

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Engineering Division
Honolulu, Hawaii 96813

May 13, 2022

Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

**REQUEST AUTHORIZATION FOR TIME EXTENSION FOR
WAHIAWA DAM (OA-0017) REMEDIATION SCHEDULE
WAHIAWA, OAHU,
Tax Map Keys 7-1-012:014, 7-3-013:003, 7-3-012:002, 7-3-007:001**

SUMMARY

The Department of Land and Natural Resources (“Department”) requests the Board of Land and Natural Resources (“Board”) authorize the Chairperson to extend the Dole Food Company Hawaii (“Dole”) remediation schedule for Wahiawa Dam (OA-0017) set by the Board in its meeting on April 9, 2021 and establish penalties in the event Dole misses any of the deadlines. The revised schedule is based on guidance provided by Dole’s engineering consultant for additional investigations required to verify the condition of the existing spillway portions proposed to be reused in Dole’s current conceptual remediation design plan.

BACKGROUND

Wahiawa Dam was constructed in 1906 as a source of irrigation water for the Waiialua Sugar Company. The dam is owned by Sustainable Hawaii, Inc. and Dole Food Company Hawaii (“Owners”). Wahiawa Dam is classified as a high hazard potential dam, as a failure of the dam will result in probable loss of human life. The reservoir is utilized by the community as a freshwater recreation area and also receives effluent discharge from a City owned wastewater treatment facility. The dam discharges water through a concrete lined tunnel, which continues to Kaukonahua Stream and supplies irrigation water to agricultural properties on the north shore.

The Wahiawa Dam is currently classified as having a Poor Overall Condition due to various deficiencies, including an undersized spillway. The dam is anticipated to overtop during storm events approaching the Probable Maximum Flood (PMF). The aging concrete spillway structure integrity is uncertain and may potentially be compromised during a significant flood event. The Department has issued four Notice of Deficiency letters to the Owner dating back to 2009 for failing to bring the dam into compliance with State dam safety regulations, including restricting the reservoir water level in 2016 to 15 feet below the spillway, or 65 feet as measured on the reservoir staff gage. The Department set deadlines for Dole to submit a dam safety permit application and construction start dates to address the current deficiencies at the dam facility in a February 18, 2020 Notice of Deficiency letter (NOD). In December 2020, Dole requested a one-

year extension to the permit application and construction start deadlines set forth in the NOD, which was presented to the Board for decision at their April 9, 2021 regular meeting.

At the April 9, 2021 Board meeting, the Board fined Dole \$20,000 for failing to submit a Dam Safety permit application to remediate the dam and address the safety deficiencies with the spillway by the stipulated deadlines. The Board's decision also included revised deadlines to submit confirmation on PMF flow data, a conceptual design to remediate the dam and spillway, and to submit a Dam Safety permit application by July 19, 2022, which is six months following Department comments on the conceptual design.

DISCUSSION

Dole has submitted the required PMF flow data and a conceptual design for dam and spillway remediation before the Board ordered deadlines. However, Dole is requesting an extension on the deadline to submit a Dam Safety permit application from July 19, 2022 to November 1, 2023. An updated schedule identifying milestones, deliverables and deadlines are identified in the table below.

Since the April 9, 2021 Board action, Dole has been working in good faith with the Department and has made progress on the process to bring their dam into compliance. They retained a new engineering consultant with extensive dam safety experience to develop a plan which includes conducting necessary studies and designing a solution to remediate the dam. The consultant has also developed and submitted a conceptual design to expand the capacity of the spillway and a schedule to implement the plan. The plan includes conducting additional geotechnical, hydraulic, structural, and hydraulic studies from which a preliminary design will be based on and included in a dam safety permit application. The permit application is expected to be submitted to the Department for review by November 1, 2023, and the Department will then initiate its technical, historic, cultural, and archaeological review. Dole will concurrently continue work to develop technical specifications and finalize its design and submit a complete permit application package to DLNR by December 1, 2024.

While this proposed schedule does add substantial time to the original deadlines established by this Board, the Department is recommending approval of the extension. Staff believes this extension is warranted, as it provides for more in-depth investigations which are necessary to verify the integrity of the proposed spillway alignment, especially at the lower section which is planned to be retained and incorporated into the new spillway remediation design.

RECOMMENDATION

1. The Department recommends the Board authorize the Chairperson to extend Dole's remediation schedule for Wahiawa Dam (OA-0017) and to issue automatic penalties in the event Dole misses any of the deadlines as follows:

Milestone	Deliverable to Department	Due date	Penalty for missed milestone
1	Investigation plan for geotechnical exploration	7/1/22	\$5,000
2	Geotechnical Data Report (draft)	1/3/23	\$5,000
3	Geotechnical analysis Technical Memorandum (draft)	5/1/23	\$5,000
4	Spillway Assessment Technical Memorandum (draft)	5/1/23	\$5,000
5	<p>Dam Safety Permit Application, which will include:</p> <ul style="list-style-type: none"> • Preliminary design drawings • H&H design and analyses • Geotechnical design and analyses, including stability, seismic, seepage, filter compatibility assessments, etc. • Structural design and analyses (spillway) • Preliminary cost estimate (engineering costs and construction costs) • Permit application fee (2% of total estimated cost). 	11/1/23	\$20,000
6	Key specifications (draft)	4/1/24	\$5,000
7	Final set of drawings and specifications (complete permit application)	12/1/24	\$10,000
8	Executed contract with construction contractor	6 months after Dam Safety permit approval, or 6 months after milestone 7, whichever date is later.	\$20,000
9	Start construction	9 months after Dam Safety permit approval or 9 months after milestone 7, whichever date is later.	\$10,000

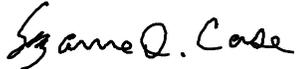
2. Dole will pay all fines issued by the Chairperson within 60 calendar days of the fine being issued. In the event the Dole fails to pay fines within the time allotted, the Dole shall be fined an additional \$5,000 per day until the ordered fine amount is paid.

Respectfully submitted,



CARTY S. CHANG
Chief Engineer

APPROVED FOR SUBMITTAL:



SUZANNE D. CASE, Chairperson