogen with the Task Force members. If errors are identified by the Consultant and/or the Task Force during the review, the Consultant will revise the maps to correct for the errors. The Consultant will not proceed with Task 1e until the Task Force agencies have had at least one month to set up an appointment with the Consultant and review the maps.

Task 1e – Compute Current-Ambient TDS and Nitrate-Nitrogen for Management Zones

The Consultant will perform the following steps to compute volume-weighted estimates of current-ambient TDS and nitrate-nitrogen for each management zone:

1. *Overlay a rectangular grid.* SAWPA will provide the Consultant with the rectangular grid as an ESRI polygon shapefile. The grid-cell size is 400x400 meters. Each grid cell is pre-assigned values for grid-cell area, elevation of the effective base of the aquifer, and

specific yield of the sediments. Where a grid cell is split by a management zone boundary, it will be assigned parameters based on the apportionment of the grid cell in each management zone (determined by area).



2. *Compute volume of groundwater in storage in each grid cell.* The Consultant will prepare groundwater-elevation contour maps for each management zone for Fall 2012. The Consultant will use the groundwater elevation contour maps to calculate the volume of groundwater in each grid cell. The volume of groundwater in a grid cell for a single-layer aquifer is operationally defined as:

$$V_i = A_i * (WL_i - B_i) * SY$$

Where, V_i = volume of groundwater in i^{th} grid cell

Ai = grid cell area

WL_i = average elevation of groundwater in i^{th} grid cell (feet above mean sea level [MSL])

B_i = average elevation of the effective base of aquifer in i^{th} grid cell (feet above MSL)

SY = specific yield

For a multi-layered aquifer, the volume of groundwater in each grid cell will be computed for each layer. The top of a layer is used to calculate the water in storage if the piezometric level is above the top of the layer.

3. *Compute the volume of groundwater in each management zone.* The Consultant will compute the total volume of groundwater within a management zone by summing the volume of groundwater in all grid cells within that management zone.

4. *Estimate the current-ambient concentration of TDS and nitrate-nitrogen for each grid cell.* The Consultant will use the digitized contours of current-ambient TDS and nitrate-nitrogen to estimate the current-ambient concentration in each grid cell (and by layer, if appropriate).

5. *Compute the volume-weighted current-ambient concentrations of TDS and nitrate-nitrogen for each management zone using the following formula:*

$$C_{avg} = (1/V_T) \cdot \Sigma C_i \cdot V_i$$

Where, C_{avg} is the volume-weighted current-ambient concentration in a management zone

V_T is the total volume of groundwater within a management zone

C_i is the concentration in grid cell volume i

V_i is the volume of water stored in grid cell i and with concentration Ci

Task 2 – Prepare Interpretive Tools for the Recomputation of Ambient Water Quality

The ambient water quality of Santa Ana River Watershed management zones has been computed for four 20-year periods (1978-1997, 1984-2003, 1987-2006, and 1990-2009) since the initial computation of historical ambient water quality (1954-1973). The results of these computations indicate that groundwater quality has changed over time in most management zones. Changes in the ambient water quality determinations are likely due to actual changes in groundwater quality, the methods the Task Force uses to compute ambient water quality, or both. Listed below are a number of factors that can influence changes in ambient water quality:

1. The movement of solutes from the vadose zone to the saturated zone
2. Changes in water levels that affect groundwater storage in a management zone
3. Pumping/recharge stresses and/or groundwater flow within or between management zones that can add, remove, and/or transport TDS and nitrate-nitrogen constituents in groundwater
4. The addition or loss of wells within management zones
5. The geographic distribution of added or lost wells within management zones
6. Differences in the techniques employed to contour and interpolate water quality data
7. The elimination of three years of data from the analysis
8. The addition of three years of data to the analysis

Changes in ambient water quality that result from the first three factors are measurable hydrologic and water chemistry changes that have occurred in the aquifer system. Herein, these changes are referred to as *systemic factors*. Changes in ambient water quality that result from the last five factors are driven by the methods and techniques employed in recomputation. Herein, these changes are referred to as *methodological factors*.

In most instances, both systemic and methodological factors play a role in the computed changes in ambient water quality for a management zone. The relative roles of each factor for each management zone, however, are not easily quantified.

The Task Force desires that each of the following questions be addressed after each recomputation of ambient water quality:

- When the recomputation indicates a significant change in ambient water quality in a management zone, how can the Task Force distinguish between the methodological and systemic factors that may have influenced this change?

- Is there a method to characterize the current groundwater quality trends in management zones that could be compared against the ambient water quality results?

- What can be done to minimize the methodological factors that influence ambient water quality?

The Consultant will perform the scope of work described below to address these questions.

Task 2a – Prepare Change Maps for TDS and Nitrate-N

The objective of this task is to show, in map view, how and why ambient water quality changed from prior ambient water quality estimates for each management zone.

The Consultant will prepare maps that display a two-dimensional, color-ramped grid of ambient water quality changes for each management zone. For management zones with multiple aquifer layers, a change map will be prepared for each layer. Change maps will show the difference between the prior ambient water quality estimate (1990-2009) and the current ambient water quality estimate (1993-2012)—providing information on how ambient water quality changed spatially across the management zone. The change maps will also display wells that were used in both recomputations. Wells will be annotated with their water-quality statistics from both recomputation periods. The wells and statistics will provide information on why the ambient water quality changed.

Task 2b – Perform Key Well Analysis of Water Quality Trends

The objective of this task is to show how and why ambient water quality has changed in each management zone, as with Task 2a, but over longer periods and at specific points within the management zone.

The Consultant will use approximately four or five "key" wells in each management zone. These wells were previously selected by WEI (2011) based on location, perforated intervals, the density and period of available water quality data, and the quality of the dataset. The exact number of key wells were based on the size and complexity of each management zone. Key wells will be symbolized and labeled on the maps prepared in Task 2a.

The Consultant will prepare TDS and nitrate-nitrogen time-series charts for each management zone, displaying raw data for the key wells (1954-2012) and the six ambient water quality estimates for the management zone. The key well data are meant to describe how groundwater quality is changing in certain areas (and depths) within each management zone. For each management zone, the Consultant will compare the trends at key wells to

the ambient water quality trend for the management zone, which will help explain where and how groundwater quality is changing and how these changes are influencing ambient water quality estimates.

Task 2c – Perform Well-Attrition Analysis for the Recomputation of Ambient Water Quality for 1996-2015

The next ambient water quality recomputation will involve the analysis of water quality data for the period of 1996-2015. The objective of this task is to identify wells that will be lost from the next recomputation if no water quality data are collected from them during the period of 2013-15. The well-attrition analysis will provide the Task Force with a list of the most important of these wells so that they can be sampled and remain included in the recomputation for 1996-2015. The Consultant will follow these steps to perform the well-attrition analysis:

- Develop AWQ statistics for 1996-2015 using the 1993-2012 database. In effect, this will remove three years of data from the back end of the study period, and no new data will be added to the front end as data from 2013-15 have not yet been collected. This will be considered the 'worst case' scenario.

- The Consultant will compare 1993-2012 and 1996-2015 AWQ statistics to identify wells that will be lost if no new data are obtained in 2013-15. The Consultant will rank wells that may be lost by importance to future re-computation efforts.

- The Consultant will conduct research on wells that may be lost by contacting well owners and/or conducting field reconnaissance. Collect information on these wells, such as current well status, any recent sampling information, the well's ability to be sampled, and any other information relevant to sampling the wells for water quality.

- The Consultant will summarize the results in maps and tables, and present findings to the Task Force.

- The Consultant will follow-up with the owners of the most important set of wells that will be lost and assist with data-collection efforts as necessary.

Task 3 – Prepare Technical Memorandum

The Consultant will prepare a draft technical memorandum that describes the methods and results of the recomputation of ambient water quality and the Interpretive Tools for the period of 1993 to 2012. The draft memorandum will be submitted in electronic format (PDF file) to the Task Force for review and comment. The draft results will be presented at a regular Task Force meeting.

The Task Force members will provide comments and suggested revisions to SAWPA within 14 days. The Consultant will address the comments and suggested revisions in a final technical memorandum, and will prepare an appendix to the report that describes the comments and responses to comments. The final technical memorandum will be delivered in hard copy format and as an electronic file to the Task Force.

Task 4 – Task Force Meetings

The Consultant will prepare for and attend eight (8) meetings with the Task Force to provide periodic progress updates and to present results. The Task Force meetings will be held at SAWPA headquarters, and SAWPA staff will perform meeting organization and facilitation, secretarial, clerical, and administrative services (*e.g.*, prepare meeting minutes, prepare agenda, provide refreshments, *etc.*). The Consultant will prepare for and present the work results at one SAWPA Commission meeting and one Santa Ana Regional Water Quality Control Board meeting at a mutually acceptable time and date to SAWPA staff and the Regional Board staff within six months after the final deliverable.

Optional Task 1 - Provide Technical Assistance

The Consultant may be asked to provide additional analysis or explanation of results to the Task Force or Regional Board as necessary for future Basin Plan Amendments or planning of future work. Consultant shall budget sixty (60) hours for this task.

Final Deliverables

Thirty (30) copies of the Final Technical Memorandum for the Recomputation of Ambient Water Quality and Interpretive Tools for the Period of 1993 to 2012 will be delivered to SAWPA by June 30, 2014.

A compact disc (CD) will accompany the final technical memorandum. This CD will contain a PDF of the final technical memorandum; an MS Access database of all well, water-quality, and water-level data used in the recomputation; GIS shapefiles created and used specifically for the recomputation; PDFs of the water-quality contour maps; and PDFs of the water-quality and water-level time series charts of each well used in the recomputation.

Schedule

The project will start on July 1, 2013 and work will continue until the delivery date of the Final Technical Memorandum by no later than June 30, 2014. The schedule assumes that the review of draft documents will occur in a timely manner (*i.e.*, 14 days after a draft is submitted).

5. PROPOSAL REQUIREMENTS

Responses to this RFP must be made according to the requirements set forth in this section for content and sequence. Failure to adhere to these requirements or to include conditions, limitations, or misrepresentations may be cause for rejection of the proposal. Any correction and resubmission by the proposer will not extend the time for evaluation of the proposal. Responses to this RFP shall be prepared as concise as possible. The proposal shall be 25 pages or less in length, not including resumes and project descriptions that may be included in an appendix. Submittal of boilerplate marketing materials is discouraged.

All proposals must include the following information:

1. Cover letter, including name, telephone number, fax number and address of the firm.

2. Background information about the proposer, including technical qualifications, size of firm and licenses. Description of the proposer's business (*i.e.*, individual, partnership, joint venture, *etc*.), and background information of subcontractors to be used.

3. Description of the proposer's experience. A list of similar services and project descriptions undertaken by the proposer (preferably with proposed project personnel), with beginning and ending dates, name, address, phone number, fax number, and e-mail address of a contact person for each reference.

4. Organization chart showing proposed management and project team.

5. Complete list of personnel, including subcontractors that will be dedicated to this project.

6. The names and qualifications of staff who will participate in the project.

7. A detailed description of the project approach. The project approach should describe the tools and methods that the Consultant will use to execute the Scope of Work described above in Section 4. The project approach need not repeat the Scope of Work, but should address each task, sub-task, and deliverable.

8. The fee proposal shall include a breakdown of labor hours by employee billing classification, and an expense reimbursement schedule that includes the cost of non-labor and sub-consultant services. The fee proposal shall be broken down by task and sub-task. All columns and rows shall have totals.

9. Hourly billing rates for personnel to be assigned to the project.

10. Project schedule.

11. Miscellaneous/Exceptions. Respondents shall thoroughly review the contents of this RFP and shall submit all supplemental information required in this section of miscellaneous information. A draft contract agreement is enclosed within this RFP (Appendix A) that the consultant/firm will be required to sign. The respondent must identify any exceptions to that draft agreement as an element of the proposal submitted for review and consideration.

6. PROPOSED SCHEDULE

RFP Published	February 20, 2013
Proposals Due	March 14, 2013 at 5pm
Recommendation of the Technical Advisory Committee	April 5, 2013
Task Force Meeting – Select Preferred Proposal/Consultant	April 17, 2013
SAWPA Commission Approves Task Order	May 21, 2013
Sign Contract and Begin Work	July 1, 2013

7. SUBMITTALS

Please submit six (6) hard copies of the proposal and one electronic copy (PDF file delivered via email) to Mark Norton, Water Resources & Planning Manager, at:

Santa Ana Watershed Project Authority
11615 Sterling Avenue
Riverside, CA 92503
mnorton@sawpa.org

All proposals must be received by 5:00 p.m. on Thursday, March 14, 2013. Proposals received after the stated time will be returned unopened and will not be considered. Thereafter, a review panel, composed of members of the Task Force and SAWPA staff, will conduct question and answer interviews. If additional information is needed, contact Mark Norton at (951) 354-4221 or mnorton@sawpa.org.

8. EVALUATION CRITERIA

Evaluation of qualifications will be conducted on the following (in order of importance):

- Responsiveness to the RFP (pass/fail)
- Experience and qualifications of the assigned individuals/firm
- Project approach and understanding of needs
- Anticipated value and quality of services received
- Appropriateness of proposed fee structure
- Project schedule

SAWPA and the Task Force reserve the sole right to evaluate and select the successful proposal. The selection process is anticipated to include an evaluation of the proposal and an interview.

9. GENERAL REQUIREMENTS

9.1 All proposers are hereby advised that this RFP is an informal solicitation and is not a commitment or offer to enter into an agreement or engage into any competitive bidding or negotiation pursuant to any statute, ordinance, rule, or regulation. SAWPA reserves the right to negotiate with any qualified source. SAWPA reserves the right to reject any or all proposals for any reason or for no reason at all.

9.2 SAWPA reserves the right to request further information from the proposer either in writing or orally. Such request will be addressed to that person or persons authorized by the proposer to represent the proposer.

9.3 SAWPA reserves the sole right to judge the proposers' representations, either written or oral.

9.4 Proposers understand and agree that submission of a proposal constitutes acknowledgement and acceptance of, and a willingness to comply with, all of the terms, conditions, and criteria contained in this RFP.

9.5 False, incomplete, or unresponsive statements in connection with a proposal may be sufficient cause for the rejection of the proposal. The valuation and determination of the fulfillment of the above requirement will be SAWPA's responsibility and its decision shall be final.

9.6 SAWPA reserves the right to interpret or change any provisions of this RFP at any time prior to the proposal submission date. Such interpretations or changes will be in the form of addenda to this RFP. Such addenda will become part of this RFP and may

become part of any resultant contract. Such addenda will be made available to each person or organization that has received an RFP. Should such addenda require additional information not previously requested, a proposer's failure to address the requirements of such addenda might result in the proposal not being considered.

9.7 All proposals submitted in response to this RFP will become the exclusive property of SAWPA. At such time as SAWPA's recommendation to the SAWPA Board relative to proposal selection appears on the Board Agenda, all such proposals become a matter of public record, and shall be regarded as public records, with the exception of those parts of each proposal which are defined by the proposer as business or trade secrets, and so marked, as "confidential" or "proprietary." SAWPA shall not in any way be liable or responsible for the disclosure of any such proposals or any part thereof if disclosure of any such proposals or any part thereof if disclosure is required under the Public Records Act.

9.8 SAWPA shall not in any way be liable for any costs incurred in connection with the preparation of any proposal submitted in response to this RFP.

SANTA ANA WATERSHED PROJECT AUTHORITY
TASK ORDER NO. _____

CONSULTANT: **VENDOR NO.**

COST:

PAYMENT: Upon Proper Invoice

REQUESTED BY: (date)

FINANCE: _____
Karen Williams, CFO Date

FINANCING SOURCE: Acct. Coding
Acct. Description

COMMISSION AUTHORIZATION REQUIRED: YES ( ) NO ( )
Commission Memo ____.

This Task Order is issued by the Santa Ana Watershed Project Authority (hereafter "SAWPA") to_____ (hereafter "Consultant") pursuant to the Agreement between SAWPA and Consultant entitled *Agreement for Services*, dated _____ *(expires).*

I. PROJECT NAME OR DESCRIPTION

II. SCOPE OF WORK / TASKS TO BE PERFORMED

Consultant shall provide all labor, materials and equipment for the Project to perform the specific tasks as described in Attachment A (or describe tasks here).

Please refer to Appendix X for acceptable formats, also found at www.sawpa.org/html/e_req.htm

III. PERFORMANCE TIME FRAME

Consultant shall begin work within five days of the date this Task Order is signed by the Authorized Officer and shall complete performance of such services by or before____, 20__.

IV. SAWPA LIASION

_____shall serve as liaison between SAWPA and Consultant.

V. COMPENSATION

For all services rendered by Consultant pursuant to this Task Order, Consultant shall receive a total not-to-exceed sum of $ ____ in accordance with the schedule of rates. Payment for such services shall be made within 30 days upon receipt of timely and proper invoices from Consultant, as required by the above-mentioned Agreement. Each such invoice shall be provided to SAWPA by Consultant within 15 days after the end of the month in which the services were performed.

VI. CONTRACT DOCUMENTS PRECEDENCE

In the event of a conflict in terms between and among the contract documents herein, the document item highest in precedence shall control. The precedence shall be:

a. The Agreement for Services by Independent Consultant/Contractor.
b. The Task Order or Orders issued pursuant to the Agreement, in numerical order.
c. Exhibits attached to each Task Order, which may describe, among other things, the Scope of Work and compensation therefore.
d. Specifications incorporated by reference.
e. Drawings incorporated by reference.

In witness whereof, the parties have executed this Task Order on the date indicated below.

SANTA ANA WATERSHED PROJECT AUTHORITY

_____

Celeste Cantú, General Manager Date

CONSULTANT NAME

_____ _____

(Signature) Date Print /Type Name

SANTA ANA WATERSHED PROJECT AUTHORITY
AGREEMENT FOR SERVICES BY INDEPENDENT CONSULTANT

This Agreement is made this ___ day of _____, 201_ by and between the Santa Ana Watershed Project Authority ("SAWPA") located at 11615 Sterling Ave., Riverside, California, 92503 and _____("Consultant") whose address is _____.

RECITALS

This Agreement is entered into on the basis of the following facts, understandings, and intentions of the parties to this Agreement:

- SAWPA desires to engage the professional services of Consultant to perform such professional consulting services as may be assigned, from time to time, by SAWPA in writing;
- Consultant agrees to provide such services pursuant to, and in accordance with, the terms and conditions of this Agreement and has represented and warrants to SAWPA that Consultant possesses the necessary skills, qualifications, personnel, and equipment to provide such services; and
- The services to be performed by Consultant shall be specifically described in one or more written Task Orders issued by SAWPA to Consultant pursuant to this Agreement.

AGREEMENT

Now, therefore, in consideration of the foregoing Recitals and mutual covenants contained herein, SAWPA and Consultant agree to the following:

ARTICLE I

TERM OF AGREEMENT

1.01 This agreement shall become effective on the date first above written and shall continue until _____, unless extended or sooner terminated as provided for herein.

ARTICLE II

SERVICES TO BE PERFORMED

2.01 Consultant agrees to provide such professional consulting services as may be assigned, from time to time, in writing by the Commission and the General Manager of SAWPA. Each assignment shall be made in the form of a written Task Order. Each such Task Order shall include, but shall not be limited to, a description of the nature and scope of the services to be performed by Consultant, the amount of compensation to be paid, and the expected time of completion.

2.02 Consultant may at Consultant's sole cost and expense, employ such competent and qualified independent professional associates, subcontractors, and consultants as Consultant deems necessary to perform each assignment; provided that Consultant shall not subcontract any work to be performed without the prior written consent of SAWPA.

ARTICLE III

COMPENSATION

3.01 In consideration for the services to be performed by Consultant, SAWPA agrees to pay Consultant as provided for in each Task Order.

3.02 Each Task Order shall specify a total not-to-exceed sum of money and shall be based upon the regular hourly rates customarily charged by Consultant to its clients.

3.03 Consultant shall not be compensated for any services rendered nor reimbursed for any expenses incurred in excess of those authorized in any Task Order unless approved in advance by the Commission and General Manager of SAWPA, in writing.

3.04 Unless otherwise provided for in any Task Order issued pursuant to this Agreement, payment of compensation earned shall be made in monthly installments after receipt from Consultant of a timely, detailed, corrected, written invoice by SAWPA's Project Manager, describing, without limitation, the services performed, when such services were performed, the time spent performing such services, the hourly rate charged therefore, and the identity of individuals performing such services for the benefit of SAWPA. Such invoices shall also include a detailed itemization of expenses incurred. Upon approval by an authorized SAWPA employee, SAWPA will pay within 30 days after receipt of a valid invoice from Consultant.

ARTICLE IV
CONSULTANT OBLIGATIONS

4.01 Consultant agrees to perform all assigned services in accordance with the terms and conditions of this Agreement including those specified in each Task Order. In performing the services required by this Agreement and any related Task Order Consultant shall comply with all local, state and federal laws, rules and regulations. Consultant shall also obtain and pay for any permits required for the services it performs under this Agreement and any related Task Order.

4.02 Except as otherwise provided for in each Task Order, Consultant will supply all personnel and equipment required to perform the assigned services.

4.03 Consultant shall be solely responsible for the health and safety of its employees, agents and subcontractors in performing the services assigned by SAWPA. Consultant hereby covenants and agrees to:

4.03a Obtain a Commercial General Liability and an Automobile Liability insurance policy, including contractual coverage, with limits for bodily injury and property damage in an amount of not less than $2,000,000.00 per occurrence for each such policy. Such policy shall name SAWPA, its officers, employees, agents and volunteers, as an additional insured, with any right to subrogation waived as to SAWPA, its officers, employees, agents and volunteers. If Commercial General Liability Insurance or other form with an aggregate limit is used, either the general aggregate limit shall apply separately to the work assigned by SAWPA under this Agreement or the general aggregate limit shall be at least twice the required occurrence limit. The coverage shall be at least as broad as Insurance Services Office Commercial General Liability Coverage (occurrence Form CG 00 01) and Insurance Services Office Form CA 00 01 covering Automobile Liability, Code 1 (any auto). The Commercial Liability Insurance shall include operations, products and completed operations, as applicable;

4.03b Obtain a policy of Professional Liability (errors and omissions) insurance appropriate to the Consultant's profession in a minimum amount of $2,000,000.00 per claim or occurrence to cover any negligent acts or omissions or willful misconduct committed by Consultant, its employees, agents and subcontractors in the performance of any services for SAWPA. Architects' and engineers' coverage shall include contractual liability;

4.03c Obtain a policy of Employer's Liability insurance in a minimum amount of $1,000,000.00 per accident for bodily injury and property damage.

4.03d Provide worker's compensation insurance or a California Department of Insurance-approved self-insurance program in an amount and form required by the State of California and the Employer's Liability Insurance that meets all applicable Labor Code requirements, covering all persons or entities providing services on behalf of the Consultant and all risks to such persons or entities;

4.03e Consultant shall require any subcontractor that Consultant uses for work performed for SAWPA under this Agreement or related Task Order to obtain the insurance coverages specified above.

4.03f Consultant hereby agrees to waive subrogation which any insurer of Consultant may seek to require from Consultant by virtue of the payment of any loss. Consultant shall obtain an endorsement that may be necessary to give effect to this waiver of subrogation. In addition, the Workers Compensation policy shall be endorsed with a waiver of subrogation in favor of SAWPA for all work performed by Consultant, and its employees, agents and subcontractors.

All such insurance policy or policies shall be issued by a responsible insurance company with a minimum A. M. Best Rating of "A-" Financial Category "X", and authorized and admitted to do business in, and regulated by, the State of California. If the insurance company is not admitted in the State of California, it must be on the List of Eligible Surplus Line Insurers (LESLI), shall have a minimum A.M. Best Rating of "A", Financial Category "X", and shall be domiciled in the United States, unless otherwise approved by SAWPA in writing. Each such policy of insurance shall expressly provide that it shall be primary and noncontributory with any policies carried by SAWPA and, to the extent obtainable, such coverage shall be payable notwithstanding any act of negligence of SAWPA that might otherwise result in forfeiture of coverage. Evidence of all insurance coverage shall be provided to SAWPA prior to issuance of the first Task Order. Such policies shall provide that they shall not be canceled or amended without 30 day prior written notice to SAWPA. Consultant acknowledges and agrees that such insurance is in addition to Consultant's obligation to fully indemnify and hold SAWPA free and harmless from and against any and all claims arising out of an injury or damage to property or persons caused by the negligence, recklessness, or willful misconduct of Consultant in performing services assigned by SAWPA.

4.04 Consultant hereby covenants and agrees that SAWPA, its officers, employees, and agents shall not be liable for any claims, liabilities, penalties, fines or any damage to property, whether real or personal, nor for any personal injury or death caused by, or resulting from, or claimed to have been caused by or resulting from, any negligence, recklessness, or willful misconduct of Consultant. Consultant shall hold harmless, defend and indemnify SAWPA and its officers, employees, agents and volunteers from and against any and all liability, loss, damage, fines, penalties, expense and costs, including, without limitation, attorneys' fees and litigation expenses and costs, of every nature arising out of or related to Consultant's negligence, recklessness, or willful misconduct related to or arising from the performance of the work required under this Agreement and any related Task Order or Consultant's failure to comply with any of its obligations contained in this Agreement and any related Task Order, except as to such loss or damage which was caused by the active negligence or willful misconduct of SAWPA.

4.05 In the event that SAWPA requests that specific employees or agents of Consultant supervise or otherwise perform the services specified in each Task Order, Consultant shall ensure that such individual(s) shall be appointed and assigned the responsibility of performing the services.

4.06 In the event Consultant is required to prepare plans, drawings, specifications and/or estimates, the same shall be furnished with a registered professional engineer's number and shall conform to local, state and federal laws, rules and regulations. Consultant shall obtain all necessary permits and approvals in connection with this Agreement, any Task Order or Change Order. However, in the event SAWPA is required to obtain such an approval or permit from another governmental entity, Consultant shall provide all necessary supporting documents to be filed with such entity, and shall facilitate the acquisition of such approval or permit.

ARTICLE V

SAWPA OBLIGATIONS

5.01 SAWPA shall:

5.01a Furnish all existing studies, reports and other available data pertinent to each Task Order that are in SAWPA's possession;

5.01b Designate a person to act as liaison between Consultant and the General Manager and Commission of SAWPA.

ARTICLE VI

ADDITIONAL SERVICES, CHANGES AND DELETIONS

6.01 During the term of this Agreement, the Commission of SAWPA may, from time to time and without affecting the validity of this Agreement or any Task Order issued pursuant thereto, order changes, deletions, and additional services by the issuance of written Change Orders authorized and approved by the Commission of SAWPA.

6.02 In the event Consultant performs additional or different services than those described in any Task Order or authorized Change Order without the prior written approval of the Commission of SAWPA, Consultant shall not be compensated for such services.

6.03 Consultant shall promptly advise SAWPA as soon as reasonably practicable upon gaining knowledge of a condition, event, or accumulation of events, which may affect the scope and/or cost of services to be provided pursuant to this Agreement. All proposed changes, modifications, deletions, and/or requests for additional services shall be reduced to writing for review and approval or rejection by the Commission of SAWPA.

6.04 In the event that SAWPA orders services deleted or reduced, compensation shall be deleted or reduced by a comparable amount as determined by SAWPA and Consultant shall only be compensated for services actually performed. In the event additional services are properly authorized, payment for the same shall be made as provided in Article III above.

ARTICLE VII

CONSTRUCTION PROJECTS: CONSULTANT CHANGE ORDERS

7.01 In the event SAWPA authorizes Consultant to perform construction management services for SAWPA, Consultant may determine, in the course of providing such services, that a Change Order should be issued to the construction contractor, or Consultant may receive a request for a Change Order from the construction contractor. Consultant shall, upon receipt of any requested Change Order or upon gaining knowledge of any condition, event, or accumulation of events, which may necessitate issuing a Change Order to the construction contractor, promptly consult with the liaison, General Manager and Commission of SAWPA. No Change Order shall be issued or executed without the prior approval of the Commission of SAWPA.

ARTICLE VIII

TERMINATION OF AGREEMENT

8.01 In the event the time specified for completion of an assigned task in a Task Order exceeds the term of this Agreement, the term of this Agreement shall be automatically extended for such additional time as is necessary to complete such Task Order and thereupon this Agreement shall automatically terminate without further notice.

8.02 Notwithstanding any other provision of this Agreement, SAWPA, at its sole option, may terminate this Agreement at any time by giving 10 day written notice to Consultant, whether or not a Task Order has been issued to Consultant.

8.03 In the event of termination, the payment of monies due Consultant for work performed prior to the effective date of such termination shall be paid after receipt of an invoice as provided in this Agreement.

ARTICLE IX

CONSULTANT STATUS

9.01 Consultant shall perform the services assigned by SAWPA in Consultant's own way as an independent contractor, in pursuit of Consultant's independent calling and not as an employee of SAWPA. Consultant shall be under the control of SAWPA only as to the result to be accomplished and the personnel assigned to perform services. However, Consultant shall regularly confer with SAWPA's liaison, General Manager, and Commission as provided for in this Agreement.

9.02 Consultant hereby specifically represents and warrants to SAWPA that the services to be rendered pursuant to this Agreement shall be performed in accordance with the standards customarily applicable to an experienced and competent professional consulting organization rendering the same or similar services. Furthermore, Consultant represents and warrants that the individual signing this Agreement on behalf of Consultant has the full authority to bind Consultant to this Agreement.

ARTICLE X
AUDIT AND OWNERSHIP OF DOCUMENTS

10.01 All draft and final reports, plans, drawings, specifications, data, notes, and all other documents of any kind or nature prepared or developed by Consultant in connection with the performance of services assigned to it by SAWPA are the sole property of SAWPA, and Consultant shall promptly deliver all such materials to SAWPA. Consultant may retain copies of the original documents, at its option and expense. Use of such documents by SAWPA for project(s) not the subject of this Agreement shall be at SAWPA's sole risk without legal liability or exposure to Consultant. SAWPA agrees to not release any software "code" without prior written approval from the Consultant.

10.02 Consultant shall retain and maintain, for a period not less than four years following termination of this Agreement, all time records, accounting records, and vouchers and all other records with respect to all matters concerning services performed, compensation paid and expenses reimbursed. At any time during normal business hours and as often as SAWPA may deem necessary, Consultant shall make available to SAWPA's agents for examination of all such records and will permit SAWPA's agents to audit, examine and reproduce such records.

ARTICLE XI
MISCELLANEOUS PROVISIONS

11.01 This Agreement supersedes any and all previous agreements, either oral or written, between the parties hereto with respect to the rendering of services by Consultant for SAWPA and contains all of the covenants and agreements between the parties with respect to the rendering of such services in any manner whatsoever. Any modification of this Agreement will be effective only if it is in writing signed by both parties.

11.02 Consultant shall not assign or otherwise transfer any rights or interest in this Agreement without the prior written consent of SAWPA. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.

11.03 In the event Consultant is an individual person and dies prior to completion of this Agreement or any Task Order issued hereunder, any monies earned that may be due Consultant from SAWPA as of the date of death will be paid to Consultant's estate.

11.04 Time is of the essence in the performance of services required hereunder. Extensions of time within which to perform services may be granted by SAWPA if requested by Consultant and agreed to in writing by SAWPA. All such requests must be documented and substantiated and will only be granted as the result of unforeseeable and unavoidable delays not caused by the lack of foresight on the part of Consultant.

11.05 Consultant shall comply with all local, state and federal laws, rules and regulations including those regarding nondiscrimination and the payment of prevailing wages.

11.06 SAWPA expects that Consultant will devote its full energies, interest, abilities and productive time to the performance of its duties and obligations under this Agreement, and shall not engage in any other consulting activity that would interfere with the performance of Consultant's duties under this Agreement or create any conflicts of interest. If required by law, Consultant shall file a Conflict of Interest Statement with SAWPA.

11.07 Any dispute which may arise by and between SAWPA and the Consultant, including the Consultants, its employees, agents and subcontractors, shall be submitted to binding arbitration. Arbitration shall be conducted by a neutral, impartial arbitration service that the parties mutually agree upon, in accordance with its rules and procedures. The arbitrator must decide each and every dispute in accordance with the laws of the State of California, and all other applicable laws. Unless the parties stipulate to the contrary prior to the appointment of the arbitrator, all disputes shall first be submitted to non-binding mediation conducted by a neutral, impartial mediation service that the parties mutually agree upon, in accordance with its rules and procedures.

11.08 During the performance of the Agreement, Consultant and its subcontractors shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), marital status and denial of family care leave. Consultant and its subcontractors shall insure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. Consultant and its subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code, Section 12290 et seq.) and the applicable regulations promulgated there under (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 et seq., set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part hereof as if set forth in full. Consultant and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement. Consultant shall include the non-discrimination and compliance provisions of this clause in all subcontracts to perform work under the Agreement.

In witness whereof, the parties hereby have made and executed this Agreement as of the day and year first above-written.

SANTA ANA WATERSHED PROJECT AUTHORITY

_____

Celeste Cantú, General Manager Date

CONSULTANT NAME

_____ _____

(Signature) Date Typed/Printed Name