I hereby certify that the foregoing Agenda was posted at least 72 hours prior to the time of the Regular Meeting so noticed below, at the usual agenda posting location of the San Juan Basin Authority.

Daniel R. Ferons
SAN JUAN BASIN AUTHORITY
and the Board of Directors thereof

AGENDA

SAN JUAN BASIN AUTHORITY
BOARD OF DIRECTORS' MEETING
SANTA MARGARITA WATER DISTRICT
BOARD ROOM
July 9, 2013
1:30 p.m.

Upon Request, this agenda will be made available in appropriate alternative formats to persons with disabilities, as required by Section 202 of the Americans with Disabilities Act of 1990. Any person with a disability who requires a modification or accommodation in order to participate in a meeting should direct such request to Daniel Ferons, Secretary, Board of Directors, at (949) 459-6590 at least 48 hours before the meeting if possible.

ITEMS DISTRIBUTED TO THE BOARD LESS THAN 72 HOURS PRIOR TO MEETING

Pursuant to Government Code section 54957.5, non-exempt public records that relate to open session agenda items and are distributed to a majority of the Board less than seventy-two (72) hours prior to the meeting will be available for public inspection in the lobby of the Authority's business office located at 26111 Antonio Parkway, Rancho Santa Margarita, California 92688, during regular business hours. When practical, these public records will also be made available on the San Juan Basin Authority's Internet Web Site, accessible at http://www.sjbauthority.com. All documents available for public review are on file with the Authority's Secretary located at 26111 Antonio Parkway, Rancho Santa Margarita, California 92688.

I. CALL MEETING TO ORDER

II. PLEDGE OF ALLEGIANCE

III. ADMINISTRATION OF OATH OF OFFICE

IV. ORAL COMMUNICATIONS

A. Persons wishing address the Board of Directors on matters not listed on the Agenda may do so at this time. "Request to be Heard" forms are available at the entrance to the Board Room. Comments are limited to three minutes, unless further time is granted by the Presiding Officer. Please submit the form to the Secretary prior to the beginning of the meeting.

Those wishing to address the Board of Directors on any items listed on the Agenda should submit a "request to be Heard" form to the Secretary before the Presiding Officer announces that agenda item. Your name will be called to speak at that time.

V. CONSENT CALENDAR

A. Consideration and Action on Minutes of Regular Meeting of June 11, 2013..... **Page 4**

Staff Recommendation: Approve subject minutes.

Note: Items on the CONSENT CALENDAR will be considered for approval without discussion in one vote. A Director may request that an item be taken off the Consent Calendar for full discussion.

[END OF CONSENT CALENDAR]

VI. ACTION ITEMS

A. Consideration and Action on Waiver of Conflicts of Interest re Refunding of San Juan Basin Authority Lease Revenue Bonds (Ground Water Recovery Project), Issue of 2002; Amendment to Operating Lease Agreement..... **Page11**

Staff Recommendation: Waive Conflict.

B. Consideration and Action on Release of Draft San Juan Basin Groundwater Management and Facilities Plan for Public Review..... **Page 16**

Staff Recommendation: Authorize release of draft document for public comment.

C. Consideration and Action on Scope of Work for Peer Review of the San Juan Basin Groundwater Management and Facilities Plan prepared by Wildermuth Environmental and the Groundwater Modeling Report Prepared by Geoscience on behalf of Municipal Water District of Orange County..... **Page 17**

Staff Recommendation: Provide direction and authorize Issuance of Request for Proposal as appropriate.

VII. CHAIRMAN'S REPORT

VIII. ATTORNEY'S REPORT

IX. OTHER MATTERS

A. Open Discussion or items received too late to be agendized.

INFORMATION ITEMS

A. Presentation by City of San Juan Capistrano on Proposed Refunding of San Juan Basin Authority Lease Revenue Bonds (Ground Water Recovery Project), Issue of 2002.

B. San Juan Basin Groundwater and Desalination Optimization Program Proposal for Metropolitan Water District of Southern California Foundational Actions Funding Program..... **Page 19**

X. ADJOURNMENT

The next Regular Board of Directors' meeting is scheduled for **August 13, 2013 at 1:30 p.m.** at the Santa Margarita Water District, 26111 Antonio Parkway, Rancho Santa Margarita, California.

UNAPPROVED

SAN JUAN BASIN AUTHORITY
BOARD OF DIRECTORS' MEETING
SANTA MARGARITA WATER DISTRICT
BOARD ROOM
June 11, 2013

A Meeting of the Board of Directors (Board) of the San Juan Basin Authority (SJBA) was held on Tuesday, March 12, 2013 at its principal place of business located at 26111 Antonio Parkway, Suite A, Rancho Santa Margarita, CA 92688. The following Directors and/or Alternate Directors were present:

Directors Present:

LARRY McKENNEY, Moulton Niguel Water District	Chairman
LARRY KRAMER, City of San Juan Capistrano	Director
DON BUNTS, Santa Margarita Water District	Alternate Director
WAYNE RAYFIELD, South Coast Water District	Director

Directors Absent: None

Support Services Present:

DANIEL R. FERONS	Administrator
WEST CURRY	Administrator

Others Present:
Samantha Adams, Wildermuth Environmental, Inc.
Allison Burns, Legal Counsel

I. CALL MEETING TO ORDER

Director McKenney called the meeting to order at 1:34 p.m.

II. PLEDGE OF ALLEGIANCE

Director McKenney led the Pledge of Allegiance

III. ADMINISTRATION OF OATH OF OFFICE

Item not required for this meeting.

IV. ORAL COMMUNICATIONS

Director McKenney recognized Roger Bütow. Mr. Bütow offered he was the Executive Director Clean Water Now Coalition as well as a land use and regulatory consultant. He offered he is interested in making a film that answered the "why" question about water. This would be a general interest to explain the complexities of production of water.

Richard Gardner offered comments on measuring progress as it applies to managing the San Juan Basin Authority.

UNAPPROVED

V. CONSENT CALENDAR

A. Consideration and Action on Minutes of Regular Meeting of March 12, 2013.
B. Consideration and Action on Monthly the Financial Statements for March, April and May 2013.

Mr. Gardner requested an amendment to the March 12, 2013 removing references to his comments as he does not believe he was at the meeting.

References to Mr. Gardner were removed. There were no objections.

MOTION NO. 2013-05

Thereafter, upon a motion duly made by Director Rayfield, seconded by Director Kramer, to approve the Consent Calendar (Item A – Approve the Minutes of Regular Meeting of March 12, 2013 as amended. Item B – Receive and file the Monthly Financial Statements for March, April and May 2013.). Motion passed 4-0.

VI. ACTION ITEMS

A. Consideration and Action on Elections of Officers for Fiscal Year 2013-2014.

MOTION NO. 2013-06

Thereafter, upon a motion duly made by Director Rayfield, seconded by Director Kramer, to nominate Director McKenney for the position of Chairman. Motion passed 4-0.

MOTION NO. 2013-07

Thereafter, upon a motion duly made by Director Bunts, seconded by Director Rayfield, to nominate Director Kramer for the position of Vice Chairman. Motion passed 4-0.

MOTION NO. 2013-08

Thereafter, upon a motion duly made by Director Rayfield, seconded by Director Bunts, to nominate Dan Ferons as Secretary and Kristen Griffith as Treasurer. Motion passed 4-0.

Mr. Ferons noted the issue of who would provide the administrator services, which are currently shared by West Curry and Dan Ferons. This item to be considered at a later date.

B. Consideration and Action on Adoption of Fiscal Year 2013-2014 Operating Budget.

UNAPPROVED

Mr. Ferons reviewed the proposed 2013/2014 Operating Budget. He reviewed the general administration services and noted the Santa Margarita Water District does not charge for administrative services, but does include a fee of $6,225 for financial services. The legal services budget was increased to $8,000 and there is a fee for secretarial services of $4,000. An addition to the budget is an item for the Ground Water Management Plan Optimization Plan. To help fund the effort, a grant may be available through Metropolitan Water District of Southern California for an action program to further the implementation of the Ground Water Management Plan. The total scope of the work is $400,000. The grant application is for $200,000 with a $200,000 matching funds from the member agencies.

The total proposed budget is $603,500 including the proposed grant application.

Directors Rayfield and Rayburn noted they would prefer to approve the budget at the basic level of $203,500, when the action program for the implementation of the Ground Water Management Plan Optimization is finalized, revisit the budget and amend as appropriate.

MOTION NO. 2013-09

Thereafter, upon a motion duly made by Director Rayfield, seconded by Director Bunts, to approve a FY2013-2014 budget for $203,500 and table the decision regarding the Groundwater Management Plan Optimization Project. Motion passed 4-0.

C. Presentation on the 2012 Annual Integrated Environmental Monitoring by Wildermuth Environmental.

Mr. Ferons reported the pumping levels for 2013 did not trigger the requirement for annual compliance monitoring and the annual report does not need to be filed with the State Water Resources Control Board. Field monitoring was done and the technical data provided to each of the member agencies. To save the agencies money, the report was not written although the data was collected and is available.

Ms. Adams responded to questions from the Board. She noted the entire production for the San Juan Basin was 6,254 acre feet. The water rights permit for the Basin applies to the GWRP Production, which was 4,583 acre feet in 2012. Because the Authority did not pump the minimum acre feet of 4,800, the annual report was not required. The savings to the SJBA was between $15,000 to $18,000. She confirmed data was collected for the entire basin, but SJBA only reports on its water rights permit.

UNAPPROVED

Ms. Adams reported that a set of data points are being collected in order to do a bi-annual storage change computation. The purpose of this data collection is to determine the inflow and effect on storage in order to ensure the member agencies can meet their pumping needs. In the fall of 2012, the storage was 27,400 acre feet, and in the spring 2013 it was 27,300. Based on the evaluation of the data, member agencies should have no problems meeting their pumping needs.

Richard Garner recommended filing the annual report to have contiguous sets of reports.

South Coast Water District's General Manager, Ms. Burnett, questioned the reality of the pumping. She would like the Basin to report on actual pumping.

Mr. Wildermuth commented on the modeling and the limitations to the pumping.

Ms. Adams confirmed the data for the Annual Integrated Environmental Monitoring Report has been collected.

MOTION NO. 2013-10

Thereafter, upon a motion duly made by Director Rayfield, seconded by Director McKenney, to receive and file the information regarding the 2012 Annual Integrated Environmental Monitoring. Motion passed 4-0.

D. Consideration and Action on Selection of Fiscal Year 2012-2013 Independent Auditor.

MOTION NO. 2013-11

Thereafter, upon a motion duly made by Director Bunts, seconded by Director Kramer, to authorize Charles Z. Fedak & Company, Certified Public Accounts, to perform audit services for the San Juan Basin Authority for Fiscal Year 2013 for $4,000 with the option to continue services for two additional years. Motion passed 4-0.

E. Consideration and Action on Release of Draft Groundwater Management Plan for Public Review.

Mr. Ferons reported the final chapter of the Groundwater Management Plan was released to the member agencies for review and comment. The next step is to release the document for public review.

A discussion ensued regarding the length of time for the public comment period.

UNAPPROVED

Director Rayfield suggested the SJBA consider adding an independent peer review of the assumptions and conclusions. He noted he expected the cost of the peer review to be less than $50,000.

The Board directed staff to develop a scope of work for the independent peer review and bring the request for proposal to the Board at its July meeting.

The Board received comments from various attendees.

MOTION NO. 2013-12

Thereafter, upon a motion duly made by Director McKenney, seconded by Director Rayfield, to establish a timeline to publish the draft Ground Water Management Plan for public review at the SJBA July meeting and to include a 45 day comment period with a public workshop to be scheduled in September 2013. Motion passed 4-0.

F. Consideration and Action on Preparation of Metropolitan Water District of Southern California Foundational Action Plan Proposal for the Technical Efforts Related to the Optimization of the San Juan Groundwater Basin.

Mr. Ferons reviewed the scope of work and the optimization analysis of the San Juan Groundwater Basin. He noted that the Orange County Water District is interested in the optimization analysis and expressed interest in supporting the application.

A discussion ensued on the previous work efforts and the scope of the optimization analysis.

Comments were received from the public.

Mr. Ferons reviewed the statements noting, the scope of work needs to include regulatory and ecological issues. It was noted that if the SJBA doesn't get the full $200,000 from Metropolitan Water District of Southern California, the scope of work will be changed to fit the funds available.

RECESS

Chairman McKenney declared a recess at 3:43 p.m. The meeting reconvened at 3:50 p.m.

UNAPPROVED

Staff was given direction that when the requests for proposal are sent out for the Optimization Analysis, it will be a fully integrated RFP.

MOTION NO. 2013-13

Thereafter, upon a motion duly made by Director Kramer, seconded by Director Bunts, to authorize staff to submit a grant proposal to Metropolitan Water District of Southern California for $200,000 and to amend the FY2013/2014 Budget to include an additional $200,000 for the optimization analysis study and add an additional $50,000 for a peer review study of the draft Groundwater Management Plan. Motion passed 4-0.

VII. CHAIRMAN'S REPORT

There was no Chairman's Report.

VIII. ATTORNEY'S REPORT

There was no Attorney's Report.

IX. OTHER MATTERS

A. Open Discussion or items received too late to be agendized.

X. INFORMATION ITEMS

A. Update on Operation of City of San Juan Capistrano and South Coast Water District Desalter Plants.

Mr. Curry provided an update on the City of San Juan Capistrano plant. He reported production is around 4.7 production levels which is a little over 5.5 million gallons a day. The plant expansion is moving forward which will increase production to 6.1 million gallons per day. Eight wells are online and the older wells are being rehabilitated.

Ms. Burnett provided an update for the South Coast Water District Desalter Plant reporting the new well is performing satisfactorily.

XI. ADJOURNMENT

There being no further business before the Board, the meeting was adjourned at 3:57 p.m.

UNAPPROVED

The next Regular Board of Directors' meeting is scheduled for **July 9, 2013 at 1:30** at the Santa Margarita Water District, 26111 Antonio Parkway, Rancho Santa Margarita, California.

Respectfully submitted,

Sharon D. Brimer, Recording Secretary

I DO HEREBY CERTIFY that the foregoing Minutes are true and correct copy of the Minutes adopted by the Board of Directors of the SAN JUAN BASIN AUTHORITY.

_____

West Curry, Administrator
SAN JUAN BASIN AUTHORITY

Stradling
Attorneys at Law

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July 3, 2013

CITY OF SAN JUAN CAPISTRANO
32400 Paseo Adelanto
San Juan Capistrano, CA 92675
Attention: Karen P. Brust

SAN JUAN BASIN AUTHORITY
26111 Antonio Parkway
Rancho Santa Margarita, CA 92688
Attention: Dan Ferons

Re: *Waiver of Conflicts of Interest re Refunding of San Juan Basin Authority Lease Revenue Bonds (Ground Water Recovery Project), Issue of 2002; Amendment to Operating Lease Agreement*

Dear Ladies and Gentlemen:

This letter is to confirm your waiver of potential or actual conflicts of interest based upon Stradling Yocca Carlson & Rauth's ("SYC&R") concurrent representation of the City of San Juan Capistrano ("City") and the San Juan Basin Authority ("SJBA") in connection with (a) an amendment to the Operating Lease Agreement by and between the City, as successor in interest to the Capistrano Valley Water District, and SJBA ("Lease Amendment"), (b) a refunding of the San Juan Basin Authority Lease Revenue Bonds (Ground Water Recovery Project), Issue of 2002 ("Bond Refunding"), (c) certain activities of the City, including matters relating to the dissolution of the former San Juan Capistrano Community Redevelopment Agency and various economic development and affordable housing matters ("City Activities"), and (d) general activities of the SJBA, including advising the SJBA Board of Directors with respect to SJBA activities taken pursuant to the Lease Agreement and the Bond Refunding ("SJBA Activities" and, together with the Lease Agreement, the Bond Refunding and the City Activities, the "Matters"). The City and SJBA are referred to collectively herein as the "Parties."

As you are aware, SYC&R is special counsel to the City in connection with a variety of matters, including as bond counsel in connection with the issuance of the San Juan Basin Authority Lease Revenue Bonds (Ground Water Recovery Project), Issue of 2002. SYC&R also serves as general counsel to SJBA. The City and SJBA have asked SYC&R to represent both the City and SJBA in connection with the Lease Amendment and SJBA in connection with the Bond Refunding and the SJBA Activities. Under rule 3-310(C) of the California Rules of Professional Conduct (a copy of which is attached to this letter), an attorney may not "(1) Accept representation of more than one client in a matter in which the interests of the clients potentially conflict; or (2) Accept or continue representation of more than one client in a matter in which the interests of the clients actually conflict; or (3) Represent a client in a matter and at the same time in a separate matter accept as a client a person or entity whose interest in the first matter is adverse to the client in the first matter" unless the attorney or firm has the informed written consent of each client. The purposes of this letter are (1) to inform you of the possible conflicts of interest inherent in the concurrent

representation proposed in the Matters, (2) suggest that you retain independent counsel to assist you in your analysis and evaluation of the conflict issues and the effect of a waiver, and (3) to seek your waiver of these conflicts.

The Matters involve various potential liabilities and responsibilities, including potential claims for money damages, incurred and to be incurred by the Parties in connection with the Lease Amendment, Bond Refunding, City Activities and SJBA Activities. There is an actual, current conflict of interest because the Lease Amendment is a contract between the City and SJBA. There is a possibility that additional future conflicts of interest may arise because the interests of the City and SJBA may become adverse to one another in other ways in connection with the Bond Refunding and/or the SJBA Activities. For example, the City and SJBA will both be parties to contracts involved in the Bond Refunding and the City is a member agency of SJBA and may have disagreements with SJBA regarding future SJBA Activities. Similarly, third parties may assert claims against the City and/or SJBA; if the Parties disagree regarding which Party should pay such claims, this would constitute a conflict of interest between the City and SJBA.

If any legal actions were to arise after the date of this letter between the City, on the one hand, and SJBA, on the other hand, we may be required to stop our representation of the City and/or SJBA. In that event, the City and/or SJBA would be forced to seek representation from another attorney or firm. We therefore strongly advise you to seek the advice of independent counsel before signing the attached consent.

As a result of the foregoing, we are required to request a written confirmation that: (1) these facts have been disclosed; (2) you have been advised to seek independent counsel concerning the actual and potential conflicts of interest; (3) you have knowingly and voluntarily waived any and all actual or potential conflicts of interest in or relating to the Matters; and (4) you consent to the concurrent representation by SYC&R of the City and SJBA in the Matters.

Should you have any questions concerning this letter or the attached consent form, please discuss them with us or with independent counsel before signing.

Very truly yours,

STRADLING YOCCA CARLSON & RAUTH

Thomas P. Clark, Jr.

Allison E. Burns

Enclosure

CONSENT

The undersigned hereby waive any actual and potential conflicts of interest or other adverse consequences that may arise from Stradling Yocca Carlson & Rauth's concurrent representation of the City of San Juan Capistrano ("City") and the San Juan Basin Authority ("SJBA") in connection with (a) an amendment to the Operating Lease Agreement by and between the City, as successor in interest to the Capistrano Valley Water District, and SJBA ("Lease Amendment"), (b) a refunding of the San Juan Basin Authority Lease Revenue Bonds (Ground Water Recovery Project), Issue of 2002 ("Bond Refunding"), (c) certain activities of the City, including matters relating to the dissolution of the former San Juan Capistrano Community Redevelopment Agency and various economic development and affordable housing matters ("City Activities"), and (d) general activities of the SJBA, including advising the SJBA Board of Directors with respect to SJBA activities taken pursuant to the Lease Agreement and the Bond Refunding ("SJBA Activities" and, together with the Lease Agreement, the Bond Refunding and the City Activities, the "Matters"). The City and SJBA are referred to herein as the "Parties."

Stradling Yocca Carlson & Rauth (SYC&R) has advised the undersigned of Rule 3-310 of the California Rules of Professional Conduct, enclosed a copy of Rule 3-310 for the undersigned to review, and explained to the undersigned that there exists presently and in the future may exist conflicting interests in, arising out of or related to the above-described Matters which might have serious adverse consequences to the undersigned. The undersigned acknowledge having received a copy of the foregoing letter and have read and understand its contents. Furthermore, the undersigned acknowledge that they have been informed and hereby consent to the following: (1) that SYC&R represent both of the undersigned in the Matters; (2) that SYC&R as a result of representing the undersigned may obtain confidential information from the City and SJBA that may be adverse to the interests of the other; (3) that there is a possibility of future claims between the undersigned in which confidential information disclosed to SYC&R may be used on behalf of the City or SJBA, respectively.

The undersigned have had an opportunity to consult with independent counsel regarding this matter and any and all actual and potential conflicts of interest. The signatures below are freely and voluntarily given, and are based upon the informed consent of the City and SJBA.

Capitalized words not defined in this Consent shall have the meaning set forth in the accompanying letter dated July 3, 2013 from SYC&R to the undersigned.

CITY OF SAN JUAN CAPISTRANO

Dated: _____, 2013

_____
Karen P. Brust, City Manager

SAN JUAN BASIN AUTHORITY

Dated: _____, 2013

_____
Dan Ferons, Co-Administrator

CALIFORNIA RULES OF PROFESSIONAL CONDUCT
RULE 3-310
Avoiding the Representation of Adverse Interests

(A) For purposes of this rule:

(1) "Disclosure" means informing the client or former client of the relevant circumstances and of the actual and reasonably foreseeable adverse consequences to the client or former client;

(2) "Informed written consent" means the client's or former client's written agreement to the representation following written disclosure;

(3) "Written" means any writing as defined in Evidence Code section 250.

(B) A member shall not accept or continue representation of a client without providing written disclosure to the client where:

(1) The member has a legal, business, financial, professional, or personal relationship with a party or witness in the same matter; or

(2) The member knows or reasonably should know that:

(a) the member previously had a legal, business, financial, professional, or personal relationship with a party or witness in the same matter; and

(b) the previous relationship would substantially affect the member's representation; or

(3) The member has or had a legal, business, financial, professional, or personal relationship with another person or entity the member knows or reasonably should know would be affected substantially by resolution of the matter; or

(4) The member has or had a legal, business, financial, or professional interest in the subject matter of the representation.

(C) A member shall not, without the informed written consent of each client:

(1) Accept representation of more than one client in a matter in which the interests of the clients potentially conflict; or

(2) Accept or continue representation of more than one client in a matter in which the interests of the clients actually conflict; or

(3) Represent a client in a matter and at the same time in a separate matter accept as a client a person or entity whose interest in the first matter is adverse to the client in the first matter.

(D) A member who represents two or more clients shall not enter into an aggregate settlement of the claims of or against the clients without the informed written consent of each client.

(E) A member shall not, without the informed written consent of the client or former client, accept employment adverse to the client or former client where, by reason of the representation of the client or former client, the member has obtained confidential information material to the employment.

(F) A member shall not accept compensation for representing a client from one other than the client unless:

(1) There is no interference with the member's independence of professional judgment or with the client-lawyer relationship; and

(2) Information relating to representation of the client is protected as required by Business and Professions Code section 6068, subdivision (e); and

(3) The member obtains the client's informed written consent, provided that no disclosure or consent is required if:

(a) such nondisclosure is otherwise authorized by law; or

(b) the member is rendering legal services on behalf of any public agency which provides legal services to other public agencies or the public.

SAN JUAN BASIN AUTHORITY

26111 Antonio Parkway • Rancho Santa Margarita, CA 92688 (949) 459-6400 FAX (949) 459-6463

TO: Board of Directors **DATE:** July 9, 2013

FROM: Dan Ferons

SUBJECT: Consideration and Action on Release of Draft Groundwater Management and Facilities Plan for Public Review

SUMMARY

Issue: Wildermuth Environmental has prepared the draft document and the Authority Technical Advisory Committee members have reviewed screen check copies. The member agencies review has continued since the June Board meeting.

Recommendation: Authorize release of draft document for public comment.

Fiscal Impact: Release of the document will not have a direct financial impact, other than printing copies for public display at each agency.

Previously Related Action: At the June 2013 Board meeting, the Authority was directed to hold the release until the July 9, 2013 Board meeting.

DISCUSSION

Wildermuth Environmental has prepared a draft update of the Groundwater Management and Facilities Plan for the San Juan Basin. The document has been under final review by the member agencies and it proposed to release the draft document for public review after the Board meeting.

The Authority will schedule a meeting for public input on the draft document at its regularly scheduled September Board meeting and consider adoption in October depending on the level of input and time to prepare responses.

SAN JUAN BASIN AUTHORITY

26111 Antonio Parkway • Rancho Santa Margarita, CA 92688 (949) 459-6400 FAX (949) 459-6463

TO: Board of Directors **DATE:** July 9, 2013

FROM: Dan Ferons

SUBJECT: Consideration and Action on Scope of Work for Peer Review of the San Juan Basin Groundwater Management and Facilities Plan prepared by Wildermuth Environmental and the Groundwater Modeling Report Prepared by Geoscience on behalf of Municipal Water District of Orange County

SUMMARY

Issue: At its June Board meeting, the Authority was directed to review the scope of work for preparation of an independent peer review of the recently updated Groundwater Management Plan (GMP) and the groundwater modeling which was the foundation of the management planning effort. The GMP was prepared by Wildermuth Environmental and the modeling was prepared by Geoscience under contract to MWDOC for the Doheny Desalter project (formerly known as South Orange Coastal Ocean Desalination (SOCOD) in cooperation with the Authority and its consultants.

Recommendation: Provide direction and authorize Issuance of Request for Proposal as appropriate.

Fiscal Impact: A budget of $50,000 was established to fund the peer review.

Previously Related Action: At the June 2013 Board meeting, the Authority authorized a budget of $50,000 to fund the peer review work.

DISCUSSION

The Authority is preparing to release its 2013 updated Groundwater Management and Facilities Plan prepared by Wildermuth Environmental; MWDOC recently released the groundwater modeling report prepared by Geoscience in cooperation with the Authority. Both documents are noteworthy milestones for the current operation and future optimization of the groundwater basin as a local resource. Significant effort has been put into the development of the alternatives and planning efforts by the consultants and the member agency Technical Advisory Committee made up of senior engineering and operations personnel. The Board requested the Authority to consider development of a scope of work for an independent peer review of both efforts as part of the public review process.

The proposed peer review consultant will address specific questions in its scope of work:

- Were the development, calibration, sensitivity analysis, and documentation procedures performed within industry standards for modeling of the type developed?
- Do the models adequately represent the regional properties and processes for the physical settings that were modeled and provide reliable projections for meeting the expectations for development of the GMP?
- Does the GMP adequately provide reliable estimates at a regional scale and over multi-year periods of the quantity, timing and location of impacts to the San Juan Basin based on the provided modeling?
- Were the developed alternatives included in the GMP based on industry standards for management planning efforts?

The tasks will include:

1. External peer review will be generally guided by the standards of the industry normally followed by the hydrogeologists, engineers, geologists and scientists involved in producing modeling tools and management planning efforts.

2. Peer review comments should be tiered by level of importance to the planning effort. The most important comments are those that identify and describe specifically any aspect of the modeling or GMP that appears to be unacceptable according to professional standards or identify a fatal flaw in terms of meeting the model and GMP objectives. Second tier comments should include suggestions for future improvements to the model or GMP that are not critical to the calibration or objectives.

3. The peer review consultant shall perform its review based on the published documentation for the modeling and the GMP developed as of July 2013 based on discussions with the Wildermuth, Geoscience, MWDOC and the member agencies as appropriate. The consultant shall be responsible for requesting any additional data, documentation, or clarification necessary to complete its review of the process and reports.

4. The consultant shall complete its efforts by September 30, 2013 on a time and materials basis within an established budget.

The Authority will issue a Request for Proposals based on the approved scope of work to professional firms that were not involved in recent groundwater efforts within the San Juan Basin. The proposals will be reviewed by members of the Technical Advisory Committee and a qualifications-based recommendation will be made to either the Co-Administrators if the value of the work is under $25,000 or to the Board of Directors at its August meeting. The schedule of work is subject to adjustment-based discussions with the consultant teams proposing on the work.

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

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Wayne Osborne
Director

Karl Seckel
Interim General Manager

MEMBER AGENCIES

City of Brea
City of Buena Park
East Orange County Water District
El Toro Water District
Emerald Bay Service District
City of Fountain Valley
City of Garden Grove
Golden State Water Co.
City of Huntington Beach
Irvine Ranch Water District
Laguna Beach County Water District
City of La Habra
City of La Palma
Mesa Water District
Moulton Niguel Water District
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Orange County Water District
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Santa Margarita Water District
City of Seal Beach
Serrano Water District
South Coast Water District
Trabuco Canyon Water District
City of Tustin
City of Westminster
Yorba Linda Water District

The Metropolitan Water District of Southern California
Water Resources Management Group
700 North Alameda Street
Los Angeles, CA 90012

Attn: Business Resource Center Desk, US 5-113

Subject: ***San Juan Basin Groundwater and Desalination Optimization Program***
Proposal in response to RFP for Foundational Actions Funding Program

Dear Board of Directors:

The Municipal Water District of Orange County (MWDOC) is pleased to submit and support this proposal in response to the Foundational Actions Funding Program request for proposals. MWDOC and the San Juan Basin Authority in South Orange County are proposing to analyze options for sustainable, long-term use of an impaired watershed. The proposed project is $400,000 with a 50% match; the requested MWD funding is $200,000.

Southern California is rife with underutilized small groundwater basins and sub-basins similar to Port Hueneme, San Clemente, Carlsbad and San Diego along the coast and inland in areas such as Cucamonga, Riverside, Lake Elsinore and Temescal Basins. The typical Southern California weather patterns of periodic intense storms have resulted in construction of significant infrastructure over the years that protect from flooding, but do not consider beneficial use of the stormwater. Likewise, many of the same basins have potential access to recycled water, but do not have the distribution ability resulting in wastewater not being realized as a resource. Other basins may be impaired with high salinity or other chemical impairments requiring significant treatment or isolation from poor quality water. The water supply agencies that overlie these basins have developed with a reliance on imported water. The Foundational Action Program is an opportunity for water agencies throughout the Metropolitan service area to help enhance the water supply reliability by providing support for technical studies to look at the potential resources available such as the conjunctive use of stormwater, recycled water and desalination in small basins with impaired groundwater quality.

The proposed project is an innovative approach not generally used in a small basin; it takes the tools that have historically been applied to larger basins and incorporates them with the goal of producing a new sustainable water supply. The project scope includes the evaluation of the following program elements:

- Desalination: conduct groundwater modeling studies to investigate the effectiveness of extraction barriers to provide groundwater protection, sustainable production rates, and projected water quality, particularly salinity concentrations. The analysis will apply to similar stream morphology that extends offshore or into another basin and currently may be underutilized.

- Stormwater: hydraulic investigation and modeling of rubber dams, t-levees, raceways and recharge galleries to assess the groundwater basin response, mounding, and the need to revise groundwater production plans to accommodate new in-stream and off-stream recharge. The data developed may be utilized in other stormwater recharge applications in urbanized areas.
- Recycled Water: hydraulic investigation to refine the layout and operation of the temporary seasonal in-stream recharge ponds and infiltration galleries potentially in conjunction with stormwater facilities, develop hydraulic and fish passage requirements for both alternatives, and refine the recycled water treatment requirements and recharge estimates for both alternatives. The proposed recharge analysis, including recycled water treatment alternatives, may be applicable for beneficial indirect use analysis.
- Groundwater: The implementation of an extraction barrier and recharge program elements may change the location, magnitude, and timing of recharge in a basin. Existing groundwater production and treatment facilities may require modification to maximize the new yield, to ensure there is groundwater storage capacity to accept the recharge, to minimize potential for liquefaction, and to ensure beneficial use of the produced water.

Many small groundwater basins in The Metropolitan Water District of Southern California (MWD) service area have the following attributes: limited yield, limited storage, natural and anthropogenic contamination sources, chronically impaired water, and overlying lands that are completely developed. The classic approach to utilizing these small basins is to treat the groundwater at its sustainable yield and rely on imported water to meet demands in excess of the underlying groundwater. The San Juan Basin in South Orange County is typical of these marginalized basins. In its current state, the San Juan Basin: can sustain on average about 9,300 acre-ft/yr of production, which will range from about 7,700 to about 11,200 acre-ft/yr, limited by hydrology and water in storage; has a storage capacity of about 40,000 acre-ft and currently has about 27,000 acre-ft in storage; has impaired groundwater with a TDS concentration of about 2,200 mg/L; has both natural and anthropogenic degradation sources; and very high concentrations of iron and manganese. The near term production goal is about 11,400 acre-ft/yr, and thus the Basin, under its current management scheme, is projected to chronically fail to meet the production needs of the local agencies. Currently, groundwater desalters are used to treat the groundwater that is produced for municipal uses.

The program elements contains the efforts to develop practical spatial and temporal groundwater production plans based on storage conditions that are related to production, natural hydrologic variability, artificial recharge, and prevailing DPH and Basin Plan requirements. There are also overlying producers that may have to convert to recycled and or municipal water to enable the implementation.

The scope of work includes: groundwater modeling to develop spatial and temporal groundwater production plans tied to groundwater storage, underground residence time for recycled water prior to production, and recycled water contribution; expected groundwater treatment requirements to produce potable water; and the water type and cost to replace the groundwater currently used by overlying producers. A reconnaissance-level Title 22 engineering assessment will be prepared pursuant to the existing draft Title 22 regulations for a groundwater recycled

reuse project (GRRP). An updated facilities and operating plan will be prepared along with updated cost estimates. The updated facilities and operation plan will include the locations of new wells, raw water conveyance, treatment facilities, product water conveyance, and the phasing of these facilities as recycled water recharge is ramped up from initially 2,000 Acre-ft/yr to a possible ultimate 10,000 acre-ft/yr. The modeling and planning are necessary work to overcome the barriers for project implementation and will be transferable to other similar situated basins in Southern California.

A proposal is being submitted separately by the Doheny Desalination Project entitled "*Overcoming Barriers to Slant Well Seawater Desalination – Siting, Groundwater, Water Quality and Treatment*". Both project efforts are complementary and provide the basis for maximizing local supply through innovative advancements for long-term sustainable local resource development. Individually and collectively, both projects examine the viable use of the off-shore and near-shore water, the actual funding/scope will be negotiated if both projects are funded to ensure there is no duplication of work.

The following contact and agency information is provided per the RFP:

Name of Proposal	San Juan Basin Groundwater and Desalination Optimization Program
Water Resource Category	**Stormwater, Desalination, Recycled Water and Groundwater**
Federal ID #	**EIN 95-2650400**
Member Agency	**Municipal Water District of Orange County**
Address	**P.O. Box 20895**
City, State &Zip Code	**Fountain Valley, CA 92708**
Main Telephone	**(714) 963-3058**
Contact Name	**Mr. Karl Seckel**
Contact Telephone	**(714) 593-5024**
Contact E-mail Address	**kseckel@mwdoc.com**
Applicable Website Address	**MWDOC.com and sjbauthority.com**

I am informed and believe that the information contained in this proposal is true and that the supporting data is accurate and complete.

Very truly yours,

Mr. Karl W. Seckel, PE
Interim General Manager and District Engineer
Municipal Water District of Orange County

San Juan Basin Groundwater and Desalination Optimization Program Proposal
The Metropolitan Water District of Southern California
Foundational Actions Funding Program

Section B. Entities Participating in Proposal

Under the member agency, Municipal Water District of Orange County, (MWDOC) the following agencies are participating in the proposed project:

- MWDOC will provide coordination with MWD and assist with the grant administration. Additionally, MWDOC will provide coordination with groundwater modeling efforts within the San Juan Basin.
- San Juan Basin Authority (SJBA), a joint powers authority is the lead agency on the project. The San Juan Basin has a drainage area of over 111,000 acres and includes Oso Creek, Trabuco Creek, Horno Creek, Chiquita Canyon, Canada Gobernadora and Bell Canyon. The SJBA is designed to carry out and oversee water resource development of the San Juan Basin. The SJBA is comprised of the following member agencies:
    - Santa Margarita Water District (SMWD)
    - Moulton Miguel Water District (MNWD)
    - South Coast Water District (SCWD)
    - City of San Juan Capistrano (CSJC)
- SMWD, MNWD, SCWD and CSJC as member agencies will provide project oversight and direction through participation in the Technical Advisory Committee

In addition, the following entities will provide an assessment and input on regulatory and feasibility issues with the project:

- State of California Department of Public Health, Division of Drinking Water and Environmental Management District Engineer has discussed the project with the proponents and will be included on the technical advisory team to review the proposed project and groundwater recharge relative to of current and proposed regulations
- National Water Research Institute (NWRI) has been involved in similar projects in other areas of California and the southwest involving groundwater recharge of recycled water. In addition to efforts to review key regulatory issues concerning recycled water. NWRI and SJBA have the opportunity for development of a Blue Ribbon Panel to conduct a peer review of the project scope and findings.

Section C. Key Individuals

Program Managers	Relevant Experience
Daniel R. Ferons San Juan Basin Authority Administrator (949) 459-6590 c/o SMWD P.O. Box 7005 Mission Viejo, CA 92690 Fax: (949)459-6463 danf@smwd.com	Dan Ferons has over 28 years of engineering and management experience with water infrastructure and distribution in South Orange County, he is currently the General Manager of Santa Margarita Water District. His applicable experience includes San Juan Basin groundwater quality, collection and reuse of urban return flows, production and distribution of recycled water and management of the San Juan Basin Authority
West Curry San Juan Basin Authority Administrator (949) 487-4307 32400 Paseo Adelanto San Juan Capistrano, CA 92675 (949) 493-3955 wcurry@sanjuancapistrano.org	West Curry has over 30 years of operations and management experience in water systems. He is currently the Assistant Utilities Director for the City of San Juan Capistrano and his applicable experience includes operating a groundwater desalter plant, operating a conventional water treatment plant, maintaining and operating storm water conveyance systems, and management of the San Juan Basin Authority.
Management Team	
David Youngblood Director of Engineering South Coast Water Dist. (949) 499-4555 P.O. Box 30205 Laguna Niguel, CA 92607 Fax: (949) 499-0058 dyoungblood@scwd.org	David Youngblood has 18 years of experience in planning, design, and construction of water infrastructure in Orange County. He is currently the Director of Engineering at South Coast Water District and prior to that engagement Director of Engineering for Orange County Water District. His experience at these agencies along with spending a dozen years as a consulting engineer, allowed him to develop experience that includes ground water recharge, advanced water purification and indirect potable reuse.
Matt Collings Director of Engineering Moulton Niguel Water Dist. (949) 425-3552 mcollings@mnwd.com	Matt Collings has 15 years of experience in planning, design, and construction of water, wastewater, and recycled water infrastructure projects in Southern California. His experience includes developing and coordinating projects with regional benefits, including maximizing recycled water production and distribution, He is currently the Director of Engineering and Operations at the Moulton Niguel Water District.
Don Bunts, Chief Engineer Santa Margarita Water Dist. (949)459-6602 P.O. Box 7005 Mission Viejo, CA 92690 Fax: (949)459-6463 donb@smwd.com	Don Bunts has over 31 years in the planning, design and construction of water, wastewater and recycled water infrastructure projects in the southwest United States. This includes projects involving groundwater recharge through percolation and or direct injection, desalting projects using brackish or impaired groundwater, indirect potable reuse in San Diego and a large number of recycled water projects. Don is currently the Chief Engineer of the Santa Margarita Water District.
Regulatory Assessment	
Oliver Pacifico, District Engineer (714) 558-4410 CDPH Drinking Water 605 West Santa Ana Blvd, Room 325 Santa Ana, Ca 92701 Oliver.Pacifico@cdph.ca.gov	Mr. Pacifico is the District Engineer for the California Department of Public Health Division of Drinking Water and Environmental Management for the San Juan Basin and its member agencies. He will be consulted concerning the technical element for recharge and potable use, with particular emphasis on recycled water recharge
Jeff Mosher, Executive Director NWRI (714) 378-3278 18700 Ward Street P.O. Box 8096 Fountain Valley, CA 92728-8096 Fax: (714) 378-3375 jmosher@nwri-usa.org	Mr. Mosher is responsible for advancing NWRI's mission of creating new sources of water through research and technology and to protecting the freshwater and marine environments. As Executive Director, Mr. Mosher manages NWRI's research program, as well as identifying funding opportunities and research partners, and communicates the results of research to the water community and public. Mr. Mosher will provide assistance to develop a Blue Ribbon Panel to provide for peer review and assessment of the project.

Section D. Project Description
San Juan Basin Groundwater and Desalination Optimization Program

The project analyzes options for sustainable, long-term use of an impaired watershed that is typical to Southern California. Without adaptive management and expanded recharge of the watershed there is limited opportunity for production of potable water. The watershed has a stream morphology that extends offshore and currently the aquifer is underutilized. The proposed project is an innovative approach not generally used on a small basin, it takes the tools that have historically been applied to larger basins and incorporates them with the goal of producing a new sustainable water supply

Proposal Description

Many small groundwater basins in The Metropolitan Water District of Southern California (MWD) service area have the following attributes: limited yield, limited storage, natural and anthropogenic contamination sources, chronically impaired water, and overlying lands that are completely developed. The classic approach to utilizing these small basins is to treat the groundwater at its sustainable yield and rely on imported water to meet demands in excess of the underlying groundwater. The San Juan Basin in South Orange County is typical of these marginalized basins. In its current state, the San Juan Basin: can sustain on average about 9,300 acre-ft/yr of production, which will range from about 7,700 to about 11,200 acre-ft/yr, limited by hydrology and water in storage; has a storage capacity of about 40,000 acre-ft and currently[1] has about 27,000 acre-ft in storage; has impaired groundwater with a TDS concentration of about 2,200 mg/L; has both natural and anthropogenic degradation sources; and very high concentrations of iron and manganese. The near term production goal is about 11,400 acre-ft/yr, and thus the Basin, under its current management scheme, is projected to chronically fail to meet the production needs of the local agencies. .

The 2013 San Juan Basin Groundwater and Facilities Master Plan (SJBGFMP) is being developed in a stakeholder process to meet the water management goals of the SJBA and other stakeholders. **The 2013 SJBGFMP proposes a novel and unprecedented approach to aggressively manage the San Juan Creek Basin that will result in a sustainable increase in Basin production to over 20,000 acre-ft/yr – an increase of over 100 percent**. This is proposed to be accomplished by: the construction and operation of a seawater extraction barrier near the coast where San Juan Creek discharges into the Pacific Ocean; new stormwater recharge in and possibly adjacent to San Juan Creek and the Arroyo Trabuco; seasonal recharge of tertiary-treated recycled water; and managed groundwater production and treatment. The expanded yield developed from the 2013 SJBGFMP will be used by the local water agencies to reduce their demand on imported water and to improve local reliability. The program elements of the 2013 SJBGFMP and the process under which they were developed can be exported to any of the small impaired groundwater basins in the Metropolitan service area. The program elements of the 2013 SJBGFMP and the proposed scope of work for this proposal are described below.

[1] Based on groundwater levels in spring 2013.

Proposed Seawater Extraction Barrier. The 2013 SJBGFMP includes a seawater extraction barrier that will prevent seawater intrusion and provide up to 4,000 acre-ft/yr of potable water. The extraction wells will be located between the coast and Stonehill Drive with a treatment plant possibly being co-located at the existing SCWD groundwater treatment plant. The current estimated cost to produce water from the extraction barrier project is about $1,330 per acre-ft. The scope of work proposed herein is to conduct groundwater modeling studies, utilizing a recently (2013) calibrated model[2] of the coastal zone of the San Juan Basin, to investigate extraction barrier well locations, sustainable production rates, and projected salinity concentrations. The analysis will apply to similar stream morphology that extends offshore and currently may be underutilized. An updated facilities and operating plan will be prepared along with updated cost estimates.

Increase Stormwater Recharge. The 2013 SJBGFMP includes in-stream stormwater recharge using either "T" and "L" levees, as utilized by the Orange County Water District (OCWD); rubber dams for in-stream recharge; and rubber dams for in-stream recharge and diversion to off-stream recharge facilities. The increase in recharge anticipated by the "T" and "L" levees alternative could range from 500 to 2,000 acre-ft/yr and for the rubber dam alternative could range from 1,000 to 4,000 acre-ft/yr. Under either in-stream recharge alternative, the cost to recharge stormwater will range from $200 per acre-ft to $800 per acre-ft. San Juan Creek and the Arroyo Trabuco have been listed as habitat for Steelhead Trout and the stream bottom may have other habitat values. The scope of work proposed herein is to conduct a hydraulic investigation to refine the "T" and "L" levees alternative, develop hydraulic and fish passage requirements for both alternatives, and refine the stormwater recharge estimates for all three alternatives. Groundwater modeling, using a recently developed groundwater model,[3] will be done to assess the groundwater basin response, mounding, and the need to revise groundwater production plans to accommodate new recharge. The data developed may be utilized in other streambed applications in urbanized areas. An updated facilities and operating plan will be prepared along with updated cost estimates.

Recycled Water Recharge. The 2013 SJBGFMP includes in-stream recycled water recharge using seasonally constructed ponds along San Juan Creek or rubber dams. The recycled water recharge anticipated by the SJBGFMP could ramp up from an initial 2,000 acre-ft/yr and eventually reach about 10,000 acre-ft/yr. Under either recharge alternative, the cost to recharge recycled water will range from $50 to $100 per acre-ft, not including recycled water production facilities. The rubber dam alternative used for stormwater recharge could also be utilized for recycled water recharge if constructed. This program element will have the same habitat challenges as the stormwater recharge program element. The scope of work proposed herein is to conduct a hydraulic investigation to refine the layout and operation of the temporary seasonal recharge ponds, develop hydraulic and fish passage requirements for both alternatives, and refine the recycled water recharge estimates for both alternatives. Groundwater modeling, using a

[2] A variable-density model developed by the MWDOC for the investigation of the South Orange County Ocean Desalter (SOCOD) project.
[3] A regional groundwater flow model developed by the MWDOC for the investigation of the South Orange County Ocean Desalter (SOCOD) project.

recently developed groundwater model,[4] will be completed to assess the groundwater basin response, mounding, and the need to revise groundwater production plans to accommodate the new recharge. Recycled water distribution system retrofits for irrigation purposes in urban areas of Southern California may be difficult and costly, the proposed recharge analysis may be applicable for beneficial indirect use analysis. An updated facilities and operating plan for recycled water will be prepared along with revised cost estimates.

Adaptive Production Management. The implementation of the extraction barrier and recharge program elements will change the location, magnitude, and timing of recharge in the basin. Existing groundwater production and treatment facilities will have to be modified to maximize the new yield, to ensure there is groundwater storage capacity to accept the recharge, to minimize potential for liquefaction, continue to protect the health of the public and to ensure maximum beneficial use of the produced water. This program element contains the efforts to develop practical spatial and temporal groundwater production plans based on storage conditions that are related to production, natural hydrologic variability, artificial recharge, and prevailing DPH[5] and Basin Plan requirements. There are also overlying producers that may have to convert to recycled and or municipal water to enable the implementation of the 2013 SJBGFMP. The scope of work for this program element includes: groundwater modeling to develop spatial and temporal groundwater production plans tied to groundwater storage, underground residence time for recycled water prior to production, and recycled water contribution; expected groundwater treatment requirements to produce potable water; and the water type and cost to replace the groundwater currently used by overlying producers. A reconnaissance-level Title 22 engineering assessment will be prepared pursuant to the existing draft Title 22 regulations for a groundwater recycled reuse project.[6] An updated facilities and operating plan will be prepared along with updated cost estimates. The updated facilities and operation plan will include the locations of new wells, raw water conveyance, treatment facilities, product water conveyance, and the phasing of these facilities as recycled water recharge is ramped up from 2,000 to 10,000 acre-ft/yr. The results of the work can be transferred to other similar situated basins in Southern California.

Section E Work Plan/Schedule
Task 1 Project Management

Task 1.1 Project Management and Administration. The work completed in this task includes project management (resourcing, scheduling, cost controls, etc.), timely invoicing, internal technical reviews, and coordination with MWD. The work products include progress reports and invoices. Success will be measured by timely progress reporting, financial management and achieving schedule milestones. There are no potential issues or challenges.

Task 1.2 Progress Reports to the SJBA Board and Stakeholder Process Meetings. Quarterly oral presentations will be conducted at the SJBA Board meetings to brief the SJBA Board, other

[4] A regional groundwater flow model developed by the MWDOC for the investigation of the South Orange County Ocean Desalter (SOCOD) project coupled with MT3D to estimate the recycled water contribution and underground residence time.
[5] http://www.cdph.ca.gov/healthinfo/environhealth/water/pages/waterrecycling.aspx
[6] Ibid

stakeholders and the public on the progress of the work. The objective of the oral presentations is to keep the SJBA Board and stakeholders current on the ongoing work and to receive input and direction from the SJBA Board. There will be detailed technical public workshops included in Tasks 2, 3 and 5 below.

- The work products will be presentations, handouts, and presentation summaries, all of which will be posted on the SJBA website.
- Success will be measured by providing advanced notice of the presentations, having the presentations, recording participants' comments, timely posting of presentation materials on the SJBA website and the incorporation of participant comments into the program elements.
- There are no potential issues or challenges.

Task 1.3 Technical Advisory Committee Meetings. The objective of this task is to meet and review the program elements as they evolve with the SJBA technical advisory committee (TAC).

- The work products will include meeting handouts (preliminary facilities plans, operation plans, cost opinions, institutional and environmental challenges and solutions, etc.), the meeting handouts and meeting summaries will be posted on the SJBA website.
- Success will be measured by providing advanced notice of the meetings, having the meetings, recording TAC member comments, timely posting of meeting summaries on the SJBA website and the incorporation of TAC comments into the program elements.
- There are no potential issues or challenges.

Task 2 Develop Preliminary Alternatives for Each Program Element

Task 2.1 Develop Design Criteria, Cost Estimating Methodology and Identify Potential Project Participants and Points of Delivery. The objectives of this task are: to identify and obtain agreement on facility design and operating criteria and assumptions before engineering work begins; to obtain agreement on the cost and financial assumptions to be used in the preparation of cost opinions; and to identify potential purchasers of the water and where they would take delivery and the capacity limitations at the points of delivery. The engineering team will prepare a draft technical memorandum (TM) and submit it to the TAC that contains this information as a straw man proposal. The TAC will review, provide direction to the engineering team and the TM will be finalized. The TM will subsequently be incorporated into an appendix to the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.
- Success will be measured by the timely completion of the draft and final TMs and the acceptance of the final TM by the TAC.
- There are no potential issues or challenges in this task. In fact, a great deal of relevant information is available specific to the San Juan Basin area from recent investigations, and the design and construction of similar facilities. The SJBA TAC and other stakeholders have been participating in a collaborative way in the development of the 2013 SJBGFMP and the Doheny Desalter investigations and thus they are well versed on the engineering, environmental and economic issues related to program elements considered for this project.

Task 2.2 Develop Preliminary Extraction Barrier Alternatives. The objective of this task to develop up to three extraction barrier alternatives that will prevent seawater intrusion and increase local supplies by intercepting and treating seawater induced landward by the extraction barrier wells. These alternatives will be analyzed in detail in Task 3. The engineering team will develop operating plans, well field layouts, raw water conveyance and treatment facilities, brine disposal facilities and product water conveyance facilities. The engineering team will rely on the recent extensive hydrogeologic work done for the Doheny Desalter investigations and the SJBA groundwater-monitoring program. The engineering team will prepare a draft TM that describes the three extraction barrier alternatives and submit it to the TAC. The TAC will review, provide direction to the engineering team and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.
- Success will be measured by the timely completion of the draft and final TMs and the acceptance of the final TM by the TAC.
- There are potential issues and challenges in this task, specifically: conflicting land uses at well sites, raw water conveyance and treatment facilities; Steelhead trout and other habitat issues; and ocean brine disposal issues. The engineering team will identify these issues and try to avoid the conflicts through thoughtful design and suggest mitigation approaches when conflicts and constraints cannot be avoided.

Task 2.3 Develop Preliminary Storm Water Recharge Alternatives. The objective of this task is to identify the range of storm water recharge alternatives overlying the San Juan Basin and to formulate up to six recharge alternatives for detailed analysis in Task 3. The 2013 SJBGFMP considered two in-stream recharge alternatives involving "T" and "L" levees as used by the OCWD on the Santa Ana River, and a series of rubber dams. The engineering team will consider these in-stream alternatives and as well as off-stream recharge in new recharge basins and infiltration galleries located near San Juan Creek and Arroyo Trabuco. The engineering team will develop facility layouts and operating schemes for each alternative. The engineering team will rely on the 2013 SJBGFMP and recent extensive hydrology modeling work done for the Doheny Desalter investigations. The engineering team will prepare a draft TM and submit it to the TAC that describes the six storm water recharge alternatives. The TAC will review, provide direction to the engineering team and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include a draft and final TMs, the final TM being posted on the SJBA website.
- Success will be measured by the timely completion of the draft and final TMs and the acceptance of the final TM by the TAC.
- There are potential issues and challenges in this task, specifically: the SJBA will be required to obtain a diversion permit from the SWRCB; there may be land use conflicts for recharge sites adjacent to the major storm channels; infiltration galleries may prove to be unfeasible; acquisition costs for recharge sites may be prohibitively high; and the in-stream recharge projects may impact Steelhead trout and other habitat. The engineering team will characterize these issues and try to avoid habitat impacts through thoughtful design and suggest mitigation approaches when conflicts and constraints cannot be avoided.

Task 2.4 Develop Preliminary Recycled Water Recharge Alternatives. The objective of this task is to identify the range of recycled water recharge alternatives overlying the San Juan Basin and to formulate up to six recharge alternatives for detailed analysis in Task 3. The 2013 SJBGFMP considered two in-stream recharge alternatives involving a series of seasonal temporary cascading ponds in San Juan Creek and Arroyo Trabuco, as well as a series of rubber dams on the same creeks. The engineering team will consider these in-stream alternatives and off-stream recharge including recharge basins, injection wells and infiltration galleries located near San Juan Creek and Arroyo Trabuco. The engineering team will develop facility layouts and operating schemes for each alternative. The engineering team will rely on the 2013 SJBGFMP, SJBA groundwater-monitoring program and planning information provided by the SOCWA to formulate these alternatives. The engineering team will prepare a draft TM and submit it to the TAC that describes the six storm water recharge alternatives. The TAC will review, provide direction to the engineering team and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include a draft and final TMs, the final TM being posted on the SJBA website.
- Success will be measured by the timely completion of the draft and final TMs and the acceptance of the final TM by the TAC.
- There are potential issues and challenges in this task, specifically: the SJBA will be required to obtain a live stream discharge permit from the RWQCB for in-stream recharge projects; there are DPH requirements regarding the GRRP projects that will need to be met; there may be land use conflicts for recharge sites adjacent to San Juan Creek and Arroyo Trabuco; acquisition costs for new recharge sites may be prohibitively high; and the in-stream recharge projects may impact Steelhead trout and other habitat. The engineering team will characterize these issues and try to avoid habitat impacts through thoughtful design and suggest mitigation approaches when conflicts and constraints cannot be avoided.

Task 2.5 Develop Preliminary Adaptive Production Management Alternatives. The objectives of this task are: to identify the range of adaptive production management alternatives that include existing and new wells and expanded groundwater treatment to enable groundwater production to be increased to exploit the existing basin as well as possible storm and recycled water recharged as part of this project; and to determine how production should be managed during critical dry periods. The engineering team will develop up to six alternatives involving: selected amounts of new storm and recycled water recharge; determination of the approximate number of new wells and treatment capacity required to increase groundwater production to recover the new recharge; to maximize groundwater production during dry periods and comply with the then current draft DPH GRRP regulations; and the location of existing wells that may need to be abandoned. The engineering team will develop facility layouts and operating schemes for each alternative. The engineering team will rely on the 2013 SJBGFMP, SJBA groundwater-monitoring program, hydrogeologic and planning information from the proposed Doheny Desalter project and planning information provided by the SOCWA to formulate these alternatives. The engineering team will prepare a draft TM and submit it to the TAC that describes the six adaptive production management alternatives. The TAC will review, provide direction to the engineering team and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.
- Success will be measured by the timely completion of the draft and final TMs and the acceptance of the final TM by the TAC.
- There are potential issues and challenges in this task, specifically: conflicting land uses at well sites, supplemental water supply for affected existing water users, raw water conveyance and treatment facilities, product water conveyance; and compliance with draft DPH GRRP regulations. The engineering team will characterize these issues and try to avoid the conflicts through thoughtful design and suggest mitigation approaches when conflicts and constraints cannot be avoided.

Task 2.6 Develop a Presentation Summarizing Preliminary Program Elements. The objective of this task is to prepare a comprehensive presentation with notes to document the history of the project and the results of Task 2-1 through 2-5. This presentation will be used in Task 2.7 (below) and will be made available to all stakeholders for their subsequent review and use.

- The work product will be a presentation file that will be posted to the SJBA website.
- Success will be measured by a completed presentation file when it is posted to the SJBA website.
- There are no potential issues or challenges.

Task 2.7 Review Program Elements with SJBA Board, Other Stakeholders, DPH, SWRCB and the RWQCB. The objective of this task is to conduct one or more workshops with the above-mentioned parties to summarize Task 2 results, answer questions, and to receive comments and suggestions.

- The work products will be the technical presentations, handouts, workshop summaries all of which will be posted on the SJBA website.
- Success will be measured by providing advanced notice of the Task 2 workshop(s), having the workshop(s), recording workshop participants' comments, timely posting of workshop summaries on the SJBA website and the incorporation of workshop participant comments into the program elements.
- There are no potential issues or challenges.

Task 3 Evaluate Feasibility of All Program Elements

Task 3.1 Evaluate Groundwater Extraction Barrier Program Element Alternatives. The objective of this task is to evaluate the preliminary extraction barrier alternatives, refine them as necessary, rank them and recommend an alternative. The engineering team evaluation will include: modifying and updating a recently calibrated variable-density groundwater model and applying that model for each of the preliminary alternatives to determine extraction barrier effectiveness, sustainable yield, and expected salinity. These model results will be used to refine the operating and facilities plan including: the phasing of groundwater treatment capacity; and the preparation of a construction cost opinion and unit cost of water produced. The engineering team will prepare a preliminary recommendation for the extraction barrier alternative. The engineering team will describe the factors that contribute to uncertainty in extraction barrier performance, the investigations required to reduce the uncertainty to an acceptable level, and the

cost of these investigations. The engineering team will prepare a draft TM and submit it to the TAC that describes the evaluation of the extraction barrier alternatives, the recommended alternative and the basis of the recommendation. The TAC will review, provide direction to the engineering team and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.
- Success will be measured by the timely completion of the draft and final TMs and the acceptance of the final TM by the TAC.
- There are potential issues and challenges in this task. These issues and challenges were identified in Task 2.2 above.

Task 3.2 Evaluate Storm and Recycled Water Recharge Program Element Alternatives. The objective of this task is to evaluate the preliminary storm and recycled water recharge alternatives, refine them as necessary, rank them and recommend an alternative. The evaluation of storm and recycled water recharge alternatives were combined herein because many of the same types of proposed facilities are being considered for both types of water. The engineering team evaluation will include: modifying and updating a recently calibrated, fine-grain regional groundwater model and applying that model for each of the preliminary recharge alternatives to determine: recharge capacity for each type of water and combinations of water types; mounding limitations; mitigation measures that can be incorporated into the project to maximize recharge; refining the facility and operating plans for each alternative based on model results; and preparing a construction cost opinion and unit cost of water recharged. The engineering team will prepare preliminary recommendations for the top three recharge alternatives, the recommended alternative and the basis for the recommendation. The engineering team will describe the factors that contribute to uncertainty in storm and recycled water recharge performance, the investigations required to reduce the uncertainty to an acceptable level, and the cost of these investigations. The engineering team will prepare a draft TM and submit it to the TAC that describes the three extraction barrier alternatives. The TAC will review, provide direction to the engineering team and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.
- Success will be measured by the timely completion of the draft and final TMs and the acceptance of the final TM by the TAC.
- There are potential issues and challenges in this task. These issues and challenges were identified in Tasks 2.2 and 2.3 above.

Task 3.3 Evaluate and Refine Adaptive Management Alternatives. The objective of this task is to evaluate the preliminary management alternatives for production of raw water, refine them as necessary based on work in Task 3-2, rank them and recommend an alternative. The engineering team evaluation will include: development and application of a new MT3D (solute transport) model to be used in conjunction with the existing fine-grain regional flow model to assess underground residence time for recycled water for each existing and proposed well, and to estimate recycled water contribution for each existing and proposed well; refining the facility and operating plans for each alternative based on model results; refining recycled water and

groundwater treatment plans and cost; conducting a salt and nutrient loading assessment consistent with the Basin Plan and SWRCB policy; and, preparing a construction cost opinion and unit cost of water produced. The engineering team will prepare recommendations for the top three adaptive management alternatives, including a recommended alternative and the basis for the recommendation. The engineering team will describe the factors that contribute to uncertainty in adaptive production management performance, the investigations required to reduce the uncertainty to an acceptable level, and the cost of these investigations. The engineering team will prepare a draft TM and submit it to the TAC that describes the top 3 adaptive production management alternatives, the recommended alternative and the basis for the recommendation. The TAC will review, provide direction to the engineering team and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.
- Success will be measured by the timely completion of the draft and final TMs and the acceptance of the final TM by the TAC.
- There are potential issues and challenges in this task. These issues and challenges were identified in Task 2.4 above.

Task 3.4 Develop a Presentation Summarizing Preliminary Program Elements. The objective of this task is to prepare a comprehensive presentation with notes to document the history of the project and the results of Task 3-1 through 3-3. This presentation will be used at project workshop(s) described in Task 3-5 (below) and will be made available to all stakeholders for their subsequent review and use.

- The work product will be a presentation file that will be posted to the SJBA website.
- Success will be measured by a completed presentation file when it is posted to the SJBA website.
- There are no potential issues or challenges.

Task 3.5 Review Task 3 Results with SJBA Board, Other Stakeholders, DPH, SWRCB and the RWQCB. The objective of this task is to conduct one or more workshops with the above-mentioned parties to summarize the results of Task 3, answer questions, and to receive comments and suggestions.

- The work products will be the technical presentations, handouts, workshop summaries all of which will be posted on the SJBA website.
- Success will be measured by providing advanced notice of the Task 3 workshop(s), having the workshop(s), recording workshop participants' comments, timely posting of workshop summaries on the SJBA website and the incorporation of workshop participant comments into the program elements.
- There are no potential issues or challenges.

Task 4 Develop Implementation Plan

Task 4.1 Identify Potential Habitat and Environmental Opportunities for the Project Alternatives. The objectives of this task are to identify the types of environmental impacts and to determine elements to include in the planning effort to move the project forward, including development of preliminary cost estimates.. The results will be incorporated into an appendix in the project report prepared in Task 5.

- The work products will be a study which will be posted on the SJBA website.
- Success will be measured by the completion of the study and posting to the SJBA website.
- There may be potential issues or challenges based on any identified impacts and determination on potential mitigation efforts.

Task 4.2 Develop Phasing and Monitoring Plans. The objective of this task is develop a plan to implement the project in phases that will allow the project participants to move forward with some of the project elements immediately and the remainder of the program elements in an incremental manner. For example the extraction barrier program element could be implemented independently of the recharge and adaptive management program for production of raw water elements, can be implemented more rapidly than the other program elements, and will likely be easier to implement. The recharge and adaptive production management program elements will still have some technical uncertainty and the regulators, specifically the DPH, will likely require that the recycled water recharge be slowly ramped up and monitoring be done to demonstrate compliance to the then current GRRP regulations. The engineering team will develop a phasing and monitoring plan based: on the work completed in Task 3; input from the regulatory community; funding availability; cost of alternative water supplies; the initial study findings from Task 4.1; and other considerations. The engineering team will prepare a draft TM and submit it to the TAC that describes the proposed phasing and monitoring plans. The TAC will review, provide direction to the engineering team and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.
- Success will be measured by the timely completion of the draft and final TMs and the acceptance of the final TM by the TAC.
- There are no potential issues and challenges in this task.

Task 4.3 Revise Cost Opinions. The objective of this task is to revise the cost opinions and unit water cost projections based on the results of Tasks 3.5, 4.1 and 4.2. The engineering team will prepare a draft TM and submit it to the TAC that describes the revised cost opinions. The TAC will review, provide direction to the engineering team and the TM will be finalized. The TM will subsequently be incorporated into the project report in Task 5.

- The work products will include draft and final TMs, the final TM being posted on the SJBA website.
- Success will be measured by the timely completion of the draft and final TMs and the acceptance of the final TM by the TAC.
- There are no potential issues and challenges in this task.

Task 5 Prepare Project Report

The objective of this task is to prepare a formal project report to document the technical work and the stakeholder process. The engineering team will prepare the project report using the following process: prepare an administrative draft report for review by the SJBA TAC; preparation and distribution of the public review draft; public workshop to summarize the report findings, answer questions, receive comments and suggestions; and finalize and distribute final report.

- The work products will include a detailed report outline produced at the conclusion of Task 2, an administrative draft report, public review draft report and final report which will be posted on the SJBA website.
- Success will be measured by the timely completion of the reports.
- There are no potential issues and challenges in this task.

The schedule associated to the work plan described above in included in the following table. The work plan and schedule have been developed in accordance with the Anticipated Process Schedule that was included in the RFP. The anticipated completion date for this project is the end of 2015 which provides sufficient time to submit the Final Report by the 2/01/16 deadline. The SJBA has developed an internal work schedule for this project which ensures the ability to execute an agreement with MWD and initiating work before December 2013.

Section F Costs

Using the work plan provided in Section E above, costs have been developed for each of the identified tasks. These costs are provided in the table immediately following this section. It is anticipated that these are the total costs for each of the tasks and that these costs would be split evenly between the SJBA and MWD to achieve the proposed 50% matching funds requirement. The costs identified were developed using SJBA member agency staff and outside consultants familiar with the work effort.

The SJBA has previously approved the funding of this project and these funds are included in the fiscal year 2013/2014 budget. None of the costs identified include any “in-kind” services as the costs directly associated to each of the SJBA member agencies activities will be borne by that agency.

San Juan Basin Groundwater and Desalination Optimization Program
Proposed Cost and Schedule

Task	Task Description	Cost			2014 Quarter				2015 Quarter			
					1	2	3	4	1	2	3	3
Task 1 Project Management		**SJBA**	**MDWSC**	**TOTAL**								
1.1	Project Management and Administration	$19,000	$19,000	$38,000	■	■	■	■	■	■	■	■
1.2	Progress Reports to the SJBA Board and Stakeholder Process Meetings	$5,000	$5,000	$10,000		■		■		■		■
1.3	Technical Advisory Committee Meetings	$10,000	$10,000	$20,000	■	■	■	■	■	■	■	■
Task 2 Develop Preliminary Alts. for Each Program Element												
2.1	Develop Design Criteria, Cost Estimating Methodology and Identify Potential Project Participants and Points of Delivery	$2,000	$2,000	$4,000	■							
2.2	Develop Preliminary Extraction Barrier Alts.	$5,000	$5,000	$10,000		■						
2.3	Develop Preliminary Storm Water Recharge Alts.	$3,000	$3,000	$6,000		■						
2.4	Develop Preliminary Recycled Water Recharge Alts.	$3,000	$3,000	$6,000		■						
2.5	Develop Preliminary Adaptive Production Management Alts.	$10,500	$10,500	$21,000		■						
2.6	Develop Presentation Summarizing Preliminary Program Elements	$4,350	$4,350	$8,700			■					
2.7	Review Program Elements with SJBA Board, Other Stakeholders, DPH, SWRCB and the RWQCB	$4,350	$4,350	$8,700			■					
Task 3 Evaluate Feasibility of All Program Elements												
3.1	Evaluate Groundwater Extraction Barrier Alts.	$20,000	$20,000	$40,000				■				
3.2	Evaluate Storm and Recycled Water Recharge Program Element Alts.	$22,000	$22,000	$44,000				■				
3.3	Evaluate and Refine Adaptive Production Management Alts.	$30,500	$30,500	$61,000				■	■			
3.4	Develop PowerPoint Presentation Summarizing Preliminary Program Elements	$4,350	$4,350	$8,700				■				
3.5	Review Program Elements with SJBA Board, Other Stakeholders, DPH, SWRCB and the RWQCB	$4,350	$4,350	$8,700					■	■		
Task 4 Develop Implementation Plan												
4.1	Prepare Study on Habitat Opportunities	$13,500	$13,500	$27,000							■	
4.2	Develop Phasing and Monitoring Plans	$6,000	$6,000	$12,000							■	
4.3	Revise Cost Opinions	$4,000	$4,000	$8,000							■	
Task 5 Prepare Project Report												
5.1	Prepare Admin Draft	$17,500	$17,500	$35,000			■			■	■	
5.2	Review Admin Draft with SJBA TAC	$600	$600	$1,200							■	
5.3	Prepare Draft Technical Report for Public Review and Distribute	$5,000	$5,000	$10,000							■	
5.4	Review Draft Technical Report with DPH and Regional Board Staffs	$1,500	$1,500	$3,000								■
5.5	Finalize Technical Report	$4,500	$4,500	$9,000								■
	Total	$200,000	$200,000	$400,000								

Section G. Criteria Three – Reduces Barriers to Future Production
Reduces Barriers to Future Production

Underground flowing stream

This study would examine the nuances of optimizing groundwater production from an aquifer that acts and is designated as an underground flowing stream. Some of the items that will be considered include:

- The velocity that groundwater travels through this type of aquifer and the impact on detention time
- The ability of this type of aquifer to absorb additional recharge
- Identification of geological constraints to increasing the recharge
- Physical constraints that may exist for maximizing the capture of the "stream" flow
- Development of rule-curve approach to determine how to schedule recycled water recharge and production and maximize yield

Impaired groundwater basin

There are natural and anthropogenic sources of degradation in the San Juan Basin (as is true in most small groundwater basins in Southern California) that contribute to the impaired status of the basin. It is assumed that by the recharging good quality water into an impaired aquifer, the water quality subsequently extracted from the aquifer will improve. Additional modeling of the aquifer with multiple infiltration points will assist in confirming this assumption as it applies to this type of basin. If the groundwater quality is improved, the cost of treatment will decrease which would make the extraction of water from an impaired groundwater basin more feasible.

Water recharge

There are a number of items associated with the recharge of storm and recycled water. Performing further investigation of the potential to increase the yield of the basin through either one, or both, of these possible water sources will assist in determining the maximum feasible volume of recharge. Some of the components that will be evaluated as a portion of this study specifically have to do with the method of how the water will be physically recharged into the basin. Another item to be investigated is the potential of recharge using tertiary treated effluent combined with high levels of treatment on the extraction side of the basin enhancement. Some of the possible infiltration approaches include:

- T Levees for in-stream storm water recharge
- In and off stream horizontal infiltration galleries
    - Gravity and/or pumped
- In and off stream vertical infiltration galleries
    - Gravity and/or pumped
- Live stream discharge of recycled water for in stream infiltration
- Rubber dam for in-stream recharge and/or diversion to off-stream basins
- Pumping of storm water to off-stream recharge and/or storage facilities
- Optimal location of recharge within the basin

Regulatory issues

A number of regulatory issues will be addressed during this initial look at the feasibility of implementing this and/or similar projects. These include

- Level of treatment for storm water recharge prior to placing into the basin
- Level of treatment required for the recharge and recovery of recycled water
- Level of treatment credit for Soil Aquifer Treatment (SAT)
- Underground detention time required for a particular level of infiltration and extraction
- Levels of redundancy required for the infiltration and extraction treatment schemes infiltration

Intrusion barrier

This component will assist in determining if artificially creating a groundwater trough at or near the coast line will succeed in providing protection for the inland groundwater basin. If this approach is successful; it would eliminate the need for pumped injection barrier wells and the costs associated with providing that type of protection. This would also be useful in eliminating the introduction of advanced treated recycle water to generate a water mound to protect the ground water basin. Due to the relatively small size, it may not be feasible to locate this injection well in the Dana Point area as the resulting basin detention time may not be adequate or may exceed the allowable blend of recycled water to other recharge sources.

Section H. Criteria Four – Regional Benefit /Applicability

As Southern California has developed, smaller groundwater basins and sub-basins have largely been ignored. The lower costs and availability of imported water have made these problematic basins less than attractive to water agencies. In recent years however, there has been a resurgence in interest in smaller basins with the advent of new treatment technology and the desire to enhance local water supply reliability.

Diverse regions such as Port Hueneme, Los Alamitos, San Juan Capistrano, San Clemente, Carlsbad and San Diego along the coast and inland in areas such as Cucamonga, Riverside, Lake Elsinore and Temescal Basins have groundwater that may be underutilized. The typical Southern California weather patterns of periodic intense storms have resulted in construction of significant infrastructure over the years that protect from flooding, but do not consider beneficial use of the stormwater. Likewise, many of the same basins have potential access to recycled water, but do not have the distribution ability resulting in wastewater not being recognized as a resource. Other basins may be impaired with high salinity or other chemical impairments requiring significant treatment or isolation from poor quality water.

The water supply agencies that overlie these basins have developed with a reliance on imported water. The Foundational Action Program is an opportunity for The Metropolitan Water District of Southern California to assist Member Agencies enhance the water supply reliability by providing support for technical studies to look at the potential resources available such as the conjunctive use of stormwater, recycled water and desalination in small basins with impaired

groundwater quality. The proposed project is an innovative approach not generally used in a small basin; it takes the tools that have historically been applied to larger basins and incorporates them with the goal of producing a new sustainable water supply. The project scope includes the evaluation of desalination, stormwater recharge, recycled water recharge and adaptive management of the groundwater.

The proposed project is an effort to enhance the production of potable water from the groundwater basin creating a local, reliable supply. The reliability is expanded by recharging from multiple sources and by providing protection through extraction. The proposed optimization techniques are individually or collectively transferable to other basins depending on the local conditions. The concepts, developed with regulatory oversight, can provide the basis for planning increased local water production throughout the region.

Attachments:

Support letter from San Juan Basin Authority
Support letter from Trabuco Canyon Water District

SAN JUAN BASIN AUTHORITY

26111 Antonio Parkway • Rancho Santa Margarita, CA 92688 (949) 459-6400 FAX (949) 459-6463

July 2, 2013

President Joan C. Finnegan
Municipal Water District of Orange County
P.O. Box 20895
Fountain Valley, CA 92708

Subject: Support for the *San Juan Basin Groundwater and Desalination Optimization Program* Proposal in response to RFP for Foundational Actions Funding Program

Dear President Finnegan:

The San Juan Basin Authority at its June 11, 2013 authorized requesting Municipal Water District of Orange County to submit a proposal for $200,000 to the Metropolitan Water District of Southern California Foundational Actions Funding Program. The Authority has developed a project in South Orange County to analyze options for sustainable, long-term use of an impaired watershed that is typical to Southern California. The work program includes the following foundational action elements:

- Stormwater: hydraulic investigation and modeling to assess the groundwater basin response, mounding, and the need to revise groundwater production plans to accommodate new in-stream and off-stream recharge. The data developed may be utilized in other streambed applications in urbanized areas.
- Desalination: conduct groundwater modeling studies, utilizing a recently (2013) calibrated model of the coastal zone of the San Juan Basin, to investigate extraction barrier well locations, sustainable production rates, and projected salinity concentrations. The analysis will apply to similar stream morphology that extends offshore and currently may be underutilized.
- Recycled Water: hydraulic investigation to refine the layout and operation of temporary seasonal recharge ponds and infiltration galleries, develop hydraulic and fish passage requirements for both alternatives, and refine the recycled water recharge estimates for both alternatives. The proposed recharge analysis may be applicable for indirect potable use analysis.
- Groundwater: The implementation of extraction barrier and recharge program elements will change the location, magnitude, and timing of recharge in the basin. Existing groundwater production and treatment facilities will have to be modified to maximize the new yield, to ensure there is groundwater storage capacity to accept the recharge, to minimize potential for liquefaction, and to ensure beneficial use of the produced water.

The Authority has included $200,000 in its Fiscal Year 2013-2014 Annual Budget to fund the project matching requirement. The scope of work will result in development of technical data to further local water reliability to lessen the regions dependence on imported water up to 20,000 acre feet per year if fully implemented.

We appreciate MWDOC's support of the proposal; by taking a leadership role in innovative efforts such as this, MWDOC will help ensure the region's sustainable water reliability.

Please feel free to contact Dan Ferons at (949) 459-6590 or danf@smwd.com if you have any questions or comments.

Very Truly Yours,

SAN JUAN BASIN AUTHORITY

Larry B. McKenney
Chairman

STAFF MEMBERS

Hector Ruiz, General Manager
Michael Perea, District Secretary
Cindy Navaroli, District Treasurer
Robert Anslow, District Legal Counsel

TRABUCO CANYON WATER DISTRICT

BOARD OF DIRECTORS

Edward Mandich, President
James Haselton, Vice President
Michael Safranski, Director
Glenn Acosta, Director
Stephen Dopudja, Director

July 2, 2013

President Joan C. Finnegan
Municipal Water District of Orange County
P.O. Box 20895
Fountain Valley, CA 92708

Subject: Support for the *San Juan Basin Groundwater and Desalination Optimization Program* Proposal in response to RFP for Foundational Actions Funding Program

Dear President Finnegan:

The Trabuco Canyon Water District is very interested in the proposed San Juan Basin Groundwater and Desalination Optimization Program. The technical information and analysis may lead to development of similar projects within the upper San Juan Creek watershed. TCWD is responsible for both water and recycled water and it has groundwater basins that may be enhanced through adaptive management of both.

Southern California, and in particularly South Orange County, have developed with a reliance on imported water. The Foundational Action Program is an opportunity for the local regions to help enhance the water supply reliability by providing support for technical studies to look at the potential resources available such as stormwater, recycled water and desalination.

The proposed project is an innovative approach not generally used on a small basin; it takes the tools that have historically been applied to larger basins and incorporates them with the goal of producing a new sustainable water supply. We are very excited to follow the development of this project and determine its potential applicability to Dove, Tick and Trabuco Creek basins within the District.

We commend MWDOC for adopting the proposal and encourage its strong support at MWD. By taking a leadership role in innovative efforts such as this MWDOC will help ensure the region's sustainable water reliability.

TRABUCO CANYON WATER DISTRICT

Hector Ruiz
General Manager

City of San Clemente
Public Works Department

William E. Cameron, Acting Assistant City Manager/
Public Works Director/City Engineer
Phone: (949) 361-6120 Fax: (949) 361-8316
CameronW@San-Clemente.org

July 2, 2013

President Joan C. Finnegan
Municipal Water District of Orange County
P.O. Box 20895
Fountain Valley, CA 92708

Subject: Support for the *San Juan Basin Groundwater and Desalination Optimization Program* Proposal in response to RFP for Foundational Actions Funding Program

Dear President Finnegan:

The City of San Clemente is very interested in the proposed San Juan Basin Groundwater and Desalination Optimization Program. The technical information and analysis may lead to development of similar projects within the numerous sub-basins in the City limits. San Clemente is responsible for both stormwater and recycled water and it has groundwater basins that may be enhanced through adaptive management of both.

Southern California, and in particularly South Orange County, have developed with a reliance on imported water. The Foundational Action Program is an opportunity for the local regions to help enhance the water supply reliability by providing support for technical studies to look at the potential resources available such as stormwater, recycled water and desalination.

The proposed project is an innovative approach not generally used on a small basin; it takes the tools that have historically been applied to larger basins and incorporates them with the goal of producing a new sustainable water supply. We are very excited to follow the development of this project and determine its potential applicability to Cristianitos, San Mateo, Prima Desecha and Segundo Desecha basins within the City.

We commend MWDOC for adopting the proposal encourage its strong support at MWD. By taking a leadership role in innovative efforts such as this MWDOC will help ensure the region's sustainable water reliability.

Very Truly Yours
CITY OF SAN CLEMENTE

William E. Cameron
Acting Assistant City Manager/Director of Public Works/City Engineer