NOTICE OF MEETING
BOARD OF DIRECTORS

MEETING DATE: TUESDAY, December 15, 2015
TIME: 7:30 p.m.
LOCATION: 1) MMWD Board Room, 220 Nellen Ave., Corte Madera, CA 94925
2) Churchill Hotel, 1914 Connecticut Avenue NW, Washington, DC (Director Koehler)

AGENDA

ITEM RECOMMENDATION APPROX. START
☐ CALL TO ORDER
☐ ADOPT AGENDA
☐ PUBLIC EXPRESSION*
☐ DIRECTORS’ AND GENERAL MANAGER’S ANNOUNCEMENTS
☐ CONSENT CALENDAR – ITEMS 1-7**
  1. Water Treatment Filter Seismic Retrofit Approve 7:44 p.m.
  2. Light Detection and Ranging (LiDAR) Survey of Alpine Lake, Soulajule Reservoir, Kent Lake and Nicasio Reservoir Approve
  3. Proposition 84 Drought Round Grant - Irrigation with AMR Project, Grant Agreement with ABAG Approve
  4. Purchase Welded Steel Pipe: Resolution No. 8376 awarding Contract No. 1791 Approve
  5. Amendment No. 4 to General Manager’s contract Approve
  6. General Manager’s Report for November Approve
  7. Commendations to retiring employees:
     A. Kevin McDonnell, Resolution No.8372 Approve
     B. Tony Camiccia, Resolution No. 8377 Approve
     C. Glen Huber, Resolution No. 8378 Approve
☐ REGULAR CALENDAR

MMWD BOARD OF DIRECTORS: Jack Gibson, President; Cynthia Koehler, Vice President; Larry Bragman; Armando Quintero; Larry Russell

*Anyone wishing to speak on an item other than those listed on this agenda will be recognized at this time. We ask any person wishing to be heard to come to the podium to address the board and state your name and address for the public record. A 3-minute limit is customary; however the committee chair may adjust the actual time allotted to accommodate the number of speakers.

**All matters listed on the consent calendar are considered to be routine and/or have been heard and reviewed at a Board Committee meeting and will be enacted by a single action of the board, unless specific items are removed from the consent calendar during adoption of the agenda for separate discussion and action.

- over -
## Item | Recommendation | Approx. Start
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8. | Present commendations to retiring employees (3) | Presentation | 7:50 p.m.
9. | Water production, storage and drought response report | Information | 8:05 p.m.
10. | Watershed Committee Referrals:  
A. Tamalpais Lands Collaborative Work Plan  
B. Appoint Watershed Citizens Advisory Committee Members | Approve | 8:10 p.m.
11. | Landscape Conservation Ordinance:  
A. Public Hearing  
B. Ordinance No. 429 | Conduct Approve | 8:15 p.m.
12. | Ross Fire Flow Improvement Project: Resolution No. 8374 awarding Contract No. 1790 | Approve | 8:25 p.m.
13. | 2016 Fire Flow Improvement Project: Directional Drill: Resolution No. 8375 awarding Contract No. 1795 | Approve | 8:30 p.m.
14. | Fill Vacancies (4) | Approve | 8:35 p.m.
15. | Future agenda items | Information | 8:40 p.m.

**ADA Notice and Hearing Impaired Provisions:** The board room is equipped with sound amplifying units for use by the hearing impaired. The units operate in conjunction with the room's sound system. You may request the personal sound amplifier from the Board Secretary for use during meetings.

In accordance with the Americans with Disabilities Act and California Law, it is the policy of the Marin Municipal Water District to offer its public programs, services, and meetings in a manner that is readily accessible to everyone, including those with disabilities. If you are disabled and require a copy of a public hearing notice, an agenda, and/or agenda packet in an appropriate alternative format, or if you require other accommodation, please contact Stephanie Eichner-Gross at (415) 945-1448, at least two days in advance of the meeting. Advance notification within this guideline will enable the district to make reasonable arrangements to ensure accessibility.

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**Information Packets Are Available for Review At The Civic Center Library, Corte Madera Library, Fairfax Library, Mill Valley Library, MMWD Office, And MMWD Website (Marinwater.org)**

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**Future Board Meetings:**

- Tuesday, January 5, 2016, 7:30 p.m.  
  MMWD Board Room
- Tuesday, January 19, 2016, 7:30 p.m.  
  MMWD Board Room
STAFF REPORT

SUBJECT: Water Treatment Plant Filter Seismic Rehabilitation Design Contract

SUBMITTED BY: Paul Sellier, Senior Engineer
Environmental and Engineering Services Division

RECOMMENDED ACTION: Authorize the General Manager to execute a professional services agreement with MWH for professional design services in support of the Water Treatment Plant Filter Seismic Rehabilitation Project

EXECUTIVE SUMMARY:

This item was reviewed by the District Operations Committee on November 20th, and is referred to the Board with the recommendation shown above.

The “San Geronimo and Bon Tempe Water Treatment Plants Master Plan Report (September 2015)” found that while the existing plant capacities are adequate under normal operating conditions, both plants require substantial rehabilitation to assure their continued service over the next 50 years and to meet demand under non-routine conditions such as during power outages or following a major earthquake. The Water Treatment Plant Filter Seismic Rehabilitation Project is the first project identified in the Master Plan and addresses the structural integrity of the filters with the goal that the filters will be fully operational with 24 hours of a major earthquake. The cost for the design work is $398,294, with a staff requested contingency of 25 percent or $99,623, for a total authorized amount of $498,115. Staff is seeking the contingency funding because the existing structural conditions of the plants are not fully known at this time.

FISCAL IMPACT:

YES  X  NO  FISCAL YEAR: 2016

<table>
<thead>
<tr>
<th>EXPENDITURES</th>
<th>FUNDING SOURCES</th>
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<tr>
<td>Budgeted Amount</td>
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<td>Capital Fund</td>
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<tr>
<td>Other</td>
<td>Operating Reserves</td>
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<tr>
<td>TOTAL EXPENDITURES</td>
<td>TOTAL SOURCES</td>
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<td>$498,115</td>
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FISCAL IMPACT NARRATIVE:

Funding for the Filter Seismic Rehabilitation Design Project is included in the FY 2016 budget.

BACKGROUND:

The District’s San Geronimo and Bon Tempe Water Treatment Plants have reliably treated District lake water for over 50 years. Today, these plants annually treat approximately 25,000 acre-feet of water, comprising approximately 25% of the District’s annual potable water supply.
Substantial investments in the District’s treatment plants are required in order to ensure these facilities continue to serve the District and its customers for another 50 years. The necessary improvements and upgrades are described in the “San Geronimo and Bon Tempe Water Treatment Plants Master Plan Report” which was presented to the District Operations Committee on August 21, 2015.

As discussed at the Committee meeting on August 21st, the most urgent upgrade required at both plants is a project to address seismic and structural issues with the filters. This is because both plants were designed prior to modern seismic building standards and are vulnerable to an earthquake.

District staff issued a request for proposals for professional design services in support of the “Water Treatment Plant Filter Seismic Rehabilitation Project”, and received two excellent proposals from TJC and Associates and MWH. District staff reviewed and evaluated the proposals, contacted references and interviewed both teams on November 13th. District staff were unanimous in their selection of MWH but acknowledged that TJC and Associates had proved to be able competitors. MWH were selected because of their experience in retrofitting water treatment facilities, in depth knowledge of MMWD’s treatment plants and system operation, which is critical in designing solutions that can be constructed while the plant is in operation.

The scope of work (attached) includes Project Management (Task 1), Review of Existing Data (Task 2), and an Existing Conditions analysis (Task 3) wherein the consultant shall confirm the condition of the concrete by taking core samples that can provide information on the strength of the existing concrete. In addition this portion of the Scope of work includes a detailed structural evaluation based upon the guidelines provided in ASCE 41 (Structural Analysis and Evaluation of Buildings). The ASCE 41 analysis will provide the information necessary to identify areas that may require more study or potential work to remedy the concern identified. The existing conditions will be summarized in a Technical Memorandum and form the basis for decisions concerning the Engineering design. The Engineering Design phase of the work (Task 4) will develop a Final Design Report and ultimately a full set of plans and specifications for bidding. Staff also requested that the consultant provide time and staff to conduct submittal review and respond to contractor inquiries (Task 5) to the extent required.

Once the design and bid documents are completed staff will return to the board for authorization for funds to construct the project. Staff is targeting completion of the design work in July 2016 and will seek board authorization in August 2016 for possible start of construction in October 2013. Staff has experience working with MWH, most recently on the Water Treatment Plant Master Plan, and is confident that the work can be accomplished on time and budget.

The cost of the scope of work is $398,492, with a staff requested contingency of 25 percent or $99,623, for a total not to exceed amount of $498,115. This scope of work assumes the concrete is in good condition and that the ASCE 41 (Task 3) analysis will show that the filter
exterior walls are structurally sound requiring only minor modifications. It is anticipated that the interior filter walls will require some level of modification however the range of modifications here is more difficult to predict. For example it may be that to strengthen the interior walls the underdrains of each filter will need to be removed to gain access to the foundation of the interior walls. In such a case the underdrains will need to be replaced and it would be prudent to consider a more robust underdrain system, air-water backwash to improve the effectiveness of the backwash process while simultaneously reducing the volume of water used in backwashing filters and possibly installation of filter to waste. In addition staff is proposing to consider additional design solutions to appurtenances and structures necessary to the operation of the filters. For example the backwash piping, essential to filter operation, will fail if additional support is not designed and installed. Similarly the chemical building roof must be adequately secured to the walls to prevent damage to the chemical systems as a result of an earthquake. These additional elements would be covered by the contingency funds requested and if needed will require substantial design effort beyond the structural design and potentially include, mechanical, electrical, controls and process engineering design components to be included.

In summary, this item was reviewed by the District Operations Committee on November 20th, and is referred to the Board with the recommendation that the Board authorize the General Manager to execute a professional services agreement with MWH for professional design services in support of the Water Treatment Plant Filter Seismic Rehabilitation Project.

**Strategic Plan Alignment:**

The project aligns with the Strategic Plan Goal 1 (Water Supply Resiliency), Strategy 4( Ensure facilities are equipped and maintained to support water resiliency, water quality, watershed management and a productive workforce), Objective 4 (Assess facility modernization / replacement options), Objective 5 (Develop water treatment plant master plans to ensure long-term reliability of treatment plants, maintain regulatory compliance and ensure resilient operations (develop specific water treatment and quality goals for the treatment plants)).

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<tr>
<th>REVIEWED BY:</th>
<th>Finance Manager</th>
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<tr>
<td>General Counsel</td>
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**Attarchments:**
1. Scope of Work
2. Fee Estimate and Schedule
Scope of Work
FILTER REHABILITATION AND SEISMIC UPGRADES AT MARIN MUNICIPAL WATER DISTRICT’S SURFACE WATER TREATMENT PLANTS

Background

The Master Plan for the water treatment plants found that major seismic rehabilitation of filters (and other structures) is required to achieve code compliance and meet the District’s reliability goal of producing water within 24 hours of a major earthquake. MMWD requires consulting services to prepare engineering design drawings, bid documents and construction period services for the Bon Tempe and San Geronimo Filter Treatment Plan rehabilitation work that addresses seismic vulnerabilities at the District’s two surface water treatment plants.

Task 1 – Project Management

The goal of this task is to provide overall project management and maintain effective communications with the MMWD’s project administration staff. Within one week of notice-to-proceed (NTP), MWH will prepare and submit to the District a detailed Work Plan which will include a time schedule, project budget, staff resource projections, communications plan, team roles and responsibilities, quality management plan, and narrative descriptions of the approach to completing each Task.

Specific project management activities include:

- Keep project participants informed of progress, technical issues, and planned activities and events.
- Submit a summary of progress, in conjunction with invoices, that present highlights of work achievements during the past month, work planned and important milestones for the upcoming month, schedule updates, and estimates of actual (not based on budget) percent complete compared to actual expenditures. The report shall identify issues or scope changes that may materially affect overall cost and/or schedule of design deliverables before the work is done. The project manager will review all project invoices, and the period of performance for the progress reports will be tied to a specific invoice (generally to follow the MWH calendar of financial months).
- Maintain project files including plans, reports, correspondence, calculations, and other documents pertaining to the project.

Within two weeks of NTP, MWH will lead a project Kickoff Meeting at which the Work Plan will be reviewed and the topics covered by the Work Plan reviewed and confirmed. Within one week following the kickoff meeting, a meeting summary will be distributed and, if necessary, an updated Work Plan will be provided. In addition to the Work Plan, the Kickoff Meeting will cover the following topics:

- Review of project purpose and scope
- Confirmation and/or definition of project objectives
- Review of initial seismic calculations
- Discussion of the shutdown windows
- Review of project schedule
Deliverables:
- Project Work Plan
- Kickoff Meeting agenda, supporting materials, and meeting summary
- Monthly invoices and progress reports

Assumptions:
- The project duration will be no more than 16 months.

**Task 2 – Review Available Data**

Review background information, including:
- Visit the treatment plant site locations.
- Review existing drawings, studies, reports, and construction records.
- MMWD CADD Standards

Develop or request additional information that you will need.
As part of the execution of other tasks, MWH shall review background documents and other information provided by MMWD. The documents to be reviewed will include:
- Review existing drawings, studies, reports, and construction records.
- MMWD CADD Standards

Additional information needed by MWH will be requested of MMWD. An initial information request will be provided to the District at the Kickoff Meeting. All information received by MWH shall be recorded in an Information Log, which will include the source and version of documents, as well as any limitations or cautions associated with the use of the information.

In addition to reviewing documents, MWH shall conduct an initial one-day visit to the two treatment plant site locations within two weeks of NTP for general orientation and to confirm the adequacy of the documents provided by the District. If necessary, a second information request will be submitted within one week following the site visit.

**Deliverables:**
- Information Request(s)
- Information Log

**Assumptions**
- MWH shall have the right to rely on the information provided by MMWD, subject to limitations disclosed by MMWD at the time the information is provided.
- Within one week following a request for information the District shall provide the information or inform MWH as to when or if the information can be provided.
Task 3 – Existing Conditions Analysis

The objective of this task is to provide a summary analysis for existing conditions and to conduct investigations such as concrete analysis or geological survey work that may be required to support engineering design. The end product will be a Technical Memorandum that includes but is not limited to:

1. Clear statement of goals for the Filter Rehabilitation work.
2. Results of investigations.
3. Summary of deficiencies related to existing and near term American Concrete Institute standards, national structural engineering and seismic evaluation and retrofit standards, the California Building Code (where applicable for new construction) and current construction practices.
4. Impacts of deficiencies related to level of service requirements.
5. Summary of specific structural vulnerabilities or weak points that require improvement.

MWH will evaluate existing structures and their vulnerability to seismic forces and develop alternatives. The greatest challenge will be to develop economical structural retrofits that 1) minimize impacts on related filter components, such as the media, underdrains and net filter area, 2) can be installed in a reasonable period of time to meet shutdown constraints, and 3) will meet the District’s level of service goals for decades to come.

3.1 Concrete Core Sampling
MWH shall engage a specialty subcontractor to take concrete cylinder samples of existing filter structures using a coring machine. For budgeting purposes, it is assumed that four samples will be taken at the Bon Tempe Treatment Plant and six samples will be taken at the San Geronimo Treatment Plant. After taking the core samples, the subcontractor will repair the concrete and polyurethane coating in the affected areas.

The concrete cylinder samples will be analyzed for the following:

1. Total concrete thickness
2. Compressive strength
3. Carbonation depth using phenolphthalein during coring
4. Petrographic testing for deterioration, carbonation, alkali-carbonate reaction, aggregates, mixing, water-cement ratio
5. Evidence of spalling, honeycombs, holidays, etc.

3.2 Structural Analysis and Evaluation
MWH will conduct a structural analysis and evaluation using a tiered approach that follows recommendations of ASCE 41-13 - Seismic Evaluation and Retrofit of Existing Buildings.

3.2.1 Tier 1 Screening Checklist and Quick Checks
Tier 1 Screening Checklist and Quick Checks will consist of an examination of existing information and the results of the concrete core sampling followed by performance of calculations to determine where further evaluations are needed (either Tier 2 or Tier 3). The objective is to clarify the adequacy of the
structural elements or areas where more study and potential work are needed. The Tier 1 Screening Checklist and Quick Checks process will include a detailed review of available record drawings, geotechnical investigations, and other reports applicable to the structural components or materials, as well as a visual inspection of the structure. Using the information obtained through these activities, the Tier 1 Screening Checklists and Quick Checks results will be used to determine the structure’s level of compliance relative to the desired Performance Objective (District’s level of service goal) and Seismic Hazard, based on the historical performance of similar building types during past earthquakes. Following conclusion of the Tier 1 evaluation, any structural or nonstructural deficiencies will be documented and reported, and options for additional structural analyses (Tier 2 Deficiency Based Evaluation, or Tier 3 Systematic Evaluation) will be determined.

3.2.2 Tier 2 Deficiency Based Evaluation
For this budgeting and initial scoping purposes, it is assumed that a Tier 2 Deficiency Based Evaluation will be needed following the Tier 1 evaluation rather than a Tier 3 Systematic Evaluation. The Tier 2 evaluation will included detailed structural calculations and development and evaluation of rehabilitation options. Rehabilitation options include application of polymer strips with glass fiber reinforcing (FRP) to the upper and lower filter gullets combined with diagonal cross bracing at the tops of the gullets, wall thickening using shotcrete, installation of fillets or pilasters, and installation of grade beams.

3.3 Summary Technical Memorandum
The results of the Existing Conditions Analysis will be summarized in a Technical Memorandum (TM) that will document the activities completed, the rehabilitation options evaluated, Class 4 cost opinions for the rehabilitation options, estimated construction durations of the rehabilitation options, and the recommended rehabilitation option.

Following submittal of the draft TM, an interactive meeting (workshop) will be held to present MWH’s findings and rehabilitation options evaluated. At the meeting MWH and District staff will discuss the information presented and agree on which rehabilitation option to carry forward into design and construction. At the meeting, potential process improvements, such as addition of air scour, addition of filter-to-waste, replacement of filter media, replacement of filter valves, and seismic bracing of piping and equipment, will be discussed. If MMWD staff decides to include any process improvements in the design and construction, this will be documented in the final TM.

Deliverables:
• Draft and Final TM in electronic format
• Supporting Calculations and Opinions of Probable Construction Cost

Assumptions
• MMWD will provide access to the filters so that coring and repair can be completed in one or two days.
• Appropriate MMWD staff will attend the workshop.
• Review comments will be provided within 10 working days of submittal of the draft TM.
Task 4 – Engineering Design

4.1 Design Report
The first task of the Engineering Design phase of the project is to prepare a Design Report that describes in detail the recommended filter rehabilitation modifications necessary to meet the level of service identified in the Master Plan. The report shall include, but not be limited to, design criteria, constructability, the order of work, discussion of the rehabilitation options, as well as the feasibility and advantages of the selected approach. In addition to these items, the Design Report shall include preliminary design drawings, at approximately a 10% design level, of the recommended improvements. At the beginning of the Design Report stage, MWH will work with the District to determine what process-related improvements are necessitated by the structural upgrades and assess whether there is available budget to implement other improvements suggested in the Master Plan. Process- and filter-related improvements that could be included in the project include:

- New underdrains
- New filter media
- Air-water backwash
- Filter-to-waste
- Valve replacement
- Seismic bracing of vulnerable piping and equipment
- Selected process- and/or filter-related improvement design criteria, preliminary design drawings and related information will be incorporated in the Design Report.

Following submittal of the draft Design Report, an interactive meeting (workshop) will be held to present design concepts and design criteria for the selected structural rehabilitation option and those process- and/or filter-related improvements selected by MMWD. At the meeting MWH and District staff will discuss the information presented and provide comments.

4.2 Detailed Design and Bid Documents
Upon acceptance of the Design Report, MWH will develop design drawings and specifications that conform to District standards, with district staff review of the drawings and specifications at 50%, 85% and 100% completion. Workshops will be held with MMWD staff following submittal of the 50% and 85% design packages.

4.3 Opinions of Probable Construction Cost
For the Design Report, MWH will provide a Class 4 opinion of probable construction cost (OPCC) according to AACE International Cost Estimate Classification with an accuracy of -30% to +50% and estimate the duration of construction. That OPCC will be updated at the 50% and 85% design submittal stages.

For the 100% design submittal, MWH will provide a Class 3 construction cost estimate according to AACE International Cost Estimate Classification System with an accuracy of -15% to +30% and estimate duration of construction.
Deliverables:

- Electronic copy in Microsoft Word of the Draft Design report for review and comment by MMWD.
- Electronic copy in Microsoft Word and searchable PDF copy of the final Design Report.
- Five bound copies of Final Design Report.
- Five copies of full size paper copies of design drawings for district staff review at 50%, 85% and 100% completion.
- Microsoft Word version of the draft Phase 1 specifications.
- CADD version of final drawings.
- Microsoft Word version of final specifications.
- One master (paper) copy for reproduction of the final ready-to-bid signed plans and specifications.
- The Final Design Report and all final Construction Documents shall be signed and stamped by a structural engineer licensed in the State of California.

Assumptions

- MMWD CADD standards will be followed
- Drawing size will be 22 inches x 34 inches
- MMWD proposal forms, general conditions and other front-end documents will be used

Task 5 – Bid and Construction Period Services

5.1 Bid Phase Services

During the bid process issue amendments to specifications, and or drawings as needed, provide clarifications to bidders, respond to inquiries through MMWD’s project manager. Attend one pre-bid meeting and one site tour for each construction site. Attend up to two additional pre-construction meetings.

5.2 Construction Period Services

Construction period services shall include but not be limited to responding to requests for information, requests for clarification, review and approval of submittals in a timely manner. Periodic on-site construction inspection by structural and civil design engineer. MWH will review and respond to changes in design suggested by contractor including changes to plans and specifications as needed.

5.2.1 Submittal Review

Upon receipt of each submittal from the construction contractor, including a sequentially numbered submittal transmittal form, the MMWD field staff will verify that the package is complete and ready for review by MWH. Incomplete submittals will be returned to the contractor un-reviewed. The contractor or the MMWD field staff will prioritize submittals. In order to maximize the amount of review/processing time available, submittals will be forwarded to MWH in a timely manner. MWH will review each submittal for general conformance to the contract documents requirements and will stamp and sign each submittal package indicating the review status. Whenever practical, a typed review comment sheet will be used in lieu of submittal markups. The submittals will then be returned to the MMWD field.
staff for distribution to the construction contractor. The MMWD field staff will review construction-type submittals such as stormwater prevention plans and site traffic control plans.

MMWD and MWH will hold a joint meeting with the contractor to review the baseline schedule for the purpose of understanding the contractor’s understanding of shutdown windows, task precedents, review times, material and equipment delivery schedules, and overall project duration.

This task assumes review of up to 16 first time submittals, 8 second time submittals and 4 third and greater time submittals. It assumes an average of 4 hours for each first time submittal review, 2 hours for each second time submittal, and 2 hours for each third time submittal review.

### 5.2.2 Response to Requests for Information

The MMWD field staff will respond to Requests for Information (RFIs) not dealing with the design intent. The MMWD field staff will require the Contractor to identify all RFI’s involving potential extra work.

MWH will respond to Contractor RFIs and MMWD field staff RFI’s that are related to design intent or that MMWD field staff chooses to submit to MWH. Responses shall be made on MMWD-provided consecutively numbered forms. RFI’s will be prioritized by the Contractor or MMWD field staff. In order to maximize the review time available, RFIs shall be transmitted to the MWH in a timely manner. Unless otherwise specified, MWH will respond to all RFI’s within 14 calendar days. This task assumes response to up to 30 contractor RFI’s and 10 MMWD field staff RFI’s at an average of 2 hours per RFI response.

### 5.2.3 Design Clarification Preparation

As necessary during construction, MWH will periodically prepare brief Design Clarifications (DC) to clarify contract documents requirements for the contractor and the MMWD field staff. DC’s will be sequentially numbered. Simple sketches or marked-up contract drawings will be attached to each DC if necessary. DC’s requiring extra work by the Contractor will be identified. This task assumes preparation of 5 design clarifications at an average of 16 hours per clarification.

### 5.2.4 Change Order Assistance

In response to MMWD field staff request, MWH will prepare revised specifications and or simple sketches or marked-up contract drawings to define potential contract change order work scope. To enable clear definition of the change order scope, the request will be as complete and detailed as possible. MWH will also prepare revised documents for DC’s necessitating change order work. The revised documents will be provided to the MMWD field staff who will prepare the actual contract change order for transmittal to the contractor. The MMWD field staff will prepare the independent cost estimate with which to compare the contractor’s cost quotation and negotiate the change order. MWH will provide equipment cost and other input to the MMWD field staff to assist in this effort. MMWD field staff will also evaluate any associated contractor time extension requests.

The MMWD field staff will handle revised document preparation of all contract change orders not requiring interpretation of design intent or process performance such as provision of additional utility...
piping, surface drainage modifications, additional paving and similar items. This task assumes preparation of revised documents for up to 5 potential change orders at an average of eight hours per package.

5.2.5 Site Visits/Construction Meetings
In order to help address design-related questions and field issues, MWH Project Manager or key Project Engineers will attend each weekly construction progress meeting with the MMWD field staff and the Contractor, either by conference call or onsite. Meeting agendas, construction logs, and meeting notes shall be completed by the Contractor. Submittals and RFI status and other issues will be reviewed at that time. In addition, the MWH Project Manager will make additional site visits as requested by MMWD field staff.

This task assumes that one construction progress meeting per month will be attended onsite and the remainder will be attended by conference call. Each progress meeting is assumed to require 2 hours of staff time. Onsite attendance will be combined with MMWD-requested site visits and are assumed to require 4 hours of staff time.

5.2.6 Record Drawings
Upon construction completion, MWH will prepare Record Drawings of the as-advertised plans using redline marked-up contract drawings maintained by the Contractor. Markups will include change orders, RFI’s, DC’s, encountered utilities, and other changes identified during construction. (It is understood and agreed that the contractor is solely responsible for the accuracy and completeness of the Record Drawings.) MMWD field staff will compare the contractor’s marked-up set against their own marked up set and resolve any discrepancies prior to providing the drawings to MWH. MWH will provide one electronic and one full sized hard copy Record Drawing set to the MMWD upon completion. Record Specifications will not be prepared. Record Drawings shall meet MMWD Drafting Standards. This task assumes up to 21 drawings prepared by MWH will require revision.

**Deliverables:**
- Addenda for construction bid documents
- Submittal review comments
- RFI responses
- Design clarification documents
- Comments on change order quotes and independent estimates, as requested by MMWD
- Site visit summary notes
- Record drawings in CAD format per District standards

**Assumptions**
- Construction duration will be no longer than 15 months
- MMWD staff will serve as the construction manager
5.3 Optional Services

5.3.1 MMWD Staff Training

The purpose of this subtask is to assist with the vendor startup and operations training for the Mission San Jose Water Treatment Plant Upgrade, and to provide training so the plant’s staff is comfortable with the startup and operation of the new facilities.

MWH shall provide training to operations staff for process upgrades to the BTTP and SGTP filters, e.g., air/water backwash and filter-to-waste.

**Deliverables:**
- Handouts and printed copies of training slides and related backup materials.
- Three-inch binder for each attendee (estimated 10 participants) in which training material will be compiled.

**Assumptions**
The fee is based on the following assumptions.
- Provide up to 40 hours to assist in coordinating vendor training sessions with Contractor and MMWD.
- Review up to 6 equipment vendor training session outline submittals.
- Prepare 6 training session outlines for MMWD’s review.
- Prepare and conduct 2 startup and operations training sessions. Each session will be given twice to maximize staff participation.

5.3.2 Startup and Testing Support

In order to supplement the start-up and testing capabilities of the MMWD field staff, plant staff and the contractor, upon request, MWH will perform startup support. MWH will provide the services of a water treatment plant startup engineer to assist in verifying that equipment and processes are properly started up and tested. MWH will prepare brief site visit reports. MWH may facilitate coordination between start-up engineer, system integrator, system programmer, and operations. This task assumes up to 10 days of start-up support at 8 hours each.
### Proposed Project Schedule

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<th>Task</th>
<th>Description</th>
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<td><strong>Notice to Proceed</strong>&lt;br&gt;1</td>
<td><strong>Project Management</strong>&lt;br&gt;Overall Management and Communications&lt;br&gt;Prepare Project Work Plan&lt;br&gt;Prepare Quality Control Plan&lt;br&gt;Track and Monitor Budget&lt;br&gt;<strong>Schedule and Attend Meetings</strong>&lt;br&gt;Kickoff Meeting&lt;br&gt;Existing Conditions Analysis Workshop&lt;br&gt;Design Report Workshop&lt;br&gt;50% Design Workshop&lt;br&gt;85% Design Workshop&lt;br&gt;Prepare Status Reports and Invoices</td>
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<tr>
<td><strong>Review Available Data</strong>&lt;br&gt;2</td>
<td>On-Site Inspections&lt;br&gt;Review Existing Drawings</td>
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<td><strong>Existing Condition Analysis</strong>&lt;br&gt;3</td>
<td>Conduct Investigations &amp; Testing&lt;br&gt;Draft TM&lt;br&gt;District Review&lt;br&gt;Incorporate District Comments&lt;br&gt;Final TM</td>
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<td>Bid Services&lt;br&gt;Construction Services&lt;br&gt;RFIs/RFCs&lt;br&gt;Submittals&lt;br&gt;Site Visits and Observations&lt;br&gt;Design Changes</td>
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Proposed Project Schedule for Marin Municipal Water District Filter Rehabilitation and Seismic Upgrades at MMWD’s Surface Water Treatment Plants.
Marin Municipal Water District
Filter Rehabilitation at Marin Municipal Water District Surface Water Treatment Plants
Budget Estimate - Seismic Upgrades Only

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<th>Task</th>
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<th>Mike Price</th>
<th>Mark Graham</th>
<th>Senior Admin</th>
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<th>Pete Kreft</th>
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ITEM NO. 2
MEETING DATE: December 15, 2015
MEETING: Board of Directors

STAFF REPORT

SUBJECT: Light Detection and Ranging (LiDAR) Survey of Alpine Lake, Soulajule Reservoir, Kent Lake and Nicasio Reservoir

SUBMITTED BY: Carl A. Gowan, P.E., Principal Engineer
Environmental and Engineering Services Division

RECOMMENDED ACTION: Authorize the General Manager to execute Amendment No. 1 in the amount of $14,100 to Miscellaneous Agreement No. 5403 with Pro-ROV for LiDAR surveys of Soulajule and Nicasio reservoirs.

EXECUTIVE SUMMARY:

In support of the District’s effort to determine the storage capacity of its reservoirs, the District hired Pro-ROV to conduct LiDAR surveys of Soulajule and Nicasio reservoirs, and Kent Lake, and Alpine Lake. Amendment No. 1 in the amount of $14,100 is necessary to account for differing site conditions at Soulajule and Nicasio Reservoirs. The changed conditions are the reservoirs are significantly lower than originally anticipated and therefore additional time, effort and special equipment is needed to complete the surveys. This amendment allows the surveys to be completed and will increase the contract by $14,100, or from $55,950 to $70,050 for Agreement No. 5403.

FISCAL IMPACT: YES X NO

FISCAL YEAR: FY2015-2016

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FISCAL IMPACT NARRATIVE:

The Soulajule Reservoir portion of the work is funded under capital budget category A1A05 Soulajule Environmental Enhancements (project D-14044). The remainder of the work is funded from Professional Fees (account 6250) in the Planning and Operations Operating Budget (5220).
BACKGROUND:

On October 17, 2014, the findings of the Bon Tempe Reservoir Bathymetric Survey conducted by Pro-ROV Services were presented to the Board of Directors. In the staff report the value of the Pro-ROV study was discussed and staff recommended that bathymetric surveys be completed for all the reservoirs. The Board of Directors supported the recommendation. In the spring of 2015 as part of the FY 2015 budget, bathymetric surveys were completed for Lake Lagunitas, Alpine Lake and Soulajule Reservoir.

October 15, 2015, the District executed Miscellaneous Agreement No. 5403 in the amount of $55,950 with Pro-ROV to conduct a LiDAR survey of Soulajule Reservoir, Nicasio Reservoir, Kent Lake, and Alpine Lake for the purpose of surveying the area from the water surface to above the spillway at each of these locations. LiDAR survey is the process of laser scanning the side surface of the reservoir from the water surface to a point above the spillway elevation at a rate of 30,000 data points per second used to map the terrain above the water surface. Bathymetric survey is a sonar survey conducted beneath the water surface using single and multi-beam sonar to map the surface of the lake bottom. Both LiDAR and Bathymetric surveys are combined with a certain overlap to generate a 3 dimensional surface model of the lake used to calculate the actual volume of water storage. This will be saved as a GIS layer.

At the time that Pro-ROV received authorization and mobilized to conduct the LiDAR Survey (October 27, 2015), the lake levels had dropped significantly from the original quote dated August 20, 2015. The drop in lake level was more significant over the shallow areas at Nicasio and Soulajule where areas that were navigable by boat in August were now exposed land. This caused the shoreline to recede further towards the deeper part of the lake making boat access to the shallow area impossible. As a result, there were many areas along the perimeters of both Nicasio and Soulajule that are missing LiDAR data resulting in a non-continuous survey.

As a result of the changed lake levels, it is now necessary to incorporate a land based LiDAR Survey to fill in the gaps that the boat LiDAR Survey was unable to capture. Below is a table of the lake levels on the day of the submitted quote and on the day Pro-ROV started the survey.

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<td>Nicasio Reservoir</td>
<td>10.45 ft</td>
<td>16.78 ft</td>
<td>19.67 ft</td>
<td>-6.33 ft &amp; -9.22 ft</td>
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<td>Soulajule Reservoir</td>
<td>11.34 ft</td>
<td>15.92 ft</td>
<td>17.53 ft</td>
<td>-4.58 ft &amp; -6.19 ft</td>
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The amended scope of work shall include conducting land based LiDAR Survey work to fill in the gaps at Nicasio Reservoir and Soulajule Reservoir at the locations where the boat based LiDAR Survey was not able to capture. This additional land based LiDAR Survey will fill in the missing areas and provide MMWD a continuous LiDAR survey of the perimeters at Nicasio and Soulajule as well as the peripheral water bodies at Nicasio.

The additional fee to complete the additional scope of work described above comes to a total of fourteen thousand one hundred dollars ($14,100). This is broken out into six thousand two hundred sixty dollars ($6,260) to complete Soulajule Reservoir and seven thousand eight hundred forty dollars ($7,840) to complete Nicasio Reservoir. This additional fee will be added to the existing agreement amount of $55,950 for a new total contract value of $70,050. The new contract value is above the General Manager’s authorization level, therefore this item is submitted for Board approval.

To complete the volumetric analysis of all the reservoirs, Bathymetric surveys will be completed for Kent Lake and Nicasio Reservoir in the fiscal year ending June 2017.

Strategic Plan Alignment:
This action aligns with the District’s 5-Year Strategic Plan:

- Strategic Plan Goal 1 (Water Supply Resiliency), Strategy 1 (Develop Water Supply Management Plan for MMWD’s long-term water supply resiliency);
- Strategic Plan Goal 2 (Financial Stewardship); Strategy 5 (Use technology to drive business process effectiveness and efficiency), Objective 3 (Evaluate and implement promising GIS capability).

**Review by:**
- Finance Manager: X, NA
- General Counsel: NA, X
- General Manager: X, NA

**Attachments:**
- Attachment 1: Agreement No. 5403
- Attachment 2: Agreement No. 5403, Amendment #1
AGREEMENT FOR PROFESSIONAL SERVICES

The following is an agreement between Marin Municipal Water District, hereinafter "MMWD", and Pro-ROV Services, hereinafter, "Consultant".

WHEREAS, Consultant is a duly qualified consulting firm, experienced in underwater imaging, inspections and hydrographic surveys.

WHEREAS, in the judgment of the Board of Directors of the MMWD, it is necessary and desirable to employ the services of the Consultant for the Light Detection and Ranging (LiDAR) Survey of Alpine Lake, Soulajule Reservoir, Kent Lake, Nicasio Reservoir by the end of Fiscal Year 2016.

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

PART A-- SPECIFIC PROVISIONS:

1. DESCRIPTION OF SERVICES AND PAYMENT: Except as modified in this agreement, the services to be provided and the payment schedule are:

   a. The scope of work covered by this agreement shall be that included in Attachment A of this agreement for the LiDAR Survey.

   b. The fee and fee payment for such work shall be as stipulated under the fee schedule included in Attachment A of this agreement and shall not exceed $55,950 in total.

   c. All boats and any other equipment to be used in the performance of work under this agreement shall be decontaminated and inspected in accordance with the aquatic invasive species protocol included in Attachment C.

PART B-- GENERAL PROVISIONS

1. ASSIGNMENT/DELEGATION: Except as above, neither party hereto shall assign, sublet or transfer any interest in or duty under this agreement without written consent of the other, and no assignment shall be of any force or effect whatsoever unless and until the other party shall have so consented.

2. STATUS OF CONSULTANT: The parties intend that the Consultant, in performing the services hereinafter specified, shall act as an independent contractor and shall have the control of the work and the manner in which it is performed. The Consultant is not to be considered an agent or employee of MMWD, and is not entitled
to participate in any pension plan, insurance, bonus or similar benefits MMWD provides its employees.

3. **INDEMNIFICATION:** MMWD is relying on professional ability and training of the Consultant as a material inducement to enter into this agreement. The Consultant hereby warrants that all its work will be performed in accordance with generally accepted professional practices and standards, as well as the requirements of applicable federal, state and local laws, it being understood that acceptance of the Consultant’s work by MMWD shall not operate as a waiver or release.

   a. Consultant expressly agrees to defend, indemnify and hold harmless MMWD, its officers, agents, and employees from and against any and all loss, liability, expense, claims, suits and damages, including attorneys’ fees, arising out of or pertaining or relating to Consultant’s, its associates’, employees’, subconsultants’, or other agents’ negligence, recklessness, or willful misconduct, in the operation and/or performance under this Agreement.

   b. With respect to all other than professional services under this agreement, Consultant shall indemnify, hold harmless, release and defend MMWD, its officers, agents and employees from and against any and all actions, claims, damages, liabilities and expenses, including attorney’s and expert fees and witness costs that may be asserted by any person or entity, including the Consultant, arising out of or in connection with this agreement and the activities necessary to perform those services and complete the tasks provided for herein, but excluding liabilities due to the sole negligence or willful misconduct of MMWD.

   This indemnification is not limited in any way by any limitation on the amount or type of damages or compensation payable by or for the MMWD or its agents under workers’ compensation acts, disability benefit acts or other employee benefit acts.

4. **PROSECUTION OF WORK:** The execution of this agreement shall constitute the Consultant’s authority to proceed immediately with the performance of this contract. Performance of the services hereunder shall be completed within 60 calendar days of agreement execution, provided, however, that if the performance is delayed by earthquake, flood, high water or other Act of God or by strike, lockout or similar labor disturbance (“Acts”), the time for the Consultant’s performance of this contract shall be extended by a number of days equal to the number of days the Consultant has been delayed by such Acts.

5. **METHOD AND PLACE OF GIVING NOTICE, SUBMITTING BILLS AND MAKING PAYMENTS:** All notices, bills and payment shall be made in writing and may be given by personal delivery or by mail. Notices, bills and payments sent by mail should be addressed as follows:

-2-

Misc. Agreement No. 5403
Alpine Lake, Soulajule Reservoir, Kent Lake, Nicasio Reservoir LiDAR Survey
MMWD: Marin Municipal Water District  
Attn: Carl A. Gowan  
220 Nellen Avenue  
Corte Madera CA 94925  
(415) 945-1589  

CONSULTANT: Pro-ROV Services  
Attn: Mark Stepanek  
7514 Girard Avenue, 1-740  
San Diego, CA 92037  
(858)-412-6150  

and when so addressed, shall be deemed given upon deposit in the United States Mail, postage prepaid. In all other instances, notices, bills and payments shall be deemed given at the time of actual delivery. Changes may be made in the names and addresses of the person to whom notices, bills and payments are to be given by giving notice pursuant to this paragraph.

6. MERGER: This writing is intended both as the final expression of the agreement between the parties hereto with respect to the included terms of the agreement, pursuant to California Code of Civil Procedure Section 1856 and as a complete and exclusive statement of the terms of the agreement. No modification of this agreement shall be effective unless and until such modification is evidenced by a writing signed by both parties.

7. SEVERABILITY: Each provision of this agreement is intended to be severable. If any term of any provision shall be determined by a court of competent jurisdiction to be illegal or invalid for any reason whatsoever, such provision shall be severed from this agreement and shall not affect the validity of the remainder of the agreement.

8. TERMINATION: At any time and without cause, the MMWD shall have the right in its sole discretion, to terminate this agreement by giving written notice to the Consultant. In the event of such termination, MMWD shall pay the Consultant for services rendered to the termination date.

In addition, if the Consultant should fail to perform any of its obligations hereunder, within the time and in the manner herein provided, or otherwise violate any of the terms of this agreement, MMWD may terminate this agreement by giving the Consultant written notice of such termination, stating the reason for such termination. In such event, the Consultant shall be entitled to receive as full payment for all services satisfactorily rendered and expenses incurred hereunder, an amount which bears the same ratio to the total fees specified in the agreement as the services satisfactorily rendered hereunder by the Consultant bear to the total services otherwise required to be performed for such total fee, provided, however, that there shall be deducted from such amount the amount of damage, if any, sustained by MMWD by virtue of the breach of the agreement by the Consultant.

-3-
9. TRANSFER OF RIGHTS/OWNERSHIP OF DATA: The Consultant assigns to MMWD all rights throughout the work in perpetuity in the nature of copyright, trademark, patent, and right to ideas, in and to all versions of any drawings, reports, video tapes, photographs, and documents now or later prepared by the Consultant in connection with this contract.

The Consultant agrees to take such actions as are necessary to protect the rights assigned to MMWD in this agreement, and to refrain from taking any action which would impair those rights. The Consultant's responsibilities under this contract will include, but not be limited to, placing proper notice of copyright on all versions of drawings, reports and documents as MMWD may direct, and refraining from disclosing any versions of the reports and documents to any third party without first obtaining written permission of MMWD. The Consultant will not use, or permit another to use, any drawings, reports and documents in connection with this or any other project without first obtaining written permission of MMWD.

All materials resulting from the efforts of MMWD and/or the Consultant in connection with this project, including documents, reports, calculations, maps, photographs, video tapes, computer programs, computer printouts, digital data, notes, and any other pertinent data are the exclusive property of MMWD. Reuse of these materials by the Consultant in any manner other than in conjunction with activities authorized by MMWD is prohibited without written permission of MMWD.

10. COST DISCLOSURE: In accordance with Government Code Section 7550, the Consultant agrees to state in a separate portion of any report provided MMWD, the numbers and amounts of all contracts and subcontracts relating to the preparation of the report.

11. NONDISCRIMINATION: The Consultant shall comply with all applicable federal, state and local laws, rules and regulations in regard to nondiscrimination in employment because of race, color, ancestry, national origin, religion, sex, marital status, age, medical condition or physical handicap.

12. EXTRA (CHANGED) WORK: Extra work may be required. The Consultant shall not proceed nor be entitled to reimbursement for extra work unless that work has been authorized, in writing, in advance, by MMWD. The Consultant shall inform the District as soon as it determines work beyond the scope of this agreement may be necessary and/or that the work under this agreement cannot be completed for the amount specified in this agreement. Failure to notify the District shall constitute waiver of the Consultant's right to reimbursement.

13. CONFLICT OF INTEREST: The Consultant covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services hereunder. The Consultant further covenants that in the performance of this contract no person having any such interest shall be employed.
14. INSURANCE: The Consultant shall obtain insurance acceptable to MMWD in a company or companies with a Best's rated carrier of at least "A". The required documentation of such insurance shall be furnished to MMWD at the time the Consultant returns the executed contract. The Consultant shall not commence work nor shall it allow its employees or subcontractors or anyone to commence work until all insurance required hereunder has been submitted and approved.

The Consultant shall have and maintain at all times during the life of this agreement, up to the date of acceptance, the following policies of insurance:

a. Workers' Compensation Insurance: Workers' Compensation Insurance to cover its employees, as required by the State of California, and shall require all subcontractors similarly to provide Workers' Compensation Insurance as required by the Labor Code of the State of California for all of the subcontractors' employees. All Workers' Compensation policies shall be endorsed with the following specific language:

"This policy shall not be canceled without first giving thirty (30) days prior notice to MMWD, Attn: Carl A. Gowan, by certified mail."

The Workers' Compensation Insurance self-insured deductibles and retentions for both the Consultant and its subcontractors shall not exceed $5,000.

b. Public Liability Insurance: Personal Injury (including bodily injury) and Property Damage Insurance for all activities of the Consultant and its subcontractors arising out of or in connection with this agreement, written on a commercial general liability form which provides coverage at least as broad as ISO Commercial General Liability Occurrence Form CG 00 01 11 85 or 88 or any subsequent revision or equivalent including benefit contractual coverage, completed operations coverage, Consultant's protective coverage, and automobile coverage. The automobile coverage should be at least as broad as ISO Business Auto Form CA001 edition 187 or equivalent including employer's non-ownership liability. All deductibles or self-insured retentions shall not exceed $5,000. Coverage in an amount not less than $1,000,000 combined single limit personal injury, including bodily injury, and property damage for each occurrence is required. Each such policy shall be endorsed with the following language:

1. The Marin Municipal Water District, its officers, agents, employees and volunteers are additional insureds under this policy.
2. The insurance shall be primary as respects the insured shown in the schedule above.

3. The insurance afforded by this policy shall not be canceled except after thirty days prior written notice by certified mail return receipt requested has been given to the MMWD.

4. The referenced policy does not exclude explosion, collapse, underground excavation hazards or removal of lateral support.

5. The inclusion of more than one insured shall not operate to impair the right of one insured against another insured, and the coverage afforded in the policy shall apply as though separate policies had been issued to each insured.

Consultant's policy shall be endorsed with "Attachment B - Additional Insured Endorsement" form.

The General Aggregate Limits of Insurance in the referenced policies apply separately to this project.

c. Professional Liability Insurance: The Consultant shall procure and maintain throughout the term of this agreement, Professional Liability Insurance in an amount not less than $1,000,000. All insurance deductibles or self-insured retentions shall not exceed $5,000. All Professional Liability Insurance policies shall be endorsed with the following specific language:

(i) This policy shall not be canceled without first giving thirty (30) days prior notice to MMWD by certified mail.

d. Documentation: The following documentation of insurance shall be submitted to MMWD:

(i) A Certificate of Insurance for Workers' Compensation Insurance for Consultant. A copy of the required policy endorsements specified in subparagraph a. shall be attached to each such Certificate submitted.

(ii) Certificates of Liability Insurance showing the limits of insurance provided. Copies of the required endorsements specified in subparagraphs b. and c. shall be attached to each Certificate submitted.

15. DISPUTE RESOLUTION: Any dispute or claim in law or equity between District and Consultant arising out of this agreement, if not resolved by informal negotiation between the parties, shall be mediated by referring it to the nearest office of
Judicial Arbitration and Mediation Services, Inc. (JAMS) for mediation. Each party shall provide the others with a list of four mediators. The parties shall confer on the list and select a mutually agreeable mediator. Mediation shall consist of an informal, non-binding conference or conferences between the parties and the judge-mediator jointly, then in separate caucuses wherein the judge will seek to guide the parties to a resolution of the case. If the parties cannot agree to a mutually acceptable member from the JAMS panel of retired judges, a list and resumes of available mediators with substantial experience in mediating claims of the type at issue between the parties, numbering one more than there are parties, will be sent to the parties, each of whom will strike one name leaving the remaining name as the mediator. If more than one name remains, JAMS arbitrations administrator will choose a mediator from the remaining names. The mediation process shall continue until the case is resolved or until such time as the mediator makes a finding that there is no possibility of resolution.

At the sole election of the District, any dispute or claim in law or equity between District and Consultant arising out of this agreement which is not settled through mediation shall be decided by neutral binding arbitration and not by court action, except as provided by California law for judicial review of arbitration proceedings. The arbitration shall be conducted in accordance with the rules of Judicial Arbitration Mediation Services, Inc. (JAMS). The parties to an arbitration may agree in writing to use different rules and/or arbitrators.

16. BILLING AND DOCUMENTATION: The Consultant shall bill MMWD for work on a monthly or agreed upon basis or as articulated in Attachment B and shall include a summary of work for which payment is requested. The summary shall include time and hourly rate of each individual, a narrative description of work accomplished, and an estimate of work completed to date.
17. REASONABLE ASSURANCES: Each party to this agreement undertakes the obligation that the other’s expectation of receiving due performance will not be impaired. When reasonable grounds for insecurity arise, with respect to performance of either party, the other may, in writing, demand adequate assurance of due performance and until the requesting party receives such assurance may, if commercially reasonable, suspend any performance for which the agreed return has not been received. "Commercially reasonable" includes not only the conduct of the party with respect to performance under this agreement but also conduct with respect to other agreements with parties to this agreement or others. After receipt of a justified demand, failure to provide within a reasonable time, not to exceed 30 days, such assurance of due performance as is adequate under the circumstances of the particular case is a repudiation of this agreement. Acceptance of any improper delivery, service, or payment does not prejudice the aggrieved party's right to demand adequate assurance of future performance.

PRO-ROV SERVICES

Dated: 9-2-15 By 
Mark Stepanek

MARIN MUNICIPAL WATER DISTRICT

Dated: 10-5-15 By 
Krishna Kumar, General Manager
SCOPE OF WORK

The scope of work shall be that included in the Pro-ROV Services Quote 08242015, dated August 24, 2015 as it relates to the LiDAR survey work for Alpine Lake, Soulajule Reservoir, Kent Lake and Nicasio Reservoir.
August 24, 2015

Quote 08242015

For The
LiDAR Surveys
With
Volumetric Analysis
Of
Nicasio Lake, Kent Lake, Alpine Lake and Soulajule Lake

To
Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925

Attention
Alex Anaya
(415) 945-1588
aanaya@marinwater.org

Mark Stepanek
Phone: 619-300-0540
mark@pro-rov.com

This proposal includes data that shall not be disclosed outside the above named and shall not be duplicated or used, in whole or in part, for any purpose other than to evaluate this Proposal. If, however, a Contract is awarded as a result of, or in connection with the submission of this data, the above named shall have the right to duplicate, use or disclose the data to the extent provided in the resulting Contract. This restriction does not limit the right of the above named to use information contained in this data if it is contained in another source without restriction. The data subject to this restriction includes the complete body, statements, and appendices, as revised.
1 Table of Contents

2 Scope of Project

3 Scope of Work
   3.1 Mobilization
   3.2 Laser Scanning
   3.3 Data Processing and Deliverables

4 Terms
   4.1 Insurance
   4.2 Copyright
   4.3 Access
   4.4 Force Majeure
   4.5 Change Orders
   4.6 Proprietary Information

5 Equipment Specifications

6 Costing
2 SCOPE OF PROJECT

Pro-ROV Services (PRS) is pleased to present this proposal to the Marin Municipal Water District (MMWD) who is considering undertaking a comprehensive analysis to assess the current storage capacity of four water supply reservoirs. These reservoirs are the Nicasio Reservoir, Kent Lake, Alpine Lake and Soulajule Reservoir. The primary product of this effort would be to determine storage capacity and surface area vs. elevation for each reservoir. PRS has already performed bathymetric surveys of Alpine and Soulajule Reservoirs, and therefore will only perform LiDAR surveys of these two reservoirs along with volumetric analysis. Nicasio and Kent Reservoirs will ONLY have LiDAR surveys done at this time, with bathymetric surveys and volumetric analysis done in 2016. In order to provide a very competitive price, PRS will do all data collection for the LiDAR surveys on consecutive days. This will allow for a one-time boat mobilization and Invasive Specie Inspection by the Park Rangers.
3 SCOPE OF WORK

In order to support a volumetric analysis of each of the four reservoirs, Pro-ROV Services (PRS) understands that high resolution topographic data needs to be collected with the use of laser or LiDAR instrumentation.

In order to characterize the topography between the water surface and the spillway elevation, PRS proposes to use a mobile laser scanning system. The laser scanner will be mounted on the survey vessel and is akin to “above water multibeam”. The scanner emits thousands of laser points per second, with each return being geo-rectified and corrected for survey vessel heave, pitch and roll. The side of the reservoir is almost an ideal place to use this technology: lack of vegetation, exposed rock and survey areas close to the waters’ edge.

All surveying will be prepared and executed under the direction of, and stamped by, a Professional Engineer and Surveyor Licensed in the State of California as well as an ASCM Nationally Certified Hydrographer.

3.1 Mobilization
Mobilization will include a site reconnaissance of each reservoir before the surveys. The hydrographic survey vessel will be mobilized once at the beginning of the first LiDAR survey location/reservoir, as well as the survey line plan and the programming of the survey computer. The vessel will then moved from reservoir to reservoir at the end of each survey. This will accomplish a cost effective data collection, as well as a one-time invasive specie inspection by the Park Rangers.

3.2 Laser Scanning
The Dynascan LiDAR system utilizes the motion data string (heave pitch and roll) from the hydrographic motion reference unit as well as the RTK-GPS string from the GPS base station for positioning. The PRS survey crew will circumnavigate the perimeter of each reservoir while collecting scan data. The scan dataset consists of an XYZ point cloud which will be cleaned and checked against traditional ground-based survey methods: RTK-GPS transects will be surveyed throughout the laser footprint.

It needs to be noted that the laser scan data point cloud will not be continuous and will have gaps where vegetation is present between the water surface and the spillway elevation. PRS recommends collecting the scanning laser data sometime after the bathymetric data has been collected in the case of Alpine and Soulajule reservoirs. Kent and Nicasio bathymetric surveys will be done after the LiDAR data has been collected. This will allow the scan data and bathymetric data points clouds to overlap, and will also enable the laser scanner to get under overhanging tree canopy a bit easier.

3.3 Data Processing and Deliverables
The deliverables from the surveys will include the following:
- ASCII file containing point id, northings, eastings (NAD 83 - State Plane Coordinate System Z5, ft.), elevations (Ft. NAVD 88) and a header containing pertinent metadata.
- AutoCAD 2012 (Civil 3D) base map showing soundings, bathymetric contours (1 Ft. intervals) and all survey monuments.
- Reservoir surface area and updated stage – storage curve (volumetric table) shown in 0.10 Ft. increments as calculated in AutoCAD Civil 3D
- A field data report which will outline Class 1 procedures, benchmarks, calibration results and technical specifications on all equipment.
- High resolution sun-illuminated geoTiff with an aerial image in the background
- Gridded xyz datasets (1'x1', 5'x5', 20'x20', 50'x50', 100'x100')
- Planimetric map generated in AutoCAD Civil3D

4 TERMS

4.1 INSURANCE
Pro-ROV Services will provide $1 million General Liability with 2 million aggregate, and $2 million Auto Liability, $1 million Workers Comprehensive, and $1 million Boat/vessel liability policies. Also insured certificates are available if required by client.

4.2 COPYRIGHT
All record material, planning documents, system engineering and software are the proprietary property of Pro-ROV Services and all documents are produced under U.S. Copyright laws. Copyright for inspection sonar data, video and reports will transfer to the Customer upon receipt of payment in full.

4.3 ACCESS
The customer will provide free and ready access to the necessary facilities at a time mutually beneficial to both parties upon the signature of contract by Pro-ROV Services.

4.4 FORCE MAJEURE
Neither party shall be liable in damages or have the right to terminate this Agreement for any delay or default in performing hereunder if such delay or default is caused by conditions beyond its control including, but not limited to Acts of God, Government restrictions, wars, insurrections and/or any other cause beyond the reasonable control of the party whose performance is affected.

Neither party shall be liable for any failure or delay in performance under this Agreement (other than for delay in the payment of money due and payable hereunder) to the extent said failures or delays are proximately caused (I) by causes beyond that party’s reasonable control and occurring without its fault or negligence, including, without limitation, failure of suppliers, subcontractors, and carriers, or party to substantially meet its performance obligations under this Agreement, provided that, as a condition to the claim of non-liability, the party experiencing the difficulty shall give the other prompt written notice, with full details following the occurrence of the cause relied upon. Dates by which performance obligations are scheduled to be met will be extended for a period of time equal to the time lost due to any delay so caused.

4.5 CHANGE ORDERS
Change Orders would be made in writing and authorized by the contracting officer of record.

4.6 PROPRIETARY INFORMATION All information contained in this document by Pro-ROV Services is considered proprietary of Pro-ROV Services and shall not be disclosed without prior written permission from Pro-ROV Services.

5 EQUIPMENT SPECIFICATIONS
Accurate, reliable MOTION and positioning data in a compact package

The F180® series of GNSS aided inertial attitude and positioning systems are high quality, compact packages for the hydrographic survey market.

Refined to meet the exacting requirements of the multibeam survey market, the F180® series systems are easy to install, easy to service and produce highly accurate positioning, heading and MOTION data in the most dynamic offshore conditions.

The light, yet robust equipment has proved to be a reliable and cost effective solution on marine survey vessels of all sizes.

The intelligent heave processing is included as standard to accurately measure small amplitudes of up to 75 m per second.

A GLONASS upgrade is available to allow your F180® series system to utilise additional satellites, especially useful in areas where the sky view is partially obscured.

Additionally, for extremely rapid vessel deployments, we produce a Pre-Calibrated housing accessory to significantly reduce the installation and calibration phases of operation.

Benefits
- Precision position, roll, pitch, heading and heave in a single compact unit
- Maximum accuracy under all conditions
- Continuous output during GNSS dropouts
- Adherence to International Hydrographic Organization (IHO) survey standards
- Reduced installation time
- Easy to use
- Highly competitive price
- Expert 24/7 Technical Support

Features
- Survey grade GNSS, gyro, attitude and heave sensor in one box
- High accuracy position, heading, heave, pitch and roll at up to 100 Hz
- Intelligent heave, heading, and attitude processing result in increased accuracy and reduced settling times when compared to outputs from separate sensors
- Continuous output during GNSS dropouts
- Compatible with F180® GPS, GLONASS and other navigation packages
- Standard formats and interfaces
- Intelligent heave processing available as standard for improved heave accuracy
- Intuitive MOTION Control software included as standard
- Optional upgrade to GLONASS or Pre-calibrated housing
- Optional Insight™ software allows for generation of post-processed solution

Applications
- Hydrographic survey
- Bridge, dam, harbour inspection
- Dredging
- Offshore renewable energy
- Environmental survey
- Shipping channel survey
### F180 Series Systems

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F180 LT™</td>
<td>Entry level system with L1, DGPS, WNAS and EGNOS to allow maximum 60cm positional accuracy.</td>
</tr>
<tr>
<td>F180™</td>
<td>As F180 LT™ but with RTK on primary antenna to allow maximum positional accuracy of 20cm</td>
</tr>
<tr>
<td>F185™</td>
<td>As F180™ but with L1 and L2 on primary antenna to allow maximum positional accuracy of 1cm</td>
</tr>
<tr>
<td>F185s™</td>
<td>As F185™ but with both antennas for rapid heading initialization.</td>
</tr>
<tr>
<td>F190™</td>
<td>As F185™ but with integrated Mainstar receiver providing global corrections of 10cm where 1cm RTK is not available</td>
</tr>
<tr>
<td>F190s™</td>
<td>As F190™ but with L1 and L2 on both antennas for rapid heading initialization.</td>
</tr>
</tbody>
</table>

**Upgrades are available between models at any time. Upgrades are available to F180™ series Maker MU system – see separate data sheet. GLONASS and PPS-calibrated housing upgrades can be applied to any model.**

### Dynamic Performance

<table>
<thead>
<tr>
<th>Positional Accuracy (CEP)</th>
<th>0.01m with L1/L2 RTK correction (F180™/F185™/F190™)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.10m with Mainstar subscription (F100™/F190™)</td>
</tr>
<tr>
<td></td>
<td>0.20m with L1 RTK correction (F180™)</td>
</tr>
<tr>
<td></td>
<td>0.40m with DGPS correction (all models)</td>
</tr>
<tr>
<td></td>
<td>0.80m with DGPS correction (all models)</td>
</tr>
<tr>
<td></td>
<td>1.50m no correction (all models)</td>
</tr>
</tbody>
</table>

| Roll and Pitch (°)       | 0.025 °                                              |
| True Heading (°)         | 0.05 ° (max 60m baseline)                           |
|                          | 0.025 ° (max 400m baseline)                         |

| Height (m)               | 5cm or 5% (on line)                                 |
|                          | 2.5cm or 3.5% (on plane)                            |

| Velocity (m/s)           | 0.014 m/s                                           |

### Interfaces

- Ethernet 100/1000B: Full control and configuration, high speed data output (MOD) with direct output to QINSy and HYFACX™
- Serial Port 1: User configurable for position, heading, and attitude strings. Choose from: TSB, TCG, EFIP, EM1000, EFO3000C, MOD, QGA, GIG, GST, IED, PANTEX, PRIDE, RMC, ROT, VTC, UTC, ZDA
- Serial Port 2: As Serial Port 1
- Serial Port 3: Data output (DGPS, RTK) Formats: RTCM 2.1/2.2/2.3/2.3.1; CMR, CMRv
- Other: 1 PPS via ENC

### PC System Requirements

- Operating System: Windows® 8 / 7 / Vista / XP SP2; both 32 and 64 bit

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**F180®**, **F180 LT™**, **F185™**, **F185s™**, **F190™**, **F190s™**, **F180MT™**, and **INSight™** are trademarks of CodaOctopus. **HYFACX™** is a registered trademark of HYFACX, Inc. Windows® is a registered trademark of Microsoft®.

The information in this publication was correct at the time it was published, but specifications may change without notice. Photos are included for illustrative purposes only and actual items may differ in appearance. CodaOctopus does not assume responsibility for typographical or photographic errors. Issued 11-11-13.

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7514 Girard Ave., 1-740, San Diego, CA 92037 USA • Phone/Fax: 858-412-6150 Cell: 619-300-0540 • mark@pro-row.com • www.pro-row.com
The Dynascal 3D mobile mapping system from MDL is ideal for the challenging situations presented in coastal and waterway applications.

The unique design of the systems enables simple interchangeability between vessel and land based platforms, allowing the user to plan survey works around tidal changes.

The Dynascal is an ideal solution if you need to combine above water survey data with bathymetry surveys for a complete above and below waterline data set.

The system is particularly useful for updating electronic navigation charts and monitoring coastal erosion. It enables scanning to be carried out where rocky outcrops, reefs, cliffs or lack of landing facilities would previously have made surveying impossible.

www.mdl-laser.com
COASTAL APPLICATIONS

As land becomes a valuable commodity in overpopulated regions the need for land reclamation is increasing. The Dynascan can be used to survey progressive infill areas where traditional surveying is dangerous and impractical.

Inland waterway surveys can be carried out as desired by efficiently collecting point cloud data sets of the topography and vegetation. This is critical in updating risk management, maintenance contracts and flood models.

SO WHAT'S THE BIG DEAL?

- One pod solution for easy mobilisation
- Can be mounted on a vessel or all terrain vehicles such as 4x4's or quad bikes to access inhospitable environments
- Water and dust resistant
- Easy to integrate with sonar equipment

WHAT'S IN IT FOR ME?

- Low cost of ownership
- Compact – easy to transport and install
- Compare old data and new
- Efficient mass data collection
- Enhances surveyors safety

Dynascan mounted on quad bike
Coastal & Waterway

Technical Specifications
- Class: IEC60685-1 (2007)
- Range: up to 250 m
- Laser ranging accuracy: ±6 cm at 80 m
  (Kodak white card to 1 sigma)
- Range resolution: 1 cm (0.4")
- Scanner field of view: 300°
- Scanner angle resolution: 0.01°
- Scanner rate: up to 20 Hz
- Beam footprint: 129 mm x 8 mm at 50 m
- Pulse measurement rate: 36,000 points per second
- Environmental
  - Operating temperature: -10°C to +50°C (+14°F to +122°F)
  - Storage temperature: -40°C to +85°C (-40°F to +185°F)
- IP65

Power & Dimensions
- Power: 12 to 17 volts DC 120W
- Weight: 14.9 kg (32.9 lbs)
- Size (mm): 1877 x 928 x 420

Attitude Accuracy
- Dual GNSS antenna heading: 0.1°
- Roll: 0.03°
- Pitch: 0.03°

Horizontal position accuracy
- GNSS modular receiver
- RTK accuracy up to 2 cm (horizontal)
- Options to take corrections from various sources
6  COSTING

Includes: Workshop setup of Equipment and Mob & De-Mob on separate occasions to each reservoir not in consecutive dates. Number of days per site is specified below and includes 22-foot aluminum boat, all equipment, 2-technicians and 1-hydrogather on-site, and deliverables.

<table>
<thead>
<tr>
<th>Location</th>
<th>Days</th>
<th>Rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALPINE LAKE</td>
<td>2-DAYS</td>
<td>$6,993</td>
<td>$13,986</td>
</tr>
<tr>
<td>SOULAJULE LAKE</td>
<td>2-DAYS</td>
<td>$6,994</td>
<td>$13,988</td>
</tr>
<tr>
<td>KENT LAKE</td>
<td>2-DAYS</td>
<td>$6,994</td>
<td>$13,988</td>
</tr>
<tr>
<td>NICASIO LAKE</td>
<td>2-DAYS</td>
<td>$6,994</td>
<td>$13,988</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$55,950</strong></td>
</tr>
</tbody>
</table>

Daily Rate for all equipment, vessel, 2-Technicians and Hydrographer = $6,993

Pro-Services Liability - PRS accepts no responsibility for any expenses incurred by MMWD District, their board members, staff or any other party whether labor, equipment rental, site rental, asset damage, asset loss or any other expenditures as a result of Pro-ROV Services activity including but not limited to operational delays caused by equipment breakdown, equipment becoming lodged or any other eventuality.

Client Liability – Vehicle Loss: In the event of loss or damage to PRS equipment as a result of client negligence, equipment failure, incorrect information including but not limited to incorrect drawings or verbal description or for any reason outside of PRS control, MMWD agrees to compensate PRS for either repair, replacement or insurance deductible of $5,000 whichever is less.

This document must be signed in order for project to proceed even if the MMWD provides a contract or Purchase Order on their letterhead.

Signature: ____________________________________________

Title: __________________________________________________Date: __________________

7514 Girard Ave., 1-740, San Diego, CA 92037 USA • Phone/Fax: 858-412-6150 Cell: 619-300-0540 • mark@pro-rov.com • www.pro-rov.com
ADDITIONAL INSURED ENDORSEMENT

This endorsement modifies insurance provided under the following:

Commercial General Liability Coverage: Policy ___________________________
          Policy Period __________________________

Automobile Liability:        Policy# __________________________
          Policy Period __________________________

INSURED:   Name_____________________________________________________
          Address ______________________________________________________
          City/State/Zip _______________________________________________

SCHEDULE

The Marin Municipal Water District, its officers, officials, agents, employees and
volunteers (MMWD).

WHO IS AN INSURED

Is amended to include as an insured the organization shown in the schedule above.

1. The insurance shall be primary concerning the insured shown in the schedule
   above.

2. The insurance afforded by this policy shall not be cancelled except after thirty
days prior written notice by certified mail return receipt requested has been
given to the MMWD.

3. The referenced policy does not exclude explosion, collapse, underground
excavation hazards or removal of lateral support.

4. The inclusion of more than one insured shall not operate to impair the right of
one insured against another insured, and the coverage afforded in the policy
shall apply as though separate policies had been issued to each insured.

Authorized Insurance Representative

______________________________________________  _________________________
Signature                                      Date

______________________________________________
Print Name and Title

-10-

Rev. 7-25-06
ATTACHMENT C

See Attached "Marin Municipal Water District Vessel and Aquatic Equipment Decontamination and Inspection Standards dated June 26, 2012" and "Aquatic Apparatus Inspection Form" Rev 01/10.
Aquatic Apparatus Inspection Form

Non-MMWD operators complete this section – This form is required and all non-District apparatus entering the water may be subject to a physical inspection before launching. Failure to comply with inspection or complete this form may result in revocation of your permit or mandatory launch delays.

(Please print clearly. If you do not understand any question, please ask staff for clarification.)

List apparatus that will enter MMWD waters (e.g., boat, barge, trailer, cars, nets, sensors, pumps, dive equipment, etc.):

Boston Whaler / Trailor

List location where apparatus will enter MMWD waters:

Kent, Alpine Solvate, Nicasio

List location and date where apparatus was in the water in the last 30 days:

Oakland Harbor 10/11/15

Are you from, or has apparatus been operated in, any of the following bodies of water? Alameda Creek, Baxter Creek, Klamath River, San Joaquin & Sacramento Delta, San Lorenzo River, American River, Russian River, Smith River, Napa River, Owens River, Riverside County, Orange County, San Diego County, San Bernadino County

Yes Circle one
If Yes, when? 2013

Do you have any standing water or live bait in any area of your vessel (bilge, live wells, bait wells, other compartments)?

Yes Circle one

Vessel Make: Boston Whaler Model: Montauk CF Number: CF8421HL

Vessel Operator Information

Name: Darren Gevant
Address: 163 commercial blvd suit 108
City: Novato, CA State: CA ZIP: 94949 County: Novato

I attest to the truthfulness of the information that I have submitted on this form and I voluntarily consent to a search and inspection of all equipment that will enter District reservoirs and/or Lagunitas Creek by the Marin Municipal Water District for the sole purpose of detecting invasive aquatic species.

Signature 10/27/15

Inspection staff complete this section

Is the boat registered? Y N In what state? Operator/Vessel address verifiable? Y N
Evidence of recent mooring (growth/stains on hull, wet material)? Y N
Evidence of mussels or other aquatic organisms? Y N Describe:

Type of vessel/motor (circle all pertinent): IB OB I/O J C/RB/K FT IF S

Standing/cooling water visible? Y N Overall vessel condition: Clean Dirty Extremely Dirty

Other equipment observed and inspected: Hull Bilge & Live Wells Bait Bucket Ropes/Anchor

Trailer Transducers/Pitots Intakes Propeller Lower Unit/Gimbal

Is the boat or other apparatus cleared for launching on this day? Y N (If no, see comments)

Additional comments: 2 Stroke ENGINE / NO REGISTRATION ON HAND OK'D BY NICK S.

Time: 9:10 Facility: Sky Oaks Inspector: Phil Johnson Rev 01/10
**EBMUD Recreation Area Private Boat Launch Inspection Form**

**Natural Resources Department**

**Boat operators complete this section** – This form is required and your vessel may be subject to a physical inspection before launching. Failure to comply with inspection or complete this form may result in revocation of your boating permit and you may be subject to citation and/or eviction from EBMUD facilities.

*(Please print clearly. If you do not understand any question, please ask staff for clarification.)*

<table>
<thead>
<tr>
<th>Location vessel was operated (last 30 days)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco Bay</td>
<td>10-1-15</td>
</tr>
</tbody>
</table>

Are you from, or has vessel been operated or moored in, any of the following bodies of water: Lake Mead, Lake Havasu, Lake Mojave, Lake Skinner, San Justo Reservoir, San Luis Reservoir, O’Neill Forebay, or any lake, reservoir, or waterway in and/or south of the Tehachapi Mountains or outside of CA?

<table>
<thead>
<tr>
<th>Circle one</th>
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</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

If Yes, when?

Do you have any other equipment (buckets, pumps, motors, oars, down riggers waders etc.) that has been used in an aquatic environment in the last 30 days?

<table>
<thead>
<tr>
<th>Circle one</th>
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</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

Do you have any standing water or live bait in any area of your vessel (bilge, live wells, bait wells, other compartments)?

<table>
<thead>
<tr>
<th>Circle one</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

**Vessel Make:** Boston Whaler  **Model:** Montauk  **CF Number:** CF 8472 HL

**Vessel Operator Information**

<table>
<thead>
<tr>
<th>Name:</th>
<th>K.A. Berger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>16 Caberet Blvd</td>
</tr>
<tr>
<td>City:</td>
<td>Novato</td>
</tr>
<tr>
<td>State:</td>
<td>CA</td>
</tr>
<tr>
<td>Zip:</td>
<td>94947</td>
</tr>
<tr>
<td>County:</td>
<td>Marin</td>
</tr>
</tbody>
</table>

I attest to the truthfulness of the information that I have submitted on this form and I voluntarily consent to a search and inspection of the boat and trailer currently in my possession by the East Bay Municipal Utility District for the sole purpose of detecting invasive aquatic species.

[Signature]

10-26-15

**Inspection Staff complete this section**

Is the boat registered? [Y] [N]  What state? [CA]  Operator/Vessel address verifiable: [Y] [N]

Evidence of recent mooring (growth/stains on hull, wet material): [Y] [N]

Evidence of mussels or other aquatic organisms? [Y] [N]  Describe__________________________

Type of vessel/motor: (circle all pertinent)  [IB] [OB] [I/O] [J] [C/R/B/K] [FT] [IF] [S]

Standing/pooling water visible? [Y] [N]  Overall vessel condition: Clean Dirty Extremely Dirty

Other Equipment observed and inspected: [ ] Hull  [ ] Bilge & Live Wells  [ ] Bait Bucket  [ ] Ropes/Anchor

[ ] Trailer  [ ] Transducers/Pitots  [ ] Intakes  [ ] Propeller  [ ] Lower Unit/Gimbal  Other_____________________

Is the boat cleared for launching on this day? [YES] [NO]  (If NO, see comments)

Additional Comments: ________________________________

**Time:** 1:30 pm  **Facility:** S.P. RESERVOIR  **Inspector:** [Signature]  rev 04/10
AMENDMENT 1 TO
MISCELLANEOUS AGREEMENT No. 5403

Miscellaneous Agreement No. 5403 for the Light Detection and Ranging (LiDAR) Survey of Alpine Lake, Soulajule Reservoir, Kent Lake, Nicasio Reservoir is hereby amended in accordance with the attached addition to the scope of work. Consultant fee is hereby increased by a not-to-exceed fee of $14,100.

<table>
<thead>
<tr>
<th>Original Fee</th>
<th>$55,950.00</th>
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<tbody>
<tr>
<td>Amendment 1</td>
<td>$14,100.00</td>
</tr>
<tr>
<td>Misc. Agreement 5403 Not-To-Exceed Fee</td>
<td>$70,050.00</td>
</tr>
</tbody>
</table>

PRO-ROV SERVICES

Dated: ______________ By ________________________
Mark Stepanek

MARIN MUNICIPAL WATER DISTRICT

Dated: ______________ By ________________________
Krishna Kumar, General Manager
Exhibit A

Additional Scope – Amendment

Additional LiDAR Survey of Nicasio Reservoir and Soulajule Reservoir

Scope of Work

Background

On October 17, 2014, the findings of the Bon Tempe Reservoir Bathymetric Survey conducted by Pro-ROV Services were presented to the Board of Directors. In the staff report the value of the Pro-ROV study was discussed and staff recommended that bathymetric surveys be completed for all the reservoirs. The Board of Directors supported the recommendation.

On October 15, 2015, the General Manager approved Miscellaneous Agreement No. 5403 that authorized Pro-ROV to conduct a (LiDAR) survey of Soulajule Reservoir, Nicasio Reservoir, Kent Lake, Alpine Lake for the purpose of surveying the area from the water surface to above the spillway at each of these locations.

At the time that Pro-ROV received authorization and mobilized to conduct the LiDAR Survey (October 27, 2015), the lake levels had dropped significantly from the original quote dated August 20, 2015. The drop in lake level was more significant over the shallow areas at Nicasio and Soulajule where areas that were navigable by boat in August were now exposed land. This caused the shoreline to recede further towards the deeper part of the lake making boat access to the shallow area impossible. As a result, there were many areas along the perimeters of both Nicasio and Soulajule that are missing LiDAR data resulting in a non-continuous survey.

As a result of the changed lake levels, it is now necessary to incorporate a land based LiDAR Survey to fill in the gaps that the boat LiDAR Survey was unable to capture. Below is a table of the lake levels on the day of the submitted quote and on the day Pro-ROV started the survey.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicasio Reservoir</td>
<td>10.45 ft</td>
<td>16.78 ft</td>
<td>19.67 ft</td>
<td>-6.33 ft &amp; -9.22 ft</td>
</tr>
<tr>
<td>Soulajule Reservoir</td>
<td>11.34 ft</td>
<td>15.92 ft</td>
<td>17.53 ft</td>
<td>-4.58 ft &amp; -6.19 ft</td>
</tr>
</tbody>
</table>

Additional Scope of Work described below:
Scope of Work

1. The amended scope of work shall include conducting land based LiDAR Survey work to fill in the gaps at Nicasio Reservoir and Soulajule Reservoir at the locations where the boat based LiDAR Survey was not able to capture. This additional land based LiDAR Survey will fill in the missing areas and provide MMWD a continuous LiDAR survey of the perimeters at Nicasio and Soulajule as well as the peripheral water bodies at Nicasio.

Fee Estimate:

The additional fee to complete the additional scope of work described above comes to a total of fourteen thousand one hundred dollars ($14,100). This is broken out into six thousand two hundred sixty dollars ($6,260) to complete Soulajule Reservoir and seven thousand eight hundred forty dollars ($7,840) to complete Nicasio Reservoir. This additional fee will be added to the existing agreement amount of $55,950 for a new total contract value of $70,050.

Attachment:
Pro-ROV quote dated 12/01/2015 for additional scope of work.
December 1, 2015

Alex Anaya  
Marin Municipal Water District  
220 Nellen Avenue  
Corte Madera, CA 94925

Alex,

The following costing is to attain full LiDAR gap coverage due to excessively low water height on Soulajule andNicasso. The LiDAR scanner would be mounted and integrated into the RTK-GPS system on a four wheel drive vehicle. As this sensor is rented every day of shipping, integration and survey time has been budgeted. In addition, after reviewing data already collected at Alpine, we will be going back in for a one-day data collection due to a heading cable not being hooked up - AT OUR COSTING as this was neglected by our team.

Originally we were considering doing Soulajule first and then Nicasio next summer when we did the bathymetric survey. However we have now decided to complete all LiDAR now to save on shipping and integration costs. We can do this project starting next Monday December 7, 2015 and complete it the same week once we receive your approval for the additional costing. In addition, and as previously discussed, we are willing to separate payment between these two reservoirs with Soulajule paid upon deliverable with bathy, and then Nicasio next Summer upon deliverable able bathy.

I hope you understand the level of additional effort we are putting forth in order to provide the best possible solution to a situation that is well beyond the original Scope Of Work (SOW) that was understood at the time of the original proposal.

Please contact me at your earliest convenience to discuss this project and any issues or questions you may have and so we can reserve the LiDAR scanner.
COSTING

Shipping Dynascan LiDAR system from TX to Novato and back  $600

Soulajule Reservoir:

System integration & Mob  1 day @ $1,300      $1,300
Dynascan Laser rental  2 days @$1,300/day      $2,600
Chief Survey    16 hrs @$110/hr      $1,760

TOTAL Soulajule  $6,260

Nicasio Reservoir:

Dynascan Laser rental  3 days @$1,300/day      $5,200
Chief Surveyor   24 hrs @$110/hr      $2,640

TOTAL Nicasio  $7,840

Very truly yours,

Mark Stepanek
Pro-ROV Services
STAFF REPORT

SUBJECT: Proposition 84 Drought Round Grant - Irrigation with AMR Project, Grant Agreement with ABAG

SUBMITTED BY: Dan Carney, Water Conservation Manager
General Manager Division

RECOMMENDED ACTION: Authorize the General Manager to execute the Local Project Sponsor Agreement between Association of Bay Area Governments/San Francisco Estuary Partnership and Marin Municipal Water District, Proposition 84 Integrated Regional Water Management 2014 Drought Grant, Agreement Number 4600010883.

EXECUTIVE SUMMARY:

The district has been awarded $975,000 in grant funding to implement a water conservation project utilizing automatic meter reading technology (AMR) and irrigation equipment rebates at 800 irrigation accounts. This is one of 10 implementation projects in a $32 million Bay Area Proposition 84 Drought Round Integrated Regional Water Management (IRWM) grant. The Association of Bay Area Governments/San Francisco Estuary Partnership (ABAG/SFEP) will manage the grant and serve as official grantee for the award. A grant agreement between the Department of Water Resources and ABAG/SFEP has been executed, and ABAG/SFEP will now enter into individual Local Project Sponsor agreements for each of the 10 separate implementation projects, including the district’s project. Staff is recommending the Board authorize the General Manager to execute the Local Project Sponsor Agreement between ABAG/SFEP and the district, securing the $975,000 in Proposition 84 grant funding.

FISCAL IMPACT: X NO

FISCAL YEAR: 2015/2016

<table>
<thead>
<tr>
<th>EXPENDITURES</th>
<th>FUNDING SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted Amount</td>
<td>Operating Fund $325,000</td>
</tr>
<tr>
<td>Budget Augmentation</td>
<td>Capital Fund</td>
</tr>
<tr>
<td>Requested</td>
<td>Prop 84 grant reimbursement $975,000</td>
</tr>
<tr>
<td></td>
<td>Operating Reserves</td>
</tr>
<tr>
<td><strong>TOTAL EXPENDITURES</strong></td>
<td><strong>TOTAL SOURCES $1,300,000</strong></td>
</tr>
</tbody>
</table>

FISCAL IMPACT NARRATIVE:

The total cost of the project is estimated to be $1,300,000, including required matching funds of $325,000, and $975,000 in reimbursable grant funds. The $325,000 in matching funds is
comprised of $236,147 in staff time for project planning, outreach, developing new water budgets, AMR installation and field testing, grant management, as well as a portion of SAP software upgrade costs and consultant work to integrate new software with existing SAP systems. The $975,000 in grant funding will cover the irrigation equipment rebate program, and purchase of SAP software and AMR equipment.

BACKGROUND:

The district’s Water Conservation Master Plan (adopted June 20, 2007) recommended incorporating AMR as one of many water conservation tools available for implementation. With AMR, water meters can be read by truck mounted sensors by driving down the street, allowing a cost-effective means to collect readings on a weekly, rather than bi-monthly basis. With weekly meter readings, available via a web portal, customers and staff can be more proactive in finding and responding to leaks, and monitoring water budgets to reduce overwatering. In addition to new AMR equipment, this project will provide customers with rebates up to $1,500 per irrigation meter for high-efficiency irrigation equipment; scientific water budgets, accurate GIS maps of the landscape areas served by each meter, and facilitate an estimated aggregate reduction in water use of 400 acre-feet per year at these sites.

In summary, the major elements of this project include:

- **Conversion of 800 existing manual-read landscape irrigation water meters to an AMR reading system,** including installation of data storage and radio transmission devices, installation of all ancillary communications infrastructure, software and delivery of meter reading data and analysis functionality, and creation of a new internet data portal that will allow staff and customers to manage irrigation water use with online accounts.

- **Retrofitting with high-efficiency irrigation equipment at project sites receiving AMR technology.** This includes launching and administering an Irrigation Equipment Rebate Program for project irrigation account customers. This high-efficiency irrigation equipment will include a combination of high-efficiency sprinkler nozzles, low-volume drip irrigation, and SMART controllers.

- **Analysis of irrigation water requirements at project sites and development of new water budgets associated with each site.** The new water budgets will reflect higher efficiencies and demand reductions made possible by the high-efficiency irrigation equipment retrofit element of the project.

- **Outreach with project irrigation account customers to inform them of project parameters, to ensure transition to water efficient irrigation equipment, and to train them to use the new technology to monitor and track water use.**

Upon executing a Local Project Sponsor agreement between MMWD and ABAG/SFEP, $975,000 in grant funding for this project will be available to the district. Under the agreement with ABAG, MMWD and all grant recipients could be held financially responsible for any grantee’s default on their agreement with ABAG. For example if a grantee were to go bankrupt and not finish its project, ABAG would first seek to recover
against the defaulting agency. However, if DWR wanted to, it could hold all of the other grant recipients responsible for those lost monies, even though it may be unlikely to that this circumstance would occur. Once the Board approves and signs the ABAG agreement, MMWD will be committing to completing this project.

Staff recommends the Board authorize the General Manager to execute the **Local Project Sponsor Agreement between Association of Bay Area Governments/San Francisco Estuary Partnership and Marin Municipal Water District, Proposition 84 Integrated Regional Water Management 2014 Drought Grant, Agreement Number 4600010883.**

**STRATEGIC PLAN ALIGNMENT:**

This action aligns with the District’s 5-Year Strategic Plan Goal 1 (Water Supply Resiliency), Strategy 2 (Emphasize Water Use Efficiency as a core water resource element for MMWD); Goal 2 (Financial Stewardship), Strategy 5 (Use technology to drive business process effectiveness and efficiency), and Strategy 7 (Maximize the role of State and federal grant funding in MMWD business model and financial planning).

**REVIEWED BY:**

- Finance Manager: X NA
- General Counsel: X NA
- General Manager: X NA

**ATTACHMENTS:**

1. Local Project Sponsor Agreement between Association of Bay Area Governments/San Francisco Estuary Partnership and Marin Municipal Water District, Proposition 84 Integrated Regional Water Management 2014 Drought Grant, Agreement Number 4600010883.
Through this Local Project Sponsor Agreement by and between the Association of Bay Area Governments (ABAG), a joint powers authority existing under the laws of the State of California acting on behalf of the San Francisco Estuary Partnership (SFEP), a project sponsored by ABAG and Marin Municipal Water District, a Special District, the parties hereby agree as follows:

RECITALS

A. Whereas, ABAG applied for a Proposition 84 Integrated Regional Water Management (IRWM) 2014 Drought Grant from the State of California, Department of Water Resources (DWR) to help fund eleven (11) local, subregional and regional projects located within the San Francisco Bay Area IRWM region (Work Plan);

B. Whereas, in July 2015 DWR and ABAG entered into Agreement No. 4600010883 (Grant Agreement) awarding to ABAG a grant for Thirty-two Million One Hundred Seventy-eight Thousand Four Hundred Twenty-three Dollars ($32,178,423) in State funding (State Grant) requiring an estimated Twenty-five Million Eight Hundred Fifty Thousand Dollars ($25,850,000) in matching funds to be expended over the grant period which extends from July 20, 2015 until May 1, 2019, when the Work Plan will be completed;

C. Whereas, subrecipients of the State Grant (Local Project Sponsors) and ABAG will be responsible for implementing their respective component parts of the Work Plan (such component parts of the Work Plan are referred to generically as ‘Local Projects’);

D. Whereas, Marin Municipal Water District is a subrecipient of the State Grant and is responsible for the completion of WaterSMART Irrigation with AMI/AMR Project (Project) as part of the Work Plan and for no matching funds but for project cost share in excess of the grant amount as required under the Grant Agreement.

NOW THEREFORE, based upon the foregoing recitals, ABAG and Marin Municipal Water District further agree as follows:
1.1 Applicable Documents. The following are attached:

1.2 Attachment 1 Project Description
1.3 Attachment 2 Insurance Requirements
1.4 Attachment 3 Grant Agreement including the following exhibits that were attached:

1.5 Exhibit A, ‘Work Plan’
1.6 Exhibit B, ‘Budget’
1.7 Exhibit C, ‘Schedule’
1.8 Exhibit D, ‘Standard Conditions’
1.9 Exhibit E, ‘Authorizing Resolution’
1.10 Exhibit F, ‘Local Project Sponsors’
1.11 Exhibit G, ‘Report Formats and Requirements’
1.12 Exhibit H, ‘Requirements for Statewide Monitoring and Data Submittal’
1.13 Exhibit I, ‘State Audit Document Requirements & Funding Match Guidelines for Grantees’
1.14 Exhibit J – Monitoring and Maintenance Plan Components

This Local Project Sponsor Agreement is comprised of this document (Base Document) and Attachments 1, 2, and 3, and is the complete and exclusive statement of understanding between ABAG and Marin Municipal Water District, and supersedes any and all previous understandings or agreements, whether written or oral, and all communications between the parties relating to the subject matter of this Local Project Sponsor Agreement.

2.0 Term of Agreement. This Local Project Sponsor Agreement shall commence as of July 20, 2015 (Effective Date) and continue until May 1, 2019, or until terminated by ABAG pursuant to the terms of this Local Project Sponsor Agreement, or until terminated by DWR pursuant to the terms of the Grant Agreement.

3.0 Project, Subaward and Matching Funds. Under the terms of the Grant Agreement, Marin Municipal Water District will implement the Project as more particularly described in Attachment 1. ABAG/SFEP will disburse up to Nine Hundred Seventy-Five Thousand Dollars ($975,000) of the State Grant to Marin Municipal Water District in accordance with the Grant Agreement. Marin Municipal Water District will provide and document the matching funds referenced in Attachment 1 to this Local Project Sponsor Agreement in accordance with the Grant Agreement.

4.1 ABAG Obligations

4.2 ABAG will undertake and complete the following Local Project, including all administrative and management responsibilities relating solely to such Local Project, in accordance with the Grant Agreement: Project 11 – Grant Administration (ABAG Project)

4.3 ABAG shall disburse Grant funds as required or permitted by the Grant Agreement. Notwithstanding the foregoing, ABAG is not obligated to disburse any funds to Marin
Municipal Water District and is not obligated to disburse any other funds until such are authorized and disbursed from DWR to ABAG.

4.4 ABAG will promptly notify Marin Municipal Water District of any notices given or actions taken by DWR if such notices or actions are likely to affect Marin Municipal Water District’s performance, duties, obligations or funding under this Local Project Sponsor Agreement, including but not limited to notices from DWR regarding Marin Municipal Water District’s invoices under section 12.c.5 of the Grant Agreement or alleged default by Marin Municipal Water District under section 14 of the Grant Agreement. ABAG shall consult with the Local Project Sponsor Committee as defined below in carrying out ABAG’s responsibilities.

4.5 Commencing with DWR’s award of the State Grant on January 18, 2014 and continuing until May 1, 2019 when the lengthiest projects covered by the Grant Agreement are expected to wind down and Grant closeout activities are expected to be completed, ABAG will undertake and complete all administrative and management responsibilities under the Grant Agreement that are not related solely to Local Projects (see Grant Agreement: Project 11 – Grant Administration). ABAG has incurred, and will continue to incur, numerous costs for administrative and management responsibilities under the Grant Agreement that are not related solely to Local Projects (the “Grant Administrative Costs”). The Grant allocates One Million Six Hundred Fifty Thousand Dollars ($1,650,000) for Grant Administrative Costs.

4.6 ABAG will cause to be formed a Local Project Sponsors (LPS) Committee comprised of one representative from each Local Project Sponsor, including ABAG. The LPS Committee will provide input to ABAG in carrying out its responsibilities under sections 4.3 and 4.4. Further, the LPS Committee will allocate among the Local Project Sponsors, any Grant Administrative Costs that exceed the amount allocated for same by the Grant Agreement. The LPS Committee will assess the potential for exceedances upon the completion of each Local Project. ABAG will convene the LPS Committee on an as-needed basis, and provide staff support. ABAG will provide the LPS Committee with available information in a timely manner to enable the LPS Committee to undertake the functions described in this section. The LPS Committee will provide input and make decisions based on consensus but if it cannot reach consensus, such input and decisions will be provided and made based on a majority vote of the quorum present at the meeting.

4.7 The obligations of ABAG under section 6.2 shall survive the termination of this Local Project Sponsor Agreement.

5.1 Marin Municipal Water District Obligations

5.2 Marin Municipal Water District is, and at all times will continue to be, in full compliance with the terms and conditions of the Grant Agreement that are applicable to it as a subrecipient of the State Grant. Marin Municipal Water District understands and agrees that for purposes of the foregoing, any requirements and responsibilities imposed upon ABAG as Grantee under the Grant Agreement are hereby passed-through to, and adopted by Marin Municipal Water District, as obligations of Marin Municipal Water District, excepting only ABAG’s obligations as defined in subsections 4.1 – 4.3 of this Local Project Sponsor Agreement. Further, Marin Municipal Water District acknowledges and agrees to comply with any requirements directly imposed on Marin Municipal Water District as a Local Project Sponsor under the Grant Agreement.
5.3 Marin Municipal Water District agrees to fund the difference between the Total Project Cost and Grant Amount specified in Attachment 1 of this Local Project Sponsor Agreement. Cost share consists of Funding Match and Additional Cost Share as documented in Attachment 1. Marin Municipal Water District is required to maintain all financial records associated with the total project cost for inclusion in the final project report.

5.4 Pursuant to DWR requirements, Marin Municipal Water District may invoice ABAG for grant share reimbursement incurred after the grant award date of January 18, 2014 in their first invoice. Subsequent invoices must bill for costs incurred during the quarter in which they were incurred by Marin Municipal Water District. Match costs can include project related costs incurred after January 1, 2010. Required match costs related to a specific task must be documented to the same level of detail as costs for a grant invoice. Required match costs must be approved by DWR prior to Marin Municipal Water District invoicing the grant for payment for that specific task. Additional cost share will be documented by Marin Municipal Water District in the Final Project Report.

5.5 Marin Municipal Water District hereby assumes responsibility for submitting Post-Performance Reports as required under section 19 of the Grant Agreement. Reports will be sent to ABAG for submittal to DWR within sixty (60) calendar days after the first year of project operation/completion and annually for a total of ten (10) years following project completion.

5.6 Marin Municipal Water District hereby assumes responsibility for the following as required under section 20 of the Grant Agreement: (a) operating and maintaining facilities and structures, (b) all costs for the operation and maintenance of the facilities and structures, and (c) performing as required under (a) and (b) for the period required.

5.7 The obligations of Marin Municipal Water District under sections 5.4, 5.5 and 6.1 shall survive the termination of this Local Project Sponsor Agreement.

5.8 Marin Municipal Water District shall not cause ABAG to be in violation of the Grant Agreement, whether by act or omission.

5.9 Marin Municipal Water District shall comply with all applicable Federal, State, and local laws, rules, regulations, ordinances, and directives, now existing and as such may change from time-to-time. Any such laws, rules, regulations, ordinances, and directives required thereby to be included in this Local Project Sponsor Agreement are incorporated herein by reference.

5.10 Marin Municipal Water District shall procure and submit proof of insurance coverage in compliance with the requirements of Attachment 2 or as approved in writing by ABAG.

5.11 Marin Municipal Water District will appoint a representative to the LPS Committee who will participate in the proceedings of the LPS Committee. Marin Municipal Water District acknowledges and affirms the responsibilities of the LPS Committee and agrees to be bound by the decisions of the LPS Committee.

5.12 If, pursuant to section 4.5, the LPS Committee determines that there are exceedances in the Grant Administrative Costs, Marin Municipal Water District will not be obligated to pay more than Four Thousand Nine Hundred Ninety Nine Dollars ($4,999) as its allocated share of exceedances in Grant Administrative Costs.
5.13 Marin Municipal Water District further acknowledges and affirms that every other Local Project Sponsor is a third party beneficiary of this Local Project Sponsor Agreement and Marin Municipal Water District is a third party beneficiary of every other Local Project Sponsor Agreement.

6.0 Indemnification

6.1 Marin Municipal Water District shall indemnify, defend, and hold harmless the other Local Project Sponsor and ABAG and their respective members, elected and appointed officers, employees, and agents from and against any and all liability resulting from Marin Municipal Water District’s act(s) and/or omission(s) arising from and/or relating to the Project. Government Code section 895.2 does not apply to this Local Project Sponsor Agreement.

6.2 ABAG shall indemnify, defend, and hold harmless Marin Municipal Water District and its elected and appointed officers, employees, and agents from and against any and all liability resulting from ABAG’s act(s) and/or omission(s) arising from and/or relating to the ABAG Projects. Government Code section 895.2 does not apply to this Local Project Sponsor Agreement.

6.3 Without limiting the scope of subsections 6.1 or 6.2, such liability includes but is not limited to the following: any funding disallowance; audits; demands; claims; actions; liabilities; damages; fines; fees, costs, and expenses, including attorney, auditor, and/or expert witness fees.

7.1 Termination.

7.2 Upon termination of the Grant Agreement, this Local Project Sponsor Agreement shall terminate effective the same date as the Grant Agreement and in accordance with the terms and conditions for the termination of the Grant Agreement.

7.3 ABAG may terminate this Local Project Sponsor Agreement upon the occurrence of all of the following: (a) receipt prior written notice from DWR of a default under section 14 of the Grant Agreement caused in whole or in part by Marin Municipal Water District that provides at least ten (10) days to cure said default, (b) ABAG’s prompt transmittal of said notice to Marin Municipal Water District, (c) Marin Municipal Water District’s failure to cure the default within the time prescribed by DWR and (d) DWR takes any of the actions described in subsections 14.i – iv of the Grant Agreement. Upon termination of this Local Project Sponsor Agreement: (1) the rights and duties of the parties with respect to the Work Plan, any portion of the Subaward Amount and any asset acquired with proceeds of the Subaward Amount shall be determined in accordance with the provisions of the Grant Agreement and this Local Project Sponsor Agreement and (2) Marin Municipal Water District shall pay all costs incurred by the State in enforcing section 14 of the Grant Agreement including, but not limited to, reasonable attorneys’ fees, legal expenses, and costs.

8.1 Notices and Administrative Contacts

8.2 All notices or notifications under this Local Project Sponsor Agreement shall be in writing addressed to the persons set forth in this section.

8.3 All notices or notifications to ABAG shall be sent to:
8.4 All notices or notifications to the Marin Municipal Water District shall be sent to:

Thomasin Grim
Marin Municipal Water District
220 Nellen Avenue
Corte Madera, CA 94925
Email: tgrim@marinwater.org

9.0 Amendments and Changes. This Local Project Sponsor Agreement may be changed only by a written amendment duly signed by ABAG and Marin Municipal Water District, provided that any changes to sections 4.4, 4.5 or 5.6 also require written concurrence by the LPS Committee.

10.0 Assignment and Delegation. Marin Municipal Water District shall not assign its rights or delegate its duties under this Local Project Sponsor Agreement. Any attempted assignment or delegation shall be null and void, and constitute a material breach of this Local Project Sponsor Agreement.

11.0 Governing Law and Venue. This Local Project Sponsor Agreement shall be governed by, and construed in accordance with, the substantive and procedural laws of the State of California. Marin Municipal Water District further agrees and consents that the venue of any action brought between Marin Municipal Water District and ABAG shall be exclusively in the County of Alameda.

12.0 Validity and Severability. If any provision of this Local Project Sponsor Agreement or the application thereof to any person or circumstance is held invalid, the remainder of this Local Project Sponsor Agreement and the application of such provision to other persons or circumstances shall not be affected thereby.

13.0 No Waiver. No waiver by either party of any event of breach and/or breach of any provision of this Local Project Sponsor Agreement shall constitute a waiver of any other event of breach and/or breach. Either party’s non-enforcement at any time, or from time to time, of any provision of this Local Project Sponsor Agreement shall not be construed as a waiver thereof.

14.0 Priority of Documents. The provisions of the Grant Agreement shall prevail over provisions of this Local Project Sponsor Agreement.

END OF BASE DOCUMENT
SIGNATURE PAGE TO FOLLOW
IN WITNESS WHEREOF, Marin Municipal Water District and ABAG have duly executed this Agreement, or caused it to be duly executed on its behalf.

Marin Municipal Water District

__________________________________________________________
Krishna Kumar, General Manager

Approved as to Form:

Mary Casey, District General Counsel

Association of Bay Area Governments

__________________________________________________________
Ezra Rapport, Executive Director

Approved as to Form:

Kenneth K. Moy, Legal Counsel, ABAG
Local Project Sponsor Agreement
between
ABAG/SFEP and Marin Municipal Water District
Proposition 84 Integrated Regional Water Management 2014 Drought Grant
- Department of Water Resources –
Agreement Number 4600010883

Project Description
Project Description

**Project 10 – WaterSMART Irrigation with AMI/AMR**

**Project Description:** Replace existing manually read landscape meters with Automated Meter Infrastructure (AMI)/Automated Meter Read water (AMR) meters, and upgrade irrigation systems to save 8,000 AF of water over 20 years.

## Work Plan

### Task 1 Direct Project Administration: Budget Category (a)

**Task 1a Project Management**

Manage grant agreement including compliance with grant requirements, and preparation and submission of supporting grant documents and coordination with IRWM regional manager, ABAG. Prepare invoices including relevant supporting documentation for submittal to DWR via ABAG. This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies.

**Deliverables:**
- Environmental Information Form (EIF)
- Financial Statements
- Invoices
- Other Applicable Project Deliverables

**Task 1b Labor Compliance Program**

Take all measures necessary to ensure compliance with applicable California Labor Code requirements, including preparation and implementation of a labor compliance program or including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

**Deliverables:**
- Proof of labor compliance upon request

**Task 1c Reporting**

Prepare quarterly progress reports detailing work completed during reporting period as outlined in Exhibit (G) of this agreement. Submit reports to ABAG for review and inclusion in a progress report to be submitted to DWR.

Prepare draft Final Project Completion Report and submit to DWR via ABAG for DWR Project Manager’s comment and review no later than 90 days after project completion. Prepare Final Report addressing ABAG/DWRs comments. The report shall be prepared and presented in accordance with the provision of Exhibit G.

**Deliverables:**
- Quarterly Project Progress Reports
- Draft and Final Project Completion Report

### Task 2 Land Purchase/Easement: Budget Category (b)

There is no land purchase or easement acquisition. Therefore, this task does not apply to the project.

### Task 3 Planning/Design/Engineering and Environmental Documentation: Budget Category (c)

**Task 3a Feasibility Studies/Assessment and Evaluation**

Scoping for integration of software to business operations software and development of the conceptual designs and project plan will be conducted under this task.
Deliverables:

Conceptual designs

Task 3b CEQA Documentation
This Project does not require any environmental documentation as part of the project development process.

Task 3c Permitting
This Project does not require any permitting as part of the project development process.

Task 3d Design
This task includes preliminary conceptual design, developing a plan and final design for project implementation, and creating a sequential work plan.

Deliverables:

Final Work Plan

Task 3e Project Monitoring Plan
Develop and submit a Project Monitoring Plan. Along with the Project Performance Measures Table provided by DWR project manager, the Project Monitoring Plan will include baseline conditions, a brief discussion of monitoring systems to be used, methodology of monitoring, frequency of monitoring, and location of monitoring points (reference Exhibit J in this agreement for guidance).

Deliverables:

Project Monitoring Plan

Task 4 Construction/Implementation: Budget Category (d)

Task 4a Contract Services
Activities necessary to secure a contractor and award the contract include: develop bid documents, prepare advertisement and contract documents for construction contract bidding, conduct pre-bid meeting, bid opening and evaluation, selection of the contractor, award of contract, and issuance of notice to proceed. This task consists of contracting including solicitations for bids and awards of contracts for consultant and advanced metering infrastructure/automatic meter reading (AMI/AMR) vendor.

Deliverables:

Bid documents
Proof of Advertisement
Award of contract
Notice to proceed

Task 4b Construction Administration
Manage contractor submittal review, answer requests for information, and issue work directives. A full time engineering construction observer will be on site for the duration of the project. Construction observer duties include: documenting of pre-construction conditions, daily construction diary, preparing change orders, addressing questions of contractors on site, reviewing/ updating project schedule, reviewing contractor log submittals and pay requests, forecasting cash flow, notifying contractor if work is not acceptable. Review the consultant and AMI/AMR vendor’s schedule and recommendations, manage and coordinate staff and departments involved with the Project, and provide implementation inspection and management oversight. All construction activities related to water meter replacements and upgrades hardware for AMR capability will be conducted by MMWD staff and will not require a separate construction contract. Installation of software will be conducted by software staff and the consultant contracts will be monitored by MMWD’s Information Technology staff. Onsite irrigation equipment retrofits will be completed by customers, with MMWD staff providing pre- and post-retrofit inspections to
verify that the equipment is installed and functioning properly.

**Deliverables:**
- Notice of Completion

**Task 4c Construction/Implementation Activities**
4c(1) Outreach: Work with project irrigation account customers to explain project parameters, establish new water budgets, and ensure transition to water efficient irrigation equipment.
4c(2) Irrigation Equipment Rebate Program: Launch and administer a water efficient irrigation equipment rebate program for project irrigation account customers.
4c(3) AMI/AMR Installation: Install and configure the new AMI/AMR hardware and software at approximately 800 project sites and within the administration center, and field test to validate system functionality and integration with software enterprise system.
4c(4) Data Analysis: Launch the new AMI/AMR system, collecting and analyze water use data.

**Deliverables:**
- Photographic documentation
- Engineers Certification
## Budget

### Project 10: WaterSMART Irrigation with AMI/AMR

<table>
<thead>
<tr>
<th>Task</th>
<th>Category</th>
<th>Requested Grant Amount</th>
<th>Cost Share: Non-State (Required Funding Match)</th>
<th>Additional Cost Share</th>
<th>TOTAL PROJECT COST</th>
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<tr>
<td>a</td>
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<td>$0</td>
<td>$0</td>
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<td>$25,748</td>
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<tr>
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<td><strong>$1,300,000</strong></td>
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## Schedule

### Project 10: WaterSMART Irrigation with AMI/AMR

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<thead>
<tr>
<th>Task</th>
<th>Category</th>
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<th>End Date</th>
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<td>Task 1b</td>
<td>Labor Compliance Program</td>
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<td>October-18</td>
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<td>Task 1c</td>
<td>Reporting</td>
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<td>October-18</td>
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<td>Task 3b</td>
<td>CEQA Documentation</td>
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<td>Design</td>
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<tr>
<td>Task 4c</td>
<td>Construction/Implementation Activities</td>
<td>April-15</td>
<td>June-18</td>
</tr>
</tbody>
</table>
Insurance Requirements

Subrecipient shall maintain insurance as required by this contract to the fullest amount allowed by law and shall maintain insurance for a period of 5 years following the completion of this project. In the event Subrecipient fails to obtain or maintain completed operations coverage as required by this agreement, ABAG, at its sole discretion, may purchase the coverage required and the cost will be paid by Subrecipient. The limits of Insurance required in hereunder may be satisfied by a combination of primary and umbrella or excess insurance. Any umbrella or excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and non-contributory basis for the benefit of the Indemnitees (if agreed to in a written contract or agreement) before the any Indemnitee’s own Insurance or self-insurance shall be called upon to protect it as a named insured.

(a) Minimum Scope of Insurance. Coverage shall be at least as broad as:

Insurance Services Office Commercial General Liability coverage

(occurrence Form CG 0001).

Insurance Services Office Form Number CA 0001 covering Automobile Liability, Code 1 (any auto).

Workers’ Compensation insurance as required by the State of California and Employer’s Liability Insurance.

Errors and Omissions Liability insurance appropriate to the Subrecipient’s profession. Architects’ and engineers’ coverage is to be endorsed to include contractual liability.

(b) Minimum Limits of Insurance. Subrecipient shall maintain limits no less than:

General Liability: $1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.

Automobile Liability: $1,000,000 per accident for bodily injury and property damage.

Employer’s Liability: $1,000,000 per accident for bodily injury or disease.

Errors and Omissions Liability: $1,000,000 per claim/aggregate.

(c) Deductibles and Self-Insured Retentions. Any deductibles or self-insured retentions must be declared to and approved by ABAG. The insurer shall reduce or eliminate such deductibles or self-insured retentions as respects ABAG, its members, officers or employees (Indemnitees); or the Subrecipient shall satisfy any such deductibles or self-insured retentions. In addition, policies containing any self-insured retention (SIR) provision shall
provide or be endorsed to provide that the SIR may be satisfied by either the named Insured or any of the Indemnitees.

(d) Other Insurance Provisions. The commercial general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

(i) The Indemnitees are to be covered as additional insureds as respects: liability arising out of work or operations performed by or on behalf of Subrecipient; completed operations; or automobiles owned, leased, hired or borrowed by Subrecipient.

(ii) For any claims related to this project, the Subrecipient's insurance coverage shall be primary insurance as respects the Indemnitees.

(iii) Any insurance or self-insurance maintained by the Indemnitees shall be excess of Subrecipient’s insurance and shall not contribute with it.

(iv) Except for General Liability and Automobile Liability, each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, except after thirty (30) days’ prior written notice by certified mail, return receipt requested, has been given to ABAG. For General Liability and Automobile Liability, Subrecipient shall provide ABAG with thirty (30) day’s prior notice of cancellation by either the insurer or Subrecipient.

(v) Coverage shall not extend to any defense or indemnity coverage for the active negligence of the Indemnitees in any case where an agreement to defend and indemnify the Indemnitees would be invalid under Subdivision (b) of Section 2782 of the Civil Code.

(e) Other Insurance Provisions – Workers Compensation. The Workers Compensation insurance shall be endorsed to waive subrogation against the Indemnitees.

(f) Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best’s rating of no less than A:VII, unless otherwise acceptable to ABAG.

(g) Verification of Coverage. Subrecipient shall furnish the ABAG with original certificates and amendatory endorsements effecting coverage required by this clause. All certificates and endorsements are to be received and approved by ABAG before work commences. ABAG reserves the right to require complete, certified copies of all required insurance policies, including endorsements effecting the coverage required by these specifications at any time.

Contractors and Lower Tier Subcontractors

Subrecipient shall to include the same requirements and provisions of this Attachment, including the section, with any contractor to the extent they apply to the scope of the contractor's work. Any contractor further agrees to include the same requirements and provisions of this Attachment, including the section, with any lower tier subcontractor to the extent they apply to the scope of the lower tier subcontractor's work. Subrecipient will give a copy of this Attachment to any contractor, or lower tier subcontractor upon request.
Attachment 3

GRANT AGREEMENT BETWEEN THE STATE OF CALIFORNIA (DEPARTMENT OF WATER RESOURCES) AND
ASSOCIATION OF BAY AREA GOVERNMENTS
AGREEMENT NUMBER 4600010883
PROPOSITION 84 INTEGRATED REGIONAL WATER MANAGEMENT (IRWM) 2014 DROUGHT GRANT
CALIFORNIA PUBLIC RESOURCES CODE §75026 ET SEQ.
THIS GRANT AGREEMENT is entered into by and between the Department of Water Resources of the State of California, herein referred to as the “State” or “DWR” and the Association of Bay Area Governments, a public agency in the State of California, duly organized, existing, and acting pursuant to the laws thereof, herein referred to as the “Grantee”, which parties do hereby agree as follows:

1. **PURPOSE.** State shall provide funding from the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 to Grantee to assist in financing projects associated with the San Francisco Bay Area IRWM Region Plan pursuant to Chapter 8 (commencing with Section 79560) of Division 26.5 of the California Water Code (CWC), hereinafter collectively referred to as “IRWM Program.”

2. **TERM OF GRANT AGREEMENT.** The term of this Grant Agreement begins on the date this Grant Agreement is executed by State, and terminates on May 1, 2019, or when all of the Parties’ obligations under this Grant Agreement are fully satisfied, whichever occurs earlier. Execution date is the date the State signs this Grant Agreement indicated on page 10.

3. **TOTAL PROJECT COST.** The reasonable Total Cost of the Projects is estimated to be $91,626,311.

4. **GRANT AMOUNT.** The maximum amount payable by the State under this Agreement shall not exceed $32,178,423.

5. **GRANTEE COST SHARE.** Grantee agrees to fund the difference between the Total Project Cost, and the Grant Amount (amount specified in Paragraph 4). Cost Share consists of Funding Match and Additional Cost Share, as documented in Exhibit B (Budget). Additional Cost Share is the amount necessary to fund the project above the Grant Amount and the Funding Match. Additional Cost Share will not be reviewed by the State for invoicing purposes; however, the Grantee is required to maintain all financial records associated with the project in accordance with Exhibit I (State Audit Document Requirements).

6. **FUNDING MATCH.** Funding Match is defined as the minimum amount of Grantee Cost Share required, and cannot include other State funds. Grantee is required to provide a Funding Match of at least 25% of the Total Project Cost (unless a Disadvantaged Community project waiver is granted). The Grantee’s Funding Match is estimated to be $25,850,000. Grantee’s Funding Match may include in-kind services that are part of Exhibit A (Work Plan) and performed after January 1, 2010.

7. **GRANTEE’S RESPONSIBILITY.** Grantee and its representatives shall:
   a) Faithfully and expeditiously perform or cause to be performed all project work as described in Exhibit A (Work Plan) and in accordance with Exhibit B (Budget) and Exhibit C (Schedule).
   b) Accept and agree to comply with all terms, provisions, conditions, and written commitments of this Grant Agreement, including all incorporated documents, and to fulfill all assurances, declarations, representations, and statements made by Grantee in the application, documents, amendments, and communications filed in support of its request for Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 financing.
   c) Comply with all applicable California laws and regulations.
   d) Implement the Projects in accordance with applicable provisions of the law.
   e) Fulfill its obligations under the Grant Agreement, and be responsible for the performance of the projects.

8. **LOCAL PROJECT SPONSOR’S RESPONSIBILITY.** Grantee shall assign Local Project Sponsors to act on behalf of Grantee for the purposes of individual project management, oversight, compliance, and
operations and maintenance. Local Project Sponsors shall be assigned in accordance with the participating agencies identified in the San Francisco Bay Area Drought Relief Program grant application. Exhibit F identifies Local Project Sponsors. Local Project Sponsors shall also act on behalf of Grantee in the fulfillment of Grantee responsibilities where specifically specified in this Grant Agreement.

9. **BASIC CONDITIONS.** State shall have no obligation to disburse money for projects under this Grant Agreement until Grantee has satisfied the following conditions (if applicable):

   a) Grantee and Local Project Sponsors demonstrates the availability of sufficient funds to complete each project by submitting the most recent 3 years of audited financial statements.

   b) Grantee must demonstrate compliance with the groundwater compliance options set forth on pages 13 and 14 of the IRWM Program Guidelines, dated June 2014.

   c) For the term of this Grant Agreement, Grantee submits timely Quarterly Progress Reports as required by Paragraph 19, “Submission of Reports.”

   d) Grantee submits deliverables as specified in Paragraph 19 of this Grant Agreement and in Exhibit A.

   e) Prior to the commencement of construction or implementation activities, Grantee shall submit the following to the State for each project:

      1) Final plans and specifications certified by a California Registered Professional (Civil Engineer or Geologist, as appropriate) for each approved projects as listed in Exhibit A of this Grant Agreement.

      2) Environmental Documentation:

         i) Grantee submits to the State all applicable environmental permits,

         ii) Documents that satisfy the CEQA process are received by the State,

         iii) State has completed its CEQA compliance review as a Responsible Agency, and

         iv) Grantee receives written concurrence from the State of Lead Agency’s CEQA documents and State notice of verification of environmental permit submittal.

   State’s concurrence of Lead Agency’s CEQA documents is fully discretionary and shall constitute a condition precedent to any work (i.e., construction or implementation activities) for which it is required. Once CEQA documentation has been completed, State will consider the environmental documents and decide whether to continue to fund the projects or to require changes, alterations or other mitigation. Grantee must also demonstrate that it has complied with all applicable requirements of the National Environmental Policy Act by submitting copies of any environmental documents, including environmental impact statements, Finding of No Significant Impact, and mitigation monitoring programs as may be required prior to beginning construction/implementation.

   3) A monitoring plan as required by Paragraph 21, “Project Monitoring Plan Requirements.”

10. **DISBURSEMENT OF FUNDS.** State will disburse to Grantee the amount approved, subject to the availability of funds through normal State processes. Notwithstanding any other provision of this Grant Agreement, no disbursement shall be required at any time or in any manner which is in violation of, or in conflict with, federal or state laws, rules, or regulations, or which may require any rebates to the federal government, or any loss of tax-free status on state bonds, pursuant to any federal statute or regulation. Any and all money disbursed to Grantee under this Grant Agreement and any and all interest earned by Grantee on such money shall be used solely to pay Eligible Project Costs, as defined in Paragraph 11.

11. **ELIGIBLE PROJECT COST.** Grantee shall apply State funds received only to Eligible Project Costs in accordance with applicable provisions of the law and Exhibit B. Eligible project costs include the reasonable costs of studies, engineering, design, land and easement acquisition, legal fees, preparation of environmental documentation, environmental mitigations, monitoring, and project construction. Reasonable administrative expenses may be included as Total Project Costs and will depend on the complexity of the project preparation, planning, coordination, construction,
acquisitions, and implementation. Reimbursable administrative expenses are the necessary costs incidentally but directly related to the projects including the portion of overhead and administrative expenses that are directly related to the projects included in this Agreement in accordance with the standard accounting practices of the Grantee. Work performed on the projects after January 17, 2014 shall be eligible for reimbursement.

Costs that are not eligible for reimbursement with State funds cannot be counted as Funding Match. Costs that are not eligible for reimbursement include, but are not limited to the following items:

a) Costs, other than those noted above, incurred prior to the award date of the Grant.
b) Operation and maintenance costs, including post construction performance and monitoring costs.
c) Purchase of equipment not an integral part of a project.
d) Establishing a reserve fund.
e) Purchase of water supply.
f) Monitoring and assessment costs for efforts required after project construction is complete.
g) Replacement of existing funding sources for ongoing programs.
h) Travel and per diem costs (per diem includes subsistence and other related costs).
i) Support of existing agency requirements and mandates (e.g., punitive regulatory agency requirement).
j) Purchase of land in excess of the minimum required acreage necessary to operate as an integral part of a project, as set forth and detailed by engineering and feasibility studies.
k) Payment of principal or interest of existing indebtedness or any interest payments unless the debt is incurred after execution of this Grant Agreement, the State agrees in writing to the eligibility of the costs for reimbursement before the debt is incurred, and the purposes for which the debt is incurred are otherwise eligible costs. However, this will only be allowed as Grantee cost share (i.e., Funding Match).
l) Overhead not directly related to project costs.

12. METHOD OF PAYMENT. Submit a copy of invoice for costs incurred and supporting documentation to the DWR Project Manager via Grant Review and Tracking Systems (GRaNTS). Additionally, the original invoice form with signature and date (in ink) of Grantee’s Project Representative, as indicated on page 10 of this Agreement, must be sent to the DWR Project Manager for approval. Invoices submitted via GRaNTS shall include the following information:

a) Costs incurred for work performed in implementing the projects during the period identified in the particular invoice.
b) Costs incurred for any interests in real property (land or easements) that have been necessarily acquired for the projects during the period identified in the particular invoice for the implementation of a project.
c) Invoices shall be submitted on forms provided by State and shall meet the following format requirements:

1) Invoices must contain the date of the invoice, the time period covered by the invoice, and the total amount due.
2) Invoices must be itemized based on the categories (i.e., tasks) specified in Exhibit B. The amount claimed for salaries/wages/consultant fees must include a calculation formula (i.e., hours or days worked times the hourly or daily rate = the total amount claimed).
3) Sufficient evidence (e.g., receipts, copies of checks, time sheets) as determined by the State must be provided for all costs included in the invoice. Additional Cost Share shall be accounted for separately in the progress reports.
4) Each invoice shall clearly delineate those costs claimed for reimbursement from the State’s Grant Amount, as depicted in Paragraph 4, and those costs that represent Grantee’s Funding Match, as applicable, in Paragraph 6.
5) DWR Project Manager will notify Grantee, in a timely manner, when, upon review of an Invoice, the State determines that any portion or portions of the costs claimed are not eligible costs or are not supported by documentation or receipts acceptable to State.
Grantee may, within thirty (30) calendar days of the date of receipt of such notice, submit additional documentation to State to cure such deficiencies. If Grantee fails to submit adequate documentation curing the deficiencies, State will adjust the pending invoice by the amount of ineligible or unapproved costs. After the disbursement requirements in Paragraph 9 “Basic Conditions” are met, State will disburse the whole or portions of State funding to Grantee, following receipt from Grantee via US mail or Express mail delivery of a “wet signature” invoice for costs incurred, including Cost Share, and timely Quarterly Progress Reports as required by Paragraph 19, Submission of Reports. Payment will be made no more frequently than monthly, in arrears, upon receipt of an invoice bearing the Grant Agreement number.

13. WITHHOLDING OF DISBURSEMENTS BY STATE. If State determines that a project is not being implemented in accordance with the provisions of this Grant Agreement, or that Grantee has failed in any other respect to comply with the provisions of this Grant Agreement, and if Grantee does not remedy any such failure to State’s satisfaction, State may withhold from Grantee all or any portion of the State funding and take any other action that it deems necessary to protect its interests. Where a portion of the State funding has been disbursed to the Grantee and State notifies Grantee of its decision not to release funds that have been withheld pursuant to Paragraph 14, the portion that has been disbursed shall thereafter be repaid immediately with interest at the California general obligation bond interest rate at the time the State notifies the Grantee, as directed by State. State may consider Grantee’s refusal to repay the requested disbursed amount a contract breach subject to the default provisions in Paragraph 14, “Default Provisions.” If State notifies Grantee of its decision to withhold the entire funding amount from Grantee pursuant to this paragraph, this Grant Agreement shall terminate upon receipt of such notice by Grantee and the State shall no longer be required to provide funds under this Grant Agreement and the Grant Agreement shall no longer be binding on either party.

14. DEFAULT PROVISIONS. Grantee (and a Local Project Sponsor receiving grant funding through this Grant Agreement) will be in default under this Grant Agreement if any of the following occur:

a) Substantial breaches of this Grant Agreement, or any supplement or amendment to it, or any other agreement between Grantee and State evidencing or securing Grantee’s obligations.

b) Making any false warranty, representation, or statement with respect to this Grant Agreement or the application filed to obtain this Grant Agreement or the application filed to obtain this Grant Agreement.

c) Failure to maintain an adopted IRWM Plan that meets the requirements contained in Part 2.2 of Division 6 of the CWC, commencing with Section 10530.

d) Failure to operate or maintain project(s) in accordance with this Grant Agreement.

e) Failure to make any remittance required by this Grant Agreement.

f) Failure to comply with Labor Compliance Program requirements (Paragraph 18).

gh) Failure to submit timely progress reports.

i) Failure to routinely invoice State.

j) Failure to meet any of the requirements set forth in Paragraph 15, “Continuing Eligibility.”

Should an event of default occur, State shall provide a notice of default to the Grantee and shall give Grantee at least ten (10) calendar days to cure the default from the date the notice is sent via first-class mail to the Grantee. If the Grantee fails to cure the default within the time prescribed by the State, State may do any of the following:

i. Declare the funding be immediately repaid, with interest, which shall be equal to State of California general obligation bond interest rate in effect at the time of the default.

ii. Terminate any obligation to make future payments to Grantee.

iii. Terminate the Grant Agreement.

iv. Take any other action that it deems necessary to protect its interests.

In the event State finds it necessary to enforce this provision of this Grant Agreement in the manner provided by law, Grantee agrees to pay all costs incurred by State including, but not limited to, reasonable attomeys’ fees, legal expenses, and costs.
15. **CONTINUING ELIGIBILITY.** Grantee must meet the following ongoing requirement(s) to remain eligible to receive State funds:

a) An urban water supplier that receives grant funds governed by this Grant Agreement shall:

1) Maintain compliance with the Urban Water Management Planning Act (CWC§ 10610 et. seq.) and Sustainable Water Use and Demand Reduction, Part 2.55 of Division 6 (CWC§ 10608 et. Seq.). Urban water suppliers that submitted 1420 compliance Table 2 in the 2014 Drought Application must submit, until June 30, 2016, either:

i) List of tasks to implement the BMPs listed in 1420 compliance Table 2 and a corresponding schedule and budget. Or

ii) The progress toward the 2015 interim gallon per capita per day (GPCD) target. If not meeting the interim target also include a schedule, financing plan, and budget for achieving the GPCD, as required pursuant to CWC § 10608.24.

By July 1, 2016 all urban water suppliers must submit documentation that demonstrates they are meeting the 2015 interim GPCD target. If not meeting the interim target also include a schedule, financing plan, and budget for achieving the GPCD, as required pursuant to CWC § 10608.24.

2) Have their 2010 UWMP deemed consistent by DWR. The 2015 UWMP update will be required to be submitted to DWR in 2016. For more information visit the following website: [http://www.water.ca.gov/urbanwatermanagement](http://www.water.ca.gov/urbanwatermanagement)

b) An agricultural water supplier receiving grant funding must:

1) Comply with Sustainable Water Use and Demand Reduction requirements outlined in Part 2.55 (commencing with §10608) of Division 6 of the CWC. Before July 1, 2016:

i) Submit a schedule, financing plan, and budget for implementation of the efficient water management practices, required pursuant to CWC § 10608.48, for inclusion in the grant agreement as an Exhibit.

2) Have their AWMP deemed consistent by DWR. The next AWMP update will be required in 2016. For more information visit the following website: [http://www.water.ca.gov/wateruseefficiency/agricultural/agmgmt.cfm](http://www.water.ca.gov/wateruseefficiency/agricultural/agmgmt.cfm)

c) Grantee’s diverting surface water must maintain compliance with diversion reporting requirements as outlined in Part 5.1 of Division 2 of the CWC.

d) Projects with potential groundwater impacts must demonstrate compliance with the groundwater compliance options set forth on pages 13 and 14 of the IRWM Program Guidelines, dated June 2014.

e) Project Proponents that have been designated as monitoring entities under the California Statewide Groundwater Elevation Monitoring (CASGEM) Program must maintain reporting compliance, as required by CWC§ 10932 and the CASGEM Program.

16. **PERMITS, LICENSES, APPROVALS, AND LEGAL OBLIGATIONS.** Grantee shall be responsible for obtaining any and all permits, licenses, and approvals required for performing any work under this Grant Agreement, including those necessary to perform design, construction, or operation and maintenance of the Projects. Grantee shall be responsible for observing and complying with any applicable federal, state, and local laws, rules or regulations affecting any such work, specifically those including, but not limited to, environmental, procurement, and safety laws, rules, regulations, and ordinances. Grantee shall provide copies of permits and approvals to State.

17. **RELATIONSHIP OF PARTIES.** Grantee is solely responsible for design, construction, and operation and maintenance of projects within the work plan. Review or approval of plans, specifications, bid documents, or other construction documents by State is solely for the purpose of proper administration of funds by State and shall not be deemed to relieve or restrict responsibilities of Grantee under this Grant Agreement.
18. **LABOR COMPLIANCE.** Grantee agrees to comply with all applicable California Labor Code requirements and Standard Condition D.28 in Exhibit D. Grantee must, independently or through a third party, adopt and enforce a Department of Industrial Relations-certified Labor Compliance Program (LCP) meeting the requirements of Labor Code section 1771.5 for projects funded by:

a) Proposition 84 (Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006; PRC sections 75075 **et seq.**) or
b) Any other funding source requiring an LCP.

At the State’s request, Grantee must promptly submit written evidence of Grantee’s compliance with the LCP requirements.

19. **SUBMISSION OF REPORTS.** The submittal and approval of all reports is a requirement for the successful completion of this Grant Agreement. Reports shall meet generally accepted professional standards for technical reporting and shall be proofread for content, numerical accuracy, spelling, and grammar prior to submittal to State. All reports shall be submitted to the State’s Project Manager, and shall be submitted via DWR’s “Grant Review and Tracking System” (GRanTS). If requested, Grantee shall promptly provide any additional information deemed necessary by State for the approval of reports. Reports shall be presented in the formats described in the applicable portion of Exhibit G. The timely submittal of reports is a requirement for initial and continued disbursement of State funds. Submittal and subsequent approval by the State, of a Project Completion Report is a requirement for the release of any funds retained for such projects.

- **Progress Reports:** Grantee shall submit progress reports on a regular and consistent basis to meet the State’s requirement for disbursement of funds. The reporting period shall not exceed one quarter in length. The progress reports shall be sent via e-mail to the State’s Project Manager and shall be uploaded into GRanTS at the frequency specified in Exhibit C, Project Schedule. The progress reports shall provide a brief description of the work performed during the reporting period including: Grantee’s activities, milestones achieved, any accomplishments, and any problems encountered in the performance of the work under this Agreement.

- **Water Management Status Report:** Until June 30, 2016, Grantees shall submit status report(s) on implementation of AB 1420 status or SBx7-7 water conservation status for the urban water suppliers that submitted 1420 compliance Table 2 in the 2014 Drought Application. For AB 1420 BMP, the status report shall be uploaded into GRanTS no later than April 30, 2016. For SBx7-7 GPCD, status reports shall be uploaded via GRanTS no later than June 30, 2016. By July 1, 2016 all urban water suppliers must submit an UWMP that demonstrates they are meeting the 2015 interim SBx7-7 GPCD target. If not meeting the interim target, the urban water suppliers must also submit, with the UWMP, a schedule, financing plan, and budget for achieving the GPCD, as required pursuant to CWC § 10608.24. These urban water suppliers (that are not meeting their 2015 GPCD target) will subsequently have to submit annual reports that include a schedule, financing plan, and budget for achieving the GPCD, as required pursuant to CWC § 10608.24 every year by June 30, starting June 30, 2017. Failure to progress on implementation may result in continuing grant eligibility actions under paragraph 15.

- **Project Completion Report:** Grantee shall prepare and submit to State a separate Project Completion Report for each project included in Exhibit A. Grantee shall submit a Project Completion Report within ninety (90) calendar days of projects completion. Project Completion Report(s) shall include, in part, a description of actual work done, any changes or amendments to each project, and a final schedule showing actual progress versus planned progress, copies of any final documents or reports generated or utilized during a project. The Project Completion Report shall also include, if applicable, certification of final project by a California Registered Professional (Civil Engineer or Geologist, as appropriate), consistent with Standard Condition D.19 in Exhibit D. A DWR “Certification of Project Completion” form will be provided by the State.

- **Grant Completion Report:** Upon completion of all projects included in Exhibit A, Grantee shall submit to State a Grant Completion Report. The Grant Completion Report shall be submitted
within ninety (90) calendar days of submitting the Project Completion Report for the final project to be completed under the Grant Agreement. The Grant Completion Report shall include reimbursement status, a brief description of each project completed, and how those projects will further the goals of the IRWM Plan and identify any changes to the IRWM Plan, as a result of project implementation. Retention for the last project to be completed as part of this Grant Agreement will not be disbursed until the Grant Completion Report is submitted to and approved by the State.

- **Post-Performance Reports:** Grantee shall submit Post-Performance Reports. Post-Performance Reports shall be submitted to State within ninety (90) calendar days after the first operational year of a project has elapsed. This record keeping and reporting process shall be repeated annually for a total of 10 years after the completed projects begins operation.

20. **OPERATION AND MAINTENANCE OF PROJECT.** For the useful life of construction and implementation projects and in consideration of the funding made by State, Grantee agrees to ensure or cause to be performed the commencement and continued operation of each project, and shall ensure or cause each project to be operated in an efficient and economical manner; shall ensure all repairs, renewals, and replacements necessary to the efficient operation of the same are provided; and shall ensure or cause the same to be maintained in as good and efficient condition as upon its construction, ordinary and reasonable wear and depreciation excepted. The State shall not be liable for any cost of such maintenance, management, or operation. Grantee or their successors may, with the written approval of State, transfer this responsibility to use, manage, and maintain the property. For purposes of this Grant Agreement, "useful life" means period during which an asset, property, or activity is expected to be usable for the purpose it was acquired or implemented; "operation costs" include direct costs incurred for material and labor needed for operations, utilities, insurance, and similar expenses, and "maintenance costs" include ordinary repairs and replacements of a recurring nature necessary for capital assets and basic structures and the expenditure of funds necessary to replace or reconstruct capital assets or basic structures. Refusal of Grantee to ensure operation and maintenance of the projects in accordance with this provision may, at the option of State, be considered a breach of this Grant Agreement and may be treated as default under Paragraph 14, "Default Provisions."

21. **PROJECT MONITORING PLAN REQUIREMENTS.** Grantee shall develop and submit to State a Project Monitoring Plan that incorporates: (1) the Project Performance Monitoring Table requirements outlined in the Proposition 84 2014 IRWM Drought Grant Proposal Solicitation Package (in Exhibit A), and (2) the guidance provided in Exhibit J, "Project Monitoring Plan Guidance."

A Project Monitoring Plan shall be submitted to the State prior to disbursement of State funds for construction or monitoring activities. See Exhibit H, "Requirements for Statewide Monitoring and Data Submittal", for web links and information regarding other State monitoring and data reporting requirements.

22. **STATEWIDE MONITORING REQUIREMENTS.** Grantee shall ensure that all groundwater projects and projects that include groundwater monitoring requirements are consistent with the Groundwater Quality Monitoring Act of 2001 (Part 2.76 (commencing with Section 10780) of Division 6 of California Water Code) and, where applicable, that projects that affect water quality shall include a monitoring component that allows the integration of data into statewide monitoring efforts, including where applicable, the Surface Water Ambient Monitoring Program carried out by the State Water Resources Control Board.

23. **NOTIFICATION OF STATE.** Grantee shall promptly notify State, in writing, of the following items:

   a) Events or proposed changes that could affect the scope, budget, or work performed under this Grant Agreement. Grantee agrees that no substantial change in the scope of a project will be undertaken until written notice of the proposed change has been provided to State and State has given written approval for such change. Substantial changes generally include changes to the work plan, schedule or term, and budget.
b) Any public or media event publicizing the accomplishments and/or results of this Grant Agreement and provide the opportunity for attendance and participation by State’s representatives. Grantee shall make such notification at least 14 calendar days prior to the event.

c) Final inspection of the completed work on a project by a California Registered Professional (Civil Engineer or Geologist, as appropriate), in accordance with Standard Condition D.19 in Exhibit D. Grantee shall notify the State’s Project Manager of the inspection date at least 14 calendar days prior to the inspection in order to provide State the opportunity to participate in the inspection.

24. NOTICES. Any notice, demand, request, consent, or approval that either party desires or is required to give to the other party under this Grant Agreement shall be in writing. Notices may be transmitted by any of the following means:

a) By delivery in person.
b) By certified U.S. mail, return receipt requested, postage prepaid.
c) By “overnight” delivery service; provided that next-business-day delivery is requested by the sender.
d) By electronic means.

Notices delivered in person will be deemed effective immediately on receipt (or refusal of delivery or receipt). Notices sent by certified mail will be deemed effective given ten (10) calendar days after the date deposited with the U.S. Postal Service. Notices sent by overnight delivery service will be deemed effective one business day after the date deposited with the delivery service. Notices sent electronically will be effective on the date of transmission, which is documented in writing. Notices shall be sent to the addresses set forth in Paragraph 26. Either party may, by written notice to the other, designate a different address that shall be substituted for the one below.

25. PERFORMANCE EVALUATION. Upon completion of this Grant Agreement, Grantee’s performance will be evaluated by the State and a copy of the evaluation will be placed in the State file and a copy sent to the Grantee.

26. PROJECT REPRESENTATIVES. The Project Representatives during the term of this Grant Agreement are as follows:

Department of Water Resources                     Association of Bay Area Governments
Paula Landis                                      Ezra Rapport
Chief, Division of IRWM                            Executive Director
P.O. Box 942836                                    101 Eighth Street
Sacramento, CA 94236-0001                          Oakland, CA 94607
Phone: (916) – 651-9220                            Phone: 510-464-7900
E-mail: plandis@water.ca.gov                      E-mail: ezra@abag.ca.gov

Direct all inquiries to the Project Manager:

Department of Water Resources                     Association of Bay Area Governments
Melissa Sparks                                     San Francisco Estuary Partnership division
Grant Project Manager, Division of IRWM            Jennifer Krebs
P.O. Box 942836                                    Project Manager
Sacramento, CA 94236-0001                          1515 Clay Street, 14th Floor
Phone: 916-651-9221                                 Oakland, CA 94612
E-mail: melissa.sparks@water.ca.gov                Phone: 510-622-2315
                                                  Email: Jennifer@sfestuary.org

Either party may change its Project Representative or Project Manager upon written notice to the other party.
27. **STANDARD PROVISIONS** The following Exhibits are attached and made a part of this Grant Agreement by this reference:

- Exhibit A - Work Plan
- Exhibit B - Budget
- Exhibit C - Schedule
- Exhibit D - Standard Conditions
- Exhibit E - Authorizing Resolution
- Exhibit F - Local Project Sponsors
- Exhibit G - Report Formats and Requirements
- Exhibit H - Requirements for Statewide Monitoring and Data Submittal
- Exhibit I - State Audit Document Requirements and Funding Match Guidelines for Grantees
- Exhibit J - Project Monitoring Plan Components
IN WITNESS WHEREOF, the parties hereto have executed this Grant Agreement.

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Paula J. Landis, P.E., Chief
Division of Integrated Regional Water Management
Date 7/30/15

Association of Bay Area Governments

Ezra Rapport
Executive Director
Date 6/18/15

Approved as to Legal Form and Sufficiency

Spencer Kenner, Assistant Chief Counsel
Office of Chief Counsel
Date 6/30/15
EXHIBIT A
WORK PLAN

The Proposition 84 IRWM 2014 Drought Grant agreement provides funding for (11) projects located within the San Francisco Bay Area region.

Project 1 – Lower Cherry Aqueduct Emergency Rehabilitation Project

Implementing Agency: San Francisco Public Utilities Commission (SFPUC)

Project Description: Repair the Lower Cherry Aqueduct and the Lower Cherry Diversion Dam. The Lower Cherry Aqueduct and Diversion Dam were both damaged by the Rim Fire. The Project will provide access to approximately 150,000 acre feet (AF) of potable water for drought preparedness.

Task 1 Direct Project Administration: Budget Category (a)

Task 1a Project Management
Manage grant agreement including compliance with grant requirements, and preparation and submission of supporting grant documents and coordination with IRWM regional manager, Association of Bay Area Governments (ABAG). Prepare invoices including relevant supporting documentation for submittal to DWR via ABAG. This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies.

Deliverables:
- Environmental Information Form (EIF)
- Financial Statements
- Invoices
- Other Applicable Project Deliverables

Task 1b Labor Compliance Program
Take all measures necessary to ensure compliance with applicable California Labor Code requirements, including, preparation and implementation of a labor compliance program or including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

Deliverables:
- Proof of labor compliance upon request

Task 1c Reporting
Prepare quarterly progress reports detailing work completed during reporting period as outlined in Exhibit (G) of this agreement. Submit reports to ABAG for review and inclusion in a progress report to be submitted to DWR.

Prepare draft Final Project Completion Report and submit to DWR via ABAG for DWR Project Manager’s comment and review no later than 90 days after project completion. Prepare Final Report addressing ABAG /DWRs comments. The report shall be prepared and presented in accordance with the provision of Exhibit G.

Deliverables:
- Quarterly Project Progress Reports
- Draft and Final Project Completion Report

Task 2 Budget Category (b) Land Purchase/Easement
The project site is located on U.S. Forest Service (USFS) land within SFPUC’s right-of-way. No land purchases or easements are necessary.
Task 3 Planning/Design/Engineering and Environmental Documentation: Budget Category (c)

Task 3a Feasibility Studies
Project Feasibility Studies were completed as part of the project development process.

Deliverables:
- Copies of all relevant Feasibility Studies

Task 3b CEQA Documentation
Prepare and submit a request for a Statutory Exemption (CEQA) to the San Francisco Environmental Planning Department for project approval. Prepare draft Notice of Exemption (CEQA) and Environmental Assessment (NEPA) and release documents for public review. Prepare responses to public comments and prepare responses to objection, if applicable. Prepare letter stating no legal challenges (or addressing legal challenges).

Deliverables:
- Copy of Notice of Exemption
- Copy of Environmental Assessment
- No Legal Challenges letter

Task 3c Permitting
Prepare and acquire the following federal, state, and local permits and clearances:
- U.S. Army Corps of Engineers (USACE) Section 404 Nationwide Permit
- Regional Water Quality Control Board (RWQCB) Section 401 Water Quality Certification
- California Department of Fish and Wildlife (CDFW) Emergency Section 1602 Agreement
- CDFW Section 2081 Incidental Take Permit
- State Historic Preservation Officer (SHPO) Section 106 compliance
- U.S. Fish and Wildlife Service Section 7 Informal Consultations

Additional permits may be obtained as required.

Deliverables:
- Copies of all required permits

Task 3d Design
Complete and finalize the pipeline, tunnel, and dam repair designs as part of the project development process to produce 100% (Final) design, plans, and specifications.

Deliverables:
- Updated project cost estimate
- 100% design plans and specifications

Task 3e Project Monitoring Plan
Develop and submit a Project Monitoring Plan. Along with the Project Performance Measures Table provided by DWR project manager, the Project Monitoring Plan will include baseline conditions, a brief discussion of monitoring systems to be used, methodology of monitoring, frequency of monitoring, and location of monitoring points (reference Exhibit J in this agreement for guidance).

Deliverables:
- Project Monitoring Plan
Task 4 Construction/Implementation: Budget Category (d)

Task 4a Contract Services
Activities necessary to secure a contractor and award the contract include: develop bid documents, prepare advertisement and contract documents for construction contract bidding, conduct pre-bid meeting, bid opening and evaluation, selection of the contractor, award of contract, and issuance of notice to proceed.

**Deliverables:**
- Bid documents
- Proof of advertisement
- Award of contract
- Notice to proceed

Task 4b Construction Administration
Review contractor submittals, answer requests for information, and issue work directives. A full time engineering construction observer will be on site for the duration of the project. Construction observer duties include: documenting of pre-construction conditions, daily construction diary, preparing change orders, addressing questions of contractors on site, reviewing/ updating project schedule, reviewing contractor log submittals and pay requests, forecasting cash flow, notifying contractor if work is not acceptable.

**Deliverables:**
- Notice of Completion

Task 4c Construction/Implementation Activities
Construction activities are outlined below.

4c(1) Mobilization and Site Preparation: Set up construction staging area and site security, install temporary construction field offices, place temporary sanitary facilities, implement site best management practices (BMPs), clear and grub, designate stockpile and material storage areas, and set up traffic control.

4c(2) Project construction will include the following elements:
- **Aqueduct Repair:** Remove approximately 500 cubic yards (yds\(^3\)) of accumulated debris in the aqueduct and repair concrete canal lining.
- **Tunnel Repair:** Remove approximately 750 yds\(^3\) rock, mud, and sand deposited in Lower Cherry Aqueduct’s (LCA) tunnel system by erosion after the Rim fire. Repair sections of LCA system’s 9,500 feet (ft.) of tunnel including: rock bolting, grouting, and reinforced concrete placement.
- **Cherry Creek Diversion Dam Facility Repairs:** Reconstruct the gate house and control room; rehabilitate trail and bridge; replace head gates; and complete concrete structural inspections and repair work for the replacement of the gates.
- **Forebay Trash Rack:** SFPUC will clean an existing 20 feet -diameter reinforced concrete structure, remove a nonfunctioning trash rack, seal the existing slide gate, and construct a new cover.
- **Erosion Control:** Stabilize existing hazardous slopes, install water quality monitoring equipment in the Early Intake Reservoir, install of Storm Water Pollution Prevention Plan (SWPPP) BMPs, and implementation of quality control measures including special inspections and field testing.

4c(3) Performance Testing and Demobilization: Conduct performance testing and stormwater testing for contaminant and turbidity levels, and demobilization and remove debris and construction spoils from the site, excess materials, temporary sanitary facilities, and equipment.

4c(4) Environmental Compliance/Mitigation/Enhancement: Monitor compliance with general construction measures; implement stormwater pollution prevention plan (SWPPP), traffic control plan, and a hazardous materials management plan. Environmental mitigation measures identified in the NEPA Environmental Assessment will also be implemented including: flagging sensitive areas, and biological monitoring during construction.
Deliverables:
- Photographic documentation
- Engineer’s certification
- Copy of construction general permit, including SWPPP
Implementing Agency: Zone 7 Water Agency

Project Description: Construct a new groundwater supply well, Chain of Lakes Well 5 (COL-5), in an area of the Livermore Valley Groundwater Basin less susceptible to drought impacts, and construct the Cope Lake Pipeline (CLP) to convey groundwater generated from area strip mines to a more permeable pond to aid in groundwater recharge. The project anticipates supplying approximately 2,240 AF per year (AFY) from the new well and up to 46 AF per day (AFD) of groundwater recharge for the Livermore-Amador Valley area.

Task 1 Direct Project Administration: Budget Category (a)

Task 1a Project Management
Manage grant agreement including compliance with grant requirements, and preparation and submission of supporting grant documents and coordination with IRWM regional manager, ABAG. Prepare invoices including relevant supporting documentation for submittal to DWR via ABAG. This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies.

Deliverables:
- Environmental Information Form (EIF)
- Financial Statements
- Invoices
- Other Applicable Project Deliverables

Task 1b Labor Compliance Program
Take all measures necessary to ensure compliance with applicable California Labor Code requirements, including, preparation and implementation of a labor compliance program or including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

Deliverables:
- Proof of labor compliance upon request

Task 1c Reporting
Prepare quarterly progress reports detailing work completed during reporting period as outlined in Exhibit (G) of this agreement. Submit reports to ABAG for review and inclusion in a progress report to be submitted to DWR. Prepare draft Final Project Completion Report and submit to DWR via ABAG for DWR Project Manager’s comment and review no later than 90 days after project completion. Prepare Final Report addressing ABAG/DWRs comments. The report shall be prepared and presented in accordance with the provision of Exhibit G.

Deliverables:
- Quarterly Project Progress Reports
- Draft and Final Project Completion Report

Task 2 Land Purchase/Easement: Budget Category (b)

The CLP project is located within Zone 7-owned property. Zone 7 has an access easement for the COL-5 Project and is in the process of purchasing the property.

Deliverables:
- All relevant documentation regarding property purchase as requested
- Copy of relevant easements including access easements, etc.
- Proof of Title Transfer for property acquisition for the COL-5 Project
Task 3 Planning/Design/Engineering and Environmental Documentation: Budget Category (c)

Task 3a Feasibility Studies/Assessment and Evaluation
Conduct site surveys, calculations, and prepare cross section drawings in preparing the project site for construction.
Deliverables:
- Relevant Feasibility Studies, including COL-5 Well Master Plan

Task 3b CEQA Documentation
Prepare and complete the required environmental compliance and environmental documentation. Prepare and file the CEQA Mitigated Negative Declaration (MND) and Environmental Impact Report (EIR) for the project. Prepare letter stating no legal challenges (or addressing legal challenges). CEQA documentation for the COL-5 Well portion was completed in the July 2005 Well Master Plan EIR. The CEQA documentation for the Cope Lake Pipeline was completed in the January 2012 Cope Lake Improvements and Maintenance Environmental Impact Statement (EIS)/MND.
Deliverables:
- Copy of Final EIR for the COL-5 Well Installation (completed in the Well Master Plan EIR)
- Copy of Final Cope Lake Pipeline EIS/MND (completed in the Cope Lake Improvements and Maintenance EIS/MND)
- No Legal Challenges letter

Task 3c Permitting
Prepare and acquire all identified federal, state, and local permits. The Cope Lake Pipeline Project component does not require any permits. The COL-5 Well Project component required three well drilling permits and one well abandonment permit.
Deliverables:
- Copies of all required permits

Task 3d Design
Complete preliminary design in development of final design, plans and specifications to produce 100% design, plans, and specifications.
Deliverables:
- Updated Project Cost Estimate
- 100% Design Documents

Task 3e Project Monitoring Plan
Develop and submit a Project Monitoring Plan. Along with the Project Performance Measures Table provided by DWR project manager, the Project Monitoring Plan will include baseline conditions, a brief discussion of monitoring systems to be used, methodology of monitoring, frequency of monitoring, and location of monitoring points (reference Exhibit J in this agreement for guidance).
Deliverables:
- Project Monitoring Plan

Task 4 Construction/Implementation: Budget Category (d)

Task 4a Contract Services
This Project does not need to be advertised and bid. Due to Zone 7’s declaration of a drought emergency, the Zone 7 Board authorized the General Manager to award the design build contracts without competitive bidding.
Deliverables:
- Copy of Zone 7 Board resolutions authorizing award of design-build contracts
- Award of contract
- Notice to proceed

Task 4b Construction Administration
Review contractor submittals, answer requests for information, and issue work directives. A full time engineering construction observer will be on site for the duration of the project. Construction observer duties include: documenting pre-construction conditions, daily construction diary, preparing change orders, addressing questions of contractors on site, reviewing/ updating project schedule, reviewing contractor log submittals and pay requests, forecasting cash flow, and notifying contractor if work is not acceptable.

Deliverables:
- Notice of Completion

Task 4c Construction/Implementation Activities
4c(1) Mobilization and Site Preparation: Set up construction staging area and site security, install temporary construction field offices, place temporary sanitary facilities, implement site best management practices (BMPs), clear and grub, designate stockpile and material storage areas, and set up traffic control.

4c(2) Project Construction: This project consists of two major project tasks outlined below.
   COL-5 Well Installation – An eight inch diameter test borehole was advanced to 690 feet to determine soil lithology. The test well was converted to a monitoring well with a two inch diameter casing. A second well was drilled with the intent of installing the water supply well. The second well was drilled to 175 feet with a 28 inch diameter borehole; however, a portion of the drill rig broke and fell into the well. This well had to be abandoned in place. The well borehole was backfilled with pea gravel and grout. A third well was installed 15-feet away from the abandoned well. The third well was completed at a depth of 715 feet with a 28 inch diameter borehole, and 18 inch casing.
   Connections were installed to the existing pipelines, disinfection system, and disposal system. Well water will be pumped to an adjacent well site to be disinfected with sodium hypochlorite and aqueous ammonia.
   CLP - The CLP project consists of installation of approximately 620 feet of pipeline, connections to existing pipelines and lake outfalls. The pipeline consists of 36-inch DR17 HDPE pipe and will be constructed by open cut trenching and backfilling.

4c(3) Performance Testing and Demobilization: Conduct performance testing including stormwater testing for contaminant and turbidity levels, and demobilize and remove debris, construction spoils, excess materials, temporary sanitary facilities, and equipment from the site.

4c(4) Environmental Compliance/Mitigation/Enhancement: Monitor construction to document compliance with general construction measures, inspect BMPs, document daily construction activities including photos, test storm water for contaminant and turbidity levels, and complete post construction site restoration.

Deliverables:
- Photographic documentation
- Engineers Certification Certified engineer inspection completion report with final as-built drawings
- A copy of the erosion and sediment control plan
- A copy of the inspection reports and meeting minutes from construction management reports
Project 3 – Los Carneros Water District and Milliken Sarco-Tulocay Recycled Water Pipelines

Implementing Agency: Napa Sanitation District

Project Description: Construct additional recycled water distribution infrastructure to offset groundwater and surface water use in the Napa Valley by up to 1,250 AFY, and improve water quality by reducing discharges to surface water from the wastewater treatment plant.

Task 1 Direct Project Administration: Budget Category (a)

Task 1a Project Management
Manage grant agreement including compliance with grant requirements, and preparation and submission of supporting grant documents and coordination with IRWM regional manager, ABAG. Prepare invoices including relevant supporting documentation for submittal to DWR via ABAG. This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies.

Deliverables:
- Environmental Information Form (EIF)
- Financial Statements
- Invoices
- Other Applicable Project Deliverables

Task 1b Labor Compliance Program
Take all measures necessary to ensure compliance with applicable California Labor Code requirements, including, preparation and implementation of a labor compliance program or including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

Deliverables:
- Proof of labor compliance upon request

Task 1c Reporting
Prepare quarterly progress reports detailing work completed during reporting period as outlined in Exhibit (G) of this agreement. Submit reports to ABAG for review and inclusion in a progress report to be submitted to DWR.
Prepare draft Final Project Completion Report and submit to DWR via ABAG for DWR Project Manager’s comment and review no later than 90 days after project completion. Prepare Final Report addressing ABAG/DWRs comments. The report shall be prepared and presented in accordance with the provision of Exhibit G.

Deliverables:
- Quarterly Project Progress Reports
- Draft and Final Project Completion Report

Task 2 Land Purchase/Easement: Budget Category (b)
Obtain easements for the Milliken Sarco-Tulocay (MST) Project (booster pump station) and a small portion of the Los Carneros Water District (LCWD) Project.

Deliverables:
- All relevant documentation regarding acquisition of easement (final recorded deed, title report)
Task 3 Planning/Design/Engineering and Environmental Documentation: Budget Category (c)

Task 3a Feasibility Studies/Assessment and Evaluation
Conduct site surveys, and prepare calculations and cross section drawings.

Deliverables:
- Alignment Study
- Assessment Study (funding evaluation)
- Modeling Study

Task 3b CEQA Documentation
Complete the required environmental compliance and environmental documentation, including an initial study (IS)/MND as part of an existing EIR/EIS certified/adopted by the U.S. Bureau of Reclamation and North Bay Water Reuse Authority in 2009. Prepare letter stating no legal challenges (or addressing legal challenges).

Deliverables:
- Copy of Notice of Preparation
- Draft and Final IS/MND
- Copy of Notice of Completion
- No Legal Challenges letter

Task 3c Permits
Acquire all required permits from appropriate agencies, including a Section 404 Nationwide Permit from the USACE, a Section 1600 Streambed Alteration Agreement permit from the CDFW, a Section 401 Water Quality Certification from the RWQCB, an Encroachment Permit from Napa County for work within the right-of-way, and a State of California Construction General Permit.

Deliverables:
- Copies of all required permits

Task 3d Design
Complete preliminary design including the following supporting work: geotechnical investigation, topographic survey, and preliminary design report. The preliminary design report will provide the overall project concept for use in development of final design, plans and specifications including: pipeline sizing, construction methods, and booster pump station details to produce 100% (final) design, plans, and specifications. This task includes 100% complete designs and construction specifications and final drawings.

Deliverables:
- Geotechnical Report
- Topographic Survey
- Updated Project Cost Estimate
- 100% Design Documents

Task 3e Project Monitoring Plan
Develop and submit a Project Monitoring Plan. Along with the Project Performance Measures Table provided by DWR project manager, the Project Monitoring Plan will include baseline conditions, a brief discussion of monitoring systems to be used, methodology of monitoring, frequency of monitoring, and location of monitoring points (reference Exhibit J in this agreement for guidance).

Deliverables:
- Project Monitoring Plan
Task 4 Construction/Implementation: Budget Category (d)

Task 4a Contract Services
Activities necessary to secure a contractor and award the contract include: develop bid documents, prepare advertisement and contract documents for construction contract bidding, conduct pre-bid meeting, bid opening and evaluation, selection of the contractor, award of contract, and issuance of notice to proceed.

Deliverables:
- Bid documents
- Proof of Advertisement
- Award of contract
- Notice to proceed

Task 4b Construction Administration
Review contractor’s schedule and performance, manage and coordinate the agencies and contractors involved with the Project, and provide construction inspection and management oversight including: review and approval of inspection reports, pay requests, meeting notes, contractor log submittals, and as-built drawings.

Deliverables:
- Notice of Completion

Task 4c Construction/Implementation Activities
Construction activities are outlined below.

4c(1) Mobilization and Site Preparation: Set up construction staging area and site security, place temporary sanitary facilities, implement site BMPs, clear and grub, designate stockpile and material storage areas, and set up traffic control.

4c(2) MST Component Project: Construct approximately five miles of recycled water pipeline (by open-cut method) and a booster pump station (pump station structure, pumps, electrical components, surge tanks).

4c(3) LCWD Component Project: Construct approximately nine miles of recycled water pipeline. The pipeline will connect to the Napa Sanitation District’s existing pipeline distribution system located west of the Napa River, and will be constructed from east to west. As segments are constructed and tested, sections of the pipeline will be brought online to provide recycled water to users in the eastern areas while the west pipeline segments are being installed.

4c(4) Performance Testing and Demobilization: Conduct performance testing and demobilization including stormwater testing for contaminant and turbidity levels, demobilization and removal of debris and excess spoils, temporary sanitary facilities, and equipment.

4c(5) Environmental Compliance/Mitigation/Enhancement: Monitor construction to document compliance with general construction measures, inspect Best Management Practices (BMP), document daily construction activities including photos, test storm water for contaminant and turbidity levels, and restore site.

Deliverables:
- Contractor agreement documentation
- Pre-construction, construction period, and post-construction photographs
- Certified engineer inspection completion report with final as-built drawings
- A copy of the erosion and sediment control plan
- A copy of the inspection reports
- A copy of meeting minutes from construction management reports
**Project 4 – Sunnyvale Continuous Recycled Water Production Facilities and Wolfe Road Pipeline**

**Implementing Agency:** Santa Clara Valley Water District (SCVWD) and City of Sunnyvale

**Project Description:** Construct recycled water pipeline and implement plant improvements at the Sunnyvale Water Pollution Control Plant (WPCP) to offset approximately 1,680 AFY of potable water demand and improve water quality.

**Task 1 Direct Project Administration: Budget Category (a)**

**Task 1a Project Management**
Manage grant agreement including compliance with grant requirements, and preparation and submission of supporting grant documents and coordination with IRWM regional manager, ABAG. Prepare invoices including relevant supporting documentation for submittal to DWR via ABAG. This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies.

**Deliverables:**
- Environmental Information Form (EIF)
- Financial Statements
- Invoices
- Other Applicable Project Deliverables

**Task 1b Labor Compliance Program**
Take all measures necessary to ensure compliance with applicable California Labor Code requirements, including, preparation and implementation of a labor compliance program or including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

**Deliverables:**
- Proof of labor compliance upon request

**Task 1c Reporting**
Prepare quarterly progress reports detailing work completed during reporting period as outlined in Exhibit (G) of this agreement. Submit reports to ABAG for review and inclusion in a progress report to be submitted to DWR. Prepare draft Final Project Completion Report and submit to DWR via ABAG for DWR Project Manager’s comment and review no later than 90 days after project completion. Prepare Final Report addressing ABAG/DWRs comments. The report shall be prepared and presented in accordance with the provision of Exhibit G.

**Deliverables:**
- Quarterly Project Progress Reports
- Draft and Final Project Completion Report

**Task 2 Land Purchase/Easement: Budget Category (b)**
The Project takes place on land within City of Sunnyvale and/or SCVWD-owned property. Therefore, land purchase or easement acquisition is not applicable to this project.

**Task 3 Planning/Design/Engineering and Environmental Documentation: Budget Category (c)**

**Task 3a Feasibility Studies/Assessment and Evaluation**
A Planning Study Report will be prepared for the pipeline alternatives evaluation. An Engineer’s Report will be prepared for the pipeline project for Board approval as required by SCVWD Act).
Deliverables:
- Copy of the Engineer’s Report and Board approval
- Copy of the Planning Study Report

**Task 3b CEQA Documentation**
Prepare CEQA compliance documentation including, an MND for the pipeline project, and a categorical exemption for the plant improvements. Prepare letter stating no legal challenges (or addressing legal challenges).

**Deliverables:**
- Copy of Notice of Preparation
- Draft and Final MND
- Copy of Notice of Completion
- No Legal Challenges letter

**Task 3c Permitting**
Acquire permits from Caltrans, Caltrains, RWQCB (National Pollutant Discharge Elimination System), Bay Area Air Quality Management District (Authority to Construct) and Sunnyvale for encroachment purposes.

**Deliverables:**
- Copies of all required permits

**Task 3d Design**
Complete preliminary design including the following supporting work: geotechnical investigation, topographic survey, and basis of design report (BOD). The BOD will provide the overall project concept for use in development of final design, plans and specifications including: preliminary earthwork calculations, preliminary design details for tank foundation, preliminary design details to produce 100% (Final) design, plans, and specifications.

**Deliverables:**
- Geotechnical Report
- Topographic Survey
- BOD Report
- Updated Project Cost Estimate
- 100% Design Documents
- Pump Station Hydraulic Criteria Memorandum
- Hazardous Materials Investigation Report

**Task 3e Project Monitoring Plan**
Develop and submit a Project Monitoring Plan. Along with the Project Performance Measures Table provided by DWR project manager, the Project Monitoring Plan will include baseline conditions, a brief discussion of monitoring systems to be used, methodology of monitoring, frequency of monitoring, and location of monitoring points (reference Exhibit J in this agreement for guidance).

**Deliverables:**
- Project Monitoring Plan

**Task 4 Construction/Implementation: Budget Category (d)**
**Task 4a Contract Services**
Activities necessary to secure a contractor and award the contract include: develop bid documents, prepare advertisement and contract documents for construction contract bidding, conduct pre-bid meeting, bid opening and evaluation, selection of the contractor, award of contract, and issuance of notice to proceed.
Deliverables:
- Bid documents
- Proof of Advertisement
- Award of contract

Task 4b Construction Administration
Secure contractor performance and payment bonds, review contractor’s schedule and performance, manage and coordinate public inquiries, manage and coordinate all contractor correspondence, maintain detailed project records, and recommend final payment and submittal of all projects for archival. This task also includes inspection of the Project including reporting and project communication.

Deliverables:
- Notice of Completion

Task 4c Construction/Implementation Activities
4c(1) Mobilization and Site Preparation: Set up construction staging area and site security, determine place temporary sanitary facilities, implement site BMPs, clear and grub, designate stockpile and material storage areas, and set up traffic control.

4c(2) Project Construction: Install approximately 13,300 feet of 24-inch diameter recycled water pipeline and appurtenances in Wolfe Road between Kifer Road and Homestead Road, and construct booster pump station at the City of Sunnyvale’s San Lucar Pump Station site. Pipe installation will primarily be open trench method. Improvements at the Water Pollution Control Plant include installation of additional valves, meters, mixing pumps, and piping at the facility to isolate and operate one air flotation tank, one dual media filter, and one chlorine contact for the sole purpose of producing recycled water.

4c(3) Performance Testing and Demobilization: Take photo inventory of the Project site prior to construction. Demobilization activities include removal of: construction spoils and debris from the Project site, excess materials, sanitary facilities, and equipment. This task also includes transferring responsibility back to property owner.

Deliverables:
- Copy of all construction related plans (e.g., traffic control, hazardous material management)
- Construction photographs
- Certified engineer inspection completion report with final as-built drawings
- A copy of the inspection reports and test results
Project 5 – DERWA Phase 3 Recycled Water Expansion Project

Implementing Agency: DSRSD/EBMUD Recycled Water Authority (DERWA)

Project Description: Construct approximately nine miles of recycled water pipeline in three component projects: the Central Dublin Pipeline, the West Dublin Pipeline, and the San Ramon Valley Phase 2 Projects. The three pipeline component projects will replace approximately 867 AFY of potable water with recycled water.

Task 1 Direct Project Administration: Budget Category (a)

Task 1a Project Management
Manage grant agreement including compliance with grant requirements, and preparation and submission of supporting grant documents and coordination with IRWM regional manager, ABAG. Prepare invoices including relevant supporting documentation for submittal to DWR via ABAG. This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies.

Deliverables:
- Environmental Information Form (EIF)
- Financial Statements
- Invoices
- Other Applicable Project Deliverables

Task 1b Labor Compliance Program
Take all measures necessary to ensure compliance with applicable California Labor Code requirements, including, preparation and implementation of a labor compliance program or including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

Deliverables:
- Proof of labor compliance upon request

Task 1c Reporting
Prepare quarterly progress reports detailing work completed during reporting period as outlined in Exhibit (G) of this agreement. Submit reports to ABAG for review and inclusion in a progress report to be submitted to DWR.
Prepare draft Final Project Completion Report and submit to DWR via ABAG for DWR Project Manager’s comment and review no later than 90 days after project completion. Prepare Final Report addressing ABAG/DWRs comments. The report shall be prepared and presented in accordance with the provision of Exhibit G.

Deliverables:
- Quarterly Project Progress Reports
- Draft and Final Project Completion Report

Task 2 Land Purchase/Easement: Budget Category (b)
The projects are located within public right-of-way and therefore do not require land purchases or easements. This task is not applicable for this project.

Task 3 Planning/Design/Engineering and Environmental Documentation: Budget Category (c)

Task 3a Feasibility Studies/Assessment and Evaluation
Planning documents have been previously prepared; no additional planning studies are necessary.

Deliverables:
- DERWA San Ramon Valley Recycled Water Program Facilities Plan, July 1996
Task 3b CEQA Documentation
Complete required environmental compliance and environmental documentation, including a Notice of CEQA Exemption and an addendum to an EIR. Prepare letter stating no legal challenges (or addressing legal challenges).

Deliverables:
- DERWA San Ramon Valley Recycled Water Program: Copy of Notice of Preparation
- DERWA San Ramon Valley Recycled Water Program: Draft and Final EIR Addendum and Exemption Statute
- DERWA San Ramon Valley Recycled Water Program: Copy of Notice of Completion
- Central Dublin Pipeline: CEQA Categorical Exemption
- West Dublin Pipeline: CEQA Categorical Exemption
- San Ramon Valley Phase 2: CEQA Categorical Exemption
- No Legal Challenges letter

Task 3c Permitting
The following permits will be acquired:
- Central Dublin Pipeline Component: Right-of-Entry Agreement with Alameda County Jail
- West Dublin Pipeline Component: Encroachment permit with City of Dublin
- San Ramon Valley Phase 2 Component: Encroachment permit

Acquire all identified permits, including local encroachment permits, which will be incorporated into bid documents.

Deliverables:
- Copies of all required permits

Task 3d Design
Complete preliminary design including the following supporting work: geotechnical investigation, topographic survey, and basis of design report (BOD). The BOD will provide the overall project concept for use in development of final design, plans and specifications including: preliminary earthwork calculations, preliminary design details for tank foundation, preliminary design details to produce 100% (Final) design, plans, and specifications.

Deliverables:
- Geotechnical Report
- Topographic Survey
- BOD Report
- Updated Project Cost Estimate
- 100% Design Documents

Task 3e Project Monitoring Plan
Develop and submit a Project Monitoring Plan. Along with the Project Performance Measures Table provided by DWR project manager, the Project Monitoring Plan will include baseline conditions, a brief discussion of monitoring systems to be used, methodology of monitoring, frequency of monitoring, and location of monitoring points (reference Exhibit J in this agreement for guidance).

Deliverables:
- Project Monitoring Plan
Task 4 Construction/Implementation: Budget Category (d)

Task 4a Contract Services
Activities necessary to secure a contractor and award the contract include: develop bid documents, prepare advertisement and contract documents for construction contract bidding, conduct pre-bid meeting, bid opening and evaluation, selection of the contractor, award of contract, and issuance of notice to proceed.

**Deliverables:**
- Bid documents
- Proof of Advertisement
- Award of contract
- Notice to proceed

Task 4b Construction Administration
Manage contractor submittal review, answer requests for information, and issue work directives. A full time engineering construction observer will be on site for the duration of the project. Construction observer duties include: documenting of pre-construction conditions, daily construction diary, preparing change orders, addressing questions of contractors on site, reviewing/ updating project schedule, reviewing contractor log submittals and pay requests, forecasting cash flow, notifying contractor if work is not acceptable.

**Deliverables:**
- Notice of Completion

Task 4c Construction/Implementation Activities

4c(1) Mobilization and Site Preparation: Set up construction staging area and site security, determine placement of temporary sanitary facilities, implement site BMPs, clear and grub, designate stockpile and material storage areas, and set up traffic control.

4c(2) Central Dublin Pipeline: Install approximately one mile of recycled water pipeline for the Central Dublin ranging in diameter from approximately four to ten inches, and connections to existing pipelines. Open-cut trench construction will be used for installation of pipeline for this project component.

4c(3) West Dublin Pipeline: Install approximately 3.7 miles of recycled water distribution pipeline ranging in diameter from four to eight inches, and connect to existing pipelines. A combination of open-cut trench construction and directional drilling will be used for installation of pipeline for this project component.

4c(4) San Ramon Valley Phase 2: Install approximately 3.6 miles of recycled water distribution pipeline ranging in diameter from six to 16 inches. This task also includes all construction equipment and supplies. Open-cut trench construction will be used for installation of pipeline for this project component.

4c(5) Performance Testing and Demobilization: Conduct performance testing and including testing water for contaminant and turbidity levels, demobilize equipment and , remove debris, construction spoils, and temporary sanitary facilities from the site.

4c(6) Environmental Compliance/Mitigation/Enhancement: This task consists of complying with general construction measures, and creating a stormwater pollution prevention plan and traffic control plan.

**Deliverables:**
- Pre-construction, construction, and post-construction photographs
- Certified engineer inspection completion report with final as-built drawings
- A copy of the stormwater pollution prevention plan, traffic control plan, and inspection reports
Project 6 – Calistoga Recycled Water Storage Facility

Implementing Agency: City of Calistoga

Project Summary: Excavate an approximately 16.3 million gallon recycled water storage pond, install approximately 200 feet of pipeline, and construct a maintenance road (including a bridge) to provide access to the new storage pond. The project will allow increased recycled water production to offset approximately 25 AFY of potable water use.

Task 1 Direct Project Administration: Budget Category (a)

Task 1a Project Management
Manage grant agreement including compliance with grant requirements, and preparation and submission of supporting grant documents and coordination with IRWM regional manager, ABAG. Prepare invoices including relevant supporting documentation for submittal to DWR via ABAG. This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies.

Deliverables:
- Environmental Information Form (EIF)
- Financial Statements
- Invoices
- Other Applicable Project Deliverables

Task 1b Labor Compliance Program
Take all measures necessary to ensure compliance with applicable California Labor Code requirements, including, preparation and implementation of a labor compliance program or including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

Deliverables:
- Proof of labor compliance upon request

Task 1c Reporting
Prepare quarterly progress reports detailing work completed during reporting period as outlined in Exhibit (G) of this agreement. Submit reports to ABAG for review and inclusion in a progress report to be submitted to DWR. Prepare draft Final Project Completion Report and submit to DWR via ABAG for DWR Project Manager’s comment and review no later than 90 days after project completion. Prepare Final Report addressing ABAG/DWRs comments. The report shall be prepared and presented in accordance with the provision of Exhibit G.

Deliverables:
- Quarterly Project Progress Reports
- Draft and Final Project Completion Report

Task 2 Land Purchase/Easement: Budget Category (b)
The Project is located within public right-of-way. No land purchases or easements are necessary. This task is not applicable for this project.

Task 3 Planning/Design/Engineering and Environmental Documentation: Budget Category (c)

Task 3a Feasibility Studies/Assessment and Evaluation
Prepare the Bypass Alternative Investigation Report, a geotechnical study, and a topographic survey.
Deliverables:
- Bypass Alternative Investigation Report
- Geotechnical study
- Topographic survey

Task 3b CEQA Documentation
Complete the required environmental compliance and environmental documentation necessary for the Project, including a categorical exemption. Prepare letter stating no legal challenges (or addressing legal challenges).

Deliverables:
- Categorical Exemption
- No Legal Challenges letter

Task 3c Permitting
Acquire all identified federal, state, and local permits. Work includes coordinating and complying with requirements for issuance of the following permits: CDFW Section 1600 permit, Clean Water Act (CWA) Section 401 permit from the San Francisco RWQCB, CWA Section 402 NPDES Construction General Permit (through preparation of a SWPPP), and CWA Section 404 permit from USACE.

Deliverables:
- Copies of all required permits

Task 3d Design
Complete preliminary design including the following supporting work: geotechnical investigation, topographic survey, and BOD. The BOD will provide the overall project concept for use in development of final design, plans and specifications including: preliminary earthwork calculations, preliminary design details for tank foundation, preliminary design details to produce 100% (Final) design, plans, and specifications.

Deliverables:
- BOD Report
- Updated Project Cost Estimate
- 100% Design Documents

Task 3e Project Monitoring Plan
Develop and submit a Project Monitoring Plan. Along with the Project Performance Measures Table provided by DWR project manager, the Project Monitoring Plan will include baseline conditions, a brief discussion of monitoring systems to be used, methodology of monitoring, frequency of monitoring, and location of monitoring points (reference Exhibit J in this agreement for guidance).

Deliverables:
- Project Monitoring Plan

Task 4 Construction/Implementation: Budget Category (d)
Task 4a Contract Services
Activities necessary to secure a contractor and award the contract include: develop bid documents, prepare advertisement and contract documents for construction contract bidding, conduct pre-bid meeting, bid opening and evaluation, selection of the contractor, award of contract, and issuance of notice to proceed.
Deliverables:
- Bid documents
- Proof of Advertisement
- Award of contract
- Notice to proceed

Task 4b Construction Administration
Review contractor submittal review, answer requests for information, and issue work directives. A qualified construction inspector will be on site for the duration of the project. Construction observer duties include: documenting of pre-construction conditions, daily construction diary, preparing change orders, addressing questions of contractors on site, reviewing/ updating project schedule, reviewing contractor log submittals and pay requests, forecasting cash flow, notifying contractor if work is not acceptable.

Deliverables:
- Notice of Completion

Task 4c Construction/Implementation Activities
Construction activities are outlined below.
4c(1): Mobilization and Site Preparation: Set up construction staging area and site security, determine placement of temporary sanitary facilities, implement site BMPs, clear and grub site, designate stockpile and material storage areas, remove existing irrigation piping/sprinklers, mobilize equipment to site, and set up traffic control.

4c(2) Project Construction: Excavate approximately 100,000 yds³ of soil and build embankment to construct an approximate 16.3-million-gallon (MG) recycled water pond. In addition, install approximately 200 feet of recycled water conveyance pipeline, and construct a pond maintenance road including a small pre-fabricated rail car bridge.

4c(3) Performance Testing and Demobilization: This task consists of performance testing, stormwater testing, including soil compaction testing, demobilization and removal of debris and construction spoils from the site, excess materials, temporary sanitary facilities, and equipment.

4c(4) Environmental Compliance/Mitigation/Enhancement: Comply with general construction measures, and create erosion and sediment control plan, and stormwater pollution prevention plan (SWPPP). Construction monitoring tasks include compaction testing for embankment berms, BMP inspections, stormwater testing, and daily documentation of construction activities. Revegetation work includes hydroseeding of all disturbed areas in accordance with CDFW requirements.

Deliverables:
- Pre-construction, construction, and post-construction photographs
- Certified engineer inspection completion report with final as-built drawings
- A copy of the erosion and sediment control plan
- A copy of the inspection reports and contractor logs
- A copy of meeting minutes from construction management reports and pay requests
- Copy of construction general permit, including SWPPP
Project 7 – Drought Relief for South Coast San Mateo County

Implementing Agency: San Mateo County Resource Conservation District (RCD)

Project Description: Repair leaking water line, construct additional water storage, and implement farm infrastructure improvements to reduce surface water withdrawals during dry months. The project will create approximately 41.2 AF of water storage and conserve approximately 32 AF of water through leaky water line repair, construction of additional water storage, and infrastructure improvements on approximately five water storage projects on agricultural lands, two water storage projects for domestic water systems, five agricultural water conservation projects, and six water conservation projects on domestic water systems.

Task 1 Direct Project Administration: Budget Category (a)

Task 1a Project Management
Manage grant agreement including compliance with grant requirements, and preparation and submission of supporting grant documents and coordination with IRWM regional manager, ABAG. Prepare invoices including relevant supporting documentation for submittal to DWR via ABAG. This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies.

Deliverables:
- Environmental Information Form (EIF)
- Financial Statements
- Invoices
- Other Applicable Project Deliverables

Task 1b Labor Compliance Program
Take all measures necessary to ensure compliance with applicable California Labor Code requirements, including, preparation and implementation of a labor compliance program or including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

Deliverables:
- Proof of labor compliance upon request

Task 1c Reporting
Prepare quarterly progress reports detailing work completed during reporting period as outlined in Exhibit (G) of this agreement. Submit reports to ABAG for review and inclusion in a progress report to be submitted to DWR.
Prepare draft Final Project Completion Report and submit to DWR via ABAG for DWR Project Manager’s comment and review no later than 90 days after project completion. Prepare Final Report addressing ABAG/DWRs comments. The report shall be prepared and presented in accordance with the provision of Exhibit G.

Deliverables:
- Quarterly Project Progress Reports
- Draft and Final Project Completion Report

Task 2 Land Purchase/Easement: Budget Category (b)
All projects will occur through partnerships with private and public landowners. This task is not applicable for this project.
Task 3 Planning/Design/Engineering and Environmental Documentation: Budget Category (c)

Task 3a Feasibility Studies/Assessment an Evaluation
Assess water supply, storage and distribution infrastructure and management (including infrastructure inspections and irrigation audits). Assessments will target leaking supply lines, failing or undersized water storage infrastructure, and opportunities to improve water use efficiency and reduce pressures on late summer stream flows. Assessments have been completed on three of six planned domestic water supply/infrastructure sites (Elements A.1 and B.1). Water supply/irrigation distribution assessments/audits are in progress on three agricultural sites, complete on seven sites, of 17 planned agricultural sites (Elements A.2 and B.2). These assessments will identify opportunities to repair or replace failing infrastructure with more efficient equipment.

Deliverables:
- Copy of Notice of Preparation
- Copies of plans for water supply lines and storage facilities
- Lists of recommended irrigation efficiency and water storage capacity actions to be implemented

Task 3b CEQA Documentation
This task consists of completing the required environmental compliance and environmental documentation necessary for the Project. Prepare letter stating no legal challenges (or addressing legal challenges). CEQA documentation includes categorical exemptions for all projects in this program.

Deliverables:
- Copy of Notice of Preparation
- Copy of Final Categorical Exemption
- Copy of Notice of Completion
- No Legal Challenges letter

Task 3c Permitting
Prepare and acquire all applicable federal, state, and local permits. Permits may include county grading permits, Coastal Development Permits (California Coastal Commission [CCC]), Lake or Streambed Alteration Agreements (CDFW), and water quality certifications (RWQCB).

Deliverables:
- Copies of all required permits

Task 3d Design
Complete preliminary design including the following supporting work: geotechnical investigation, topographic survey, and BOD. The BOD will provide the overall project concept for use in development of final design, plans and specifications including: preliminary earthwork calculations, preliminary design details for tank foundation, preliminary design details to produce 100% (Final) design, plans, and specifications.

Deliverables:
- Geotechnical Report
- Topographic Survey
- BOD Report
- Updated Project Cost Estimate
- 100% Design Documents

Task 3e Project Monitoring Plan
Develop and submit a Project Monitoring Plan. Along with the Project Performance Measures Table provided by DWR project manager, the Project Monitoring Plan will include baseline conditions, a brief
discussion of monitoring systems to be used, methodology of monitoring, frequency of monitoring, and location of monitoring points (reference Exhibit J in this agreement for guidance).

**Deliverables:**
- Project Monitoring Plan

### Task 4 Construction/Implementation: Budget Category (d)

#### Task 4a Contract Services
Activities necessary to secure a contractor and award the contract include: develop bid documents, prepare advertisement and contract documents for construction contract bidding, conduct pre-bid meeting, bid opening and evaluation, selection of the contractor, award of contract, and issuance of notice to proceed.

**Deliverables:**
- Bid documents
- Proof of Advertisement
- Award of contract
- Notice to proceed

#### Task 4b Construction Administration
Manage contractor submittal review, answer requests for information, and issue work directives. A full time engineering construction observer will be on site for the duration of the project. Construction observer duties include: documenting of pre-construction conditions, daily construction diary, preparing change orders, addressing questions of contractors on site, reviewing/ updating project schedule, reviewing contractor log submittals and pay requests, forecasting cash flow, notifying contractor if work is not acceptable.

**Deliverables:**
- Notice of Completion

#### Task 4c Construction/Implementation Activities

4c(1) Project Construction: Repair leaky supply lines on four sites (Element A.1), repair water storage infrastructure on four sites (Element B.2), and replace oversized single speed surface water pumps with variable speed pumps on up to 17 sites (Elements A.1 and A.2, typically one pump per site, a minimum of 10 pumps will be replaced). Construct new or upgraded water storage infrastructure to increase the forbearance of surface water withdrawals during the late summer in exchange for storing water earlier in the season when stream flows are greater (six sites under Elements B.1 and B.2). Install groundwater pumps on new and existing groundwater wells to increase conjunctive use and reduce pressures on withdrawing surface water (one to three sites under Element A.2, one to three pumps will be installed).

4c(2) Environmental Compliance/Mitigation/Enhancement: Comply with general permit requirements and general construction measures issued for construction of water supply, storage and distribution infrastructure improvements.

**Deliverables:**
- Photographic documentation
- Engineers Certification
Project 8 – Stinson Beach Water Supply & Drought Preparedness Plan

Implementing Agency: Stinson Beach County Water District (CWD)

Project Description: Construct upgrades to water supply system including new well, and install individual and inline water meters, to reduce use and augment supply water.

Implementation of the Stinson Beach Water Supply and Drought Preparedness Plan includes 4 projects:

- Component A - 2014 Calles Pipeline Replacement Project,
- Component B - Patios Pipelines Replacement Project,
- Component C - Supplemental Groundwater Supplies, and
- Component D - Water Meter Replacements and In-Line Meters.

The four component projects will generate approximately 15 million gallons per year (MGY) of reliable water supply for drought and emergency periods: 10 MGY increase supply/reliability by 2016 and 5 MGY recovered water by 2017.

Task 1 Direct Project Administration: Budget Category (a)

Task 1a Project Management

Manage grant agreement including compliance with grant requirements, and preparation and submission of supporting grant documents and coordination with IRWM regional manager, ABAG. Prepare invoices including relevant supporting documentation for submittal to DWR via ABAG. This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies.

Deliverables:

- Environmental Information Form (EIF)
- Financial Statements
- Invoices
- Other Applicable Project Deliverables

Task 1b Labor Compliance Program

Take all measures necessary to ensure compliance with applicable California Labor Code requirements, including, preparation and implementation of a labor compliance program or including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

Deliverables:

- Proof of labor compliance upon request

Task 1c Reporting

Prepare quarterly progress reports detailing work completed during reporting period as outlined in Exhibit (G) of this agreement. Submit reports to ABAG for review and inclusion in a progress report to be submitted to DWR.

Prepare draft Final Project Completion Report and submit to DWR via ABAG for DWR Project Manager’s comment and review no later than 90 days after project completion. Prepare Final Report addressing ABAG/DWRs comments. The report shall be prepared and presented in accordance with the provision of Exhibit G.

Deliverables:

- Quarterly Project Progress Reports
- Draft and Final Project Completion Report
Task 2 Land Purchase/Easement: Budget Category (b)
Acquire land and/or easements if needed for implementation of the projects.
Deliverables:
- Proof of land acquisition and/or easement

Task 3 Planning/Design/Engineering and Environmental Documentation: Budget Category (c)
Task 3a Feasibility Studies/Assessment and Evaluation
Assessment and Evaluation for components A and B will include completing initial site assessments, surveys, planning studies, environmental compliance, engineering design plans and specifications for project construction, and performing preliminary calculations. Feasibility studies for Component C will include evaluation of groundwater source capacity, installation of small diameter test wells to evaluate aquifer capacity, evaluation of connections with at least three privately-owned wells, and pursue the development of agreements and easements with private well owners. Component D planning will include completion of preliminary calculations, and surveys, associated with leak detection.
Deliverables:
- Feasibility studies and summary reports

Task 3b CEQA Documentation
Prepare required CEQA compliance for Components A, B, C, and D.
Component A: A categorical exemption was completed for this project.
Component B: Anticipate preparation of a Notice of Exemption with basis for determinations of exemption, and a Notice of Completion.
Component C: Anticipate preparation of MND and Notice of Completion.
Component D: Anticipate preparation of a Notice of Exemption with bases for determinations of exemption, and a Notice of Completion.
A letter stating no legal challenges will be prepared (or addressing legal challenges).
Deliverables:
- Copies of all CEQA compliance documents.
- No Legal Challenges letter

Task 3c Permitting
Components A, B, and D: No environmental permits are necessary to complete Projects A, B, and D. The projects involve replacement of existing facilities and installation of small equipment (water meters) within the same sites and alignments of the facilities being replaced. The sites and alignments of the facilities being replaced are authorized for Stinson Beach CWD’s existing water utilities and the repair and maintenance of those water utilities.
Component C: This task includes completing the required Coastal Development Permit from the County of Marin and Amendment to the District’s Water Supply Permit from the California Department of Public Health to add the well as a source of supply.
Deliverables:
- Copies of all required permits

Task 3d Design
Complete preliminary design including the following supporting work: geotechnical investigation, topographic survey, and basis of design report (BOD). The BOD will provide the overall project concept for use in development of final design, plans and specifications including: preliminary earthwork calculations, preliminary design details for tank foundation, preliminary design details to produce 100% (Final) design, plans, and specifications.
Deliverables:
- Geotechnical Report
- Topographic Survey
- BOD Report
- Updated Project Cost Estimate
- 100% Design Documents

Task 3e Project Monitoring Plan
Develop and submit a Project Monitoring Plan. Along with the Project Performance Measures Table provided by DWR project manager, the Project Monitoring Plan will include baseline conditions, a brief discussion of monitoring systems to be used, methodology of monitoring, frequency of monitoring, and location of monitoring points (reference Exhibit J in this agreement for guidance).

Deliverables:
- Project Monitoring Plan

Task 4 Construction/Implementation: Budget Category (d)

Task 4a Contract Services
Activities necessary to secure a contractor and award the contract include: develop bid documents, prepare advertisement and contract documents for construction contract bidding, conduct pre-bid meeting, bid opening and evaluation, selection of the contractor, award of contract, and issuance of notice to proceed.

Deliverables:
- Bid documents
- Proof of Advertisement
- Award of contract
- Notice to proceed

Task 4b Construction Administration
Manage contractor submittal review, answer requests for information, and issue work directives. A full time engineering construction observer will be on site for the duration of the project. Construction observer duties include: documenting of pre-construction conditions, daily construction diary, preparing change orders, addressing questions of contractors on site, reviewing/ updating project schedule, reviewing contractor log submittals and pay requests, forecasting cash flow, notifying contractor if work is not acceptable.

Deliverables:
- Notice of Completion

Task 4c Construction/Implementation Activities
4c(1) Mobilization and Site Preparation: This task consists of mobilizing construction equipment, and designating staging and stockpiling areas.
4c(2) Component A: Replace approximately 1,300 feet of old/undersized pipeline with new piping and 40 service laterals. The service laterals are not located on private property.
4c(3) Component B: Replace approximately 1,000 feet of old/undersized pipeline with new piping and approximately 30 service laterals. The service laterals are not located on private property.
4c(4) Component C: Drill one to three small-diameter test wells, construct a new groundwater production well, obtaining approvals for connecting up to 3 private wells to the District’s distribution system for drought and/or emergency uses, and the commencement of a comprehensive leak detection survey.
4c(5) Component D: Replace approximately 700 customer water meters and install one to five in-line water meters.
4c(6) Performance Testing and Demobilization: Test performance of newly constructed facilities. Remove debris and construction spoils, excess materials, temporary sanitary facilities, and equipment from the site.

4c(7) Environmental Compliance/Mitigation/Enhancement: Monitor all construction activity for environmental compliance and restore all construction sites to pre-project conditions.

**Deliverables:**
- Photographic documentation
- Engineers Certification
Implementing Agency: StopWaste

Project Description: Implement water use efficiency BMPs, to reduce water use by approximately 24,000 AFY and support statewide 20% drought demand reduction goal. BMPs may include: landscape rebates, toilet/urinal rebates, toilet/urinal direct installation, clothes washer rebates, and lawn-to-garden education.

Task 1 Direct Project Administration: Budget Category (a)

Task 1a Project Management
Manage grant agreement including compliance with grant requirements, and preparation and submission of supporting grant documents and coordination with IRWM regional manager, ABAG. Prepare invoices including relevant supporting documentation for submittal to DWR via ABAG. This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies.

Deliverables:
- Environmental Information Form (EIF)
- Financial Statements
- Invoices
- Other Applicable Project Deliverables

Task 1b Labor Compliance Program
Take all measures necessary to ensure compliance with applicable California Labor Code requirements, including, preparation and implementation of a labor compliance program or including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

Deliverables:
- Proof of labor compliance upon request

Task 1c Reporting
Prepare quarterly progress reports detailing work completed during reporting period as outlined in Exhibit (G) of this agreement. Submit reports to ABAG for review and inclusion in a progress report to be submitted to DWR. Prepare draft Final Project Completion Report and submit to DWR via ABAG for DWR Project Manager’s comment and review no later than 90 days after project completion. Prepare Final Report addressing ABAG/DWRs comments. The report shall be prepared and presented in accordance with the provision of Exhibit G.

Deliverables:
- Quarterly Project Progress Reports
- Draft and Final Project Completion Report

Task 1d Project Monitoring Plan
Develop and submit a Project Monitoring Plan. Along with the Project Performance Measures Table provided by DWR project manager, the Project Monitoring Plan will include baseline conditions, a brief discussion of monitoring systems to be used, methodology of monitoring, frequency of monitoring, and location of monitoring points (reference Exhibit J in this agreement for guidance).

Deliverables:
- Project Monitoring Plan
Task 2 Land Purchase/Easement: Budget Category (b)
This project does not require land purchases or easements. This task is not applicable for this project.

Task 3 Planning/Design/Engineering and Environmental Documentation: Budget Category (c)
  Task 3a Feasibility Studies
  This Project does not require any feasibility studies as part of the project development process.

  Task 3b CEQA Documentation
  Prepare Notices of Exemption for all project participants, if necessary under CEQA (CEQA Guidelines 15378). Prepare letter stating no legal challenges (or addressing legal challenges).

  Deliverables:
  - Proof of CEQA compliance (NOE)
  - Copy of Notice of Completion
  - No Legal Challenges letter

  Task 3c Permitting
  This Project does not require any permitting as part of the project development process.

  Task 3d Design
  This Project does not require any design as part of the project development process.

Task 4 Construction/Implementation: Budget Category (d)
  Task 4a Contract Services
  The High-Efficiency Toilet (HET)/Urinal Direct Installation Project element will include procurement of professional services. Third-party contracting specifics and structure will be set-up per agencies, and will likely include the following steps: (1) prepare and issue request for proposal (RFP) for toilet/urinal supply and installation services or rebate administration, and professional software deployment services; (2) evaluate proposals; (3) select highest-scoring vendor; (4) enter into agreement and award contract. Some agencies already have contractors in place and will not need to solicit for new services.

  Deliverables:
  - Copies of relevant RFPs
  - Contract Agreements for third-party contractors and vendors

  Task 4b Construction Administration
  This Project does not require any contract administration as part of the project development process.

  Task 4c Construction/Implementation Activities
  4c(1) Project Marketing: Specific marketing efforts may include: bill inserts, newsletters, electronic, newspaper advertisements, public service announcements, media (websites, blogs, social media platforms, online videos, direct email marketing), displays at retail businesses, and others. Educational elements developed by the project function in part as project marketing for the financial incentive elements. In addition, participating agencies will develop, design and print marketing materials. Agencies will have the flexibility to collaborate to ensure consistent messaging throughout the region.

  4c(2) Rebate Implementation: Implement rebate programs, including processing and issuance of rebates for over 2 million square feet of lawn to landscape conversions and over 25,000 high-efficiency toilets, urinals, and high-efficiency washers.

  4c(3) High-Efficiency Toilet and Urinal Direct Installations: Install high efficiency toilets and urinals in primarily multi-family residential, commercial and municipal units. Agencies will develop specific
project terms and conditions. This task may include procurement of professional services for installation and inspection services.

4c(4) Lawn-to-Garden Marketplace: Creating Drought Resistant Soils and Gardens. Develop Lawn-to-Garden partnerships to market and advertise sheet mulching lawns as the preferred form of lawn removal. Conduct stakeholder meetings and workshops for the public, and develop in-store displays and outreach tools for retail partners and water agencies and train landscape professionals to market sheet mulch lawn services and resources through workshops or networking event.

**Deliverables:**

- Photographic documentation
- Copies of public outreach, marketing, and promotional/web link materials
- Examples of rebate applications
- Quarterly numbers of rebates issued, toilet/urinal installations, high-efficiency washer participants, and square feet of lawn converted
- Copies of partnership agreement documents
- Copies of curriculum from trainings
- List of and links to online tools
- List of meetings held
- Copies of agendas and attendance sheets
Project 10 – WaterSMART Irrigation with AMI/AMR

Implementing Agency: Marin Municipal Water District (MMWD)

Project Description: Replace existing manually read landscape meters with Automated Meter Infrastructure (AMI)/Automated Meter Readwater (AMR) meters, and upgrade irrigation systems to save 8,000 AF of water over 20 years.

Task 1 Direct Project Administration: Budget Category (a)

Task 1a Project Management
Manage grant agreement including compliance with grant requirements, and preparation and submission of supporting grant documents and coordination with IRWM regional manager, ABAG. Prepare invoices including relevant supporting documentation for submittal to DWR via ABAG. This task also includes administrative responsibilities associated with the project such as coordinating with partnering agencies.

Deliverables:
- Environmental Information Form (EIF)
- Financial Statements
- Invoices
- Other Applicable Project Deliverables

Task 1b Labor Compliance Program
Take all measures necessary to ensure compliance with applicable California Labor Code requirements, including, preparation and implementation of a labor compliance program or including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

Deliverables:
- Proof of labor compliance upon request

Task 1c Reporting
Prepare quarterly progress reports detailing work completed during reporting period as outlined in Exhibit (G) of this agreement. Submit reports to ABAG for review and inclusion in a progress report to be submitted to DWR. Prepare draft Final Project Completion Report and submit to DWR via ABAG for DWR Project Manager’s comment and review no later than 90 days after project completion. Prepare Final Report addressing ABAG/DWRs comments. The report shall be prepared and presented in accordance with the provision of Exhibit G.

Deliverables:
- Quarterly Project Progress Reports
- Draft and Final Project Completion Report

Task 2 Land Purchase/Easement: Budget Category (b)
There is no land purchase or easement acquisition. Therefore, this task does not apply to the project.

Task 3 Planning/Design/Engineering and Environmental Documentation: Budget Category (c)

Task 3a Feasibility Studies/Assessment and Evaluation
Scoping for integration of software to business operations software and development of the conceptual designs and project plan will be conducted under this task.

Deliverables:
- Conceptual designs
Task 3b CEQA Documentation
This Project does not require any environmental documentation as part of the project development process.

Task 3c Permitting
This Project does not require any permitting as part of the project development process.

Task 3d Design
This task includes preliminary conceptual design, developing a plan and final design for project implementation, and creating a sequential work plan.

Deliverables:
- Final Work Plan

Task 3e Project Monitoring Plan
Develop and submit a Project Monitoring Plan. Along with the Project Performance Measures Table provided by DWR project manager, the Project Monitoring Plan will include baseline conditions, a brief discussion of monitoring systems to be used, methodology of monitoring, frequency of monitoring, and location of monitoring points (reference Exhibit J in this agreement for guidance).

Deliverables:
- Project Monitoring Plan

Task 4 Construction/Implementation: Budget Category (d)

Task 4a Contract Services
Activities necessary to secure a contractor and award the contract include: develop bid documents, prepare advertisement and contract documents for construction contract bidding, conduct pre-bid meeting, bid opening and evaluation, selection of the contractor, award of contract, and issuance of notice to proceed. This task consists of contracting including solicitations for bids and awards of contracts for consultant and advanced metering infrastructure/automatic meter reading (AMI/AMR) vendor.

Deliverables:
- Bid documents
- Proof of Advertisement
- Award of contract
- Notice to proceed

Task 4b Construction Administration
Manage contractor submittal review, answer requests for information, and issue work directives. A full time engineering construction observer will be on site for the duration of the project. Construction observer duties include: documenting of pre-construction conditions, daily construction diary, preparing change orders, addressing questions of contractors on site, reviewing/ updating project schedule, reviewing contractor log submittals and pay requests, forecasting cash flow, notifying contractor if work is not acceptable. Review the consultant and AMI/AMR vendor’s schedule and recommendations, manage and coordinate staff and departments involved with the Project, and provide implementation inspection and management oversight. All construction activities related to water meter replacements and upgrades hardware for AMR capability will be conducted by MMWD staff and will not require a separate construction contract. Installation of software will be conducted by software staff and the consultant contracts will be monitored by MMWD’s Information Technology staff. Onsite irrigation equipment retrofits will be completed by customers, with MMWD staff providing pre- and post-retrofit inspections to verify that the equipment is installed and functioning properly.
Deliverables:

☐ Notice of Completion

Task 4c Construction/Implementation Activities

4c(1) Outreach: Work with project irrigation account customers to explain project parameters, establish new water budgets, and ensure transition to water efficient irrigation equipment.

4c(2) Irrigation Equipment Rebate Program: Launch and administer a water efficient irrigation equipment rebate program for project irrigation account customers.

4c(3) AMI/AMR Installation: Install and configure the new AMI/AMR hardware and software at approximately 800 project sites and within the administration center, and field test to validate system functionality and integration with software enterprise system.

4c(4) Data Analysis: Launch the new AMI/AMR system, collecting and analyze water use data.

Deliverables:

☐ Photographic documentation

☐ Engineers Certification
Implementing Agency: Association of Bay Area Governments

Project Description: The Regional Water Management Group authorized ABAG to act as the applicant and the grant manager for the Proposition 84, IRWM 2014 Drought Grant.

ABAG will administer these funds and respond to DWR’s reporting and compliance requirements associated with the grant administration. This office will act in a coordination role: disseminating grant compliance information to the project managers responsible for implementing the projects contained in this agreement, obtaining and retaining evidence of compliance (e.g., CEQA/NEPA documents, reports, monitoring compliance documents, labor requirements, etc.), obtaining data for quarterly progress reports from individual project managers, assembling and submitting quarterly progress reports to the State, and coordinating all invoicing and payment of invoices.

Task 1 Direct Project Administration: Budget Category (a)

Task 1a Agreement Administration
ABAG will respond to DWR’s reporting and compliance requirements associated with the grant administration and will coordinate with the project managers responsible for implementing the projects contained in this agreement.

Task 1b Invoicing
ABAG will be responsible for compiling invoices for submittal to DWR. This includes collecting invoice documentation from each of the project proponents and compiling the information into a DWR Invoice Packet.

Task 1c Progress Reports and Project Completion Report(s)
ABAG will be responsible for compiling quarterly progress reports for submittal to DWR. ABAG will coordinate with project proponent staff to retain consultants as needed to prepare and submit Quarterly, Progress Reports and Final Project Completion Reports for each project, as well as the Grant Completion Reports.

Reports will meet generally accepted professional standards for technical reporting and the requirements terms of the contract with DWR outlined in Exhibit G of this agreement. For example, Quarterly Progress Reports will explain the status of the project and will include the following information: summary of the work completed for the project during the reporting period; activities and milestones achieved; and accomplishments and any problems encountered in the performance of work. Project Completion Reports will include: documentation of actual work done, changes and amendments to each project, a final schedule showing actual progress versus planned progress, and copies of final documents and reports generated during the project.

Deliverables:
- Executed Grant Agreement
- Invoices and associated backup documentation
- Quarterly Progress Reports
- Draft and Final Project Completion Report
## EXHIBIT B
### BUDGET

<table>
<thead>
<tr>
<th>Project #</th>
<th>Individual Project Title</th>
<th>Requested Grant Amount</th>
<th>Cost Share: non state fund source</th>
<th>Additional Cost Share</th>
<th>Total</th>
<th>Cost Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lower Cherry Aqueduct Emergency Rehabilitation Project</td>
<td>$3,000,000</td>
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<td>$4,029,548</td>
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**Overall Budget**

- **Requested Grant Amount:** $32,178,423
- **Cost Share: non state fund source:** $25,850,000
- **Additional Cost Share:** $33,597,888
- **Total:** $91,626,311
- **Cost Share:** 28%
### Project 1: Lower Cherry Aqueduct Emergency Rehabilitation Project

<table>
<thead>
<tr>
<th>Task</th>
<th>Category</th>
<th>Requested Grant Amount</th>
<th>Cost Share: Non-State (Required Funding Match)</th>
<th>Additional Cost Share</th>
<th>TOTAL PROJECT COST</th>
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<tbody>
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### Project 2: Zone 7 Water Supply Drought Preparedness Project

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<tr>
<th>Task</th>
<th>Category</th>
<th>Requested Grant Amount</th>
<th>Cost Share: Non-State (Required Funding Match)</th>
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### Project 3: Los Carneros Water District and Milliken-Sarco-Tulocay Recycled Water Pipelines

<table>
<thead>
<tr>
<th>Task</th>
<th>Category</th>
<th>Requested Grant Amount</th>
<th>Cost Share: Non-State (Required Funding Match)</th>
<th>Additional Cost Share</th>
<th>TOTAL PROJECT COST</th>
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### Project 4: Sunnyvale Continuous Recycled Water Production Facilities and Wolfe Road Pipeline

<table>
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<tr>
<th>Task</th>
<th>Category</th>
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### Project 5: DERWA Phase 3 Recycled Water Expansion Project

<table>
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<th>Task</th>
<th>Category</th>
<th>Requested Grant Amount</th>
<th>Cost Share: Non-State (Required Funding Match)</th>
<th>Additional Cost Share</th>
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<td><strong>$10,022,662</strong></td>
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### Project 6: Calistoga Recycled Water Storage Facility

<table>
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<tr>
<th>Task</th>
<th>Category</th>
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<th>Cost Share: Non-State (Required Funding Match)</th>
<th>Additional Cost Share</th>
<th>TOTAL PROJECT COST</th>
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## Project 7: Drought Relief for South Coast San Mateo County

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## Project 8: Stinson Beach Water Supply & Drought Preparedness Plan

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## Project 9: Bay Area Regional Drought Relief Conservation Program

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### Project 10: WaterSMART Irrigation with AMI/AMR

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### Project 3: Los Carneros Water District and Milliken-Sarco-Tulocay Recycled Water Pipelines

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### Project 4: Sunnyvale Continuous Recycled Water Production Facilities and Wolfe Road Pipeline

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### Project 5: DERWA Phase 3 Recycled Water Expansion Project

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### Project 6: Calistoga Recycled Water Storage Facility

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### Project 7: Drought Relief for South Coast San Mateo County

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### Project 8: Stinson Beach Water Supply & Drought Preparedness Plan

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### Project 9: Bay Area Regional Drought Relief Conservation Program

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### Project 10: WaterSMART Irrigation with AMI/AMR

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D.1) **ACCOUNTING AND DEPOSIT OF FUNDING DISBURSEMENT:**

   a) Separate Accounting of Funding Disbursements and Interest Records: Grantee shall account for the money disbursed pursuant to this Grant Agreement separately from all other Grantee funds. Grantee shall maintain audit and accounting procedures that are in accordance with generally accepted accounting principles and practices, consistently applied. Grantee shall keep complete and accurate records of all receipts, disbursements, and interest earned on expenditures of such funds. Grantee shall require its contractors or subcontractors to maintain books, records, and other documents pertinent to their work in accordance with generally accepted accounting principles and practices. Records are subject to inspection by State at any and all reasonable times.

   b) Fiscal Management Systems and Accounting Standards: The Grantee agrees that, at a minimum, its fiscal control and accounting procedures will be sufficient to permit tracing of grant funds to a level of expenditure adequate to establish that such funds have not been used in violation of state law or this Grant Agreement.

   c) Disposition of Money Disbursed: All money disbursed pursuant to this Grant Agreement shall be deposited, administered, and accounted for pursuant to the provisions of applicable law.

   d) Remittance of Unexpended Funds: Grantee shall remit to State any unexpended funds that were disbursed to Grantee under this Grant Agreement and were not used to pay Eligible Project Costs within a period of sixty (60) calendar days from the final disbursement from State to Grantee of funds or, within thirty (30) calendar days of the expiration of the Grant Agreement, whichever comes first.

D.2) **ACKNOWLEDGEMENT OF CREDIT:**

   Grantee shall include appropriate acknowledgement of credit to the State and to all cost-sharing partners for their support when promoting the Projects or using any data and/or information developed under this Grant Agreement. During construction of each project, Grantee shall install a sign at a prominent location, which shall include a statement that the project is financed under the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006, administered by State of California, Department of Water Resources. Grantee shall notify State that the sign has been erected by providing them with a site map with the sign location noted and a photograph of the sign.

D.3) **AIR OR WATER POLLUTION VIOLATION:** Under State laws, the Grantee shall not be: (1) in violation of any order or resolution not subject to review promulgated by the State Air Resources Board or an air pollution control district; (2) subject to cease and desist order not subject to review issued pursuant to Section 13301 of the Water Code for violation of waste discharge requirements or discharge prohibitions; or (3) finally determined to be in violation of provisions of federal law relating to air or water pollution.

D.4) **AMENDMENT:** This Grant Agreement may be amended at any time by mutual agreement of the Parties, except insofar as any proposed amendments are in any way contrary to applicable law. Requests by the Grantee for amendments must be in writing stating the amendment request and the reason for the request. State shall have no obligation to agree to an amendment.

D.5) **AMERICANS WITH DISABILITIES ACT:** By signing this Grant Agreement, Grantee assures State that it complies with the Americans with Disabilities Act (ADA) of 1990, (42 U.S.C., 12101 et seq.), which prohibits discrimination on the basis of disability, as well as all applicable regulations and guidelines issued pursuant to the ADA.

D.6) **APPROVAL:** This Agreement is of no force or effect until signed by all parties to the agreement. Grantee may not submit invoices or receive payment until all required signatures have been obtained.

D.7) **AUDITS:** State reserves the right to conduct an audit at any time between the execution of this Grant Agreement and the completion of Projects, with the costs of such audit borne by State. After completion of the Projects, State may require Grantee to conduct a final audit to State’s specifications, at Grantee’s expense, such audit to be conducted by and a report prepared by an independent
Certified Public Accountant. Failure or refusal by Grantee to comply with this provision shall be considered a breach of this Grant Agreement, and State may elect to pursue any remedies provided in Paragraph 14 or take any other action it deems necessary to protect its interests.

Pursuant to Government Code Section 8546.7, the Grantee shall be subject to the examination and audit by the State for a period of three years after final payment under this Grant Agreement with respect to all matters connected with this Grant Agreement, including but not limited to, the cost of administering this Grant Agreement. All records of Grantee or its contractor or subcontractors shall be preserved for this purpose for at least three (3) years after project completion or final billing, whichever comes later.

D.8) **BUDGET CONTINGENCY:** If the Budget Act of the current year covered under this Grant Agreement does not appropriate sufficient funds for the Proposition 84 Implementation Grant Program, this Grant Agreement shall be of no force and effect. This provision shall be construed as a condition precedent to the obligation of State to make any payments under this Grant Agreement. In this event, State shall have no liability to pay any funds whatsoever to Grantee or to furnish any other considerations under this Grant Agreement and Grantee shall not be obligated to perform any provisions of this Grant Agreement. Nothing in this Grant Agreement shall be construed to provide Grantee with a right of priority for payment over any other Grantee. If funding for any fiscal year after the current year covered by this Grant Agreement is reduced or deleted by the Budget Act for purposes of this program, State shall have the option to either cancel this Grant Agreement with no liability occurring to State, or offer a Grant Agreement amendment to Grantee to reflect the reduced amount.

D.9) **CALIFORNIA CONSERVATION CORPS:** As required in Water Code section 79038(b), Grantee shall examine the feasibility of using the California Conservation Corps or community conservation corps to accomplish the habitat restoration, enhancement and protection activities listed in the Exhibit A, Work Plan, and shall use the services of one of these organizations whenever feasible.

D.10) **CEQA:** Activities funded under this Grant Agreement, regardless of funding source, must be in compliance with the California Environmental Quality Act (CEQA) (Public Resources Code §21000 et seq.). Information on CEQA may be found at the following links:

Environmental Information: [http://ceres.ca.gov/ceqa/](http://ceres.ca.gov/ceqa/)


D.11) **CHILD SUPPORT COMPLIANCE ACT:** For any Grant Agreement in excess of $100,000, the Grantee acknowledges in accordance with Public Contract Code 7110, that:

a) The Grantee recognizes the importance of child and family support obligations and shall fully comply with all applicable state and federal laws relating to child and family support enforcement, including, but not limited to, disclosure of information and compliance with earnings assignment orders, as provided in Chapter 8 (commencing with section 5200) of Part 5 of Division 9 of the Family Code; and

b) The Grantee, to the best of its knowledge is fully complying with the earnings assignment orders of all employees and is providing the names of all new employees to the New Hire Registry maintained by the California Employment Development Department.

D.12) **CLAIMS DISPUTE:** Any claim that the Grantee may have regarding performance of this agreement including, but not limited to, claims for additional compensation or extension of time, shall be submitted to the State’s Project Manager, within thirty (30) days of the Grantee’s knowledge of the claim. State and Grantee shall then attempt to negotiate a resolution of such claim and process an amendment to this Agreement to implement the terms of any such resolution.

D.13) **COMPETITIVE BIDDING AND PROCUREMENTS:** Grantee shall comply with all applicable laws and regulations regarding securing competitive bids and undertaking competitive negotiations in Grantee’s contracts with other entities for acquisition of goods and services and construction of public works with funds provided by State under this Grant Agreement.
D.14) **COMPUTER SOFTWARE:** Grantee certifies that it has appropriate systems and controls in place to ensure that state funds will not be used in the performance of this Grant Agreement for the acquisition, operation, or maintenance of computer software in violation of copyright laws.

D.15) **CONFLICT OF INTEREST:** All participants are subject to State and Federal conflict of interest laws. Failure to comply with these laws, including business and financial disclosure provisions, will result in the application being rejected and any subsequent contract being declared void. Other legal action may also be taken. Applicable statutes include, but are not limited to, Government Code, Section 1090 and Public Contract Code, Sections 10410 and 10411, for State conflict of interest requirements.

a) **Current State Employees:** No State officer or employee shall engage in any employment, activity, or enterprise from which the officer or employee receives compensation or has a financial interest and which is sponsored or funded by any State agency, unless the employment, activity, or enterprise is required as a condition of regular State employment. No State officer or employee shall contract on his or her own behalf as a consultant with any State agency to provide goods or services.

b) **Former State Employees:** For the two-year period from the date he or she left State employment, no former State officer or employee may enter into a contract in which he or she engaged in any of the negotiations, transactions, planning, arrangements, or any part of the decision-making process relevant to the contract while employed in any capacity by any State agency. For the twelve-month period from the date he or she left State employment, no former State officer or employee may enter into a contract with any State agency if he or she was employed by that State agency in a policy-making position in the same general subject area as the proposed contract within the twelve-month period prior to his or her leaving State service.

c) **Employees of the Grantee:** Employees of the Grantee shall comply with all applicable provisions of law pertaining to conflicts of interest, including but not limited to any applicable conflict of interest provisions of the California Political Reform Act, Cal. Gov’t Code § 87100 et seq.

d) **Employees and Consultants to the Grantee:** Individuals working on behalf of a Grantee may be required by the Department to file a Statement of Economic Interests (Fair Political Practices Commission Form 700) if it is determined that an individual is a consultant for Political Reform Act purposes.

D.16) **DELIVERY OF INFORMATION, REPORTS, AND DATA:** Grantee agrees to expeditiously provide throughout the term of this Grant Agreement, such reports, data, information, and certifications as may be reasonably required by State.

D.17) **DISPOSITION OF EQUIPMENT:** Grantee shall provide to State, not less than 30 calendar days prior to submission of the final invoice, an itemized inventory of equipment purchased with funds provided by State. The inventory shall include all items with a current estimated fair market value of more than $5,000.00 per item. Within 60 calendar days of receipt of such inventory State shall provide Grantee with a list of the items on the inventory that State will take title to. All other items shall become the property of Grantee. State shall arrange for delivery from Grantee of items that it takes title to. Cost of transportation, if any, shall be borne by State.

D.18) **DRUG-FREE WORKPLACE CERTIFICATION:** Certification of Compliance: By signing this Grant Agreement, Grantee, its contractors or subcontractors hereby certify, under penalty of perjury under the laws of State of California, compliance with the requirements of the Drug-Free Workplace Act of 1990 (Government Code 8350 et seq.) and have or will provide a drug-free workplace by taking the following actions:

a) **Drug-free Awareness Program:** Publish a statement notifying employees, contractors, and subcontractors that unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited and specifying actions to be taken against employees, contractors, or subcontractors for violations, as required by Government Code Section 8355(a)(1).

b) **Establish a Drug-Free Awareness Program:** As required by Government Code Section 8355(a)(2) to inform employees, contractors, or subcontractors about all of the following:
i) The dangers of drug abuse in the workplace,
ii) Grantee’s policy of maintaining a drug-free workplace,
iii) Any available counseling, rehabilitation, and employee assistance programs, and
iv) Penalties that may be imposed upon employees, contractors, and subcontractors for drug abuse violations.

c) Provide, as required by Government Code Sections 8355(a)(3), that every employee, contractor, and/or subcontractor who works under this Grant Agreement:
i) Will receive a copy of Grantee’s drug-free policy statement, and
ii) Will agree to abide by terms of Grantee’s condition of employment, contract or subcontract.

D.19) **FINAL INSPECTIONS AND CERTIFICATION OF REGISTERED PROFESSIONAL:** Upon completion of the Project, Grantee shall provide for a final inspection and certification by the appropriate registered professional (California Registered Civil Engineer or Geologist) that the Project has been completed in accordance with submitted final plans and specifications and any modifications thereto and in accordance with this Grant Agreement. Grantee shall notify the State’s Project Manager of the inspection date at least 14 calendar days prior to the inspection in order to provide State the opportunity to participate in the inspection.

D.20) **GRANTEE COMMITMENTS:** Grantee accepts and agrees to comply with all terms, provisions, conditions and commitments of this Grant Agreement, including all incorporated documents, and to fulfill all assurances, declarations, representations, and statements made by the Grantee in the application, documents, amendments, and communications filed in support of its request for funding.

D.21) **GRANTEE NAME CHANGE:** Approval of the State’s Program Manager is required to change the Grantee’s name as listed on this Grant Agreement. Upon receipt of legal documentation of the name change the State will process an amendment. Payment of invoices presented with a new name cannot be paid prior to approval of said amendment.

D.22) **GOVERNING LAW:** This Grant Agreement is governed by and shall be interpreted in accordance with the laws of the State of California.

D.23) **INDEMNIFICATION:** Grantee shall indemnify and hold and save the State, its officers, agents, and employees, free and harmless from any and all liabilities for any claims and damages (including inverse condemnation) that may arise out of the Projects and this Agreement, including, but not limited to any claims or damages arising from planning, design, construction, maintenance and/or operation of levee rehabilitation measures for this Project and any breach of this Agreement. Grantee shall require its contractors or subcontractors to name the State, its officers, agents and employees as additional insured on their liability insurance for activities undertaken pursuant to this Agreement.

D.24) **INDEPENDENT CAPACITY:** Grantee, and the agents and employees of Grantees, in the performance of the Grant Agreement, shall act in an independent capacity and not as officers, employees, or agents of the State.

D.25) **INSPECTION OF BOOKS, RECORDS, AND REPORTS:** During regular office hours, each of the parties hereto and their duly authorized representatives shall have the right to inspect and to make copies of any books, records, or reports of either party pertaining to this Grant Agreement or matters related hereto. Each of the parties hereto shall maintain and shall make available at all times for such inspection accurate records of all its costs, disbursements, and receipts with respect to its activities under this Grant Agreement. Failure or refusal by Grantee to comply with this provision shall be considered a breach of this Grant Agreement, and State may withhold disbursements to Grantee or take any other action it deems necessary to protect its interests.

D.26) **INSPECTIONS OF PROJECT BY STATE:** State shall have the right to inspect the work being performed at any and all reasonable times during the term of the Grant Agreement. This right shall extend to any subcontracts, and Grantee shall include provisions ensuring such access in all its contracts or subcontracts entered into pursuant to its Grant Agreement with State.

D.27) **INVOICE DISPUTES:** In the event of an invoice dispute, payment will not be made until the dispute is resolved and a corrected invoice submitted. Failure to use the address exactly as provided may result in
return of the invoice to the Grantee. Payment shall be deemed complete upon deposit of the payment, properly addressed, postage prepaid, in the United States mail. Any claim that Grantee may have regarding the performance of this Grant Agreement including, but not limited to claims for additional compensation or extension of time, shall be submitted to the DWR Project Manager within thirty (30) calendar days of Grantee’s knowledge of the claim. State and Grantee shall then attempt to negotiate a resolution of such claim and process an amendment to the Grant Agreement to implement the terms of any such resolution.

D.28) LABOR CODE COMPLIANCE: The Grantee will be required to keep informed of and take all measures necessary to ensure compliance with applicable California Labor Code requirements, including, but not limited to, Section 1720 et seq. of the California Labor Code regarding public works, limitations on use of volunteer labor (California Labor Code Section 1720.4), labor compliance programs (California Labor Code Section 1771.5) and payment of prevailing wages for work done and funded pursuant to these Guidelines, including any payments to the Department of Industrial Relations under Labor Code Section 1771.3.

D.29) MODIFICATION OF OVERALL WORK PLAN: At the request of the Grantee, the State may at its sole discretion approve non-material changes to the portions of Exhibit A which concern the budget and schedule without formally amending this Grant Agreement. Non-material changes with respect to the budget are changes that only result in reallocation of the budget and will not result in an increase in the amount of the State Grant Agreement. Non-material changes with respect to each Project schedule are changes that will not extend the term of this Grant Agreement. Requests for non-material changes to the budget and schedule must be submitted by the Grantee to the State in writing and are not effective unless and until specifically approved by the State’s Project Manager in writing.

D.30) NONDISCRIMINATION: During the performance of this Grant Agreement, Grantee and its contractors or subcontractors shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex (gender), sexual orientation, race, color, ancestry, religion, creed, national origin (including language use restriction), pregnancy, physical disability (including HIV and AIDS), mental disability, medical condition (cancer/-genetic characteristics), age (over 40), marital status, and denial of medical and family care leave or pregnancy disability leave. Grantee and its contractors or subcontractors shall ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. Grantee and its contractors or subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Gov. Code §12990 (a-f) et seq.) and the applicable regulations promulgated there under (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part hereof as if set forth in full. Grantee and its contractors or subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

Grantee shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under the Grant Agreement.

D.31) NO DISCRIMINATION AGAINST DOMESTIC PARTNERS: For contracts over $100,000 executed or amended after January 1, 2007, the Grantee certifies by signing this Grant Agreement, under penalty of perjury under the laws of State of California that Grantee is in compliance with Public Contract Code section 10295.3.

D.32) OPINIONS AND DETERMINATIONS: Where the terms of this Grant Agreement provide for action to be based upon, judgment, approval, review, or determination of either party hereto, such terms are not intended to be and shall never be construed as permitting such opinion, judgment, approval, review, or determination to be arbitrary, capricious, or unreasonable.

D.33) PERFORMANCE AND ASSURANCES: Grantee agrees to faithfully and expeditiously perform or cause to be performed all Project work as described in Exhibit A, “Work Plan” and to apply State funds received only to Eligible Project Costs in accordance with applicable provisions of the law.
D.34) **PRIORITY HIRING CONSIDERATIONS:** If this Grant Agreement includes services in excess of $200,000, the Grantee shall give priority consideration in filling vacancies in positions funded by the Grant Agreement to qualified recipients of aid under Welfare and Institutions Code Section 11200 in accordance with Pub. Contract Code §10353.

D.35) **PROHIBITION AGAINST DISPOSAL OF PROJECT WITHOUT STATE PERMISSION:** The Grantee shall not sell, abandon, lease, transfer, exchange, mortgage, hypothecate, or encumber in any manner whatsoever all or any portion of any real or other property necessarily connected or used in conjunction with the Projects, or with Grantee’s service of water, without prior permission of State. Grantee shall not take any action, including but not limited to actions relating to user fees, charges, and assessments that could adversely affect the ability of Grantee to meet its obligations under this Grant Agreement, without prior written permission of State. State may require that the proceeds from the disposition of any real or personal property be remitted to State.

D.36) **REMEDIES NOT EXCLUSIVE:** The use by either party of any remedy specified herein for the enforcement of this Grant Agreement is not exclusive and shall not deprive the party using such remedy of, or limit the application of, any other remedy provided by law.

D.37) **RETENTION:** Notwithstanding any other provision of this Grant Agreement, State shall, for each project, withhold five percent (5.0%) until January 1, 2018 and ten percent (10.0%), thereafter, of the funds requested by Grantee for reimbursement of Eligible Costs. Each project in this Grant Agreement will be eligible to release its respective retention when that project is completed and Grantee has met requirements of Paragraph 19, “Submissions of Reports” as follows: At such time as the “Project Completion Report” required under Paragraph 19 is submitted to and approved by State, State shall disburse the retained funds as to that project to Grantee, except in the case of the last project to be completed under this Grant Agreement, in which case retention for such project will not be disbursed until the “Grant Completion Report” is submitted to and approved by State.

D.38) **RIGHTS IN DATA:** Grantee agrees that all data, plans, drawings, specifications, reports, computer programs, operating manuals, notes and other written or graphic work produced in the performance of this Grant Agreement shall be made available to the State and shall be in the public domain to the extent to which release of such materials is required under the California Public Records Act, Cal. Gov’t Code §6250 et seq. Grantee may disclose, disseminate and use in whole or in part, any final form data and information received, collected and developed under this Grant Agreement, subject to appropriate acknowledgement of credit to State for financial support. Grantee shall not utilize the materials for any profit-making venture or sell or grant rights to a third party who intends to do so. The State shall have the right to use any data described in this paragraph for any public purpose.

D.39) **SEVERABILITY:** Should any portion of this Grant Agreement be determined to be void or unenforceable, such shall be severed from the whole and the Grant Agreement shall continue as modified.

D.40) **STATE REVIEWS:** The parties agree that review or approval of projects applications, documents, permits, plans, and specifications or other project information by the State is for administrative purposes only and does not relieve the Grantee of their responsibility to properly plan, design, construct, operate, maintain, implement, or otherwise carry out the projects.

D.41) **SUSPENSION OF PAYMENTS:** This Grant Agreement may be subject to suspension of payments or termination, or both, and Grantee may be subject to debarment if the State determines that: a) Grantee, its contractors, or subcontractors have made a false certification, or b) Grantee, its contractors, or subcontractors violates the certification by failing to carry out the requirements noted in this Grant Agreement.

D.42) **SUCCESSORS AND ASSIGNS:** This Grant Agreement and all of its provisions shall apply to and bind the successors and assigns of the parties. No assignment or transfer of this Grant Agreement or any part thereof, rights hereunder, or interest herein by the Grantee shall be valid unless and until it is approved by State and made subject to such reasonable terms and conditions as State may impose.

D.43) **TERMINATION BY GRANTEE:** Subject to State approval which may be reasonably withheld, Grantee may terminate this Agreement and be relieved of contractual obligations. In doing so, Grantee must provide...
a reason(s) for termination. Grantee must submit all progress reports summarizing accomplishments up until termination date.

D.44) **TERMINATION FOR CAUSE:** Subject to the right to cure under Paragraph 14, the State may terminate this Grant Agreement and be relieved of any payments should Grantee fail to perform the requirements of this Grant Agreement at the time and in the manner herein, provided including but not limited to reasons of default under Paragraph 14.

D.45) **TERMINATION WITHOUT CAUSE:** The State may terminate this Agreement without cause on 30 days advance written notice. The Grantee shall be reimbursed for all reasonable expenses incurred up to the date of termination.

D.46) **THIRD PARTY BENEFICIARIES:** The parties to this Agreement do not intend to create rights in, or grant remedies to, any third party as a beneficiary of this Agreement, or any duty, covenant, obligation or understanding established herein.

D.47) **TIMELINESS:** Time is of the essence in this Grant Agreement.

D.48) **TRAVEL:** Grantee agrees that travel and per diem costs shall NOT be eligible for reimbursement with State funds, and shall NOT be eligible for computing Grantee cost match. Travel includes the costs of transportation, subsistence, and other associated costs incurred by personnel during the term of this Grant Agreement.

D.49) **WAIVER OF RIGHTS:** None of the provisions of this Grant Agreement shall be deemed waived unless expressly waived in writing. It is the intention of the parties here to that from time to time either party may waive any of its rights under this Grant Agreement unless contrary to law. Any waiver by either party of rights arising in connection with the Grant Agreement shall not be deemed to be a waiver with respect to any other rights or matters, and such provisions shall continue in full force and effect.

D.50) **WORKERS’ COMPENSATION:** Grantee affirms 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 Grantee affirms that it will comply with such provisions before commencing the performance of the work under this Grant Agreement and will make its contractors and subcontractors aware of this provision.
EXHIBIT E
AUTHORIZING RESOLUTION

ASSOCIATION OF BAY AREA GOVERNMENTS
ADMINISTRATIVE COMMITTEE

RESOLUTION NO. 09-14

AUTHORIZING THE EXECUTIVE DIRECTOR OR DESIGNEE, TO SUBMIT AN
APPLICATION AND EXECUTE AN AGREEMENT WITH THE CALIFORNIA
DEPARTMENT OF WATER RESOURCES ON BEHALF OF THE SAN FRANCISCO
BAY REGION IRWMP DROUGHT RELIEF PROJECTS

NOW, THEREFORE, BE IT RESOLVED, that the Administrative Committee of
the Association of Bay Area Governments hereby approves that application be made to
the California Department of Water Resources to obtain an Integrated Regional Water
Management Implementation Grant pursuant to the Safe Drinking Water, Water Quality
and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Public
Resource Code Section 75001 et seq.), and to enter into an agreement to receive a
grant for the Bay Area Drought Relief Program (BAYDRP). The Executive Director, or
designee, of the Association of Bay Area Governments is hereby authorized and
directed to prepare the necessary data, conduct investigations, file such application,
and execute a grant agreement with the California Department of Water Resources.

The foregoing was adopted by the Administrative Committee this 13th day of June,
2014.

[Signature]
Julie Pierce
Chair

Certification of Executive Board Approval

I, the undersigned, the appointed and qualified Secretary-Treasurer of the Association
of Bay Area Governments (Association), do hereby certify that the foregoing resolution
was adopted by the Administrative Committee of the Association at a duly called
meeting held on the 13th day of June, 2014.

[Signature]
Ezra Rapport
Secretary-Treasurer

Approved as To Legal Form

[Signature]
Kenneth K. Moy
Legal Counsel

-1-
Grantee has assigned, for each project, a Local Project Sponsor according to the roles of the participating agencies identified in the IRWM Plan. Local Project Sponsors may act on behalf of Grantee for the purposes of individual project management, oversight, compliance, and operations and maintenance. Local Project Sponsors are identified for each Sponsored Project below:

<table>
<thead>
<tr>
<th>Sponsored Project</th>
<th>Sponsor Agency</th>
<th>Agency Address</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project 1 - Lower Cherry Aqueduct Emergency Rehabilitation Project</strong></td>
<td>San Francisco Public Utilities Commission Attn: Michelle Novotny</td>
<td>525 Golden Gate Avenue, 13th Floor San Francisco, CA 94102</td>
</tr>
<tr>
<td><strong>Project 2 - Zone 7 Water Supply Drought Preparedness Project</strong></td>
<td>Alameda County Flood Control and Water Conservation District, Zone 7 (Zone 7 Water Agency) Attn.: Rhett Alzona</td>
<td>100 North Canyons Parkway Livermore, CA 94550</td>
</tr>
<tr>
<td><strong>Project 3 - Los Cameros Water District and Milliken-Sarco-Tulocay Recycled Water Pipelines</strong></td>
<td>Napa Sanitation District Attn: Jeff Tucker</td>
<td>1515 Soscol Ferry Road Napa, CA 94558</td>
</tr>
<tr>
<td><strong>Project 4 - Sunnyvale Continuous Recycled Water Production Facilities and Wolfe Road Pipeline</strong></td>
<td>Santa Clara Valley Water District Attn: Tracy Hemmeter City of Sunnyvale Attn: Bhavani Yerrapotu</td>
<td>5905 Winfield Blvd San Jose, CA 95123</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1444 Borregas Ave Sunnyvale, CA 94089</td>
</tr>
<tr>
<td><strong>Project 5 - DERWA Phase 3 Recycled Water Expansion Project</strong></td>
<td>Dublin San Ramon Services District D Attn: Ms. Rhodora Biagtan East Bay Municipal Utility District Attn: Ms. Linda Hu</td>
<td>Dublin San Ramon Services District 7051 Dublin Blvd. Dublin, CA 94568 East Bay Municipal Utility District 375 11th St., Oakland 94607</td>
</tr>
<tr>
<td><strong>Project 6 - Calistoga Recycled Water Storage Facility</strong></td>
<td>City of Calistoga Department of Public Works</td>
<td>414 Washington Street Calistoga, CA 94515</td>
</tr>
<tr>
<td><strong>Project 7 - Drought Relief for South Coast San Mateo County</strong></td>
<td>San Mateo Resource Conservation District Attn: Kellyy Nelson</td>
<td>625 Miramontes Street, Suite 103, Half Moon Bay, CA 94019</td>
</tr>
<tr>
<td><strong>Project 8 - Stinson Beach Water Supply &amp; Drought Preparedness Plan</strong></td>
<td>Stinson Beach County Water District Attn: Ed Schmidt</td>
<td>3785 Shoreline Highway Stinson Beach, CA 94970</td>
</tr>
<tr>
<td><strong>Project 9 - Bay Area Regional Drought Relief and Water Conservation Project</strong></td>
<td>Stopwaste Attn: Teresa Eade and Stephanie Stem</td>
<td>1537 Webster Street Oakland, CA 94612</td>
</tr>
<tr>
<td><strong>Project 10 - WaterSMART Irrigation with AMI/AMR</strong></td>
<td>Marin Municipal Water District Attn: Thomasin Grim</td>
<td>220 Nellen Avenue Corte Madera, CA 94925-1169</td>
</tr>
<tr>
<td><strong>Project 11 - Grant Administration</strong></td>
<td>Association of Bay Area Governments Attn: Jennifer Krebs</td>
<td>P.O. Box 2050 Oakland, CA 94604-2050</td>
</tr>
</tbody>
</table>
EXHIBIT G
REPORT FORMATS AND REQUIREMENTS

The following reporting formats should be utilized. Please obtain State approval prior to submitting a report in an alternative format.

PROGRESS REPORTS
Progress reports shall generally use the following format. This format may be modified as necessary to effectively communicate information. For each project, discuss the following at the task level, as organized in Exhibit A Work Plan:

- Percent complete estimate.
- Discussion of work accomplished during the reporting period.
- Milestones or deliverables completed/submitted during the reporting period.
- Scheduling concerns and issues encountered that may delay completion of the task.

For each project, discuss the following at the project level, as organized in Exhibit A Work Plan:

- Work anticipated for the next reporting period.
- Photo documentation, as appropriate.
- Any schedule or budget modifications approved by DWR during the reporting period.

PROJECT COMPLETION REPORT
Project Completion Reports shall generally use the following format.

Executive Summary
Should include a brief summary of project information and include the following items:

- Brief description of work proposed to be done in the original Grant application.
- Description of actual work completed and any deviations from Exhibit A. List any official amendments to this Grant Agreement, with a short description of the amendment.

Reports and/or Products
The following items should be provided:

- Final Evaluation report
- Electronic copies of any data collected, not previously submitted
- As-built drawings
- Final geodetic survey information
- Self-Certification that the Project meets the stated goal of the Grant Agreement (e.g. 100-year level of flood protection, HMP standard, PI-84-99, etc.)
- Project photos
- Discussion of problems that occurred during the work and how those problems were resolved
- A final project schedule showing actual progress versus planned progress

Costs and Dispositions of Funds
A list of showing:

- The date each invoice was submitted to State
- The amount of the invoice
- The date the check was received
- The amount of the check (If a check has not been received for the final invoice, then state this in this section.)
• A summary of the payments made by the Grantee for meeting its cost sharing obligations under this Grant Agreement.
• A summary of final funds disbursement including:
  o Labor cost of personnel of agency/ major consultant/sub-consultants. Indicate personnel, hours, rates, type of profession and reason for consultant, i.e., design, CEQA work, etc.
  o Project cost information, shown by material, equipment, labor costs, and any change orders
  o Any other incurred cost detail
  o A statement verifying separate accounting of funding disbursements
• Summary of project cost including the following items:
  o Accounting of the cost of project expenditure;
  o Include all internal and external costs not previously disclosed; and
  o A discussion of factors that positively or negatively affected the project cost and any deviation from the original project cost estimate.

Additional Information
• Benefits derived from the project, with quantification of such benefits provided, if applicable.
• A final project schedule showing actual progress versus planned progress as shown in Exhibit B.
• Certification from a California Registered Professional (Civil Engineer or Geologist, as appropriate) that the project was conducted in accordance with the approved work plan and any approved modifications thereto.
• Submittal schedule for the Post Performance Report and an outline of the proposed reporting format.

GRANT COMPLETION REPORT
The Grant Completion Report shall generally use the following format. This format may be modified as necessary to effectively communicate information on the various projects in the IRWM Program funded by this Grant Agreement, and includes the following:

Executive Summary
The Executive Summary consists of a maximum of twenty (20) pages summarizing information for the grant as well as the individual projects.

Reports and/or products
• Summary of the regional priorities, objectives, and water management strategies of the IRWM Plan.
• Brief comparison of work proposed in the original Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 IRWM Implementation Grant application and actual work done.
• Brief description of the projects completed and how they will further the goals identified in the Agency’s final approved IRWM Plan.
• Describe how the implemented projects will meet the regional priorities identified in the final approved IRWM Plan and how the projects contribute to regional integration.
• Identify remaining work and mechanism for their implementation.
• Identify any changes to the IRWM Plan as result of project implementation.
• If applicable, a short discussion on how the IRWM Plan will assist in reducing dependence on Delta water supplies.
• If applicable, a discussion of the critical water supply or water quality benefits to DAC as part of this Grant Agreement

Cost & Disposition of Funds Information
• A summary of final funds disbursement for each project.

Additional Information
• A final schedule showing individual project’s actual progress duration versus planned progress.
• Certification from a California Registered Professional (Civil Engineer or Geologist, as appropriate) that the Program was conducted in accordance with the approved work plan and any approved
modifications thereto. Discussion of the synergies of the completed projects, including the integration of project benefits and a comparison of actual benefits versus those discussed in the original proposal.

- Submittal schedule for the Post Performance Reports for each of the projects in this Grant Agreement.

**POST-PERFORMANCE REPORT**

Report should be concise, and focus on how (each/the) project is actually performing compared to its expected performance; whether the project is being operated and maintained, and providing intended benefits as proposed.

**Reports and/or products**

- Time period of the annual report (i.e., Oct 2014 through September 2015)
- Short project description
- Discussion of the project benefits
- An assessment of any explanations for any differences between the expected versus actual project benefits in meeting IRWM priorities as stated in the original IRWM Implementation Grant application. Where applicable, the reporting should include quantitative metrics, i.e., new acre-feet of water produced that year, acres of wildlife habitat added, etc.
- Summary of any additional costs and/or benefits deriving from the project since its completion, if applicable
- Continued reporting on meeting the Output Indicators and Targets discussed in the Project Monitoring Plan discussed in Paragraph 21 of this Grant Agreement
- Any additional information relevant to or generated by the continued operation of the project
EXHIBIT H
REQUIREMENTS FOR STATEWIDE MONITORING AND DATA SUBMITTAL

Surface and Groundwater Quality Data

Groundwater quality and ambient surface water quality monitoring data that include chemical, physical, or biological data shall be submitted to the State as described below, with a narrative description of data submittal activities included in project reports, as described in Exhibit G.

Surface water quality monitoring data shall be prepared for submission to the California Environmental Data Exchange Network (CEDEN). The CEDEN data templates are available on the CEDEN website. Inclusion of additional data elements described on the data templates is desirable. Data ready for submission should be uploaded to your CEDEN Regional Data Center via the CEDEN website. CEDEN website: http://www.ceden.org.

If a project’s Work Plan contains a groundwater ambient monitoring element, groundwater quality monitoring data shall be submitted to the State for inclusion in the State Water Resources Control Board’s Groundwater Ambient Monitoring and Assessment (GAMA) Program. Information on the GAMA Program can be obtained at: http://www.waterboards.ca.gov/water_issues/programs/gama/. If further information is required, the Grantee can contact the State Water Resources Control Board (SWRCB) GAMA Program. A listing of SWRCB staff involved in the GAMA program can be found at: http://www.swrcb.ca.gov/water_issues/programs/gama/contact.shtml

Groundwater Level Data

Grantee shall submit to DWR groundwater level data collected as part of this grant. Water level data must be submitted using the California Statewide Groundwater Elevation Monitoring (CASGEM) online data submission system. Grantee should use their official CASGEM Monitoring Entity or Cooperating Agency status to gain access to the online submittal tool and submit data. If the data is from wells that are not part of the monitoring network, the water level measurements should be classified as voluntary measurements in the CASGEM system. If the grantee is not a Monitoring Entity or Cooperating Agency, please contact your DWR grant project manager for further assistance with data submittal. The activity of data submittal should be documented in appropriate progress or final project reports, as described in Exhibit G. Information regarding the CASGEM program can be found at http://www.water.ca.gov/groundwater/casgem/.
State Audit Document Requirements

The list below details the documents/records that State Auditors typically reviewed in the event of a Grant Agreement being audited. Grantees should ensure that such records are maintained for each State funded Program/Project. Where applicable, this list of documents also includes documents relating to the Grantee’s funding match which will be required for audit purposes.

**Internal Controls:**
1. Organization chart (e.g., Agency’s overall organization chart and organization chart for this Grant Agreement’s funded project.
2. Written internal procedures and flow charts for the following:
   a) Receipts and deposits
   b) Disbursements
   c) State reimbursement requests
   d) State funding expenditure tracking
   e) Guidelines, policies, and procedures on State funded Program/Project
3. Audit reports of the Grantee’s internal control structure and/or financial statements within the last two years.
4. Prior audit reports on State funded Program/Project.

**State Funding:**
1. Original Grant Agreement, any amendments and budget modification documents.
2. A list of all bond-funded grants, loans or subventions received from the State.
3. A list of all other funding sources for each Program/Project.

**Contracts:**
1. All subcontractor and consultant contracts and related, if applicable.
2. Contracts between the Grantee, member agencies, and project partners as related to the State funded Program/Project.

**Invoices:**
1. Invoices from vendors and subcontractors for expenditures submitted to the State for payments under the Grant Agreement.
2. Documentation linking subcontractor invoices to State reimbursement requests and related Grant Agreement budget line items.
3. Reimbursement requests submitted to the State for the Grant Agreement.

**Cash Documents:**
1. Receipts (copies of warrants) showing payments received from the State.
2. Deposit slips or bank statements showing deposit of the payments received from the State.
3. Cancelled checks or disbursement documents showing payments made to vendors, subcontractors, consultants, and/or agents under the Grant Agreement.

**Accounting Records:**
1. Ledgers showing receipts and cash disbursement entries for State funding.
2. Ledgers showing receipts and cash disbursement entries of other funding sources.
3. Bridging documents that tie the general ledger to reimbursement requests submitted to the State for the Grant Agreement.

**Administration Costs:**
1. Supporting documents showing the calculation of administration costs.
Personnel:
1. List of all contractors and Grantee staff that worked on the State funded Program/Project.
2. Payroll records including timesheets for contractor staff and the Grantee’s

Project Files:
1. All supporting documentation maintained in the Program/Project files.
2. All Grant Agreement related correspondence.

Funding Match Guidelines

Funding Match consists of non-State funds including in-kind services. In-kind services are defined as work performed or items contributed (i.e., dollar value of non-cash contributions) by the Grantee (and potentially other parties involved) directly related to the execution of Exhibit A “Work Plan” (examples: volunteer services, equipment use, and facilities). The cost of in-kind service can be counted as funding match in-lieu of actual funds (or revenue) provided by the Grantee. Other funding match and in-kind service eligibility conditions may apply. Provided below is guidance for documenting funding match with and without in-kind services.

1. Although tracked separately, in-kind services shall be documented and, to the extent feasible, supported by the same methods used by the Grantee for its own employees. Such documentation should include the following:
   a. Detailed description of the contributed item(s) or service(s)
   b. Purpose for which the contribution was made (tied to Grant Agreement Exhibit A “Work Plan”)
   c. Name of contributing organization and date of contribution
   d. Real or approximate value of contribution. Who valued the contribution and how the value was determined? (e.g., actual, appraisal, fair market value, etc.). Justification of rate. (See item #2, below)
   e. For contributed labor, the person’s name, the work performed, the number of hours contributed, and the pay rate applied
   f. If multiple sources exist, these should be summarized on a table with summed charges
   g. Source of contribution and whether it was provided by, obtained with, or supported by government funds

2. Rates for volunteer or in-kind services shall be consistent with those paid for similar work in the Grantee’s organization. For example, volunteer service of clearing vegetation performed by an attorney shall be valued at a fair market value for this service, not the rate for professional legal services. In those instances in which the required skills are not found in the recipient organization, rates shall be consistent with those paid for similar work in the labor market. Paid fringe benefits that are reasonable, allowable and allocable may be included in the valuation.

3. Funding match contribution (including in kind services) shall be for costs and services directly attributed to activities included in the Grant Agreement Work Plan. These services, furnished by professional and technical personnel, consultants, and other skilled and unskilled labor may be counted as in-kind if the activities are an integral and necessary part of the State funded Program/Project under the Grant Agreement.

4. Cash contributions made to a Program/Project shall be documented as revenue and in-kind services as expenditure. These costs should be tracked separately in the Grantee’s accounting systems.
EXHIBIT J
PROJECT MONITORING PLAN GUIDANCE

Introduction

Please include a brief description of the project (maximum ~150 words) including project location, implementation elements, and need for project (what problem will the project address).

Project Monitoring Plan Components

The Project Monitoring Plan should contain responses to the following questions:

- What are the anticipated project physical benefits?
- What are the corresponding numeric targets for each project benefit?
- How will proposed numeric targets be measured?
- What are baseline conditions?
- When will the targets be met (upon project completion, five years after completion, etc.)?
- How often will monitoring be undertaken (monthly yearly, etc.).
- Where are monitoring point locations (ex: meter located at., at stream mile...)? Include relevant maps.
- How will the project be maintained (ex: irrigation, pest management, weed abatement..)?
- What will be the frequency and duration of maintenance proposed activities?
- Are there any special environmental considerations (e.g., resource agency requirements, permit requirements, CEQA/NEPA mitigation measures)?
- Who is responsible for collecting the samples (who is conducting monitoring and/or maintenance)?
- How, and to whom, will monitoring results be reported (e.g.,: paper reports, online databases, public meetings)?
- What adaptive management strategies will be employed if problems are encountered during routine monitoring or maintenance?
- What is the anticipated life of the project?
STAFF REPORT

SUBJECT: Furnishing and Delivery of Welded Steel Pipe Award of Contract No. 1791

SUBMITTED BY: Woytek Zaborowski, P.E., Project Engineer Environmental and Engineering Services Division

RECOMMENDED ACTION: Approve Resolution No. 8376 authorizing award of Contract No. 1791, to West Coast Pipe Linings Inc., in the amount of $834,477.72, for the purchase of welded steel pipe (WSP).

EXECUTIVE SUMMARY:

On December 8, 2015, the District received and opened three (3) bids for the subject contract which involves the furnishing of 38,200 feet of 4, 6, 8, 12, 18 and 36-inch welded steel pipe for the upcoming Fire Flow Improvement Plan (FFIP) and Capital Budget Pipeline Replacement Projects.

The lowest bid was submitted by West Coast Pipe Linings Inc. of Rialto, California in the amount of $834,477.72. Funding for this purchase comes from the 2015-2016 Capital Budget. The Engineers Estimate for this contract is $980,000, and it is based on the last contract delivered earlier this year. Lower fuel and steel costs contributed to this drop in contract price.

West Coast Pipe Linings Inc. is a long established company. Staff has checked all bid documents for accuracy and completeness.

There is a long lead time for welded steel pipe. Ordering this pipe now will assure delivery at the needed time for projects commencing this spring and summer.

FISCAL IMPACT: YES X NO FISCAL YEAR: 2015-2016

<table>
<thead>
<tr>
<th>EXPENDITURES</th>
<th>FUNDING SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted Amount</td>
<td>Operating Fund</td>
</tr>
<tr>
<td>$834,477.72</td>
<td>Capital Fund</td>
</tr>
<tr>
<td>Budget Augmentation</td>
<td>$834,477.72</td>
</tr>
<tr>
<td>Requested</td>
<td>Other</td>
</tr>
<tr>
<td>Inspection</td>
<td>Operating Reserves</td>
</tr>
<tr>
<td>TOTAL EXPENDITURES</td>
<td>TOTAL SOURCES</td>
</tr>
<tr>
<td>$834,477.72</td>
<td>$834,477.72</td>
</tr>
</tbody>
</table>
FISCAL IMPACT NARRATIVE:

Contract No: 1791  
Project No: N/A 
Engineer’s Estimate: $980,000  
Award: $834,477.72

Budget 
Contract Award: $834,477.72 
Total Budget: $834,477.72 
Budget Category: N/A

BACKGROUND: None

Bid History

Advertised: November 23, 2015 
Bids Received: Sealed bids were received from three (3) firms on December 8, 2015, as follows:

<table>
<thead>
<tr>
<th>Bid Rank</th>
<th>Contractor Name</th>
<th>Bid Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>West Coast Pipe Linings Inc.</td>
<td>$834,477.72</td>
</tr>
<tr>
<td>2</td>
<td>Imperial Pipe Services</td>
<td>$857,787.30</td>
</tr>
<tr>
<td>3</td>
<td>North West Pipe Co</td>
<td>$1,157,361.73</td>
</tr>
</tbody>
</table>

Schedule

Bids Received: December 8, 2015  
Project Award: December 15, 2015  
Delivery Date: March 31, 2016

STRATEGIC PLAN ALIGNMENT:

This action aligns with the District’s 5-Year Strategic Plan Goal 1 (Water Supply Resiliency) and Strategy 4 (Ensure facilities and equipment are maintained and sufficient to support resiliency, water quality, watershed management and a productive workforce).

REVIEWED BY:  
Finance Manager: X NA  
General Counsel: NA X  
General Manager: X NA

ATTACHMENTS:

1. Resolution No. 8376
MARIN MUNICIPAL WATER DISTRICT

RESOLUTION NO. 8376

IT IS HEREBY RESOLVED that the bid of $834,477.72 submitted by West Coast Pipe Linings Inc., for the Furnishing and Delivery of Welded Steel Pipe under Contract No. 1791 was the lowest responsible bid submitted therefor, and said bid is hereby accepted.

BE IT FURTHER RESOLVED that a contract for this project be awarded to said low bidder, and the General Manager and Secretary are authorized and directed to execute said contract on behalf of the District upon receipt of a performance bond, payment bond, proof of insurance, and the executed contract for the work from said bidder.

BE IT FURTHER RESOLVED that upon complete execution of said contract, the bonds and/or checks of the other bidders are to be returned to said other bidders, and all bids other than that of West Coast Pipe Linings, Inc. are to be rejected.

PASSED AND ADOPTED this 15th day of October, 2015, by the following vote of the Board.

AYES:

NOES:

ABSENT:

_____________________________
President, Board of Directors

ATTEST:

_____________________________
Secretary
STAFF REPORT

SUBJECT: Fourth Amendment to the General Manager’s At-Will Employment Agreement

SUBMITTED BY: President Jack Gibson

RECOMMENDED ACTION: Approve the Fourth Amendment to the General Manager’s At-Will Employment Agreement increasing the base salary by 2.7% ($6,269.25) effective July 1, 2015, extending the Agreement until June 30, 2018, allowing for cost of living increases to the General Manager’s Base Salary effective July 1, 2016 and July 1, 2017 upon satisfactory performance as determined by the Board and adding terms mandated by AB 1344.

EXECUTIVE SUMMARY: Attached for the Board’s review and consideration is a Fourth Amendment to the General Manager’s At-Will Employment Agreement which expired December 10, 2015. The Fourth Amendment provides for (1) an extension of the agreement to June 30, 2018, (2) a 2.7% cost of living increase to the General Manager’s Base Salary, effective July 1, 2015, for a new total Base Salary of $238,474, (3) upon satisfactory performance, as determined by the Board, cost of living increases to the General Manager’s Base Salary effective July 1, 2016 and 2017 which are tied to the California Consumer Price Index for Urban Wage Earners and Clerical Workers as determined by the Department of Industrial Relations and (4) additional terms mandated by AB 1344.

FISCAL IMPACT: Yes X No

<table>
<thead>
<tr>
<th>EXPENDITURES</th>
<th>FUNDING SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted Amount</td>
<td>Operating Fund</td>
</tr>
<tr>
<td>Budget Augmentation Requested</td>
<td>Capital Fund</td>
</tr>
<tr>
<td></td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>Operating Reserves</td>
</tr>
<tr>
<td><strong>TOTAL EXPENDITURES</strong></td>
<td><strong>TOTAL SOURCES</strong></td>
</tr>
</tbody>
</table>
FISCAL IMPACT NARRATIVE: Necessary funds are available in the fiscal year 2016 operating budget to accommodate the increase.

BACKGROUND

Attached for the Board’s review and consideration is a Fourth Amendment to the General Manager’s At-Will Employment Agreement which expired December 10, 2015. The Fourth Amendment provides for an extension of the agreement to June 30, 2018, a 2.7% cost of living increase to the General Manager’s Base Salary, effective July 1, 2015, for a new total of $238,474, upon satisfactory performance, as determined by the Board, cost of living increases to the General Manager’s Base Salary effective July 1, 2016 and 2017 which are tied to the California Consumer Price Index for Urban Wage Earners and Clerical Workers as determined by the Department of Industrial Relations.

Additional terms have been included in the Fourth Amendment which are mandated by AB 1344, enacted by California Legislature. Those statutory provisions limit the amount of severance an executive can receive, require an executive convicted of a crime involving abuse of his/her office under Government Code Section 53243.4 to (1) repay any paid leave salary provided by a public agency pending an investigation into any abuse and any cash settlement related to the termination of his/her contract and/or (2) fully reimburse the public agency for any cash settlement related to the termination of the executive and/or his/her contract. The current amendment to the General Manager’s agreement brings that contract into compliance with the provisions of AB 1344.

Recommendation

I recommend that the Board approves the Fourth Amendment to the General Manager’s At Will Employment Agreement.

Attachment

1. Fourth Amendment to the General Manager’s At-Will Employment Agreement
FOURTH AMENDMENT TO AT WILL EMPLOYMENT
AGREEMENT OF KRISHNA KUMAR

This contract amendment (“Fourth Amendment”) is entered into by and between Marin Municipal Water District (“District”) and Krishna Kumar (“General Manager”).

For good and valuable consideration the receipt and adequacy of which is hereby acknowledged, the parties hereto agree as follows:

Section 1. Recitals:

A. The District and the General Manager are parties to an agreement signed October 17, 2012, titled “At Will Employment Agreement of Krishna Kumar as General Manager of the Marin Municipal Water District” (“Agreement”); and

B. The Agreement specifies a Base Salary for the General Manager in Section 2(D) and further specifically states at Section 2.E that the Board in its discretion may modify that salary based on evaluation and/or assessment of the General Manager’s performance; and

C. Section 2.L of the Agreement specifies that the Board shall endeavor to conduct an evaluation of the General Manager at least once each year, and may occur more often for the purpose of mid-course corrections; and

D. The Agreement was amended on three occasions to memorialize increases in base salary occasioned by positive evaluations of the General Manager by the District’s Board of Directors (“Board”); and

E. The Board has conducted a further evaluation of the General Manager, and on the basis of that evaluation has determined that it is appropriate to (a) increase the General Manager’s annual Base Salary by a cost of living increase of 2.7 percent, to a new total annual salary of two-hundred thirty-eight thousand four hundred and seventy-four ($238,474); (b) extend the term of this Agreement through June 30, 2018; and (c) provide for cost of living increases as hereafter provided;

F. Pursuant to Section 2.N, the Agreement may only be amended or modified by a written, fully executed amendment to the Agreement of the parties formally approved by the Board.

Section 2. Amendments to Agreement:

A. Amendment to Agreement: This Fourth Amendment modifies the Agreement. Except for the modifications contained herein, all the terms of the Agreement continue to apply without change.

B. Amendments to Section 2(D) Base Salary: The parties have negotiated cost of living increases for the General Manager that will take effect July 1, 2015, July 1, 2016 and July 1, 2018 respectively, subject to the provisions set forth below. Section 2(D) Base Salary is amended and effective as follows:
(1) Effective on July 1, 2015, Section 2(D), Base Salary, is modified to read as follows:

D. Base Salary: Effective July 1, 2015, the District agrees to pay the General Manager a total annual salary of TWO-HUNDRED THIRTY EIGHT THOUSAND FOUR HUNDRED AND SEVENTY-FOUR DOLLARS ($238,474) as compensation for services rendered, payable in accordance with District's regular payroll procedures. The term "Base Salary" as used in this Agreement means the annual compensation (currently $238,474) specified in this Section 2(D) for services rendered, as Base Salary may be modified from time to time.

(2) Effective on July 1, 2016, provided that a performance evaluation occurred in the immediately preceding 2015/2016 fiscal year and the General Manager’s performance was thereby deemed Satisfactory, Section 2(D), Base Salary, shall be modified to read as follows:

D. Base Salary: Effective July 1, 2016, the General Manager’s total annual salary shall be increased from $238,474 by a percentage change equivalent to the change in the California Consumer Price Index for Urban Wage Earners and Clerical Workers as determined by the Department of Industrial Relations (CPI) for the calendar year immediately preceding the adjustment. That total annual salary as calculated herein shall be paid as compensation for services rendered, payable in accordance with the District’s regular payroll procedures. The term “Base Salary” as used in this Agreement means the annual compensation specified in this Section 2(D) for services rendered, as Base Salary may be modified from time to time.

(3) Effective on July 1, 2017, provided that a performance evaluation occurred in the immediately preceding 2016/2017 fiscal year and the General Manager’s performance was thereby deemed Satisfactory, Section 2(D), Base Salary, shall be modified to read as follows:

D. Base Salary: Effective July 1, 2017, the General Manager’s total annual salary shall be increased from that established for the 2016-2017 fiscal year by a percentage change equivalent to the change in the California Consumer Price Index for Urban Wage Earners and Clerical Workers as determined by the Department of Industrial Relations (CPI) for the calendar year immediately preceding the adjustment. That total annual salary as calculated herein shall be paid as compensation for services rendered, payable in accordance with the District’s regular payroll procedures. The term “Base Salary” as used in this Agreement means the annual compensation specified in this Section (2)(D) for services rendered, as Base Salary may be modified from time to time.

C. Amendment to Section 2(H)(3) Vacation: Section 2(H)(3) is amended to read as follows:
3. Vacation. The General Manager shall receive six weeks of vacation per year. Accrual shall be in equal measure per pay period, annually totaling 240 hours. Vacation time cannot be accrued in excess of 500 hours. After one year of employment, the General Manager may annually request to cash-out up to one week of unused vacation time. The Board prefers that the General Manager take no more than two consecutive weeks of vacation at a time. Vacations of more than two consecutive weeks shall be subject to advance approval by the Board.

D. Amendment to Section 2(I) Term: Section 2(I) is amended to read as follows:

I. Term. The term of this Agreement shall be extended to and end on June 30, 2018.

E. Amendment to Section 2(J)(1)(a) Termination Without Cause: Section 2(J)(1)(a) is amended to read as follows:

(a) If the Board terminates this Agreement without cause, the General Manager shall receive one lump sum cash payment equal to six months of Base Salary as defined in Section 2(D) hereof and six months of Medical Insurance as defined in Section 2(H)(2) unless the number of months left on the General Manager’s unexpired contract is less than six months; in that case, the General Manager shall receive one lump sum cash payment calculated as follows: an amount equal to the monthly salary (Base Salary divided by 12) multiplied by the number of months left on his unexpired contract and the same number of months of Medical Insurance (hereinafter respectively “Severance”). The Severance shall be the maximum and exclusive payment the General Manager shall receive, with the sole exception of the payout of any vacation time the General Manager has previously accrued up to the Termination Date.

i. As a condition precedent to receiving that Severance, the General Manager now hereby agrees that he shall first execute the General Release and Waiver of Claims contained in Exhibit C (which is attached hereto and incorporated herein as if fully set forth) to this Agreement within five calendar days of receiving written notice that the Board is terminating this Agreement without cause. The General Manager’s failure to execute the release and waiver contained in Exhibit C and provide it to the District’s General Counsel within that five calendar day time frame will eliminate the District’s obligation to pay the General Manager the Severance.

ii. The District shall pay the General Manager the Severance on the eighth day after the General Manager executes the Release and Waiver of Claims contained in Exhibit C to this Agreement, provided the General Manager does not revoke the Release and Waiver of Claims contained in Exhibit C within the seven day revocation period contained in the Older Worker’s Benefit Protection Act. If such a revocation occurs, the District’s obligation to pay the Severance is eliminated.
F. Section (J)(1)(b) Termination for Cause: Section (J)(1)(b) is amended to read as follows:

**b. Termination for Cause.** The Board in its discretion may terminate the General Manager with cause. In the event of a for cause termination, the General Manager shall not be entitled to Severance. However, the General Manager will receive payment for any vacation time the General Manager has previously accrued up to the For Cause Termination Date.

“Causes” for termination shall include but shall not be limited to, any of the following reasons:

i. Fraud in securing appointment;
ii. Incompetency;
iii. Inefficiency;
iv. Inexcusable neglect of duty;
v. Insubordination;
vi. Official misconduct;
vii. Dishonesty;
viii. Repeated and protracted unexcused absences from the General Manager’s office and duties;
ix. Conviction of a felony. A plea or verdict of guilty, or a conviction following a plea of nolo contendere, to a charge of a felony is deemed to be a conviction within the meaning of this section;
x. Discourteous treatment of the public or other employees;
xi. Improper political activity;
xii. Misuse of District or public property;
xiii. Other failure of good behavior either during or outside of duty hours, which is of such a nature that it causes discredit to the appointing authority or the person's employment;
xiv. Unavailability to perform services for a time period in excess of 30 business days unless on approved leave pursuant to state or federal law;
xv. Unlawful discrimination, including harassment, against the public or other employees;
xvi. Unlawful retaliation against any employee or member of the public who in good faith reports, discloses, divulges, or otherwise brings to the attention of, the Attorney General or any other appropriate authority, any facts or information relative to actual or suspected violation of any law of this state or the United States occurring on the job or directly related to the job;
xvii. Sale, possession or use of illegal drugs;
xviii. A final judgment by a court of law of unlawful discrimination by the General Manager under State or Federal law;
xix. A final judgment by a court of law of unlawful retaliation by the General Manager against any other District employee;
xx. Willful disregard of a lawful directive of the Board of Directors;
xxi. Abuse of Office or Position as defined by Government Code Section 53243.4 or
xxii. A material breach of this Agreement.

If the Board determines that termination for cause is appropriate, it shall so notify the General Manager, and before making any final decision regarding termination shall give him an opportunity to respond to the allegations. The Board may place the General Manager on leave without pay during the pendency of an investigation into alleged misconduct and/or after issuance of a notice of intended termination. The determination of the Board with respect to for cause termination shall be final and conclusive and shall not be subject to administrative or judicial review. Granting the General Manager the opportunity to respond to allegations of misconduct in no way alters the at-will nature of his employment. If the General Manager is convicted of a crime involving an abuse of his office or position under Government Code Section 53243.4, then (1) any paid leave salary provided by the District to the General Manager pending an investigation into that abuse and (2) any cash settlement related to the termination of the General Manager and/or his contract shall be fully reimbursed to the District by the General Manager.

F. The Agreement, as hereby amended, shall constitute the entire Agreement of the parties.

For: MARIN MUNICIPAL WATER DISTRICT

By: _______________________________ Date: __________________
    John C. Gibson
    President, Board of Directors

ATTEST: ____________________________
    Stephanie Eichner-Gross
    Board Secretary

GENERAL MANAGER

By: _______________________________ Date: _________________
    Krishna Kumar, General Manager
**SUBJECT:** General Manager's Report for November 2015

**SUBMITTED BY:** General Manager

**RECOMMENDED ACTION:**

Accept Report

AF = Acre Feet  
Mg/L = milligrams per liter  
MPN = most probable number  
MPY = mils per year  
MG = million gallons  
NTU = nephelometric turbidity units

**SUMMARY:**

### A. Water Production:

<table>
<thead>
<tr>
<th>Item</th>
<th>FY 2015/16</th>
<th>FY 2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(million gallons)</td>
<td>(acre-feet)</td>
</tr>
<tr>
<td><strong>Potable</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total production this FY</td>
<td>3,476</td>
<td>10,667</td>
</tr>
<tr>
<td>Monthly production, Nov.</td>
<td>531</td>
<td>1,628</td>
</tr>
<tr>
<td>Daily average, Nov.</td>
<td>17.68</td>
<td>54.27</td>
</tr>
<tr>
<td><strong>Recycled</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total production this FY</td>
<td>114.50</td>
<td>351.39</td>
</tr>
<tr>
<td>Monthly production, Nov.</td>
<td>12.43</td>
<td>38.15</td>
</tr>
<tr>
<td>Daily average, Nov.</td>
<td>0.41</td>
<td>1.27</td>
</tr>
<tr>
<td><strong>Raw Water</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total production this FY</td>
<td>69.39</td>
<td>212.95</td>
</tr>
<tr>
<td>Monthly production, Nov.</td>
<td>3.15</td>
<td>9.67</td>
</tr>
<tr>
<td>Daily average, Nov.</td>
<td>0.11</td>
<td>0.32</td>
</tr>
<tr>
<td><strong>Imported Water</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total imported this FY</td>
<td>589</td>
<td>1,806</td>
</tr>
<tr>
<td>Monthly imported, Nov.</td>
<td>107</td>
<td>329</td>
</tr>
<tr>
<td><strong>Reservoir Storage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total storage, Nov. 30</td>
<td>16,736</td>
<td>51,361</td>
</tr>
<tr>
<td>Storage change during month</td>
<td>-793</td>
<td>-2,433</td>
</tr>
<tr>
<td><strong>Stream Releases</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total releases this FY</td>
<td>1,436</td>
<td>4,408</td>
</tr>
<tr>
<td>Monthly releases, Nov.</td>
<td>351</td>
<td>1,076</td>
</tr>
</tbody>
</table>
B. **Precipitation:**

<table>
<thead>
<tr>
<th>Location</th>
<th>FY 2015/16 (in.)</th>
<th>FY 2014/15 (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpine</td>
<td>3.71</td>
<td>10.40</td>
</tr>
<tr>
<td>Bon Tempe</td>
<td>2.96</td>
<td>7.27</td>
</tr>
<tr>
<td>Kent</td>
<td>2.82</td>
<td>8.30</td>
</tr>
<tr>
<td>Lagunitas *</td>
<td>2.69</td>
<td>8.00</td>
</tr>
<tr>
<td>Nicasio</td>
<td>2.18</td>
<td>6.38</td>
</tr>
<tr>
<td>Phoenix</td>
<td>2.45</td>
<td>6.02</td>
</tr>
<tr>
<td>Soulajule</td>
<td>2.02</td>
<td>6.22</td>
</tr>
</tbody>
</table>

* Average to date = 9.57 inches

C. **Water Quality:**

<table>
<thead>
<tr>
<th>Laboratory:</th>
<th>FY 2015/16</th>
<th>FY 2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Quality Complaints:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Month of Record</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Fiscal Year to Date</td>
<td>61</td>
<td>221</td>
</tr>
</tbody>
</table>

| Water Quality Information Phone Calls: |      |                  |
| Month of Record | 4                | 9                |
| Fiscal Year to Date | 41           | 39               |

The lab performed 2,731 analyses on lakes, treatment plants and distribution system samples. The 30 fluoride distribution system samples averaged 0.77 mg/L compared to the control range not to exceed 1.2 mg/L.

Mild steel corrosion rates averaged 6.55 (4.63–8.08) MPY. The AWWA has recommended an operating level of <5 MPY with a goal of <1 MPY.

**Complaint Flushing:** No services were flushed by MMWD for the month of record.

**Annual Main Flushing Program:** This program has been completed for the year.

**Tank Survey Program:** 17 water storage tanks were surveyed during the month. 89% of the planned survey program has been completed for calendar year 2015.

**Lake Treatment:** No lake treatments were performed for the month of record.

**Disinfection Program:** 1,783 feet of new pipeline was disinfected during the month. Performed chlorinations on 14 water storage tanks to ensure compliance with bacteriological water quality regulations.

**Tank Water Quality Monitoring Program:** Performed 4 water quality monitoring events on storage tanks for various water quality parameters this month to help ensure compliance with bacteriological water quality regulations.
D. **Water Treatment:**

<table>
<thead>
<tr>
<th>Treatment Results</th>
<th>San Geronimo</th>
<th>Bon Tempe</th>
<th>Ignacio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Goal</td>
<td>Monthly</td>
<td>Average Goal</td>
</tr>
<tr>
<td>Turbidity (NTU)</td>
<td>0.08 &lt;0.10</td>
<td>0.06 &lt;0.10</td>
<td>0.05 &lt;0.10</td>
</tr>
<tr>
<td>Chlorine residual (mg/L)</td>
<td>2.51 2.50 *</td>
<td>2.56 2.50 *</td>
<td>2.54 2.50 *</td>
</tr>
<tr>
<td>Zinc residual (mg/L)</td>
<td>0.25 0.24***</td>
<td>0.31 0.20 ***</td>
<td>0.24 0.24***</td>
</tr>
<tr>
<td>Color (units)</td>
<td>0.7 &lt;15</td>
<td>0.1 &lt; 150.2</td>
<td>&lt;15</td>
</tr>
<tr>
<td>pH (units)</td>
<td>7.8 7.8*</td>
<td>7.8 7.8*</td>
<td>8.4 &gt;7.8**</td>
</tr>
</tbody>
</table>

* Set monthly by Water Quality Lab
** pH to Ignacio is controlled by SCWA
*** Zinc reduction per NPDES Permit Regulations

**Recycled Water**

<table>
<thead>
<tr>
<th>Las Gallinas Recycled Water Plant</th>
<th>Average</th>
<th>MMWD Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turbidity</td>
<td>0.56 NTU</td>
<td>&lt;2.0 NTU</td>
</tr>
<tr>
<td>Chlorine residual</td>
<td>3.91 Mg/L</td>
<td>4.0 Mg/L</td>
</tr>
<tr>
<td>pH</td>
<td>8.2 Units</td>
<td>8.2 Units</td>
</tr>
</tbody>
</table>

E. **Capital Improvement**

1. **Elinor Avenue Tank Replacement Project**

   **Summary:** This project involves the replacement of a 100,000 gallon redwood tank with a new 113,000 gallon bolted steel tank in Mill Valley.

   - **Project Budget:** $440,000
   - **Monthly Activities:** The Contractor installed the tank concrete foundation and received the bolted steel tank parts for assembly.

2. **Summit Avenue Tank Replacement Project**

   **Summary:** This project involves the replacement of a 100,000 gallon redwood tank with a 120,000 gallon bolted steel tank and replacement of an old pump station located on the tank site.

   - **Project Budget:** $981,622
   - **Monthly Activities:** The Contractor installed the pump station foundation and erected the station block walls this month.

3. **Sequoia Valley Rd/Tourist Club Rd Fire Flow Improvement Project**

   **Summary:** This project involves the replacement of 2,760 feet of 2 & 6-inch galvanized threaded pipe with 6 & 8-inch welded steel pipe within unincorporated Marin County.
• **Project Budget:** $494,410

• **Monthly Activities:** Pipeline installation was completed this month and put into service.

4. **North Marin Line Fire Flow Improvement Project**

**Summary:** This project involves the installation of 1,700 feet of 36-inch welded steel pipe in Sir Francis Drake near the San Geronimo Treatment Plant in unincorporated Marin County. This is seismic retrofit work and is part of the Fire Flow Improvement Program.

• **Project Budget:** $649,600

• **Monthly Activities:** The Contractor installed 1,300 feet of mainline this month.

5. **Sausalito Pipeline Replacement Project**

**Summary:** This project involves the installation of 2,710 feet of 8, 6, and 4-inch welded steel pipe and PVC pipe in Sausalito to replace leaky cast iron and lock converse pipe ahead of the City’s paving project.

• **Project Budget:** $497,496

• **Monthly Activities:** The Contractor obtained the encroachment permit and began pipeline layout this month.

F. **Other:**

<table>
<thead>
<tr>
<th>Pipeline Installation</th>
<th>FY2015/16</th>
<th>FY2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipe installed during Nov. (feet)</td>
<td>2,749</td>
<td>1,242</td>
</tr>
<tr>
<td>Total pipe installed this fiscal year (feet)</td>
<td>14,974</td>
<td>14,518</td>
</tr>
<tr>
<td>Total miles of pipeline within the District</td>
<td>911*</td>
<td>911*</td>
</tr>
</tbody>
</table>

*Reflects adjustment for abandoned pipelines*

<table>
<thead>
<tr>
<th>Pipe Locates</th>
<th>FY2015/16</th>
<th>FY2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month of Nov. (feet)</td>
<td>29,397</td>
<td>18,479</td>
</tr>
<tr>
<td>Total this fiscal year (feet)</td>
<td>255,720</td>
<td>173,996</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main Line Leaks Repaired:</th>
<th>FY2015/16</th>
<th>FY2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month of Nov.</td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>Total this fiscal year</td>
<td>76</td>
<td>76</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Services:</th>
<th>FY2015/16</th>
<th>FY2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service upgrades during Nov.</td>
<td>17</td>
<td>14</td>
</tr>
<tr>
<td>Total service upgrades this FY</td>
<td>87</td>
<td>88</td>
</tr>
<tr>
<td>Service connections installed during Nov.</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>Total service connections installed this FY</td>
<td>19</td>
<td>61</td>
</tr>
<tr>
<td>Total active services as of December 1, 2015</td>
<td>60,399</td>
<td>60,325</td>
</tr>
</tbody>
</table>
### G. Demand Management:

#### WATER EFFICIENCY PROGRAMS

<table>
<thead>
<tr>
<th>Program</th>
<th>Nov-15</th>
<th>FY 15/16 TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conservation Assistance Program (CAP) Consultations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential properties resi 1-2 (single-family)</td>
<td>15</td>
<td>128</td>
</tr>
<tr>
<td>Residential properties resi 3-7 (multi-family units)</td>
<td>11</td>
<td>24</td>
</tr>
<tr>
<td>Residential properties resi 3-7 (multi-family sites)</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Non-residential properties resi 6-7 (commercial)</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Dedicated irrigation accounts resi 8-10 (large landscape)</td>
<td>17</td>
<td>48</td>
</tr>
<tr>
<td><strong>Marin Master Gardeners' Marin-Friendly Garden Walks</strong></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td><strong>CYES Water/Energy Surveys (seasonal)</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Tier 4 Exemption Program</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applications</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Inpections that resulted in a pass</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Irrigation Budgets</strong></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Budgets completed</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td><strong>Public Outreach and Education, Customer Service</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public outreach events (number of people attending)</td>
<td>0</td>
<td>605</td>
</tr>
<tr>
<td>Public education events (number of participants)</td>
<td>0</td>
<td>426</td>
</tr>
<tr>
<td>Phone calls admin staff</td>
<td>200</td>
<td>987</td>
</tr>
<tr>
<td><strong>School Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School assemblies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of activities</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Number of students reached</td>
<td>0</td>
<td>1,515</td>
</tr>
<tr>
<td>Field trips</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of activities</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Number of students reached</td>
<td>0</td>
<td>181</td>
</tr>
<tr>
<td>Classroom presentations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of activities</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Number of students reached</td>
<td>71</td>
<td>312</td>
</tr>
<tr>
<td><strong>STEMhero Teacher's License Reimbursement Grants (start date June 2015)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of grants</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of students reached</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Other (e.g. booth events, school gardens)</strong></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Number of activities</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of students reached</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Restoration Field Trips (Water Conservation participation)</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Number of students reached

Prop 84 - Round I Rebate Incentive Program *(start date Sept 1, 2013 - June 30, 2015)*
- Number of HETs approved: 127, 590
- Number of HECWs approved: 57, 198
- Number of Direct Install HETs installed *(program ended 8/31/15)*: 0, 263
- Irrigation Improvement Resi 8 customers *(program started 7/1/2015)*: 29, 29

5 x $50 - Rebate Incentive Program *(start date Oct. 25, 2014)*
- Number of Organic Mulch approved: 29, 314
- Number of Rain Barrels approved: 7, 43
- Number of Pool Covers approved: 5, 69
- Number of Hot Water Recirculating Systems approved: 4, 55
- Number of Laundry-to-Landscape systems approved: 0, 7

**ORDINANCES**

Water Waste Prevention Ordinance
- No. of properties reporting activity: 6, 247

Ord. 421 Landscape Plan Review
- Plans submitted: 11, 38
- Plans exempt: 2, 8
- Plans completed: 0, 5
- Plans in workflow (pass & fail): 18, 66
H. **Watershed Protection**

<table>
<thead>
<tr>
<th>SUMMARY OF ACTIVITY</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Aid Incidents</td>
<td>0</td>
</tr>
<tr>
<td>Search and Rescue</td>
<td>0</td>
</tr>
<tr>
<td>Wildland Fire</td>
<td>0</td>
</tr>
</tbody>
</table>

**LAW ENFORCEMENT ACTIVITIES**

<table>
<thead>
<tr>
<th>Date</th>
<th>Section Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/15</td>
<td>PC 594/Vandalism: A total of 14 separate vandalism reports in various areas of the Watershed in the month of November</td>
</tr>
<tr>
<td>11/3/15</td>
<td>PC 384(a)/Cutting of Vegetation: Vegetation cut along the Liberty Gulch Trail</td>
</tr>
<tr>
<td>11/6/15</td>
<td>WDO 9.03.03/Shooting of Wildlife: A dead deer was found in the area of the Nicasio Dam with a single gunshot wound to the side</td>
</tr>
<tr>
<td>11/7/15</td>
<td>PC 246.3/Negligent Discharge of Firearm: A regulation sign was shot at in the area of the Old Air Force Base</td>
</tr>
<tr>
<td>11/11/15</td>
<td>PC 384(a)/Cutting of Vegetation: Vegetation cut along the West Fork Trail</td>
</tr>
<tr>
<td>11/29/15</td>
<td>PC 384(a)/Cutting of Vegetation: Vegetation cut along the Cary Camp Trail</td>
</tr>
</tbody>
</table>

**OTHER INCIDENTS**

<table>
<thead>
<tr>
<th>Date</th>
<th>Nature</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>n/a</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I. **Personnel**

**Employee authorization as of:**

<table>
<thead>
<tr>
<th>Regular full-time positions</th>
<th>07/01/13</th>
<th>07/01/14</th>
<th>07/01/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTE’s</td>
<td>242.00</td>
<td>244.00</td>
<td>246.00</td>
</tr>
</tbody>
</table>

J. **Investment**

During the month of November 2015 there was no activity.
Marin Municipal Water District
Investment Report as of
November 30, 2015

<table>
<thead>
<tr>
<th>Investments</th>
<th>Par Value</th>
<th>Par Date</th>
<th>Current Market Value</th>
<th>Purchase Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FHLMC</td>
<td>3</td>
<td>1,000,000.00</td>
<td>02/12/13</td>
<td>05/27/16</td>
</tr>
<tr>
<td>FHLB</td>
<td>3</td>
<td>2,000,000.00</td>
<td>09/18/13</td>
<td>06/10/16</td>
</tr>
<tr>
<td>FHLMC</td>
<td>3</td>
<td>2,000,000.00</td>
<td>1/8/2014 &amp; 3/8/2014</td>
<td>06/29/17</td>
</tr>
<tr>
<td>US Treasury N/B</td>
<td>1</td>
<td>1,000,000.00</td>
<td>03/03/15</td>
<td>06/30/18</td>
</tr>
<tr>
<td>Fidelity Money Market Fund</td>
<td>7</td>
<td>1,635,856.99</td>
<td>01/01/2016</td>
<td>1,635,856.99</td>
</tr>
<tr>
<td>Local Agency Investment Fund</td>
<td>4</td>
<td>39,070,358.33</td>
<td>09/29/17</td>
<td>39,070,358.33</td>
</tr>
</tbody>
</table>

Total District Investments $46,706,215.32

Weighted Average Interest Rate 0.437%

* callable security

Dated December 1, 2015. I certify that all investments are made in conformance with the District's approved investment policy and that the District has sufficient liquidity to meet all budgeted and planned obligations during the next six-month period.

Respectfully submitted:
Oreen Delgado, Finance Manager

Yield Curve
November 2015

- LAIF
- Treasuries
- Portfolio
WHEREAS, THE BOARD OF DIRECTORS OF THE MARIN MUNICIPAL WATER DISTRICT WISHES TO RECOGNIZE Kevin McDonnell for his 36 years of service beginning as a temporary Junior Engineer in November 1979 after having graduated from the University of Santa Clara, then hired on a permanent basis as a Junior Engineer in May 1980, then advancing to Assistant Engineer in December 1981, then advancing to Associate Engineer in June 1984, then advancing to Senior Engineer II in May 1990, where he finished his career; and

WHEREAS, Kevin works well with his fellow employees, District customers, contractors and public officials and willingly provides others with the knowledge he has gained through his vast water works experience and is often the face of the District to agencies throughout the County and State; and

WHEREAS, Kevin was instrumental in ensuring MMWD customers enjoy a reliable supply of water when the tap is turned on, and will enjoy this life sustaining commodity for many decades to come, by designing the replacement of more than 200 miles of pipe, dozens of storage tanks, pump stations and other critical infrastructure improvements too numerous to list, and seeing those designs through to fruition; all accomplished due to his engineering prowess, sheer cleverness and resolute determination to serve the public; and

WHEREAS, while Kevin’s list of accomplishments at MMWD are too numerous to list, a few noteworthy projects include the Las Gallinas Valley Recycled Water Plant, the conversion of the Nike Missile vaults to water storage facilities, also known as “Swords to Plow Shares,” the Redwood Tank Replacement Program, the pipeline replacements at Fourth Street Downtown San Rafael, the “Hub” and in Sir Francis Drake and, successful implementation of the 15 year Fire Flow Master Plan; and for FEMA funded storm and flood repairs of the watershed and water system in 1982 and 1986; and as coordinator for the California Energy Commission Wind Energy analysis of Mt Tamalpais.

WHEREAS, Kevin can has installed pipe in front of nearly every City Hall in Marin County; and

WHEREAS, Kevin’s Civil Engineering Registration stamp will remain on thousands of district plans and Record Drawings in perpetuity; and

WHEREAS, Kevin represented the District at the American Water Works Association for many years, having given many presentations about MMWD projects; serving and Chairing several committees; and

WHEREAS, Kevin was a leader at the District by creating, adopting, and promoting innovative ways (such as “pipe bursting” and directional drill”) to get work accomplished; and

WHEREAS, Kevin was a leader at the District by being President of the MMWD Employee’s Association; and

WHEREAS, Kevin’s many friends at the District will miss him and have noticed that his always upbeat nature has become even more upbeat with each day as Kevin has gotten closer to retirement; and

WHEREAS, Kevin, along with his wife Melissa, raised four children, Brighid, Collin, Glynnis and Llewellyn, all of whom had the privilege of being MMWD summer employees; and

WHEREAS, Kevin is a true humanitarian and civic activist, having donated hundreds of pints of platelets and blood, held seats on a multitude of city commissions and, spent more than 25 years coaching youth soccer;
NOW, THEREFORE, BE IT RESOLVED THAT THE BOARD OF DIRECTORS expresses its sincere appreciation to Kevin McDonnell for his services to the District and wishes him good health and happiness in his retirement where he will spend much time bike riding, hiking the John Muir Trail and continuing his civic service for the people of Petaluma.

RESOLUTION NO. 8372 APPROVED at a regular meeting of the Board of Directors held this 15th day of December, 2015.

John C. Gibson, President

Larry Bragman

Armando Quintero

ATTEST: Krishna Kumar, General Manager

Cynthia Koehler

Larry Russell

Secretary
TONY CAMICCIA

WHEREAS, THE BOARD OF DIRECTORS OF THE MARIN MUNICIPAL WATER DISTRICT WISHES TO RECOGNIZE Tony Camiccia for 37 years and 8 months of dedicated service to the District and its customers in Marin County; beginning as a Seasonal Helper in the Land Division in March 1977 and soon became a permanent employee in May 1978 as a Gardener.

WHEREAS, Tony advanced to Engineering Aide in September 1980, where he used his innate ability to perform every type of task required in the Engineering Department; and

WHEREAS, Tony further showed his versatility and became a Drafting Technician I in February 1985; where Tony advanced to a Drafting Technician II and eventually to become a Senior Engineering Technician in the Drafting Department; and

WHEREAS, Tony helped design tanks, pipelines, pump stations and every type of MMWD facility imaginable, lending his hands and mind to all who needed his expertise. In addition, Tony became the Sausalito specialist, who could make sense of the spaghetti underground piping that exists in the narrow 150 year old streets where you can find just about anything buried under the asphalt; and

WHEREAS, Tony always kept the MMWD community spirit alive by collaborating with all that needed his help, and always volunteering his time and energy to his coworkers. Tony has made MMWD more than just a place to work – Tony has helped make MMWD an important part of all of our lives and a good friend; thus, Tony will be missed by all.

NOW, THEREFORE, BE IT RESOLVED THAT THE BOARD OF DIRECTORS expresses its sincere appreciation to Tony Camiccia for his services and contributions to the Marin Municipal Water District and wishes his good fortune, continued good health and many more memorable adventures with Tanya and the rest of his family and friends.

RESOLUTION NO. 8377 APPROVED at the regular meeting of the Board of Directors held this 15th day of December 2015.

Jack Gibson, President

Larry L. Russell

Larry Bragman

Cynthia Koehler

Armando Quintero

Krishna Kumar,
General Manager

ATTEST:

Secretary
WHEREAS, THE BOARD OF DIRECTORS OF THE MARIN MUNICIPAL WATER DISTRICT WISHES TO RECOGNIZE GLENN HUBER for his 16 years of service beginning as a Meter Reader and Repair Worker on March 29, 1999. On March 30, 2000, Glenn was promoted to Mechanical and Electrical Maintenance Worker I. A short year later, on May 21, 2001, having proven himself as a superior Mechanical and Electrical Maintenance Worker I, he was promoted to Mechanical and Electrical Maintenance Worker II. On October 31, 2002, Glenn switched career paths and successfully became a Water Quality Technician. On March 24, 2003, having realized that there is nothing better, more satisfying, challenging and glamorous than being a Mechanical and Electrical Maintenance Worker, he returned to where he belonged and once again became a Mechanical and Electrical Maintenance Worker II. Glenn continued improving his skills, working his way up to Mechanical and Electrical Maintenance Worker III in 2006, and then was promoted to the highly respected position of Mechanical and Electrical Maintenance Worker IV in 2008, and in that position he finished his career at the District on December 29, 2015; and

WHEREAS, Glenn has spent a lifetime as a sailboat captain working on broken critical equipment in the middle of the shark infested ocean where no parts or proper tools are available, this gave him the skills he needed to keep Las Gallinas Treatment Plant running.

WHEREAS, due to Glenn’s dedication to learning as much as he could about the equipment he encountered while doing his job, he has been a resource for his coworkers over the years for information on all aspects of treatment plant and distribution system equipment. He would frequently let his coworkers know of the problems he had solved at the weekly staff meetings. This was very helpful in avoiding future problems his coworkers might encounter.

WHEREAS, Glenn earned a plethora of awards over his career at the district, totaling an unprecedented and very impressive 25 Bravo Awards and 12 Quarterly Recognition Awards.

WHEREAS, Glenn served as a Union Steward and did a fine job representing his coworkers in matters of discipline and contract negotiations.

WHEREAS, Glenn is beginning his retirement by captaining his own sailboat on an extended voyage in the Caribbean. We wish him bon voyage, smooth sailing, red skies at night, shiver me timbers, anchors aweigh, batten down the hatches, fair winds and following seas, walk the plank and never get caught in the doldrums!

WHEREAS, NOW, THEREFORE, BE IT RESOLVED THAT THE BOARD OF DIRECTORS expresses its sincere appreciation to Glenn Huber for his services to the district and wishes him good health and happiness in his retirement.

RESOLUTION NO. 8378 APPROVED at a regular meeting of the Board of Directors held this 15th day of December 2015.

John C. Gibson, President

Cynthia Koehler

Larry Bragman

Larry Russell

Armando Quintero

Krishna Kumar, General Manager

ATTEST:

Secretary
STAFF REPORT

SUBJECT: Water Production and Storage Report

SUBMITTED BY: Michael Ban, P.E., Manager
Environmental and Engineering Services Division

RECOMMENDED ACTION: Information

EXECUTIVE SUMMARY:

The District’s treated water production for the report period ending December 08, 2015 has averaged 15.88 mgd. Potable water production for the fiscal year has been 11,060 acre-feet, which is 6.36% below FY14/15. The District’s total water production for the most recent 12-month period of December 2014 through November 2015 was 22,881 acre-feet.

District reservoir storage, as of this date is 50,859 acre-feet. This is 63.92% of total storage capacity and 94.98% of normal storage. Last year on this date, storage was 56,476 acre-feet. Storage on November 09, 2015 (as reported to you at the Board meeting of November 17, 2015) was 53,229 acre feet and has decreased in the two-week interval by 2,370 acre-feet.

As measured from the lip of each spillway, the water surface at Kent is down 19.55 feet; Bon Tempe is down 5.69 feet; Alpine is down 13.48 feet; Nicasio is down 19.94 feet; Soulajule is down 17.69 feet; Lagunitas is down 1.39 feet; and Phoenix is down 4.36 feet.

Billed water for the month of November 2015 was 649,016 CCFs and was 2.45% above the same month last year and cumulatively was 11.37% below last year. Water revenue, based on the billed figures for November 2015 was $3,307,946 and was 4.31% above the same month last year, while cumulative revenue through November 2015 at $21,523,164 was 15.56% below last year.

The stream release from Kent Reservoir is 18.04 cfs (11.66 mgd), and the release from Soulajule is 5.26 cfs (3.40 mgd).

ATTACHMENTS:

- Monthly Water Production From FYE 2010 – 2015
- Daily Production-Potable Water for the past two years
- Running 12-month Water Production for 1987 to present
- Total Reservoir Storage for the past three years
- Cumulative Precipitation for the past two years
- Cumulative Billed Water
- Cumulative Water Revenue
- Consumption Comparison
- Water Sales Budget vs Actual
## Total Potable Water Production

<table>
<thead>
<tr>
<th>Month</th>
<th>FYE 16</th>
<th>FYE 15</th>
<th>FYE 14</th>
<th>FYE 13</th>
<th>FYE 12</th>
<th>FYE 11</th>
<th>FYE 10</th>
<th>% Change FYE16 vs FYE15</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>2,287</td>
<td>2,690</td>
<td>2,977</td>
<td>3,038</td>
<td>2,851</td>
<td>3,029</td>
<td>3,054</td>
<td>-15%</td>
</tr>
<tr>
<td>August</td>
<td>2,369</td>
<td>2,590</td>
<td>2,960</td>
<td>3,042</td>
<td>2,865</td>
<td>3,003</td>
<td>3,048</td>
<td>-9%</td>
</tr>
<tr>
<td>September</td>
<td>2,239</td>
<td>2,298</td>
<td>2,742</td>
<td>2,744</td>
<td>2,700</td>
<td>2,851</td>
<td>2,781</td>
<td>-3%</td>
</tr>
<tr>
<td>October</td>
<td>2,148</td>
<td>2,118</td>
<td>2,599</td>
<td>2,345</td>
<td>2,182</td>
<td>2,383</td>
<td>2,143</td>
<td>1%</td>
</tr>
<tr>
<td>November</td>
<td>1,628</td>
<td>1,641</td>
<td>2,090</td>
<td>1,622</td>
<td>1,728</td>
<td>1,612</td>
<td>1,793</td>
<td>-1%</td>
</tr>
<tr>
<td>Total YTD</td>
<td>10,671</td>
<td>11,337</td>
<td>13,367</td>
<td>12,791</td>
<td>12,326</td>
<td>12,878</td>
<td>12,820</td>
<td>-6%</td>
</tr>
</tbody>
</table>

## Imported Water Production

<table>
<thead>
<tr>
<th>Month</th>
<th>FYE 16</th>
<th>FYE 15</th>
<th>FYE 14</th>
<th>FYE 13</th>
<th>FYE 12</th>
<th>FYE 11</th>
<th>FYE 10</th>
<th>% Change FYE16 vs FYE15</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>364</td>
<td>710</td>
<td>517</td>
<td>349</td>
<td>376</td>
<td>327</td>
<td>326</td>
<td>-49%</td>
</tr>
<tr>
<td>August</td>
<td>355</td>
<td>451</td>
<td>502</td>
<td>356</td>
<td>376</td>
<td>331</td>
<td>332</td>
<td>-21%</td>
</tr>
<tr>
<td>September</td>
<td>378</td>
<td>867</td>
<td>498</td>
<td>363</td>
<td>367</td>
<td>310</td>
<td>311</td>
<td>-56%</td>
</tr>
<tr>
<td>October</td>
<td>380</td>
<td>619</td>
<td>520</td>
<td>424</td>
<td>378</td>
<td>449</td>
<td>461</td>
<td>-39%</td>
</tr>
<tr>
<td>November</td>
<td>329</td>
<td>769</td>
<td>539</td>
<td>528</td>
<td>475</td>
<td>647</td>
<td>786</td>
<td>-57%</td>
</tr>
<tr>
<td>Total YTD</td>
<td>1,806</td>
<td>3,416</td>
<td>2,575</td>
<td>2,020</td>
<td>1,971</td>
<td>2,063</td>
<td>2,216</td>
<td>-47%</td>
</tr>
</tbody>
</table>

## Reservoir Water Production

<table>
<thead>
<tr>
<th>Month</th>
<th>FYE 16</th>
<th>FYE 15</th>
<th>FYE 14</th>
<th>FYE 13</th>
<th>FYE 12</th>
<th>FYE 11</th>
<th>FYE 10</th>
<th>% Change FYE16 vs FYE15</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>1,922</td>
<td>1,980</td>
<td>2,460</td>
<td>2,689</td>
<td>2,476</td>
<td>2,702</td>
<td>2,729</td>
<td>-3%</td>
</tr>
<tr>
<td>August</td>
<td>2,014</td>
<td>2,139</td>
<td>2,458</td>
<td>2,686</td>
<td>2,489</td>
<td>2,673</td>
<td>2,716</td>
<td>-6%</td>
</tr>
<tr>
<td>September</td>
<td>1,861</td>
<td>1,431</td>
<td>2,244</td>
<td>2,381</td>
<td>2,332</td>
<td>2,542</td>
<td>2,470</td>
<td>30%</td>
</tr>
<tr>
<td>October</td>
<td>1,769</td>
<td>1,499</td>
<td>2,079</td>
<td>1,921</td>
<td>1,804</td>
<td>1,934</td>
<td>1,683</td>
<td>18%</td>
</tr>
<tr>
<td>November</td>
<td>1,299</td>
<td>872</td>
<td>1,551</td>
<td>1,094</td>
<td>1,253</td>
<td>965</td>
<td>1,007</td>
<td>49%</td>
</tr>
<tr>
<td>Total YTD</td>
<td>8,865</td>
<td>7,921</td>
<td>10,792</td>
<td>10,770</td>
<td>10,354</td>
<td>10,815</td>
<td>10,604</td>
<td>12%</td>
</tr>
</tbody>
</table>

## Recycled Water Production

<table>
<thead>
<tr>
<th>Month</th>
<th>FYE 16</th>
<th>FYE 15</th>
<th>FYE 14</th>
<th>FYE 13</th>
<th>FYE 12</th>
<th>FYE 11</th>
<th>FYE 10</th>
<th>% Change FYE16 vs FYE15</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>87</td>
<td>103</td>
<td>109</td>
<td>117</td>
<td>98</td>
<td>116</td>
<td>107</td>
<td>-15%</td>
</tr>
<tr>
<td>August</td>
<td>87</td>
<td>80</td>
<td>103</td>
<td>116</td>
<td>98</td>
<td>109</td>
<td>112</td>
<td>8%</td>
</tr>
<tr>
<td>September</td>
<td>77</td>
<td>78</td>
<td>89</td>
<td>90</td>
<td>89</td>
<td>92</td>
<td>88</td>
<td>-1%</td>
</tr>
<tr>
<td>October</td>
<td>60</td>
<td>55</td>
<td>69</td>
<td>54</td>
<td>15</td>
<td>57</td>
<td>39</td>
<td>8%</td>
</tr>
<tr>
<td>November</td>
<td>12</td>
<td>23</td>
<td>38</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>-47%</td>
</tr>
<tr>
<td>Total YTD</td>
<td>323</td>
<td>340</td>
<td>407</td>
<td>381</td>
<td>301</td>
<td>377</td>
<td>352</td>
<td>-5%</td>
</tr>
</tbody>
</table>
RUNNING 12 MONTH POTABLE WATER PRODUCTION

Acre-Feet/Year

15,000 20,000 25,000 30,000 35,000

TOTAL RESERVOIR STORAGE

STORAGE (Thousands of Acre Feet)

MONTHS

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

1977 DROUGHT

MEDIAN

MAXIMUM STORAGE

2013

2014

2015

MEDIAN

1977 DROUGHT

2015

2014

2013
CUMULATIVE BILLED WATER

BILLED WATER (IN THOUSAND OF CCF)

MONTHS

JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN

2014-15 2015-16
During the month of November 2015 consumption was up (higher) 15,460 ccf from November 2014.
STAFF REPORT

SUBJECT: Watershed Committee Referrals

SUBMITTED BY: Crystal Yezman, Division Manager, Facilities and Watershed Division

RECOMMENDED ACTION: A) Tamalpais Land Collaborative (TLC) 2016 Work Plan – Approve; and B) Appoint Watershed Citizen Advisory Committee members – Approve.

EXECUTIVE SUMMARY: The following items were referred to the board of directors for approval at the December 10, 2015, Watershed Committee:

A) The annual TLC work plan is to be reviewed and approved by each partner agency executive and/or elected board per the TLC Memorandum of Understanding. The 2016 work plan includes both program and project support. Program support includes the continuation and expansion of the mountain-wide habitat restoration, weed management, citizen science, volunteer stewardship and youth education programs. These programs are integrally linked to, and add capacity to the District’s existing program areas. A proposed science symposium for 2016 will focus on biodiversity and Mt Tam’s natural resources, to include developing a “report card” on the health of some of those resources. The 2016 work plan also includes support for several proposed projects, including the Log Cabin and West Peak Restoration projects.

Staff requests that the board of directors approve the TLC 2016 work plan.

B) At the December 10, 2015, Watershed Committee meeting, the board and general manager put forth their nominations for the formation of a Citizen Advisory Committee on MMWD’s participation in the TLC (CAC).

The recommended and confirmed committee members are:

- Priscilla Bull, Kentfield (Director Gibson’s nominee)
- Karen Betzner, Mill Valley (Director Koehler’s nominee)
- Jerry Riessen, Tiburon (Director Russell’s nominee)
- Roger Roberts, San Rafael (Director Quintero’s nominee)
- Peter Anderson, Fairfax (Director Bragman’s nominee)
- Gary Yost, Mill Valley (GM’s nominee)
- Phil Sotter, Woodacre (GM’s nominee)

Staff requests that the board of directors approve the appointment of these nominees to the CAC.
FISCAL IMPACT:  YES _____  NO  X  FISCAL YEAR:  ____________________________
BACKGROUND:

I. TLC 2016 Work Plan

The TLC 2016 Work Plan (attached) and associated financial forecast were presented at a public meeting of the TLC Executive Committee ("Tam Talk") on October 4, 2015, at the Mill Valley Community Center. Public comment was heard at that time. Subsequently, the draft work plan was presented and reviewed by the board at the December 10, 2015 Watershed Committee and referred to the full board for approval.

In accordance with the TLC Memorandum of Understanding the partner agencies developed a “Five Year List” of projects and programs that are compatible with the purpose and vision of the TLC so as to guide fundraising activities. This comprehensive Five Year vision document and project and program list for the TLC was approved by the MMWD Board of Directors on November 10, 2014.

In order to provide more discrete accounting of activities and expenditures each year, the partner agencies work together to develop an annual work plan that details project and programs implementation, fundraising, and volunteer engagements for the coming year. This work plan is reviewed and approved by agency executives and elected boards.

The TLC 2016 work plan includes both program and project support. Program support includes the continuation and expansion of the mountain-wide habitat restoration, weed management, citizen science, volunteer stewardship and youth education programs. These programs are integrally linked to, and add capacity to the District’s existing program areas. A proposed symposium for 2016 will focus on biodiversity and Mt Tam’s natural resources, to include developing a “report card” on the health of some of those resources. The work plan also includes several proposed projects, including the Log Cabin and West Peak Restoration projects.

Staff requests that the board of directors approve the TLC 2016 work plan.

II. Citizen Advisory Committee for MMWD Participation in the TLC

At the September 10, 2015, Watershed committee meeting, the board provided specific direction to staff on its preferences for the formation of a Citizen Advisory Committee on MMWD’s participation in the TLC (CAC). Based on that direction, staff now proposes the following for the CAC:

- The purpose of the committee is to review projects and programs of the district that are being supported through the TLC for consistency with district policies – specifically those policies intended to provide for the long term health of district watershed lands.
• The committee will comprise seven people, one member appointed by each board Member plus two members at large appointed by the General Manager.
• The committee will serve a minimum one year term, or until such time that the board dissolves the committee. The committee will elect a chair and co-chair from its ranks.
• The committee will meet as a noticed public meeting at least twice per year and will be supported by MMWD staff. Staff may arrange field trips in addition to the meetings.
• A committee representative will report to the watershed committee twice per year.

The recommended committee members are:

• Priscilla Bull, Kentfield (Director Gibson’s nominee)
• Karen Betzner, Mill Valley (Director Koehler’s nominee)
• Jerry Riessen, Tiburon (Director Russell’s nominee)
• Roger Roberts, San Rafael (Director Quintero’s nominee)
• Peter Anderson, Fairfax (Director Bragman’s nominee)
• Gary Yost, Mill Valley (GM’s nominee)
• Phil Sotter, Woodacre (GM’s nominee)

Staff requests that the board of directors approve the appointment of these nominees to the CAC.

**STRATEGIC PLAN ALIGNMENT:**

The requested actions aligns with the district’s Strategic Plan Goal 4: Environmental Stewardship, Strategy 2 – Increase community engagement in stewardship of Mt. Tamalpais as water and community asset: Objective 1 - Develop projects and programs for the Tamalpais Lands Collaborative and Objective 2 - Increase volunteer and education program capacity through public-private and not-for-profit partnerships.

<table>
<thead>
<tr>
<th>REVIEWED BY</th>
<th>Finance Manager</th>
<th>General Counsel</th>
<th>General Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NA</td>
<td>NA</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NA</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x</td>
<td>NA</td>
</tr>
</tbody>
</table>

**ATTACHMENTS:**

1. TLC 2016 Work Plan and Financial Forecast
The following programs and projects are under consideration for the TLC in 2016 to improve the health of the mountain, enrich the experiences of its visitors, and cultivate and educate a new generation of stewards. They will be implemented as funding becomes available, and will include all necessary agency permitting, compliance, and community engagement and public review. For more information please visit onetam.org.

**Community & Conservation Programs**

**Volunteer Stewardship & Citizen/Community Science**
- Increase annual support for approximately 30 volunteer stewardship workdays for habitat restoration, invasive plant patrol, and trails stewardship
- Add 60 stewardship and community science programs/workdays
- Expand the Wildlife Camera Project (by approx. 100 cameras) into the Redwood Creek Watershed
- Build academic and community partnerships for data collection and processing
- Recruit and train 100 volunteers and 15 students to support the Wildlife Camera Project
- Develop an interactive website to process and share wildlife images and data

**Conservation Management (Habitat Restoration & Ecological Monitoring)**
- Hire 2 One Tam Conservation Management Team staff—a Specialist and a Technician
- Conduct biodiversity inventories
- Launch a mountain-wide rare plant monitoring program, and weed detection and management programs
- Coordinate interagency priorities and develop a report on health report of Mt. Tam
- Increase weed and vegetation management throughout the Redwood Creek watershed

**Youth & Community Programs**
- Increase support for 60 agency youth education programs
- Conduct second year of One Tam LINC (*Linking Individuals with Natural Communities*) program and advanced summer internships for 2015 LINC youth participants
- Work with community organizations to engage underserved youth in stewardship programs
- Support 4 mountain-wide volunteer days
- Increase mountain-wide naturalist walks
- Pilot in-school wildlife education programs for middle and high schools
- Develop interactive watershed-based education displays
- Provide presentations and outreach at local community events and trailheads
- Develop academic internship partnership with Marin colleges and universities

**Host Two Tam Symposia (topics under consideration include):**
- The State of Mt. Tam’s Forest’s and the Forest Resiliency Study
- Discovering Marin’s Wildlife through the Wildlife Camera Project
- The Status of Mt. Tam’s Biodiversity
- Building the Next 100 Years of Care and Stewardship
Proposed Projects

Legacy Projects

Potrero Meadow Restoration
- Conduct a study to re-route roads and trails to restore wetland habitat
- Develop a meadow revegetation strategy

West Peak
- Perform a feasibility study for restoring the West Peak

Log Cabin at Phoenix Lake
- Complete an initial design assessment

Resilient Forest Project at Laurel Dell, Bolinas, and San Geronimo Ridges
- Plant 600 redwoods, Douglas firs, and oak trees

Signature Trail Corridor Projects

Redwood Creek Trail Re-alignment
- Complete planning

Coordinated Trail Stewardship in Redwood Creek Watershed
- Implement a watershed-wide State/National Parks Trail Crew Program

Wayfinding/Signage
- Assess signage gaps at Mount Tamalpais State Park and install new signs
- Develop mountain-wide standards for wayfinding signs to improve navigation and visitor experience

Community Trailheads
- Complete the design and pilot the One Tam Roving Ranger—a mobile vehicle to build awareness and understanding of Mt. Tam’s resources, One Tam, and agency programs

Potential Projects are contingent on complete project-specific grant/foundation/agency funding and will only be implemented if funds are available & with appropriate board approval of agency budgets. Projects may be implemented by the Parks Conservancy or by agency partners. Projects either are, or will be further described on www.onetam.org.
TAMALPAIS LANDS COLLABORATIVE
FORECASTED FY2016 FUNDING PLAN
Contingent on Secured Funding & Agency Approvals

SUPPORT TO MT. TAM PROGRAMS AND PROJECTS

<table>
<thead>
<tr>
<th>Community &amp; Conservation Programs</th>
<th>FY2016 Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Stewardship &amp; Youth Programs</td>
<td>254,500</td>
</tr>
<tr>
<td>Conservation Management Program</td>
<td>255,000</td>
</tr>
<tr>
<td>Science Symposia Series &amp; Conferences</td>
<td>15,000</td>
</tr>
<tr>
<td>Citizen (Community) Science</td>
<td>113,750</td>
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<td><strong>Total</strong></td>
<td><strong>638,250</strong></td>
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<thead>
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<th>Initiative Development, Infrastructure and Staffing</th>
<th>FY2016 Forecast</th>
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<tbody>
<tr>
<td>Staff Support</td>
<td>84,146</td>
</tr>
<tr>
<td>Marin Office Equipment &amp; Supplies</td>
<td>81,500</td>
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<tr>
<td>Initiative Development &amp; Design</td>
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<tr>
<td>Partnership Research and Systems Development¹</td>
<td>171,000</td>
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<tr>
<td>Graphic Design and Website Management Support</td>
<td>50,000</td>
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<tr>
<td>Material Development &amp; Production</td>
<td>37,500</td>
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<tr>
<td>Reporting &amp; Documentation</td>
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</tr>
<tr>
<td>Events &amp; Meetings</td>
<td>16,500</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>555,646</strong></td>
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<table>
<thead>
<tr>
<th>Priority Projects - Signature Trail Corridors²</th>
<th>FY2016 Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved Wayfinding - Assessment &amp; Installation</td>
<td>103,000</td>
</tr>
<tr>
<td>Mobile Trailhead</td>
<td>75,000</td>
</tr>
<tr>
<td>Community Trailheads</td>
<td>65,000</td>
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<tr>
<td>Redwood Creek Trail Re-alignment Implementation</td>
<td>40,000</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>283,000</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Priority Projects - Legacy Projects³</th>
<th>FY2016 Forecast</th>
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</thead>
<tbody>
<tr>
<td>West Peak Feasibility Study</td>
<td>TBD</td>
</tr>
<tr>
<td>Potrero Meadow Restoration</td>
<td>65,000</td>
</tr>
<tr>
<td>Forest Resiliency Strategy &amp; Pilot Project Development</td>
<td>TBD</td>
</tr>
<tr>
<td>Large Scale Inventories</td>
<td>145,400</td>
</tr>
<tr>
<td>Log Cabin</td>
<td>TBD</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>210,400</strong></td>
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</tbody>
</table>

Inkind Conservancy Staff Contribution - $241,000

TOTAL SUPPORT: **1,687,296**

SOURCES OF SUPPORT

<table>
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<tr>
<th>FY2016 Forecast</th>
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</thead>
<tbody>
<tr>
<td>FY2015 Committed One Tam Funds</td>
</tr>
<tr>
<td>Foundation Grants¹</td>
</tr>
<tr>
<td>Government Grants</td>
</tr>
<tr>
<td>Individual Contributions</td>
</tr>
<tr>
<td>Business Contributions</td>
</tr>
<tr>
<td>Redwood Creek Watershed Collaborative²</td>
</tr>
<tr>
<td><strong>Total Sources of Support</strong></td>
</tr>
</tbody>
</table>

NET PROJECTED OPERATING SURPLUS: **55,065**
FORECASTED TLC AGENCY CONTRIBUTIONS TO PROGRAM AND PROJECT FUNDING

<table>
<thead>
<tr>
<th>Programs &amp; Projects Specific to Redwood Creek Watershed&lt;sup&gt;4&lt;/sup&gt;</th>
<th>845,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservation Management &amp; Stewardship (integrated across CDPR &amp; NPS lands)&lt;sup&gt;4&lt;/sup&gt;</td>
<td>845,000</td>
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<table>
<thead>
<tr>
<th>Priority Projects - Signature Trails&lt;sup&gt;3&lt;/sup&gt;</th>
<th>15,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved Wayfinding - Assessment &amp; Installation</td>
<td>-</td>
</tr>
<tr>
<td>Mobile Trailhead&lt;sup&gt;5&lt;/sup&gt;</td>
<td>15,000</td>
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<tr>
<td>Community Trailheads</td>
<td>-</td>
</tr>
<tr>
<td>Redwood Creek Trail Re-alignment Implementation</td>
<td>-</td>
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</table>

<table>
<thead>
<tr>
<th>Priority Projects - Legacy Projects&lt;sup&gt;3&lt;/sup&gt;</th>
<th>185,000</th>
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<tbody>
<tr>
<td>West Peak Feasibility Study&lt;sup&gt;6&lt;/sup&gt;</td>
<td>TBD</td>
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<tr>
<td>Potrero Meadow Restoration</td>
<td>-</td>
</tr>
<tr>
<td>Forest Resiliency Strategy &amp; Pilot Project Development&lt;sup&gt;7&lt;/sup&gt;</td>
<td>185,000</td>
</tr>
<tr>
<td>Large Scale Inventories</td>
<td>-</td>
</tr>
<tr>
<td>Log Cabin&lt;sup&gt;8&lt;/sup&gt;</td>
<td>50,000</td>
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<table>
<thead>
<tr>
<th>TOTAL FORECASTED AGENCY PROJECT FUNDING</th>
<th>1,095,000</th>
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</thead>
</table>

<sup>1</sup>Includes S.D. Bechtel Jr. Foundation Grant ($440,000 over 4 years)

<sup>2</sup>Redwood Creek Watershed Collaborative Funds - S. Marin Wildlife Picture Index (2015)

<sup>3</sup>Potential Projects are contingent on complete project-specific grant/foundation/agency funding and will only be implemented if funds are available & with appropriate board approval of agency budgets. Projects may be implemented by the Parks Conservancy or by Agency Partners.

<sup>4</sup>National Park Service Contribution to support shared CA State Parks/NPS conservation and stewardship

<sup>5</sup>$15K anticipated from Marin County Parks, subject to board approval.

<sup>6</sup>TBD, project undertaking subject to Marin Municipal Water District (MMWD) board review and approval.

<sup>7</sup>$120K approved by the MMWD board, and remaining $60K pending through grants & approval.

<sup>8</sup>$50K administered by MMWD for Basis of Design Study.
STAFF REPORT

SUBJECT: Water Conservation Ordinance Update

SUBMITTED BY: Dan Carney, Water Conservation Manager
General Manager’s Division

RECOMMENDED ACTION: Approve Draft Ordinance No. 430

EXECUTIVE SUMMARY:

The purpose of draft Ordinance No. 430 (Ordinance) is to update elements of the District’s water conservation code Title 13, Chapter 13, Section 13.02.021 to be consistent with the Governor’s executive order no. b-29-15 revising sections of the California Code of Regulations, Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape ordinance, and the July 1, 2015 supplement to the 2013 California Green Building Code, Title 24, Part 11. The Ordinance is triggered when a local jurisdiction requires a construction permit, plan check, or design review for a residential, commercial, industrial and institutional project.

The significant changes to existing conservation code included in the Ordinance include:

- Reducing the square foot threshold for all new landscapes required to complete a plan review from 1,000 sq. ft. to 500 sq. ft.
- Requiring all landscape rehabilitation projects of any size to complete a plan review, with the option for projects of less than 1,000 sq. ft. to complete a plan review or an abbreviated “prescriptive” review process.
- Reducing the Maximum Applied Water Allocation (MAWA) by approximately 10% for residential landscapes and 25% for commercial landscapes.
- Increasing the MAWA for landscape areas irrigated exclusively with non-potable water including recycled water, gray water, infiltrated storm water, and harvested rain water.
- Limiting ornamental turf and high water use plants in residential landscapes to 25% of the total landscape area.
- Requiring flow sensors and automatic irrigation shutoff valves on all landscape projects of 5,000 sq. ft. or greater in size.
- Reducing the allowable flow from lavatory and kitchen faucets from 1.5 gallons per minute to 1.0 g.p.m., and 2.5 g.p.m. to 1.8-2.2 g.p.m., respectively.
- Expanding and revising the “Definitions” subsection in code 13.02.021 (2).

FISCAL IMPACT: YES ________ NO X ________ FISCAL YEAR: ________________________________
BACKGROUND:

Governor Brown’s Drought Executive Order of April 1, 2015 (EO B-29-15) directed DWR to update the State’s Model Water Efficient Landscape Ordinance (MWELO) through expedited regulation. The California Water Commission approved the revised MWELO on July 15, 2015.

The MWELO increases water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, gray water usage, onsite storm water capture, and by limiting the portion of landscapes that can be covered in turf. It also requires reporting on the implementation and enforcement of local ordinances, with required reports due to the Department of Water Resources by December 31, 2015, and subsequent annual reports due by January 31st each year thereafter. Draft Ordinance 430 has been developed by staff to comply with the MWELO.

New development projects that include landscape areas of 500 sq. ft. or more are subject to the Ordinance. This applies to residential, commercial, industrial and institutional projects that require a permit, plan check or design review. The previous landscape size threshold for new development projects was 1,000 sq. ft.

Rehabilitated residential and non-residential projects of any size are subject to the Ordinance. The previous landscape size threshold for rehabilitated projects was 1,000 sq. ft. To reduce the complexity and costs for the smaller landscapes, a prescriptive compliance approach (Appendix D) is available for landscapes less than 1,000 sq. ft. in size. Customers with landscape projects within this size range can choose to comply by either completing the entire Ordinance plan review procedure, or opt to use the abbreviated prescriptive approach in Appendix D.

The maximum applied water allowance (MAWA) has been lowered from 60% of the reference evapotranspiration (ETo) to 55% for residential landscape projects, and to 45% of ETo for non-residential projects. This water allowance reduces the landscape area that can be planted with high water use plants such as turf.

Local agencies (cities and counties) have until December 1, 2015 to adopt the MWELO or adopt their own ordinance, which must be at least as effective in conserving water as the MWELO. The State is also requiring agencies to submit a progress report to DWR Staff is recommending that conservation staff continue to offer plan review services to the local agencies in MMWD.

STRATEGIC PLAN ALIGNMENT:

The recommended action aligns with the district’s Strategic Plan Goal Area 1 (Water Supply Resiliency), Strategy 2 (Emphasize water use efficiency as a core water resource element for MMWD), and Objective 2 (Implement new conservation programs to achieve targets).
**ATTACHMENTS:**

1. Draft Ordinance No. 430
DRAFT
MARIN MUNICIPAL WATER DISTRICT
ORDINANCE NO. 430

AN ORDINANCE AMENDING TITLE 13 OF THE MARIN MUNICIPAL WATER DISTRICT CODE ADDING ANOTHER ELEMENT OF THE DISTRICT’S WATER CONSERVATION PROGRAM PURSUANT TO WATER CODE SECTION 375 BY REPEALING IN ITS ENTIRITY EXISTING CODE SECTION 13.02.021 AND REPLACING IT WITH A NEW SECTION 13.02.021 OF THE DISTRICT CODE

BE IT ORDAINED BY THE BOARD OF DIRECTORS OF THE MARIN MUNICIPAL WATER DISTRICT AS FOLLOWS:

SECTION 1. Purpose: The purpose of this ordinance is to adopt another element of the District’s water conservation program pursuant to Water Code Section 375. The purpose of this ordinance is to update elements of the District’s water conservation code Title 13, Section 13.02.021 to comply with the Governor’s Executive Order No. b-29-15 which revised provisions of the California Code of Regulations, Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance, and the July 1, 2015 supplement to the 2013 California Green Building Code, Title 24, Part 11. The current element includes revisions that will improve the effectiveness of the District’s water waste prevention program and increase efficiency standards. The Board of Directors views this conservation program as a fundamental and necessary step in its on-going efforts to reduce overall water use District-wide.

SECTION 2. Ordinance Amendments:

A. Section 13.02.021 entitled “Water Conservation: Normal Year Water Conservation” of Chapter 13.02 of Title 13 of the District Code is repealed in its entirety and replaced with a new Section 13.02.021 entitled “Water Conservation: Normal Year Water Conservation” which shall read as follows:


(1) Declaration of Purpose. The purpose of this chapter is to provide a water conservation plan to maximize the water supply during periods of relatively normal rainfall and to minimize the effect of a shortage of water on the district's consumers during an extended dry weather period (drought). The normal year conservation programs in this chapter are based on industry standards promulgated by the American Rainwater Catchment Systems Association (ARCSA), Bay-Friendly Landscape and Gardening Practices (Bay-Friendly), Best Management Practices developed by the California Urban Water Conservation Council (CUWCC), California Department of Water Resources (DWR), California Invasive Plant Council (Cal-IPC), California Irrigation Management Information System (CIMIS), Consortium for Energy Efficiency (CEE), University of California Cooperative Extension (U.C. Extension), USEPA WaterSense Program (WaterSense), Water Use Classification of Landscape Species (WUCOLS), and other recognized conservation industry standards. In every case, the intent of this chapter is to remain a living document,
incorporating the most restrictive industry standards in practice at the time in question. In the event that there is a conflict in regulations, the default shall be determined by the District, or as required by law.

Section 2 of Article X of the California Constitution specifies that the right to use water is limited to the amount reasonably required for the beneficial use to be served and the right does not and shall not extend to waste or unreasonable method of use. This policy protects local water supplies through the implementation of a whole systems approach to design, construction, installation and maintenance of the landscape resulting in water conserving climate-appropriate landscapes, improved water quality and the minimization of natural resource inputs.

(2) Definitions. Definitions used in this chapter are as follows:

A. Aggregate Landscape Area: The total square foot area of new or rehabilitated landscape subject to plan review.

B. Applied Water: The portion of water supplied by the irrigation system to the landscape.

C. Application for Service from an Existing Connection: The application for service from an existing connection, whether it is a new, increased, or modified water service, in a customer’s name for a property.

D. Automatic Irrigation Controller: means a device used to remotely control valves that operate an irrigation system. Automatic irrigation controllers are able to self-adjust and schedule irrigation events using either evapotranspiration (weather-based) or soil moisture data.

E. Backflow Prevention Device: means an approved device installed to District standards which will prevent backflow or back-siphonage into the potable water system.

F. Booster Pumps: A water pump used where the normal water system pressure is low and needs to be increased.

G. Bubblers: Irrigation heads that produce a large volume of output, measured in gallons per minute (gpm) that flood the soil area surrounding the bubbler head.

H. Check Valve or Anti-Drain Valve: means a valve located under a sprinkler head, or other location in the irrigation system, to hold water in the system to prevent drainage from sprinkler heads when the sprinkler is off.

I. Common Interest Development: community apartment projects, condominium projects, planned developments, and stock cooperatives per Civil Code Section 1351.

J. Compost: the decayed remains of organic matter that has rotted into a natural fertilizer suitable as a soil amendment to enhance plant growth.
K. Conversion Factor (0.62): means the number that converts acre-inches per acre per year to gallons per square foot per year.

L. Developed landscape area: all outdoor areas under irrigation, swimming pools, and water features, but excluding hardscape areas.

M. Distribution Uniformity: means the measure of the uniformity of irrigation water over a defined area.

N. Drip Irrigation: means any non-spray low volume irrigation system utilizing emission devices with a flow rate measured in gallons per hour. Low volume irrigation systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.

O. Ecological Restoration Project: a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

P. Effective Precipitation (Eppt): the portion of total rainfall which becomes available for plant growth and that is used by the plants, defined as an average of 25% of total rainfall.

Q. Emitter: a drip irrigation device that delivers water slowly from the system to the soil.

R. Established Landscape: means the point at which plants in the landscape have developed significant root growth into the soil. Typically, most plants are established after one or two years of growth.

S. Estimated Total Water Use (ETWU): a calculated amount of water needed to irrigate a given landscape, and used as the basis for assigning water budgets at a site.

T. ET Adjustment Factor (ETAF): a factor of 0.55 for residential areas and 0.45 for non-residential areas, that, when applied to reference evapotranspiration as measured by a CIMIS weather station, or equivalent, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. The ETAF for new and existing (non-rehabilitated) Special Landscape Areas shall not exceed 1.0. The ETAF for existing non-rehabilitated landscapes is 0.8.

U. Evapotranspiration rate: the quantity of water evaporated from adjacent soil and other surfaces and transpired by plants during a specific specified time.

V. Flow Rate: the rate at which water flows through pipes, and valves and emission devices, measured in (gallons per minute, gallons per hour, or cubic feet per second).

W. Flow Sensor: means an inline device installed at the supply point of the irrigation system that produces a repeatable signal proportional to flow rate. Flow sensors must be connected to an automatic irrigation controller, or flow...
monitor capable of receiving flow signals and operating master valves. This combination flow sensor/controller may also function as a landscape water meter or submeter.

X. Friable: means a soil condition that is easily crumbled or loosely compacted down to a minimum depth per planting material requirements, whereby the root structure of newly planted material will be allowed to spread unimpeded.

Y. Graywater: means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthy processing, manufacturing, or operating wastes. Graywater includes, but is not limited to, wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.

Z. Hardscape: impermeable areas including patios, decks and paths, driveways and sidewalks.

AA. Head-to-Head Coverage: a high-flow irrigation system designed to provide an irrigation spray pattern that delivers water from one sprinkler head to the next.

BB. High-efficiency Fixture(s): High efficiency fixtures shall, at a minimum, meet the current requirements of the Water Sense labeling program and those of the California Department of Water Resources and the District.

CC. High-efficiency Irrigation Controller: An electronic device that controls the amount of time and frequency of operation for an irrigation system and adjusts automatically to compensate for the seasonal plant water requirements at the site (commonly referred to as weather-based irrigation controllers).

DD. High-efficiency Irrigation System: An irrigation system connected to a water service where the overall distribution uniformity (how evenly water is distributed across the irrigated landscape area) is a minimum of 75% for overhead spray devices and 85% for drip and bubbler systems, and the volume of water used is consistent with seasonal plant requirements as defined by the District.

EE. High volume irrigation: An irrigation device or system that delivers water to the landscape in a spray, stream-like, or flooding manner from above-ground irrigation nozzles with output expressed in gallons per minute (include many bubblers and micro-spray devices).

FF. High-Flow Sensor: a device for sensing the rate of flow in the irrigation system.

GG. High-water-use plants: Annuals, plants in containers, and plants identified as high-water-use in the current edition of the WUCOLS list published by the U.C. Extension. High-water-using plants are characterized by high transpiration
rates, shallow rooting, the need for frequent watering during summer months or with exposure to hot and drying climatic conditions.

**HH.** Hydrozones: A distinct grouping of plants with similar water needs and climatic requirements. Hydrozone types include, but are not limited to turf, high-water-use plants, low-water-use plants, microclimates (i.e., sun or shade, southern or northern exposures, surrounded by highly reflective surfaces), and partially hardscaped areas with plants, pool areas and water-use features.

**II.** Infiltration Rate: the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour).

**JJ.** Invasive Plant Species: species of plants not historically found in California and/or that spread outside cultivated areas and can damage environmental or economic resources as determined by Cal-IPC [www.cal-ipc.org](http://www.cal-ipc.org) and the District.

**KK.** Irrigation Design Capacity: the maximum amount of water calculated to flow through an irrigation system, or section of a system, based on pipe size, pipe material, and operating pressure.

**LL.** Irrigation Efficiency (IE): a calculated measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The irrigation efficiency for purposes of this ordinance is 0.75 for overhead spray devices and 0.85 for drip and bubbler systems.

**MM.** Isolation Valves: used to isolate and shut-off water to a portion of the piping system.

**NN.** Landscape Agent: The consumer's designated representative for interacting with the District on landscape plan reviews.

**OO.** Landscape Area: means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designated for non-development (e.g., open spaces and existing native vegetation).

**PP.** Landscape Plans: This includes a planting plan, an irrigation plan, and a grading plan drawn at the same scale and that clearly and accurately identify specified plants, irrigation layout, equipment, finish grades and drainage, specifications and construction details, plan sheet numbers, and drawing date of plans.

**QQ.** Landscape Project: means total area of landscape in a project as defined in “landscape area”.

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RR. Landscape Water Budget: The amount of water allowed for landscape water use at a site, adjusted on a seasonal basis, as determined by the District.

SS. Landscape Water Meter: means an inline device installed at the irrigation supply point that measures the flow of water into the irrigation system and is connected to a totalizer to record water use.

TT. Lateral Line: non-pressurized pipe that is located downstream of an irrigation valve.

UU. Low-Head Drainage: water that flows out of the system after the valve turns off due to elevation changes within the system.

VV. Low Volume Irrigation: Irrigation devices, commonly called drip or point-source irrigation, with output measured and typically expressed in gallons per hour (gph), that apply water directly to soil in the plants root zone.

WW. Low-water-use plants: Plants identified as low-water-use in the current edition of the Water Use Classification of Species list published by the U.C. Extension. (Typically, plants that once established can survive on two irrigations per month during the summer months).

XX. Main Line: the pressurized pipeline that delivers water from the water source to the valve or outlet.

YY. Master Valve: is an automatic valve installed at the irrigation supply point which controls water flow into the irrigation system. When this valve is closed water will not be supplied to the irrigation system. A master valve will greatly reduce any water loss due to a break, leak, or other malfunction in the irrigation system.

ZZ. Maximum Applied Water Allowance (MAWA): for design purposes, the upper limit of annual applied water for the established landscape as determined by the District.

AAA. Median: is an area between opposing lanes of traffic that may be unplanted or planted.

BBB. Microclimate: The climate of a specific area in the landscape that has substantially differing sun exposure, temperature, or wind, or proximity to reflective surfaces than adjacent areas or the area as a whole.

CCC. Moderate Water Use Plants: ornamental trees, shrubs ground covers, and perennials and other plants recognized as moderate-water-use by WUCOLS.

DDD. Mulch: any organic material such as leaves, bark, straw, compost or other inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface for the beneficial purposes of reducing evaporation, suppressing weeds, moderating soil temperature and preventing soil erosion.
EEE. New construction: means any new landscape area such as a planter, lawn, swimming pool, park, playground, or greenbelt with or without a new building associated with the project.

FFF. Non-Residential Landscape: means landscapes in commercial, institutional, industrial and public settings that may have areas designated for recreation or public assembly. It also includes portions of common areas of common interest developments, such as home owners associations, with designated recreational areas.

GGG. Operating Pressure: the pressure when water is flowing through the irrigation system.

HHH. Overhead Sprinkler Irrigation Systems or “overhead spray irrigation systems” means systems that deliver water through the air (e.g., spray heads, microspray, multi-stream rotating nozzles and rotors).

III. Overspray: Water delivered by an irrigation system outside the targeted landscape area during average operating conditions onto any adjacent hardscapes or other non-landscaped areas during an irrigation cycle.

JJJ. Pervious: any surface or material that allows the passage of water through the material and into the underlying soil.

KKK. Plant Factor: a factor specified in WUCOLS that, when multiplied by reference evapotranspiration (ETo), estimates the amount of water used by specified plants.

LLL. Point of Connection (POC): The location where an irrigation system is connected to water supply.

MMM. Precipitation Rate: the rate of application of water measured in inches per hour.

NNN. Pressure Regulating Valve: a valve that automatically reduces the pressure in a pipe.

OOO. Project Applicant: the individual or entity submitting a Landscape Documentation Package, to request a permit, plan check or design review from the local agency. A project applicant may be the property owner or his or her designee.

PPP. Property: Any structure, including but not limited to single family residential, multi-family residential and floating homes, built and/or intended primarily for sheltering or housing of any person and ancillary structures thereto.

QQQ. Property Owner: A person or entity that owns or has the financial authority or control over the property to comply with the requirements set forth in this chapter.
RRR. Rain Sensor: a system component which automatically shuts off and suspends the irrigation system when it rains.

SSS. Recreational Area: areas dedicated to active play or recreation such as sports fields, school yards, picnic grounds, or other areas with intense foot traffic parks, sports fields and golf courses where turf provides a playing surface.

TTT. Recycled Water: means tertiary treated water which results from the treatment of wastewater, is suitable for direct beneficial use, and conforms to the definition of disinfected tertiary recycled water in accordance with state law.

UUU. Reference Evapotranspiration or ETo: a standard measurement of environmental parameters which affect the water use of plants and are an estimate of the evapotranspiration of a large field of four to seven-inch tall, cool-season grass that is well watered.

VVV. Rehabilitated Landscape: any re-landscaping project that requires a building or grading permit, plan check or design review.

WWW. Residential Customer: The person(s) or entity with an existing water service connection for a residential property.

XXX. Residential Landscape: means landscapes surrounding single family or duplex homes.

YYY. Runoff: Irrigation water that is not absorbed by the soil or landscape area to which it is applied and which flows onto other non-targeted areas, including runoff into storm drain systems.

ZZZ. Soil Moisture Sensing Device or “soil moisture sensor”: means a device that measures the amount of water in the soil. The device may also suspend or initiate an irrigation event.

AAAA. Soil Texture: means the classification of soil based on its percentage of sand, silt, and clay.

BBBB. Soils Laboratory Report: the analysis of a soil sample to determine nutrient content, composition and other characteristics, including contaminants, for horticultural purposes.

CCCC. Special Landscape Area (SLA): an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.

DDDD. Sprinkler Head: a high volume irrigation device that delivers water to the landscape through a spray nozzle.

EEEE. Static Water Pressure: the pipeline or municipal water supply pressure when water is not flowing.
Station: an area served by one valve or by a set of valves that operate simultaneously.

Submeter: a separate meter that is located on the private side of the water system and is plumbed to measure all water that flows only through the irrigation system. This meter is to be used by the owner to monitor irrigation water use and will not be read or maintained by the District.

Swing Joint: an irrigation component that provides a flexible, leak-free connection between the emission device and lateral pipeline to allow movement in any direction and to prevent equipment damage.

Turf: A mat layer of monocotyledonous plants with shallow rooting structures requiring frequent watering during the growing season; i.e., cool or warm season grass consisting, but not limited to Blue, Rye, Fescue, Bent, Bermuda, Kikuyu, St. Augustine, Zoysia, and Buffalo.

Valve: a device used to control the flow of water in the irrigation system.

Valve Manifold: a one-piece manifold for use in a sprinkler valve assembly that includes an intake pipe having a water inlet and a plurality of ports adapted for fluid connection to inlets.

Water Budget: an allocation of water based on plant water needs, used to determine the billing tiers for customers with dedicated landscape irrigation meters, for example.

Water Feature: a design element where open water performs an aesthetic or recreational function. Water features include ponds, lakes, waterfalls, fountains, artificial streams, spas and swimming pools (where water is artificially supplied). The surface area of water features is included in the high water use hydrozone of the landscape area.

Watering Window: means the time of day irrigation is allowed.

Weather Based or Sensor Based Irrigation Control Technology: uses local weather and landscape conditions to tailor irrigation schedules to actual conditions on the site or uses historical weather data.

WUCOLS: the most current Water Use Classification of Landscape Species published by the University of California Cooperative Extension, the Department of Water Resources and the Bureau of Reclamation.

(3) Requirements for All Services.

A. Pressure Regulation: A pressure-regulating valve shall be installed and maintained by the consumer if static service pressure exceeds 80 pounds per square inch (psi), and be set at a maximum operating pressure of 60 psi at the regulator outlet. The pressure-regulating valve shall be located between the meter and the first point of water use, or first point of division in the pipe, and pressure-relief valves and other
plumbing safety devices shall be installed as required by local codes. The operating pressure requirement may be waived if the consumer presents evidence satisfactory to the District that high pressure is necessary in the design and that no water will be wasted as a result of higher pressure operation.

B. Interior Plumbing Fixtures. All plumbing installed, replaced or moved in any new or existing service shall be high-efficiency fixtures and shall meet the following minimum requirements:

1. High-efficiency Clothes Washers: Residential or commercial clothes washers that meet the current highest water efficiency standards as defined by the District. The General Manager shall have authority to grant a variance from the requirements of this section based upon financial hardship.

2. High-efficiency Lavatory Faucet: The maximum flow rate shall not exceed 1.0 gallons per minute (gpm) at a pressure of 60 pounds per square inch (psi) at the inlet, when water is flowing.

3. High-efficiency Shower Head: The manufacturer shall specify a maximum flow rate equal to or less than 2.0 gallons per minute (gpm), at a pressure of 60 pounds per square inch (psi) at the inlet, when water is flowing.

4. High-efficiency Toilet: Any WaterSense listed toilet rated at an effective flush volume of no greater than 1.28 gallons.

5. High-efficiency Urinal: The average water consumption shall not exceed 0.25 gallons per flush (gpf).

C. Pool Covers. Pool covers are required for all new outdoor swimming pools. (Ord. 421 §3(part), 2011; Ord. 385 §1(part), 1999; Ord. 326 §1(part), 1991).

(4) Non-Residential Interior Plumbing Fixtures. All plumbing installed, moved or replaced in any new or existing service shall be high-efficiency fixtures and shall meet the following minimum requirements: (Ord. 421 §3(part), 2011).

A. Faucets. Lavatory faucets, other than public lavatory or metering faucets, shall deliver 1.0 gallons, or less of water per minute.

1. Metered Faucets Self-closing or self-closing metering faucets shall be installed on lavatories intended to serve the transient public, such as those in, but not limited to, service stations, train stations, airports, restaurants, and convention halls. Metered faucets shall deliver no more than .25 gallons of water per use. Self-closing faucets shall deliver no more than .5 gallon per minute.

2. Public Lavatory (other than metering) faucets shall deliver 0.5 gallons, or less, of water per minute.
3. **Kitchen, Bar and Utility/Service** (other than hand-washing sinks) faucets shall by default deliver 1.8 gallons per minute or less, and may constructed to allow a temporary flow of 2.2 gallons, or less, of water per minute.

**B. Private Use, Public Use**. *Pursuant to the International Plumbing Code (IPC):*

“In the classification of plumbing fixtures, “private” applies to fixtures in residences and apartments, and to fixtures in nonpublic toilet rooms of hotels and motels and similar installations in buildings where the plumbing fixtures are intended for utilization by a family or an individual...” “public” applies to fixtures in general toilet rooms of schools, gymnasiums, hotels, airports, bus and railroad stations, public buildings, bars public comfort stations, office buildings, stadiums, stores, restaurants and other installations where a number of fixtures are installed so that their utilization is similarly unrestricted”.

**C. Commercial Equipment Specifications.**

1. **Dishwashers.** Dishwashers are machines designed to clean and sanitize plates, glasses, cups, bowls, utensils, and trays by applying sprays of detergent solution (with or without blasting media granules) and a sanitizing final rinse. Dishwashers shall meet the current specifications set by the Consortium for Energy Efficiency’s (CEE) “High Efficiency Specifications for Commercial Dishwashers and any and all amendments thereto”.

2. **Steamers.** A “steamer” or “steam cooker” is a device with one or more food steaming compartments in which the energy in the steam is transferred to the food by direct contact. Steamers shall meet the current specifications set by the CEE’s “High Efficiency Specifications for Commercial Steamers and any and all amendments thereto”.

3. **Pre-Rinse Spray Valves.** Pre-rinse valves use a spray of water to remove food waste from dishes prior to cleaning in a dishwasher. Pre-rinse spray valves shall (1) deliver 1.3 gallons, or less, of water per minute based on tested performance by the FSTC and (2) meets the cleaning performance standard of 26 seconds per plate or less, based on the ASTM Standard Test Method for Performance of Pre-Rinse Spray Valves and any and all amendment thereto.

4. **Dipper Wells.** A “dipper well” is a basin into which clean tap water flows constantly to provide a fresh supply of water for soaking utensils. The run-off goes down the drain. Dipper well flow rate shall be .3 gallon, or less, per minute.

5. **Ice Machines.** Ice machine are a factory-made assembly (not necessarily shipped in one package) consisting of a condensing unit and ice-making section operating as an integrated unit, with means for making and harvesting ice. It is an assembly that makes up to 4,000 lbs. of ice per day at Standard Ratings Conditions, as defined in Section 5.2.1 of ARI Standard 810-2006, and may also include means for storing or dispensing ice, or both. Ice machines shall (1) be Energy Star qualified and (2) meet the current highest Tier specification set by the CEE’s “High Efficiency Specifications for Air-Cooled Ice Machines and any and all amendments thereto”.

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6. **Heating, Ventilation and Air Conditioning (HVAC) Equipment.** HVAC Equipment shall eliminate all once-through cooling, replacing with an air-cooled system or a cooling tower. For cooling towers, the following are recommended:
   (a) flow submeters on make-up and bleed-off lines; submeters should, at a minimum, be capable of totaling the flow.
   (b) conductivity controllers that activate the blowdown valve for dissolved solids control.
   (c) overflow sensors on the overflow pipes.
   (d) baffles or drift eliminators.

   All cooling towers shall be monitored and maintained in a manner consistent with applicable regulatory guidelines and manufacturers recommendations.

(5) **Water Efficient Landscaping.**

A. After December 1, 2015, this chapter shall apply to all of the following:

1. New construction projects with an aggregate landscape area equal to or greater than 500 square feet requiring a building or landscape permit, plan check or design review;

2. Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 1,000 square feet requiring a building or landscape permit, plan check, or design review;

3. Any project with an aggregate landscape area of less than 1,000 square feet requiring a building or landscape permit, plan check, or design review shall comply with the performance requirements of this ordinance or conform to the prescriptive measures contained in Appendix D.

B. This chapter shall not apply to:

1. Registered local, state or federal historical sites;

2. Ecological restoration projects that do not require a permanent irrigation system;

3. Mined-land reclamation projects that do not require a permanent irrigation system; or

4. Existing plant collections, as part of botanical gardens and arboreta open to the public.

C. **Water Efficient Landscape Worksheet.**

1. Complete the Maximum Applied Water Allowance and Estimated Total Water Use worksheet in Appendix A.

2. Water budget calculations shall adhere to the following requirements:
   (a) The plant factor used shall be from WUCOLS or from horticultural researchers with academic institutions or professional associations as approved by the California Department of Water Resources (DWR).
   (b) All water features shall be included in the high water use hydrozone and temporarily irrigated areas shall be included in the low water use hydrozone.
   (c) All Special Landscape Areas shall be identified and their water use calculated as shown in Appendix A.
   (d) ET Adjustment Factor for new and existing (non-rehabilitated) Special Landscape Areas, and for areas exclusively irrigated with recycled water, rainwater, or graywater, shall not exceed 1.0.

D. **Soil Management Report.**

1. In order to reduce runoff and improve plant growth, the project applicant may be required by the District to complete a soil management report as follows:
   (a) Submit soil samples to a laboratory for analysis and recommendations.
   (b) Soil sampling shall be conducted in accordance with laboratory protocol, including protocols regarding adequate sampling depth for the intended plants.
   (c) The soil analysis may include:
      (1) soil texture;
      (2) infiltration rate determined by laboratory test or soil texture infiltration rate table;
      (3) pH;
      (4) total soluble salts;
      (5) sodium;
      (6) percent organic matter; and
      (7) recommendations.

E. **Landscape Design Plan.** For each landscape project subject to this chapter applicants shall submit a landscape design plan in accordance with the following:

1. The landscape design plan, at a minimum, shall:
   (a) delineate and label each hydrozone by number, letter, or other method;
   (b) identify each hydrozone as low, moderate, high water. Temporarily irrigated areas of the landscape shall be included in the low water use hydrozone for the water budget calculation;
   (c) identify recreational areas;
   (d) identify areas permanently and solely dedicated to edible plants;
   (e) identify areas irrigated with recycled water;
   (f) identify type of mulch and application depth;
   (g) identify soil amendments, type, and quantity;
   (h) identify type and surface area of water features;
(i) identify hardscapes (pervious and non-pervious);
(j) identify location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Appropriate stormwater best management practices are encouraged in the landscape design.
(k) identify any applicable rain harvesting or catchment technologies
(l) identify any applicable graywater discharge piping, system components and area(s) of distribution;
(m) contain the following statement: “I have complied with the criteria of the ordinance and applied them for the efficient use of water in the landscape design plan”; and
(n) bear the signature of a licensed landscape architect, licensed landscape contractor, or other person authorized by the property owner to design the project’s landscape.

F. Soil Preparation, Mulch and Amendments.

1. Prior to the planting of any materials, compacted soils shall be transformed to a friable condition. On engineered slopes, only amended planting holes need meet this requirement.

2. Soil amendments shall be incorporated according to what is appropriate for the plants selected.

3. For landscape installations, compost at a rate of a minimum of six-cubic yards per 1,000 square feet of permeable area shall be incorporated to a depth of eight inches into the soil. Soils with greater than 6% organic matter in the top 8 inches of soil, as determined by a soil management report, are exempt from adding compost and tilling.

4. A minimum three inch (3”) layer of organic mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated. To provide habitat for beneficial insects and other wildlife, up to 5 % of the landscape area may be left without mulch. Designated insect habitat must be included in the landscape design plan as such.

5. Stabilizing mulching products shall be used on slopes that meet current engineering standards.

6. The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirement.

7. Organic mulch materials made from recycled or post-consumer are preferred over virgin forest products unless the recycled post-consumer organic products are not locally available.

G. Plants.

1. Any plant may be selected for the landscape, providing the Estimated Total Water Use in the landscape area does not exceed the Maximum Applied Water
Allowance and the selected plants meet all other permit, fire safe, and non-invasive requirements for the project. Methods to achieve water efficiency shall include the following:

(a) protection and preservation of native species and natural vegetation;
(b) selection of water-conserving plant, tree and turf species, especially local native plants;
(c) selection of plants based on local climate suitability, disease and pest resistance;
(d) selection of trees based on applicable local tree ordinances or tree shading guidelines, and size at maturity as appropriate for the planting area; and
(e) selection of plants from local and regional landscape program plant lists.

(f) Plants with similar water use needs shall be grouped together in distinct hydrozones, and where irrigation is required the distinct hydrozones shall be irrigated with separate valves.

(g) Low and moderate water use plants can be mixed, but the entire hydrozone will be classified as moderate water use for MAWA calculations.

(h) High water use plants shall not be mixed with low or moderate water use plants.

(i) Plants shall be selected and planted appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the project site. Methods to achieve water efficiency shall include one or more of the following:
   (1) use the Sunset Western Climate Zone System which takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continental and marine influence on local climate;
   (2) recognize the horticultural attributes of plants (i.e., mature plant size, invasive surface roots) to minimize damage to property or infrastructure [e.g., buildings, sidewalks, power lines]; allow for adequate soil volume for healthy root growth; and
   (3) consider the solar orientation for plant placement to maximize summer shade and winter solar gain.

(j) Turf shall not be allowed in the following conditions: Slopes exceeding 10%, planting areas 10 feet wide or less, street medians, traffic islands, planter strips adjacent to hardscape, bulbouts or parkways, unless the parkway is adjacent to a parking strip and used to enter and exit vehicles. Any turf in parkways must be irrigated by sub-surface irrigation or by other technology that creates no overspray or runoff.

(k) High water use plants, characterized by a plant factor of 0.7 to 1.0, are prohibited in street medians, traffic islands, planter strips adjacent to hardscape, or bulbouts of any size.

(l) Invasive plants as listed by the Cal-IPC are prohibited. Weedy species, listed as invasive in California at (www.cal-ipc.org/ip/inventory/index.php) shall not be planted. Please check the species you might be thinking of planting against these lists, broken out by plant type. Exemptions may be granted on a case by case basis if District staff determine that the proposed location, species, size,
number of plants, and other cultural methods are not likely to cause harm to the watershed ecosystem.13.02.021

(m) Fire Safe Landscape Practices. The requirements in this chapter are intended to support, and be in compliance with, all local and State requirements related to Fire Safe Landscaping practices, including, but not limited to, requirements for Wildlife Urban Interface zones as specified by the local authority.

(n) The architectural guidelines of a common interest development, which include community apartment projects, condominiums, planned developments, and stock cooperatives, shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group.

H. Water Features.

1. Recirculating water systems shall be used for water features.

2. Where available, recycled water shall be used as a source for decorative water features.

3. Surface area of a water feature shall be included in the high water use hydrozone area of the water budget calculation.

4. Pool covers are required for all new outdoor swimming pools.

I. Irrigation Design Plan. This section applies to landscaped areas requiring permanent irrigation, not areas that require temporary irrigation solely for the plant establishment period. For the efficient use of water, an irrigation system shall meet all the requirements listed in this section and the manufacturers’ recommendations. The irrigation system and its related components shall be planned and designed to allow for proper installation, management, and maintenance. An irrigation design plan meeting the following design criteria shall be submitted as part of the Landscape Documentation Package:

1. The irrigation design plan, at a minimum, shall contain:
   (a) location and size of separate water meters for landscape;
   (b) location, type and size of all components of the irrigation system, including controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, pressure regulators, and backflow prevention assemblies;
   (c) static water pressure at the point of connection to the public water supply;
   (d) flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (pressure per square inch) for each station;
   (e) recycled water irrigation systems;
   (f) the following statement: “I have complied with the criteria of the ordinance and applied them accordingly for the efficient use of water in the irrigation design plan”; and
(g) the signature of a licensed landscape architect, certified irrigation designer, licensed landscape contractor, or other person authorized by the property owner to design the project’s irrigation system.

2. System
   (a) Separate District landscape water service meters shall be required for all new landscapes, other than single-family and two-unit residential landscapes, for which the irrigated area is equal to or greater than 1,000 square feet.
   (b) A private submeter shall be required for all rehabilitated landscapes for which the irrigated landscape area is equal to or greater than 2,500 square feet.
   (c) Automatic irrigation controllers utilizing either evapotranspiration or soil moisture sensor data utilizing non-volatile memory shall be required for irrigation scheduling in all irrigation systems.
   (d) If the water pressure is below or exceeds the recommended pressure of the specified irrigation devices, the installation of a pressure regulating device(s) is required to ensure that the dynamic pressure at each emission device is within the manufacturer’s recommended pressure range for optimal performance.
   (e) Sensors (rain, freeze, wind, etc.), either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions shall be required on all irrigation systems, as appropriate for local climatic conditions. Irrigation should be avoided during windy or freezing weather or during rain.
   (f) Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be required, as close as possible to the point of connection of the water supply and before each valve or valve manifold, to minimize water loss in case of an emergency (such as a main line break) or routine repair.
   (g) Backflow prevention assemblies shall be required to protect the water supply from contamination by the irrigation system. A project applicant shall refer to the applicable local agency code (i.e., public health) for additional backflow prevention requirements.
   (h) Flow sensors that detect high flow conditions created by system damage or malfunction, are required for all non-residential landscapes and residential landscapes of 5000 sq. ft. or larger and shall be integrated with the irrigation system in such a manner as to be capable of automatically stopping water flow in the irrigation system in the event of a high flow condition. Flow sensors that meet this requirement are typically integrated with the irrigation controller(s) and master valve(s), and have the ability to alert the system operator of malfunctions using remote communication devices.
   (i) The irrigation system shall be designed to prevent runoff, low head drainage, overspray, or other similar conditions where irrigation water flows onto non-targeted areas, such as adjacent property, non-irrigated areas, hardscapes, roadways, or structures.
   (j) If applicable, relevant information from the soil management plan, such as soil type and infiltration rate, shall be utilized when designing irrigation systems.
(k) The design of the irrigation system shall conform to the hydrozones of the landscape design plan.
(l) The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency regarding the Maximum Applied Water Allowance.
(m) It is highly recommended that the project applicant inquire with the District about water restrictions that may impact the effectiveness of the irrigation system.
(n) In mulched planting areas, the use of low volume irrigation is required to maximize water infiltration into the root zone.
(o) Sprinkler heads and other emission devices shall have matched precipitation rates.
(p) Sprinkler spacing shall be designed to achieve the highest possible distribution uniformity using the manufacturer’s recommendations.
(q) Swing joints or other pipe protection components are required on above-ground irrigation piping.
(r) Check valves shall be installed to prevent low-head drainage.
(s) Areas less than ten (10) feet in width in any direction shall be irrigated with subsurface irrigation or other means that produce no runoff or overspray.
(t) Minimum 24” setback of overhead spray irrigation is required when adjacent to a continuous hardscape area where runoff water flows into the curb and gutter.
(u) Slopes greater than 15% shall not be irrigated with an irrigation system with an application rate exceeding 0.75 inches per hour. This restriction may be modified if the landscape designer specifies an alternative design or technology, as part of the Landscape Documentation Package, and clearly demonstrates no runoff or erosion will occur. Prevention of runoff and erosion must be confirmed during the irrigation audit.
(v) Identify any applicable rain harvesting, graywater, or catchment technologies (e.g. rain gardens, cisterns, etc.). Applicants are encouraged to employ alternative irrigation techniques as appropriate, and where permitted by law.
(w) Identify location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Appropriate stormwater best management practices are encouraged in the landscape design.

3. Hydrozone
(a) Each valve shall irrigate a hydrozone with similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.
(b) Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.
(c) Trees shall be placed on separate irrigation valves except when planted in turf areas.
(d) Low and moderate water use plants can be mixed, but the entire hydrozone will be classified as moderate water use for MAWA calculations.
(e) High water use plants shall not be mixed with low or moderate water use plants.
(f) On the landscape design plan and irrigation design plan, hydrozone areas shall be designated by number, letter, or other designation. On the irrigation design plan, designate the areas irrigated by each valve, and assign a number to each valve. Use this valve number in the Hydrozone Information Table. This table can also assist with the irrigation audit and programming the controller.

J. Certificate of Completion (Appendix C).
   1. The Certificate of Completion shall include the following six (6) elements:
      (a) project information sheet that contains:
         (1) date;
         (2) project name;
         (3) project applicant name, telephone, and mailing address;
         (4) project address and location; and
         (5) property owner name, telephone, and mailing address;
      (b) certification by either the signer of the landscape design plan, the signer of the irrigation design plan, or the licensed landscape contractor that the landscape project has been installed per the approved Landscape Documentation Package;
         (1) where there have been significant changes made in the field during construction, “as-built” or record drawings shall be included with the certification;
         (2) A diagram of the irrigation plan showing hydrozones shall be kept with the irrigation controller for subsequent management purposes.
      (c) irrigation scheduling parameters used to set the controller
      (d) landscape and irrigation maintenance schedule
      (e) irrigation audit report and
      (f) soil analysis report, if not submitted with Landscape Documentation Package, and documentation verifying implementation of soil report recommendations as required.

   2. The project applicant shall:
      (a) submit the signed Certificate of Completion to the District for review;
      (b) ensure that copies of the approved Certificate of Completion are submitted to the property owner or his or her designee.

K. Landscape and Irrigation Maintenance Schedule.

   1. Landscapes shall be maintained to ensure water use efficiency. A regular maintenance schedule shall be submitted with the Certificate of Completion.

   2. A regular maintenance schedule shall include, but not be limited to, routine inspection; auditing, adjustment and repair of the irrigation system and its components; aerating and dethatching turf areas; top dressing with compost, replenishing mulch; fertilizing; pruning; weeding in all landscape areas, and removing obstructions to emission devices. Operation of the irrigation system outside the normal watering window is allowed for auditing and system maintenance.
3. Repair of all irrigation equipment shall be done with the originally installed components or their equivalents or with components with greater efficiency.

4. A project applicant is encouraged to implement established landscape industry sustainable Best Practices for all landscape maintenance activities.

L. **Irrigation Audit, Irrigation Survey, and Irrigation Water Use Analysis.**

1. All landscape irrigation audits shall be conducted by a local agency landscape irrigation auditor or a third party certified landscape irrigation auditor.

2. In large projects or projects with multiple landscape installations (i.e. production home developments) an auditing rate of 1 in 7 lots or approximately 15% will satisfy this requirement.

3. For new construction and rehabilitated landscape projects installed after December 1, 2015, the project applicant shall submit an irrigation audit report with the Certificate of Completion to the District that may include, but is not limited to: inspection, system tune-up, system test with distribution uniformity, reporting overspray or run off that causes overland flow, and preparation of an irrigation schedule, including configuring irrigation controllers with application rate, soil types, plant factors, slope, exposure and any other factors necessary for accurate programming;

M. **Irrigation Efficiency.** For the purpose of determining Estimated Total Water Use, average irrigation efficiency is assumed to be a minimum of 0.75 for overhead spray devices and 0.85 for drip system devices.

N. **Recycled Water.**

1. The installation of recycled water irrigation systems shall allow for the current and future use of recycled water.

2. All recycled water irrigation systems shall be designed and operated in accordance with all applicable local and State laws.

3. Landscapes using recycled water are considered Special Landscape Areas. The ET Adjustment Factor for new and existing (non-rehabilitated) Special Landscape Areas shall not exceed 1.0.

O. **Graywater Systems.** Graywater systems promote the efficient use of water and are encouraged to assist in on-site landscape irrigation. All graywater systems shall conform to the California Plumbing Code (Title 24, Part 5, Chapter 16) and any applicable local ordinance standards.

P. **Stormwater Management and Rainwater Retention.**

1. Identify location and installation details of any applicable stormwater best management practices that encourage on-site retention and infiltration of stormwater. Appropriate stormwater best management practices are encouraged in the landscape design.
2. Rain gardens, cisterns, and other landscapes features and practices that increase rainwater capture and create opportunities for infiltration and/or onsite storage are recommended.

Q. Forms.
The following forms shall be submitted: Appendix A, Maximum Applied Water Allowance; Appendix B, Hydrozone Table; Appendix C, Certificate of Completion; Appendix D, Prescriptive Compliance (Optional).

Appendix A – Maximum Applied Water Allowance
Appendix B – Hydrozone Table
Appendix C – Certificate of Completion
Appendix D – Prescriptive Compliance Option

(6) Drinking Water Served Upon Request Only.
By January 1, 2011, eating or drinking establishments, including but not limited to a restaurant, hotel, café, cafeteria, bar, or other public place where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested.

(7) Commercial Lodging Establishments Must Provide Guests Option to Decline Daily Linen Services.
By January 1, 2011, hotels, motels and other commercial lodging establishments shall provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments shall prominently display notice of this option in each bathroom using clear and easily understood language.

(8) Gray Water Systems. This section is reserved for future provisions regarding grey water systems. 13.02.021

(9) Rain Water Harvesting Systems. This section is reserved for future provisions regarding rain water harvesting systems.

(10) Other Provisions. The General Manager will consider and may allow the substitution of design alternatives and innovation which may equally reduce water consumption for any of these requirements. The General Manager may accept documentation methods, water allowance determination, and landscape and irrigation design requirements of the State of California Model Water Efficient Landscape Ordinance instead of Chapters 14-30.040 and 14-30.050 of these requirements where it can be demonstrated that the State procedure will more effectively address the design requirements of the project.

(11) Provisions For Appeal. The applicant or any affected person may appeal the final decision of staff regarding plan check or final inspection to the General Manager, The decision of the General Manager shall be final. An appeal regarding plan check shall be submitted prior to the installation of the landscape or it will be deemed to have been waived.

(12) Forms. The following forms shall be submitted as described in this chapter: Appendix A, Maximum Applied Water Allowance; Appendix B, Hydrozone Table; Appendix C, Certificate of Completion; Appendix D, Prescriptive Compliance Option (as required). (Ord. 421 §3(part), 2011; Ord. 414 §2, 2010)
Appendix A – Maximum Applied Water Allowance (Residential & Commercial)

Maximum Applied Water Allowance - Residential

--- Zone 4 ---

Zip Codes: 94104, 94120, 94125, 94130, 94139, 94146, 94197, 94963, 94964, 94973

The following calculations will help you determine your site specific water budget and establish a planting mix that will allow you to meet your water budget. Your Estimated Total Water Use must be less than your Maximum Applied Water Allowance.

1.)

Maximum Applied Water Allowance (MAWA)

MAWA = \[(ETo \times (0.55 \times LA) + (0.45 \times SLA))\]  

Where:
ETo = Annual Net Reference Evapotranspiration (inches)
0.55 = ET Adjustment Factor
LA = Landscaped Area (square feet)
0.45 = Conversion factor (to gallons per square foot)
SLA = Portion of the landscape area identified as Special Landscape Area (square feet)
0.45 = the additional ET adjustment factor for Special Landscape Area (1.0 - 0.55 = 0.45)

A.) Net Evapotranspiration Calculation

\[
\begin{align*}
&\quad \begin{array}{c}
\text{Annual ETo} \\
\text{\hspace{1cm} (inches)}
\end{array} \\
&\quad \begin{array}{c}
26.30 \\
\text{\hspace{1cm} annual rain}(\text{inches})
\end{array} \\
&\quad \begin{array}{c}
0.25 \\
\text{\hspace{1cm} adjustment factor}
\end{array} \\
&\quad \begin{array}{c}
6.58 \\
\text{\hspace{1cm} rain(water)(inches)}
\end{array}
\end{align*}
\]

B.) Adjusted Landscape Area Calculation

\[
\begin{align*}
&\quad \begin{array}{c}
\text{Landscape Area} \\
\text{\hspace{1cm} (square feet)}
\end{array} \\
&\quad \begin{array}{c}
0 \\
\text{\hspace{1cm} adjustment factor}
\end{array} \\
&\quad \begin{array}{c}
0 \\
\text{\hspace{1cm} adjustment factor}
\end{array}
\end{align*}
\]

\[
\begin{align*}
&\quad \begin{array}{c}
\text{Sum of Adjusted Landscape Area} \\
\text{\hspace{1cm} (gallons)}
\end{array} \\
&\quad \begin{array}{c}
0 \\
\text{\hspace{1cm} gallons}
\end{array} \\
&\quad \begin{array}{c}
0 \text{ CCFs}
\end{array}
\end{align*}
\]

2.)

Estimated Total Water Use (ETWU)

A.) Net Evapotranspiration Calculation

\[
\begin{align*}
&\quad \begin{array}{c}
\text{Annual ETo} \\
\text{\hspace{1cm} (gallons)}
\end{array} \\
&\quad \begin{array}{c}
40.03 \\
\text{\hspace{1cm} (gallons)}
\end{array} \\
&\quad \begin{array}{c}
0.62 \\
\text{\hspace{1cm} adjustment factor}
\end{array} \\
&\quad \begin{array}{c}
0 \\
\text{\hspace{1cm} gallons}
\end{array}
\end{align*}
\]

B.) Adjusted Landscape Area Calculation

\[
\begin{align*}
&\quad \begin{array}{c}
\text{Low water use plants (gallons)} \\
\text{\hspace{1cm} area}
\end{array} \\
&\quad \begin{array}{c}
0 \\
\text{\hspace{1cm} area}
\end{array} \\
&\quad \begin{array}{c}
0 \\
\text{\hspace{1cm} area}
\end{array}
\end{align*}
\]

\[
\begin{align*}
&\quad \begin{array}{c}
\text{Moderate water use plants (gallons)} \\
\text{\hspace{1cm} area}
\end{array} \\
&\quad \begin{array}{c}
0 \\
\text{\hspace{1cm} area}
\end{array} \\
&\quad \begin{array}{c}
0 \\
\text{\hspace{1cm} area}
\end{array}
\end{align*}
\]

\[
\begin{align*}
&\quad \begin{array}{c}
\text{High water use plants (gallons)} \\
\text{\hspace{1cm} area}
\end{array} \\
&\quad \begin{array}{c}
0 \\
\text{\hspace{1cm} area}
\end{array} \\
&\quad \begin{array}{c}
0 \\
\text{\hspace{1cm} area}
\end{array}
\end{align*}
\]

\[
\begin{align*}
&\quad \begin{array}{c}
\text{Sum of Adjusted Landscape Area} \\
\text{\hspace{1cm} (gallons)}
\end{array} \\
&\quad \begin{array}{c}
0 \\
\text{\hspace{1cm} gallons}
\end{array} \\
&\quad \begin{array}{c}
0 \text{ CCFs}
\end{array}
\end{align*}
\]

\[
\begin{array}{c|c|c|c|c|c|c|c}
\% \text{ of Total Landscape} & \text{Irrigation Efficiency Factor} \\
\hline
0-30\% & \text{enter 0.55 above} \\
34-60\% & \text{enter 0.35 above} \\
67-100\% & \text{enter 0.25 above}
\end{array}
\]
Maximum Applied Water Allowance - Commercial

--- Zone 4 ---

Zip Codes: 54904, 54922, 54935, 54939, 54945, 54957, 54960, 54963, 54964, 54973

The following calculations will help you determine your site-specific water budget and establish a planting mix that will allow you to meet your water budget. Your Estimated Total Water Use must be less than your Maximum Applied Water Allowance.

1. Maximum Applied Water Allowance (MAWA)

MAWA = (ETo) x (0.62) x (0.845 x LA) + (0.55 x SLA)

Where:
ETo = Annual Net Reference Evapotranspiration (inches)
0.62 = ET Adjustment Factor
LA = Landscape Area (square feet)
0.845 = Evaporation Factor to gallons per square foot
SLA = Portion of the landscape area identified as Special Landscape Area (square feet)
0.55 = the additional ET adjustment factor for Special Landscape Area (1.0 - 0.45 - 0.55)

A) Net Evapotranspiration Calculation

\[
\begin{align*}
\text{Net Evapotranspiration Calculation} &= \text{Annual ETo} - \text{Effective Rainfall} \\
\text{Annual ETo} &= 46.60 \\
\text{Effective Rainfall} &= 0.65
\end{align*}
\]

B) Adjusted Landscape Area Calculation

\[
\begin{align*}
\text{Adjusted Landscape Area} &= (\text{Landscape Area}) \\ 
&= 0 \\
\text{Adjusted Factor} &= 0.65 \\
&= 0 \\
\text{Effective Rainfall} &= 0.55 \\
&= 0 \\
\text{Sum of Adjusted Landscape Area} &= 0 \\
\text{MAWA} &= 46.60 - 0.62 - 0.55 - 0 \\
&= 0 \text{ gallons} \\
&= 0 \text{ CCFs}
\end{align*}
\]

2. Estimated Total Water Use (ETWU)

A) Net Evapotranspiration Calculation

\[
\begin{align*}
\text{Net Evapotranspiration Calculation} &= \text{Annual ETo} - \text{Effective Rainfall} \\
\text{Annual ETo} &= 40.63 \\
\text{Effective Rainfall} &= 0
\end{align*}
\]

B) Adjusted Landscape Area Calculation

\[
\begin{align*}
\text{Adjusted Landscape Area} &= (\text{Low water use plant type}) \\ 
&= 0 \\
\text{Adjusted Factor} &= 0.3 \\
&= 0 \\
\text{Effective Rainfall} &= 0.6 \\
&= 0 \\
\text{Adjusted Landscape Area} &= 0 \\
\text{ETWU} &= 40.63 - 0.62 - 0.6 - 0 \\
&= 0 \text{ gallons} \\
&= 0 \text{ CCFs}
\end{align*}
\]

<table>
<thead>
<tr>
<th>% of Total Landscape</th>
<th>Irrigation Efficiency Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3%</td>
<td>enter 0.75 above</td>
</tr>
<tr>
<td>3-6%</td>
<td>enter 0.90 above</td>
</tr>
<tr>
<td>67-100%</td>
<td>enter 0.95 above</td>
</tr>
</tbody>
</table>
Appendix B – Hydrozone Table

Hydrozone Table
This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package. Please complete the hydrozone table(s) for each hydrozone. Use as many tables as necessary to provide the square footage of landscape area per hydrozone.

<table>
<thead>
<tr>
<th>Zone or Valve</th>
<th>Hydrozone*</th>
<th>Irrigation Method**</th>
<th>Gallons Per Minute</th>
<th>Area (sq. ft.)</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

| Total         |            |                     |                    | 0             |

Summary Hydrozone Table

<table>
<thead>
<tr>
<th>Hydrozone</th>
<th>Area (sq. ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Water Use</td>
<td></td>
</tr>
<tr>
<td>Moderate Water Use</td>
<td></td>
</tr>
<tr>
<td>Low Water Use</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
</tr>
</tbody>
</table>

*HW=High Water Use Plants; MW=Moderate Water Use Plants; LW=Low Water Use Plants
**MS=Micro-spray; S=Spray; R=Rotor; B=Bubbler; D=Drip; O=Other
# Certificate of Completion

This certificate is filled out by the project applicant, landscape architect and landscape contractor upon completion of the landscape project.

## Part 1. Project Information Sheet

<table>
<thead>
<tr>
<th>Date:</th>
<th>MMWD Project Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Name:</td>
<td>Project Address:</td>
</tr>
<tr>
<td>Name of Project Applicant:</td>
<td>Telephone No.:</td>
</tr>
<tr>
<td>Title:</td>
<td>Fax No.:</td>
</tr>
<tr>
<td>Email Address:</td>
<td></td>
</tr>
<tr>
<td>Company:</td>
<td>Street Address:</td>
</tr>
<tr>
<td>City:</td>
<td>State:</td>
</tr>
<tr>
<td></td>
<td>ZIP Code:</td>
</tr>
</tbody>
</table>

"I/we certify that I/we have received copies of all the documents within the Landscape Documentation Package and that it is our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule."

<table>
<thead>
<tr>
<th>Property Owner Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

## Part 2. Landscape Architect and Landscape Contractor/Installer

<table>
<thead>
<tr>
<th>Landscape Architect Name:</th>
<th>Telephone No.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>Fax No.:</td>
</tr>
<tr>
<td>License No. or Certification No.:</td>
<td>Email Address:</td>
</tr>
<tr>
<td>Company:</td>
<td>Street Address:</td>
</tr>
<tr>
<td>City:</td>
<td>State:</td>
</tr>
<tr>
<td></td>
<td>ZIP Code:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Landscape Contractor Name:</th>
<th>Telephone No.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>Fax No.:</td>
</tr>
<tr>
<td>License No. or Certification No.:</td>
<td>Email Address:</td>
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<tr>
<td>Company:</td>
<td>Street Address:</td>
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<td>City:</td>
<td>State:</td>
</tr>
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<td></td>
<td>ZIP Code:</td>
</tr>
</tbody>
</table>

"I/we certify that the work has been completed in accordance with the ordinance and that the landscape planting and irrigation installation conform to the criteria and specifications of the approved Landscape Documentation Package. Additionally, a landscape audit and irrigation maintenance schedule have been completed and are attached to this certificate showing that the system meets the efficiency requirements used in the Maximum Applied Water Allowance calculation."

<table>
<thead>
<tr>
<th>Landscape Architect Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Landscape Contractor Signature</th>
<th>Date</th>
</tr>
</thead>
</table>
Appendix D – Prescriptive Compliance Option

1. This appendix contains prescriptive requirements which may be used as a compliance option to the Model Water Efficient Landscape Ordinance.

2. Compliance with the following items is mandatory and must be documented on a landscape plan in order to use the prescriptive compliance option:

   (a) Submit a Landscape Documentation Package which includes the following elements:
      (1) date
      (2) project applicant
      (3) project address (if available, parcel and/or lot number(s))
      (4) total landscape area (square feet), including a breakdown of turf and plant material
      (5) project type (e.g., new, rehabilitated, public, private, homeowner-installed)
      (6) water supply type (e.g., potable, recycled, well) and identify the local retail water purveyor if the applicant is not served by a private well
      (7) contact information for the project applicant and property owner
      (8) applicant signature and date with statement, “I agree to comply with the requirements of the prescriptive compliance option to the MWELO”.
      (9) narrative description of project

   (b) Incorporate compost at a rate of at least six cubic yards per 1,000 square feet to a depth of eight inches into landscape area (unless contra-indicated by a soil test);

   (c) Plant material shall comply with all of the following:
      (1) For residential areas, install climate adapted plants that require occasional, little or no summer water (average WUCOLS plant factor 0.3) for 75% of the plant area excluding edibles and areas using recycled water, graywater, and/or rainwater as the exclusive source of water for irrigation. For non-residential areas, install climate adapted plants that require occasional, little or no summer water (average WUCOLS plant factor 0.3) for 100% of the plant area, excluding edibles and areas using recycled water, rainwater, or graywater as the exclusive source of water for irrigation.
      (2) A minimum three inch (3”) layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated.
      (3) Do not plant invasive or non-fire safe species of plants not historically found in California and/or that spread outside cultivated areas and can damage environmental or economic resources as determined by Cal-IPC (www.cal-ipc.org), the local fire agency, and the District.

   (d) Turf shall comply with all of the following:
      (1) Turf and other high water use plants shall not exceed 25% of the landscape area in residential areas, and there shall be no turf permitted in non-residential areas;
      (2) Turf shall not be planted on sloped areas which exceed a slope of 1 foot vertical elevation change for every 10 feet of horizontal length;
      (3) Turf is prohibited in parkways less than 10 feet wide, unless the parkway is adjacent to a parking strip and used to enter and exit vehicles. Any turf in parkways must be irrigated by sub-surface irrigation or by other technology that creates no overspray or runoff.
(e) Irrigation systems shall comply with the following:
   (1) Automatic irrigation controllers are required and must use evapotranspiration or soil moisture sensor data and utilize a rain sensor.
   (2) Irrigation controllers shall be of a type which does not lose programming data (non-volatile memory) in the event the primary power source is interrupted.
   (3) Pressure regulators shall be installed on the irrigation system to ensure the dynamic pressure of the components are within the manufacturers recommended pressure range.
   (4) Manual shut-off valves (such as a gate valve, ball valve, or butterfly valve) shall be installed as close as possible to the point of connection of the water supply and before each valve or valve manifold.
   (5) Areas less than ten (10) feet in width in any direction shall be irrigated with subsurface irrigation or other means that produces no runoff or overspray.

(f) For non-residential projects with landscape areas of 1,000 sq. ft. or less, a private submeter(s) to measure landscape water use shall be installed.

(g) At the time of final inspection, the permit applicant must provide the owner of the property with a certificate of completion, certificate of installation, irrigation schedule and a schedule of landscape and irrigation maintenance.

SECTION 3. Findings of Necessity: The Board of Directors finds as follows:

A. Water is a finite and precious resource.

B. Currently, California is in its fourth year of drought.

C. On January 17, 2014, Governor Jerry Brown issued a drought state of emergency declaration in response to record-low water levels in California’s rivers and reservoirs as well as an abnormally low snowpack. On April 1, 2015, Governor Brown issued an Executive Order calling for statewide mandatory water reductions of up to 25%.

D. On May 5, 2015, the State Water Resources Control Board approved regulations, based on Governor Brown’s Executive Order, mandating the District to reduce its water consumption by 20% percent for June 2015 through February 2016 as compared to the same months in 2013.

E. Governor Brown’s Drought Executive Order of April 1, 2015 (EO B-29-15) directed the Department of Water Resources to update the State’s Model Water Efficient Landscape Ordinance through expedited regulation. The California Water Commission approved the revised Ordinance on July 15, 2015.

F. The Executive Order calls for revising the Model Ordinance to increase water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, gray water usage, onsite storm water capture, and by limiting the portion of landscapes that can be covered in turf. It also requires reporting on the implementation and enforcement of local ordinances, with required reports due to the Department of Water Resources by
December 31, 2015, and subsequent annual reports due by January 31st each year thereafter.

G. This ordinance is designed to comply with the State’s requirement, conserve water and preserve the District’s water supply.

H. Article X Section 2 of the California Constitution declares that the general welfare requires that water resources be put to beneficial use to the fullest extent of which they are capable and that the waste, unreasonable use or unreasonable method of use of water be prevented, and that conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and the public welfare.

I. California Water Codes Section 375 authorized water suppliers to adopt and enforce a comprehensive water conservation program to reduce water consumption and conserve water supplies.

J. The adoption and enforcement of the water conservation program contained in this ordinance is necessary to manage and conserve the District’s water supply and ensure its sustainability and reliability while preventing water waste.

K. The Board finds this ordinance is exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with Section 15061(b) (3) of the CEQA Guidelines.

L. After more than twenty years of innovative and aggressive conservation efforts, more needs to be accomplished. The water conservation program required by this ordinance is necessary to conserve additional water for beneficial use and to preserve the District’s water supply.

SECTION 4. Environmental Determination: This project has been reviewed for compliance with the California Environmental Quality Act and qualifies for an exemption under the General Rule section 15061(b) (3) because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

SECTION 5. Severability: If any section, subsection, sentence, clause, phrase, portion or part of this ordinance is for any reason held to be invalid or unconstitutional by any court of competent jurisdiction, such section shall not affect the validity of the remaining portions of this code. The Board of Directors hereby declares that it would have adopted this ordinance and each section, subsection, sentence, clause, phrase, part or portion thereof, irrespective of the fact that any one or more sections subsections, clauses, phrases, parts or portions be declared invalid or unconstitutional.
SECTION 6. Effective Date: This ordinance shall be effective on the day of its adoption.

PASSED AND ADOPTED this ____ day of December, 2015, by the following vote of the Board:

AYES:

NOES:

ABSENT:

John C. Gibson, President
Board of Directors

ATTEST:

Stephanie Eichner-Gross
Secretary, Board of Directors
STAFF REPORT

SUBJECT: Fire Flow Improvement Program- Ross Pipeline Replacement Project Contract No. 1790

SUBMITTED BY: Elysha Anderson, P.E., Associate Engineer Environmental and Engineering Services Division

RECOMMENDED ACTION: Approve Resolution No. 8374 authorizing award of Contract No. 1790, to D&D Pipelines, Inc. in the amount of $868,023.

EXECUTIVE SUMMARY:

This project is part of the District’s Fire Flow Improvement Program and includes the replacement of approximately 5,740 feet of undersized 4-inch pipe that is 110 years old, with new 8, 6, and 4 inch pipe in the Town of Ross and County of Marin. This project will increase fire flow capacity and provide better seismic reliability in this area, and is being coordinated with the Town of Ross to be completed prior to their road overlay project.

The lowest responsible bid was submitted by D&D Pipelines, Inc. in the amount of $868,023. This project is budgeted at $1,285,523 under the FY2015/16 Capital Improvement Budget. Based on their qualifications and their submittal of the lowest responsible bid on this contract, staff recommends that the District award Contract No. 1790 to D&D Pipelines, Inc. at their bid price of $868,023.

FISCAL IMPACT: Yes X No FISCAL YEAR: 2015-2016

<table>
<thead>
<tr>
<th>EXPENDITURES</th>
<th>FUNDING SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted Amount</td>
<td>Operating Fund $868,023</td>
</tr>
<tr>
<td>Budget Augmentation Requested</td>
<td>Capital Fund</td>
</tr>
<tr>
<td></td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>Operating Reserves</td>
</tr>
<tr>
<td>TOTAL EXPENDITURES $868,023</td>
<td>TOTAL SOURCES $868,023</td>
</tr>
</tbody>
</table>

FISCAL IMPACT NARRATIVE:

The total cost to complete the Ross FFIP Pipeline Replacement Project is estimated to be $1,285,523.
Contract No: 1790  
Project No: F15002  
Engineer’s Estimate: $950,000

Award: Sealed bids were received from 5 firms on December 10, 2015:

<table>
<thead>
<tr>
<th>Bid Rank</th>
<th>Contractor Name</th>
<th>Bid Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>D&amp;D Pipelines, Inc.</td>
<td>$868,023</td>
</tr>
<tr>
<td>2.</td>
<td>Maggiora &amp; Ghilotti</td>
<td>$892,298</td>
</tr>
<tr>
<td>3.</td>
<td>W.R. Forde Associates</td>
<td>$917,118</td>
</tr>
<tr>
<td>4.</td>
<td>Team Ghilotti</td>
<td>$933,975</td>
</tr>
<tr>
<td>5.</td>
<td>Michael Paul Co.</td>
<td>$1,054,630</td>
</tr>
</tbody>
</table>

Budget:

Contract Award: $868,023  
Materials and Professional Fees: $179,000  
District Labor/Inspection: $238,500  
Total Budget: $1,285,523  
Budget Category: A2A

BACKGROUND:

The Ross Pipeline Replacement Project – Fire Flow Improvement Program (FFIP) is a scheduled component of the Fire Flow Improvement Program. This project will replace vulnerable and leak prone piping installed as early as 1903 that supplies water to the Town of Ross and the County of Marin from Ross Reservoir. There have been numerous leaks along these sections of piping, making these pipelines a good candidate for replacement. This project is being coordinated with the Town of Ross to be completed prior to the Town’s project to overlay Redwood Drive and Brookwood Lane in 2016. This project is another example of MMWD’s efforts to coordinate infrastructure project with other local government agencies for the highest benefit and least public impact.
The streets involved in the replacement are:

<table>
<thead>
<tr>
<th>Street</th>
<th>Length</th>
<th>Original Pipeline Installation Date</th>
<th>Existing Size and Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norwood Ave</td>
<td>1,340 feet</td>
<td>1903</td>
<td>4” GTP</td>
</tr>
<tr>
<td>Bridge Rd</td>
<td>2,790 feet</td>
<td>1904</td>
<td>4” GTP</td>
</tr>
<tr>
<td>Redwood Dr</td>
<td>880 feet</td>
<td>1904</td>
<td>4” GTP</td>
</tr>
<tr>
<td>Brookwood Ln</td>
<td>730 feet</td>
<td>1904</td>
<td>4” GTP</td>
</tr>
</tbody>
</table>

The material for the new pipeline was chosen based on existing conditions at the site. Welded steel piping with tape exterior will be used for the main on the elevated streets of Bridge Road, Redwood Drive, and Brookwood Lane. District standard polyvinyl chloride pipe will be used for the main on Norwood Avenue.

Since the work included in this contract is vital to the operation of the water system in these areas, the liquidated damages assessed, in the event the contractor does not finish the work before the required completion date, are set at a rate of $500 per day.

These street segments were evaluated for the installation of recycled water piping. There are no recycled water pipelines near the project site and there is no plan for recycled water service in this area at this time, therefore installation of recycled water pipelines was not included in this project.

**ENVIRONMENTAL REVIEW:**
The Environmental Services Coordinator has determined that the project is Categorically Exempt pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15302(c), Replacement or Reconstruction. The project qualifies for exemption pursuant to Section 15302(c) inasmuch as it is the replacement of existing water pipeline with negligible or no expansion of capacity. A copy of the draft Notice of Exemption is enclosed as Attachment 3. The Notice of Exemption will not be filed with the County Clerk’s office following board action to award the contract.

**PROJECT IMPLEMENTATION:**
Project Advertisement: November 24, 2015
Project Award: December 15, 2015
Estimated Completion Date: June 12, 2016
Duration: 180 days
STRATEGIC PLAN ALIGNMENT:

This action aligns with the District’s 5-Year Strategic Plan Goal 1 (Water Supply Resiliency) and Strategy 4 (Ensure facilities and equipment are maintained and sufficient to support resiliency, water quality, watershed management and a productive workforce).

REVIEWED BY:

<table>
<thead>
<tr>
<th>Role</th>
<th>Finance Manager</th>
<th>General Counsel</th>
<th>General Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>NA</td>
<td>X</td>
<td>NA</td>
</tr>
<tr>
<td>X</td>
<td>NA</td>
<td>X</td>
<td>NA</td>
</tr>
</tbody>
</table>

ATTACHMENTS:

1. Resolution No. 8374
2. Site Map
3. Notice of Exemption
IT IS HEREBY RESOLVED that the bid of $868,023 submitted by D&D Pipelines, Inc., for the Fire Flow Improvement Program – Ross Pipeline Replacement Project under Contract No. 1790 was the lowest responsible bid submitted therefor, and said bid is hereby accepted.

BE IT FURTHER RESOLVED that a contract for this project be awarded to said low bidder, and the General Manager and Secretary are authorized and directed to execute said contract on behalf of the District upon receipt of a performance bond, payment bond, proof of insurance, and the executed contract for the work from said bidder.

BE IT FURTHER RESOLVED that upon complete execution of said contract, the bonds and/or checks of the other bidders are to be returned to said other bidders, and all bids other than that of D & D Pipelines, Inc. are to be rejected.

BE IT FURTHER RESOLVED that the project is Categorically Exempt from review under Section 15302(c) of the CEQA Guidelines inasmuch as it is the replacement of existing water pipelines with negligible or no expansion of capacity.

PASSED AND ADOPTED this 15th day of December, 2015, by the following vote of the Board.

AYES:

NOES:

ABSENT:

_______________________________
President, Board of Directors

ATTEST:

_______________________________
Secretary
Notice of Exemption

Filing Requested By and When Filed Return To:
Marin Municipal Water District
220 Nellen Ave
Corte Madera, CA  94925
Attn: Dain Anderson, Environmental Services Coordinator

Project Title: Ross Pipeline Replacement Project (F15002)

Project Location – City: Ross  Project Location – County: Marin

Project Description: The Ross Pipeline Replacement Project is part of the District’s Fire Flow Improvement Program and includes the replacement of approximately 5,740 feet of undersized 4-inch pipe that is 110 years old, with new 8-, 6-, and 4-inch welded steel and polyvinyl chloride pipe with the Town of Ross and County of Marin. This project will increase fire flow capacity and provide more seismic reliability in this area, and is being coordinated with the Town of Ross to be completed.

The streets involved in the replacement are:

<table>
<thead>
<tr>
<th>Street</th>
<th>Length</th>
<th>Installation Date</th>
<th>Existing Size and Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norwood Avenue</td>
<td>1,340 feet</td>
<td>1903</td>
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<td>Bridge Road</td>
<td>2,790 feet</td>
<td>1904</td>
<td>4” GTP</td>
</tr>
<tr>
<td>Redwood Drive</td>
<td>880 feet</td>
<td>1904</td>
<td>4” GTP</td>
</tr>
<tr>
<td>Brookwood Lane</td>
<td>730 feet</td>
<td>1904</td>
<td>4” GTP</td>
</tr>
</tbody>
</table>

GTP – Galvanized threaded pipe

The material for the new pipeline was chosen based on existing conditions at the site. Welded steel piping with tape exterior will be used for the main on Bridge Road, Redwood Drive, and Brookwood Lane due to greater reliability of welded steel piping in the event of an earthquake. Polyvinyl chloride pipe will be used for the main on Norwood Avenue.

Public Agency Approving Project: Marin Municipal Water District

Name of Person or Agency Carrying Out Project: Marin Municipal Water District

CEQA Exemption Status: Categorical Exemption Section 15302(c), Replacement or Reconstruction.

Reason for Exemption: The project qualifies for exemption pursuant to Section 15302(c) inasmuch as it is the replacement of existing water pipelines with negligible or no expansion of capacity.

Project Approval: The Marin Municipal Water District Board of Directors approved the award of a contract for project construction, which represents project approval as defined by Section 15352 of the Guidelines for Implementation of the California Environmental Quality Act, at their regularly scheduled meeting on December 15, 2015.

Lead Agency Contact Person: Dain Anderson, Marin Municipal Water District  Telephone: (415) 945-1586

Dain Anderson, Environmental Services Coordinator  Date
Figure 1: Ross Pipeline Replacement Project

SOURCE: MMWD 2015
STAFF REPORT

SUBJECT: Fire Flow Improvement 2016 Directional Drill Project

SUBMITTED BY: Jake Miller, Engineering Design
Environmental and Engineering Services Division

RECOMMENDED ACTION: Approve Resolution No. 8375 authorizing the award of Contract No 1795, to W.R. Forde Associates in the amount of $218,000.

EXECUTIVE SUMMARY:

The subject project involves the replacement of approximately 660-feet of undersized, 80-year old pipe in Kentfield and Mill Valley in support of the District’s Fire Flow Improvement Program. Directional drilling will be used for most of the installations due to the challenging terrain in the area.

The lowest responsible bid was submitted by W.R. Forde Associates in the amount of $218,000 on December 8th. W.R. Forde has completed several pipeline projects for the District. Their bid documents have been reviewed and determined to be complete and satisfactory. Based on their qualifications and their submittal of the lowest responsible bid on this contract, staff recommends the District award Contract No. 1795 to W.R. Forde Associates at their bid price of $218,000.

FISCAL IMPACT: Yes ☑ No ❌ FISCAL YEAR: 2015-2016

<table>
<thead>
<tr>
<th>EXPENDITURES</th>
<th>FUNDING SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted Amount</td>
<td>Operating Fund</td>
</tr>
<tr>
<td>$218,000</td>
<td></td>
</tr>
<tr>
<td>Budget Augmentation</td>
<td>Capital Fund</td>
</tr>
<tr>
<td>Requested</td>
<td>$218,000</td>
</tr>
<tr>
<td>Other</td>
<td>Operating Reserves</td>
</tr>
<tr>
<td>Total Expenditures</td>
<td>Total Sources</td>
</tr>
<tr>
<td>$218,000</td>
<td>$218,000</td>
</tr>
</tbody>
</table>

FISCAL IMPACT NARRATIVE: The cost to complete the FFIP 2016 Directional Drill Project is estimated to be $364,000.

Contract No: 1795
Project No: F16002
Engineer’s Estimate: $175,000
Budget

Contract Award: $218,000
Materials: $55,000
Professional Fees: N/A
District Labor/Design & Constr. Mgmt.: $91,000
Total Budget: $364,000

Budget Category: A2A

BACKGROUND: The 2016 Fire Flow Improvement Program Directional Drill Project is made up of two sites that are planned portions of the FY 2015-2016 Fire Flow Improvement Program (FFIP). Each site has two sections of pipe that will be installed by directional drill method. One site is an easement on Toussin Avenue in Kentfield and is part of the Fire Flow Improvement Program’s Construction Bundle 14. The other site is the Bolsa Tank easement to Hillside Avenue and is part of Construction Bundle 51. These sites have been separated from their bundles due to easement and terrain difficulties. The narrow easements and steep hillsides that these pipelines are in make them great candidates for trenchless horizontal directional drilling replacement. This method for pipeline replacement will have minimal impact on the hillsides, vegetation and local residences.

The streets involved in the replacement are:

<table>
<thead>
<tr>
<th>Street</th>
<th>City</th>
<th>Easement</th>
<th>Length (ft)</th>
<th>Original Pipeline Installation Date</th>
<th>Existing Diameter and Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toussin Avenue</td>
<td>Kentfield</td>
<td>Upper</td>
<td>180</td>
<td>1933</td>
<td>4” CI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lower</td>
<td>120</td>
<td>1928</td>
<td>4” CI</td>
</tr>
<tr>
<td>Bolsa</td>
<td>Mill Valley</td>
<td>Upper</td>
<td>120</td>
<td>1929</td>
<td>6” LC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lower</td>
<td>240</td>
<td>1929</td>
<td>6” LC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total 660</td>
</tr>
</tbody>
</table>

Design Parameters:

The material of the pipeline was chosen based on the replacement method, stability of the underlying soils as well as the steep cross slopes in the area. HDPE SDR-11 pipe was chosen for the difficult terrain where the pipeline will be replaced by horizontal directional drill method. Welded steel pipe was chosen for connections in this difficult terrain. The use of HDPE SDR-11 pipe and welded steel pipe will improve the seismic reliability of the distribution system that serves these areas.
Since the work included in this contract is vital to the operation of the water system in these areas, the liquidated damages assessed, in the event the contractor does not finish the work before the required completion date, are set at a rate of $500 per day.

These easement segments were evaluated for the installation of recycled water piping. There are no recycled water pipelines near the project site and there is no plan for recycled water service in this area at this time, therefore installation of recycled water pipelines was not included in this project.

Two bids were submitted for this project as follows:

<table>
<thead>
<tr>
<th>Bid Rank</th>
<th>Contractor Name</th>
<th>Bid Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>W.R. Forde Associates</td>
<td>$218,000</td>
</tr>
<tr>
<td>2.</td>
<td>Piazza Construction</td>
<td>$306,800</td>
</tr>
</tbody>
</table>

**Schedule**

Project Award: December 15, 2015
Estimated Notice-To-Proceed: January 15, 2016
Estimated Completion Date: April 13, 2016
Duration: 120 days

**ENVIRONMENTAL REVIEW:**

The Environmental Services Coordinator has determined that the project is Categorically Exempt pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15302(c), Replacement or Reconstruction. The project qualifies for exemption pursuant to Section 15302(c) inasmuch as it is the replacement of existing water pipeline with negligible or no expansion of capacity. A copy of the draft Notice of Exemption is enclosed as Attachment 3. The Notice of Exemption will not be filed with the County Clerk’s office following board action to award the contract.

**STRATEGIC PLAN ALIGNMENT:**

This action aligns with the District’s 5-Year Strategic Plan Goal 1 (Water Resiliency) and Strategy 4 (Ensure facilities and equipment and maintained and sufficient to support resiliency, water quality, watershed management and productive workforce).
ATTACHMENTS:

1. Resolution No. 8375
2. Vicinity Map – Kentfield
3. Vicinity Map – Mill Valley
4. Notice of Exemption
MARIN MUNICIPAL WATER DISTRICT

RESOLUTION NO. 8375

IT IS HEREBY RESOLVED that the bid of $218,000 submitted by W.R. Forde Associates for the FFIP 2016 Directional Drill Project under Contract No. 1795 was the lowest responsible bid submitted therefor, and said bid is hereby accepted.

BE IT FURTHER RESOLVED that a contract for this project be awarded to said low bidder, and the General Manager and Secretary are authorized and directed to execute said contract on behalf of the District upon receipt of a performance bond, payment bond, proof of insurance, and the executed contract for the work from said bidder.

BE IT FURTHER RESOLVED that upon complete execution of said contract, the bonds and/or checks of the other bidders are to be returned to said other bidders, and all bids other than that of WR Forde Associates are to be rejected.

BE IT FURTHER RESOLVED that the project is Categorically Exempt from review under Section 15302(c) of the CEQA Guidelines inasmuch as it is the replacement of existing water pipelines with negligible or no expansion of capacity.

PASSED AND ADOPTED this 15th day of December, 2015, by the following vote of the Board.

AYES:

NOES:

ABSENT:

_______________________________
President, Board of Directors

ATTEST:

_____________________________
Secretary
Pipeline Replacement by Directional Drill Method
**Project Title:** 2016 FFIP Directional Drill Pipeline Replacement Project (F16002)

**Project Location – City:** Kentfield & Mill Valley  
**Project Location – County:** Marin

**Project Description:** The 2016 Fire Flow Improvement Program Directional Drill Project involves two sites that are planned portions of the FY 2015-2016 Fire Flow Improvement Program (FFIP). The project entails the replacement of existing cross-country pipeline segments within existing easements. Specifically, the project includes the installation of 8-inch high density polyethylene (HDPE) pipe for an approximate length of 120 feet in a lower easement and 180 feet in an upper easement between sections of Toussin Avenue in Kentfield (Figure 1). The second element of the project includes the installation of 10-inch HDPE pipe in two sections of approximately 120 feet and 240 feet from Bolsa Tank to Hillside Avenue in the Bolsa Easement, Mill Valley (Figure 2). The new pipe segments would replace existing pipe segments as noted below:

<table>
<thead>
<tr>
<th>Easement</th>
<th>City</th>
<th>Easement</th>
<th>Length (ft)</th>
<th>Installation Date</th>
<th>Existing Diameter and Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toussin Avenue</td>
<td>Kentfield</td>
<td>Upper</td>
<td>180</td>
<td>1933</td>
<td>4” CI</td>
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<td>Upper</td>
<td>120</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Lower</td>
<td>240</td>
<td>1929</td>
<td>6” LC</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>660</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Public Agency Approving Project:** Marin Municipal Water District

**Name of Person or Agency Carrying Out Project:** Marin Municipal Water District

**CEQA Exemption Status:** Categorical Exemption Section 15302(c), Replacement or Reconstruction.

**Reason for Exemption:** The project qualifies for exemption pursuant to Section 15302(c) inasmuch as it is the replacement of existing water pipelines with negligible or no expansion of capacity.

**Project Approval:** The Marin Municipal Water District Board of Directors approved the award of a contract for project construction, which represents project approval as defined by Section 15352 of the Guidelines for Implementation of the California Environmental Quality Act, at their regularly scheduled meeting on December 15, 2015.

**Lead Agency Contact Person:** Dain Anderson, Marin Municipal Water District  
**Telephone:** (415) 945-1586

Dain Anderson, Environmental Services Coordinator  
Date
Figure 1: 2016 FFIP Directional Drill Pipeline Replacement Project (Kentfield)

SOURCE: MMWD 2015
Figure 2: 2016 FFIP Directional Drill Pipeline Replacement Project (Mill Valley)

SOURCE: MMWD 2015
STAFF REPORT

SUBJECT: Approval to Fill Mechanical & Electrical Maintenance Worker II Vacancy

SUBMITTED BY: Erik Westerman, Superintendent of Operations
Environmental and Engineering Services Division

RECOMMENDED ACTION: Authorize General Manager to recruit and hire one Mechanical & Electrical Maintenance Worker II.

EXECUTIVE SUMMARY: On December 29, 2015, a Mechanical & Electrical Maintenance Worker IV is retiring. The retirement leaves staffing inadequate to perform proper levels of preventive and corrective maintenance on mechanical & electrical systems. The recruitment process is planned to begin in January with the goal of filling the position by early April 2016. The Mechanical & Electrical Maintenance group consists of eight (8) maintenance workers and one (1) supervisor. The group is responsible for all mechanical and electrical maintenance at the district’s 95 pump stations, 105 pressure reducing stations, 4 treatment plants and multiple office and administration buildings.

FISCAL IMPACT:

<table>
<thead>
<tr>
<th>EXPENDITURES:</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted Amount</td>
<td>$30,324</td>
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<tr>
<td>TOTAL EXPENDITURES</td>
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<tr>
<th>FUNDING SOURCES</th>
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<tbody>
<tr>
<td>Operating Fund $30,324</td>
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<tr>
<td>TOTAL SOURCES $30,324</td>
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</table>

FISCAL IMPACT NARRATIVE: It is proposed to fill the position at the Mechanical & Electrical Maintenance Worker II level with annual salary and benefits ranging from $121,296 to $148,042. This position is included in the FY 2015-2016 budget.

STRATEGIC PLAN ALIGNMENT: The requested action aligns with the District’s Strategic Plan Goal 5- Workforce, Strategy 5- attract and retain a high quality efficient workforce to achieve MMWD’s strategic goals and Objective 6- ensure that MMWD has sufficient qualified staff to address critical tasks in a timely manner.

REVIEWED BY:

| Finance Manager | X | NA |
| General Counsel | NA | X |
| General Manager | X | NA |
STAFF REPORT

SUBJECT: Approval to fill Laborer Position

SUBMITTED BY: Crystal Yezman, Division Manager, F&W

RECOMMENDED ACTION: Authorize General Manager to recruit and hire a Laborer in the Facilities and Watershed Division.

EXECUTIVE SUMMARY:

Tony Boyd, a Maintenance Worker II, has announced his separation from MMWD effective November 30, 2015. Staff is requesting authorization for the General Manager to recruit and hire one permanent Laborer.

FISCAL IMPACT: YES X NO FISCAL YEAR: 2016/2017

<table>
<thead>
<tr>
<th>EXPENDITURES</th>
<th>FUNDING SOURCES</th>
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<tbody>
<tr>
<td>Budgeted Amount</td>
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<td>Budget Augmentation Requested</td>
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<td>Other</td>
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<td><strong>TOTAL EXPENDITURES</strong></td>
<td><strong>TOTAL SOURCES</strong> $39,977</td>
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</table>

FISCAL IMPACT NARRATIVE:

The budgeted amount of $39,977 reflects the starting annual salary with benefits based on filling the Laborer position on January 1, 2016. Salary and benefits for the Laborer are budgeted in the Facilities and Watershed Division, Facilities Maintenance budget for both FY 2016 and FY2017. The total annual salary with benefits for the Laborer ranges from a minimum of $79,953 to a maximum of $97,336.

Filling this position will not increase the budgeted FTE within the Division.
BACKGROUND:

The Laborer position is necessary to support the Division in the System Maintenance, Facilities Maintenance, and Watershed Departments. The Laborer classification performs a wide variety of unskilled and semi-skilled tasks in the construction, maintenance, repair and landscaping of District facilities and distribution systems.

STRATEGIC PLAN ALIGNMENT:

The requested action aligns with the District’s Strategic Plan Goal 5- Workforce, Strategy 5- attract and retain a high quality efficient workforce to achieve MMWD’s strategic goals and Objective 6- ensure that MMWD has sufficient qualified staff to address critical tasks in a timely manner.

REVIEWED BY:  
Finance Manager  X  NA  
General Counsel  NA  
General Manager  X  NA
STAFF REPORT

SUBJECT: Approval to fill Administrative Analyst Position

SUBMITTED BY: Crystal Yezman, Division Manager, F&W

RECOMMENDED ACTION: Authorize General Manager to recruit and hire an Administrative Analyst in the Facilities and Watershed Division.

EXECUTIVE SUMMARY:

Cindy Lee, an Administrative Analyst, has announced her retirement from MMWD effective December 30, 2015. Staff is requesting authorization for the General Manager to recruit and hire one permanent Administrative Analyst.

FISCAL IMPACT: 

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<tr>
<th>EXPENDITURES</th>
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<tbody>
<tr>
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<td>Budget Augmentation Requested</td>
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<td>Other</td>
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<tr>
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<td>Operating Reserves</td>
</tr>
<tr>
<td>TOTAL EXPENDITURES $53,149</td>
<td>TOTAL SOURCES $53,149</td>
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FISCAL IMPACT NARRATIVE:

The budgeted amount of $53,149 reflects the starting annual salary with benefits based on filling the Administrative Analyst position on January 1, 2016. Salary and benefits for the Administrative Analyst are budgeted in the Facilities and Watershed Division, Support Services budget for both FY 2016 and FY 2017. The total annual salary with benefits for the Administrative Analyst ranges from a minimum of $106,297 to a maximum of $129,717.

Filling this position will not increase the budgeted FTE within the Division.
BACKGROUND:

The Administrative Analyst position is necessary to support the Division in the Support Services Department. The Administrative Analyst classification is a professional level administrative position that performs a wide variety of responsible, complex, and analytical work. Under direction, this position plans, organizes, and coordinates administrative activities within the division. This may include budget preparation and monitoring, contract administration, and record keeping.

STRATEGIC PLAN ALIGNMENT:

The requested action aligns with the District’s Strategic Plan Goal 5- Workforce, Strategy 5- attract and retain a high quality efficient workforce to achieve MMWD’s strategic goals and Objective 6- ensure that MMWD has sufficient qualified staff to address critical tasks in a timely manner.

REVIEWED BY:   

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<th>General Counsel</th>
<th>General Manager</th>
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<tr>
<td>Reviewer</td>
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</tbody>
</table>
STAFF REPORT

SUBJECT: Approval to fill Grant Program Coordinator Position

SUBMITTED BY: Crystal Yezman, Division Manager, F&W

RECOMMENDED ACTION: Authorize General Manager to recruit and hire a Grant Program Coordinator in the Facilities and Watershed Division.

EXECUTIVE SUMMARY:

Thomasin Grim, the district’s Grant Program Manager, has announced her retirement from MMWD effective December 30, 2015. Staff is requesting authorization for the General Manager to recruit and hire one permanent Grant Program Coordinator.

FISCAL IMPACT: YES X NO FISCAL YEAR: 2016/2017

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<thead>
<tr>
<th>EXPENDITURES</th>
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<tbody>
<tr>
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<td>TOTAL SOURCES</td>
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<td>$61,813</td>
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FISCAL IMPACT NARRATIVE:

The budgeted amount of $61,813 reflects the median annual salary with benefits based on filling the Grant Program Coordinator position on February 1, 2016. Salary and benefits for the Grant Program Coordinator are budgeted in the Facilities and Watershed Division, Administration budget for both FY 2016 and FY 2017. The total annual salary with benefits for the Grant Program Coordinator ranges from a minimum of $133,892 to a maximum of $164,360.

Filling this position will not increase the budgeted FTE within the Division.
BACKGROUND:

The Grant Program Coordinator position is necessary to support the district in obtaining grants, which currently average close to $1 million in added revenue each year. The Grant Program Coordinator classification is a professional level position that performs a wide variety of responsible, complex, and analytical work. Under general direction, this position researches, develops and writes grant proposals seeking financial support from foundations, corporations, individuals and government agencies for special District projects. This work may include grant preparation, monitoring and administration, reviewing and selecting qualified and appropriate projects, and managing funding agreements and reporting.

STRATEGIC PLAN ALIGNMENT:

The requested action aligns with the District’s Strategic Plan Goal 5- Workforce, Strategy 5- attract and retain a high quality efficient workforce to achieve MMWD’s strategic goals.

REVIEWED BY:

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<th>Finance Manager</th>
<th>General Counsel</th>
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</table>
STAFF REPORT

SUBJECT: Future Agenda Items

SUBMITTED BY: Krishna Kumar, General Manager

RECOMMENDED ACTION: Information

CALENDAR

12-17 Finance
12-18 DOC

1-5 Board
1-15 DOC
1-19 Board
1-28 Finance