

SCOPE OF WORK

Siskiyou County Flood Control and Water Conservation District

FISCAL YEAR 2022 to 2025

BACKGROUND

The Box Canyon Dam (NATDAM No. CA00889; DSOD No. 1056.000) is the primary facility and consists of the following: a concrete gravity dam with an ungated overflow section and non-overflow sections; two earth embankment dams at either end of the concrete dam; outlet works; and, a powerhouse containing two horizontal-shaft Francis turbines each rated at 2,500 kW..

Siskiyou County Flood Control and Water Conservation District (SCFCWC) and Mead & Hunt agree that the following tasks will be performed by the latter during the contract period. Performance of any individual task will only commence after SCFCWC provides written authorization to Mead & Hunt for that particular task.

SCOPE OF WORK

Mead & Hunt will perform the following services upon receiving individual task-specific authorization from SCFCWC:

Task 1: Update Owner's Dam Safety Plan

Background

In 2012, the Federal Energy Regulatory Commission (FERC) issued a letter directing licensees and exemptees to develop and submit formal documentation of an Owners Dam Safety Programs (ODSP). The intent of the is to assure that dam owners make dam safety a top priority.

Mead & Hunt has assisted SCFCWC in updating their ODSP, which addressed recent FERC comments. We do not anticipate a need to update the ODSP annually. The next Part 12D inspection would occur in 2025. However, the ODSP should be reviewed periodically.

Work to be Performed

Mead & Hunt will review the ODSP in early 2023 and again in early 2025 to ensure no changes are needed based upon current operations. Our budgeted time assumes no major rewrite will be necessary.

Deliverables

- Draft and final ODSP in PDF format

Schedule

Agreement for Engineering Consultant Services between Siskiyou County Flood Control and Water Conservation District and Mead & Hunt, Inc.

This task will be performed on a schedule that is decided by consensus between SCFCWC and Mead & Hunt.

Task 2: Emergency Action Plan Related Tasks

Background

The July 2015 revision to Chapter 6 of the FERC's *Engineering Guidelines* requires the dam owners to perform specific tasks related to their Emergency Action Plan (EAP) on an annual basis.

Work to be Performed

Task 2.1 – EAP Annual Seminar

The dam owner is required to conduct an annual seminar per Section 6-4.2.1 of Chapter 6. Mead & Hunt will:

- 2.1.1 Provide guidance to SCFCWC, as needed, on how to conduct an annual seminar and annual reporting requirements.

Task 2.2 – EAP Annual Drill

The dam owner is required to conduct an annual drill per Section 6-4.2.2 of Chapter 6. Mead & Hunt will:

- 2.2.1 Provide guidance to SCFCWC, as needed, on how to conduct an annual drill and annual reporting requirements.

Task 2.3 – EAP Annual Revision/Updates

The dam owner is required to update their EAP annually per Section 6-2.2.5 of Chapter 6. Mead & Hunt will:

- 2.3.1 Update the EAP annually based on information provided by SCFCWC. *NOTE: Update information is typically discovered during the annual seminar and annual drill. Mead & Hunt will provide SCFCWC with an electronic version of the updated EAP pages.*
- 2.3.2 If a significant change to the EAP occurs at any time throughout the year, such as a change in how emergency responders are contacted or a change on the notification flowchart(s), the update must be made to the EAP (by Mead & Hunt) and delivered (by SCFCWC) to all plan holders within 30 days. Mead & Hunt will provide SCFCWC with an electronic version of the updated EAP pages.

Task 2.4 – EAP Annual Status Report

The dam owner is required to submit an annual status report per Section 6-2.2.6 and Appendix 6-C of Chapter 6.

Mead & Hunt will:

- 2.4.1 Provide guidance to SCFCWC, as needed, on developing the annual report, per the requirements.
- 2.4.2 Review the annual report prior to due date of December 31 each year.

Task 2.5 – FERC EAP Annual Filing

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Mead & Hunt will:

2.5.1 Provide guidance to SCFCWC, as necessary, with e-filing annual report; or e-file on behalf of SCFCWC. Responsibilities of SCFCWC

Task 2.1 – EAP Annual Seminar

- SCFCWC will conduct the annual seminar.
- SCFCWC will prepare a summary of the seminar to include in the annual report.
- SCFCWC will provide Mead & Hunt with any necessary EAP

updates/revisions. Task 2.2 – EAP Annual Drill

- SCFCWC will conduct the annual drill.
- SCFCWC will prepare a summary of the drill to include in the annual report.
- SCFCWC will provide Mead & Hunt with any necessary EAP

updates/revisions. Task 2.3 – EAP Annual Updates

- SCFCWC will provide Mead & Hunt with any necessary EAP updates, per Tasks 2.1 and 2.2 above. SCFCWC will print and deliver to plan holders as soon as is practical, but no later than December 31 of the same calendar year.
- SCFCWC will promptly provide Mead & Hunt with any significant changes to the EAP. Once updates are made by Mead & Hunt, SCFCWC will print and deliver to plan holders within 30 days of the identified change.

Task 2.4 – EAP Annual Status Report

- SCFCWC will prepare the annual status report for submittal to the FERC no later than December 31 of each calendar year.

Task 2.5 – FERC EAP Annual Filing

- SCFCWC will e-file the annual status report no later than December 31 of each calendar year.
- If SCFCWC requests Mead & Hunt to e-file on their behalf, SCFCWC will prepare a cover letter on SCFCWC letterhead for submittal with the annual status report.

Deliverables

- Task 2.1 – no deliverables expected.
- Task 2.2 – no deliverables expected.
- Task 2.3 – provide SCFCWC will an electronic version of the updated EAP pages.
- Task 2.4 – provide SCFCWC will an electronic version of any edits to their annual status report.
- Task 2.5 – no deliverables expected.

Schedule

This task will be performed on a schedule that is decided by consensus between SCFCWC and Mead & Hunt.

Task 3: Prepare DSSMR for calendar years 2021, 2022, 2023 and 2024 and update DSSMP

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Understanding

Our scope of services for this task is based on our knowledge of Box Canyon Dam, the previous year's DSSMR prepared by Mead & Hunt, and our understanding of the Federal Energy Regulatory Commission's (FERC's) requirements for preparing a DSSMR. The DSSMR will address surveillance and monitoring conducted from January through December (2021, 2022, 2023 and 2024) and be prepared in accordance with Appendix K of Chapter 14 of the FERC's Engineering Guidelines.

We will update the DSSMP based on the annual FERC review and approval of the DSSMR.

Prepare DSSMR:

Field Observations

We will develop summaries of dam safety surveillance and monitoring items noted during inspections performed by the Chief Dam Safety Engineer (CDSE), plant personnel, consultants, and FERC engineers. We will provide dam safety recommendations based upon observations performed by others and maintenance requirements.

Instrumentation Evaluation

We will update graphs and evaluate the instrumentation data to assess whether the data supports satisfactory performance of a structure. We will provide an opinion regarding the reliability of data from each instrument and state whether those data are consistent with historic readings and discuss inconsistencies, if present. Our opinion of structure performance will be based on surveillance observations, instrumentation data, and engineering judgment.

Specialty Inspections

We will review any specialty inspections performed at the Project such as underwater surveys, dive inspection, and other non-routine inspections for the calendar year in which the DSSMR is prepared.

Instrumentation Related to Potential Failure Modes (PFMs)

We will provide a table summarizing an evaluation of the surveillance and monitoring data with respect to the PFMs for the Project. Any new or updated data from specialty inspections will be included in the table.

Annual Statement for Continued Operation

We will provide a statement for SCFCWC to acknowledge the suitability of Box Canyon Dam for continued safe operation.

Certification(s)

We will include a signature page with the name of the individual(s) involved in the preparation and review of the report. The reviewer's resume will also be included in an appendix.

Appendices

We will prepare required appendices to the *DSSMR*:

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- Supporting drawings showing project features and instrument locations.
- Instrumentation details and plots.
- Report reviewer’s resume.

Update DSSMP:

The Projects DSSMP will be updated as needed yearly based upon the recommendations in the DSSMR. The DSSMP will be updated after receiving the FERC’s approval of the recommended changes.

The report will be updated each year for 4 years.

Responsibilities of SCFCWC

- SCFCWC will provide current and historical data for dam instrumentation (survey monuments, drains, piezometers, weirs) in excel format to Mead & Hunt.
- Clear and legible inspection reports
- Submittal of the final *DSSMR* to the FERC

Deliverables

- Revised version of the DSSMP (if revisions are identified) in PDF format
- Draft and final versions of the DSSMR in PDF format

Schedule

Deliverables will be provided on the following schedule:

- Pertinent information supplied by SCFCWC End of January each year
 - Draft *DSSMR*..... End of February each year
 - *Final *DSSMR* End of March each year
 - Update *DSSMP*..... As needed
- *Assumes we receive SCFCWC comments by mid-March*

Task 4: Facilitate Tabletop and Functional Exercises in 2023

Background

The FERC will direct SCFCWC to perform a Tabletop and/or Functional exercise of its Emergency Action Plan (EAP) in 2023. SCFCWC and Mead & Hunt agreed previously (for 2018 Functional Exercise) that a comprehensive test of the EAP is most effective when a Tabletop Exercise recently precedes a Function Exercise. Thus, this task order covers a Tabletop Exercise and a Functional Exercise. The goal of the exercises is to improve coordination among SCFCWC’s hydro personnel and emergency responders, and to identify opportunities to improve the existing EAP.

Tabletop Exercise: The Tabletop Exercise is a preliminary exercise that serves as a primer for the Function Exercise. It involves gathering representatives of emergency response agencies, the dam owner, hydro personnel, and a facilitator in a roundtable meeting format. Following an orientation presentation, the facilitator presents a pre-scripted dam failure scenario for purposes of discussion. The Tabletop Exercise

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familiarizes participants with the contents and workings of the EAP, offers a forum for questions, and identifies a need for improvements in the EAP before the Functional Exercise is conducted. Although the Tabletop Exercise is designed as a “low-stress” event, the FERC has specific directives as to how the exercise is to be conducted and documented.

Functional Exercise: The Functional Exercise involves gathering Tabletop Exercise participants once again to have them act out their responsibilities and actions in a simulated emergency in a more stressful environment with time constraints. The purpose of the exercise is to test the effectiveness of the EAP notification sequence in getting the word out in a timely and effective manner. A FERC representative typically attends as an observer.

Work to be Performed

Task 4.1 – Tabletop Exercise Preparation

Mead & Hunt will:

- 4.1.1 Prepare documentation assessing Tabletop Exercise needs, defining scope, stating purpose and identifying objectives, in accordance with applicable FERC directives.
- 4.1.2 Develop a failure scenario for the Box Canyon Dam, with accompanying narrative.
- 4.1.3 Prepare problem statements to prompt responder discussion, in accordance with FERC directives.

Task 4.2 – Functional Exercise Preparation

Mead & Hunt will:

- 4.2.1 Develop Functional Exercise communications protocol.
- 4.2.2 Prepare documentation assessing the need for the exercise, defining its scope, stating its purpose and identifying objectives.
- 4.2.3 Develop a failure scenario and accompanying narrative in accordance with FERC directives.
- 4.2.4 Prepare a Master Scenario Events List (MSEL) requiring a response by the licensee or emergency preparedness agencies throughout the Functional Exercise.
- 4.2.5 Prepare messages for transmission to licensee and emergency responder representatives to prompt emergency response actions throughout the Functional Exercise.

Task 4.3 – Tabletop and Functional Exercises

Mead & Hunt will perform the following for both the Tabletop and Functional Exercises:

- 4.3.1 Invitations and Follow-Up:
 - Prepare and deliver invitations for key federal, state, county and local emergency response personnel with jurisdiction within areas of potential inundation. Mead & Hunt understands that SCFCWC will provide contact information, including a valid email address, of EAP book holders and other exercise participants to assist us in this regard.
 - Coordinate exercise participation with emergency responders, FERC and other agency participants; follow-up with key agencies to encourage attendance.

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4.3.2 Exercise Set-Up:

- Assist SCFCWC to greet and register participants; provide name tags, table tents, registration list.
- Assist SCFCWC to set-up meeting room(s) for Tabletop and Functional Exercises.
- Coordinate meeting room break-out areas and setup for participants in consultation with SCFCWC (Functional Exercise).

4.3.3 Meeting Materials and Binders:

- Prepare exercise participant materials to include agenda, facility map, PowerPoint presentation, Tabletop and Functional Exercise situation manual, Functional Exercise guidelines, activity logs and exercise-related flowchart(s), descriptions/acronyms/terms, response actions, responsibilities and inundation maps. SCFCWC will be responsible for printing of binders.

4.3.4 PowerPoint and Briefing Materials:

Mead & Hunt will prepare an orientation presentation providing the following:

- Overview of the various elements of the Box Canyon Dam.
- Major updates to the EAP, if any.
- Summary of emergency levels and potential consequences of dam failure.
- Review of EAP notification flowcharts and inundation maps and how to use them.
 - During this time, Mead & Hunt will ask for and collect changes or updates that are needed for the notification flowchart contact names or numbers. If changes are needed, we can assist SCFCWC with edits, updates, distribution of new EAP pages, and verification of receipt by each plan holder. As the scope of this work is unknown, a separate contract would be needed for these services.

4.3.5 Facilitate Exercise:

Mead & Hunt will serve as the exercise facilitator and do the following:

- Tabletop Exercise
 - Facilitate discussion of participant roles and responsibilities.
 - Introduce hypothetical failure scenario of Box Canyon Dam.
 - Facilitate interaction based on pre-scripted problem statements or injects.
 - In consultation with SCFCWC and emergency responders, identify opportunities, if any, to enhance emergency response procedures or EAP.
- Functional Exercise
 - Deliver brief orientation/overview of the exercise events.
 - Instruct participants on expectations and rules of play.
 - Introduce hypothetical scenario for failure of Box Canyon Dam.
 - Provide pre-scripted messages and injects based on the MSEL.
 - Manage exercise flow and pacing.
 - Post-Exercise Critique:
 - Prepare participant forms for written post-exercise critique.
 - Lead post-exercise oral critique session in accordance with FERC directives.

Task 4.4 – Follow-Up Activities

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Following completion of the Tabletop and Functional Exercises, Mead & Hunt will draft a combined exercise report in accordance with Appendix 6-C of Chapter 6 of FERC's Engineering Guidelines for review by SCFCWC. Mead & Hunt will send a draft document to SCFCWC for review within 35 days following the exercise. SCFCWC will supply any report edits or modifications to Mead & Hunt within 7 days of receipt to allow Mead & Hunt time to incorporate edits and finalize the report. An electronic copy (Adobe PDF) of the report will be provided to SCFCWC for submission to FERC to meet the 60-day requirement.

Responsibilities of SCFCWC

- SCFCWC will provide the current emergency action plan, notification flowcharts, inundation maps and other drawings and information relevant to the Box Canyon Dam.
- SCFCWC will, at least 90 days before the scheduled Tabletop and Functional Exercises, submit a plan and schedule to the FERC Regional Engineer stating when and where the exercises will take place.
- SCFCWC will provide contact information, including a valid email address, of EAP book holders, emergency preparedness agencies and other entities that would be involved in response efforts for dam failure, to assist Mead & Hunt with invitation distribution.
- SCFCWC will coordinate exercise participation with SCFCWC employees.
- SCFCWC will greet and register participants; provide name tags, table tents, registration list.
- SCFCWC will assist to set-up meeting room(s) for Tabletop and Functional Exercises.
- SCFCWC will designate a SCFCWC representative who is responsible for ensuring the EAP is consistent with FERC requirements and SCFCWC policy and procedures; and who has complete authority to transmit instructions and information, receive information, interpret policy, define decisions and coordinate arrangements.
- SCFCWC will provide additional data, drawings and information, as required, related to the EAP.
- SCFCWC will coordinate and provide the following for the Tabletop and Functional Exercises:
 - Exercise meeting facilities
 - Audio/visual equipment for PowerPoint presentation
 - Refreshments and lunch for exercise participants
 - Communications equipment for exercise participant use (Functional Exercise only)

Deliverables

- Combined Tabletop and Functional Exercise Report (Adobe PDF) for submittal to the FERC by SCFCWC.

Schedule

This task will be performed in 2023 on a schedule that is decided by consensus between SCFCWC, FERC, and Mead & Hunt.

Task 5: Miscellaneous Dam Safety Coordinator Items

As additional dam safety coordination items arise that are not listed above, SCFCWC may call upon Mead & Hunt for assistance under this time and material task. Work to be performed will be dependent upon tasks that SCFCWC assigns and requires assistance with. This task may not be needed or utilized.

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Responsibilities of SCFCWC

- SCFCWC will notify Mead & Hunt when additional dam safety coordinator items should arise.

Deliverables

- Deliverables will be dependent upon what is requested of SCFCWC.

Schedule

- Schedule of deliverables will be dependent upon what is requested of SCFCWC.

COMPENSATION

The work described under the Scope of Services will be performed on a time-and-expense basis in accordance with the *Mead & Hunt Standard Billing Rate Schedule*, which is attached and made part of this proposal. The estimate of probable engineering cost of services is \$160,041.

GOVERNING TERMS AND CONDITIONS

The work stated in this document will be performed in accordance with the terms and conditions codified in the Contract for Services, that is prepended to this scope of work.

APPROVALS



June 16, 2021

Nathan Rockwood, PE SE

Date

Mead & Hunt, Inc.

Jason Ledbetter

Date

Siskiyou County Flood Control and Water Conservation District

MEAD & HUNT, Inc.
Standard Billing Rate Schedule
Effective January 1, 2021
EXHIBIT "B"

Standard Billing Rates

Clerical	\$81.00 / hour
Technical Editor	\$116.00 / hour
Senior Editor	\$189.00 / hour
Registered Land Surveyor	\$148.00 / hour
Accounting, Administrative Assistant	\$104.00 / hour
Technician I, Technical Writer	\$104.00 / hour
Technician II, Surveyor - Instrument Person	\$120.00 / hour
Technician III	\$138.00 / hour
Technician IV	\$154.00 / hour
Senior Technician	\$164.00 / hour
Engineer I, Scientist I, Architect I, Interior Designer I, Planner I.....	\$133.00 / hour
Engineer II, Scientist II, Architect II, Interior Designer II, Planner II.....	\$151.00 / hour
Engineer III, Scientist III, Architect III, Interior Designer III, Planner III	\$170.00 / hour
Senior Engineer, Senior Scientist, Senior Architect, Senior Interior Designer, Senior Planner, Senior Economist.....	\$189.00 / hour
Project Engineer, Project Scientist, Project Architect, Project Interior Designer, Project Planner	\$209.00 / hour
Senior Project Engineer, Senior Project Scientist, Senior Project Architect, Senior Project Interior Designer, Senior Project Planner	\$241.00 / hour
Senior Associate.....	\$269.00 / hour
Principal	\$293.00 / hour
Senior Client/Project Manager	\$293.00 / hour

Expenses

Geographic Information or GPS Systems	\$100.00 / day
Total Station Survey Equipment	\$110.00 / day
Charges for other equipment may appear in a proposal	
Out-Of-Pocket Direct Job Expenses.....	cost plus 15%
Such as reproductions, sub-consultants / contractors, etc.	

Travel Expense

Company or Personal Car Mileage	IRS rate / mile
Air and Surface Transportation.....	cost plus 15%
Lodging and Sustenance	cost plus 15%

Billing & Payment

Travel time is charged for work required to be performed out-of-office. A minimum of two hours will be billed for any work out-of-office.

Invoicing is on a monthly basis for work performed. Payment for services is due within 30 days from the date of the invoice. An interest charge of 1.5% per month is made on the unpaid balance starting 30 days after the date of invoice.

This schedule of billing rates is effective January 1, 2021, and will remain in effect unless changes to rates are agreed upon in writing by both parties,.