

## **EXHIBIT A –SCOPE OF WORK**

### **Professional Services**

#### **Groundwater Sustainability Plan Development, April through June 2018**

#### **Marina Coast Water District**

EKI Environment & Water, Inc. (EKI; formerly known as Erler & Kalinowski, Inc.) is pleased to provide Marina Coast Water District (MCWD) this scope of work for Marina Coast Water District's (MCWD's) Groundwater Sustainability Plan (GSP) development between April and June 2018. This scope of work is based the work plan developed for the Proposition 1 Sustainable Groundwater Planning Grant (Proposition 1 Grant) application, which was developed pursuant to EKI's scope of work for MCWD's *Groundwater Sustainability Planning Study* (Planning Study).

As described in more detail below, the proposed scope of work includes:

Task 1 – Conduct Foundation GSP Development Efforts

Task 2 – Program Management and Grant Administration

### **BACKGROUND**

The MCWD submitted an application for a Proposition 1 Sustainable Groundwater Planning Grant for the development of two coordinated GSPs in the Monterey Subbasin respectively by the MCWD and the Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA). On 4 April 2018, the California Department of Water Resources (DWR) announced the Final Awards that included full funding of MCWD's application. This Proposition 1 Grant application, prepared by EKI with significant input from MCWD, included a Work Plan, Budget, and Schedule for GSP development for the MCWD Study Area (i.e. Marina and Ord Subareas within the Monterey Subbasin) by MCWD (Attachments A through C).

As outlined in the Work Plan, the overall GSP development effort will be conducted in four phases with a schedule targeting submittal of the GSP by the statutory deadline of 31 January 2022.

The proposed scope of work aligns with and summarizes the effort required to develop a GSP as more fully described in the attached Proposition 1 Work Plan (Attachment A). The proposed scope of work includes tasks scheduled to occur between April 2018 and June 2018 (i.e. until the end of Fiscal Year [FY] 2017-18). These tasks generally fall under the GSP Foundation Phase (Phase 1) and the Basin Characterization and Analysis Phase (Phase 2) (see Attachment D). A separate scope has been prepared for work efforts scheduled within FY 2018-19, which generally includes completion of remaining Phase 2 tasks.

Detailed schedule and budget that itemize the proposed Tasks and Subtasks (equivalent to the “Tasks” in the Proposition 1 application) are also included herein (Attachments B and C, respectively). The attached detailed schedule has been updated to reflect the postponement of the Proposition 1 grant award from December 2017 to April 2018.

## **PROPOSED SCOPE OF WORK**

### **Task 1 – Conduct Foundation GSP Development Efforts**

Task 1 consists of preparing the data, information, technical tools, and funding and outreach plans needed to successfully perform subsequent GSP development efforts. Efforts within Task 1 align with portions of Articles 3, 4, 5-1, 5-2, and 8 of the GSP Regulations (23-California Code of Regulations [CCR] §352-354.18, §357-357.4) and are primarily associated with Phase 1 of the Proposition 1 Work Plan.

Task 1 will build upon work completed to date by EKI for MCWD’s Planning Study (see Attachment D). Key work efforts will include development of a functional Data Management System (DMS); completion of key data gaps assessment for GSP development and suggestions for how to fill them; completion of numerical groundwater modeling evaluation; and development of a stakeholder communication and engagement plan that will fulfill the Sustainable Groundwater Management Act (SGMA) requirements and is suited to the interested parties in the Monterey Subbasin (see Attachments A through D).

Task 1 also includes support for stakeholder engagement and coordination efforts scheduled between April and June 2018, as well as initiating data gaps filling efforts in Phase 2 between May and June 2018.

### **Task 2 Program Management and Grant Administration**

Task 2 includes efforts relating to general management of the GSP development process from April 2018 through June 2018 and includes efforts consistent, where applicable, with the grant administration requirements outlined in the Proposition 1 Proposal Grant Agreement template and the technical and reporting standards outlined in the GSP Regulations (23-CCR §352-352.6). Key work efforts within this task will include initiating development of a Quality Assurance/Quality

Control (QA/QC) Plan; support of the GSA in submission of required quarterly progress reports; and project management during the GSP development effort.

## **PROJECT SCHEDULE**

We are prepared to begin work immediately on this project upon receipt of MCWD authorization to proceed. Efforts under the proposed scope of work is anticipated to occur between April and June 2018.

## **PROPOSED PROJECT BUDGET**

In as much as the exact level of effort to complete the above scope of work cannot be known precisely, we propose that compensation for consulting services by EKI be on a time and expense reimbursement basis in accordance with our current Schedule of Charges. On the basis of the scope of work described above, we propose a budget of \$114,000 which will not be exceeded without additional authorization. A detailed budget estimate is included as Attachment D. The approved Proposition 1 grant amount for each task has been identified on the budget table for reference. However, it should be recognized that MCWD will be responsible for submittal of invoices for reimbursement to DWR pursuant to the provisions of the Proposition 1 grant. EKI will work with MCWD to provide invoices in a format that is compatible with DWR requirements; however, MCWD will be responsible for payment of EKIs services pursuant to the terms of its agreement with EKI.

As the services to be provided by EKI may evolve, EKI will inform MCWD whenever the existing budget is anticipated to need augmentation to accomplish requested work; such additional budgets will be established by mutually agreeable work authorizations.

## **ATTACHMENTS**

- Attachment A      MCWD Proposition 1 Work Plan for GSP Development in the MCWD Study Area
- Attachment B      Revised GSP Development Schedule
- Attachment C      Cost Estimate to Develop a GSP
- Attachment D      GSP Development Efforts Complete to date and Remaining Cost Estimate with Detailed Cost Breakdown for Phases 1 and 2
- Attachment E      2018 Schedule of Charges

**ATTACHMENT A**

**MCWD Proposition 1 Work Plan for GSP Development in the MCWD Study Area**

## BACKGROUND

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The Salinas Valley Groundwater Basin Monterey Subbasin (DWR 3-004.10, hereinafter “Basin”) is a medium priority basin and as such is required to comply with the Sustainable Groundwater Management Act (SGMA). Specifically, the Basin is required to be managed under a single Groundwater Sustainability Plan (GSP) or multiple coordinated GSP adopted by one or more Groundwater Sustainability Agencies (GSAs) and submitted to the California Department of Water Resources (DWR) by 31 January 2022.

The Basin is bordered to the west by the Pacific Ocean and has been subject to significant saltwater intrusion over the last 50 years. It is bordered to the north by the 180/400 Foot Aquifer Subbasin (DWR 3-004.01), which has been designated by the California Department of Water Resources (DWR) as being in a condition of critical overdraft, and on the south by the Seaside Subbasin (DWR 3-004.08), which is fully adjudicated and therefore not subject to SGMA. The Basin includes a large area of federal land associated with the Ford Ord Military Reservation. Those lands are not subject to SGMA.

The Basin is covered by two GSAs, the Marina Coast Water District (MCWD) GSA and the Salinas Valley Basin GSA (SVBGSA). The MCWD GSA is a single-agency GSA formed by MCWD. The SVBGSA is formed by a Joint Powers Agreement (JPA) and is composed of Monterey County, Monterey County Water Resources Agency (MCWRA), Castroville Community Services District, and the Cities of Salinas, Soledad, Gonzales, Greenfield, and King. For administrative purposes, the Basin has been subdivided into three subareas, as shown on Figure 1. These subareas are described as follows:

- (1) Marina Subarea: This Subarea consists of the lands within MCWD GSA’s boundaries and includes the small island of land within the City of Marina that is excluded from MCWD GSA’s boundaries;
- (2) The Ord Subarea: This Subarea consists of that portion of the SVBGSA lands, which overlie MCWD’s Ord Community; and
- (3) Corral de Tierra Subarea: This Subarea consists the remainder portion of the SVBGSA lands besides the Ord Subarea.

MCWD is the main water supplier in the Basin and uses groundwater as its sole source of water supply. MCWD currently owns and operates eight production wells in the Basin. Four of the production wells are screened in the 180 Foot Aquifer and/or the 400 Foot Aquifer. In order to avoid the effects of seawater intrusion in these shallower aquifers MCWD’s four other production wells are screened in the Deep Aquifer, which is encountered at depths of roughly 900 feet. The Deep Aquifer had become a significant groundwater source in the Basin, yet there is limited knowledge regarding groundwater conditions within this aquifer. Limited data exists regarding the nature and extent of recharge, vertical connectivity to overlying aquifers, and volumes of groundwater extracted from the Deep Aquifer. Addressing seawater intrusion and developing a hydrogeologic conceptual model that further characterizes the Deep Aquifer will be critical for an effective GSP.

Acknowledging the importance of groundwater sustainability and technical complexities within the Basin, the Basin GSAs have made significant progress towards SGMA compliance, including GSA formation, inter- and intra-basin coordination, initial stakeholder engagement, as well as multiple engineering and scientific studies to inform assessment of undesirable results and management projects. The MCWD GSA has demonstrated a strong commitment to working through differences with other GSAs and developing

#### *Attachment 4 – Work Plan*

greater understanding of the hydrogeology of the Basin and engaging with groundwater users. These efforts have laid the initial groundwork for GSP development and will facilitate the development of a comprehensive GSP that will be supported by stakeholders.

The Basin GSAs are working together to develop one or more coordinated GSPs in the Basin for submission by the SGMA deadline. The GSAs have agreed that MCWD GSA shall be the Party responsible for submitting a Proposition 1 Grant Application for the Monterey Subbasin and shall be the grantee if the proposal is successful.

The work described in this Work Plan will be performed through a combination of direct efforts by MCWD GSA and contracted services by a specialized consultant team. Specifically, this Work Plan assumes that MCWD GSA: (1) will retain a qualified consultant team to conduct the technical and stakeholder engagement work described herein, and (2) will be active in the GSP development effort, including, but not limited to, providing data and in-kind support for Plan development, engaging in proactive and informed decision-making during coordination meetings, and providing constructive feedback and timely reviews of work products.

Monterey County received funding through the SGWP Proposition 1 Counties with Stressed Basins solicitation for assessment and modeling of the larger Salinas Valley Groundwater Basin (DWR 3-004). The effort included in this Work Plan is for GSP development for the MCWD Study Area of the Monterey Subbasin and therefore is not duplicative with efforts conducted by Monterey County. As described in the Work Plan, basin assessment and modeling tasks will be built upon efforts conducted by Monterey Basin for the Salinas Valley Groundwater Basin.

## PROJECT OVERVIEW

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For the purposes of this Proposition 1 Grant Application, the “Project” is the development of a SGMA-compliant GSP by MCWD GSA for the MCWD Study Area of the Basin.<sup>1,2</sup> The MCWD Study Area covers the Marina and Ord Subareas, where MCWD is the water service provider (Figure 1).

It has been agreed that SVBGSA will develop a GSP for the Corel de Tierra Subarea, and that the two coordinated GSPs prepared respectively by MCWD GSA and SVBGSA will cover the entire Basin. A separate project for GSP Development for the Corral De Tierra subarea which will be coordinated by SVBGSA is also included in this Proposition 1 application. The costs for that separate project are not included in the budget of this Work Plan.

This GSP Development Project Work Plan (Work Plan) describes the scope of work for development of a SGMA-compliant GSP by and for the MCWD GSA.

## PROJECT OBJECTIVES

The main objective of this Project is to develop a complete GSP covering the MCWD Study Area of the Basin that will comply with and meet all requirements of the GSP Emergency Regulations (23-CCR §350-358.4) and will provide a reasonable path forward for achieving sustainable groundwater management in the Basin by the SGMA implementation deadline of 2042. The Project is designed to meet all requirements for a Category 2, Tier 2 project described in the Sustainable Groundwater Planning (SGWP) Groundwater Sustainability Plans and Projects Proposal Solicitation Package (PSP).

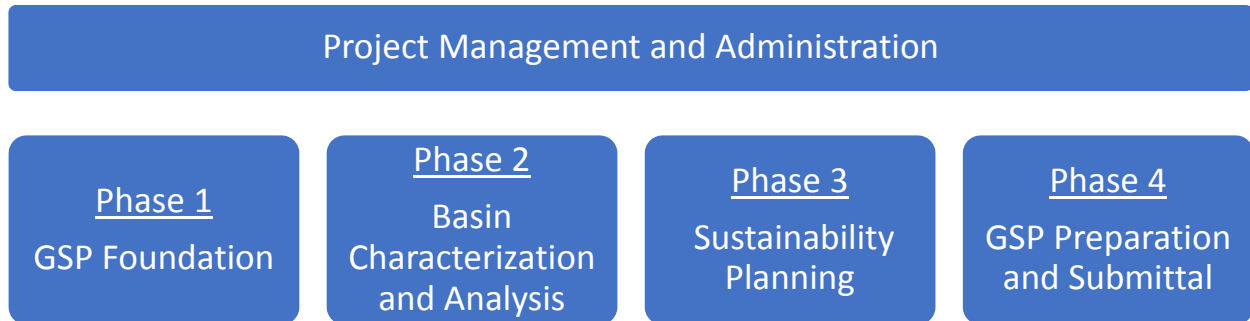
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<sup>1</sup> This Work Plan and the accompanying Project schedule and budget were developed assuming that two GSPs will be developed covering the entire Basin and coordinated pursuant to California Water Code (CWC) §10727(b)(3). It is assumed that the Basin GSAs would coordinate in the development of all Basin-wide GSP components outlined as requirements of a GSP Coordination Agreement “to ensure that the Plans are developed and implemented using the same data and methodologies, and that elements of the Plans necessary to achieve the sustainability goal for the basin are based upon consistent interpretations of the basin setting” (California Code of Regulations, Title 23 [23-CCR] §354.7). As such, the incremental costs associated with developing separate GSPs are expected to be relatively minor. While not currently anticipated, if the Basin GSAs ultimately chooses to prepare and adopt a single GSP for the Basin, many of the data collection, development, and synthesis efforts and other stakeholder outreach and intra- and interbasin coordination efforts outlined and described in this Work Plan will be applicable to that effort.

<sup>2</sup> A portion of the Ord Subarea is federal land not subject to SGMA. The MCWD, through an agreement, provides water services to and regulates groundwater use in this area.

## PROJECT PHASING

The Work Plan divides the overall GSP development effort into four phases, with a Project Management and Administration Phase (PM Phase) covering the entire process. As shown below, the four phases are: (1) GSP Foundation, (2) Basin Characterization and Analysis, (3) Sustainability Planning, and (4) GSP Preparation and Submittal. Each phase builds off efforts and results of the previous phases. The PM Phase includes tasks related to general management, including (1) grant management and administration, (2) project management, and (3) quality assurance/quality control (QA/QC).



As shown in the attached GSP Development Project Schedule, the four phases overlap temporally in cases where activities in a later phase can be initiated while activities in a previous phase are still ongoing. The work efforts of Phase 1, Phase 2 and portions of Phase 3 are accelerated with the objectives of:

- **Keeping pace with SGMA efforts in adjacent subbasins**, i.e., the 180/400 Foot Aquifer Subbasin (DWR 3-004.01), which is in critical overdraft conditions and subject to an accelerated SGMA-compliance schedule; and
- **Supporting effective interbasin coordination**, particularly with respect to critical factors such as the water budget and numerical groundwater model development (Phase 2) and the development and vetting of sustainability criteria (Phase 3).

The 180/400 Foot Aquifer Subbasin is hydraulically connected to the Basin. Overdraft conditions in the 180/400 Foot Aquifer Subbasin are causing groundwater to flow further inland within the Basin. Therefore, careful coordination with the 180/400 Foot Aquifer Subbasin will be required to stop further saltwater intrusion within the Basin. The MCWD GSA and the SVBGSA also cover the 180/400 Foot Aquifer Subbasin, and will be coordinating regarding GSP development for that subbasin.

## INTERIM WORK PRODUCTS

The Work Plan will be implemented in a transparent and collaborative fashion such that all Basin stakeholders have ample opportunity to provide timely input. Specifically, the work effort of each task described herein will be documented as follows:

- **Technical Presentations** will be made by technical specialists on a regular and as-needed basis to the MCWD GSA and Basin stakeholders to provide for an open and transparent process and significant opportunity for input as key elements of the GSP are being developed. This approach



ensures that there will be “no surprises” when the Draft Technical Memoranda (see below) are reviewed and will streamline the review and revision process as major issues will have been vetted during the development stage by all parties; and

- **Draft Technical Memoranda (TM)** and associated tables and figures will be submitted to MCWD GSA and in some cases additional key stakeholders for review and comment. The Draft TMs will reflect input received during the related technical presentations and will be drafted to support key elements of the GSP. The Draft TMs will not be finalized; rather, suggested revisions to the Draft TMs will be incorporated as appropriate into chapters of the Draft GSP.

Selected work products, resources and underlying data will be made available for public review on the MCWD GSA website ([http://www.mcwd.org/gsa\\_about.html](http://www.mcwd.org/gsa_about.html)).

## PROJECT DELIVERABLES

The deliverable for this Project is a complete and fully SGMA-compliant GSP reflective of MCWD GSA’s efforts under this Project, including any associated Coordination Agreement(s), data and informational components (i.e., a functional Data Management System containing all preliminary data and a bibliography of sources used to develop the GSP; numerical model input/output files and documentation, project feasibility studies, etc.), submitted to the DWR. Additionally, the Project Applicant (i.e., the MCWD GSA) will submit all required grant administration-related reports to DWR, including quarterly progress reports and a final report, as established in the Grant Agreement that will be entered into by the Project Applicant and DWR.

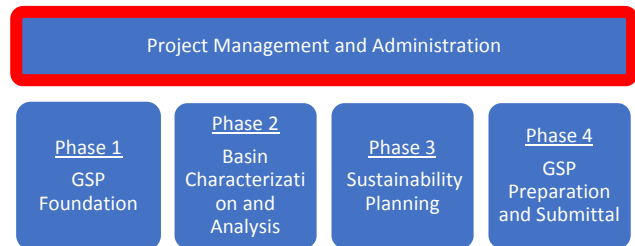
## SUMMARY WORK PLAN FOR GRANT ADMINISTRATION PURPOSES

Although the Project Work Plan has been developed in significant detail, it is assumed that, for purposes of grant administration, the Project Applicant will work with DWR to manage the grant at the Phase level. As such, a brief summary Work Plan that describes each Phase and the associated Tasks and associated work products and deliverables is provided below. This information supports and is consistent with the level of detail presented in the Project Budget and Schedule.

A more detailed description of each Phase and Task follows thereafter in the “Detailed Project Work Plan”.

### PM PHASE - PROJECT MANAGEMENT AND ADMINISTRATION (0% COMPLETE)

The Project Management and Administration Phase (PM Phase) includes tasks related to general management of the entire GSP development process (i.e., through planned submission by January 2022)<sup>3</sup>. The PM Phase efforts will be carried out concurrently with the execution of Phases 1 through 4, and includes the following Tasks consistent, where applicable, with the grant administration requirements outlined in the PSP Grant Agreement Template and the technical and reporting standards outlined in the GSP Regulations (23-CCR §352-352.6):



- Task 1. Proposition 1 Grant (Grant) Management, Administration, and Reporting
- Task 2. Project Management
- Task 3. Quality Assurance/Quality Control

Anticipated work products under the PM Phase will include:

- Meeting agendas, minutes and presentations, as applicable;
- Project schedule, budget tracking and other management tools; and
- Draft and Final QA/QC Plan.

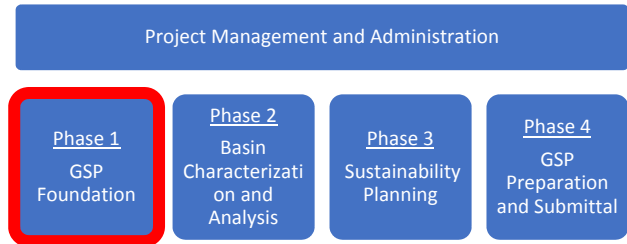
Deliverables to DWR under the PM Phase will include all submittals required by Proposition 1 grant requirements and agreed to in the Grant Agreement, including:

- Quarterly progress and accountability reports;
- A final Project Completion Report;
- A Grant Completion Report; and
- A Coordination Agreement (*as necessary*).

<sup>3</sup> The MCWD GSA may choose to accelerate GSP development efforts in order to submit the Final GSP to DWR ahead of the January 2022 deadline.

## PHASE 1 – GSP FOUNDATION (67% COMPLETE)

Phase 1 of the Work Plan involves the following Tasks consistent, where applicable, with portions of Articles 3, 4, 5-1, 5-2, and 8 of the GSP Regulations (23-CCR §352-354.18, §357-357.4):



Task 4. Conduct Preliminary GSP Development Efforts

Task 5. Provide Initial Notification of GSP Development

Task 6. Select or Design Data Management System (DMS)

Task 7. Gather Available Data and Compile into DMS

Task 8. Compile Information on the Plan Area and Basin Management Activities

Task 9. Conduct Data Gaps Assessment

Task 10. Evaluate Numerical Groundwater Modeling Options

Task 11. Develop GSP Development Funding Plan

Task 12. Develop Stakeholder Communication and Engagement Plan (SCEP)

Task 13. Conduct Stakeholder Engagement Related to the GSP Foundation Phase

Task 14. Participate in Intrabasin and Interbasin Coordination Efforts

Efforts under Phase 1 will prepare MCWD GSA with the data, information, technical tools (i.e., a selected numerical model), and funding and outreach plans needed to successfully perform the subsequent Basin Characterization and Analysis efforts under Phases 2 and 3. Anticipated work products from Phase 1 efforts include:

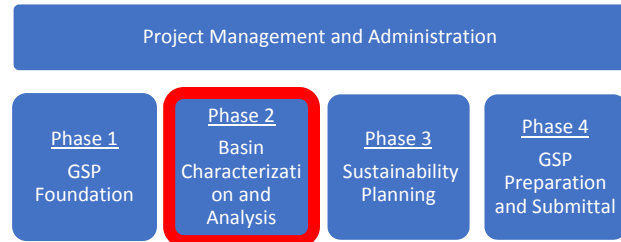
- A functional DMS containing all preliminary data and a living bibliography;
- Draft TM #1 – Data Management System Evaluation and Selection;
- Draft TM #2 – Data Compilation and Data Gaps Assessment;
- Draft TM #3 – Numerical Groundwater Model Evaluation and Selection;
- Draft TM #4 – GSP Development Funding Plan; and
- Draft TM #5 – Stakeholder Communication and Engagement Plan

Phase 1 will extend from the grant award date through June 2018<sup>4</sup>. One or more focused technical presentations will be made to MCWD GSA to present the data, methodology, and results from each task, and to solicit feedback prior to drafting and submitting each Draft TM for review.

<sup>4</sup> Cost-sharing activities associated with Phase 1 efforts will encompass relevant work undertaken by GSAs in the Basin since January 2015 (the effective date of SGMA).

## PHASE 2 - BASIN CHARACTERIZATION AND ANALYSIS (0% COMPLETE)

Phase 2 of the Work Plan focuses on technical analysis of Basin conditions, and includes the following Tasks consistent, where applicable, with portions of the Basing Setting and Monitoring Network sections of the GSP Regulations (23-CCR §354.12-18, §354.32-40):



- Task 15. Implement Plans for Filling Data Gaps Needed for GSP Preparation
- Task 16. Assess Groundwater Conditions and Develop Hydrogeologic Conceptual Model
- Task 17. Develop/Refine Numerical Groundwater Model
- Task 18. Develop Study Area and Basin-Wide Water Budget
- Task 19. Assess Existing Monitoring Programs and Develop SGMA-Compliant Monitoring Network
- Task 20. Conduct Stakeholder Engagement Related to the Basin Characterization and Analysis Phase
- Task 21. (Continue to) Implement GSP Development Funding Plan
- Task 22. (Continue to) Participate in Intrabasin and Interbasin Coordination Efforts

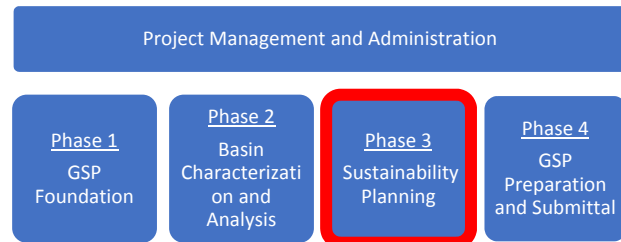
Efforts under Phase 2 will build towards a complete and coherent understanding of the Basin that will serve as the foundation for sustainability planning efforts under Phase 3. Anticipated work products from Phase 2 efforts include:

- Draft TM #6 – Groundwater Conditions and Hydrogeologic Conceptual Model;
- Draft TM #7 – Model Development and Calibration;
- Draft TM #8 – Water Budget and Preliminary Estimate of Sustainable Yield; and
- Draft TM #9 – Summary of Monitoring Network Assessment and Preliminary Monitoring Plan.

Phase 2 will extend from July 2018 through June 2019. One or more focused technical presentations will be made to MCWD GSA to present the data, methodology, and results from each task and to solicit feedback prior to drafting and submitting each Draft TM for review.

## PHASE 3 - SUSTAINABILITY PLANNING (0% COMPLETE)

Phase 3 of the Work Plan focuses on planning for the sustainable management of the Basin, and includes the following Tasks consistent, where applicable, with portions of the Basin Setting, Sustainable Management Criteria, Monitoring Network, and Project and Management Actions sections of the GSP Regulations (23-CCR §354.20-44):



- Task 23. Evaluate Potential Management Areas
- Task 24. Develop Sustainable Management Criteria
- Task 25. Identify Projects and Management Actions
- Task 26. Create GSP Implementation Plan

Attachment 4 – Work Plan

- Task 27. Finalize Monitoring Network and Protocols
- Task 28. Conduct Stakeholder Engagement Related to Sustainability Planning
- Task 29. (Continue to) Implement GSP Development Funding Plan
- Task 30. (Continue to) Participate in Intrabasin and Interbasin Coordination Efforts

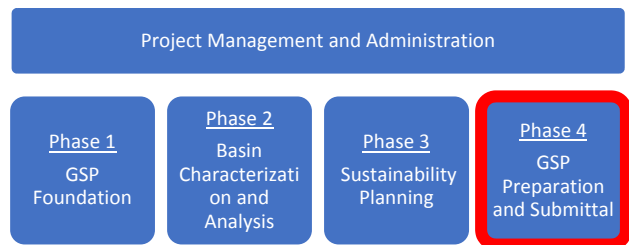
Anticipated work products from Phase 3 efforts include:

- Draft TM #10 – Delineation of Management Areas;
- Draft TM #11 – Establishment of Sustainability Criteria;
- Draft TM #12 – Proposed Projects and Management Actions;
- Draft TM #13 – GSP Implementation Plan; and
- Draft TM #14 – Proposed Monitoring Network and Protocols.

Phase 3 will extend from July 2019 through June 2020. One or more focused technical presentations will be made to MCWD GSA to present the data, methodology, and results from each task and to solicit feedback prior to drafting and submitting each Draft TM for review.

## PHASE 4 - GSP PREPARATION AND SUBMITTAL (0% COMPLETE)

Phase 4 of the Work Plan involves preparation of the GSP for submittal to DWR, and includes the following Tasks consistent, where applicable, with requirements for GSP submission outlined in the GSP Regulations and in the California Water Code (CWC §10727-10728.6):



- Task 31. Compile Complete Draft GSP
- Task 32. Distribute Draft GSP and Revise (if necessary) Per Stakeholder Feedback
- Task 33. Submit Final GSP to DWR
- Task 34. (Continue to) Participate in Intrabasin and Interbasin Coordination Efforts

Final deliverables to DWR from Phase 4 efforts will include:

- A Final (written) GSP for the MCWD Study Area;
- Coordination Agreements (as applicable);
- A Data Management System, integrated with all existing data; and
- Numerical Model Inputs/Outputs

It is anticipated that Phase 4 will extend from July 2020 through the GSP submission deadline of 31 January 2022. The MCWD GSA may choose to accelerate Phase 4 efforts in order to submit the Final GSP to DWR ahead of the January 2022 deadline.

## DETAILED PROJECT WORK PLAN

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### PM PHASE - PROJECT MANAGEMENT AND ADMINISTRATION (0% COMPLETE)

The Project Management and Administration Phase (PM Phase) includes tasks related to general management of the entire GSP development process (i.e., through the January 2022 GSP submission deadline). The PM Phase efforts will be carried out concurrently with the execution of Phases 1 through 4.



#### Task 1: Proposition 1 Grant Management, Administration, and Reporting (0% complete)

This task includes all work efforts needed to comply with the grant reporting and administration requirements, including accounting of expenditures of allocated grant monies, preparation of progress reports, invoices, and associated documentation, and as-needed communications with DWR SGWP grant administration staff.

As specified in the PSP Grant Agreement Template, deliverables to DWR will include:

- Quarterly progress and accountability reports;
- A final Project Completion Report;
- A Grant Completion Report; and
- A Coordination Agreement (*as necessary*)<sup>5</sup>.

The requirements for this reporting shall be established in the grant agreement that will be entered into by the Project Applicant (i.e., the MCWD GSA) and DWR.

#### Task 2: Project Management (0% complete)

This task includes overall project management activities, including management of project budgets, schedule, staff assignments, subconsultant/subcontractor management, records management, contract compliance, etc. This task will also cover routine communication between MCWD GSA and the consultant team, including the preparation of meeting agendas, presentations, minutes, etc.

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<sup>5</sup> The Coordination Agreement between MCWD GSA and SVBGSA will be developed as part of intrabasin coordination efforts under Tasks 14, 22, 30, and 34.

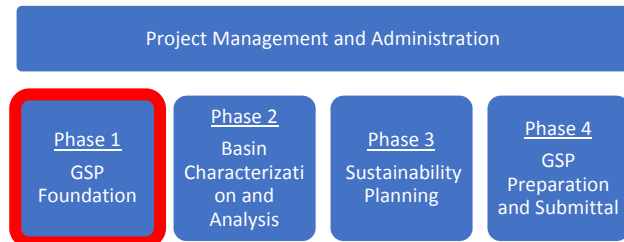
### Task 3: Quality Assurance/Quality Control (0% complete)

Under this task, a QA/QC Plan will be developed to ensure that all interim work projects and deliverables are developed using standardized methodologies appropriate to each individual work product, and undergo review for conformance with applicable standards. The methodologies covered under the QA/QC Plan will include those related to:

- Data collection and compilation;
- Maintenance of a project bibliography (i.e., document repository);
- Technical analyses including water budgets and numerical modeling;
- Preparation of graphics including map-based figures and others;
- Preparation of written work products (i.e., technical memoranda and reports); and
- Performance of project management activities.

### PHASE 1 - GSP FOUNDATION (67% COMPLETE)

Efforts under Phase 1 will prepare MCWD GSA with the data, information, technical tools (i.e., a selected numerical model), and funding and outreach plans needed to successfully perform the subsequent Basin Characterization and Analysis efforts under Phases 2 and 3. Phase 1 will extend through June 2018.



### Task 4: Conduct Preliminary GSP Development Efforts (100% complete)

After SGMA was adopted on January 1, 2015, entities in the Basin initiated efforts to comply with SGMA. The efforts conducted to date have been related to SGMA administration, initial stakeholder engagement, intrabasin and interbasin coordination, initial basin setting and management options analysis, and assessment and coordination regarding GSP development costs and funding options. The following are specific efforts that have already been carried out:

- **GSA formation:** In September 2016, MCWD submitted a Notice of Intent to become a GSA for the portion of the Basin within its Service Area. The MCWD GSA is the exclusive GSA for the portion of the Basin underlying MCWD’s jurisdictional boundary in and around the City of Marina.
- **Basin Boundary Modification:** The MCWD GSA participated in Monterey Peninsula Water Management District’s (MPWMD’s) March 2016 request to modify boundaries of the Seaside Subbasin and the former Corral de Tierra Subbasin. The basin boundary modification request was approved by DWR in October 2016, creating the Monterey Subbasin.
- **Development and management of SGMA/GSA website:** The MCWD GSA website was established in 2016 and provides a nexus for public outreach and stakeholder engagement.
- **Meetings to support intra- and inter-basin coordination:** The MCWD GSA interacted closely with SVBGSA for both inter- and intra-basin coordination. A staff member of the MCWD GSA elected to serve on SVBGSA’s Advisory Committee and attended regular meetings with SVBGSA since 2016. In addition, MCWD GSA help organize the first GSA Manager workshop in October 2017, a

workshop attended by GSAs within the larger Salinas Valley Basin to coordinate intrabasin GSP development.

- **Stakeholder outreach meetings/workshops:** The MCWD GSA invited the beneficial users identified during the GSA formation processes (i.e., agricultural and domestic water users, environmental water users, Disadvantaged Community [DAC] representatives, municipalities, federal agencies, etc.) to participate in an initial stakeholder workshop in October 2017. The workshop focused on identifying their interests, concerns, and priorities; the best tools for communicating with them (i.e., e-mail, direct mail, newsletters, social media, etc.); what issues or concerns they would like to see addressed in the GSP development process; and who else they think should be involved in the GSP development and implementation process.
- **Water Supply Augmentation Feasibility Study:** The MCWD GSA is conducting a feasibility assessment of water supply augmentation and groundwater recharge augmentation for the Basin in particular. The study began in 2016 and is anticipated to continue as part of GSP development. Efforts to date assessed technical feasibility and costs of augmenting water supplies within the Basin through recharge of advanced treated recycled water and/or surplus surface water from the Salinas River available during winter months. Recharge would be facilitated through either percolation or injection at the Armstrong Ranch Site. The MCWD GSA anticipates continuing feasibility studies to further assess the viability of groundwater augmentation in the Basin during 2017 and 2018. The study will inform the Project's Sustainability Planning Phase in identifying projects and management actions to be implemented under the Basin's GSP.
- **Stanford Airborne Electromagnetics seawater intrusion study along the Monterey coast ("Stanford AEM Study"):** The MCWD retained technical consultants and Stanford University researchers in 2017 to obtain and analyze Electrical Resistivity Tomography data along 40 kilometers of the Monterey coast. Previous studies within the Basin identified "isolated freshwater lens" of low total dissolved solids (TDS) water within an area otherwise known to be seawater intruded. This study mapped the hydrostratigraphy and distribution of fresh and salt water along the Monterey coast using AEM methods. The purpose of this study is to identify the existence of freshwater and potential locations for groundwater recharge augmentation in the Monterey Subbasin, as part of potential projects and management actions identified during the Sustainability Planning Phase. This study is anticipated to continue through 2018.
- **Modeling efforts planning:** The MCWRA, a member of SVBGSA, is developing the Salinas Valley Integrated Hydrologic Model (SVIHM) for the larger Salinas Valley Basin in collaboration with the U.S. Geological Survey (USGS). The MCWD GSA participated in SVIHM workshops held by USGS in 2017 and assessed the potential to use SVIHM to assist with GSP development.
- **Drafting and adoption of the Proposition 1 Coordination Agreement:** Between September and November 2017, the Basin GSAs strategized a Proposition 1 Grant Application and drafted a Proposition 1 Coordination Agreement regarding grant administration and the pathway to complete coordinated GSPs for the entire Basin. The Agreement was adopted by the Basin GSAs on 9 November 2017.
- **Preparation of a grant application:** Between September and November 2017, the Basin GSAs developed the Basin's Proposition 1 Grant Application for submittal to DWR under the Proposition 1 Coordination Agreement.



These efforts are included in the budget for this Project, as they constitute foundational technical efforts that have contributed to GSP development for the MCWD Study Area of the Basin.

### **Task 5: Provide Initial Notification of GSP Development (0% complete)**

The GSP Regulations (23-CCR §353.6) require that each GSA shall notify DWR of their process for developing the GSP, including how interested parties can contact the GSA and participate in the development and implementation of the GSP. The required initial notification documentation will be prepared and submitted to DWR on behalf of MCWD GSA via the online SGMA portal to commence GSP development. Additionally, the initial notification documentation will be posted on the MCWD GSA website ([http://www.mcwd.org/gsa\\_about.html](http://www.mcwd.org/gsa_about.html)).

### **Task 6: Select or Design Data Management System (0% complete)**

The GSP Regulations (23-CCR §352.6) require that each GSA develop a DMS to enable the storage and reporting of information relevant to GSP implementation and monitoring of basin conditions. DWR's *BMP 2: Monitoring Networks and Identification of Data Gaps* briefly discusses DMS requirements, and indicates that DWR intends to update BMP 2 with a suggested DMS data structure to facilitate data consistency, transparency, and sharing amongst basins and with DWR. Data to be included in the DMS must conform to the Data and Reporting Standards described in §352.4 of the GSP Regulations and must be consistent with the requirements of any inter- or intra-basin coordination agreements that address data consistency.

#### ***Evaluate Data Management Systems***

The Basin GSAs will select or develop a DMS in accordance with the forthcoming update to the DWR's BMP guidance. Various options for the DMS will be evaluated and summarized for review and consideration by the Basin GSAs. The review will include potential "off-the-shelf" data management tools, or the development of a customized DMS. It is anticipated that the DMS will include both spatial and temporal data, and that the two data types will be linked through use of a Geographic Information System (GIS) geodatabase. Specifically, it is anticipated that:

- **Spatial data** will generally be stored as shapefiles or other graphical formats, as appropriate, and will include but not be limited to: surficial soils and geology; topography; natural and artificial surface water features (i.e., rivers and streams, lakes, reservoirs, springs, wetlands, canals, recharge basins, etc.); wells, stream gauges, subsidence monitoring stations, and other monitoring sites, as applicable; various boundaries (i.e., basin, agency, GSA, DAC, and parcel boundaries); and
- **Temporal data** will be stored in a set of cross-referenced tables, and will include, but not be limited to: climate and meteorological data; hydrology/streamflow; well-specific data on groundwater levels and quality; land use/cropping data; water use information (including groundwater pumping, imports and deliveries by water suppliers); and demographic/population data.

The DMS will be constructed to include QA/QC checks, in accordance with the QA/QC Plan developed under Task 3, so that all data entered into the DMS are valid and compatible for subsequent analyses necessary for GSP preparation and implementation. The DMS will be designed to allow for the accurate

and efficient export of information for GSP analysis as well as on-going reporting purposes. Also, the DMS shall readily provide for future addition of new data. MCWD GSA staff will be trained on use of the DMS as a part of Task 26 [Error! Reference source not found.](#)

### ***Prepare Technical Presentation(s) and Draft Technical Memorandum***

The options for DMS selection and/or development will be summarized in technical presentation(s) made to MCWD GSA and summarized in *Draft TM #1 – Data Management System Evaluation and Selection* for consideration by MCWD GSA, which will then decide on what approach to utilize.

## **Task 7: Gather Available Data and Compile into DMS (0% complete)**

Under Task 7, available existing data will be gathered and compiled into the Basin DMS in support of subsequent GSP analyses (e.g., groundwater conditions assessment, hydrogeologic conceptual model [HCM], numerical model development, and water budget analysis).

### ***Compile Publicly Available Data***

DWR has compiled many useful data sources and tools on its website, including the “*Sustainable Groundwater Management - Data, Tools, and Reports*” webpage. The DWR webpages and data repositories will be visited frequently to ensure compilation of all applicable, publicly available data. Statewide or federal (i.e., non-local) public data sources that will also be mined for the purposes of populating the DMS for subsequent GSP analysis include the following:

- Groundwater Level Data:
  - DWR California Statewide Groundwater Elevation Monitoring Program (CASGEM);
  - DWR Groundwater Information Center (GIC); and
  - DWR Water Data Library (WDL).
- Surface Water Flow Data:
  - DWR California Data Exchange Center (CDEC);
  - DWR WDL;
  - United States Geological Survey (USGS) National Water Information System (NWIS); and
  - United States Bureau of Reclamation (USBR).
- Surface Water Diversion and Permitting Data:
  - State Water Resources Control Board (SWRCB) Electronic Water Rights Information Management System (eWRIMS) data
- Climatological / Meteorological Data:
  - DWR CDEC;
  - DWR California Irrigation Management Information System (CIMIS);
  - National Oceanic and Atmospheric Administration (NOAA) data; and
  - PRISM climate data.
- Groundwater Quality Data:
  - SWRCB Groundwater Ambient Monitoring and Assessment (GAMA) program;
  - SWRCB GeoTracker program;
  - SWRCB Division of Drinking Water (DDW); and
  - USGS NWIS.
- Topography: USGS

## Attachment 4 – Work Plan

- Surficial Soils: United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)
- Surficial Geology:
  - USGS reports; and
  - California Division of Mines and Geology (CDMG) reports.
- Land Use:
  - DWR Land Use Surveys;
  - USGS National Land Cover Database (NLCD);
  - USDA; and
  - Any publicly available city- and/or county- wide land use surveys.
- Land Subsidence:
  - DWR's *Summary of Recent, Historical, and Estimated Potential for Future Land Subsidence in California* (2014);
  - Jet Propulsion Laboratory, California Institute of Technology's *Subsidence in California InSAR Study* (Farr, Jones, and Liu, 2015 and 2016); and
  - Various maps and reports from the USGS California Water Science Center.
- Population:
  - DWR;
  - State Department of Finance; and
  - United States Census Bureau.
- Water Use:
  - DWR Agricultural Land and Water Use Estimates; and
  - ITRC Evapotranspiration (ET) Data.
- Well Construction information
  - DWR Well Completion Report Map; and
  - California Department of Oil, Gas, and Geothermal Resources (DOGGR) logs.

### **Compile Local and Basin-Specific Data**

To supplement the above public data sources, additional information from local sources (i.e., agencies within the Basin) will be gathered and compiled under Task 7. It is anticipated that this local information may include more detailed information on hydrogeologic characteristics, land use, water use, groundwater levels, and water quality in the Basin. The MCWD GSA, in coordination with SVBGSA, will enter this information into the Basin DMS and/or a document repository established in support of GSP development using the QA protocols established during DMS construction under Task 6. These local data sources include, but are not limited to, the following:

- Groundwater Management Plan (GWMP) prepared by MCWRA (2006);
- CASGEM Monitoring Network Plans prepared by MCWRA (2015) and MPWMD (2012);
- Urban Water Management Plans (UWMPs) prepared by the MCWD (2016) and California American Water Company – Monterey District (CalWater, 2016) and submitted to DWR;
- General Plans (discussed further under Task 8 below);
- The Basin Boundary Modification Request submitted by MPWMD and approved by DWR in 2016;
- MCWRA's larger scale HCM and numerical model for the Salinas Basin (DWR 3-004);

#### *Attachment 4 – Work Plan*

- Results of studies and investigations by individual entities within the Basin (e.g., hydrogeologic investigations conducted as part of remediation efforts at the former Fort Ord, etc.);
- Databases of well records, water level data, water quality data (e.g., Fort Ord Data Integration System, DWR Well Completion Records, etc.);
- Databases of operational data (e.g., deliveries of water to customers of each water supplier);
- Relevant studies completed or currently being conducted in the Basin and adjacent basins (e.g. MCWD Groundwater Supply Augmentation Feasibility Study, Stanford AEM Study [as described in Task 4], Salinas and Carmel Basin Study, North Monterey County Drought Contingency Plan, investigations performed as part of the Monterey Peninsula Water Supply Project, State of the Salinas River Groundwater Basin Study, etc.);
- Relevant data and information being developed in the adjacent basins as part of SGMA efforts; and
- Any other available, relevant data and/or information.

Additionally, outreach with stakeholders in the Basin will be conducted to collect additional relevant local data sources not yet identified by MCWD GSA.

One particular source of additional information will be the Salinas and Carmel Rivers Basin Study and the North Monterey County Drought Contingency Plan projects both of which are being conducted by the MPWMD and the U.S. Bureau of Reclamation (USBR) as part of the USBR's Sustain and Manage America's Resources for Tomorrow (WaterSMART) initiative. These two projects, which cover the Salinas River and Carmel River watersheds, will include compilation of substantial amounts of information on hydrology, climate, and land and water use. These efforts will compliment GSP development efforts in the Basin and will be leveraged to the extent possible during Phase 1 and Task 7 of this Project.

#### ***Prepare Technical Presentations(s) and Draft Technical Memorandum***

Results of Task 7 will be presented in the technical presentation(s) and draft Technical Memorandum to be prepared pursuant to Task 9.

### **Task 8: Compile Information on the Plan Area and Basin Management Activities (0% complete)**

The GSP Regulations (23-CCR §354.8) require that each GSP contain information on the Plan Area, including the following:

- Maps depicting the area covered by GSP, adjudicated areas, other agencies within the basin, and areas covered by an Alternative, jurisdictional boundaries of federal, state, tribal, city, county, and agencies with water management responsibilities, areas covered by relevant General Plans, existing land use designations, the density of wells per square mile, and locations of communities dependent on groundwater;
- A written description of the Plan area describing the features depicted on the above maps;
- Identification and description of water resource monitoring and management programs, how those programs may be incorporated into the Plan, and how they may limit operational flexibility in the basin;
- A description of conjunctive use programs, if any;

- A description of land use elements or topic categories of applicable General Plans, including a summary of those plans, how implementation of the GSP may change water demands or affect achievement of sustainability and how the GSP addresses those effects, how implementation of the GSP may affect the water supply assumptions of relevant land use plans and how land use plans outside the basin could affect the ability to achieve sustainable groundwater management within the basin;
- A summary of the permitting process for new or replacement wells in the basin; and
- Any additional elements determined to be relevant and appropriate.

### ***Review Information on the Plan Area and Basin Management Activities***

Under Task 8, MCWD GSA will compile, review, and summarize the above information to the extent applicable in coordination with SVBGSA. In addition, the required set of maps will be prepared. An extensive bibliography will be developed and maintained of relevant reports, documents, and web-based resources. The review will be necessary at this stage to inform the subsequent basin analyses and sustainability planning to be performed under Phases 2 and 3 (i.e., the water budget, development of management actions and criteria, etc.).

### ***Prepare Technical Presentation(s) and Draft Technical Memorandum***

Results of Task 8 will be presented in the technical presentation(s) and draft Technical Memorandum to be prepared pursuant to Task 9.

## **Task 9: Conduct Data Gaps Assessment (0% complete)**

Upon completion of data and information compilation tasks described above (Task 7 and Task 8), an assessment of data gaps will be performed under Task 9.

### ***Assess Data Gaps of Plan Area and Basin Setting Elements***

The purpose of this data gaps assessment will be to identify high priority data gaps that will need to be filled in the near term in order to prepare the GSP. The assessment will therefore focus on information pertinent to requirements under the GSP Regulations for the Plan area description, the HCM, the groundwater conditions, and the water budget. The assessment will generally be performed in accordance with GSP Regulations (23-CCR §354.38) and the flow chart included as Figure 4 of DWR's BMP 2.

The assessment will focus on the MCWD Study Area and that extends outwards a reasonable distance in order to capture any notable boundary conditions or spatial variations in conditions. The MCWD GSA will review information developed for the larger Salinas Basin for consistency with local conditions observed within the MCWD Study Area.

### ***Prepare Technical Presentation(s) and Draft Technical Memorandum***

Results from this task (and prior Task 7 and Task 8) will be summarized in technical presentation(s) made to MCWD GSA and summarized in *Draft TM #2 – Data Compilation and Data Gaps Assessment* that includes a description of the data gaps analysis effort, a table summarizing and prioritizing the identified data gaps, and a description of potential activities that may be undertaken to address the data gaps. The potential plans to fill data gaps will describe the intended benefits/rationale, data collection methods, estimated costs, permitting and regulatory requirements, and other relevant considerations for each

potential data gap filling activity. Costs to fill certain identified data gaps are provided in the Budget under Task 15. Additional data gaps that MCWD GSA will identify under this task may warrant solicitation of DWR's Technical Services to address.

### **Task 10: Evaluate Numerical Groundwater Model Options (0% complete)**

The GSP Regulations require that the “best available science” be used to quantify the water budget for the Basin (23-CCR §354.18) and to support the definition of management actions (23-CCR §354.44). DWR's review of GSPs will include consideration of whether the “best available science” supports the assumptions, criteria, findings, and objectives of the Plan. While the use of a numerical groundwater and surface water model is not *required* under the GSP Regulations, the 23-CCR §354.18 states that “If a numerical groundwater and surface water model is not used to quantify and evaluate the projected water budget conditions and the potential impacts to beneficial uses and users of groundwater, the Plan shall identify an equally effective method, tool, or analytical model to evaluate projected water budget conditions.”

#### ***Conduct Groundwater Model Evaluation***

Sustainable groundwater management and related policy decisions must be based on knowledge of the past and present behavior of the hydrologic system, its likely response to future changes, and the understanding of uncertainty in those responses. It is therefore likely that a numerical groundwater/surface water model (Numerical Model) will be required in order to develop future water budgets and to more fully represent and understand complexities within the Basin. These complexities include subsurface flows across the boundary with the 180/400 Foot Aquifer Subbasin, and fluxes between the aquifers and the ocean, and the source of seawater intrusion in the basin.

As discussed in Task 4, the MCWRA, a member of SVBGSA, is developing the SVIHM for the larger Salinas Valley Basin in collaboration with the USGS. The MCWD GSA intends to continue to participate in development of the SVIHM and to coordinate with SVBGSA in using SVIHM to assist with water budget analysis for the Basin, assuming that the model results are reasonably reflective of conditions within the Basin.

Upon release of the model by USGS, MCWD GSA will review the SVIHM with respect to the assumptions and parameterization in the Monterey Subbasin to assess its ability to represent conditions in the Basin including groundwater heads and gradients across boundaries and seawater intrusion. The effort will include a synthesis of available information regarding the vertical and lateral extent of sea water intrusion within the Basin. Available sources of such information include (a) long-term water quality data obtained by MCWRA from local agricultural and production wells, (b) the recent Stanford AEM Study conducted on behalf of MCWD, and (c) water quality data from Fort Ord monitoring and extraction wells; and (c) data compiled as part of the the CalAm Monterey Peninsula Water Supply Project.

The model evaluation will also include assessment of alternative model options for analysis of basin conditions. For example, it may be determined that the SVIHM is not capable of simulating seawater intrusion conditions to the degree necessary to evaluate undesirable results and management actions, in which case alternative model(s) of seawater intrusion may need to be identified and assessed.

### **Prepare Technical Presentation(s) and Draft Technical Memorandum**

The results of this Numerical Model evaluation task will be summarized in technical presentation(s) to MCWD GSA and *Draft TM #3 – Numerical Groundwater Model Evaluations and Recommendations* for consideration by the MCWD GSA, which will then decide on which, if any, numerical modeling approach to use for GSP development.

### **Task 11: Develop GSP Development Funding Plan (0% complete)**

Based on this Work Plan and corresponding budget, MCWD GSA will conduct a funding needs assessment that accounts for the estimated budget to develop the GSP and the estimated funding amount allocated from DWR through this SWGP Grant Solicitation, as well as estimates of local funding and in-kind services. If awarded a SGWP Grant, the funding plan will also account for the actual grant award.

To the extent that local funds are needed to fulfill the cost share requirements for this Project, MCWD GSA will follow the required process for public notice and public hearings as documented in California Water Code 10730 and/or Proposition 218. To the extent that costs (e.g., for filling data gaps) exceed that which is anticipated at the time of this Proposal, MCWD GSA will investigate other options for financial or in-kind assistance, including DWR's Technical Assistance Program.

The results of this updated funding plan will be summarized in technical presentation(s) and in a *Draft TM #4 – GSP Development Funding Plan* to document MCWD GSA's final funding approach for GSP development.

### **Task 12: Develop Stakeholder Communication and Engagement Plan (0% complete)**

The GSP Regulations (23-CCR §354.10) require a summary of the engagement and communication by the GSA leadership with other agencies and interested parties in the Basin. Specifically, the GSP Regulations (23-CCR § 354.10) prescribe “notice and communication” requirements for agencies preparing GSPs which require that a GSP include, among other things, a communication section that explains MCWD GSA's decision-making process; describes opportunities for public engagement and how public input and response will be used; encourages active involvement of diverse social, cultural, and economic elements of the population within the Basin; and describes the methods for informing the public on GSP implementation progress. The Basin GSAs will develop a Stakeholder Communication and Engagement Plan (SCEP) to guide stakeholder engagement throughout the GSP development and implementation process.

The MCWD GSA intends to continue to engage with stakeholders in a similar process as demonstrated through the GSA formation process carried out by MCWD GSA. During the GSA formation process, beneficial users of groundwater were identified (as summarized below); an approach for engaging these specific stakeholders will be included in the SCEP.

- **Water suppliers** – MCWD is the main water supplier in the MCWD Study Area; MPWMD and MCWRA are public agencies that have water management authority in these areas. MCWD provides water service to the City of Marina and the Ord Community, formerly the Fort Ord Army

Base. A portion of the Ord Community is retained for use by the U.S. Army, while the remainder is being converted to civilian use under the guidance of the Fort Ord Reuse Authority (FORA). These MCWD customers and local agencies were invited to participate in GSP development for the MCWD Study Area and MCWD GSA's October 2017 Stakeholder workshop.

- **Environmental water users** – in the Basin including Fort Ord National Monument, Fort Ord Dunes State Park, Marina Beach State Park, and the County of Monterey. A process for engaging with individuals from these entities will be included in the SCEP.
- **Disadvantaged Communities** - The MCWD GSA notes that Census Tracts 141.04 and 142.02, which are recognized as Disadvantaged Community Tracts, overly a portion of the Basin. Also, several census block groups (a statistical division of a census tract) overlying the basin are identified as Severely Disadvantaged Community Census Block Group or Disadvantaged Community Census Block Group. There are no Disadvantaged Community Places identified within the Basin. DACs are identified based on having an average household income less than 80% of the State median, and Severely Disadvantaged Communities (SDACs) are identified based on having an average household income less than 60% of the State median (US Census American Community Survey, 2014). The MCWD GSA will ensure within the Basin SCEP that stakeholders in disadvantaged communities are invited and encouraged to participate in the GSP development and implementation process.
- **Federal / Tribal** – Several federal agencies own or manage land overlying the Basin within boundaries of the MCWD Study Area, including the U.S. Bureau of Land Management, U.S. Army Ord Military Community - presidio of Monterey, and the U.S. National Parks Service. There are no identified California Native American tribal lands within the Basin.

### ***Develop a SCEP to Encompass GSP Development***

Under Task 12, MCWD GSA will develop the SCEP to include the specific sections required by the GSP regulations and to guide stakeholder engagement throughout the GSP development and implementation process.

In developing its SCEP, MCWD GSA intends to document and frame its approach to engaging relevant stakeholders in the Basin with the goal of developing and implementing a GSP with broad support and improved groundwater-related outcomes for relevant stakeholders. The MCWD GSA's approach to stakeholder engagement will focus on open and effective communication, fostering constructive dialogues, and maximizing MCWD GSA and stakeholder time and resources through coordinated engagement opportunities and meetings. The SCEP will describe specific activities for informing interested members of the public, including periodic workshops, development of a website (already active) and mailings (email and post). Additionally, MCWD GSA Board meetings are open to the public and include multiple opportunities for public comment; written meetings minutes are posted to the website ([http://www.mcwd.org/gsa\\_about.html](http://www.mcwd.org/gsa_about.html)).

The MCWD GSA will use the following as resources in refining its SCEP:

- *DWR's Guidance Document for Groundwater Sustainability Plan: Stakeholder Communication and Engagement;*



- DWR's *Guidance Document for the Sustainable Management of Groundwater: Engagement with Tribal Governments*;
- The Community Water Center's *Collaborating for Success: Stakeholder Engagement for Sustainable Groundwater Management Act Implementation*;
- DWR's *Outreach and Engagement: A Resource Management Strategy of the California Water Plan*
- The Institute for Local Government's (ILG) resources on public engagement; and
- Feedback from public workshops designed to generate input on effective outreach strategies and preferences among affected stakeholders.

The SCEP will identify a series of public meetings to be held throughout the GSP development process during which MCWD GSA will present information and provide progress updates. These meetings will be venues for public dialogue and for receiving input on the work efforts and results of each phase. Meetings will also be used to outline and receive initial input on the tasks to be completed in the upcoming phase(s).

An October 2017 workshop has already been conducted to engage groundwater users to participate in GSP development for the MCWD Study Area, as described in Task 13.

### ***Prepare Technical Presentation(s) and Draft Technical Memorandum***

The results of this updated SCEP will be summarized in technical presentation(s) and in a *Draft TM #5 – Stakeholder Communication and Engagement Plan* for consideration by MCWD GSA, which will then authorize implementation of the SCEP. The SCEP will be managed adaptively throughout GSP development as the GSAs discern which activities are most effective in engaging interested public and identify gaps in outreach efforts.

### **Task 13: Conduct Stakeholder Engagement Related to the GSP Foundation Phase (0% complete)**

Under Task 13, MCWD GSA will continue its stakeholder engagement efforts and begin to implement the SCEP. Stakeholder engagement during Phase 1 is anticipated to include dissemination of information (through appropriate modes of communication, as discussed above) regarding the data compilation, numerical model evaluation, and data gaps assessment efforts. Additionally, MCWD GSA will communicate and invite input on the tasks to be completed in the Basin Characterization and Analysis Phase (Phase 2).

### **Task 14: Participate in Intrabasin and Interbasin Coordination Efforts (0% complete)**

Successful GSP development hinges on effective intra- and inter-basin coordination. The MCWD GSA has made such coordination a priority.

Both intra- and inter-basin coordination will build on close interactions between MCWD GSA and SVBGSA, which covers both the Monterey Subbasin and the adjacent 180/400 Foot Aquifer Subbasin. A Board member of the MCWD GSA is currently serving on SVBGSA's Advisory Committee. The MCWD GSA also anticipates involvement in SVBGSA's future Technical Advisory Committee.

### ***Participate in Intrabasin Coordination***

Coordination amongst the GSAs within the Basin (i.e. between MCWD GSA and SVBGSA) will be necessary throughout the GSP development process (23-CCR § 357.4). During this Phase, intrabasin coordination will be conducted related to decisions regarding the DMS selection and development, compilation of data and information into the DMS and document repository, Numerical Model options and selection, data gap filling efforts, development of a GSP funding plan, and stakeholder engagement activities. A key task in Phase 1 will also include discussions to develop an interim Governance/Coordination Agreement among MCWD GSA and SVBGSA to further guide GSP development in the Basin.

The Basin GSAs and consultant staff will organize and convene regularly scheduled meetings to foster timely and effective discussion of the start-up tasks associated with GSP development. Meetings will be supported by technical advisors. Meetings are expected to be held monthly, though frequency may vary based on need and participant availability.

### ***Participate in Interbasin Coordination***

To support SGMA implementation, MCWD GSA will coordinate with the SVBGSA regarding the adjacent 180/400 Foot Aquifer Subbasin<sup>6</sup> to “establish compatible sustainability goals and understanding regarding fundamental elements of the Plans of each Agency as they relate to sustainable groundwater management” (23-CCR §357.2). Interbasin coordination will be especially useful when deriving water budget components relating to cross-boundary surface/subsurface flows and effects of groundwater elevation in adjacent basins on seawater intrusion conditions (see Task 18 for further clarification).

The MCWD GSA has expressed an interest in accelerating the development of certain portions of the GSP development to foster effective communication with its neighboring basins, in particular with the 180/400 Foot Aquifer Subbasin which is critically overdrafted and has an accelerated SGMA-compliance timeline.

In addition, MCWD GSA has begun organizing GSA Manager workshops to assist the SVBGSA for coordinated GSP development within the Salinas Valley Basin. MCWD GSA has participated in the first GSA Manager workshop in October 2017 and anticipate participation in future workshops with the goal of SVBGSA taking over as the lead since they adjoin the other GSAs.

A key factor in this on-going coordination will be the attendance at pertinent meetings and review of technical documents produced by entities in adjacent basins. It is anticipated that the following coordination activities will occur:

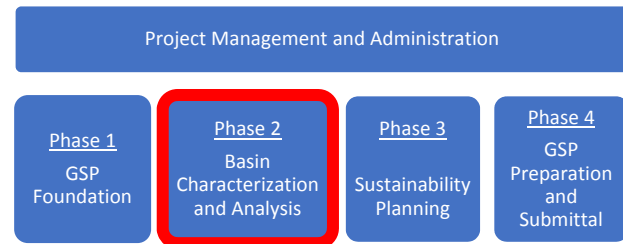
- Attendance at regularly, scheduled SGMA-related public meetings in the adjacent subbasins, assumed to occur monthly;
- Quarterly meetings between technical counterparts in the adjacent subbasins; and
- Review and comment on significant work products produced in the adjacent subbasins.

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<sup>6</sup> The Basin is also adjacent to the Seaside Subbasin (3-004.08), which is adjudicated and therefore not subject to SGMA.

## PHASE 2 - BASIN CHARACTERIZATION AND ANALYSIS (0% COMPLETE)

As described further below, Phase 2 of the Work Plan focuses on technical analysis of Basin conditions and will build towards a complete and coherent understanding of the Basin that will serve as the foundation for sustainability planning efforts under Phase 3. Phase 2 will extend from July 2018 through June 2019.



### Task 15: Implement Plan for Filling Data Gaps Needed for GSP Preparation (0% complete)

Based on results from the data gaps assessment performed under Task 9 above, selected data collection activities will be completed to fill high-priority data gaps in support of improving the Phase 2 work effort.

The MCWD GSA anticipates that the following data gap filling actions will be performed, subject to adjustments based on results from the data gaps assessment:

- Processing and analysis of DWR well completion reports for wells within the MCWD Study Area;
- Pump tests to better understand principal aquifer characteristics;
- Groundwater quality, geochemical, isotopic and age-dating sampling and analysis; and
- Groundwater elevation data collection.

These efforts will be focused on filling data gaps relevant to understanding the Basin setting during Phase 2, which will set the groundwork for Phase 3 efforts to develop sustainable management criteria and identify projects and management actions that will allow the Basin to achieve its sustainability goal. The technical consultant will work with the individual GSAs and landowners within the Basin to identify and gain access to desired wells for testing. Results from this analysis will be incorporated into the DMS and will support subsequent work efforts in Task 18.

#### ***Process and Analyze Well Completion Reports***

As part of Task 15, MCWD GSA will compile, digitize, process, and analyze all available well completion reports, including those provided by DWR in its Well Completion Report Map Application and by the U.S. Army and its contractors for wells constructed as part of remediation efforts at the former Fort Ord. Data extracted from well reports will include:

- General well information (type, location, capacity, status, etc.);
- Well screening intervals; and
- Well log data (i.e. lithologic units), as available.

This information will be used to enhance understanding of subsurface lithology under the MCWD Study Area, to help characterize wells by the principal aquifer(s) they pump from, to identify candidate wells to include in a SGMA-compliant monitoring network (further discussed in Task 19 and Task 27), and to perform selected data gap filling analyses (see below).

### **Conduct Pumping Tests**

To refine understanding of key aquifer characteristics in the MCWD Study Area, up to three (3) controlled pumping tests will be conducted at selected locations throughout the MCWD Study Area. These pumping tests will utilize existing well infrastructure and will be designed and implemented to achieve multiple objectives, such as:

- Quantifying aquifer parameters (hydraulic conductivity, transmissivity, storativity, etc.);
- Testing boundary conditions and verifying the lateral/ vertical extent of discrete aquifer units; and
- Analyzing the degree of vertical interconnection between different aquifer units.

### **Sample and Analyze Groundwater Quality**

In order to comprehensively understand water quality in the principal aquifers and throughout the MCWD Study Area, a “snap shot” of water quality samples will be collected from up to 20 wells and analyzed for general minerals, metals, and stable isotopes for conducting recharge source and age dating analyses. This groundwater quality evaluation will also seek to further assess seawater intrusion conditions that have been measured indirectly via geophysical methods (i.e., the Stanford AEM Study).

### **Collect Groundwater Elevation Data**

In order to comprehensively understand groundwater elevation in all principal aquifers and throughout the MCWD Study Area, two “snap shots” of groundwater elevation data coinciding with typical Spring and Fall conditions will be collected from up to 20 wells across the Basin.

## **Task 16: Assess Groundwater Conditions and Develop Hydrogeologic Conceptual Model (0% complete)**

The GSP Regulations (23-CCR §354.14 and §354.16) require the assessment of groundwater conditions in the Basin and the development of a HCM. The efforts described in Task 16 will address this need through coordinated analysis of hydrologic and geologic data.

### **Assess Groundwater Conditions**

The GSP Regulations (23-CCR §354.16) require each GSP to include a description of groundwater conditions in the Basin, including the following:

- Groundwater elevations, spatially, with depth, and over time;
- Estimated change in storage by water year type and cumulatively over time;
- Seawater intrusion conditions;
- Groundwater quality issues, including known contamination sites and plumes;
- Land subsidence;
- Interconnected surface water; and
- Groundwater dependent ecosystems.

Under Task 16, groundwater conditions will be assessed with respect to the above topics. This assessment will be based on the data compiled into the Basin DMS under Phase 1 and Task 15. The assessment will include preparation of representative maps and graphs (i.e., groundwater elevation contour maps and hydrographs, graph(s) of change in groundwater storage, and map(s) showing groundwater quality issues

(including seawater intrusion), subsidence, interconnected surface water, and groundwater dependent ecosystems, to the extent applicable). Updated data sources from DWR shall be incorporated into the groundwater conditions assessment as they become available.

### ***Develop Hydrogeologic Conceptual Model***

The GSP Regulations (23-CCR §354.14) describe the requirements for a HCM to be included in a GSP. Further guidance is contained within *BMP 3: Hydrogeologic Conceptual Model*. An HCM is a conceptual representation of the physical basin characteristics that affect and/or control the occurrence, movement, and quality of groundwater in a basin. The HCM describes how a basin functions and how water moves through the system, and serves as a foundation for further quantitative and data-driven analyses of sustainability and planning efforts. The HCM necessarily includes both narrative and graphical components.

Building upon the data compilation efforts completed under Phases 1 and Task 15, and upon work completed to date within the Basin (e.g., through the development of GWMPs, UWMPs, and CASGEM Monitoring Network Plans), a preliminary HCM will be developed for the MCWD Study Area under Task 16 that includes all elements required under the GSP Regulations, including:

- Regional geologic setting;
- Basin boundaries, both laterally and vertically;
- Principle aquifers, including formation names, physical properties, general water quality, primary uses of each aquifer and data gaps/uncertainty;
- Two scaled cross sections depicting major stratigraphic and structural features; and
- A set of maps depicting topography, surficial geology, soil characteristics, recharge areas, surface water bodies, and points of delivery for imported water supplies.

BMP 3 describes data sources that may be of use in developing the HCM. These data include, but are not limited to DWR, USGS, and CDMG maps and reports on geology; USEPA, USGS, SWRCB, and DOGGR maps and information on the base of fresh water and definable bottom of the Basin; and USGS and SWRCB information on physical properties and water quality within principle aquifers, supplemented by local information from aquifer testing and sampling, as available. The HCM will cover all required aspects listed in the GSP Regulations, but will also aim to focus on the most significant issues and questions facing the Monterey Subbasin (based on MCWD GSA's current understanding of the Basin), including:

- Assessment of aquifer properties and their spatial and vertical extent, controls on groundwater flow patterns, and cross-boundary flows;
- Analysis of groundwater quality for each principal aquifer in the Basin;
- Assessment of salinity conditions along the coast and extending inland in each primary aquifer; and
- Identification of sites within the MCWD Study Area with hydrogeologic conditions conducive to potential groundwater recharge projects.

While the focus of Task 16 will be the MCWD Study Area, information and analysis will be coordinated with efforts being conducted for the portion of the Basin outside of the MCWD Study Area.

### **Prepare Technical Presentation(s) and Draft Technical Memorandum**

Results from Task 16 will be summarized in technical presentation(s) to MCWD GSA and in a *Draft TM #6 – Groundwater Conditions and Hydrogeologic Conceptual Model* that includes narrative/descriptive and graphical components of the HCM and groundwater conditions, including maps, charts and other graphics, tables, and supporting documentation as appendices, as appropriate.

### **Task 17: Develop/Refine Numerical Groundwater Model (0% complete)**

As stated above under Task 10, MCWD GSA intends to participate in the ongoing development of the SVIHM and use the SVIHM to assist support the water budget analysis for the MCWD Study Area and the Basin as a whole, assuming that upon release of that model by USGS and review by MCWD GSA it is determined to be reasonably representative of conditions in the Basin.

Should MCWD GSA decide to use the SVIHM or any alternative model(s), Task 17 will involve coordination with MCWRA, the USGS, and SVBGSA regarding refining the model to meet local needs, as necessary, to determine water budgets and/or evaluate sustainability criteria and management actions for SGMA purposes. The model evaluation in Task 10 provides direction for modifying/refining the following features of the Numerical Model:

- Parameterization (i.e., hydraulic properties of aquifer units and confining beds);
- Extraction and monitoring well locations and associated data;
- Spatially and temporally variable land-use, water-use, and climatic data for calculating water demand and estimating recharge and unreported groundwater use; and
- Boundary conditions, including recharge from precipitation and applied irrigation water, subsurface inflow/outflow, and fluxes between the aquifers and the ocean.

The MCWD GSA will validate performance of the Numerical Model against measured water level and seawater intrusion data in the Basin. Ideally, the differences between model-calculated and measured values are small and distributed randomly both spatially and with time. Methods to assess Numerical Model performance and reliability can include the following:

- Calculation of model performance statistics (e.g., Nash-Sutcliffe Model Efficiency) based on water level data;
- Comparison of time-series plots of measured and model-calculated water levels (hydrographs) and salinity to assess the agreement between the magnitude, timing, and longer-term trends in water level changes and seawater intrusion conditions;
- A scatterplot of measured data (i.e., water levels or seawater intrusion conditions) against model-calculated data to assess the correspondence between measured and modeled results;
- A histogram of residuals to assess whether model errors are approximately centered around a mean of zero; and/or
- Maps of residuals to reveal the spatial distribution of model performance.

The above tests can be applied to the entire model or selected parts of a model (for example, individual model layers or model subareas). Ultimately the decision of model acceptability will be based on a combination of some or all of the above test results and their relevance for meeting SGMA objectives.

The Numerical Model development/refinements will be based on the information assembled under Phase 1 as well as Task 15 and Task 16. Numerical Model development/refinement will be geared towards the intended model use(s), which can include supporting water budget calculations; calculating changes in future groundwater levels and seawater intrusion conditions under “baseline” conditions (i.e., assuming a continuation of existing conditions) and alternative future scenarios; and calculating the groundwater system response to potential management actions, projects, and possible climate change. Numerical Model results can also be considered and utilized when establishing the Sustainable Management Criteria and for the refinement of the Basin monitoring network over time.

### **Task 18: Develop Study Area and Basin-Wide Water Budget (0% complete)**

The GSP Regulations (23-CCR §354.18) spell out the requirements for water budgets that must be included in a GSP. Guidance on water budget development, including a partial listing of GSP-related uses, is provided in *BMP 4: Water Budget*. Per the GSP Regulations, the water budget must assess the following:

- Current, historical (at least 10 years) and projected (projecting forward based on 50 years of hydrology) water budgets;
- Quantification of total surface water entering and leaving the basin;
- Inflows and outflows to/from the groundwater system, including (but not limited to) subsurface inflows/outflows, infiltration of applied water and precipitation, and groundwater extraction;
- Change in storage between seasonal high conditions;
- Overdraft during a period when water supply conditions approximate average conditions;
- Water year types; and
- An estimate of the sustainable yield of the basin.

#### ***Develop Preliminary Water Budget Based on Empirical Storage and Flux Relationships***

Under Task 18, preliminary historical and current water budgets will be developed based on a simple “bucket model”, whereby the various storage components (e.g., atmosphere, land surface, root zone, unsaturated zone, and saturated zone) are represented as “buckets”, each subject to mass balance requirements and connected to the other buckets by various flux relationships.

A water budget derived from an empirical “bucket model”, though not as rigorous and comprehensive as a Numerical Model, can serve various benefits to MCWD GSA throughout the GSP development process. For example, the empirical “bucket model” may be a useful tool for approximating the range of uncertainty of major water budget components and investigating their sensitivity to changes in critical input parameters. As most of the input data for the “bucket model” will likely also be incorporated into the Numerical Model, this approach will not require a large amount of additional work effort and yet could provide a reasonable, independent means of verifying Numerical Model results. The empirical “bucket model” can also serve as a simple and transparent means of communicating major water budget components to stakeholders within the Basin, and can be developed on an accelerated timeline to help stimulate discussions regarding sustainability planning and interbasin flows while the Numerical Model is still under development/refinement.

The non-measured fluxes between storage components in the “bucket model” will be quantified using commonly used and accepted analysis methods (e.g., the crop coefficient method of evapotranspiration estimation, Darcy’s Law for groundwater flow through a cross section, soil moisture accounting model for

deep percolation, etc.), supported by the best available information compiled under Phases 1 and 2. The preliminary “bucket model” will then be calibrated through strategic adjustment of certain parameters employed within these empirical flux relationships (e.g., hydraulic conductivity, storativity, runoff curve numbers, etc.) to better align simulated groundwater elevations (i.e., changes in groundwater storage) with current and historical water level measurements collected from in-Basin wells.

The MCWD GSA intends to develop this empirical water budget model for the MCWD Study Area and coordinate with SVBGSA to develop a water budget for the entire Basin. The water budgets will begin as far back in time as the available data will allow and will extend at least through 2015, at a minimum fulfilling the requirement for a historical water budget “starting with the most recently available information and extending back a minimum of 10 years” (CCR §354.18).

### ***Extract Water Budget Information from Numerical Model***

After developing the “bucket model”, historical and current water budget information will be extracted from the Numerical Model. The preliminary historical and current water budget developed through the “bucket model” approach will then be used to further inform and/or verify analogous water budget components calculated through the Numerical Model. Water budget components extracted from the Numerical Model that differ significantly from the analogous “bucket model” prediction will be identified and further investigated to determine the nature of the discrepancy and to adjust assumptions/inputs as necessary.

### ***Determine Sustainable Yield of the Study Area and Monterey Subbasin***

The sustainable yield of a groundwater basin is defined as “the maximum quantity of water, calculated over a base period representative of long term conditions in the basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing an undesirable result” (CWC §10721(w)). The historical yield is the net annual consumption of groundwater extracted from the Basin during the same base period. When the historical yield has caused undesirable results, the sustainable yield is defined by either a lower rate of groundwater consumption, a different spatial distribution and/or timing of groundwater consumption, or both relative to the conditions that determined the historical yield.

The Numerical Model will be employed to establish the historical yield, including the yield over the most recent ten-year interval, and explore how “historical conditions have impacted the ability of the [Agencies] to operate the basin within sustainable yield” (23-CCR §354.18(c)(2)(C)). From this information, a metric of “sustainable yield” within the MCWD Study Area and the Basin can be derived in accordance with the requirements described in the GSP regulations (23-CCR §354.18(b)). For example, the Numerical Model can explore how changes in water demand correspond to changes in seawater intrusion conditions. The contributing factors identified by this analysis provide input to the selection of possible actions towards groundwater sustainability. It is recognized that sustainable yield of the Monterey Subbasin, which is bordered by the critically overdrafted 180/400 Foot Aquifer Subbasin, is in part dependent on the amount of net groundwater pumping in the adjacent interconnected Basin. As such, the sustainable yield estimate for the Basin will have to consider and make assumptions about conditions outside of the Basin.

### ***Develop Projected (Future) Water Budget Baseline and Uncertainty Scenarios***

After derivation of the sustainable yield, the Numerical Model will be used to determine a “baseline condition” for the Basin from which to project future water budget conditions and to “evaluate future



scenarios of uncertainty” in accordance with the requirements described in the GSP Regulations (23-CCR §354.18(c)(3)). The baseline condition shall be represented by:

1. 50 years of historical hydrology (e.g. precipitation, evapotranspiration, streamflow information)
2. Water demands based on the most recent land use, evapotranspiration, and crop-coefficient information
3. Surface water supply based on the most recent water supply information (as applicable)

The baseline conditions calculated by the Numerical Model will provide a projected (future) water budget for the Basin. The baseline condition will also be used to evaluate future scenarios of uncertainty related to climate, local land use planning, population growth, surface water supply availability/reliability, and any other factors of particular concern identified by the MCWD GSA. This uncertainty analysis will help establish a range in projected water supply and demand conditions from which to define appropriate sustainability criteria (e.g. minimum thresholds, measurable objectives) and quantify a “reasonable margin of operational flexibility” for these criteria during later stages of GSP development (see Phase 3 efforts for greater detail).

To inform the development of future scenarios related to land use, population growth, and surface water supply availability, MCWD GSA intends to use data and reports compiled in Task 7. The MCWD GSA also understands that DWR will release a guidance document for uncertainty analysis related to climate change, which the MCWD GSA intends to use to inform climate uncertainty scenarios.

### ***Prepare Technical Presentation(s) and Draft Technical Memorandum***

Results from the water budget analysis will be documented in technical presentations(s) and in a *Draft TM #8 – Water Budget and Preliminary Estimate of Sustainable Yield* that includes a narrative description of the water budget as well as tables and graphical depictions of historical, current and projected future water budget components, following the examples (i.e., paired bar water budget graphs) provided in BMP 3.

## **Task 19: Assess Existing Monitoring Programs and Develop SGMA-Compliant Monitoring Network (0% complete)**

As described in GSP Regulations (23-CCR §354.34-36) and BMP 2, each basin’s monitoring network must be designed to allow for the collection of data sufficient to provide representative information on groundwater conditions and trends within the basin. The GSP must describe monitoring objectives that, when implemented, will allow for characterization of all relevant sustainability indicators, quantification of progress towards achieving measurable objectives and sustainability goals, and quantification of water budgets and impacts to beneficial uses or users in the basin. Achieving these objectives will require a monitoring network with sufficient spatial and temporal coverage that can directly measure or provide an appropriate representative (i.e. “proxy”) measurement to adequately characterize each relevant sustainability indicator throughout the Basin.

### ***Develop Recommended Monitoring Network***

This task includes assessment of the existing monitoring programs and infrastructure for their ability to achieve the basic objectives outlined above. Currently the main monitoring programs active in the Basin

include CASGEM monitoring and monitoring associated with the ongoing Fort Ord remediation efforts. The assessment of monitoring programs under Task 19 will build off these efforts, as well as any other efforts identified through review of information compiled under Phase 1, and will be conducted in parallel with the HCM development and groundwater conditions assessments, focusing on the sustainability indicators that are determined to apply to the Basin.

Maps of existing monitoring sites will be developed for each relevant sustainability indicator, allowing for the preliminary evaluation of spatial data gaps. Each existing monitoring site will be screened against the data and reporting standards contained in the GSP Regulations (23-CCR §352.4), and deficiencies summarized in a table.

As recommended in BMP 2, the Data Quality Objective (DQO) process described in the US EPA's *Guidance on Systematic Planning Using the Data Quality Objectives Process* (EPA, 2006) will be followed in developing the Basin's GSP monitoring network. The 8-step DQO process serves as a guide to developing a data collection and QA/QC program that will meet the intended purposes.

### ***Prepare Technical Presentation(s) and Draft Technical Memorandum***

The monitoring network assessment will be summarized in technical presentation(s) to MCWD GSA and in a *Draft TM #9 – Summary of Monitoring Network Assessment and Preliminary Monitoring Plan*) that describes the planned monitoring network and plans to address relevant sustainability indicators and requirements under the GSP Regulations. To the extent that the monitoring plan identifies deficiencies, The MCWD GSA will work on plans to rectify those deficiencies prior to submittal of the GSP to DWR, or to address them as part of Plan implementation.

## **Task 20: Conduct Stakeholder Engagement Related to the Basin Characterization and Analysis Phase (0% complete)**

In accordance with the SCEP developed under Task 12, MCWD GSA will hold at least one public workshop with stakeholders during Phase 2. The workshop will be focused on presenting and receiving feedback on the preliminary HCM, water budget, definition of groundwater conditions, and the data gaps evaluation and plans to fill them. Additionally, during this workshop, MCWD GSA will outline and receive initial input on the tasks to be completed in the Sustainability Planning (Phase 3) portion of this Work Plan.

Throughout this process, monthly MCWD GSA Board meetings will continue to provide a forum for interested members of the public to track GSP development and provide ongoing input.

## **Task 21: Implement GSP Development Funding Plan (0% complete)**

The MCWD GSA will continue to implement the GSP Development Funding Plan created in Phase 1.

## **Task 22: Participate in Intrabasin and Interbasin Coordination Efforts (0% complete)**

The results of the preliminary HCM, water budget, and definition of groundwater conditions will be shared, as appropriate, with SVBGSA and with entities in neighboring basins (i.e., the SVBGSA and Seaside

Basin Watermaster). Additionally, MCWD GSA will follow the developments of basin characterization and analysis in the portion of the Basin outside of the MCWD Study Area and in neighboring basins, to ensure that assumptions and estimates of projected values of the major components of interaction between the basins (e.g., groundwater inflow/outflow and stream inflow/outflow) align, or to resolve any differences.

**Participate in Intrabasin Coordination**

The Basin GSAs and consultant staff will continue to organize and convene regularly scheduled monthly meetings to foster timely and effective discussion of the Phase 2 tasks associated with GSP development and ongoing data-sharing.

**Participate in Interbasin Coordination**

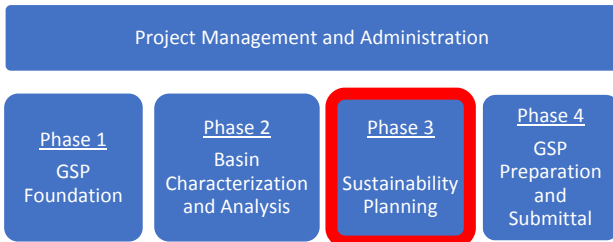
The Basin GSAs and consultant staff will continue to foster interbasin dialogues through targeted meetings and ongoing data-sharing to support GSP development, with a particular focus on the water budget and sustainable yield estimates and development of the Numerical Model. A key component of this effort will be the review of technical documents and results produced by entities in adjacent basins.

As before, specific coordination efforts will include:

- Attendance at regularly, scheduled SGMA-related public meetings in the adjacent subbasins, assumed to occur monthly;
- Quarterly meetings between technical counterparts in the adjacent subbasins; and
- Review and comment on significant work products produced in the adjacent subbasins.

**PHASE 3 - SUSTAINABILITY PLANNING (0% COMPLETE)**

As described further below, Phase 3 of the Work Plan focuses on planning for the sustainable management of the Basin. Phase 3 will extend from July 2019 through June 2020.



**Task 23: Evaluate Potential Management Areas (0% complete)**

Based on the understanding of the Basin gained through stakeholder engagement efforts and technical analyses completed in Phases 1 and 2, the Basin GSAs may choose to define management areas within the Basin to facilitate implementation of the GSPs and to provide an increased ability to achieve Basin-wide sustainable groundwater management. Based on the Proposition 1 Coordination Agreement between the Basin GSAs finalized on 9 November 2017, the Basin GSAs anticipate using management areas corresponding to the three Subareas within the Basin in the GSPs.

Under Task 23, the Basin GSAs will evaluate Management Area effectiveness for reaching GSP objectives using information generated from the Numerical Model that quantifies the interbasin and intrabasin relationships between groundwater extractions, groundwater levels, and flows across potential Management Area boundaries. Should management areas be utilized, the GSP will define distinct minimum thresholds, measurable objectives, and monitoring requirements for each management area

and will describe how the use of these tailored management criteria will help foster effective sustainable management across the entire Basin.

Results from Task 23 will be summarized in technical presentation(s) to MCWD GSA and in a *Draft TM #10 – Delineation of Management Areas* that includes a description of management areas including the rationale, supported by maps, charts and other graphics, tables, and supporting documentation as appendices, as appropriate. As discussed under Task 30 below, the potential use of Management Areas in the GSP will be decided through coordination of both GSAs in the Basin.

## **Task 24: Develop Sustainable Management Criteria (0% complete)**

Task 24 will involve developing sustainable management criteria, including the Sustainability Goal for the Basin, as well as Undesirable Results, Minimum Thresholds, Measurable Objectives, and Interim Milestones for the Basin and/or specific management areas. Per the GSP regulations (23-CCR §354.24-30), the Sustainability Goal, Minimum Thresholds, and Measurable Objectives will be selected to avoid causing Undesirable Results within the Basin or in adjacent basins, or affecting the ability of adjacent basins to achieve sustainability goals. The approach to setting the sustainable management criteria will include the use of monitoring data and, where historical measurements don't exist, the Numerical Model, to identify numerical criteria (e.g., Minimum Thresholds) that, if met, will avoid Undesirable Results. In addition, the uncertainty in these criteria due to uncertainty in future climate, local land use planning, population growth, and other factors can be used to define a margin of operational flexibility for each criterion.

The MCWD GSA will use the BMP recently released in draft form by DWR regarding Sustainable Management Criteria to further inform methodologies for selecting appropriate criteria for the Basin.

### ***Define Sustainability Goal***

Per the GSP Regulations (23-CCR §354.24), the Basin GSAs will coordinate to develop a Sustainability Goal for the Basin that culminates in the absence and avoidance of Undesirable Results and the operation of the Basin within its sustainable yield by 2042. Definition of the Sustainability Goal will be based in part on information on the basin setting, HCM, groundwater conditions, and water budget developed during Phase 2. Stakeholder input will also be critical to defining the Sustainability Goal.

### ***Define Undesirable Results and Minimum Thresholds***

Per the GSP Regulations (23-CCR §354.26), Undesirable Results occur when significant and unreasonable effects for any of the sustainability indicators are caused by groundwater conditions occurring throughout the Basin. Minimum Thresholds are the numeric values for each sustainability indicator that, if exceeded, may cause Undesirable Results. As demonstrated by their regulatory definitions, Undesirable Results and Minimum Thresholds are closely linked, and therefore must be developed in concert with each other. Furthermore, the meaning of "significant and unreasonable" is subject to local interpretation and will thus need to be defined with ample stakeholder input. As described in the GSP Regulations, an Agency may need to evaluate multiple Minimum Threshold values to determine whether an Undesirable Result is occurring. This suggests that an iterative approach, where whereby multiple potential values are considered before determining a final value, may be required.

Recognizing that Undesirable Results and associated Minimum Thresholds may differ from one location to another within the Basin, MCWD GSA will develop a systematic process for evaluating the occurrence of Undesirable Results across the entire Basin, which may include:

1. Chronic lowering of groundwater levels
2. Reduction of groundwater storage
3. Seawater intrusion
4. Degraded water quality
5. Land Subsidence
6. Depletions of interconnected surface water

These will be defined based on the groundwater conditions assessment performed under Phase 2. For each sustainability indicator, the Basin GSAs will identify the primary cause(s) of groundwater conditions occurring throughout the Basin that would lead to or has led to Undesirable Results, and will consider potential effects of Undesirable Results on beneficial uses and users of groundwater. Last, per 23-CCR §354.30, the Basin GSAs will determine whether to include in the GSP Measurable Objectives to address Undesirable Results that occurred before, and have not been corrected by, January 1, 2015.

The MCWD GSA and SVBGSA will then coordinate to develop Minimum Thresholds for each sustainability indicator, which are quantifiable metrics for each applicable sustainability indicator at each monitoring site or representative monitoring site. The Minimum Thresholds definitions will be based on the GSP Regulations (23-CCR §354.28(c)) and the understanding of the Basin generated during Phase 2. Specifically, the Minimum Thresholds definitions will be based on the following analyses:

- **Chronic Lowering of Groundwater Levels.** The rate of groundwater elevation decline will be calculated based on historical trends, water year type, and projected water use in the Basin. Additionally, the potential effects of groundwater level on other sustainability indicators will be evaluated. The Minimum Threshold will be set as the elevation indicating a depletion of supply at a given location that would lead to Undesirable Results.
- **Reduction of Groundwater Storage.** The sustainable yield of the Basin will be based on historical trends, water year type, and projected water use in the Basin. The Minimum Threshold will be set as the volume of water that can be withdrawn from storage without causing conditions that may lead to Undesirable Results.
- **Seawater Intrusion.** The Minimum Threshold for seawater intrusion will be based on: 1) existing maps and cross sections that document chloride concentrations within each principal aquifer, and 2) any other existing information or public knowledge that documents the presence of elevated chloride levels within the Basin that could have resulted from an advancing seawater front. The Minimum Threshold will be defined using a chloride concentration isocontour for each principal aquifer where seawater intrusion may lead to undesirable results.
- **Degraded Water Quality.** The Minimum Threshold will be evaluated based on degradation of water quality on the number of supply wells, a volume of water, or a location of an isocontour that exceeds concentrations of constituents determined by MCWD GSA to be of concern for the Basin. The Minimum Threshold will be set as the degradation of water quality that may lead to Undesirable Results.

- **Land Subsidence.** The Minimum Threshold for land subsidence will be based, as applicable, on: 1) the land uses and property interests that have been or are likely to be affected by land subsidence, and 2) generating maps and graphs showing the extent and rate of land subsidence in the Basin. The Minimum Threshold will be set as the rate of subsidence that substantially interferes with surface land uses and may lead to Undesirable Results.
- **Depletions of Interconnected Surface Water.** The Numerical Model will be used to quantify surface water depletion and will identify the location, quantity, and timing of depletions of interconnected surface water. The Minimum Threshold will be set as the rate or volume of surface water depletion that has adverse impacts on beneficial uses of surface water and that may lead to Undesirable Results.

This process will consider whether groundwater levels, and the Minimum Threshold defined for this sustainability indicator, can serve as a proxy for other sustainability indicators, as allowed for under the GSP Regulations (23-CCR §354.28(d)).

### ***Define Measurable Objectives and Interim Milestones***

Measurable objectives refer to “specific, quantifiable goals for the maintenance or improvement of specified groundwater conditions” (23-CCR §351(s)), and can be considered as indicators of progress towards achieving the long-term sustainability goal for the Basin. Measurable Objectives will be defined by applying both qualitative and quantitative optimization techniques using the same metrics and monitoring sites as are used to define the Minimum Thresholds for the Basin, as described above. The Measurable Objectives will be defined based on the 20-year Sustainability Goal and will include the definition of Interim Milestones in increments of five years. Trigger levels will be identified that, when exceeded based on comparison of actual basin conditions to the Interim Milestones, will prompt corrective actions.

The Basin GSAs will build into the sustainable management criteria a reasonable margin of operational flexibility under adverse conditions which will take into consideration components such as historical water budgets, seasonal and long-term trends, and periods of drought, and which will be commensurate with levels of uncertainty defined in the Basin Setting section of the GSP. The margin of operational flexibility will be informed, in part, by the results of the uncertainty analyses related to projected surface water supply reliability, climate, land use planning, and population growth dynamics performed under Task 18. This will likely involve defining proportionality criteria for successive interim milestones relative to the sustainability goal (e.g., 25% recovery of seawater intrusion in 5 years, 50% in 10 years, etc.) and then approximating reasonable measurable objectives for each sustainability indicator for both the “baseline”, “low uncertainty” and “high uncertainty” scenarios developed in Task 18.

### ***Prepare Technical Presentation(s) and Draft Technical Memorandum***

Results from Task 24 will be summarized in technical presentation(s) and in a *Draft TM #11 – Establishment of Sustainability Criteria* that includes a narrative description of the sustainable management criteria and which is supported by maps, charts and other graphics, tables, and supporting documentation as appendices, as appropriate.

## **Task 25: Identify Projects and Management Actions (0% complete)**

Given an understanding of the sustainable management criteria relevant to the Basin, MCWD GSA will identify projects and management actions that may need to be implemented within the MCWD Study Area in order to meet the Sustainability Goal by 2042 (California Water Code 10727.2(d)(3)).

- **Potential projects** may include any efforts designed to increase available groundwater supplies within the Basin, while
- **Potential management actions** may include any efforts designed to reduce groundwater demands within the Basin.

### ***Identify and Analyze Projects and Management Actions***

Projects and management actions will be identified through consideration and engagement with Basin stakeholders, as described by the SCEP developed in Task 12. Findings from initial assessment of management projects conducted during the GSP Foundation Phase under Task 4 (i.e. the Water Supply Augmentation Feasibility Study and the Stanford AEM Study) will be incorporated into this effort. The potential impacts of these projects and management actions will be assessed using appropriate quantitative and qualitative analytical techniques.

Consistent with DWR’s GSP Checklist, the description of projects and management actions in the GSP will include:

- Description of projects and management actions that will help achieve the basin’s sustainability goal;
- Measurable Objective that is expected to benefit from each project and management action;
- Circumstances (i.e., triggers) for implementation;
- Public noticing;
- Permitting and regulatory process;
- Time-table for initiation and completion, and the accrual of expected benefits;
- Expected benefits and how they will be evaluated;
- How the project or management action will be accomplished. If the projects or management actions rely on water from outside the jurisdiction of the Agency, an explanation of the source and reliability of that water shall be included;
- Legal authority required;
- Estimated costs and plans to meet those costs; and
- Management of groundwater extractions and recharge.

The Numerical Model characterizes changes in Measurable Objectives assuming a continuation of existing conditions (i.e., the “baseline analysis”) which can be compared to changes in those same objectives as a result of potential local or Basin-wide projects and actions intended to promote sustainability and mitigate Undesirable Results – particularly those actions that alter recharge and groundwater consumption. The results of Numerical Model analysis will be used to assess the relative effectiveness of each project, and will inform the overall prioritization of projects which will also consider the feasibility and cost of project implementation.

### ***Prepare Technical Presentation(s) and Draft Technical Memorandum***

Results from Task 25 will be summarized in technical presentation(s) and in a *Draft TM #12 – Proposed Projects and Management Actions* that includes a narrative description of the projects and management actions, supported by maps, charts and other graphics, tables, and supporting documentation as appendices, as appropriate.

### **Task 26: Create GSP Implementation Plan (0% complete)**

The GSP must include a plan for implementation, including an estimate of GSP implementation costs, schedule, plan for required annual reporting, and process for required periodic evaluations of the GSP. Task 26 will involve developing this plan for inclusion in the GSP.

#### ***Create Programmatic GSP Implementation Plan***

This task includes development of a programmatic plan for GSP implementation outlining the framework and general processes associated with meeting SGMA compliance beyond the GSP submission deadline of January 2022. This programmatic plan will be developed through coordinated efforts of the Basin GSAs and will include elements related to:

- Annual Reporting, per the GSP Regulations (23-CCR §356.2);
- Periodic (5 Year) Plan Evaluations, per the GSP Regulations (23-CCR §356.4);
- Maintenance of the DMS (including documentation and training for use by MCWD GSA staff); and
- Maintenance of the Numerical Model.

#### ***Create Plan for Implementation of GSP Projects and Management Actions***

This task includes development of a foundational plan to support implementation of projects and management actions identified in Task 25 in order to ensure that the GSAs will have the legal, funding, and permitting authority to enact these measures, if needed. This implementation plan will outline all efforts related to:

- Conducting feasibility studies for identified projects and/or management actions;
- Performing CEQA and other environmental impact analyses;
- Initiating development/construction efforts for any projects involving built infrastructure; and
- Supporting development of a funding plan (see below).

#### ***Develop Funding Plan for GSP Implementation***

After assessing GSP implementation costs, the Basin GSAs will identify potential funding sources and develop a plan to fund GSP implementation in their respective areas. Funding sources may include grants from federal, state, or local governments, as well as monies raised through the collection of fees on basin landowners levied by the GSAs. Should it be decided that fees will be levied within the MCWD Study Area, MCWD GSA will follow the required process for public notice and public hearings as documented in California Water Code 10730. This effort may require retention of a rate consultant and/or economics consultant which is not included as part of this Project.



### **Prepare Technical Presentation(s) and Draft Technical Memorandum**

Results from Task 26 will be summarized in technical presentation(s) and in a *Draft TM #13 – GSP Implementation Plan*.

### **Task 27: Finalize Monitoring Network and Protocols (0% complete)**

#### **Designate Final Monitoring Network and Protocols**

Per the GSP Regulations (23-CCR §354.34(b)), the GSA(s) must develop a monitoring network fit to achieve the following:

- Demonstrate progress toward achieving Measurable Objectives described in the Plan;
- Monitor impacts to the beneficial uses and users of groundwater;
- Monitor changes in groundwater conditions relative to Measurable Objectives and Minimum Thresholds; and
- Quantify annual changes in water budget components.

Given the results of the preliminary assessment of the monitoring network in Task 19, the understanding of the Basin generated in the Phase 2, and the development of sustainable management criteria completed in Task 24, the Basin GSAs will finalize the monitoring network and protocols. Within the MCWD Study Area, the monitoring network will be designed to leverage existing infrastructure to the extent possible and appropriate and such that the data collected will allow for assessment of the sustainability indicators with respect to the Measurable Objectives and Minimum Thresholds.

[Table 1](#) shows the infrastructure/approach, measurement type, and temporal, spatial, and other considerations corresponding to data collection for each undesirable result. As shown in [Table 1](#), monitoring wells are the main infrastructure used for data collection for groundwater levels, groundwater storage, seawater intrusion, and water quality. There are several options for collection of land subsidence and surface water monitoring data. The MCWD GSA will consider which monitoring infrastructure options are most appropriate for the MCWD Study Area and the sustainable management criteria.

Given the understanding of the Basin generated in Phase 2, the Basin GSAs may designate representative monitoring sites at which the sustainability indicators are monitored, and for which quantitative values for Minimum Thresholds, Measurable Objectives, and Interim Milestones are defined (23-CCR §354.36).

Consistent with DWR’s GSP Checklist, the documentation of the Monitoring Network in the GSP will include the following:

- Description of monitoring network;
- Description of monitoring network objectives;
- Description of how the monitoring network is designed to demonstrate groundwater occurrence, flow directions, and hydraulic gradients between principal aquifers and surface water features; estimate the change in annual groundwater in storage; monitor seawater intrusion; determine groundwater quality trends; identify the rate and extent of land subsidence; and calculate depletions of surface water caused by groundwater extractions;
- Description of how the monitoring network provides adequate coverage of Sustainability Indicators;

#### *Attachment 4 – Work Plan*

- Density of monitoring sites and frequency of measurements required to demonstrate short-term, seasonal, and long-term trends;
- Scientific rationale (or reason) for site selection;
- Consistency with data and reporting standards;
- Corresponding sustainability indicator, Minimum Threshold, Measurable Objective, and Interim Milestone;
- Location and type of each monitoring site within the basin displayed on a map, and reported in tabular format, including information regarding the monitoring site type, frequency of measurement, and the purposes for which the monitoring site is being used; and
- Description of technical standards, data collection methods, and other procedures or protocols to ensure comparable data and methodologies.

To document the use of representative monitoring sites, if applicable, the GSP will include:

- Description of representative sites;
- Demonstration of adequacy of using groundwater elevations as proxy for other sustainability indicators; and
- Adequate evidence demonstrating the site reflects general conditions in the area.

To document the assessment and improvement of the monitoring network, the GSP will further include:

- Review and evaluation of the monitoring network;
- Identification and description of data gaps;
- Description of steps to fill data gaps; and
- Description of monitoring frequency and density of sites.

#### ***Prepare Technical Presentation(s) and Draft Technical Memorandum***

Results from Task 27 will be summarized in technical presentation(s) and in a *Draft TM #14 – Proposed Monitoring Network and Protocols* that includes a narrative description of the plans to implement a monitoring network, supported by maps, charts and other graphics, tables, and supporting documentation as appendices, as appropriate.

#### **Task 28: Conduct Stakeholder Engagement Related to Sustainability Planning (0% complete)**

The Sustainability Planning Phase of GSP development is expected to generate the most interest among Basin stakeholders, and therefore will require substantial stakeholder engagement. We anticipate holding at least two workshops during this phase.

The first workshop will be focused on presenting and receiving feedback on the sustainable management criteria.

The second workshop will be focused on presenting and receiving input on the identified potential projects and management actions. Additionally, during this workshop, MCWD GSA will outline and receive initial input on the tasks to be completed in the GSP Preparation (Phase 4) portion of this Work Plan.

Throughout this process, monthly MCWD GSA Board meetings will continue to provide a forum for interested members of the public to track GSP development and provide ongoing input.

**Task 29: Implement GSP Development Funding Plan (0% complete)**

The MCWD GSA will continue to implement the GSP Development Funding Plan created in Phase 1.

**Task 30: Participate in Intrabasin and Interbasin Coordination Efforts (0% complete)**

The MCWD GSA will continue to follow developments in the neighboring basins, with particular attention paid to the development of sustainable management criteria developed in neighboring basins. The Basin GSAs will ensure that impacts on the Basin are accurately represented in the sustainable management criteria developed in neighboring basins, and will be responsive to any concerns from entities in neighboring basins about the impacts of developed sustainable management criteria for the Basin.

***Participate in Intrabasin Coordination***

The Basin GSAs and consultant staff will continue to organize and convene regularly scheduled, monthly meetings to foster timely and effective discussion of the Phase 3 tasks associated with GSP development and ongoing data-sharing.

***Participate in Interbasin Coordination***

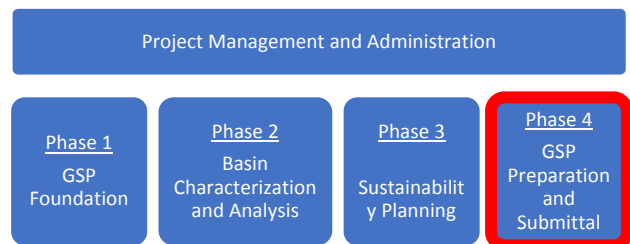
The Basin GSAs and consultant staff will continue to foster interbasin dialogues through targeted meetings and ongoing data-sharing to support Phase 3. The Basin GSAs will develop Interbasin Agreements if necessary.

It is anticipated that the following specific coordination activities will occur:

- Attendance at regularly, scheduled SGMA-related public meetings in the adjacent subbasins, assumed to occur monthly;
- Quarterly meetings between technical counterparts in the adjacent subbasins; and
- Review and comment on significant work products produced in the adjacent subbasins.

**PHASE 4 - GSP PREPARATION AND SUBMITTAL (0% COMPLETE)**

Phase 4 of the Work Plan involves preparation of the GSP and associated deliverables for submittal to DWR. It is anticipated that Phase 4 will extend from July 2020 through the GSP submission deadline of 31 January 2022.



### **Task 31: Compile Complete Draft GSP (0% complete)**

Most of the major GSP components for the MCWD Study Area will have been developed and included, in whole or in part, in the TMs prepared in previous tasks of this Work Plan. These previously prepared elements include:

- Data Management System;
- Plan Area Information;
- Data Gaps Assessment;
- Stakeholder Communication and Engagement Plan;
- Hydrogeological Conceptual Model;
- Current and Historical Groundwater Conditions;
- Water Budget Information, including an Estimate of Sustainable Yield of Basin;
- Sustainable Management Criteria;
- Projects and Management Actions, and Plans for Implementation and Funding; and
- Monitoring Network and Protocols.

Under Task 31, these existing GSP components will be compiled and reworked into a full GSP along with additional components such as Administrative Information (23-CCR §354.4–354.6), documentation of notice and communication (23-CCR §354.10), and “additional plan elements” (as applicable, and listed in CWC §10727.4). The GSP will be structured to conform with the GSP regulations, GSP Annotated Outline, and Preparation Checklist for GSP Submittal.

An Administrative Draft will be prepared for review by the MCWD GSA. After comments have been received, a revise draft GSP will be released for public review.

### **Task 32: Distribute Draft GSP and Revise (if necessary) Per Stakeholder Feedback (0% complete)**

As required by CWC §10728.4, a draft GSP will be made available to Basin stakeholders and a public hearing will be held to receive feedback on the draft GSP. Per CWC §10728.4, the public hearing will be held at least 90 days after providing notice to any city or county within the area of the proposed plan. As necessary, MCWD GSA and SVBGSA will coordinate on revisions to the draft GSP to reflect stakeholder feedback.

### **Task 33: Submit Final GSP to DWR (0% complete)**

MCWD GSA will submit the final GSP for the MCWD Study Area and associated deliverables to DWR, after which DWR is to establish a period of at least 60 days to receive comments on the adopted Plan (per 23-CCR §355.2). Final deliverables to DWR will include:

- The Final (written) GSP for the MCWD Study Area;
- Coordination Agreements (as applicable);
- A Data Management System, integrated with all existing data; and
- Numerical Model Inputs/Outputs.

DWR will then have up to two years to review the Final GSP, after which it will be given the status of approved, incomplete, or inadequate. Should the GSP be deemed incomplete, MCWD GSA and SVBGSA will coordinate to take corrective actions, revise, and resubmit the GSPs within 180 days of DWR's assessment, as required.

**Task 34: Participate in Intrabasin and Interbasin Coordination Efforts (0% complete)**

The MCWD GSA will continue follow developments in neighboring basins, including review of other GSPs, and will finalize any necessary Interbasin Agreements.

***Participate in Intrabasin Coordination***

The Basin GSAs and consultant staff will continue to organize and convene regular meetings to foster timely and effective discussion of the Phase 4 tasks associated with GSP development and ongoing data-sharing.

***Participate in Interbasin Coordination***

The Basin GSAs and consultant staff will continue to foster interbasin dialogues through targeted meetings, integrated participation at public meetings, and ongoing data-sharing to support GSP development. A key component of this effort will be the review of the GSPs produced by entities in adjacent basins and responding to comments received on the GSP prepared for the Basin.

### **List of Tables**

Table 1          Summary of Monitoring Network Considerations

### **List of Figures**

Figure 1        Monterey Subbasin Subareas and the MCWD Study Area

## WORK PLAN REFERENCES

This Work Plan has been prepared in accordance with the requirements, recommendations, and guidance contained in the following documents:

- “Attachment 4. Work Plan”, from the Groundwater Sustainability Plans and Projects Proposal Solicitation Package, dated September 2017;
- GSP Emergency Regulations (California Code of Regulations Title 23 [23-CCR], Division 2, Chapter 1.5, Subchapter 2; herein referred to as the “GSP Regulations”), approved by the California Water Commission on 18 May 2016;
- Groundwater Sustainability Plan (GSP) Emergency Regulations Guide, dated July 2016;
- Best Management Practices (BMPs) published by the Department of Water Resources (DWR), dated December 2016, including:
  - BMP 1: Monitoring Protocols, Standards, and Sites;
  - BMP 2: Monitoring Networks and Identification of Data Gaps;
  - BMP 3: Hydrogeologic Conceptual Model;
  - BMP 4: Water Budget; and
  - BMP 5: Modeling.
- Guidance documents published by DWR, including:
  - Preparation Checklist for GSP Submittal, dated December 2016;
  - GSP Annotated Outline, dated December 2016;
  - Engagement with Tribal Governments, DRAFT dated June 2017; and
  - Stakeholder Communication and Engagement, DRAFT dated June 2017.

**Table 1**  
**Summary of Monitoring Network Considerations**

<b>Undesirable Result</b>	<b>Infrastructure / Approach</b>	<b>Measurement Type</b>	<b>Temporal Considerations</b>	<b>Spatial Considerations</b>	<b>Other Considerations</b>
<b>Chronic Lowering of Groundwater Levels</b>	Monitoring Wells	Groundwater Level	<ul style="list-style-type: none"> <li>• Must be measured at a minimum twice per year during the seasonal high and low;</li> <li>• Must be measured more frequently in the case of:               <ul style="list-style-type: none"> <li>• A shallow/unconfined aquifer;</li> <li>• Rapid groundwater flow and recharge;</li> <li>• More groundwater pumping; or</li> <li>• More variable climatic conditions.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Density per 100 square miles could be 0.2 to 10 wells;</li> <li>• Density should be greater in areas of greater pumping and undesirable results;</li> <li>• Well screens should be aquifer-specific;</li> <li>• Proximity to pumping wells, basin boundaries, and significant recharge areas should be considered.</li> </ul>	
<b>Reduction of Groundwater Storage</b>	Monitoring Wells	Groundwater Level	See above.	See above.	Use of water levels to estimate storage requires assumptions about thickness, porosity, and connectivity of units.
	Remote Sensing	Differential Gravity			"Should be used cautiously as they tend to be regional in nature and may not provide the level of accuracy necessary to fully determine conditions within the basin" (BMP, p. 14)
<b>Seawater Intrusion</b>	Monitoring Wells	Groundwater Quality	Must be measured "at least quarterly" (BMP, p. 15) and more frequently during initial characterization.	<p>Must be:</p> <ul style="list-style-type: none"> <li>• Accompanied by groundwater elevation monitoring;</li> <li>• Adequate to map isocontour of chloride;</li> <li>• From each aquifer that is currently, or may be in the future, impacted by degraded water quality;</li> <li>• Able to define the three-dimensional extent of existing seawater intrusion;</li> <li>• Sufficient for mapping movement of seawater or degraded water quality; and</li> <li>• Sufficient to assess groundwater quality impacts on beneficial uses and users.</li> </ul> <p>May be optimized by:</p> <ul style="list-style-type: none"> <li>• Including geophysical techniques to identify the preferential pathways controlling seawater intrusion; and</li> <li>• Targeting critical connections to existing water supply wells and mitigation efforts.</li> </ul>	<ul style="list-style-type: none"> <li>• Must analyze for chloride concentration;</li> <li>• Additional analytes may be desirable; and</li> <li>• Use of a surrogate (e.g., electrical conductivity) must be demonstrated through correlative analysis.</li> </ul>



**Table 1  
Summary of Monitoring Network Considerations**

Undesirable Result	Infrastructure / Approach	Measurement Type	Temporal Considerations	Spatial Considerations	Other Considerations
<b>Degraded Water Quality</b>	Monitoring Wells	Groundwater Quality	Must be measured at times generally correlated to seasonal high and low, or more frequent as appropriate.	Must be: <ul style="list-style-type: none"> <li>• Adequate to map or supplement mapping of known contaminants;</li> <li>• From each aquifer that is currently, or may be in the future, impacted by degraded water quality;</li> <li>• Able to define the three-dimensional extent of existing degraded water quality;</li> <li>• Sufficient for mapping movement of degraded water quality;</li> <li>• Sufficient to assess groundwater quality impacts to beneficial uses and users; and</li> <li>• Adequate to evaluate whether management activities are contributing to water quality degradation.</li> </ul>	Supplement to existing monitoring under regulatory programs (i.e., contaminant plumes); Additional may be needed to address unregulated contaminant plumes and naturally occurring water quality impacts
<b>Land Subsidence</b>	Level Surveys	Elevation	Should reflect results of initial screening level analysis for subsidence.	Should reflect results of initial screening level analysis for subsidence, which should include review of: <ul style="list-style-type: none"> <li>• The Basin's HCM and understanding of grain-size distributions and potential for subsidence to occur;</li> <li>• Any known regional or correlative geologic conditions where subsidence has been observed;</li> <li>• Historic range of groundwater levels in the principal aquifers of the Basin;</li> <li>• Historic records of infrastructure impacts, including, but not limited to, damage to pipelines, canals, roadways, or bridges, or well collapse potentially associated with land surface elevation changes;</li> <li>• Remote sensing results such as InSAR or other land surface monitoring data; and</li> <li>• Existing CGPS surveys.</li> </ul>	Following Caltrans Surveys Manual and tied to known benchmarks.
Borehole Extensometers	Change in Elevation	Following extensometry principles and methods used by the USGS.			
CGPS Locations	Elevation	Following Caltrans Surveys Manual.			
Remote Sensing	InSAR data	Requires data (some available for free) and processing is "not a trivial task" (BMP, p. 20).			
Monitoring Wells	Groundwater Level	Correlation of subsidence to groundwater level must be demonstrated.			

**Table 1**  
**Summary of Monitoring Network Considerations**

<b>Undesirable Result</b>	<b>Infrastructure / Approach</b>	<b>Measurement Type</b>	<b>Temporal Considerations</b>	<b>Spatial Considerations</b>	<b>Other Considerations</b>
<b>Depletions of Interconnected Surface Waters (b)</b>	Modeling	Calculated Exchange between Surface Water and Groundwater			Requires input parameters and assumptions to be made which should be based on empirical observations.
	Stream Gauges	Surface Water Flow		Must account for surface water diversions and return flows or gauging locations must be selected over which no diversions or return flows exist.	Measurements should be in accordance with USGS WSP 2175, Volumes 1 and 2.
	Monitoring Wells	Groundwater Level	Adequate to capture seasonal pumping conditions in vicinity-connected surface water bodies.	Network should: <ul style="list-style-type: none"> <li>• Extend parallel and perpendicular to connected streams; and</li> <li>• Identify and quantify timing and volume of groundwater pumping within approximately 3 miles of stream or as appropriate for the flow regime.</li> </ul>	
	Visual Observation	Flow Cessation			Qualitative evaluation of timing and position of cessation of flow in ephemeral streams may contribute to understanding of surface water depletion.
	Other Methods for Initial Characterization	Stream Bed Conductance Surveys; Aquifer Testing; Isotopic / Geochemical Studies; Geophysical Techniques			May help to establish an appropriate monitoring method that would best provide parameters for a model or another technique to estimate depletion of surface water.

**Abbreviations**

BMP = Best Management Practices

Caltrans = California Department of Transportation

CGPS = continuous global position system

DWR = California Department of Water Resources

InSAR = interferometric synthetic aperture radar

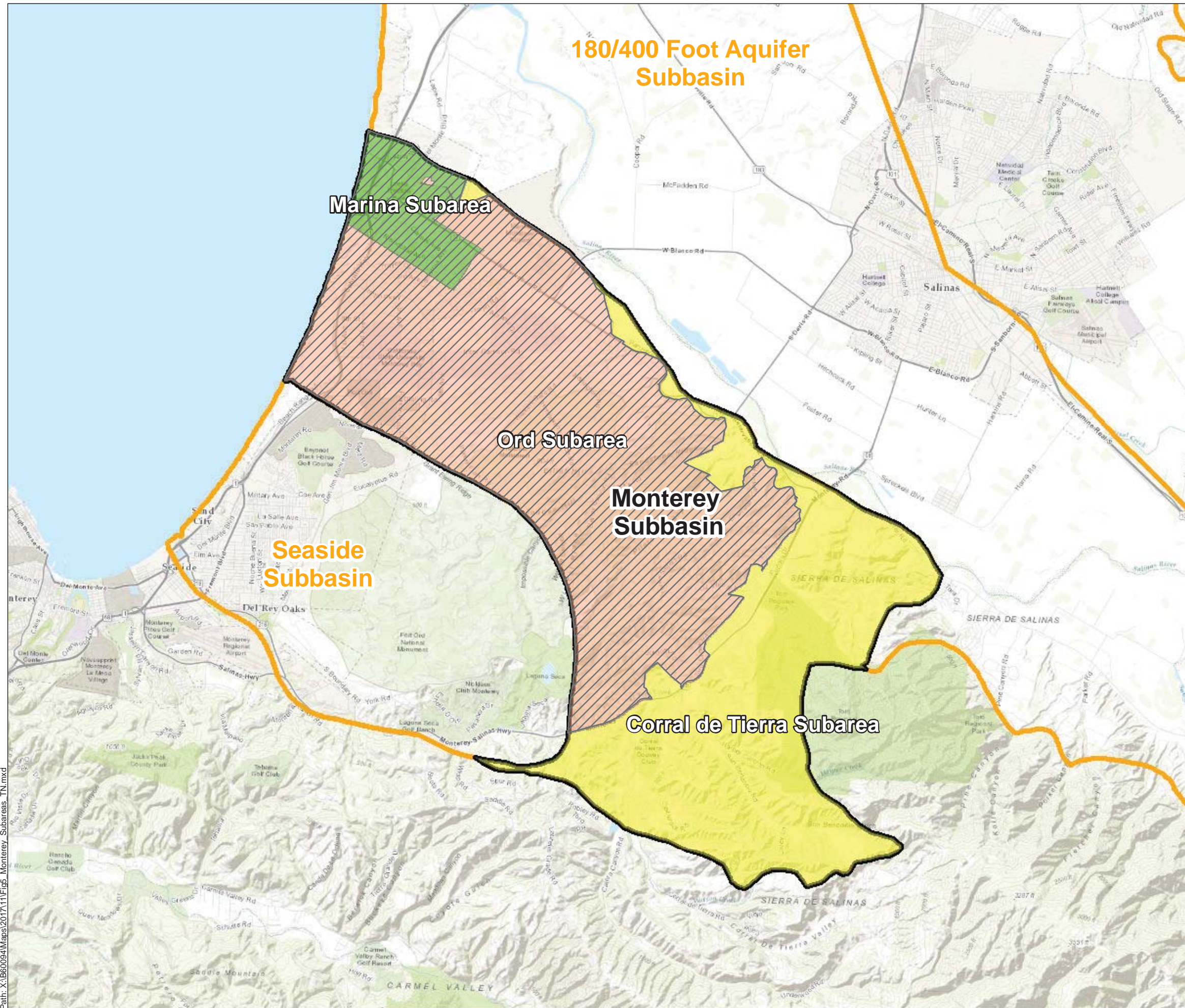
USGS = United States Geological Survey

WSP = Water Supply Paper







**Notes**

(a) This table has been created as a summary of the guidance provided in DWR's *Best Management Practices for the Sustainable Management of Groundwater: Monitoring Networks and Identification of Data Gaps* document, referred to herein as "BMP".

(b) Several infrastructure / approach options will have to be utilized to characterize and monitor potential depletion of interconnected surface water(s); use of a model would require data collection for input parameters.



**Legend**

-  Monterey Subbasin (DWR 3-004.10)
-  Other Groundwater Subbasin within Salinas Valley Basin (DWR 3-004)
-  Marina Subarea
-  Ord Subarea
-  Corral de Tierra Subarea
-  MCWD Study

**Abbreviations**

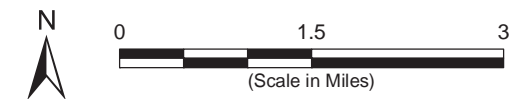
DWR = California Department of Water Resources

**Notes**

1. All locations are approximate.

**Sources**

1. Basemap layers obtained from ESRI.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118 - 2016 Update.



**Monterey Subbasin Subareas and the MCWD Study Area**

Marina Coast Water District  
 Monterey County, California  
 November 2017  
 EKI B60094.03



**Figure 1**

**ATTACHMENT B**  
**Revised GSP Development Schedule**

ID	Phase/Task #	Phase/Task Name	Start	Finish	Duration	2018				2019				2020				2021				2022			
						Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
1	<b>PM Phase</b>	<b>Project Management and Administration</b>	<b>1/1/18</b>	<b>1/31/22</b>	<b>1066 days</b>	<b>PM Phase</b>																			
2	Task 1	Prop 1 Grant Management, Administration, & Reporting	4/1/18	1/31/22	1002 days	Task 1																			
3	Task 2	Project Management	1/1/18	1/31/22	1066 days	Task 2																			
4	Task 3	Quality Assurance/Quality Control	1/1/18	1/31/22	1066 days	Task 3																			
5	<b>Phase 1</b>	<b>GSP Foundation</b>	<b>1/1/15</b>	<b>9/28/18</b>	<b>977 days</b>	<b>Phase 1</b>																			
6	Task 4	Conduct Preliminary GSP Development Efforts	1/1/15	11/13/17	748 days	Task 4																			
7	Task 5	Provide Initial Notification of GSP Development	4/1/18	4/30/18	22 days	Task 5																			
8	Task 6	Select or Design Data Management System	4/1/18	6/29/18	66 days	Task 6																			
9	Task 7	Gather Available Data & Compile into DMS	1/1/18	6/29/18	130 days	Task 7																			
10	Task 8	Compile Info on Plan Area & Basin Mgmt. Activities	1/1/18	6/29/18	130 days	Task 8																			
11	Task 9	Conduct Data Gaps Assessment	1/1/18	6/29/18	130 days	Task 9																			
12	Task 10	Evaluate Numerical Groundwater Model Options	4/1/18	6/28/18	65 days	Task 10																			
13	Task 11	Develop GSP Development Funding Plan	4/1/18	6/29/18	66 days	Task 11																			
14	Task 12	Develop Stakeholder Communication & Engagement Plan	4/1/18	6/29/18	66 days	Task 12																			
15	Task 13	Conduct Stakeholder Engagement Re: GSP Foundation	4/1/18	9/28/18	131 days	Task 13																			
16	Task 14	Participate in Intrabasin & Interbasin Coordination Efforts	4/1/18	9/28/18	131 days	Task 14																			
17	<b>Phase 2</b>	<b>Basin Characterization and Analysis</b>	<b>5/1/18</b>	<b>10/1/19</b>	<b>371 days</b>	<b>Phase 2</b>																			
18	Task 15	Implement Plan for Filling Data Gaps Needed for GSP Preparation	5/1/18	2/28/19	218 days	Task 15																			
19	Task 16	Assess Groundwater Conditions & Develop HCM	7/1/18	12/31/18	132 days	Task 16																			
20	Task 17	Develop/Refine Numerical Groundwater Model	7/1/18	12/31/18	132 days	Task 17																			
21	Task 18	Develop Study Area and Basin-Wide Water Budget	9/1/18	2/28/19	130 days	Task 18																			
22	Task 19	Assess Existing Monitoring Programs & Develop SGMA Network	12/1/18	5/30/19	130 days	Task 19																			
23	Task 20	Conduct Stakeholder Engagement Re: Basin Char. & Analysis	10/1/18	10/1/19	262 days	Task 20																			
24	Task 21	Implement GSP Development Funding Plan	10/1/18	10/1/19	262 days	Task 21																			
25	Task 22	Participate in Intrabasin & Interbasin Coordination Efforts	10/1/18	10/1/19	262 days	Task 22																			
26	<b>Phase 3</b>	<b>Sustainability Planning</b>	<b>10/1/19</b>	<b>9/30/20</b>	<b>262 days</b>	<b>Phase 3</b>																			
27	Task 23	Evaluate Potential Management Areas	10/1/19	12/31/19	66 days	Task 23																			
28	Task 24	Develop Sustainable Management Criteria	10/1/19	3/30/20	130 days	Task 24																			
29	Task 25	Identify Projects and Management Actions	1/1/20	7/1/20	131 days	Task 25																			
30	Task 26	Create GSP Implementation Plan	7/2/20	9/30/20	65 days	Task 26																			
31	Task 27	Finalize Monitoring Network & Protocols	1/1/20	9/30/20	196 days	Task 27																			
32	Task 28	Conduct Stakeholder Engagement Re: Sustainability Planning	10/1/19	9/30/20	262 days	Task 28																			
33	Task 29	Implement GSP Development Funding Plan	10/1/19	9/30/20	262 days	Task 29																			
34	Task 30	Participate in Intrabasin & Interbasin Coordination Efforts	10/1/19	9/30/20	262 days	Task 30																			
35	<b>Phase 4</b>	<b>GSP Preparation and Submittal</b>	<b>10/1/20</b>	<b>1/31/22</b>	<b>348 days</b>	<b>Phase 4</b>																			
36	Task 31	Compile Complete Draft GSP	10/1/20	7/1/21	196 days	Task 31																			
37	Task 32	Distribute Draft GSP & Revise per Stakeholder Feedback	7/2/21	1/31/22	152 days	Task 32																			
38	Task 33	Submit Final GSP to DWR	1/31/22	1/31/22	0 days	★ 1/31																			
39	Task 34	Participate in Intrabasin & Interbasin Coordination Efforts	10/1/20	1/31/22	348 days	Task 34																			

Marina Coast Water District Study Area  
Groundwater Sustainability Planning  
March 2018

Phase  Task  Milestone ★

**ATTACHMENT C**  
**Cost Estimate to Develop a GSP**

## Project Budget

Table 4 – Project Budget

Proposal Title: \_\_Groundwater Sustainability Planning for the Monterey Subbasin\_\_

Project Title: \_\_Marina Coast Water District Study Area Groundwater Sustainability Planning\_\_

Project serves a need of a DAC?:  Yes  NoCost Share Waiver request?:  Yes  No

Tasks <sup>1</sup>	(a)	(b)	(c)	(d)
	Requested Grant Amount	Cost Share: Non-State Fund Source <sup>2</sup>	Other Cost Share	Total Cost
<b>Phase PM - Project Management and Administration (Tasks 1 - 3)</b>	\$ 72,937	\$ 80,085	\$ 7,148	\$ 160,170
(a) Task 1. Proposition 1 Grant Mgmt., Admin, & Reporting	\$ 32,312	\$ 35,479	\$ 3,167	\$ 70,958
(b) Task 2. Project Mgmt.	\$ 34,541	\$ 37,926	\$ 3,385	\$ 75,853
(c) Task 3. Quality Assurance/Quality Control	\$ 6,083	\$ 6,680	\$ 596	\$ 13,359
<b>Phase 1 - GSP Foundation (Tasks 4 - 14)</b>	\$ 283,444	\$ 311,223	\$ 27,779	\$ 622,446
(d) Task 4. Conduct Preliminary GSP Development Efforts	\$ 190,008	\$ 208,630	\$ 18,622	\$ 417,261
(e) Task 5. Provide Initial Notification of GSP Development	\$ 842	\$ 925	\$ 83	\$ 1,849
(f) Task 6. Select or Design Data Management System	\$ 8,315	\$ 9,130	\$ 815	\$ 18,259
(g) Task 7. Gather Available Data & Compile into DMS	\$ 8,238	\$ 9,045	\$ 807	\$ 18,090
(h) Task 8. Compile Information on the Plan Area & Basin Management Activities	\$ 6,357	\$ 6,980	\$ 623	\$ 13,960
(i) Task 9. Conduct Data Gaps Assessment	\$ 18,793	\$ 20,634	\$ 1,842	\$ 41,269
(j) Task 10. Evaluate Numerical Groundwater Modeling Options	\$ 9,731	\$ 10,684	\$ 954	\$ 21,369
(k) Task 11. Develop GSP Development Funding Plan	\$ 4,671	\$ 5,129	\$ 458	\$ 10,257
(l) Task 12. Develop Stakeholder Communication & Engagement Plan	\$ 7,911	\$ 8,686	\$ 775	\$ 17,372
(m) Task 13. Conduct Stakeholder Engagement Related to GSP Foundation	\$ 5,672	\$ 6,228	\$ 556	\$ 12,456
(n) Task 14. Participate in Intrabasin & Interbasin Coordination Efforts	\$ 22,907	\$ 25,152	\$ 2,245	\$ 50,304
<b>Phase 2 - Basin Analysis and Characterization (Tasks 15 - 22)</b>	\$ 244,532	\$ 268,497	\$ 23,966	\$ 536,994
(o) Task 15. Implement Plan for Filling Data Gaps Needed for GSP Preparation	\$ 57,370	\$ 62,992	\$ 5,623	\$ 125,984
(p) Task 16. Assess Groundwater Conditions & Develop Hydrogeologic Conceptual Model	\$ 31,747	\$ 34,858	\$ 3,111	\$ 69,716
(q) Task 17. Develop/Refine Numerical Groundwater Model	\$ 65,510	\$ 71,931	\$ 6,420	\$ 143,861
(r) Task 18. Develop Study Area and Basin-Wide Water Budget	\$ 27,876	\$ 30,608	\$ 2,732	\$ 61,216
(s) Task 19. Assess Existing Monitoring Programs & Develop SGMA-Compliant Monitoring Network	\$ 19,996	\$ 21,956	\$ 1,960	\$ 43,911

## Project Budget

(t)	Task 20. Conduct Stakeholder Engagement Related to Basin Characterization	\$ 5,379	\$ 5,906	\$ 527	\$ 11,812
(u)	Task 21. Implement GSP Development Funding Plan	\$ 3,112	\$ 3,417	\$ 305	\$ 6,834
(v)	Task 22. Participate in Intrabasin & Interbasin Coordination Efforts	\$ 33,542	\$ 36,830	\$ 3,287	\$ 73,660
<b>Phase 3 - Sustainability Planning (Tasks 23 - 30)</b>		<b>\$ 149,046</b>	<b>\$ 163,654</b>	<b>\$ 14,607</b>	<b>\$ 327,308</b>
(w)	Task 23. Evaluate Potential Management Areas	\$ 9,678	\$ 10,627	\$ 949	\$ 21,253
(x)	Task 24. Develop Sustainable Management Criteria	\$ 27,160	\$ 29,822	\$ 2,662	\$ 59,644
(y)	Task 25. Identify Projects & Management Actions	\$ 33,084	\$ 36,327	\$ 3,242	\$ 72,654
(z)	Task 26. Create GSP Implementation Plan	\$ 20,076	\$ 22,044	\$ 1,968	\$ 44,087
(aa)	Task 27. Finalize Monitoring Network & Protocols	\$ 14,988	\$ 16,457	\$ 1,469	\$ 32,913
(ab)	Task 28. Conduct Stakeholder Engagement Related to Sustainability Planning	\$ 9,569	\$ 10,506	\$ 938	\$ 21,013
(ac)	Task 29. Implement GSP Development Funding Plan	\$ 1,380	\$ 1,515	\$ 135	\$ 3,030
(ad)	Task 30. Participate in Intrabasin & Interbasin Coordination Efforts	\$ 33,112	\$ 36,357	\$ 3,245	\$ 72,714
<b>Phase 4 - GSP Preparation and Submittal (Tasks 31 - 34)</b>		<b>\$ 86,153</b>	<b>\$ 94,597</b>	<b>\$ 8,444</b>	<b>\$ 189,194</b>
(ae)	Task 31. Compile Complete Draft GSP	\$ 17,854	\$ 19,604	\$ 1,750	\$ 39,207
(af)	Task 32. Distribute Draft GSP & Revise per Stakeholder Feedback	\$ 16,332	\$ 17,933	\$ 1,601	\$ 35,866
(ag)	Task 33. Submit Final GSP	\$ 1,403	\$ 1,541	\$ 138	\$ 3,081
(ah)	Task 34. Participate in Intrabasin & Interbasin Coordination Efforts	\$ 50,564	\$ 55,520	\$ 4,956	\$ 111,040
<b>(ai)</b>	<b>Grand Total (Sum rows (a) through (ai) for each column)</b>	<b>\$ 836,112</b>	<b>\$ 918,056</b>	<b>\$ 81,944</b>	<b>\$ 1,836,112</b>

<sup>1</sup> Refer to Work Plan for description of tasks. Tasks are organized by Work Plan phase and subtotals are shown for each phase.

<sup>2</sup> Local Cost Share will be provided by MCWD GSA (per Resolution No. 2017-GSA04, adopted 16 October 2017). The total for Column B is exactly 50% of the total project cost, and Column C is the additional cost share that the MCWD GSA is opting to contribute beyond the minimum requirement.



### Budget Description

This detailed budget table was developed to reflect estimated Project costs on a Task and Phase basis and is commensurate with the level of detail included in the Project Work Plan and Schedule. We anticipate that the grant will be managed at the Phase level.

For each Phase (and Task), estimated costs are reported for each of the entities (i.e., Technical Consultant and GSA staff) that will be involved in Project development. The costs are inclusive of the expected contributions of all staff within each respective entity and are developed based on: (1) records of hours or dollars spent to date for tasks already completed, and/or (2) professional experience performing similar work efforts. Total costs for each Phase (and Task) include the expected labor associated with completing the technical, facilitation, and/or administrative work efforts and preparing the associated presentations, technical memoranda, and all other interim work products and deliverables identified in the Project Work Plan.

Labor hours for each Phase (and Task) are translated into Project costs based on the billing/hourly rates and an assumed distribution of labor for each of the entities involved in Project development. Certain labor hours and costs (e.g., those related to GSA staff effort) are associated with in-kind services and will be applied towards Project cost share. Total requested grant amount is exactly 50% of the total Technical Consultant fees and the other direct costs (ODCs).

This budget estimate includes ODCs for field equipment, laboratory/analytical charges, and specialized software usage charges (i.e., CADD and GIS), wherever any ODCs are anticipated to occur. These ODCs were estimated based on typical current unit costs for each individual item multiplied by the anticipated quantity as described in the Project Work Plan. The level of effort and corresponding budget assumed for each Phase (and Task) reflects currently known or anticipated availability of technical information, tools, and other resources to support the Project, as described in the Project Work Plan.

Phase	Task		Costs by Category			Cost Totals	
			Technical Consultant	GSA Staff	ODCs	Task TOTAL	Rounded Phase TOTAL
PM Phase	Task 1.	Proposition 1 Grant Management, Administration, & Reporting	\$40,952	\$30,007	\$0	\$70,958	\$160,170
	Task 2.	Project Management	\$39,749	\$36,104	\$0	\$75,853	
	Task 3.	Quality Assurance/Quality Control	\$7,519	\$5,680	\$160	\$13,359	
Phase 1 GSP Foundation	Task 4.	Conduct Preliminary GSP Development Efforts	\$383,159	\$34,102	\$0	\$417,261	\$622,446
	Task 5.	Provide Initial Notification of GSP Development	\$1,389	\$460	\$0	\$1,849	
	Task 6.	Select or Design Data Management System	\$17,633	\$626	\$0	\$18,259	
	Task 7.	Gather Available Data & Compile into DMS	\$13,726	\$4,044	\$320	\$18,090	
	Task 8.	Compile Information on the Plan Area & Basin Management Activities	\$12,544	\$1,096	\$320	\$13,960	
	Task 9.	Conduct Data Gaps Assessment	\$40,629	\$0	\$640	\$41,269	
	Task 10.	Evaluate Numerical Groundwater Modeling Options	\$21,129	\$0	\$240	\$21,369	
	Task 11.	Update GSP Development Funding Plan	\$6,405	\$3,852	\$0	\$10,257	
	Task 12.	Develop Stakeholder Communication & Engagement Plan	\$12,162	\$5,210	\$0	\$17,372	
	Task 13.	Conduct Stakeholder Engagement Related to GSP Foundation	\$8,310	\$4,146	\$0	\$12,456	
	Task 14.	Participate in Intrabasin & Interbasin Coordination Efforts	\$30,828	\$19,476	\$0	\$50,304	

## Budget Description

Phase	Task		Costs by Category			Cost Totals	
			Technical Consultant	GSA Staff	ODCs	Task TOTAL	Rounded Phase TOTAL
Phase 2 Basin Characterization & Analysis	Task 15.	Implement Plan for Filling Data Gaps Needed for GSP Preparation	\$92,489	\$8,595	\$24,900	\$125,984	\$536,994
	Task 16.	Assess Groundwater Conditions & Develop Hydrogeologic Conceptual Model	\$64,463	\$3,973	\$1,280	\$69,716	
	Task 17.	Develop/Refine Numerical Groundwater Model	\$143,861	\$0	\$0	\$143,861	
	Task 18.	Develop Study Area and Basin-Wide Water Budget	\$58,178	\$2,878	\$160	\$61,216	
	Task 19.	Assess Existing Monitoring Programs & Develop SGMA-Compliant Monitoring Network	\$38,588	\$5,003	\$320	\$43,911	
	Task 20.	Conduct Stakeholder Engagement Related to Basin Characterization and Analysis	\$9,052	\$2,760	\$0	\$11,812	
	Task 21.	Implement GSP Development Funding Plan	\$1,198	\$5,636	\$0	\$6,834	
	Task 22.	Participate in Intrabasin & Interbasin Coordination Efforts	\$58,596	\$15,064	\$0	\$73,660	
Phase 3 Sustainability Planning	Task 23.	Evaluate Potential Management Areas	\$19,637	\$1,456	\$160	\$21,253	\$327,308
	Task 24.	Develop Sustainable Management Criteria	\$55,128	\$4,036	\$480	\$59,644	
	Task 25.	Identify Projects & Management Actions	\$61,612	\$10,402	\$640	\$72,654	
	Task 26.	Create GSP Implementation Plan	\$32,683	\$11,004	\$400	\$44,087	
	Task 27.	Finalize Monitoring Network & Protocols	\$31,027	\$1,406	\$480	\$32,913	
	Task 28.	Conduct Stakeholder Engagement Related to Sustainability Planning	\$18,741	\$2,272	\$0	\$21,013	
	Task 29.	Implement GSP Development Funding Plan	\$1,340	\$1,690	\$0	\$3,030	
	Task 30.	Participate in Intrabasin & Interbasin Coordination Efforts	\$58,596	\$14,118	\$0	\$72,714	
Phase 4 - GSP Prep & Submittal	Task 31.	Compile Complete Draft GSP	\$27,535	\$11,192	\$480	\$39,207	\$189,194
	Task 32.	Distribute Draft GSP & Revise per Stakeholder Feedback	\$21,206	\$14,660	\$0	\$35,866	
	Task 33.	Submit Final GSP to DWR	\$1,905	\$1,176	\$0	\$3,081	
	Task 34.	Participate in Intrabasin & Interbasin Coordination Efforts	\$57,302	\$53,738	\$0	\$111,040	
<b>TOTAL ESTIMATED PROJECT COSTS:</b>						<b>\$1,836,112</b>	

**ATTACHMENT D**

**GSP Development Efforts Complete to date and Remaining Cost Estimate with Detailed  
Cost Breakdown for Phases 1 and 2**

**Efforts Completed to date and Remaining Cost Estimate  
with Detailed Cost Breakdown for Phases 1 and 2**

Phase	Task	Consultant Budget	As of Apr 2018		Planned Consultant Budget			Approved Grant Amount (a)
			Consultant % Complete	Consultant Budget Remaining	Proposed EKI Budget Apr - Jun 2018	Proposed EKI Budget FY 2018-19	Beyond FY 2018-19	
PM Phase	Task 1. Proposition 1 Grant Mgmt., Admin, & Reporting	\$ 40,952	0%	\$ 40,952	\$ 2,792	\$ 11,169	\$ 26,991	\$ 32,312
	Task 2. Project Mgmt.	\$ 39,749	11%	\$ 35,376	\$ 2,360	\$ 9,440	\$ 23,576	\$ 34,541
	Task 3. Quality Assurance/Quality Control	\$ 7,519	11%	\$ 6,692	\$ 446	\$ 1,786	\$ 4,460	\$ 6,083
Phase 1	Task 4. Conduct Preliminary GSP Development Efforts	\$ 383,159 (b)	100%	\$ -	\$ -	\$ -	\$ -	\$ 190,008
	Task 5. Provide Initial Notification of GSP Development	\$ 1,389	0%	\$ 1,389	\$ 1,389	\$ -	\$ -	\$ 842
	Task 6. Select or Design Data Management System	\$ 17,633	20%	\$ 14,107	\$ 14,107	\$ -	\$ -	\$ 8,315
	Task 7. Gather Available Data & Compile into DMS	\$ 13,726	80%	\$ 2,745	\$ 2,745	\$ -	\$ -	\$ 8,238
	Task 8. Compile Information on the Plan Area & Basin Management Activities	\$ 12,544	80%	\$ 2,509	\$ 2,509	\$ -	\$ -	\$ 6,357
	Task 9. Conduct Data Gaps Assessment	\$ 40,629	65%	\$ 14,220	\$ 14,220	\$ -	\$ -	\$ 18,793
	Task 10. Evaluate Numerical Groundwater Modeling Options	\$ 21,129	10%	\$ 19,016	\$ 19,016	\$ -	\$ -	\$ 9,731
	Task 11. Develop GSP Development Funding Plan	\$ 6,405	10%	\$ 5,765	\$ 5,765	\$ -	\$ -	\$ 4,671
	Task 12. Develop Stakeholder Communication & Engagement Plan	\$ 12,162	0%	\$ 12,162	\$ 12,162	\$ -	\$ -	\$ 7,911
	Task 13. Conduct Stakeholder Engagement Related to GSP Foundation	\$ 8,310	0%	\$ 8,310	\$ 4,155	\$ 4,155	\$ -	\$ 5,672
	Task 14. Participate in Intrabasin & Interbasin Coordination Efforts	\$ 30,828	10%	\$ 27,745	\$ 13,872	\$ 13,872	\$ -	\$ 22,907
Phase 2	Task 15. Implement Plan for Filling Data Gaps Needed for GSP Preparation	\$ 92,489	0%	\$ 92,489	\$ 18,498	\$ 73,991	\$ -	\$ 57,370
	Task 16. Assess Groundwater Conditions & Develop Hydrogeologic Conceptual Model	\$ 64,463	10%	\$ 58,017	\$ -	\$ 58,017	\$ -	\$ 31,747
	Task 17. Develop/Refine Numerical Groundwater Model	\$ 143,861	5%	\$ 136,668	\$ -	\$ 136,668	\$ -	\$ 65,510
	Task 18. Develop Study Area and Basin-Wide Water Budget	\$ 58,178	5%	\$ 55,269	\$ -	\$ 55,269	\$ -	\$ 27,876
	Task 19. Assess Existing Monitoring Programs & Develop SGMA-Compliant Monitoring Network	\$ 38,588	5%	\$ 36,659	\$ -	\$ 36,659	\$ -	\$ 19,996
	Task 20. Conduct Stakeholder Engagement Related to Basin Characterization	\$ 9,052	0%	\$ 9,052	\$ -	\$ 6,789	\$ 2,263	\$ 5,379
	Task 21. Implement GSP Development Funding Plan	\$ 1,198	0%	\$ 1,198	\$ -	\$ 899	\$ 300	\$ 3,112
Task 22. Participate in Intrabasin & Interbasin Coordination Efforts	\$ 58,596	0%	\$ 58,596	\$ -	\$ 43,947	\$ 14,649	\$ 33,542	
Phase 3	Sustainability Planning (Tasks 23 - 30)	\$ 278,764	0%	\$ 278,764	\$ -	\$ -	\$ 278,764	\$ 149,046
Phase 4	GSP Preparation and Submittal (Tasks 31 - 34)	\$ 107,948	0%	\$ 107,948	\$ -	\$ -	\$ 107,948	\$ 86,153
<b>TOTAL</b>					<b>\$ 114,036</b>	<b>\$ 452,660</b>	<b>\$ 458,950</b>	<b>\$ 836,112</b>

Notes

(a) Grant amount was developed based on cost share of total cost per task consists of technical consultant costs, GSA staff cost, other direct costs. See Attachment C for detailed budget estimate.

(b) Consultant budget under Task 4 reflects cost spent to date by EKI and others. Details of work completed under Task 4 are included in the GSP Work Plan (Attachment A).

**ATTACHMENT E**  
**2018 Schedule of Charges**

**Client/Address: Marina Coast Water District**

Mike Wegley, P.E.  
 280 4<sup>th</sup> Ave,  
 Marina, CA 93933

**Proposal/Agreement Date: 5 April 2018****EKI Project # B8-065****SCHEDULE OF CHARGES FOR EKI ENVIRONMENT & WATER, INC.<sup>1</sup>****1 January 2018**

<u>Personnel Classification</u>	<u>Hourly Rate</u>
Officer and Chief Engineer-Scientist	280
Principal Engineer-Scientist	270
Supervising I, Engineer-Scientist	260
Supervising II, Engineer-Scientist	250
Senior I, Engineer-Scientist	238
Senior II, Engineer-Scientist	225
Associate I, Engineer-Scientist	213
Associate II, Engineer-Scientist	199
Engineer-Scientist, Grade 1	185
Engineer-Scientist, Grade 2	175
Engineer-Scientist, Grade 3	160
Engineer-Scientist, Grade 4	140
Engineer-Scientist, Grade 5	124
Engineer-Scientist, Grade 6	109
Technician	100
Senior GIS Analyst	128
CADD Operator / GIS Analyst	113
Senior Administrative Assistant	125
Administrative Assistant	99
Secretary	82

**Direct Expenses**

Reimbursement for direct expenses, as listed below, incurred in connection with the work will be at cost plus ten percent (10%) for items such as:

- a. Maps, photographs, reproductions, printing, equipment rental, and special supplies related to the work.
- b. Consultants, soils engineers, surveyors, drillers, laboratories, and contractors.
- c. Rented vehicles, local public transportation and taxis, travel and subsistence.
- d. Special fees, insurance, permits, and licenses applicable to the work.
- e. Outside computer processing, computation, and proprietary programs purchased for the work.

A Communication charge for e-mail access, web conferencing, cellphone calls, messaging and data access, file sharing, local and long distance telephone calls and conferences, facsimile transmittals, standard delivery U.S. postage, and incidental in-house copying will be charged at a rate of 4% of labor charges. Large volume copying of project documents, e.g., bound reports for distribution or project-specific reference files, will be charged as a project expense as described above.

Reimbursement for company-owned automobiles, except trucks and four-wheel drive vehicles, used in connection with the work will be at the rate of sixty cents (\$0.60) per mile. The rate for company-owned trucks and four-wheel drive vehicles will be seventy-five cents (\$0.75) per mile. There will be an additional charge of thirty dollars (\$30.00) per day for vehicles used for field work. Reimbursement for use of personal vehicles will be at the federally allowed rate plus fifteen percent (15%).

CADD Computer time will be charged at twenty dollars (\$20.00) per hour. In-house material and equipment charges will be in accordance with the current rate schedule or special quotation. Excise taxes, if any, will be added as a direct expense.

Rate for professional staff for legal proceedings or as expert witnesses will be at a rate of one and one-half times the Hourly Rates specified above.

The foregoing Schedule of Charges is incorporated into the Agreement for the Services of EKI Environment & Water, Inc. and may be updated annually.

<sup>1</sup> Formerly known as Erler & Kalinowski, Inc.