**Template revision date: March 2019** Agreement# 19ZJTAAXXXX  
 OPA Review #####

# TECHNICAL ASSISTANCE AGREEMENT

This Technical Assistance Agreement is entered by and between U.S. Geological Survey, a Bureau of the Department of the Interior, through the offices of its Nevada Water Science Center, hereinafter referred to as the "USGS" and Monterey Peninsula Water Management District, hereinafter referred to as "Collaborator." USGS and Collaborator are sometimes herein referred to as a **"Party"** and collectively as the **"Parties".**

Whereas, the USGS is authorized to perform technical assistance with other Federal agencies, units of State or local government, industrial organizations, private corporations, public and private foundations, and nonprofit organizations (including universities) under the Stevenson­ Wydler Act (15 U.S.C. § 3710a, as amended);

Whereas, the USGS has a mission in developing a water census and has need of groundwater and surface water use to support this mission;

Whereas, Collaborator has useful historic water use data and has need of USGS expertise in incorporating these data into hydrologic models for water census analysis;

Whereas, the project entitled, **"Water Management Scenario Evaluation for the Carmel River Watershed using GSFLOW",** is intended by the Parties to be mutually beneficial and to benefit the people of the United States;

Now, therefore, the Parties hereto agree as follows:

1. **Statement of Work.** See attached Statement of Work (SOW) (Exhibit A), incorporated by

reference herein. '

1. **Principal Investigator.** The USGS principal investigator (PI) for this project is Richard Niswonger, 775-297-1392, [rniswon@usgs.gov,](mailto:rniswon@usgs.gov) 345 Middlefield Rd MS496, Menlo Park, CA 94025. The PI for the Collaborator is Thomas Christensen, 831-238-2547, [Thomas@mpwmd.net,](mailto:Thomas@mpwmd.net) P.O. Box 85, Monterey, CA 93942. In the event that a PI is unable to continue in this project, the sponsoring agency will make every effort to substitute a replacement acceptable to the other Party.
2. **Title to Equipment.** There will be no joint property purchased as a result of the work outlined in the SOW. Each Party will provide its own equipment necessary to support its participation in the technical evaluation.
3. **Term.** The technical assistance contemplated by this Agreement will commence on the effective date of this Agreement. The effective date of this Agreement shall be the later date of
4. March 1, 2019 or (2) the date of the last signature by the Parties. The expiration date of this

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Agreement shall be March 1, 2020. The Agreement may be extended by mutual written Agreement of the Parties.

# Funding/Cost Share.

1. The Collaborator will provide an estimated $75,000 in funds-in to the project. The Collaborator is providing in-kind services valued at $0.00.
2. The USGS requires an advance of $0.00.
3. The USGS will submit invoices to the Collaborator's administrative contact, identified in Article 9. $20,000 will be due within 30 days of agreement execution and the remaining $55,000 will be billed quarterly through March 1, 2020. Invoices not paid within 60 days of receipt will bear interest at the annual rate established by the U.S. Treasury pursuant to 31 USC § 3717.
4. The USGS is providing in-kind services valued at $0.00 to the collaboration.
5. **Termination.** This Agreement may be terminated by either Party on 30 days written notice to the other. In the event of an early termination, the USGS shall be reimbursed for any completed work or work in progress on the Effective Date of Termination (i.e., when the Agreement terminates following the receipt of written notice from the other Party). Any unspent advanced funds will be returned to Collaborator. The USGS shall also supply a copy of the evaluations completed as of the Effective Date of Termination in the event of an early termination of the project. This provision shall survive the termination of the Agreement.

# Publications/Reports.

1. Each Party will be free to publish any non-proprietary results of the research.
2. Under the authority of 15 USC§ 3710a (c)(7)(B), as amended, the Parties will have the opportunity, as part of the technical assistance, to identify protected research and development information, which is defined as information generated by the research which would have been proprietary information had it been obtained from a non-Federal entity. Each Party may designate as protected research and development information, any information generated by its own employees, and with the Agreement of the other Party, mark any information produced by the other Party's employees. Such protected research and development information shall be exempt from disclosure under Subchapter II of Chapter 5 of Title 5. After the protected research and development information period has expired, the USGS may publish the results of the research as part of open literature journal and proceeding articles) or as USGS open file reports.
3. Generated information and results which have been created and marked as protected research and development information may be protected from release or disclosure for a period of **two**
4. years, unless an earlier date is agreed upon by the Parties

# Intellectual Property and Background Intellectual Property.

1. All rights in intellectual property, which are defined as new/improved patents, copyrights, new inventions, discoveries, biological materials, or software, created during the SOW, shall be the property or joint property of the organization employing the respective individual who made the invention or discovery. Any such inventions ("subject inventions”) shall be reported to the PI within 60 days of creation, who in tum will notify their own management and the other Party's PI. In the event that the intellectual property is a joint invention not described in paragraph (b) below, the Parties agree to meet and negotiate a commercialization plan within 60 days of the receipt of a written request from the other Party.
2. For purposes of this Agreement, background intellectual property refers to intellectual property, which was in existence prior to or first produced outside of this Agreement and was developed by a Party either alone or with others, using one or more separate funding sources not related to the Agreement. Background intellectual property is not considered a subject invention.

In this Agreement, the Collaborator is providing valuable patented/copyrighted material specified in the SOW to which the USGS may/could value. In the event that the joint efforts of the Parties builds upon the preexisting background intellectual property of the Collaborator, the Collaborator may take ownership of the patent/copyright but must agree to negotiate a Government Purpose license or revenue sharing arrangement with the USGS that reflects USGS's contributions to the joint project.

1. **Notices.** Any notice required to be given or which shall be given under this Agreement shall be in writing and delivered by first-class mail to the Parties as follows:

# USGS: Collaborator:

**Technical: Technical:**

Richard Niswonger

345 Middlefield Rd MS496 Menlo Park, CA 94025 [miswon@usgs.gov](mailto:miswon@usgs.gov)

650-329-4534

[www.usgs.gov](http://www.usgs.gov/)

# Administrative:

Helen Houston

USGS, Nevada Water Science Center

2730 North Deer Run Road

Carson City, NV 89701

[hhouston@usgs.gov](mailto:hhouston@usgs.gov)

775-887-7605

Thomas Christensen

P.O. Box 85 Monterey, CA 93942 [Thomas@mpwmd.net](mailto:Thomas@mpwmd.net) 831-238-2547 [www.mpwmd.net](http://www.mpwmd.net/)

# Administrative:

Thomas Christensen

P.O. Box 85 Monterey, CA 93942 [Thomas@mpwmd.net](mailto:Thomas@mpwmd.net) 831-238-2547

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# Financial Contact Information for Collaborator:

Thomas Christensen

P.O. Box 85 Monterey, CA 93942 831-238-2547

Taxpayer ID: 94-2535586

Customer Number: 6000000949

[www.mpwmd.net](http://www.mpwmd.net)

1. **Independent Entity.** For purposes of this Agreement and all research and services to be provided hereunder, each Party shall be, and shall be deemed to be, an independent Party and not an agent or employee of the other Party. Each Party shall have exclusive control over its employees in the performance of the work. While in field locations, a Party's employees shall adhere to the safety and technical requirements imposed by the Party controlling the work site.

Neither Party shall have authority to make any statements, representations, or commitments of any kind, or take any action, which shall be binding on the other Party, except as may be explicitly provided for herein or authorized in writing. Neither Party may use the name of the other in advertising or other forms of publicity without the written permission of the other.

# Governing Law.

1. The validity and interpretation of this Agreement are subject to interpretation under Federal law. Each Party agrees to be responsible for the activities, including the negligence, of their employees. The USGS responsibility for the payment of claims for loss of property, personal injury, or death caused by the negligence or wrongful act or omission of a USGS employee, while acting within the scope of their employment, is limited to provisions of the Federal Tort Claims Act, 28 USC§§ 2671-80.
2. The USGS and the Collaborator make no express or implied warranty as to the conditions of the research, merchantability or fitness for a purpose of the research, data, or resulting product incorporating data developed and exchanged under the SOW. These provisions shall survive the termination of the Agreement.
3. **Force Majeure.** Neither Party shall be liable for any unforeseeable event beyond its control, not caused by the fault or negligence of such Party, which causes such Party to be unable to perform its obligations under this Agreement, and which it is unable to overcome by the exercise of due diligence including, but not limited to, flood, drought, earthquake, storm, fire, pestilence, lightning, and other natural catastrophes; epidemic, war, riot, civil disturbance, or disobedience; strikes, labor disputes, or failure, threat of failure, or sabotage; or any order or injunction made by a court or public agency. In the event of the occurrence of such a force majeure event, the Party unable to perform shall promptly notify the other Party. It shall further use its best efforts to resume performance as quickly as possible and shall suspend performance only for such period of time as is necessary as a result of the force majeure event.

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1. **Entire Agreement.** This Agreement contains all the terms of the Parties and supersedes all prior Agreements and understandings related thereto. This Agreement can be changed or amended only by a written instrument signed by the Parties. Due to the specialized nature of the work, this contract is non-assignable by both Parties.
2. **Disputes.** The signatories to this Agreement shall expend their best efforts to amicably resolve any dispute that may arise under this Agreement. Any dispute that the signatories are unable to resolve shall be submitted to the Director of the USGS or his/her designee and the General Manager of the Collaborator or his/her designee for resolution.
3. **Miscellaneous Provisions.** Pursuant to the Anti-Deficiency Act, 31 U.S.C. §1341 (a)(I), nothing herein contained shall be construed as binding the USGS to expend in any one fiscal year any sum in excess of its appropriations or funding in excess or what it has received for the collaborative work outlined in the SOW.
4. **Survivability.** The following provisions shall survive the termination of this Agreement: I, 3, 5-8, I 0-16.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed on the last date listed below.

U.S. GEOLOGICAL SURVEY COLLABORATOR

By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Exhibit A STATEMENT OF WORK

**Proposal for USGS to Develop Water Management Scenarios and Evaluation for the Carmel River Watershed using GSFLOW**

**PROBLEM**

The Carmel River originates in the Santa Lucia Mountains in Central California and drains a 660 km2 area before flowing into the Pacific Ocean at Carmel Bay. Competing water needs in the basin has led the Monterey Peninsula Water Management District (MPWMD) to develop an integrated ground water-surface water GSFLOW model of the basin (Markstrom and others, 2008). The previously developed GSFLOW model will be used to simulate instream flow needs for steelhead in the Carmel River and to model different water supply scenarios and their impacts on the Carmel River. A calibrated GSFLOW model has been developed; however, the MPWMD is interested in contracting to the U.S. Geological Survey to provide guidance on implementation of water management scenarios into the GSFLOW model.

# SCOPE

This proposal describes a cooperative program that will develop water management scenarios of the Carmel River basin using different configurations of the Los Padres Reservoir and associated stream network that flows through the reservoir. Additionally, different groundwater pumping scenarios will be implemented in the model using data provided by MPWMD. The MPWMD will work in cooperation with the U.S. Geological Survey (USGS).

# OBJECTIVES

This study will construct at least 5 different model (GSFLOW) configurations for the Carmel River basin that emulate different water management options for improving Carmel River flows for fish. The objective of this study is to predict how the Carmel River streamflow is impacted by the management scenarios. This proposal encompasses the following tasks outlined below.

Water management scenarios using the GSFLOW model will be constructed to simulate the following water management scenarios:

1. Model configured to simulate removal of Los Padres Dam, with water rights of 3,376 acre-feet per year (afy) and reflects meeting the SWRCB Cease and Desist Order. Water rights include pre-1914 (1,137 afy), riparian (60 afy), and petitioning the SWRCB to transfer the licensed right (2,179 afy) at LP Dam with diversion at San Clemente Dam to the downstream well field. In addition, a short summary of changes made to the model will be provided.
2. Model configured to simulate removal of Los Padres Dam, water rights of 1,197 afy, which reflects the loss of Cal-Am’s Los Padres Reservoir water right of 2,179 acre-feet associated with LP Dam. In addition, a short summary of changes made to the model will be provided.
3. Model configured to simulate installation of a rubber dam and dredging (or other method to increase storage capacity) at Los Padres Reservoir, with a water right of 4,492 afy, which reflects additional storage capacity at Los Padres Reservoir (3,295 acre –feet) and Pre-1914 and Riparian Rights (1,197 acre-feet). In addition, a short summary of changes made to the model will be provided.
4. Model configured to simulate a dredged Los Padres Reservoir (excluding the rubber dam), with a water right of 3,906 afy, which reflects dredging Los Padres Reservoir to original capacity (2,709 acre-feet) and pre-1914 and riparian rights (1,197 acre-feet). In addition, a short summary of changes made to the model will be provided.
5. Model configured to simulate the current state of Los Padres Reservoir (usable storage of 1,590 af) with a water right of 3,376 afy, which reflects meeting the Cease and Desist Order, but taking no action to manage storage at LP Reservoir. In addition, a short summary of changes made to the model will be provided. This alternative may be fine-tuned to model continued loss of storage at the historical rate.
6. Finalize MPWMD technical memorandum documenting the construction and calibration of the Carmel River Basin Hydrologic Model (CRBHM).

The Lake Package is used to represent Los Padres Reservoir, and the Streamflow Routing (SFR) Package is used to represent flows in the Carmel River and tributaries, including channel inflows and outflows from the reservoir. To accommodate changes in the physical characteristics of the reservoir, including dredging, changes will be made to the Lake Package bathymetry files and to the height of the reservoir spillway representing in the Streamflow Routing (SFR) Package.

Los Padres reservoir will be removed from the GSFLOW model by connecting inflowing and outflowing SFR Package segments at the midpoint of the reservoir profile to represent the channel configuration prior to the installation of the reservoir. MPWMD will provide updates to reservoir release schedules for each of the different reservoir configurations (e.g., dredged and historical conditions).

Changes in groundwater pumping to meet the Cease and Desist Order will be implemented in the GSFLOW model by generating new WELL Package time series input files that reflect reductions in pumping in appropriate wells. MPWMD will provide WELL Package time series files that reflect reductions in groundwater pumping for the Cease and Desist Order.

The MPWMD technical memorandum is under development and requires sections be finalized and supplemented to include additional details. USGS will finalize model descriptions and calibration sections, including updating and modification of illustrations and figures where necessary.

USGS will provide technical support for all aspects of model applications for simulating the management scenarios, including model data management and archival, and review of technical documentation.

# BUDGET

|  |  |
| --- | --- |
| **Task** | **Fiscal Year 2019** |
| Water management Scenarios | $50,000 |
| Finalize Technical Memo, Model Technical Support, Stakeholder Updates | $ 25,000 |
| **Total** | $75,000 |