Moulton Niguel Water District

STAFF REPORT

TO: **Board of Directors** **MEETING DATE: August 17, 2015**

FROM: **Marc Serna, Director of Engineering and Operations**
Eva Plajzer, Assistant Director of Engineering

SUBJECT: **Recycled Water Master Plan Agreement Award**

DIVISION: **District-Wide**

SUMMARY:

Issue: The District issued a Request for Proposals to develop the District's Recycled Water Master Plan.

Recommendation: It is recommended that the Board of Directors approve the Engineering Services Agreement with AKM Consulting Engineers in the amount of $527,126; and authorize the General Manager to execute the agreement; and authorize the General Manager or designee to approve amendments up to 10% of the contract value.

Fiscal Impact: The Recycled Water Master Plan is budgeted in Fund 6, Water Efficiency Fund. Staff is also applying for a State Water Resources Control Board grant for a 50% matching grant up to $75,000. If approved, grant funds will offset a portion of the project cost.

BACKGROUND:

During the development of the Long Range Water Reliability Plan, the District identified recycled water as its highest priority alternative water supply source. Currently, almost a quarter of the District's overall water demand is met with recycled water. The District desires to optimize this water source through a comprehensive planning effort, the Recycled Water Master Plan.

The Recycled Water Master Plan requires the services of an engineering consultant experienced in recycled water, master planning, and capital improvement programs to prepare a complete assessment of the District's recycled water system and identify improvements to increase and optimize recycled water use. The services required will include hydraulic model development, assessment of existing and future recycled water users, assessment of recycled water supply and demand, evaluation of existing system hydraulics, diurnal and seasonal storage requirements, system deficiencies,

operational improvements, interagency connection and opportunities, and development of a capital improvement plan.

El Toro Water District (ETWD) is considering participating in the analysis to evaluate opportunities to interconnect portions of the District's recycled water system with the ETWD system, including participation in regional seasonal storage. A participation agreement would be forthcoming should ETWD elect to participate.

DISCUSSION:

Staff issued a Request for Proposals to seven firms for comprehensive engineering services for the Recycled Water Master Plan and on July 2, 2015, received two proposals. The proposals are summarized below.

Firm	Fee Estimate
AKM Consulting Engineers	$527,126
HDR Engineering, Inc	$546,400

The proposals were evaluated based on related projects experience, understanding of the project objectives and scope of work, project team experience and expertise, responsiveness to the request for proposal, unique qualifications, level of effort, and project fee. Both proposals were responsive and of high quality. Staff performed interviews with both firms on July 16, 2015. The firm that showed the best understanding of the project, had the most qualified team, and proposed the most comprehensive scope of work was AKM Consulting Engineers.

The Engineering Services Agreement has been reviewed and approved by District counsel. A copy of the agreement is attached for reference. The District's standard ten day termination clause is included as a provision in the agreement.

Attachment: Agreement for Engineering Services

AGREEMENT FOR ENGINEERING SERVICES BETWEEN
MOULTON NIGUEL WATER DISTRICT AND AKM CONSULTING ENGINEERS
MNWD PROJECT: RECYCLED WATER MASTER PLAN
CONTRACT NO. OM15-16.004

THIS AGREEMENT (the "Agreement") is dated as of _____, 2015, by and between AKM Consulting Engineers, hereinafter referred to as the "ENGINEER" and Moulton Niguel Water District hereinafter referred to as "MNWD," and provides for the furnishing of engineering services to MNWD by ENGINEER. MNWD and ENGINEER may sometimes be referred to in this Agreement individually as "party" and together as "parties."

RECITALS

ENGINEER proposes to provide services to MNWD in connection with the evaluation and analysis of the recycled water system for the **Recycled Water Master Plan** (the "Project"). The scope of work to be performed by ENGINEER under this Agreement is described in **Exhibit A** hereto, which is incorporated herein (the "Scope of Work").

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties agree as follows:

AGREEMENT

SECTION I - ENGINEERING SERVICES, AUTHORIZATION

Section 1.1 ENGINEER proposes to perform those services which are described in the Scope of Work. MNWD may request or ENGINEER may recommend, that ENGINEER perform work in addition to or different from that delineated in the original Scope of Work, or delete services from the Scope of Work. Upon MNWD's request for additional or changed work, ENGINEER shall provide a cost estimate and written description of the additional or changed work. Prior to any such addition, changes, or deletion to the Scope of Work, MNWD and ENGINEER shall negotiate an adjustment of the compensation and time for completion and shall execute a written addendum to this Agreement. Upon execution of each addendum, (i) the Scope of Work shall thereafter be as described in **Exhibit A**, respectively, as modified by the addendum and any previously executed addendum; and (ii) the time for completing the work shall be as set forth in the addendum. Following execution of any addendum, all terms and provisions of the Agreement, except as expressly modified by such addendum, shall remain in full force and effect. MNWD will not be required to pay for any additional or changed work rendered in advance of the execution of an addendum covering the additional or changed work.

Section 1.2 ENGINEER agrees to complete the services described in the Scope of Work no later than **December 31, 2016.** ENGINEER further agrees to complete all other work within the time periods set forth in the Scope of Work. Time is of the essence in this Agreement.

ENGINEER agrees to coordinate the work to ensure its timely completion and shall promptly notify MNWD of any anticipated delays or causes or casualties beyond ENGINEER'S control which may affect the work schedule. In the event the time for completing the Scope of Work is projected to be exceeded due to circumstances beyond the control of ENGINEER, ENGINEER shall have an additional amount of time to be agreed upon in writing between the parties pursuant to Section 1.1

and an executed addendum, in which to complete the work. ENGINEER shall not begin work on any services pursuant to this Agreement until receipt of MNWD'S written direction to proceed. Upon receipt of such notice, ENGINEER shall immediately commence the work described in **Exhibit A**.

Section 1.3 ENGINEER'S civil engineer, duly licensed in the State of California, who shall be the Principal in Charge of work, is Zeki Kayiran, P.E.

As part of the Project, ENGINEER intends to subcontract certain services for the Project. Separate subcontracts may be entered into between ENGINEER and the subconsultants listed in **Exhibit B** hereto. Any additional subconsultants ENGINEER proposes to use are subject to prior written approval by MNWD.

Without prior written approval of MNWD, ENGINEER will not make any changes in ENGINEER'S Principal in Charge, in consultants, in outside labor arrangements, or associations or joint ventures which are required to accomplish any part of the Scope of Work. ENGINEER is responsible to MNWD for the acts and omissions of its subcontractors as it is for persons directly employed by ENGINEER. Nothing contained in this Agreement creates any contractual relationship between any subconsultant/subcontractor and MNWD. ENGINEER shall not allow any subconsultant/subcontractor to commence work or services under any subcontract until all insurance required of ENGINEER has been obtained for the subconsultant/subcontractor.

Section 1.4 MNWD shall make available to ENGINEER at no cost all technical data in MNWD's possession, including maps, past reports, prior studies, prior plan operating data, and other information reasonably required by ENGINEER and relating to the work to be performed under this Agreement.

Engineer will furnish to MNWD the agreed upon number of reports and supporting documents.

These instruments of service are furnished for MNWD's use in connection with the project or work provided for in this Agreement and shall become MNWD's property upon receipt. All documents and information generated by Engineer and any of Engineer's subcontractors pursuant to this Agreement shall remain confidential and shall not be copied, distributed, or otherwise provided or referenced by Engineer or Engineer's subcontractors to any third parties other than with MNWD's written consent, or as compelled by order of court.

All original drawings and other documents, including detailed calculations developed for the Project shall, upon payment in full for the services described in this Agreement or as otherwise provided in SECTION V herein, be furnished to and become the property of MNWD. Engineer may retain a copy of all reports and documents for their files.

SECTION II - ENGINEERING FEES

Section 2.1 In consideration for providing the engineering services referred to in SECTION I herein, MNWD agrees to compensate ENGINEER on an hourly rate basis, with a not-to-exceed maximum amount of **Five Hundred Twenty Five Thousand Seven Hundred Fifty Three Dollars ($525,753.00)** (which maximum amount is inclusive of 'labor costs' and 'direct costs', as further discussed below). The breakdown of the fee and costs for the Project is attached hereto as **Exhibit C** which is incorporated herein. Compensation shall be on an hourly rate basis for labor costs as defined herein below in Section 2.2 plus 100% of the reasonable direct costs as defined below in Section 2.3.

Section 2.2 Labor costs shall be the total number of hours worked on the job by each employee multiplied by the applicable hourly billing rate. The Fee Schedule set forth in **Exhibit D** attached hereto and incorporated herein sets forth the current billing rates of ENGINEER.

Section 2.3 Reasonable direct costs shall include those costs as described in the Scope of Work and listed in **Exhibit C**.

Section 2.4 Monthly progress payments will be made based on submittal of invoices by ENGINEER. Invoices will include the number of hours worked by various labor categories, the hourly billing rate per individual, and the total amount due. Only one bill per month shall be submitted by ENGINEER, showing invoices for ENGINEER and each subconsultant utilized during the monthly billing period.

SECTION III - WARRANTY/DISCLAIMER

Section 3.1 ENGINEER is employed to render engineering services pursuant to this Agreement only, and any payments made to ENGINEER are compensation solely for such services as it may render and recommendations it may make in carrying out the work. ENGINEER makes no warranty, either expressed or implied, as to its services furnished under this Agreement, including any findings, opinions, recommendations, factual presentations, or professional advice, other than that such services will be performed in accordance with generally accepted professional engineering practices and principles.

Section 3.2 ENGINEER will provide any construction or operation and maintenance cost opinions based on exercise of his experience and judgment in applying presently available cost data, but it is recognized that ENGINEER has no control over cost of labor and materials, or over competitive bidding proceedings and market conditions, so that it cannot warrant that construction or capital costs will not vary from such costs estimates.

Section 3.3 In performing services under this Agreement, ENGINEER shall observe and abide by the terms and conditions of all applicable laws, regulations, ordinances, or other rules of the United States, of the State of California, or any political subdivisions thereof, or of any other duly constituted public authority or agency including but not limited to MNWD.

Section 3.4 If the Project results in construction of any kind, the parties agree MNWD and ENGINEER shall be indemnified by the contractor for all claims, damages, losses and expenses arising out of or resulting from the contractor's performance of work including injury to any worker on the job site except for the negligence of MNWD or ENGINEER, such indemnity to be in accordance with MNWD's construction documents. MNWD and ENGINEER shall be named as additional primary insured(s) by contractor's General Liability Insurance policies without offset and all construction documents and insurance certificates shall include wording to such effect.

ENGINEER and MNWD shall not be responsible for the means, methods, techniques, sequences, or procedure of construction selected by contractors or the safety precautions and programs incident to the work of contractor and will not be responsible for a contractor's failure to carry out work in accordance with contract documents.

The services to be performed by ENGINEER are intended solely for the benefit of MNWD. Nothing contained herein shall confer any rights upon or create any duties on the part of ENGINEER toward any person or persons not a party to this Agreement including, but not limited to any contractor, subcontractor, supplier, or the agents, officers, employees, insurers, or sureties of any of them. Any reuse of documents or data for other than the intended use shall be at the sole risk of MNWD.

SECTION IV - INSURANCE AND INDEMNIFICATION

Section 4.1 Professional Liability Insurance. ENGINEER and each of its sub-consultants/subcontractors shall maintain throughout the term of this Agreement a professional liability (errors and omissions) policy of insurance having coverage of not less than One Million Dollars ($1,000,000) for each claim and in annual aggregate. The following provisions shall apply if the professional liability coverage is written on a claims-made basis:

(a) The retroactive date of the policy must be shown and must be before the dated date of this Agreement.

(b) Insurance must be maintained and evidence of insurance must be provided for at least three (3) years after completion of this Agreement or the services hereunder.

(c) If coverage is canceled or not renewed and it is not replaced with another claims made policy form with a retroactive date that precedes the date of this Agreement, ENGINEER must provide extended reporting coverage for a minimum of three (3) years after completion of the services. MNWD shall have the right to exercise at the ENGINEER's cost any extended reporting provisions of the policy should the ENGINEER cancel or not renew the coverage.

(d) A copy of the claims reporting requirements must be submitted to MNWD prior to the commencement of any work under this Agreement.

Section 4.2 General/ Automobile Liability Insurance. ENGINEER and each of its sub-consultants/subcontractors shall maintain throughout the term of this Agreement a general liability policy of insurance for bodily injury and/or death, personal injury and property damage claims which may arise from or in connection with the performance of the work under this Agreement by ENGINEER and its sub-consultants/subcontractors, and each of their agents, representatives, or employees. Such public liability and property damage insurance (which shall cover claims, injury, death, loss or damage or accidents from the use or operation of any automobiles, trucks and/or other mobile or stationary equipment, whether owned, non-owned or hired) shall be comprehensive in form and shall be on a "per occurrence" basis in a minimum amount of One Million Dollars ($1,000,000) per occurrence and an annual aggregate limit in a minimum amount at least twice the per occurrence limit specified in this section.

All insurance provided under this Section 4.2 shall name MNWD and its' directors, officers, employees and representatives as additional insureds under each such policy ("additional insureds") and an additional insured endorsement shall be provided in form acceptable to MNWD.

Section 4.3 Worker's Compensation. By its signature hereunder, ENGINEER certifies that it is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and that ENGINEER will comply with such provisions before commencing the performance of work under this Agreement. ENGINEER and subconsultants/subcontractors shall maintain throughout the term of this Agreement workers' compensation insurance with limits no less than the statutory limits, and Employer's Liability insurance with limits no less than One Million Dollars ($1,000,000) per accident and per disease for their employees and shall file with the MNWD the certificate required by Labor Code Section 3700. The workers compensation/Employer's Liability insurance shall be endorsed with a waiver of subrogation in favor of MNWD and its' directors, officers, employees and representatives.

Section 4.4 Requirements of All Policies. All policies of insurance required under this SECTION IV shall be from insurance providers who are either admitted or licensed to do business in California, or are Surplus Lines Carriers authorized to do business in California, and who have financial size and ratings of no less than A-, Class XIII, and in either case are otherwise acceptable to MNWD. All such policies shall include a provision and executed endorsement for thirty (30) days prior written notice by certified mail, return receipt requested, to MNWD of any cancellation or material alteration of such insurance. ENGINEER shall provide original certificates and endorsements for all such insurance on forms approved by MNWD in conformity with all requirements of this Agreement prior to commencement of any work or professional services. The policies required hereunder shall be endorsed to include contractual liability.

In the case of additional insured provisions, any insurance afforded the additional insureds by this Agreement is primary insurance as to the additional insureds. Any insurance or self-insurance maintained by the additional insureds shall be excess of the ENGINEER's (and its subconsultant's/subcontractor's) insurance, and shall not contribute to such insurance.

Any deductibles or self-insured retentions must be declared in writing and approved by MNWD. At the option of MNWD, either: the insurance provider(s) shall reduce or eliminate such deductibles or self-insured retentions as respects the MNWD and its' directors, officers, employees and representatives; or the ENGINEER shall provide a financial guarantee satisfactory to MNWD guaranteeing payment of losses and related investigations, claim administration and defense expenses. Maintenance of insurance coverage as specified in this Agreement is a material term of this Agreement, and any failure to maintain or renew coverage, or to provide evidence thereof, as required by the terms is a material breach of this Agreement.

Section 4.5 Indemnity.

ENGINEER shall hold harmless and indemnify, including the cost to defend, MNWD and its' directors, officers, employees and representatives from liability, claims, damages, demands, actions, attorney's fees, costs and expenses (i) for personal injury, bodily injury or property damage that arise out of, pertain to, or relate to the operations and work of the ENGINEER and its sub-consultants/subcontractors under this Agreement (other than professional services), and (ii) that arise out of, pertain to, or relate to ENGINEER's or its sub-consultant's/ subcontractor's negligence including negligent acts, errors or omissions, recklessness, or willful misconduct in the performance (or actual or alleged non-performance) of the professional services under this Agreement.

ENGINEER shall defend itself and MNWD and its' directors, officers, employees and representatives against any and all liabilities, claims, losses, damages, actions, attorney's fees,

costs and expenses (i) for personal injury, bodily injury or property damage that arise out of, pertain to, or relate to ENGINEER's or its sub-consultant's/ subcontractor's operations and work under this Agreement (other than professional services), and (ii) that arise out of, pertain to, or relate to ENGINEER's or its sub-consultant's/ subcontractor's negligence including negligent acts, errors or omissions, recklessness, or willful misconduct in the performance (or actual or alleged non-performance) of the professional services under this Agreement.

The foregoing provisions of this Section are intended to be, and shall be interpreted in a manner that is, consistent with Civil Code Section 2782.8 as it exists as of the dated date of this Agreement. The ENGINEER'S obligations pursuant to this Section shall survive the expiration or termination of this Agreement and/or the performance or completion of any or all services and work provided under this Agreement. This indemnity obligation shall apply to all liability regardless of whether any insurance is applicable, and the policy limits of any insurance shall not act as a limitation upon the indemnification, and amounts related thereto, to be provided by ENGINEER hereunder.

SECTION V - TERMINATION OR ABANDONMENT

This Agreement may be terminated in whole or in part in writing by either party provided that no such termination may be effected unless the other party is given not less than ten (10) calendar day's written notice (deliver by certified mail, return receipt requested) of intent to terminate. Additionally, MNWD may suspend performance by ENGINEER of any or all services listed in the Scope of Work under this Agreement by providing written notice to ENGINEER at least five (5) working days prior to the date on which MNWD wishes to suspend; provided, upon receipt of such notice, ENGINEER shall immediately suspend any work or services hereunder, unless otherwise instructed by MNWD in such notice.

ENGINEER shall not perform further work under this Agreement after the effective date of suspension until receipt of written notice from MNWD to resume performance. MNWD and ENGINEER agree that in the event MNWD suspends or terminates performance by ENGINEER for any cause other than the intentional or negligent error or omission of ENGINEER, ENGINEER shall be entitled to payment of compensation incurred prior to the effective date of the suspension or termination, as determined under SECTION II of this Agreement.

In the event of any suspension or termination herein, MNWD shall have the right to take possession and shall immediately own all original drawings and other documents developed for that portion of the work completed and/or being suspended or abandoned.

SECTION VI - GENERAL

Section 6.1 ENGINEER represents that it is aware of no facts or circumstances which would impair its ability to provide fair and unbiased advice to MNWD in the course of performing the engineering services hereunder, or which would impact its objectivity in performing such services hereunder.

Section 6.2 This Agreement represents the entire understanding of MNWD and ENGINEER as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder. This Agreement may not be amended, modified or altered except in writing, signed by the parties. This Agreement shall not be construed against the party preparing it, but shall be construed as if both parties prepared it.

Section 6.3 Any notice required or permitted to be given hereunder if not otherwise specified

herein may be given or delivered by depositing the same in the United States Post Office, registered or certified, postage prepaid, or by personal service a hand delivery, and addressed to:

To MNWD - Attn: Marc Serna, Director of Engineering and Operations
Moulton Niguel Water District
27500 La Paz Road
Laguna Niguel, CA 92677-3489

To ENGINEER - Attn: Zeki Kayiran, P.E.
AKM Consulting Engineers
553 Wald
Irvine, CA 92618
(949) 753-7333

Section 6.4 California law shall govern the interpretation of this Agreement. In the event of any legal action to enforce or interpret this Agreement, the sole and exclusive venue shall be a court of competent jurisdiction located in Orange County, California, and the parties hereto agree to and do hereby submit to the jurisdiction of such court, notwithstanding Code of Civil Procedure 394.

Section 6.5 In the event an action is commenced by either party to enforce its rights or obligations arising from this Agreement, the prevailing party in such action, in addition to any other relief and recovery awarded by the court, shall be entitled to recover all costs and expenses, including court costs, plus a reasonable amount for attorney's fees.

Section 6.6 If any section of this Agreement or provision of this Agreement as applied to either party or to any circumstance shall be adjudged by a court of competent jurisdiction to be void or unenforceable for any reason, the same shall in no way affect (to the maximum extent permissible by law) any other provision of this Agreement, the application of any such provision under circumstances different from those adjudicated by the court, or the validity or enforceability of this Agreement as a whole.

Section 6.7 It is expressly understood and agreed that ENGINEER is an independent contractor and not an employee of MNWD while engaged in carrying out this Agreement. ENGINEER warrants that it will not represent, at any time or in any manner, that ENGINEER is an employee or agent of MNWD. ENGINEER shall have no authority to, and shall not, incur any debt, obligation or liability on behalf of MNWD.

The person signing this Agreement on behalf of each party hereto represents he/she has authority to sign on behalf of, respectively, MNWD or ENGINEER.

Section 6.8 This Agreement and all of the terms, conditions, and provisions hereof shall inure to the benefit of and be binding upon the parties hereto, and their respective successors and assigns; provided, however, that no assignment of this Agreement or any interest herein shall be made by ENGINEER without prior written consent of MNWD.

Section 6.9 This Agreement may be executed in counterparts, each of which shall be deemed an original.

SIGNATURE PAGE FOLLOWS

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on this _____ day of _____, 2015.

Moulton Niguel Water District

By: _____
Joone Lopez
General Manager

ENGINEER – AKM Consulting Engineers

By: _____

Title: _____

EXHIBIT A

SCOPE OF WORK

EXHIBIT A
SCOPE OF WORK

TASK 1 – PROJECT ADMINISTRATION / MANAGEMENT

Project management activities will be tailored to ensure obtaining the necessary information in a timely manner, fully understanding the operation of and developing the necessary insight into all elements of the recycled water system, completing the project within schedule and budget, providing continuous communication between our team and MNWD, and implementation of our quality assurance/quality control (QA/QC) program. They will include:

- Project kickoff meeting
- Monthly project meetings, with prepared agendas and follow-up meeting minutes
- Specific task meetings with MNWD and ETWD, as needed
- Interviews of MNWD and ETWD engineering and operations staff to obtain accurate information on system operations
- Coordination of field work for equipment (pressure data loggers and flow metering) installation, quality control, and removal
- Monthly billing statements with list of all tasks, budgets, percent complete, and hours charged to each task
- Updated project schedule

All of the aforementioned activities will minimize delays in the project, shorten review periods, and ensure quality of the finished product.

TASK 2 – DATA COLLECTION AND REVIEW

The first step of the project will be to meet with MNWD staff to determine what information is available and can be used in developing the calibrated hydraulic model. At a minimum, the following information is expected to be collected:

- Recycled water system atlas maps
- GIS files / base data - Recycled water, potable water, and wastewater geodatabase, parcels, streets, service boundaries, land use - received
- Digital Terrain Model (DTM) data
- As-built and design drawings for facilities - treatment facilities, booster pump stations, reservoirs, pressure reducing stations, interconnections/flow control stations.
- Pump curves (certified test curves if available) for all booster pump stations
- Efficiency tests for all existing booster pumps
- Operational data - facility control settings
- Demand and supply data
- Water purchase, sale, treatment plant inflows, and recycled water production for the past 10 years
- Department of Water Resources Public Water System Statistics Reports for the past 10 years
- Recycled water and potable irrigation water customer individual meter data and billing records with link to GIS Meter shapefiles
- Previous relevant planning documents and design standards
- Appropriate regulatory documents
- Inter-agency agreements
- Known system issues
- General Plan land uses and specific plans
- SOCWA treatment plants' information
- Previous studies related to recycled water system
- MNWD and ETWD SCADA data
- Hydraulic Models of ETWD and SMWD
- Atlas maps of ETWD and SMWD
- Monthly production and sales data for ETWD and SMWD
- Recycled water individual meter data and billing records for ETWD and SMWD, as needed
- Facility information and controls for ETWD and SMWD facilities, as needed
- Asset Hierarchy document

- List of existing water storage ponds at major golf courses
- Water demand management information for all Golf Courses from recent meetings (spring 2015)

TASK 3 – REGULATORY OVERVIEW

The District is in the process of finalizing updates to its Rules and Regulations (last updated in 2004), which is expected to be completed in the fall of 2015. The Rules and Regulations will include all current requirements regarding the production and serving of recycled water, which are primarily dictated by the San Diego Regional Water Quality Control Board's Order 97-52 issued to the South Orange County Wastewater Authority.

Our team brings regulatory experts that can efficiently prepare a review of the current regulatory landscape on a continuous basis. Guy Carpenter is Water Reuse Technical Practice Director and Vice President of the WateReuse Association on a National Level, while Inge Wiersema keeps track of both State and Local regulatory landscape as the Technical Chair of the Los Angeles WateReuse Chapter.

In order to provide timely input to the preparation of the update to the Rules and Regulations, our team will assess and summarize the current and upcoming recycled water regulations governing the District's service area, starting from federal to local regulations and how they are applicable to the Rules and Regulations. At a minimum, the following regulations will be included: Wastewater Reclamation Criteria, California Administrative Code, Title 22, Division 4; Regulations related to Cross Connection, California Administrative Code, Title 17; Regional Water Quality Control Board, State Water Resources Control Board and Department of Public Health requirements and guidelines; County Environmental Health requirements; and local ordinances.

Future regulatory requirements with respect to treatment may include nutrient removal (nitrates, ammonia, and phosphorus), as well as constituents of emerging concern (pharmaceuticals, personal care products, and estrogen disruptors), which will be important for groundwater recharge utilizing recycled water. Regulations addressing recharge utilizing recycled water will also be discussed.

Deliverable: Regulatory Overview TM

TASK 4 – RECYCLED WATER MARKET AND DEMAND ASSESSMENT

Our team will evaluate existing recycled water demands and applicable potable water demands and prepare a projection of ultimate recycled water demands. The District desires to complete this task as soon as possible, but no later than December 2015 to provide timely information for the 2015 Urban Water Management Plan, which is due to be submitted to the Department of Water Resources by July 1, 2016.

Based on our discussions with District staff, we understand that there is approximately 3,000 AFY of potable demand that has the potential of being converted to the recycled water system. The objective of this task is to confirm this potential demand, identify the locations, develop representative diurnal patterns, and ultimately develop a phasing plan to connect the customers that are most cost-effective to be converted.

As outlined in the RFP, this effort will consist of a sequence of steps to develop an inventory of potential customers and ultimate demand that can be connected to the District's existing or expanded recycled water system. Subsequent hydraulic modeling will then define pipeline sizing, unit cost, so that these potential customers can be screened to develop a final list of customers that will be associated with the recycled water master plan CIP. Our approach for the various steps is presented below:

TASK 4A – INVENTORY EXISTING WATER USERS AND DEMANDS

Our team will document existing recycled water customers and analyze their billing records from the past 5 years to establish current average annual and monthly demands. As part of this task, we will document the existing recycled water user demands for ETWD as well.

TASK 4B – DEVELOP DIURNAL FLOW CHARACTERISTICS

Pressure Zone Diurnal Curves

If historical SCADA data is available, we will retrieve SCADA data for a low, an average, and a high demand period for developing diurnal demand curves by pressure zone. Some of the smaller closed zones may need to be combined with source open zones. We will collect reservoir levels; booster pump flows and start/stop times; pressure reducing station flows (if available) and settings.

Based on the hydraulic schematic and SCADA data provided, we currently estimate developing diurnal demand curves for eight (8) zones:

1. Zone 450 – Saddleback Reservoir, Crown Valley Reservoir, Aliso Viejo Reservoir
2. Zone 585 – Golden Lantern Reservoir
3. Zone 650/550 (closed)/450 (closed) – Mathis Reservoir, Southridge Reservoir
4. Zone 650 (closed) – Alicia Booster Pump Station
5. Zone 690 – Laguna Heights Reservoir
6. Zone 750 (closed) – Golden Lantern Booster Pump Station
7. Zone 790 (closed) – Crown Valley Highlands Booster Pump Station
8. Zone 880/725 (closed)/650 (closed) – Moulton Peak Reservoir

Once these curves are developed, we will segregate the diurnal curves developed for the large users and groups of users; and develop diurnal curves which will be applied to the remainder of the zone, after considering specific characteristics of each.

We will develop system wide diurnal use patterns for El Toro Water District based upon their SCADA data (reservoir levels and pump station operational data).

Specific User Diurnal Flow Patterns

We propose to install flow metering equipment for specific users, particularly the high water users to confirm their usage volumes on a daily basis and develop specific diurnal flow patterns. Each of the users monitored will be assigned a unique demand and a specific diurnal curve in the hydraulic model. Based on review of the provided service meter shapefile, there are 24 large water meters (3"to10"). It is assumed that these meters are associated with the high water users in the system. The remaining meters are 2" or smaller. We propose to monitor the large water meters as well as several smaller meters to cover all irrigation types (golf course, schools, parks, medians). Some of the recycled water user locations anticipated for monitoring are as follows:

- Aliso Viejo Country Club
- Mission Viejo Country Club
- El Niguel Country Club
- Arroyo Trabuco Golf Course
- Capistrano Valley High School
- Grand Park
- Niguel Heights Park
- Niguel Botanical Preserve
- Chapparosa Park

We will also meter the top ten largest potential recycled water customers to develop specific diurnal curves (see Task 4d). For proposal purposes, a total of 50 meter locations is estimated to be monitored for a period of one week each.

We propose to utilize Meter Master Model 100EL flow recorders for collecting data. We will program the recorders to collect and record data every 15 seconds to precisely define water use through each meter. AKM staff will install the Meter Masters on accessible MNWD flow meters, and we will accompany the MNWD staff but not install them where the meters are in permit required confined spaces. Similarly, we will retrieve them and download the data for subsequent use in the models.

Equipment Rental/Purchase Costs

For proposal purposes, we have assumed that specific use patterns will be developed for 50 irrigation users utilizing Meter Master Model 100EL Flow Recorders and it will take 1-1/2 to 2 months to complete the monitoring work.

We would like to schedule this work to start as soon as the project starts so that we capture the demand patterns during the high water use period in August and September 2015. We will work with the District and the Meter Master manufacturer prior to the award of the contract to ascertain that the equipment is available for installation at the start of the project.

TASK 4C – DEVELOP SEASONAL FLOW CHARACTERISTICS

To develop the seasonal flow characteristics, our team will analyze 10 years of monthly historical data by customer groups, such as, schools, parks, golf courses, HOA's, medians, etc. This will be very important in accurately balancing the production and demand, and storage needed to maximize the use of all supply that can be developed. The following seasonal demand factors will be developed to represent five demand conditions:

- Maximum Day Demand (MDD, calculated from MMD or SCADA data, if available)
- Maximum Month Demand (MMD, calculated from billing data)
- Average Day Demand (ADD, average billing data from two most recent years)
- Minimum Month Demand (MinMD, calculated from billing data)
- Minimum Day Demand (MinDD calculated from MinMD or SCADA data, if available)

We will obtain monthly demand data from ETWD for the past two years, which we believe to most closely represent the current demand conditions, and develop seasonal demand variations for their service area.

TASK 4D – IDENTIFY POTENTIAL RECYCLED WATER DEMANDS AND DIURNAL AND SEASONAL CHARACTERISTICS

Identify Potential Recycled Water Customers

A list of potential recycled water customers will be identified in Task 4.f.

Estimate Potential Recycled Water Demands

The historical potable water billing records will be used to estimate the recycled water demands of potential customers. We will create an initial future recycled water customer table and map, which will denote the location of existing customers and infrastructure as well as the location and estimated demand of potential customers.

Projected Diurnal and Seasonal Flow Characteristics

A demand summary will be prepared that will include the estimated potential seasonal demand for the 5 conditions listed in Task 4c, as well as monthly demands for use in determining future needed supply, storage, and transmission/distribution facilities. We will initially use the applicable diurnal flow patterns developed in Task 4b. We will investigate if the diurnal use patterns can be revised to reduce peaking on the demand to maximize the use of recycled water.

Customer specific seasonal flow factors will be determined for the top ten (10) largest potential recycled water customers, as these customers have a greater impact on the system hydraulics. Customer specific diurnal curves will be developed for the top ten (10) potential customers by metering the flow at each site.

In addition, we will estimate the demand impact of the moderate, aggressive, and very aggressive turf removal scenarios and incorporate them in the potential demand summary.

TASK 4E – ASSESS THE IMPACT OF TURF REMOVAL ON RECYCLED WATER CONSUMPTION

The assessment on the demand impact on turf removal programs will include the impacts of the potential outdoor demand reductions for both the existing recycled water customers (which will free up more recycled water supply) and the potential customer demands developed. To estimate this impact, our team will compile historical turf removal program records from the District and nearby agencies, and extrapolate these records for three scenarios (moderate, aggressive, and very aggressive). Existing information suggests turf removal results in 50% to 70% reduction in water demand, depending upon the type of replacement installed. Additionally, we will review and refine potential reductions based on projections from Metropolitan Water District staff considering the escalated interest in turf removal rebates and the associated funding as well as other studies regarding the relation of outdoor water conservation and water pricing. As the actual impact on water demands for turf removal is difficult to predict and sensitive to the duration of the ongoing drought and other water awareness programs, our team will develop a spreadsheet tracking tool for this effort. This tool will be provided to District staff at the end of the project so that turf removal of both potable and recycled water customers can be closely evaluated and utilized to update the hydraulic model demands if needed after the project is completed.

TASK 4F – PREPARE A LIST OF ALL POTENTIAL RECYCLED WATER USERS

Our team will identify the potential recycled water customer demands within the District's service area by evaluating the historical potable water billing records, land use maps, specific plans, aerial maps, and previous planning documents. Customers identified will be categorized by use type, such as, irrigation, wholesale agency, and possibly indirect potable.

TASK 4G – REVIEW AND UPDATE USER COST EFFECTIVENESS ANALYSIS

Our team will review the District's existing recycled water cost-effectiveness analysis methodology and provide suggestions to modify the methodology and/or key assumptions of the analysis with District staff in one of the progress meetings. Upon agreement on the methodology and assumptions, a recycled water cost-effectiveness analysis will be conducted in Task 4h for the customers included in the potential customer list developed in Task 4f. It is anticipated that this analysis will utilize criteria such as:

- *Total Demand:* Larger customers will be ranked higher for ease of operations and administration.
- *Diurnal Peaking and Stress on System:* Existing daytime demand customers or those that can be scheduled to daytime use will be given a higher ranking to maximize supply and pipeline capacities.
- *Distance from Existing System:* For initial screening, the length can be used as a criterion, while in subsequent stages, the actual pipeline alignment length, diameter, and pipeline cost will need to be considered.
- *Supply Source Categorization:* Sites that require less regulatory oversight and staff time, such as single source sites, will have a higher ranking than dual source sites. Currently, single source sites require inspection every three (3) years and dual source sites require annual inspections. This will help minimize impacts to the District's staff time. Dual plumbed sites will be listed, but not be considered within the planning horizon of this Report.
- *Long-Term Demand Security:* Customers with a higher likelihood of reducing their recycled water demand potential due to turf removal programs will be ranked lower.
- *Ability to Obtain Grant Funding:* Potential customers that have the ability to receive grant funding to offset the cost to connect to the recycled water system will be ranked higher. This will be based on input from District staff.

TASK 4H – PRIORITIZE IMPLEMENTATION OF RECYCLED WATER CONVERSION PROJECTS

Utilizing the methodology and criteria developed in Task 4g, potential recycled water customers will be ranked utilizing weighing factors that will be developed in collaboration with District staff. Once the initial ranking and prioritization of potential customers is completed, adjustments will be made to include pick-up customers that are located near newly proposed pipeline alignments. For budgeting purposes, up to 5 future expansion segments that extend to the highest ranking customers are included in this analysis. Up to five (5) GIS maps will be created to depict the proposed alignments and potential customer locations. The planning level facilities sizing (developed under Task 10) and cost estimates (developed under Task 13) will be utilized to estimate the total unit cost in $/acre-foot for each segment.

TASK 4I – DEVELOP A PHASED IMPLEMENTATION SCHEDULE

In collaboration with District staff, we will develop an implementation schedule. We anticipate that the higher ranked customer connection projects will be implemented within the near-term planning horizon and the lower ranked projects will be implemented within the long-term planning horizon.

Based on the potential customer demands listed in the phased implementation schedule, a forecast will be developed that will provide sufficient detail to be incorporated into the 2015 Urban Water Management Plan (UWMP). Forecasts will be completed in 5-year increments through the year 2040 to coincide with the requirements of the UWMP.

Deliverable: Recycled Water Market and Demand Assessment TM

The recycled water demand and wastewater production forecasts included in this TM will provide sufficient detail to be incorporated into the 2015 Urban Water Management Plan (UWMP). Forecasts will be completed in 5-year increments through the year 2040 to coincide with the requirements of the UWMP.

TASK 5 – RECYCLED WATER SUPPLY

The District's wastewater is treated by the South Orange County Wastewater Authority (SOCWA). SOCWA operates four treatment plants. The District owns capacity at all four plants; however, the District's wastewater is mainly treated at Joint Regional, JB Latham and Plant 3A Wastewater Treatment Facilities. The District owns tertiary treatment for production of recycled water at the Regional and 3A Plants and has an agreement with South Coast Water District (SCWD) to obtain up to 1.4 mgd from the Coastal Plant. The Santa Margarita Water District will take over the operation of the 3A Plant.

In addition to the Title 22 treatment capacity, recycled water supply capacity is directly related to the wastewater tributary to the treatment facilities. Due to the decrease in wastewater generation over the last few years resulting from the water efficiency efforts and public's awareness of the prolonged drought, recycled water production has decreased, and the District has had to supplement the supply with potable water during the high demand periods.

In order to accurately estimate the future recycled water supply capacity, we will evaluate existing wastewater generation rates, assess future wastewater generation based on passive indoor conservation or other pertinent variables, and provide a forecast of wastewater supply. To the extent data is available, we will estimate wastewater generation rates based on non-irrigation potable water use within the tributary areas of the treatment plants, and the influent flows over the past five years to develop the trend in inside water use (wastewater generation) decline. We will estimate further refinements to account for SBx 7-7, and the statewide mandatory reductions in water use. We anticipate developing a base supply, and conduct sensitivity analyses with one higher and one lower supply.

Although there is surplus treatment capacity compared to the recycled water actually produced and used, some of these assets are stranded at times due to lack of sufficient wastewater flows, and adequate seasonal storage/transmission facilities. The District is in the process of investigating short and long term projects that will divert wastewater flows from the 3A Plant to the Regional Plant to increase recycled water production at both facilities. Additionally the District has been investigating the possibility of obtaining, maybe through a capacity exchange process, additional seasonal storage at Trampas Canyon/Upper Oso Reservoir, which will increase recycled water availability during periods of greatest need – the warm summer months. We will review the current agreements, and investigate other opportunities to produce additional recycled water through diversion of wastewater flows from other agencies to MNWD facilities where capacity is available, or can be increased.

We will obtain ETWD's expected recycled water production information and document it for subsequent evaluation of the various supply alternatives.

We will prepare a technical memorandum (TM) that documents the findings from this task. The TM will provide the District with an understanding of available wastewater resources and possible recycled water uses within the District's service area, as well as optimizing the available sources for MNWD, and ETWD.

Deliverables: Recycled Water Supply TM

TASK 6 – SEASONAL AND OPERATIONAL STORAGE NEEDS ASSESSMENT

This task will consist of two sub-tasks, and analyses common to both the Moulton Niguel Water District and the El Toro Water District. We will develop diurnal and seasonal demand curves, as well as recycled water production for the two agencies, incorporate El Toro Water District's model into MNWD's model, and conduct analyses to not only assess seasonal storage that will allow the two agencies to optimize recycled water use, but will also determine system deficiencies. There are several other tasks that will contribute to formulating the recommended improvements, such as Project Management and Administration (Task 1), Data Collection and Review (Task 2), Inventory Existing Water Users and Demands (Task 4a), Develop Diurnal Flow Characteristics (Task 4b), Develop Seasonal Flow Characteristics (Task 4c), Recycled Water Supply (Task 5), Hydraulic Model Update (Task 7), Proposed System Analysis (Task 10), Inter-Agency Opportunities (Task 11), and Capital Improvement Plan (Task 12), and Report (Task 13).

We understand that the existing system has bottlenecks in delivering recycled water to Upper Oso Reservoir. The District utilizes a portion of Santa Margarita Water District's system to fill the reservoir, and draw from it. We will attend one meeting with Santa Margarita Water District and their modeling consultant (PSOMAS) to obtain their model and understand its source data and scenarios. Subsequently, we will incorporate it into MNWD's model to conduct analyses with existing flows and capacity, as well as with future flows and expanded seasonal storage

capacity. It is assumed that this model is accurately calibrated for the purposes of this project. Modification to the SMWD model is not included in this task.

For MNWD's system, we will utilize the data collected and information developed in the previous tasks to address the District's seasonal and operational storage needs. We propose to develop typical hourly existing and potential recycled water production and demand for each month to establish the capacity surplus and deficiency for the District. This will be utilized to assess the seasonal storage volume needed for the existing and future conditions, including sensitivity analyses.

As described in Task 4b, we will obtain high, low, and average day SCADA information from El Toro Water District to develop system-wide diurnal curves for their system. We will also obtain recycled water production capability (actual recycled water that can be produced based on available wastewater), and monthly billing records for the recycled water customers to develop a 12-month production and demand curve for El Toro Water District.

As described in Task 7.1.1, we will convert ETWD's existing hydraulic model into InfoWater and incorporate it into MNWD's model for analyses of seasonal and operational storage needs.

We will then investigate where seasonal storage could be most feasibly provided. It could be in the future Trampas Canyon Reservoir or the Upper Oso Reservoir possibly through capacity exchanges. Depending upon the desired location, we will evaluate the adequacy of the pumping and transmission facilities, and formulate projects that will accomplish the District's goals taking into consideration the needs and requirements of El Toro Water District and Santa Margarita Water District. We expect that the adequacy of the seasonal storage will need to be ascertained through an analysis of the system under fill (low demand) and draw (high demand) conditions. We will recommend demand management measures, such as changing the irrigation patterns and time of use in order to maximize the use of recycled water with the existing storage.

We will conduct analyses of the systems with 12 monthly demands and selected supply scenarios in order to determine the seasonal storage needs for the various analysis scenarios. We will then conduct hydraulic analyses with low demand/high supply conditions (reservoir fill), as well as reasonable supply and high demand conditions (reservoir draw) under the selected alternatives in order to accurately assess the capacity of the system components (pipelines, pump stations, and pressure regulating stations), including those of Santa Margarita Water District. Based upon the results of the analyses, we will develop capital improvement projects to eliminate any identified deficiencies, and their phasing.

We will conduct short term extended period analyses with maximum day demands to further assess the capacity of the system for the various alternatives evaluated. As we will do throughout the study, we will investigate demand management procedures to eliminate the bottlenecks, as well as capacity improvement projects where deficiencies exist even with demand management.

For each deficiency mitigation project, we will develop implementation cost estimates as well as their phasing. We will review the results with the District prior to finalizing the capital improvement project recommendations

Deliverables: Seasonal and Operational Storage Needs Assessment TM

TASK 7 – HYDRAULIC MODEL UPDATE

A calibrated hydraulic model of the recycled water system is an essential tool for MNWD for analyzing the existing system conditions; planning for future expansions and facility replacements; and evaluating options, including operational and seasonal storage, to formulate the most feasible supply portfolio. The hydraulic model has to be based upon the best information available, and be well documented so that it can be updated as changes occur in the system, land use planning, and sources of supply.

AKM's approach to hydraulic modeling and water resources planning assignments involve several basic procedures which ensure that the finished product is used for accomplishing the agency's goals. In order to provide this, the project has to be staffed with professionals with expertise in not only water system modeling, but also with deep insight into all elements that make up a recycled water system.

Our general approach to the water model development and analysis assignment is illustrated in the flow chart on the following page. Specific steps that will be taken are described in the following:

TASK 7.1.1 – HYDRAULIC MODEL DEVELOPMENT

We will use Innovyze's InfoWater software to create a new calibrated recycled water system hydraulic model, based on MNWD's current recycled water GIS data. Creating the hydraulic model will involve the development of system geometry, demands, supply points, facility information, and controls.

One of the first steps we take when creating a hydraulic model is to develop a system map and a hydraulic schematic of the system. This helps us develop insight into the components of the system, which in turn aids in preparing the hydraulic model. MNWD has a hydraulic schematic for its recycled water system that was developed in 1997. It is in need of an update to represent the current system. We have updated the hydraulic schematic based on the information we have, and included it as Exhibit A in the Appendix to our proposal. A system map we developed from existing GIS is included as Exhibit B in the Appendix. Both exhibits will be revised as necessary as we learn more about the system through model development, interviews with system operators, and field investigations. They will be included in the project documentation and provided to MNWD in electronic form for future use.

Geometry

Since the previous model has not been kept up to date and is missing portions of the current system and also does not geographically align with the GIS data, we are proposing to use MNWD's existing (up to date) recycled water GIS as the basis for the geometry of the hydraulic model. The new model will include all pipes (excluding meter connections, service laterals, and private lines that do not loop the system), pump stations, reservoirs, interconnections, pressure regulating stations and treatment facilities (end points in model).

Modeling information for each pipe will include identification numbers, service zone identification, diameter, length, and roughness. Model nodes will be located to represent points of intersection, ends of pipes, changes in diameter or material, and/or locations where supply or demands are applied to the system. Modeling information associated with each node will include identification numbers, service zone identification, demand, diurnal pattern, user type, and elevation. The elevations will be extracted from MNWD's digital terrain model (DTM) data. Currently, the recycled water pipes in GIS are broken at all valves, and major tees, and crosses but not at each service lateral or laterals for other appurtenances such as blow offs and airvacs. We are proposing to further segment the existing GIS pipes at every fitting. This way, demands can be placed more accurately and pressures at high and low points in the system can be represented. The pipes will be assigned new IDs to ensure uniqueness. The GIS Asset IDs will be imported and included in the model file so segmented pipes can be tracked back to its original Asset ID.

System Geometry Verification

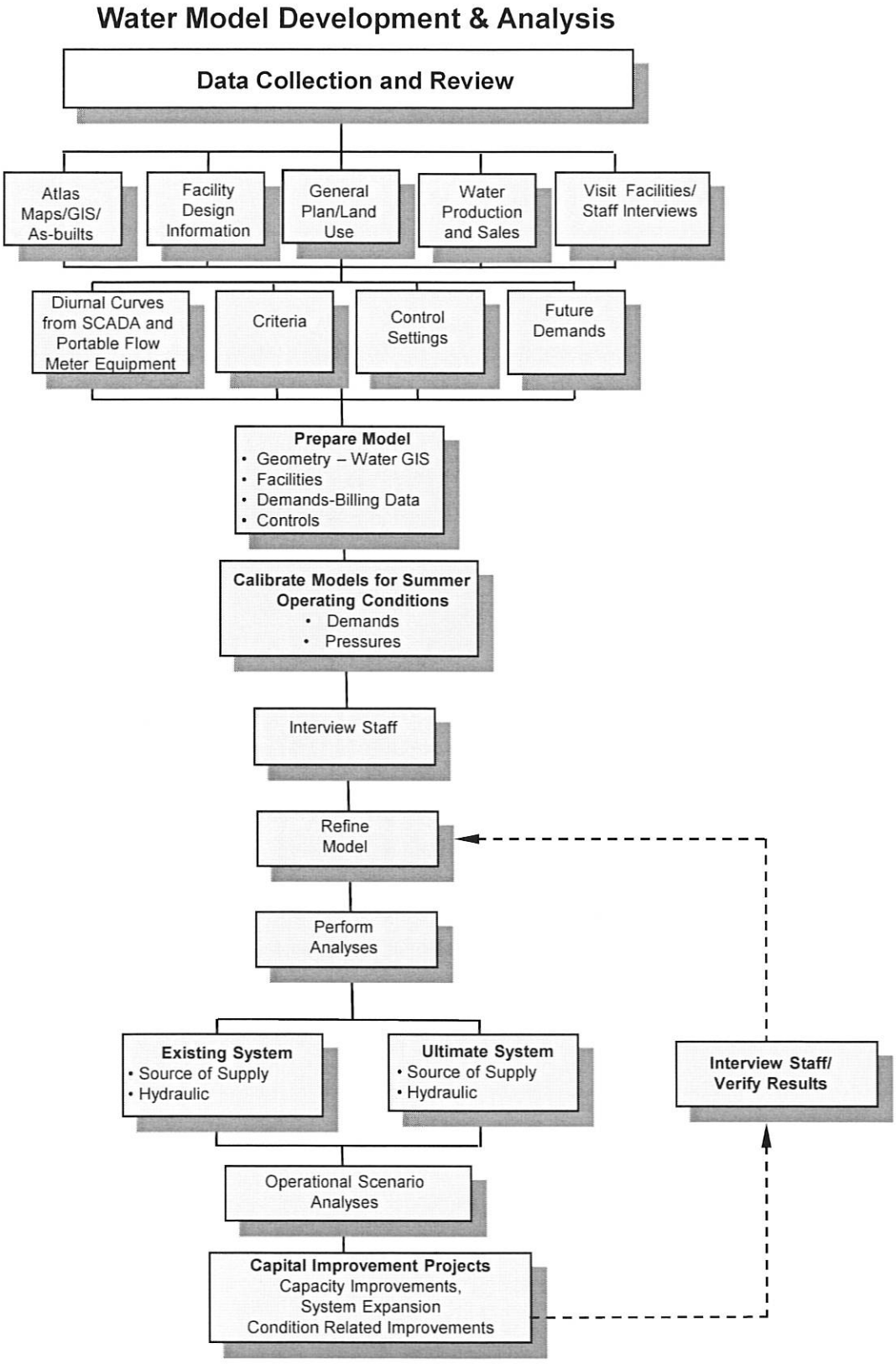
We will first evaluate the geometry of the recycled water system by reviewing the existing GIS shapefiles, atlas maps, as built plans, inventory lists, SCADA information and other relevant data. We will set up a series of meetings with MNWD's planning, operations, and SCADA staff to clarify discrepancies between the various sources of data. All questions and resolutions will be documented for MNWD's records.

We will evaluate the connectivity of the pipe network, zone by zone. With the help of MNWD operations staff, we will identify and document all zone breaks. We will verify that the zones are isolated by zone valves, pressure reducing valves, and/or pump stations.

Allocation of Demands

We propose to use one or more years of actual water use data collected from meter readings or billing information to compute and distribute the recycled water system demands in the hydraulic model.

MNWD has already developed a water meter shapefile that contains a unique account number that can be used to link billing data records to the GIS map. (MNWD staff has stated that the account number in the billing data would have to be truncated to link it to the GIS map.) Per recent billing records, there are approximately 1,329 active recycled water meters. The rwServiceMeter shapefile contains 1,487 meter locations. The discrepancy of these two sources of data will be reviewed with MNWD staff and resolved prior to linking the billing data to the map and using it to allocate demands in the hydraulic model.


Water Model Development & Analysis
Data Collection and Review
Atlas Maps/GIS/ As-builts
Facility Design Information
General Plan/Land Use
Water Production and Sales
Visit Facilities/ Staff Interviews
Diurnal Curves from SCADA and Portable Flow Meter Equipment
Criteria
Control Settings
Future Demands
Prepare Model
• Geometry – Water GIS
• Facilities
• Demands-Billing Data
• Controls
Calibrate Models for Summer Operating Conditions
• Demands
• Pressures
Interview Staff
Refine Model
Perform Analyses
Existing System
• Source of Supply
• Hydraulic
Ultimate System
• Source of Supply
• Hydraulic
Interview Staff/ Verify Results
Operational Scenario Analyses
Capital Improvement Projects
Capacity Improvements,
System Expansion
Condition Related Improvements

Linking the water billing data to the water meter shapefile will allow us to use the meter data to obtain a very accurate spatial distribution of demands. Meter consumption data will be adjusted to match the established existing low period, average day and maximum day demands.

Each water meter will be assigned to a model node. The model node ID will be added to the District's water meter shapefile for allocation of demands and for future use in linking AMI data to the model. The linked water meter billing data will be allocated to the associated model node. This allocation method will inherently account for all high water users at their actual locations. It will most closely represent the current water use, and will be the most appropriate data to use for model calibration after incorporating unaccounted for water.

Demands and Demand Patterns/Diurnal Curves

After allocating the demands per the billing information, we will utilize the system demands developed in Task 4c to adjust the allocated demands for each demand scenario in the model.

We will apply the diurnal curves and specific user flow patterns developed in Task 4b to the appropriate locations in the model. For the most part, the model junctions in each zone will be assigned a diurnal curve. The exception will be the specific user locations, which primarily account for the high water users in the system.

We will utilize the information developed in Task 4b and 4d and apply future potential recycled water demands and use patterns to the model at the appropriate user locations for the future scenarios.

Facilities

We will obtain all facility (pump station, reservoir, pressure regulating station, treatment plant, turnout, filtration facility, and interconnection) information from MNWD. We will model each facility based upon as-built construction drawings and the existing operating conditions. We will enter pump curves into the model based on the latest field performance tests. At least five points will be input for each pump curve.

Operational Controls and Settings

We will obtain facility controls and settings from MNWD staff and SCADA information. After an initial review of facility control/settings information, we will interview MNWD operations staff to develop further insight into the operation of the system and to discuss any operational problems that the system may experience.

If operational controls and settings change during different times of the year, such as corresponding to filling of the seasonal storage facilities during the low demand periods, and drawing from them during high demand periods, we will set up separate control sets in the model to reflect the various operational conditions. If any pump stations are operated on TOU schedules to reduce the electric power costs, we will model them on time of use schedules per review of the SCADA data and information from MNWD staff.

ETWD Hydraulic Model

We will obtain ETWD's existing and ultimate recycled water system hydraulic models and convert them to InfoWater, if they are in a different format. We will meet with ETWD to determine the phasing of demands and facilities for the ultimate system. We will run the existing system model to verify its proper operation. We will incorporate them into MNWD's models for subsequent evaluation of supply alternatives and seasonal storage.

TASK 7.1.2 – MODEL CALIBRATION

Calibration Plan

We will prepare a Calibration Plan that will describe the steps involved in the calibration process, operational procedures, required equipment and/or supplemental monitoring instruments, field data to be collected, data collection methods, and recording intervals.

Field Data and SCADA Data Collection

We propose to calibrate the existing model for a 7-day period by collecting field pressure measurements and SCADA data (reservoir levels; booster pump flows and start/stop times; pressure reducing station flows and settings, and any facility and/or system pressures) for a 3-week time period during the high demand period (summer months), which represent the period when the system may be stressed the most.

The system pressure data will be collected by installing pressure data loggers to selected system components such as air-vacs and blow offs, throughout the system. We may need to install data loggers on customer meters if other facilities are not available. This will require including the meter lateral and associated facilities in the model for calibration purposes. We currently anticipate the need for 40 pressure data loggers to cover the entire system adequately, as shown in Table 1.

We will install the data loggers and flow meters with assistance from one MNWD staff member. AKM will direct and oversee the field calibration process. We will work with MNWD staff to select the final locations for all calibration equipment.

It will be necessary to collect data on the flow to and from Santa Margarita Water District's (SMWD's) Zone B at the La Paz Pump Station and Pressure Regulating Station. It appears that MNWD's SCADA system collects flow data at these two locations. In the event that the flow data is not available at the pressure regulating station, the ClaVal e-FlowMeter X144 can be used to measure and record flows through the valves. If power is not available at the site, a turbine power generator can also be utilized, which uses the hydraulic energy of the system to generate power for the flow meter.

Table 1

Pressure Data Logger Estimate

Zone Designation	Numer of Data Loggers
450	7
550 (closed)	1
585	1
650	8
650 (closed)	3
690	6
725	2
750 (closed) north	2
750 (closed) south	2
790 (closed)	1
880	2
950 (closed)	1
Zone B	2
Zone C	2
Total	**40**

Model Adjustments

Diurnal curves will be developed from the collected field data and SCADA data as discussed in Task 4.b. Individual curves will be developed for large water users. We will input the pump operational settings, as well as the initial conditions of facilities (reservoir levels, pump on-off status) in the model. We will adjust the model demands to the demand experienced by the system during the calibration period (determined from SCADA data and flow recorders). We will run the model and compare the results to the SCADA data and field measured pressures. We will also compare the model's demands and reservoir levels to the SCADA data collected. If the model results are close to the field measurements (no more than 5 percent deviation in pressure regulating station flows, booster station flows, and tank levels (to within 1 foot), the model will be deemed calibrated. Otherwise, we will determine the causes of the differences, make adjustments to the model, and re-run it until it closely matches the field conditions. The pipe roughness coefficients (C values) will be the last variable adjusted in the model to reach calibration. Through an iterative process, the system calibration will be refined. Model versus field data graphs for each site will be developed to ensure accuracy within a 5 percent deviation.

Supervisory Control and Data Acquisition (SCADA) and Advanced Metering Infrastructure (AMI) Connectivity

It is our understanding that MNWD will convert all recycled and potable irrigation meters to AMI technology in the near future. The model developed for this project will have the ability to be connected to programs such as Demand Analyst and SCADA Watch by Innovyze.

Demand Analyst, an add-on module to InfoWater, will provide the ability to constantly update diurnal curves in the model. We will assign a model junction ID to each meter in the meter shapefile that will allow for easier future incorporation of the AMI data that is collected in the future.

SCADA Watch is the program that will allow for model simulation results to be compared with real-time SCADA data. This is another reason to segment the current recycled water GIS into smaller pieces. Segmentation will allow more junctions to be added to the model. Then when a program such as SCADA Watch is implemented, the locations of the monitoring devices can be more accurately portrayed.

TASK 7.2 – MODEL SCENARIOS

We will conduct extended period simulations of the system for the following conditions:

1. Existing System
   a. Low period demands (winter)
   b. Average period demands (spring/fall)
   c. Maximum period demands (summer)
2. Future System
   a. Low period demands (winter)
   b. Average period demands (spring/fall)
   c. Maximum period demands (summer)

   We will also run up to 20 additional scenarios with models including ETWD's system to address the following:
   a. Evaluate alternative irrigation schedules (based on results of Task 8) that can improve system performance and increase recycled water use
   b. Evaluate hydraulic capacity needs in system to move water to and from Upper Oso Reservoir and other future storage facilities to maximize the beneficial use of all recycled water that can be produced
   c. Evaluate hydraulic capacity needs in the system if water is exchanged between neighboring agencies to maximize recycled water use
   d. Evaluate each phase of the proposed Capital Improvement Program (CIP)

TASK 7.3 – HYDRAULIC MODEL MANUAL

We will prepare a hydraulic model manual that will be submitted as a final deliverable for this project. This report will be in constant development as the project progresses. It will include documentation of the model development including a description of model controls, scenarios, results, pump curves, and facility information. Any assumptions made in developing the model will also be documented in this report. An outline of the report is as follows:

1.0 Model Geometry - This section will describe how the model geometry was developed based on GIS data, as-built plans, etc. Numbering nomenclature will be explained in this section.

2.0 Demands - This section will describe how the demands were developed and distributed in the models.

3.0 Diurnal Curves - This section will describe how the diurnal curves were developed for various service zones and specific customers. A plot of each one, as well as tabular list will be provided.

4.0 Facility Data - This section will include summary tables of pertinent facility (reservoirs, pump stations, pressure regulating stations, pipes) information. Model IDs for each facility will be included. Source information such as pump curves, and efficiency tests will be included in the appendix of the report.

5.0 Control Data - This section will include a summary table(s) of control information for the pumps, valves, and reservoirs.

6.0 Scenarios and Datasets - This section will describe the scenarios and datasets set up in the model.

7.0 Model Calibration – This section will describe the model calibration process.

8.0 ***Model Modification*** – This section will describe modification and maintenance procedures to keep the model operational when modifications are made.

TASK 8 – TIME MANAGEMENT AND USER SCHEDULING PLAN

Traditionally, recycled water use for irrigation has been scheduled to the late night and early morning hours, which increases peaking on the system, and limits usage to the period when the sewage flows and recycled water production are low. This in turn requires greater storage volume to be able to meet the peak demands, particularly during the warm summer months.

Not only do these conditions hamper the efficient use of recycled water, but high flows in short periods result in frequent starting and stopping of these high flows in the system piping, resulting in high surge pressures. We do

not currently know if MNWD's system experiences surges due to limited usage duration, but we will determine it through the field pressure measurements using pressure data loggers and Meter Masters.

Meter Master equipment we propose to install on the high water user meters, which will cover a variety of customers, along with SCADA data, will provide us with the information for developing recommended scheduling of usage within the limitation of the existing permit requirements and potential new regulations. We will utilize the calibrated hydraulic model, which will include each individual customer along with its diurnal curve, and conduct extended period simulations in refining the irrigation schedules, which will result in more efficient use of the existing, as well as future resources. We will conduct these analyses with ETWD's system utilizing the system-wide diurnal use patterns, and adjust the high water user demands per discussions with the ETWD staff.

TASK 9 – EXISTING SYSTEM ANALYSIS

TASK 9.1 – EVALUATION CRITERIA

We will develop evaluation criteria for assessment of the existing system. At a minimum, criteria will be developed for the following items:

- Source of Supply
- Recycled Water Demand Estimates
- Operational and Seasonal Storage
- Pipe Size, Velocity, and Headloss
- Minimum and Maximum Operating Pressures
- Booster Pump Stations – capacity, redundancy, flow meters, emergency power, telemetry, etc.
- Pressure Reducing Stations – number and size of valves, velocities, flow meters, telemetry, etc.

Deliverables: Evaluation Criteria TM

TASK 9.2 – CONDITION ASSESSMENT

Protocol for Condition Assessments and Asset Inventory for Vertical Assets

Our team will develop protocols for condition assessments along with an asset inventory list for vertical (or above ground) assets utilizing data provided by the District. The protocol will enable our team to conduct the cursory condition assessment on key vertical assets to identify possible deficiencies that may require future correction. Our team will meet with District staff to discuss our field condition assessment plan to inspect all above ground recycled water system facilities that are a concern to the District's operational staff. For budgeting purposes, it is assumed that all 13 booster pumping stations and all five (5) concrete reservoirs can be inspected in **five** (5) days. Findings will be documented in a separate condition assessment TM that will include field notes, questionnaires, measurements, and/or photos for each inspected facility. The results of the condition assessment will indicate repair, rehabilitation or replacement needs and the estimated remaining useful life of the assets. Since the District is currently completing a seismic assessment of the six (6) steel storage tanks in the recycled water system, the findings from this study along with dive reports will be used in lieu of field inspections. The findings of this task will be included in the capital improvement recommendations of vertical assets. In addition, the periodic inspection reports for the District's five (5) concrete tanks that are partially buried or buried will be reviewed by our structural engineer and recommendations will be included in this TM.

Protocol for Condition Assessments for Pipelines

In addition to the needs for vertical assets, our team will develop a protocol and plan for assessing the repair, rehabilitation, or replacements needs of pipelines within the recycled water distribution system. We anticipate that this will be primarily based on District's maintenance records, and secondarily on pipe and valve material, age, and construction period.

Asset Management Program

As part of this Task, a powerful analytical tool developed by Innovyze called InfoMaster will be utilized. InfoMaster uses GIS, the hydraulic model, and other data sources such as condition assessments to predict the likelihood of failure and the consequence of failure, which then calculates risk. The calculated risk of assets will help establish the most cost-effective solution for avoiding or mitigating potential failures within the distribution system. The calculated risk can then be used to develop a prioritized CIP plan for repairing, rehabilitating, or replacing facilities throughout the planning period. Our team will work collaboratively with District staff to establish criticality criteria that will be used to predict the risk of failure and the ranking of CIP projects. Carollo will utilize its own software license to conduct the work. Purchase of a software license for MNWD is not included in this task.

Deliverables: Condition Assessment TM

TASK 9.3 – SYSTEM PRESSURES AND PRESSURE ZONES

We will overlay the parcels with the recycled water pipes from the model and the recycled water service meters. Using spatial analysis, we will assign the pressure zones to the parcels served. Using the analysis results, the elevation information from the DTM data and the hydraulic model, we will develop pressure zone polygons for the recycled water system. Each pressure zone will be a polygon in a GIS layer based on criteria developed in concurrence with MNWD.

A pressure zone map will be developed using the pressure zone polygons, DTM data, parcels, and recycled water system facilities.

MNWD staff has indicated that there are areas in the system with low pressures. We will evaluate those areas identified by the hydraulic model with low pressures and determine if it is possible to redefine the pressure zones utilizing existing facilities (moving zone valves). If not, recommendations will be developed on how to change pressure zones to mitigate the low pressure areas.

TASK 10 – PROPOSED SYSTEM ANALYSIS

We will conduct proposed system analyses based on selected alternative scenarios which incorporate the future customers selected in Tasks 4f through 4i, with regional storage, as well as inter-agency projects. We will refine the selected scenarios in consultation with the District. All of these scenarios will include the existing and potential expanded seasonal storage in the Upper Oso Reservoir. For budgeting purposes, we have included two (2) analysis scenarios consisting of:

a. Obtaining as much recycled water as feasibly possible from El Toro Water District and providing capacity to El Toro Water District and the City of San Juan Capistrano;

b. Above scenario plus providing additional recycled water to regional storage in Trampas Canyon (physical or paper capacity) and participating in the San Juan Basin Authority's indirect potable re-use project

We will formulate improvement projects needed to implement the selected alternatives, develop phasing and cost estimates, and review them with the District for selecting a preferred project.

TASK 11 – INTER-AGENCY OPPORTUNITIES

South Orange County agencies have been cooperating in developing efficient water supply portfolios and reducing dependence on imported water for many years. This cooperation is continuing through MNWD's agreement with Santa Margarita Water District regarding the 3A Plant operation; MNWD providing recycled water to the City of San Juan Capistrano and El Toro Water District; the Upper Chiquita Reservoir; seasonal storage reservoirs being planned by the Santa Margarita Water District; Doheny Ocean Desalination Project; and the San Juan Basin Groundwater and Facilities Management Plan. Joint projects can provide significant efficiencies in facility sizing, and more importantly maximizing efficient use of available resources.

As one of the first tasks of the project, we will meet MNWD to discuss the planned regional projects, and possibly develop additional ones. These will include maximizing the capacity available from the El Toro Water District; MNWD's participation in the San Juan Basin Authority planned projects; joint projects with Santa Margarita Water District, who is also pursuing the use of capacity available at the City of San Clemente's Water Reclamation Plant; service to the City of San Juan Capistrano and whether MNWD should pursue a project with the City involving the City's Groundwater Recovery Plant; status of an advanced wastewater treatment facility near JB Latham Plant; and seasonal storage needs at the Upper Oso Reservoir and the Trampas Canyon Reservoir. We will formulate alternatives to further pursue, and present them to the District for review and selection of alternatives. We will then meet with the involved agencies to obtain information, verify the initial assumptions, and ascertain their interest in these alternatives. We will finalize the alternatives to pursue, and implement the work program described in the various tasks included in our proposal. We will include the 3A Plant, continuing service to the City of San Juan Capistrano, and exchanges/service to El Toro Water District in all alternatives.

As the work is developed, we will review it with the District in an effort to obtain prompt direction for subsequent work, which will maintain the work on the desired schedule.

We point out that it is very important to obtain the hydraulic model of the recycled water systems and/or and supplies and demands from the El Toro Water District and the hydraulic model of the Santa Margarita Water

District to evaluate these alternatives in a timely manner. We have the City of San Juan Capistrano's 2006 model, and can incorporate any changes to the system since then.

TASK 12 – CAPITAL IMPROVEMENT PLAN

A capital improvement program (CIP) will be developed based on the results of the hydraulic analyses and condition assessment of facilities. It will include all identified improvements required to support future growth in the service area, as well as improvements required to correct existing system capacity and operational deficiencies. The CIP will include recommendations for improvements to the recycled water distribution system, supply sources, pump stations, storage facilities, and instrumentation. We will meet with MNWD for review and obtain comments at appropriate points.

Deliverables: Capital Improvement Plan TM

TASK 12.1 – COSTS

Cost estimates will be developed for each recommended CIP project and will include engineering, construction, and other contingencies. To the extent possible, cost estimates will be based on actual bid data for the District or for similar projects in the area for agencies with similar contract requirements to that of MNWD.

TASK 12.2 – PHASES

The recommended capital improvement projects will be used to develop a phased Capital Improvement Plan. The rehabilitation and replacement projects will be separated out from the expansion projects. The CIP will be broken into annual costs up to the year 2030. All projects planned for past 2030 will be identified as a future project.

TASK 13 – REPORT

We will prepare a hydraulic model manual as described in Task 7.3.

The technical memorandums will include:

TM 1.0 Regulatory Overview
TM 2.0 Recycled Water Market and Demand Assessment
TM 3.0 Recycled Water Supply
TM 4.0 Seasonal and Operational Storage Needs Assessment
TM 5.0 Evaluation Criteria
TM 6.0 Condition Assessment
TM 7.0 Existing and Proposed System Analysis
TM 8.0 Capital Improvement Plan

As a final deliverable, we will prepare a Recycled Water Master Plan document that will be a compilation of all the technical memorandums prepared throughout the project as well as a brief summary of the information included in the hydraulic model manual. An outline of the final report is as follows:

1.0 Executive Summary
2.0 Introduction (include Regulatory Overview TM)
3.0 Study Area
4.0 Recycled Water System
5.0 Service Criteria (include Evaluation Criteria TM)
6.0 Recycled Water Supply (include Recycled Water Supply TM)
7.0 Recycled Water Use (include Recycled Water Market and Demand Assessment TM)
8.0 Hydraulic Model (condense and summarize portions of Model Manual)
9.0 Existing System Analysis (include portions of System Analysis TM)
10.0 Proposed System Analysis (include portions of System Analysis TM)
11.0 Condition Assessment (include Condition Assessment TM)
12.0 Capital Improvement Program (include Capital Improvement Program TM)

EXHIBIT B

LIST OF SUBCONSULTANTS

Carollo Engineers
199 S. Los Robles Avenue, Suite 530
Pasadena, CA 91101
Contact: Inge Wiersema, P.E.
Vice President

DCSE, Inc.
23382 Mill Creek Drive, Suite 100
Laguna Hills, CA. 92653
Contact: Masoud S. Hoseyni, Ph.D.
President

F.S. Brainard & Company
5 Terri Lane, Unit 15
P.O. Box 366
Burlington, NJ 08016
Contact: Bradford Brainard
President

EXHIBIT C

BREAKDOWN OF COSTS

STAFF HOUR & FEE ESTIMATE
Moulton Niguel Water District
Recycled Water Master Plan
August 5, 2015

	Task	Project Manager (AkM) - Zeki Koyiran	Project Engineer (AkM) - Diann Pay	Hydraulic Modeling and Analysis (AkM) - Jon Nitta	Hydraulic Modeling and Analysis (AkM) - Haly Herrera	Field Data Collection (AkM) - Steve Patterson	Condition Assessment (AkM) - Gary Hobson	John Loague (AkM) - QA/QC	Office Support	Project Mgr (Carollo) - Inge Wiersema	Project Engr (Carollo) - Amy Martin	Staff Engineer/GIS (Carollo) - Aimee Zhao	Condition Assessment Lead (Carollo) - Andrew Wiesner	Regulatory Overview (Carollo) - Guy Carpenter	Structural Engr (Carollo) - James Doering	Mechanical Engr (Carollo) - Khalil Kalrouz	Graphics, Admin / Document Processing	Sr. GIS Analyst (DCSE) - Haritha Vendra	GIS Analyst (DCSE) - Latha Palakur, Hugh Dittrich	Total Hours	Labor Cost	Expenses	Total Cost	ETWD Cost	MNWD Cost
1	**Project Administration / Management**	48	48							24	24		8							152	$28,908		$28,908	$4,336	$24,572
2	**Data Collection and Review**	8	16	16	8															48	$7,880		$7,880	$1,182	$6,698
3	**Regulatory Overview (with TM)**	4	4							10				40			2			60	$11,936		$11,936		$11,936
4	**Recycled Water Market and Demand Assessment (TM)**	16	40	24				16		8	24	16					4			148	$25,682		$25,682		$25,682
	4a Inventory Existing Water Users and Demands									4	16	20								40	$6,300		$6,300	$1,575	$4,725
	4b Develop Diurnal Flow Characteristics (50 Sites with Meter Masters)	8	24	60	120	180														392	$52,800	$35,000	$87,800	$6,864	$80,936
	4c Develop Seasonal Flow Characteristics	8	16	32	80					2	4	8								150	$21,125		$21,125	$4,225	$16,900
	4d Identify Potential Recycled Water Demands & Diurnal and Seasonal Characteristics									6	16	40								62	$9,471		$9,471		$9,471
	4e Assess the Impact of Turf Removal on Recycled Water Consumption									8	24	8								40	$6,888		$6,888		$6,888
	4f Prepare a List of All Potential Recycled Water Users									2	4	8								14	$2,205		$2,205		$2,205
	4g Review and Update User Cost Effectiveness Analysis									8	16									24	$4,452		$4,452		$4,452
	4h Prioritize Implementation of Recycled Water Conversion Projects									12	40	60								112	$17,556		$17,556		$17,556
	4i Develop a Phased Implementation Schedule									12	10	12								34	$5,964		$5,964		$5,964
5	**Recycled Water Supply (with TM)**	16	32	40				4												92	$15,820		$15,820	$2,373	$13,447
6	**Seasonal and Operational Storage Needs Assessment (with TM)**	16	32	56	96			4												204	$29,740		$29,740	$9,814	$19,926
7	**Hydraulic Model Update**																								
	7.1.1 Hydraulic Model Development	8	24	80	300													20	60	492	$62,820		$62,820	$8,167	$54,653
	7.1.2 Model Calibration	8	16	40	100	64														228	$30,840		$30,840		$30,840
	7.2 Model Scenarios (existing, future, plus 20)	16	32	120	60															228	$34,240		$34,240	$5,136	$29,104
	7.3 Hydraulic Model Manual	8	40	60	24			16	16											164	$24,920		$24,920		$24,920
8	**Time Management and User Scheduling Plan**	4	16	16	40															76	$10,940		$10,940	$2,188	$8,752
9	**Existing System Analysis**																								
	9.1 Evaluation Criteria	4	16	16																36	$6,140		$6,140		$6,140
	9.2 Condition Assessment (with TM)	4					40			20	30	60	80		100	60	12			406	$72,566		$72,566		$72,566
	9.3 System Pressures and Pressure Zones	4	4	8	8													8	16	48	$6,368		$6,368		$6,368
10	**Proposed System Analysis (with TM)**	4	24	16	16			4												64	$10,320		$10,320	$1,032	$9,288
11	**Inter-Agency Opportunities**	24	40																	64	$12,080		$12,080	$3,986	$8,094
12	**Capital Improvement Plan (with TM)**																								
	12.1 Costs	4	8	8																20	$3,460		$3,460	$346	$3,114
	12.2 Phases	4	8	8																20	$3,460		$3,460	$346	$3,114
13	**Report**	16	48	24				4												92	$16,380	$3,000	$19,380	$1,938	$17,442
	Total Hours	232	488	624	852	244	40	48	16	116	208	232	88	40	100	60	18	28	76	3510					
	Rate ($/Hr)	$195	$185	$150	$120	$130	$185	$195	$60	$221	$168	$137	$168	$200	$200	$200	$116	$126	$105						
	Total Cost	**$45,240**	**$90,280**	**$93,600**	**$102,240**	**$31,720**	**$7,400**	**$9,360**	**$960**	**$25,578**	**$34,944**	**$31,668**	**$14,784**	**$7,980**	**$19,950**	**$11,970**	**$2,079**	**$3,528**	**$7,980**		**$541,261**	**$38,000**	**$579,261**	**$53,508**	**$525,753**

EXHIBIT D

SCHEDULE OF ENGINEERING FEES

AKM CONSULTING ENGINEERS
HOURLY FEE SCHEDULE
January 2015

Labor Classification		Hourly Rate
1.	Principal	$205.00
2.	Principal Engineer	$195.00
3.	Project Manager	$195.00
4.	Project Engineer	$185.00
5.	Resident Engineer	$180.00
6.	Senior Engineer	$150.00
7.	Associate Engineer	$135.00
8.	Financial Analyst	$105.00
9.	Construction Manager	$130.00
10.	Staff Engineer	$120.00
11.	Inspector	$110.00
12.	Assistant Engineer	$87.00
13.	Senior Designer/Senior CADD Technician	$90.00
14.	Designer/CADD Technician	$85.00
15.	Engineering Technician	$80.00
16.	Engineering Aide	$55.00
17.	Data or Word Processing	$66.00
18.	Office Support	$60.00

Out of pocket expenses (blueprinting, reproduction and printing, delivery, etc.) will be invoiced at cost plus 5%. Subcontracted services will be marked up 5% in order to cover costs associated with administration, coordination and management of subcontractors. Mileage will be invoiced at $0.65/mile. This schedule of rates is in effect for one full year from date of contract.

Moulton Niguel Water District

STAFF REPORT

TO: **Board of Directors** **MEETING DATE: August 17, 2015**

FROM: **Marc Serna, Director of Engineering and Operations**
Eva Plajzer, Assistant Director of Engineering

SUBJECT: **SWRCB Water Recycling Facilities Planning Grant**

DIVISION: **District-Wide**

SUMMARY:

Issue: Board action is required for submitting an application to the State Water Resources Control Board for the Water Recycling Facilities Planning Grant for FY 2015-16.

Recommendation: It is recommended that the Board of Directors adopt the resolution entitled, "Authorizing Water Recycling Facilities Planning Grant Application to State Water Resources Control Board and Authorizing the General Manager to Develop a Grant Agreement for the Moulton Niguel Water District Recycled Water Master Plan."

Fiscal Impact: The Recycled Water Master Plan is budget in Fund 6, Water Efficiency Fund. If the grant is awarded to MNWD, SWRCB will reimburse MNWD 50% of the project cost up to $75,000.

BACKGROUND:

On March 7, 2000, the voters approved the Safe Drinking Water, Clean Water, Watershed Protection and Flood Protection Act (Proposition 13). Section 79143 of Proposition 13 provides authorization for the State Water Resources Control Board (SWRCB) to issue water recycling facilities planning grants from monies in the 2000 Bond Law Water Recycling Subaccount. This authorization continues the water recycling program that was started under the Safe, Clean, Reliable Water Supply Act of 1996.

The SWRCB approved the Water Recycling Funding Program (WRFP) Guidelines on April 17, 1997, governing the Water Recycling Construction Program and the Water

Recycling Facilities Planning Grant Program (FPGP). FPGP grants are authorized to cover 50 percent of eligible costs up to a maximum grant of $75,000 per study.

The District's Recycled Water Master Plan will meet the requirements outlined in the FPGP Guidelines. Development of the Recycled Water Master Plan will require the services of a consultant experienced in recycled water, master planning, and capital improvement programs to prepare a complete assessment of the District's recycled water system. A professional services agreement for master planning services will be presented to the Board of Directors for consideration.

DISCUSSION:

Staff recommends applying for the SWRCB Water Recycling Facilities Planning Grant for FY 2015-16 to assist in funding the Recycled Water Master Plan, up to the maximum grant amount of $75,000. The grant would require that MNWD share at least 50 percent of the total project costs. The proposed project budget is $527,126. The District would incorporate the appropriate funding in the FY 2015-16 budget. The current resolution provides provisions for submitting the SWRCB Water Recycling Facilities Planning Grant application.

Attachment: Resolution entitled, "Authorizing Water Recycling Facilities Planning Grant Application to State Water Resources Control Board and Authorizing the General Manager to Develop a Grant Agreement for the Moulton Niguel Water District Recycled Water Master Plan".

RESOLUTION NO. 15-___

RESOLUTION OF THE BOARD OF DIRECTORS OF THE MOULTON NIGUEL WATER DISTRICT AUTHORIZING WATER RECYCLING FACILITIES PLANNING GRANT APPLICATION TO THE STATE WATER RESOURCES CONTROL BOARD AND AUTHORIZING A GRANT AGREEMENT FOR THE MNWD RECYCLED WATER MASTER PLAN

WHEREAS, the Board of Directors of the Moulton Niguel Water District (MNWD), intends to authorize an application to the State Water Resources Control Board (SWCRB) to obtain a Water Recycled Facilities Planning Grant ("Grant"), and further to authorize MNWD to enter into an agreement to receive the Grant for the MNWD Recycled Water Master Plan ("Project"); and

WHEREAS, the Project is for the benefit of MNWD and its customers, and the Grant and the Project shall be carried out consistent with MNWD's policies, rules, regulations and bylaws; and

WHEREAS, the Project would accomplish the following:

- Optimize recycled water use within the District;
- Provide for regional corporation for recycled water use;
- Provide a detailed path to increase recycled water;
- Develop a capital improvement program for the recycled water system.

NOW, THEREFORE, the Board of Directors of Moulton Niguel Water District does hereby **RESOLVE, DETERMINE** and **ORDER** as follows:

Section 1. The foregoing recitals are incorporated in this Resolution.

Section 2. The General Manager of MNWD, or her designee, is hereby authorized and directed to prepare required data and to conduct any review and necessary investigation in connection with the Grant application, and to sign and file for and on behalf of MNWD the Grant application from the SWRCB in the amount not to exceed seventy five thousand dollars ($75,000.00) for a facility planning study of Recycled Water Master Plan; and

Section 3. The General Manager of MNWD, or her designee, is hereby authorized and directed to negotiate and execute a Grant contract and any amendments or change orders thereto on behalf of MNWD; and

Section 4. MNWD agrees, and authorizes the General Manager of MNWD, or her designee, to certify that, MNWD has and will comply with all applicable State statutory and regulatory requirements related to any state Grant funds received.

ADOPTED, APPROVED and **SIGNED** this 20th day of August, 2015.

MOULTON NIGUEL WATER DISTRICT

_____

President
MOULTON NIGUEL WATER DISTRICT and of the Board of Directors thereof

_____

Secretary
MOULTON NIGUEL WATER DISTRICT and of the Board of Directors thereof

Moulton Niguel Water District

STAFF REPORT

TO: **Board of Directors** **MEETING DATE: August 17, 2015**

FROM: **Marc Serna, Director of Engineering and Operations**
Todd Dmytryshyn, Senior Engineer

SUBJECT: **Mathis Recycled Water Reservoir Re-coating Contract Award**

DIVISION: **3**

SUMMARY:

Issue: Staff issued the Notice Inviting Sealed Proposals (Bids) for the Mathis Recycled Water Reservoir Re-coating and Safety Improvements, Project No. 2013.002.

Recommendation: It is recommended that the Board of Directors award the construction services contract for the Mathis Recycled Water Reservoir Re-coating and Safety Improvements Project No. 2013.002 to J. Colon Coatings, Inc. in the amount of $842,550; authorize the General Manager to execute the contract; and authorize the General Manager or designee to approve change orders up to 10% of the contract value.

Fiscal Impact: Project No. 2013.002 is budgeted in Fund 7, Rehabilitation and Replacement with a current project budget of $800,000. The proposed project budget is $1,036,415. The additional funds required will be moved forward from Fiscal Year (FY) 2016-17 Reservoir Recoating Program and an equal amount will be moved from FY 2015-16 Valve Replacement Project to FY 2016-17 under the authority of the General Manager; the overall FY 2015-16 CIP budget will not be impacted.

BACKGROUND:

The Mathis Recycled Water Reservoir was constructed in 1965 as part of Improvement District No. 2. The reservoir was originally constructed as a potable water tank. It was converted to recycled water in 2002. The reservoir is a 1.75 million gallon (MG) steel tank and serves the District's 650-zone recycled water system in the Nellie Gail Ranch area of Laguna Hills (as shown in Exhibit A). It is a critical facility in the District's recycled water distribution system.

The District's steel reservoirs are coated to protect the steel shell, floor, and roof. The District inspects each reservoir every 10 years to determine if and when repairs to the coating or steel surfaces are necessary or if a complete recoating is appropriate. The Mathis Recycled Water Reservoir was drained and inspected in 2011 as part of the District's annual maintenance program for reservoirs. The inspections showed corrosion and structural damage that require repairs. The proposed work will include structural and corrosion repairs, tank operation and safety improvements, a cathodic protection system, and re-coating of the interior and exterior of the reservoir.

The construction documents also include re-painting the exterior of the 4.0 MG Nellie Gail potable water reservoir located at the same site. The Nellie Gail Reservoir was constructed in 1982. The interior of the reservoir was re-coated in 2006 and a warranty inspection was performed in 2007. Damage and corrosion were observed on the exterior paint of the Nellie Gail Reservoir while performing field investigations for the design of the Mathis Recycled Water Reservoir project. Staff recognized that the this project provides a great opportunity to address the exterior paint issues at the Nellie Gail Reservoir while a contractor is already mobilized at the site, thereby reducing the inconvenience to neighboring residences and ultimately saving time and cost to the District.

Construction documents for the Mathis Recycled Water Reservoir Re-coating and Safety Improvements project were prepared by Harper & Associates Engineering, Inc. to address the recommendations of the 2011 inspection report.

DISCUSSION:

A request for bids was issued to eight qualified contractors. On July 28, 2015, the District received five sealed bids. The table below summarizes the bids received:

Firm	**Bid**
J. Colon Coatings, Inc.	$842,550
Paso Robles Tank	$870,000
Advanced Industrial Services	$888,660
Blastco Inc.	$1,091,425
Crosno Construction	$1,315,000
Engineer's Estimate	**$956,300**

Staff has determined that the lowest responsible and responsive bidder is J. Colon Coatings, Inc. Staff has completed its review of the contract documents and has determined that they are in order. J. Colon Coatings, Inc. has performed quality work in the past for the District and is well-qualified to perform this type of work.

The primary reason that bids came in higher than the original budget is due to the additional cost associated with re-painting the exterior of the Nellie Gail Reservoir.

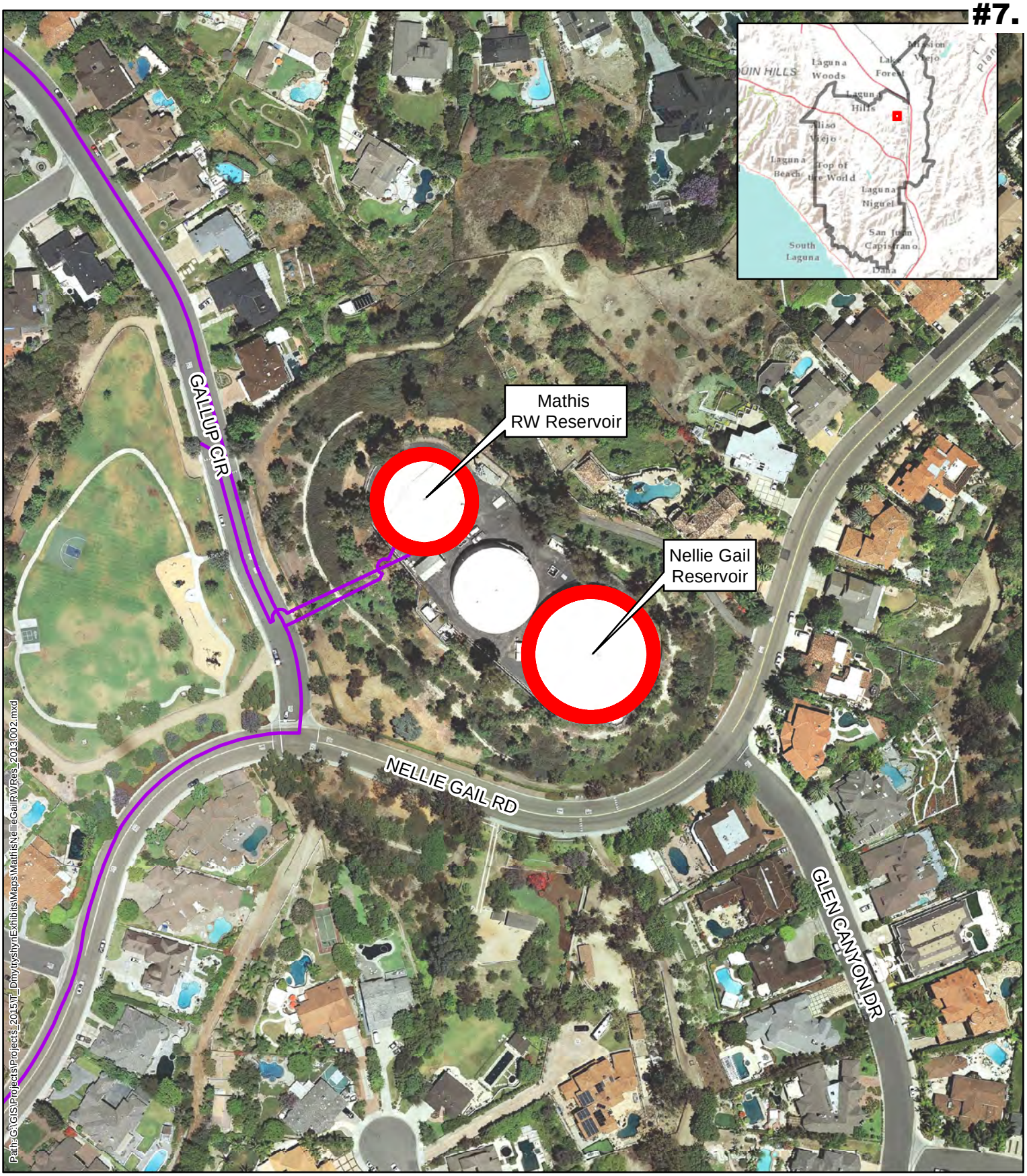
Staff also prepared a Request for Proposals (RFP) for specialty inspection services for the coating and improvements inspection. The services are valued at $91,610 and are presented as a separate Board action.

SUMMARY OF PROJECT BUDGET:

	Project Budget	Proposed / Approved Contract	Proposed / Authorized Contingency	Total Proposed / Authorized Amount
Project Items				
Engineering	$15,000*	$15,000	$0	$15,000
Construction	$700,000	$842,550	$84,255	$926,805
Specialty Inspection	$82,000	$91,610	$0	$91,610
Legal & District Labor	$3,000	$3,000	$0	$3,000
Totals	$800,000	$952,160	$84,255	$1,036,415

* $8,804 has been expended to date.
Currently Proposed Amount

Attachment: Exhibit A – Location Map



Reservoir

RW Mainline

N

Moulton Niguel Water
Leading the Way in Service

0 50 100 200 300 Feet

Scale = 1:2,000

Exhibit "A" Location Map
Mathis & Nellie Gail Reservoirs
Contract No. 2013.002

Moulton Niguel Water District

STAFF REPORT

TO: **Board of Directors** **MEETING DATE: August 17, 2015**

FROM: **Marc Serna, Director of Engineering and Operations**
Todd Dmytryshyn, Senior Engineer

SUBJECT: **Inspection Services for Mathis Recycled Water Reservoir**

DIVISION: **3**

SUMMARY:

Issue: Specialty inspection services are required for the Mathis Recycled Water Reservoir Re-coating and Safety Improvements, Project No. 2013.002. These specialty services are related to the coating and structural aspects of the project.

Recommendation: It is recommended that the Board of Directors award the engineering services agreement with Harper and Associates Engineering, Inc. in the amount of $91,610 and authorize the General Manager to execute the agreement.

Fiscal Impact: Project No. 2013.002 is budgeted in Fund 7, Rehabilitation and Replacement with a current project budget of $800,000. The proposed project budget is $1,036,415. The additional funds required will be moved forward from Fiscal Year (FY) 2016-17 Reservoir Recoating Program and an equal amount will be moved from FY 2015-16 Valve Replacement Project to FY 2016-17 under the authority of the General Manager; the overall FY 2015-16 CIP budget will not be impacted.

BACKGROUND:

The Mathis Recycled Water Reservoir is proposed to receive structural and corrosion repairs, tank operation and safety improvements, a cathodic protection system and re-coating of the interior and exterior. The Nellie Gail Reservoir is proposed to receive exterior re-painting. This work is required due to the age and condition of the reservoirs. The Board of Directors will be presented with a separate Board action to award a construction contract for this work to J. Colon Coatings, Inc. in the amount of $842,550.

DISCUSSION:

A request for proposals for specialty inspection services for both reservoirs was issued to five qualified firms. On July 16, 2015, the District received five proposals. The table below summarizes the proposals received:

Firm	Bid
Harper & Associates Engineering, Inc. (Harper)	$91,610
CSI Services, Inc. (CSI)	$95,496
MCS Inspection Group, Inc. (MCS)	$96,262
HDR	$225,806
Corrpro	$233,275

The proposals were evaluated based on related project experience, understanding of the project objectives and scope of work, project team experience and expertise, responsiveness to the request for proposal, unique qualifications, level of effort, and proposal fees.

The proposals from Harper and CSI were very competitive. Consequently, staff negotiated with Harper and CSI and prepared supplemental questions for both firms to obtain a better understanding of their proposed approaches to providing the required services. Although the proposed qualifications were comparable, the firm that showed the best approach was Harper and Associates Engineering, Inc. The proposed agreement and scope of work is provided in Exhibit B.

The primary reason that proposals came in higher than the original budget and overall increase in project budget is due to the additional cost associated with inspection services for the exterior re-painting work at the Nellie Gail Reservoir. This additional work was added to the project to address issues observed during field investigations for the design of the Mathis Recycled Water Reservoir. Staff recognized that this project provides a great opportunity to address the exterior paint issues at the Nellie Gail Reservoir while a contractor is already mobilized at the site, thereby reducing the inconvenience to neighboring residences and ultimately saving time and cost to the District.

SUMMARY OF PROJECT BUDGET:

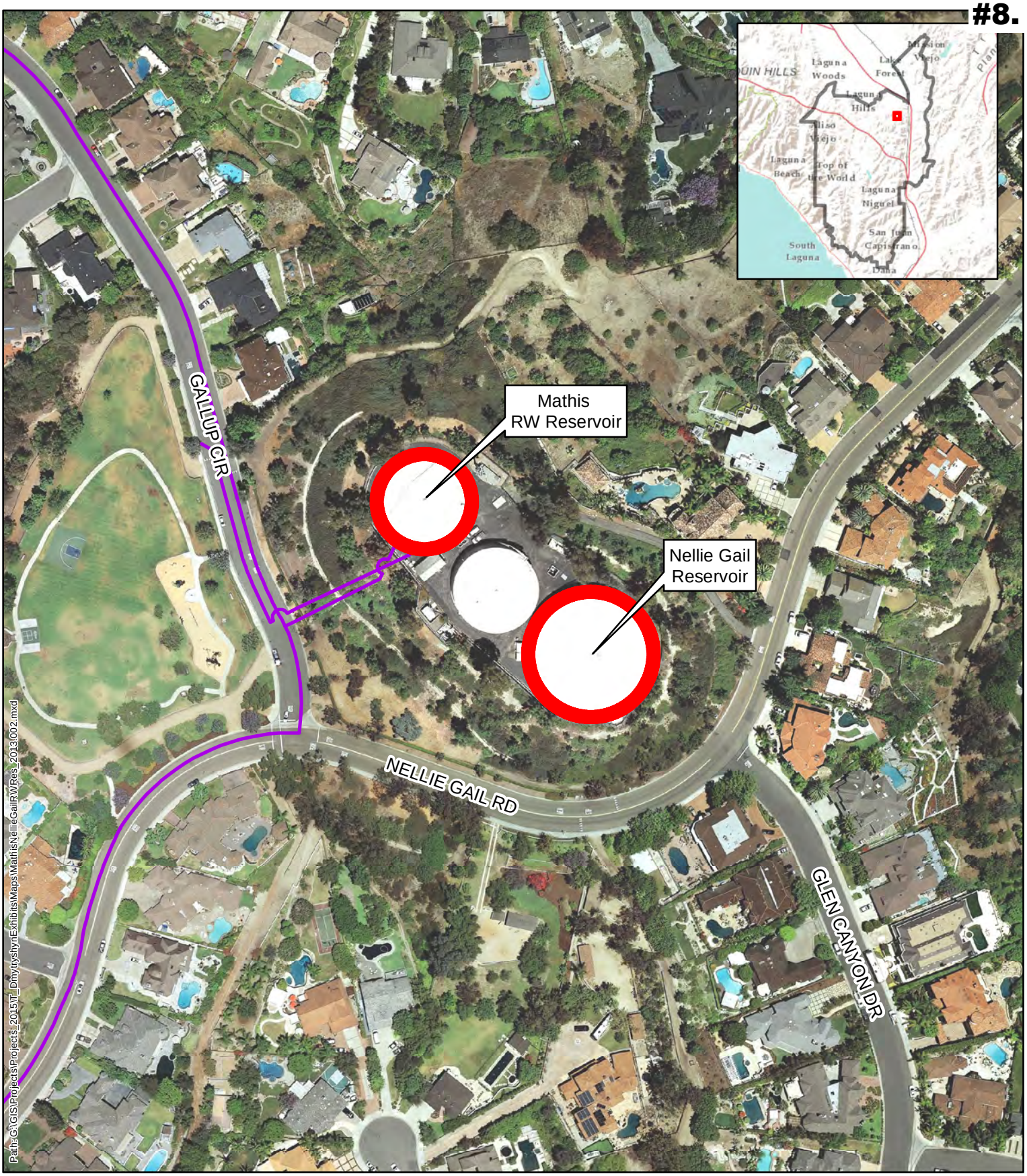
	Project Budget	Proposed / Approved Contract	Proposed / Authorized Contingency	Total Proposed / Authorized Amount
Project Items				
Engineering	$15,000*	$15,000	$0	$15,000
Construction	$700,000	$842,550	$84,255	$926,805
Specialty Inspection	$82,000	$91,610	$0	$91,610
Legal & District Labor	$3,000	$3,000	$0	$3,000
Totals	$800,000	$952,160	$84,255	$1,036,415

* $8,804 has been expended to date.

Currently Proposed Amount

Attachments:

1. Exhibit A – Location Map
2. Proposed Agreement and Scope of Work



Reservoir

RW Mainline

N

Moulton Niguel Water
Leading the Way in Service

0 50 100 200 300 Feet

Scale = 1:2,000

Exhibit "A" Location Map
Mathis & Nellie Gail Reservoirs
Contract No. 2013.002

AGREEMENT FOR ENGINEERING SERVICES BETWEEN MOULTON NIGUEL WATER DISTRICT AND HARPER & ASSOCIATES ENGINEERING, INC. MNWD PROJECT: MATHIS RECYCLED WATER RESERVOIR RE-COATING AND SAFETY IMPROVEMENTS; CONTRACT NO. 2013.002

THIS AGREEMENT (the "Agreement") is dated as of _____, 2015 (the "Effective Date"), by and between Harper & Associates Engineering, Inc., hereinafter referred to as "ENGINEER" and Moulton Niguel Water District hereinafter referred to as "MNWD," and provides for the furnishing of engineering services to MNWD by ENGINEER. MNWD and ENGINEER may sometimes be referred to in this Agreement individually as "party" and together as "parties."

R E C I T A L S

WHEREAS, ENGINEER proposes to provide inspection services to MNWD in connection with its Mathis Recycled Water Reservoir Re-coating and Safety Improvement project (the "Project"). The scope of work to be performed by ENGINEER under this Agreement is described in **Exhibit A** hereto, which is incorporated herein (the "Scope of Work").

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties agree as follows:

A G R E E M E N T

SECTION I - ENGINEERING SERVICES, AUTHORIZATION

Section 1.1 ENGINEER proposes to perform those services which are described in the Scope of Work. MNWD may request or ENGINEER may recommend, that ENGINEER perform work in addition to or different from that delineated in the original Scope of Work, or delete services from the Scope of Work. Upon MNWD's request for additional or changed work, ENGINEER shall provide a cost estimate and written description of the additional or changed work. Prior to any such addition, changes, or deletion to the Scope of Work, MNWD and ENGINEER shall negotiate an adjustment of the compensation and time for completion and shall execute a written addendum to this Agreement. Upon execution of each addendum, (i) the Scope of Work shall thereafter be as described in **Exhibit A**, respectively, as modified by the addendum and any previously executed addendum; and (ii) the time for completing the work shall be as set forth in the addendum. Following execution of any addendum, all terms and provisions of the Agreement, except as expressly modified by such addendum, shall remain in full force and effect. MNWD will not be required to pay for any additional or changed work rendered in advance of the execution of an addendum covering the additional or changed work.

Section 1.2 ENGINEER agrees to complete the inspection work described in the Scope of Work no later than **April 15, 2016**. ENGINEER further agrees to complete all other work within the time periods set forth in the Scope of Work. Time is of the essence in this Agreement.

ENGINEER agrees to coordinate the work to ensure its timely completion and shall promptly notify MNWD of any anticipated delays or causes or casualties beyond ENGINEER'S control which may affect the work schedule. In the event the time for completing the Scope of Work is projected to be exceeded due to circumstances beyond the control of ENGINEER, ENGINEER shall have an additional amount of time to be agreed upon in writing between the parties pursuant to Section 1.1 and an executed addendum, in which to complete the work. ENGINEER shall not begin work on any services pursuant to this Agreement until receipt of MNWD'S written direction to proceed. Upon receipt of such notice, ENGINEER shall immediately commence the work described in

Exhibit A.

Section 1.3 ENGINEER'S civil engineer, duly licensed in the State of California, who shall be the Principal in Charge of work, is Krista Harper, P.E.

As part of the Project, ENGINEER intends to subcontract certain services for the Project. Separate subcontracts may be entered into between ENGINEER and the subconsultants listed in **Exhibit B** hereto. Any additional subconsultants ENGINEER proposes to use are subject to prior written approval by MNWD.

Without prior written approval of MNWD, ENGINEER will not make any changes in ENGINEER'S Principal in Charge, in consultants, in outside labor arrangements, or associations or joint ventures which are required to accomplish any part of the Scope of Work. ENGINEER is responsible to MNWD for the acts and omissions of its subcontractors as it is for persons directly employed by ENGINEER. Nothing contained in this Agreement creates any contractual relationship between any subconsultant/subcontractor and MNWD. ENGINEER shall not allow any subconsultant/subcontractor to commence work or services under any subcontract until all insurance required of ENGINEER has been obtained for the subconsultant/subcontractor.

Section 1.4 MNWD shall make available to ENGINEER at no cost all technical data in MNWD's possession, including maps, past reports, prior studies, prior plan operating data, and other information reasonably required by ENGINEER and relating to the work to be performed under this Agreement.

Section 1.5 All documents and information generated by Engineer and any of Engineer's subcontractors pursuant to this Agreement shall remain confidential and shall not be copied, distributed, or otherwise provided or referenced by Engineer or Engineer's subcontractors to any third parties other than with MNWD's written consent, or as compelled by order of court.

Section 1.6 All original drawings and other documents, including detailed calculations developed for the Project shall, upon payment in full for the services described in this Agreement or as otherwise provided in SECTION II herein, be furnished to and become the property of MNWD.

Engineer may retain a copy of all reports and documents for their files.

Section 1.7 Except as otherwise required by law, ENGINEER will not disclose or cause their respective officers, directors, employees, representatives, agents, advisors, or subconsultants to disclose or use any of the content of negotiations or Confidential Information, furnished or otherwise permitted for review, by one party to the other in connection with the proposed transactions. For purposes of this paragraph, "Confidential Information" means information supplied by one party to the other, except information which is part of public record.

SECTION II – FEES AND PAYMENT

Section 2.1 In consideration for providing the inspection services referred to in SECTION I herein, MNWD agrees to compensate ENGINEER on an hourly rate basis, with a not-to-exceed maximum amount of **Ninety-One Thousand Six Hundred Ten Dollars ($91,610)**. The breakdown of the costs for the Project is attached hereto as **Exhibit C** which is incorporated herein. Compensation shall be on an hourly rate basis for labor costs as defined below in Section 2.2.

Section 2.2 Labor costs shall be the total number of hours worked on the job by each employee multiplied by the applicable hourly billing rate. The Fee Schedule set forth in **Exhibit D** attached

hereto and incorporated herein sets forth the current billing rates of ENGINEER.

Section 2.3 Payments will be made based on submittal of invoices by ENGINEER. Invoices will include the number of hours worked by various labor categories, the hourly billing rate per individual, and the total amount due. Only one bill per month shall be submitted by ENGINEER, showing invoices for ENGINEER and each subconsultant utilized during the monthly billing period.

SECTION III – PREVAILING WAGE

Section 3.1 Under the provisions of the California Labor Code, the Director of the California Department of Industrial Relations has determined the prevailing rate of wages for the locality in the services are to be performed and MNWD has adopted said prevailing rate of wages. A copy of these prevailing wage rates are on file with the Department of Industrial Relations and can be found online with the State of California at http://www.dir.ca.gov/dlsr/pwd. A copy of such prevailing wage rates shall be posted on the jobsite by ENGINEER.

Section 3.2 ENGINEER will not pay less than the specified prevailing wage rates to all workers employed by them in the execution of the services.

Section 3.3 ENGINEER must be registered with the Department of Industrial Relations pursuant to the requirements of Sections 1725.5 and 1771.1 of the California Labor Code. Contracts entered into with any ENGINEER or subcontractor, in violation of Section 1771.1(a), shall be subject to cancellation by the MNWD at the sole discretion of the MNWD consistent with Section 1771.1(e).

Section 3.4 ENGINEER acknowledges that this project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

Section 3.5 ENGINEER shall post job site notices, pursuant to the requirements set forth in the Labor Code and related applicable regulations, including but not limited to, those provisions addressing the posting of notice relating to prevailing wage compliance.

Section 3.6 ENGINEER is responsible for furnishing those records specified in Section 1776 of the Labor Code directly to the Labor Commissioner, pursuant to the procedures set forth in Section 1771.4 of the Labor Code.

SECTION IV - WARRANTY/DISCLAIMER

Section 4.1 ENGINEER is employed to render inspection services pursuant to this Agreement only, and any payments made to ENGINEER are compensation solely for such services as it may render and recommendations it may make in carrying out the work. ENGINEER makes no warranty, either expressed or implied, as to its services furnished under this Agreement, including any findings, opinions, recommendations, factual presentations, or professional advice, other than that such services will be performed in accordance with generally accepted professional engineering practices and principles.

Section 4.2 ENGINEER will provide any construction or operation and maintenance cost opinions based on exercise of his experience and judgment in applying presently available cost data, but it is recognized that ENGINEER has no control over cost of labor and materials, or over competitive bidding proceedings and market conditions, so that it cannot warrant that construction or capital costs will not vary from such costs estimates.

Section 4.3 In performing services under this Agreement, ENGINEER shall observe and abide by the terms and conditions of all applicable laws, regulations, ordinances, or other rules of the United States, of the State of California, or any political subdivisions thereof, or of any other duly constituted public authority or agency including but not limited to MNWD.

Section 4.4 If the Project results in construction of any kind, the parties agree MNWD and ENGINEER shall be indemnified by the contractor for all claims, damages, losses and expenses arising out of or resulting from the contractor's performance of work including injury to any worker on the job site except for the negligence of MNWD or ENGINEER, such indemnity to be in accordance with MNWD's construction documents. MNWD and ENGINEER shall be named as additional primary insured(s) by contractor's General Liability Insurance policies without offset and all construction documents and insurance certificates shall include wording to such effect.

Section 4.5 ENGINEER and MNWD shall not be responsible for the means, methods, techniques, sequences, or procedure of construction selected by contractors or the safety precautions and programs incident to the work of contractor and will not be responsible for a contractor's failure to carry out work in accordance with contract documents.

Section 4.6 The services to be performed by ENGINEER are intended solely for the benefit of MNWD. Nothing contained herein shall confer any rights upon or create any duties on the part of ENGINEER toward any person or persons not a party to this Agreement including, but not limited to any contractor, subcontractor, supplier, or the agents, officers, employees, insurers, or sureties of any of them. Any reuse of documents or data for other than the intended use shall be at the sole risk of MNWD.

SECTION V - INSURANCE AND INDEMNIFICATION

Section 5.1 Professional Liability Insurance. ENGINEER and each of its sub-consultants/subcontractors shall maintain throughout the term of this Agreement a professional liability (errors and omissions) policy of insurance having coverage of not less than One Million Dollars ($1,000,000) for each claim and in annual aggregate. The following provisions shall apply if the professional liability coverage is written on a claims-made basis:

(a) The retroactive date of the policy must be shown and must be before the date of this Agreement.

(b) Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of this Agreement or the services hereunder.

(c) If coverage is canceled or not renewed and it is not replaced with another claims made policy form with a retroactive date that precedes the date of this Agreement, ENGINEER must provide extended reporting coverage for a minimum of five (5**)** years after completion of the services. MNWD shall have the right to exercise at the ENGINEER's cost any extended reporting provisions of the policy should the ENGINEER cancel or not renew the coverage.

(d) A copy of the claims reporting requirements must be submitted to MNWD prior to the commencement of any work under this Agreement.

Section 5.2 General/ Automobile Liability Insurance. ENGINEER and each of its sub-consultants/subcontractors shall maintain throughout the term of this Agreement a general liability policy of insurance for bodily injury and/or death, personal injury and property damage claims

which may arise from or in connection with the performance of the work under this Agreement by ENGINEER and its sub-consultants/subcontractors, and each of their agents, representatives, or employees. Such public liability and property damage insurance (which shall cover claims, injury, death, loss or damage or accidents from the use or operation of any automobiles, trucks and/or other mobile or stationary equipment, whether owned, non-owned or hired) shall be comprehensive in form and shall be on a "per occurrence" basis in a minimum amount of One Million Dollars ($1,000,000) per occurrence and an annual aggregate limit in a minimum amount at least twice the per occurrence limit specified in this section.

All insurance provided under this Section 5.2 shall name MNWD and its' directors, officers, employees and representatives as additional insureds under each such policy ("additional insureds") and an additional insured endorsement shall be provided in form acceptable to MNWD.

Section 5.3 Worker's Compensation. By its signature hereunder, ENGINEER certifies that it is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and that ENGINEER will comply with such provisions before commencing the performance of work under this Agreement. ENGINEER and subconsultants/subcontractors shall maintain throughout the term of this Agreement workers' compensation insurance with limits no less than the statutory limits, and Employer's Liability insurance with limits no less than One Million Dollars ($1,000,000) per accident and per disease for their employees and shall file with the MNWD the certificate required by Labor Code Section 3700. The workers compensation/Employer's Liability insurance shall be endorsed with a waiver of subrogation in favor of MNWD and its' directors, officers, employees and representatives.

Section 5.4 Requirements of All Policies. All policies of insurance required under this SECTION V shall be from insurance providers who are either admitted or licensed to do business in California, or are Surplus Lines Carriers authorized to do business in California, and who have financial size and ratings of no less than A-, Class XIII, and in either case are otherwise acceptable to MNWD. All such policies shall include a provision and executed endorsement for thirty (30) days prior written notice by certified mail, return receipt requested, to MNWD of any cancellation or material alteration of such insurance. ENGINEER shall provide original certificates and endorsements for all such insurance on forms approved by MNWD in conformity with all requirements of this Agreement prior to commencement of any work or professional services. The policies required hereunder shall be endorsed to include contractual liability.

In the case of additional insured provisions, any insurance afforded the additional insureds by this Agreement is primary insurance as to the additional insureds. Any insurance or self-insurance maintained by the additional insureds shall be excess of the ENGINEER's (and its subconsultant's/subcontractor's) insurance, and shall not contribute to such insurance.

Any deductibles or self-insured retentions must be declared in writing and approved by MNWD. At the option of MNWD, either: the insurance provider(s) shall reduce or eliminate such deductibles or self-insured retentions as respects the MNWD and its' directors, officers, employees and representatives; or the ENGINEER shall provide a financial guarantee satisfactory to MNWD guaranteeing payment of losses and related investigations, claim administration and defense expenses. Maintenance of insurance coverage as specified in this Agreement is a material term of this Agreement, and any failure to maintain or renew coverage, or to provide evidence thereof, as required by the terms is a material breach of this Agreement.

Section 5.5 Indemnity.

ENGINEER shall hold harmless and indemnify, including the cost to defend, MNWD and its' directors, officers, employees and representatives from liability, claims, damages, demands, actions, attorney's fees, costs and expenses (i) for personal injury, bodily injury or property damage that arise out of, pertain to, or relate to the operations and work of the ENGINEER and its sub-consultants/subcontractors under this Agreement (other than professional services), and (ii) that arise out of, pertain to, or relate to ENGINEER's or its sub-consultant's/ subcontractor's negligence including negligent acts, errors or omissions, recklessness, or willful misconduct in the performance (or actual or alleged non-performance) of the professional services under this Agreement.

ENGINEER shall defend itself and MNWD and its' directors, officers, employees and representatives against any and all liabilities, claims, losses, damages, actions, attorney's fees, costs and expenses (i) for personal injury, bodily injury or property damage that arise out of, pertain to, or relate to ENGINEER's or its sub-consultant's/ subcontractor's operations and work under this Agreement (other than professional services), and (ii) that arise out of, pertain to, or relate to ENGINEER's or its sub-consultant's/ subcontractor's negligence including negligent acts, errors or omissions, recklessness, or willful misconduct in the performance (or actual or alleged non-performance) of the professional services under this Agreement.

The foregoing provisions of this Section are intended to be, and shall be interpreted in a manner that is, consistent with Civil Code Section 2782.8 as it exists as of the date of this Agreement. The ENGINEER'S obligations pursuant to this Section shall survive the expiration or termination of this Agreement and/or the performance or completion of any or all services and work provided under this Agreement. This indemnity obligation shall apply to all liability regardless of whether any insurance is applicable, and the policy limits of any insurance shall not act as a limitation upon the indemnification, and amounts related thereto, to be provided by ENGINEER hereunder.

SECTION VI - TERMINATION OR ABANDONMENT

Section 6.1 This Agreement may be terminated in whole or in part in writing by either party provided that no such termination may be effected unless the other party is given not less than ten (10) calendar day's written notice (deliver by certified mail, return receipt requested) of intent to terminate. Additionally, MNWD may suspend performance by ENGINEER of any or all services listed in the Scope of Work under this Agreement by providing written notice to ENGINEER at least five (5) working days prior to the date on which MNWD wishes to suspend; provided, upon receipt of such notice, ENGINEER shall immediately suspend any work or services hereunder, unless otherwise instructed by MNWD in such notice.

Section 6.2 ENGINEER shall not perform further work under this Agreement after the effective date of suspension until receipt of written notice from MNWD to resume performance. MNWD and ENGINEER agree that in the event MNWD suspends or terminates performance by ENGINEER for any cause other than the intentional or negligent error or omission of ENGINEER, ENGINEER shall be entitled to payment of compensation incurred prior to the effective date of the suspension or termination, as determined under SECTION II of this Agreement.

Section 6.3 In the event of any suspension or termination herein, MNWD shall have the right to take possession and shall immediately own all original drawings and other documents developed for that portion of the work completed and/or being suspended or abandoned.

SECTION VII - GENERAL

Section 7.1 ENGINEER represents that it is aware of no facts or circumstances which would impair its ability to provide fair and unbiased advice to MNWD in the course of performing the engineering services hereunder, or which would impact its objectivity in performing such services hereunder.

Section 7.2 This Agreement represents the entire understanding of MNWD and ENGINEER as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder. This Agreement may not be amended, modified or altered except in writing, signed by the parties. This Agreement shall not be construed against the party preparing it, but shall be construed as if both parties prepared it.

Section 7.3 Any notice required or permitted to be given hereunder if not otherwise specified herein may be given or delivered by depositing the same in the United States Post Office, registered or certified, postage prepaid, or by personal service a hand delivery, and addressed to:

To MNWD - Attn: Marc Serna, Director of Engineering and Operations
Moulton Niguel Water District
27500 La Paz Road
Laguna Niguel, CA 92677-3489

To ENGINEER - Attn: Krista Harper
Harper & Associates Engineering, Inc.
1240 E. Ontario Ave., Suite 102-312
Corona, CA 92881

Section 7.4 California law shall govern the interpretation of this Agreement. In the event of any legal action to enforce or interpret this Agreement, the sole and exclusive venue shall be a court of competent jurisdiction located in Orange County, California, and the parties hereto agree to and do hereby submit to the jurisdiction of such court, notwithstanding Code of Civil Procedure 394.

Section 7.5 In the event an action is commenced by either party to enforce its rights or obligations arising from this Agreement, the prevailing party in such action, in addition to any other relief and recovery awarded by the court, shall be entitled to recover all costs and expenses, including court costs, plus a reasonable amount for attorney's fees.

Section 7.6 If any section of this Agreement or provision of this Agreement as applied to either party or to any circumstance shall be adjudged by a court of competent jurisdiction to be void or unenforceable for any reason, the same shall in no way affect (to the maximum extent permissible by law) any other provision of this Agreement, the application of any such provision under circumstances different from those adjudicated by the court, or the validity or enforceability of this Agreement as a whole.

Section 7.7 It is expressly understood and agreed that ENGINEER is an independent contractor and not an employee of MNWD while engaged in carrying out this Agreement. ENGINEER warrants that it will not represent, at any time or in any manner, that ENGINEER is an employee or agent of MNWD. ENGINEER shall have no authority to, and shall not, incur any debt, obligation or liability on behalf of MNWD.

The person signing this Agreement on behalf of each party hereto represents he/she has authority to sign on behalf of, respectively, MNWD or ENGINEER.

Section 7.8 This Agreement and all of the terms, conditions, and provisions hereof shall inure to the benefit of and be binding upon the parties hereto, and their respective successors and assigns; provided, however, that no assignment of this Agreement or any interest herein shall be made by ENGINEER without prior written consent of MNWD.

Section 7.9 This Agreement may be executed in counterparts, each of which shall be deemed an original.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the Effective Date.

Moulton Niguel Water District

By: _____
Joone Lopez
General Manager

Harper & Associates Engineering, Inc.

By: _____

Title: _____

EXHIBIT A

SCOPE OF WORK

PROJECT APPROACH

TASK NO. 1

PROJECT MANAGEMENT SERVICES - The objective of this item is to provide management services which will assist the District during the construction phase and help guarantee the project is completed in accordance with the specifications. As a firm that specializes in reservoir rehabilitation, HAE has a thorough understanding of the management required to provide a successful project.

1. Assist the District in conducting Pre-Construction Conference to enable all relevant parties to comprehend scope of project, implementation of specifications, and District requirements. Prepare an agenda and minutes for the Pre-Construction Conference covering all aspects of Contractor's questions and clarifications of project and present to all parties.

2. Prepare a video of the site conditions prior to the commencement of any construction work. Take additional photographs and video throughout the project as required to document site conditions.

3. Inspection Activity Reports shall identify daily start and stop times, size of Contractor's crew, equipment used, visitors to job site, climatic conditions throughout the day, quantity of materials used, work accomplished, periods of Contractor down time and cause, inspection procedures used and results, verification and recording of surface preparation, and coating material "batch numbers" mixing, thinning, application, and thickness. All entries shall be dated and timed. Daily inspection reports, including diagrams of the coating work accomplished, shall be submitted to the District.

4. Review all Contractor monthly progress payments, inspection reports, and inspector estimates of percent completion and make recommendations to the District for payment to Contractor as appropriate.

5. Prepare change orders as needed. The modifications communicated by change order would be fully documented with drawings, sketches, and/or written descriptions of the work required.

6. Assist the District in final acceptance of the project upon completion of all work by the Contractor. Prepare a punch list of items during the final project walk for the Contractor to complete.

7. Prepare a final project report documenting information from all inspection tasks, test results, and other required information.

    a. Submit three (3) hard copies and a pdf file of the final report to the District for review and approval. Accomplish all revisions determined necessary by the District.

    b. Submit three (3) hard copies and a pdf file of the final report to the District.

8. Participate in additional meetings as requested by the District.

TASK NO. 2

GENERAL INSPECTION SERVICES - The objective of this item is to provide inspection services which will help guarantee the project is completed in accordance with the specifications and plans and to expedite the services as to not impact the project schedule.

1. Observe the Contractor for compliance with site and job safety requirements. Inform the District of any concerns or problems concerning site or job safety observed. Direct the Contractor to comply with all safety orders.

2. Observe and note all deliveries of materials with respect to the Contractor's conformance to the contract documents and shop drawings.

3. Take digital photos during key points in the project to document the construction progress and submit photo files on a CD with the final report.

4. Verify wash down of interior surfaces is according to the specifications and District requirements.

TASK NO. 3

FIELD COATING AND PAINTING INSPECTION - Provide inspection of all coating and painting operations to verify compliance with the Contract Documents.

1. SURFACE PREPARATION INSPECTION - Physical inspection of blast cleaned surfaces to verify compliance with specification, removal of dust, etc.

    a. Weather conditions will be verified by use of an electronic or sling psychrometer to determine suitability of climatic conditions.

    b. Surfaces will be observed to determine compliance with specifications.

        i. Preliminary Cleaning - Surfaces will be inspected to verify removal of grease, oil, chemicals, etc., after completion of solvent cleaning of surfaces.

        ii. Abrasive Blast Cleaning

            (1) Inspect blasted surfaces at the end of each day's shift to determine compliance with specification. Physical tests for surface profile will be performed using a K-T Surface Profile Comparator. At completion of blast cleaning each shift, areas not meeting specification will be re-blasted and tests again performed. This cycle will be repeated until surfaces are accepted for material application.

(2) Upon completion of above inspection, dust and other surface contaminants will be removed as specified and surfaces visually and physically inspected for compliance with specification.

2. MATERIALS APPLICATION INSPECTION - After approval of surface preparation, ongoing inspection monitors weather conditions, Contractor's application equipment and its operation, mixing of primer, and physical inspection of prime coat application, including spray techniques, cleanliness of surface, thickness, etc.

   a. Weather conditions will be verified by use of an electronic or sling psychrometer to determine suitability of climatic conditions.

   b. Contractor's equipment will be monitored to ensure operation will not contribute to any degradation of application (oil, moisture, etc.).

   c. Applied materials will be inspected for compliance with specification and mixing/thinning operations will be monitored.

   d. Surfaces will be re-inspected to verify no dust or other contaminants are on surfaces and remedial cleaning performed as required.

   e. After approval of surfaces, application will be carefully monitored to verify materials are evenly applied at the proper thickness and with no overspray to interfere with adhesion.

3. FINISH COAT(S) INSPECTION - After approval of prime coat application, ongoing inspection monitors weather conditions, Contractor's application equipment and its operation, mixing of primer, and physical inspection of prime coat application, including spray techniques, cleanliness of surface, thickness, etc.

   a. Procedures outlined in 2. above will be repeated during application of additional materials, including careful examination of areas where cleaning penetrated coating film to verify edges of film have not lifted, curled, etc. Where defects exist, additional cleaning will be performed to bring area into compliance with specification and area will be recoated as required.

4. FINAL INSPECTION - Requires input at conclusion of finish coatings to ensure application, film continuity (holiday detection), and dry film thickness are in complete conformance with specification.

   a. DRY FILM THICKNESS TESTING

      i. Prior to testing dry film thickness on any given day, Inspector will calibrate his instrument against N.B.S. metal plate standard. No plastic shims will be used. Instrument will be re-calibrated at the beginning of the afternoon session or at any time the instrument may have been subjected to impact against scaffold, structure, etc.

ii. The coating will be tested to determine if it has sufficiently dried to eliminate indentation of the probe into the coating, which subtracts mils from the correct reading. If the coating does deform, the testing will be postponed until the coating is firm enough to prevent deformation by the gauge.

iii. Dry film thickness measurements will be taken on 3' centers until it is determined deficient readings warrant more tests to truly indicate the thickness of the area. Testing will be performed as deemed necessary to accurately determine the thickness, regardless of what the Contractor may say. If widespread deficiencies are found, the Contractor will be advised to determine if they prefer Inspector to proceed with testing after they apply additional material.

iv. After completion of the testing and after the Contractor has recoated all of the deficient areas, tests on the recoated areas will be repeated until the minimum dry film thickness is obtained.

b. HOLIDAY DETECTION (INTERIOR ONLY)

i. After completion of dry film thickness testing, all surfaces will then be holiday detected, utilizing the specified detector.

ii. The Tinker-Rasor AP or AP-W High Voltage Holiday Detector power pack voltage will be set according to the voltage required in the specification.

iii. Holiday detection and marking of defective areas will be performed as noted above under "DRY FILM THICKNESS TESTING".

iv. All marked areas will then be repaired and holiday detection performed again. Re-detection and marking will continue until the surfaces are holiday-free, unless otherwise instructed by the Owner or his Representative.

5. LIMITATIONS OF AUTHORITY

a. RESIDENT PROJECT INSPECTOR

i. Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment, unless authorized by ENGINEER/OWNER in writing.

ii. Shall not exceed limitations of CONSULTANT'S AUTHORITY as set forth in the Agreement or the Contract Documents.

iii. Shall not undertake any of the responsibilities of CONTRACTOR, subcontractor or CONTRACTOR'S superintendent.

iv. Shall not advise on, issue directions relative to, or assume control over safety precautions and programs in connection with the work.

v. Shall not advise on, issue directions regarding, or assume control over any aspect of the CONTRACTOR'S means, methods, techniques, sequences, or procedures of construction, unless such advice or directions are specifically required by the Contract Documents.

vi. Shall not accept Shop Drawings or sample submittals from anyone other than CONTRACTOR, and shall immediately deliver such submittals to ENGINEER/OWNER.

vii. Shall not authorize ENGINEER/OWNER to occupy the Project in whole or in part.

b. DEFINITIONS: ENGINEER/OWNER is intended to apply as a joint reference or a single reference subject to the applicable circumstance.

TASK NO. 4

STRUCTURAL AND TANK IMPROVEMENTS INSPECTION - The objective of this item is to observe the Contractor's work during construction of structural and tank improvements to ensure the project is completed in accordance with the specifications and plans.

1. Provide as needed quality control inspection of the structural/safety modifications. The structural items shall include handrailing, center vent, exterior staircase, interior ladders, safety climb devices, overflow pipe, roof hatches, sample ports, flush-type cleanout, manhole, LLI assembly, replace rafters and tie-rods as determined needed, and cathodic protection system. Inspection will involve a minimum of six (6) site visits.

2. Perform visual inspection of the welds during structural modifications including re-inspection after repair of defective welds. Witness air pressure testing, vacuum testing, and x-ray testing performed by the Contractor when required.

3. After structural modifications, inspect finished surfaces for nicks, abrasions, etc., and supervise repair.

4. Review and evaluation of welder's credentials and welding procedures.

EXHIBIT B

LIST OF SUBCONSULTANTS

N/A

EXHIBIT C

BREAKDOWN OF COSTS

MOULTON NIGUEL WATER DISTRICT
MATHIS RECYCLED WATER RESERVOIR

MATHIS RECYCLED WATER REESRVOIR - OCTOBER 1, 2015 - FEBRUARY 29, 2016							
TASK	Project Manager		Eng. Technician		Inspector		Total
	Hrs	Cost	Hrs	Cost	Hrs	Cost	
		$155		$82		$75	
Project Management	32	$4,960		$0		$0	$ 4,960.00
Coating/Paint Inspection		$0		$0	704	$52,800	$ 52,800.00
Structural Inspection		$0	160	$13,120		$0	$ 13,120.00
TOTAL (MATHIS RW)							$ 70,880.00
NELLIE GAIL RESERVOIR - MARCH 1, 2016 - APRIL 14, 2016							
Project Management	6	$930		$0		$0	$ 930.00
Painting Inspection		$0		$0	264	$19,800	$ 19,800.00
TOTAL (NELLIE GAIL)							$ 20,730.00
TOTAL (MATHIS RW & NELLIE GAIL)							$ 91,610.00

EXHIBIT D

SCHEDULE OF ENGINEERING RATES

HARPER & ASSOCIATES ENGINEERING, INC.

CONSULTING ENGINEERS

1240 E. Ontario Ave., Ste. 102-312, Corona, CA 92881-8671
Phone (951) 372-9196 Fax (951) 372-9198
www.harpereng.com

TERMS AND SCHEDULE OF FEES AND CHARGES

HARPER & ASSOCIATES ENGINEERING, INC. services are furnished on the basis of the below listed terms and in accordance with the following schedule of fees and charges which are subject to revision at six month intervals:

FEES:	Principal Engineer	$200.00 per hour
	Expert Witness/Deposition	$250.00 per hour
	Registered Corrosion Engineer	$180.00 per hour
	Registered Structural Engineer	$190.00 per hour
	Project Manager	$155.00 per hour
	Engineer/Diver	$135.00 per hour
	Engineering Technician	$82.00 per hour
	Engineering Aide/Tender	$82.00 per hour
	Coating/Paint Inspector	$75.00 per hour
	Draftsperson (CADD)	$90.00 per hour

Travel time is chargeable at the above rates. Overtime for non-professionals, when authorized, shall be charged at 1-1/2X and 2X, based on specific time schedule under which work is performed. If project is located out of area, food and lodging will be charged as noted below.

EQUIPMENT AND MISCELLANEOUS CHARGES:

The above charges include instruments commonly used in corrosion and related testing. However, specialized instrumentation and test equipment and facilities may require an additional charge.

These and miscellaneous charges are computed at cost plus fifteen percent. Examples of such charges include, but are not limited to food, lodging, outside consultants, public transportation, rental equipment, special permits and fees, reproduction, special insurance, etc.

Passenger cars and pick-up trucks are chargeable at $.50 per mile.

Moulton Niguel Water District

STAFF REPORT

TO: **Board of Directors** **MEETING DATE: August 17, 2015**

FROM: **Marc Serna, Director of Engineering and Operations**
Steve Merk, Inspection Supervisor

SUBJECT: **FY 2014-15 Valve Replacement Construction Contingency Adjustment**

DIVISION: **District-wide**

SUMMARY:

Issue: Board action is required to increase the contingency of the construction contract value as a result of contract change orders.

Recommendation: It is recommended that the Board of Directors increase the construction contract contingency for the FY 2014-15 Valve Replacements Project, project No. 2014.008, with Paulus Engineering, Inc. by $55,000 for a total not to exceed $108,185 and authorize the General Manager or designee to approve change orders up to $108,185.

Fiscal Impact: Project No. 2014.008 is budgeted in Fund 7, Replacement and Refurbishment, with a current project budget of $655,037. The proposed budget is $710,037. $55,000 will be transferred to the project budget from fund 7, Unanticipated Projects.

BACKGROUND:

Many of the District's valves have exceeded their useful life and require replacement to ensure reliability. The FY 2014-15 Valve Replacements Project will replace key valves that have been identified by Operations personnel. There are six distinct areas where the valve replacements are currently occurring. These areas are within the jurisdiction of four cities: Laguna Niguel, Laguna Hills, Aliso Viejo, and Mission Viejo. One of the areas involves sewer force main valves; one of the areas involves recycled water system valves; the remaining four areas involve potable water system valves. The scope of work for each area is unique with a specific sequence of events required to accomplish the designated work. The total number of valves to be replaced or installed is 23.

Construction documents for the FY 2014-15 Valve Replacements Project were prepared by AKM Consulting Engineers utilizing the existing on-call services agreement. In December 2014, the Board of Directors awarded a contract to Paulus Engineering, Inc. to replace the identified valves. The project is currently 60% constructed.

DISCUSSION:

In May, Paulus Engineering initiated construction of the project. In the course of the project, the contractor has experienced various utility conflicts that were unknown at the time of bidding. Also, valves that tested as functional during the design phase and necessary to isolate the system failed during the construction phase, which required additional valves to be installed for isolation purposes. To date, six change orders have been issued for the project totaling $52,553 for such items as additional traffic control plans requested by the City of Laguna Niguel, utility conflicts, and change in field conditions.

The construction contingency approved in December 2015 is $53,185. There are still two major construction areas pending that could potentially result in additional change orders. Staff requests an increase in construction contingency of $55,000 for a total project budget of $710,037.

SUMMARY OF PROJECT BUDGET:

	Project Budget	Proposed / Approved Contract	Proposed / Authorized Contingency	Total Proposed / Authorized Amount
Project Items				
Engineering	$30,000	$30,000	$0	$30,000
Geotechnical	$15,000	$15,000	$0	$15,000
Construction	$585,037	$531,852	$53,185	$640,037
Additional Contingency			$55,000	
Legal, Permits, District Labor	$25,000	$25,000	$0	$25,000
Totals	$655,037	$601,852	$108,185	$710,037

Note: Expended to date $330,946.

Moulton Niguel Water District

STAFF REPORT

TO: **Board of Directors** **MEETING DATE: August 17, 2015**

FROM: **Marc Serna, Director of Engineering and Operations**
Eva Plajzer, Assistant Director of Engineering

SUBJECT: **Quarterly Capital Improvement Program Report**

DIVISION: **District-wide**

SUMMARY:

Issue: District staff is responsible for executing the Capital Improvement Program (CIP) as adopted by the Board of Directors. This quarterly report is for April, May, and June of Fiscal Year (FY) 2014-15.

Recommendation: This is an information item only.

Fiscal Impact: The fiscal impact for each project is presented to the Board of Directors on a project by project basis. The collective impact for FY 2014-15 is $47,444,870 if fully expensed.

DISCUSSION:

The Moulton Niguel Water District (District) Board of Directors approved a FY 2014-15 budget in June 2014 (see Table 1). Several of the projects in this fiscal year budget, such as SOCWA, JRWSS, and the Baker Water Treatment Plant, are managed by other entities, with the District providing funding through a project agreement or joint powers entity. For these projects, staff primarily assesses capital expenditures and reviews deliverables and invoices, but does not actively manage them. These projects totaled $27.9 million for FY 2014-15 budget. The remainder of the budget, $19.5 million, is executed by District staff. After completion of the fourth quarter of the fiscal year, approximately 80% of CIP budget has been committed and 51% has been expended to date. Table 1 summarizes the expenditures and contractual obligations for the fiscal year.

Table 1 Adopted Budget by Fund Fiscal Year: July 2014 to June 2015			
Item/Fund	Fiscal Year Adopted Budget	Awarded Contracts Through Fourth Quarter	Payments Through Fourth Quarter
Replacement and Refurbishment Project - Fund 07	$11,259,664	$9,707,536	$5,771,885
SOCWA & JRWSS - Fund 07	$12,745,932	$11,890,181	$3,643,532
Water Supply Reliability Projects - Fund 12	$15,452,106	$15,406,294	$13,748,179
Planning and Construction - Fund 14	$7,987,168	$917,846	$1,093,196
Total	$47,444,870	$37,921,857	$24,256,792

Staff has prioritized CIP projects to maximize the resources available to effectively execute the projects. Table 2 lists the projects in the 10-year Capital Improvement Program and their implementation status (see attached). To date, all projects in the current fiscal year have been addressed and are either in design or construction.

During the fourth quarter of FY 2014-15, these major activities were performed within the Capital Improvement Program:

- Six projects were completed
  - 2010.003 – New District Enterprise Software
  - 2011.014 – Seismic and Structural Assessment of Steel Tanks
  - 2012.007 – Lower Salada Lift Station Ventilation Unit Replacement
  - 2012.008 – Regional Lift Station Ventilation Unit Replacement
  - 2012.013 – Field GIS – Valve Turning Data Software
  - 2014.009 – 2014-15 Manhole Rehabilitation

- 2221 projects are under construction
  - The following construction projects have recently been awarded:
    - 2014.004 Encantamar Pipeline Abandonment
  - Invitation to bid were issued for these projects
    - 2014.018 Flores Avenue Water Main Construction
    - 2014.005 Utility Main Breaker Replacement

- Design work continued on 20 additional projects
    - Issued 4 task orders utilizing the On-Call Professional Engineering Services Agreements. Table 3 summarizes the expenditures for the program. Task Orders were issued for these projects:
        - 2014.005 – Aliso Creek and Lower Salada Utility Main Breaker Replacements
        - 2014.012 – Hidden Hills Village Easement Rehabilitation
        - O&M – Valencia Lift Station Flow Diversion
        - O&M – Trabuco Creek Crossing Preliminary Evaluation

Table 3
On-Call Professional Engineering Services Agreement Expenditure Summary

Consultant	Contracted Amount	Number of Task Orders Issued	Total Value of Task Orders	Remaining Contractual Amount
AKM Consulting Engineers	$500,000	8	$257,697	$242,303
Lee & RO, Inc	$500,000	7	$308,271	$191,729
Tetra Tech, Inc	$500,000	13	$374,950	$125,050
Total	$1,500,000	28	$977,686	$559,082

Attachment: Table 2 Quarterly CIP Report

Moulton Niguel Water District

STAFF REPORT

TO: **Board of Directors** **MEETING DATE: August 17, 2015**

FROM: **Matt Collings, Assistant General Manager**

SUBJECT: **Joint Powers Authority Quarterly Update**

DIVISION: **District-wide**

SUMMARY:

Issue: The District participates in several Joint Powers Authorities and other regional partnerships or programs that impact District operations and finances.

Recommendation: This is an information item only.

Fiscal Impact: The District has adopted a revised Fiscal Year 2015-16 budget of $9,879,230 for Operating and Maintenance Expenses and $15,137,940 for Capital Expenses associated with various Joint Powers Authorities and other regional partnerships and programs. A detailed breakdown is provided in Table 1.

BACKGROUND:

The District participates in several Joint Powers Authorities, including the South Orange County Wastewater Authority (SOCWA), San Juan Basin Authority (SJBA), and the Santiago Aqueduct Commission (SAC), and regional partnerships, such as the Joint Regional Water Supply System (JRWSS) or various facilities with Santa Margarita Water District (SMWD). District appointed individuals consisting of Board members and/or staff to represent the District at these various entities. Each entity is operated by either a staff of the Joint Power Authority or a contracted agency responsible for executing the operations and maintenance functions, completing necessary capital improvements, preparing annual budgets, and processing invoices as necessary. Table 1 provides a summary of the various Joint Powers Authorities and regional partnerships of which the District is a member and a breakdown of the annual District budget for each entity. The summary includes only entities with facilities currently in operation and on-going operations and maintenance requirements.

Table 1

Joint Powers Authority or Regional Partnership	Revised O&M Budget FY 2015-16	Adopted CIP Budget FY 2015-16
South Orange County Wastewater Authority (SOCWA)	$7,324,538	$12,256,912
San Juan Basin Authority (SJBA)	$200,000	N/A
Joint Regional Water Supply System (JRWSS)	$454,495	$1,065,274
Santiago Aqueduct Commission (SAC)	$20,000	N/A
Regional Facilities with SMWD (Upper Oso, Upper Chiquita, Plant 3A)	$1,880,197	$1,815,754
TOTAL	**$9,879,230**	**$15,137,940**

DISCUSSION:

During the period covered by this quarterly update (May, June, July and August) the following notable items were addressed:

South Orange County Wastewater Authority:

- Administrative:
  - The SOCWA Board approved the Fiscal Year 2015-16 budget with a total Operating and Maintenance budget of $18,601,624 and a total capital budget of $32,587,169. The MNWD portion of these budgets is identified in the table above.
  - The SOCWA Board approved keeping the representative from Emerald Bay Services District (Mike Dunbar) as the Board Chair and the representative from Santa Margarita Water District (Dan Ferons) as the Vice-Chair.
- Project Committee 17 (Regional Treatment Plant):
  - The PC 17 members of the SOCWA Board approved a construction management contract with Butier Engineering for the Regional Treatment Plant Cogeneration and Switchgear Upgrade for a total contract value of $293,580 and engineering services contract with Carollo for a total contract value of $298,428.
  - Construction progress continues on the disinfection conversion to sodium hypochlorite at the Regional Treatment Plant. Construction activities also include upgrades to the influent wastewater system. Extensive coordination has occurred with MWND and SOCWA staff to

divert wastewater inflows into the plant for extended periods of time to facilitate the necessary work.

- Project Committee 15 (Coastal Treatment Plant):
  - The PC 15 members of the SOCWA Board approved a contract with Sunset Landscaping to clear vegetation at the Coastal Treatment Plant as part of a Fire Protection project.
  - The PC 15 members of the SOCWA Board approved a fourth amendment to the Cooperative Agreement with the County of Orange allowing for additional time to complete negotiations for the transfer of ownership of the AWMA Bridge. The amendment extended the term of the existing agreement to March 1, 2016.

<u>San Juan Basin Authority:</u>

- Board Officers:
  - The SJBA elected Betty Olson from SMWD as the Board Chair and Wayne Rayfield from SCWD as the Board Vice-Chair. The Board will consider appointment of the Basin Administrators at a future meeting.
- Foundational Action Funding Work:
  - The SJBA Board of Directors has awarded contracts to Geoscience Support Services, Wildermuth Environmental, and Black & Veatch to conduct necessary analyses in support of the Foundational Action Program work to evaluate recharge opportunities in the San Juan Basin watershed. Staff is arranging for a presentation from Cathrene Glick, SJBA Project Manager, to provide an overview of the proposed project that is being evaluated.
- Groundwater Production:
  - Groundwater production within the basin continues to be significantly lower than previous years as a result of the drought. SCWD has voluntarily shut-off its groundwater production since Fall 2014. In the early summer, the City of San Juan Capistrano also ceased pumping from the basin. On July 14, 2015, the Board of Directors approved a resolution authorizing the City to proceed pumping groundwater per the SJBA water rights permit under certain conditions to ensure the protection of the basin. The City pumping began during the week of August 10, 2015.

<u>Joint Regional Water Supply System:</u>

- Budget Approval
  - At the June 11, 2015 SCWD Board Meeting, the SCWD Board approved the proposed JRWSS budget as finalized by the JRWSS Administrative Committee.
- Wye Vault Improvements
  - SCWD is finalizing the design for the Wye Vault improvements, which would include modifications to structures on the Eastern Transmission Main (ETM). An agreement between the JRWSS and the District will be necessary to incorporate the improvements on the ETM.

- Bradt Reservoir Cover Replacement
    - The replacement of the floating cover has been completed and the reservoir is back in operation.

Santiago Aqueduct Commission:

- The Commission received a final report on the Cathodic Improvement upgrades performed during the previous fiscal year. A minor amount of additional follow-up is required based on some inconclusive readings received on a portion of the pipeline.

Regional Facilities with Santa Margarita Water District:

- Plant 3A
    - SMWD assumed operation of Plant 3A on July 1, 2015. MNWD staff have been coordinating closely with SMWD and SOCWA to ensure a smooth transfer of operation.
    - SOCWA awarded a construction services contract to S.S. Mechanical for various improvements at the Plant 3A for a total contract value of $1,578,000. Improvements include modifications and upgrades to the sedimentation basins, the aeration system, and site drainage. This is the last construction contract that SOCWA will award and administer on behalf of MNWD and SMWD.
- Capital Projects
    - The SMWD Board of Directors has included in its Capital Improvement Program improvement projects for both the Upper Oso Reservoir and the Upper Chiquita Reservoir. The District is responsible for 25% of the capital expenses at Upper Oso Reservoir and about 37% at the Upper Chiquita Reservoir. Planned projects include inlet and outlet system improvements at Upper Oso Reservoir and recirculation pump upgrades at the Upper Chiquita Reservoir.