



**BOARD OF DIRECTORS
EAST BAY MUNICIPAL UTILITY DISTRICT**

375 – 11th Street, Oakland, CA 94607

Office of the Secretary: (510) 287-0440

AGENDA

**Planning Committee
Tuesday, August 13, 2019
9:15 a.m.
Training Resource Center**

(Committee Members: Directors Linney {Chair}, McIntosh and Mellon)

ROLL CALL:

PUBLIC COMMENT: The Board of Directors is limited by State law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.

DETERMINATION AND DISCUSSION:

1. Information Technology Security Annual Update (Levine)
2. Dam Safety Program Annual Report (Irias)
3. Main Wastewater Treatment Plant Odor Control Program Update (White)
4. Duffel Photovoltaic Renewable Energy Project Update (Briggs)

ADJOURNMENT:

Disability Notice

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EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: August 8, 2019

MEMO TO: Board of Directors

THROUGH: Alexander R. Coate, General Manager *ARC*

FROM: Andrew J. Levine, Manager of Information Systems *AL*

SUBJECT: Information Technology Security Annual Update

INTRODUCTION

This memo provides an update on the status of information technology (IT) security at the District and the IT security-related efforts planned for Fiscal Year 2020 (FY20). This information will be presented at the August 13, 2019 Planning Committee meeting.

DISCUSSION

The primary responsibility of the District's IT Security Division is ensuring the confidentiality, integrity, and availability of information technology systems and data. This includes safeguarding District systems against ever-evolving cyber threats and ensuring that critical District business systems are available following a disaster.

Cyber Crime Trends

Email remains the primary attack vector for fraud and malware attacks. Fraud attempts through the use of impersonation and business email compromise are on the rise. The District has experienced numerous attempts over the past year. Ransomware attacks are continuing nationwide, with numerous reports of companies, cities, and agencies being down for weeks or paying large ransoms to regain control of their information systems and data.

Cyber Security Readiness Key Performance Indicators (KPIs)

The District's 2018 Strategic Plan introduced several cyber security-related KPIs to measure cyber security operational readiness, including metrics regarding software patching, database security reviews, business recovery exercises, security controls reviews, security awareness, and IT security assessments. In FY19, the District met or exceeded all cyber security operational readiness KPIs.

Data Security/Personally Identifiable Information

Staff continues to improve the security of District data in a variety of ways, including the development of an IT services contract template that emphasizes data and system security best

practices for vendors. Staff also creates data management plans when District data is exchanged with vendors to ensure personally identifiable information is handled securely.

IT Security Program Review

A third party IT security program review was completed in November 2018. The review validated the District's overall approach to IT security and analyzed existing priorities, security architecture, tools, controls, and processes. A separate vulnerability assessment of the District's IT systems is planned for later in 2019.

Security Awareness

Because email is the primary way criminals gain access to targeted networks, raising employees' security awareness remains an important tool for blocking malicious activity. In FY19, staff implemented security awareness training for new employees. The District also distributed new email phishing awareness tests to all employees. Employees who fail the phishing tests are assigned additional security awareness training.

Center for Internet Security's Critical Security Controls

Staff has begun implementation of the Center for Internet Security's Critical Security Controls. The Center for Internet Security is a non-profit entity that developed a set of cyber security best practices for safeguarding information systems and data.

NEXT STEPS

On September 10, 2019 the Board will be asked to consider a consultant agreement to conduct an IT vulnerability assessment of the District's IT environment.

Other significant IT security-related projects scheduled for FY20 include:

- In October 2019, the Board will be asked to consider a contract to purchase new endpoint malware protection products. The selected products will significantly improve the ability to detect malicious activity on District systems and more quickly respond to security incidents.
- In February 2020, the Board will be asked to consider a contract to replace/refresh the District's business network firewall infrastructure. The current business network firewall infrastructure will be at end of life in 2020.
- Continue implementation of the Center for Internet Security's Critical Security Controls to further protect critical District information systems and data.

ARC:AJL:wlj

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: August 8, 2019

MEMO TO: Board of Directors

THROUGH: Alexander R. Coate, General Manager *ARC*

FROM: Xavier J. Irias, Director of Engineering and Construction *XJI*

SUBJECT: Dam Safety Program Annual Report

SUMMARY

This report is provided in accordance with Policy 9.07 – Dam Safety Program, whereby the District's Chief Dam Safety Engineer (CDSE) provides an annual update to the General Manager, who informs the Board of dam safety issues, actions from the previous calendar year related to dam safety, projected dam safety activities for the upcoming year(s), and an assessment of the adequacy of the budget to cover the cost of safety needs. This report documents the CDSE's conclusion that the District's dams are considered safe for continued operation. These items will be presented at the Planning Committee meeting on August 13, 2019.

DISCUSSION

The Dam Safety Program is overseen by the District's designated CDSE, Xavier J. Irias. It is a comprehensive program under which staff performs regular site inspections, monitors instrumentation, submits dam safety reports to regulatory agencies, conducts training, maintains emergency plans, and performs maintenance or capital improvements as needed. The program covers all of the District's upcountry, terminal and open-cut reservoir dams.

The California Department of Water Resources Division of Safety of Dams (DSOD) has jurisdiction over 20 District facilities based on dam height and reservoir volume. The Federal Energy Regulatory Commission (FERC) has joint jurisdiction over two of these dams, Pardee and Camanche, as they are power-generating facilities. Six dams are not regulated based on their relatively small size.

Recent and Upcoming Activities

Legislation and License Compliance

The 2017 Oroville Spillway failure triggered legislative and regulatory activity in the dam safety arena. Senate Bill 92 (SB 92), effective July 1, 2017, requires development of Emergency Action Plans (EAPs) and updated inundation maps for dams under DSOD jurisdiction. Staff updated the

existing dam emergency action plan to conform to the new criteria and submitted EAPs for all DSOD-regulated dams in December 2017. The Department of Water Resources (DWR) adopted permanent inundation map regulations in November 2018. Work on the inundation maps is discussed subsequently under *Dam Breach Inundation Mapping Project*.

Dam Safety Training Program

Staff is working to update the current dam safety training with a program that meets FERC requirements and is consistent for all District dams. As part of this effort, the District evaluated and purchased training modules in January 2019 through our membership in the Centre for Energy Advancement through Technological Innovation (CEATI). Staff is in the process of incorporating previously developed training and customizing the modules for District facilities, policies, and protocols. This approach has been used successfully by other dam owners to satisfy the FERC training requirement, including dams under DSOD jurisdiction. Staff expects to begin conducting the new training in July 2020.

Emergency Plans, Drills and Exercises

Pardee and Camanche, our largest dams and only such structures subject to both federal and state regulation, were the focus of emergency exercises over the past fiscal year.

- The District conducted its Functional Exercise (FX) and Orientation Seminar/ Tabletop Exercise (TTX) jointly with Jackson Valley Irrigation District on September 19, 2018 at Pardee Center. There were approximately 50 attendees from the host agencies and 13 from additional organizations, including local fire and police departments, state and county offices of emergency services, Caltrans, California Highway Patrol, DWR, FERC, Woodbridge Irrigation District, and Pacific Gas & Electric. The focus of the TTX and FX was physical and cyber security and testing of communication and coordination protocols.
- The District updated the EAP in August 2018 and again in February 2019 to include improvements and update notification contacts in response to comments received at the FX.
- Staff met individually with upcountry emergency management agencies in spring 2019 to discuss the sudden failure assessment for time-sensitive emergency action plan analyses and determination. The EAP was classified as “time sensitive” because of the lengthy response time for detection, notification and warning. As a result, the District is identifying potential measures to shorten response times, including different communication and warning tools, public outreach workshops hosted by the District and local police and fire departments, technical training for dispatchers by the District and data sharing.

Dam Inspection and Surveillance

Staff inspects each dam monthly; the inspection includes the dam itself as well as its appurtenances and instrumentation. In addition, annual inspections are conducted with representatives from DSOD for jurisdictional dams, and with FERC for the upcountry dams. A summary of this past year's inspections and valve exercises is included in Table 1 (see attachment). Follow-up items, e.g. pruning brush, have all been completed or scheduled.

The annual dam surveillance report for local reservoirs was submitted to DSOD in July 2019, and the report for Pardee and Camanche is scheduled for submittal in August 2019. The reports include a thorough evaluation of data and instrumentation issues to ensure both dams are safe for continued operation.

Due to FERC's limited staffing resources, the agency did not schedule a dam safety inspection of Camanche and Pardee dams during this review cycle. However, an inspection is scheduled for September 2019, and the results will be discussed in next year's Dam Safety Program Annual Report.

The annual Dam Safety Surveillance and Monitoring Reports for Camanche and Pardee Dams were submitted to FERC in May 2019. The reports included a thorough analysis, evaluation, and interpretation of data and instrumentation issues to ensure the dams were safe for continued operation. Based on the results of the inspections and with concurrence of the regulatory agencies, all District dams are deemed safe for continued operation.

Dam Safety Studies and Improvements

The following are key highlights from the District's current and upcoming dam safety capital projects and studies:

Dam and Tower Seismic Studies and Upgrades

Chabot Dam Seismic Upgrade - The project to stabilize the dam and retrofit the outlet was completed in October 2017. The District continues to perform annual post-performance water quality sampling both upstream and downstream of Chabot Reservoir through 2020 in compliance with the requirements of the \$5 million State DWR Prop 1E grant that partially funded the project.

Upper San Leandro (USL) Reservoir Tower Retrofit - The seismic retrofit of USL Reservoir Tower was completed in October 2018. The contractor installed tower braces to provide seismic stability and replaced the outlet tower valves and controls to improve reliability. Remaining work includes replacing trees removed as part of construction, and monitoring the replacements for a period of five years.

Briones Tower Modifications - A preferred design concept, which attaches steel reinforcements to the inside of the tower to prevent damage during an earthquake, was submitted to DSOD for review in May 2019. A California Environmental Quality Act (CEQA) notice of exemption was posted in January 2019, and the District received the Lake and Stream Bed Alteration Permit from the California Department of Fish and Wildlife in April 2019. Applications for permits from U.S. Army Corps of Engineers and the Regional Water Quality Control Board have been filed. Pending the approval of the permit applications, and DSOD's approval of the design, construction is scheduled to start in late FY20.

San Pablo Tower - An isolation valve was added near the tower to prevent uncontrolled releases of water through the San Pablo Tunnel in case of an earthquake. In addition, improvements were made to the tunnel access shaft and a new access ladder was installed at the tower.

Lafayette Tower Modifications - The District retained a consultant to thoroughly evaluate retrofit alternatives for the tower and perform detailed seismic analyses. Based on the analyses, shortening the tower would most effectively address the seismic vulnerabilities. CEQA analysis and permitting is beginning, along with public outreach. Design and construction will follow.

Dam Seismic Stability Studies - The District has completed updated seismic studies of all its dams in the previous review cycle, and has made upgrades or operational modifications to address any deficiencies. In the upcoming cycle, staff will review older studies to account for accumulated changes in standards and safety requirements. The District completed the seismic stability evaluation of Maloney Reservoir in March 2018 and determined the dam is safe for continued operations. The District will review the seismic stability of Danville Reservoir in 2020 and 2021 and will re-evaluate the potential for seismic sliding of Pardee Dam, as recommended in the most recent FERC Part 12D inspection report. The dam was designed to account for sliding, and thus this failure mode is a very unlikely scenario. However, the Part 12D process is designed to raise awareness of dam safety and call for re-evaluation of certain aspects of dam design as a verification and to incorporate any new information that has emerged since the original design.

Dam Spillway Evaluations and Inundation Modeling

Dam Spillway Condition Assessments - The District and its consultant performed engineering assessments of the terminal reservoir spillways at the Briones, Chabot, San Pablo, and USL dams. After thoroughly reviewing design documents and performing detailed field inspections, the consultant prepared four spillway condition assessment reports which the District submitted to DSOD in March 2019. Based on their assessments, the consultant noted that each of the four terminal reservoir concrete spillways need corrective repairs and will require ongoing maintenance to keep them operational. The District is awaiting review comments from DSOD and plans to schedule spillway repair and maintenance work as required.

Based on comments from DSOD requesting detailed evaluations similar to the terminal reservoir reports, further evaluation of the Camanche spillway is being performed. The consultant has

performed its field inspection and is working on the draft spillway condition assessment report. The District plans to submit the report to DSOD later this year.

Dam Breach Inundation Mapping Project - In compliance with Senate Bill 92, which went into effect in July 2017, the District is updating dam breach inundation maps for many of its dams. These include the two Mokelumne River dams, the five terminal reservoir dams, and twelve of the open-cut distribution reservoir dams. The final inundation maps for the terminal reservoir dams are scheduled for submittal to DSOD by October 31, 2019, followed by the open-cut distribution reservoirs. The District is developing a submittal schedule for Pardee and Camanche based on comments from DSOD and FERC.

Other

Tunnel Inspections - The District performed a remote-operated vehicle inspection of Pardee Tunnel and the final inspection report was completed in December 2018. The District is preparing a request for proposals for inspection of San Pablo and Upper San Leandro Tunnels. The selected firm will perform the inspection work, provide a condition assessment and develop recommendations for repair if needed.

Open-Cut Reservoir Underdrain Instrumentation - The District has installed automated underdrain flow monitoring devices at all open-cut reservoirs not planned for conversion to tanks, except for Moraga and Maloney Reservoirs as they require mechanical upgrades to the measurement systems before they can be automated.

FERC Part 12D Safety Inspections and Evaluation Reports - In May 2018, the District submitted a plan and schedule to FERC for implementing the recommendations from the Part 12D inspection and evaluation of Pardee and Camanche Dams. FERC responded in July 2019 requesting the District accelerate the schedule to evaluate the spillways and dam stability at Pardee and Camanche so that any potential concerns are identified and addressed promptly. The District is preparing a response to address FERC's concerns, with considerations for dam safety, capital outlays, staffing, and the practicality of completing studies in sequence.

The District began its plan implementation, addressing recommendations through the District's Capital Improvement Program (CIP) and updating dam safety-related documents:

- Performing additional studies for seismic hazard analysis;
- Contracting services to clean and inspect the foundational uplift relief wells at Camanche facilities;
- Performing additional monitoring of specific dam features for early leak detection;
- Updating protocols related to dam safety monitoring, assessment, maintenance; and
- Supplementing current dam safety documentation with results of recent field inspections and investigation summaries.

Compliance with the Dam Safety Program

FERC requires that CDSE routinely assess the District's compliance with the requirements of the dam safety program and determine whether the program is being implemented in accordance with the written dam safety program and in the spirit of overall dam safety. The initial third-party audit of the program is due in March 2021.

Based on the CDSE's knowledge, including a review of dam-safety-related reports and activities, the CDSE concludes that the District's dams are considered safe for continued operation.

FISCAL IMPACT

Funds from ongoing capital and operating budgets have sufficiently supported the efforts of the District's dam safety program to date. However, there may be a need for additional funds in response to the FERC Part 12D report recommendations. If so, those funds will be requested through the CIP process. The Dam Safety Program Steering Committee reviews budgets as part of its ongoing work and will recommend adjustments as needed.

NEXT STEPS

The Dam Safety Program Steering Committee will continue to meet quarterly. Dam inspections will continue monthly and annual inspections will take place with DSOD and FERC. Progress on the District's various capital projects will continue and will be reported in the next annual report.

Staff will continue to work on the inundation mapping project and update of the EAPs in compliance with new state regulations and federal requirements.

Staff plans to audit its dam safety program on a schedule not to exceed five years in accordance with its Dam Safety Program Guide. The first audit will be due in March 2021.

ARC:XJI:SMT

Attachment

Table 1: FY19 DSOD Dam Inspections and Valve Exercises

Dam Name	DSOD Inspection Date	DSOD Valve Exercise^(a)
Almond	4/4/2019	Yes
Argyle #2	4/11/2019	Yes
Briones	3/21/2019	Yes
Camanche	12/19/2018	
Central	4/4/2019	Yes
Chabot	3/28/2019	
Danville	4/9/2019	
Dunsmuir	4/4/2019	
Lafayette	3/21/2019	
Leland	4/9/2019	Yes
Maloney	4/11/2019	Yes
Moraga	4/9/2019	
North	4/11/2019	Yes
Pardee	12/19/2018	Yes ^(b)
Piedmont	4/4/2019	
San Pablo CW	4/11/2019	Yes
San Pablo	3/21/2019	
Seneca	4/4/2019	
Sobrante CW	4/11/2019	Yes
USL	3/28/2019	

Notes:

- a) Valves are required to be exercised every three years. The valve exercise program is up to date.
- b) The Pardee South 72-inch and North 42-inch needle valves were exercised as part of the dam inspection.

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: August 8, 2019

MEMO TO: Board of Directors

THROUGH: Alexander R. Coate, General Manager *ARC*

FROM: Eileen M. White, Director of Wastewater *Eileen*

SUBJECT: Main Wastewater Treatment Plant Odor Control Program Update

SUMMARY

Staff continue to strive to control and minimize odors through investment in odor control equipment and technology at the District's Main Wastewater Treatment Plant (MWWTP), good day-to-day operational and maintenance practices, timely investigation of odor complaints, and community engagement. In Fiscal Year 2019 (FY19), these efforts contributed to the District achieving its Key Performance Indicator (KPI) for the number of odor reports attributable to the MWWTP. Staff will provide an update on odor management and community engagement activities at the Planning Committee meeting on August 13, 2019.

DISCUSSION

The District's Strategic Plan includes an objective to "minimize customer and community impacts from water and wastewater operations" and establishes a KPI of less than or equal to 30 customer complaints per year. The District met the KPI in FY19; staff received 15 odor complaints where the MWWTP was determined to be the probable source of the odors. This is two fewer complaints than the 17 complaints received in FY18. Most of the FY19 odor complaints were associated with plant shutdowns for construction purposes and trucked waste handling at the MWWTP.

Capital Improvement Program Efforts

Over the past 17 years, the District has spent approximately \$14 million in capital improvements for odor control at the MWWTP. The MWWTP Influent Pump Station (IPS) odor control system was upgraded to a dual-stage system and began operating in FY19. This new system is capable of removing a broader range of odor compounds than the former single-stage system.

Improvements for the existing odor control systems at the trucked waste receiving station and the blend tanks are being designed and are expected to be operational within the next five years. These improvements will provide sufficient capacity to handle the highly odorous air associated with the high strength liquid and solid wastes received at the MWWTP.

The Integrated MWWTP Master Plan, which is in development, will further inform additional, major long-term odor control capital investments at the plant. The Integrated MWWTP Master Plan will include recommendations for improved odor management over the next 30 years.

Operations and Maintenance Improvements

The District's Odor Management Program team continues to identify operational improvements for odor reduction. The team was formed to address odor control utilizing a multidisciplinary approach. In FY19, plant operations were optimized to minimize odors during the plant shutdowns required for system maintenance and construction. The team effectively developed an innovative way to dose odor control chemicals at the IPS during shutdowns to improve odor reduction. In addition, staff actively communicates with neighbors in advance of shutdowns to explain how operational needs may impact offsite odor and the District's efforts to mitigate the odors. This outreach has advanced neighbors' understanding and appreciation of the District's diligent focus on odor management.

Community Engagement Activities

Staff provided an update on the District's MWWTP odor mitigation efforts at the March 27, 2019 West Oakland Liaison Group meeting. Members of the group continue to voice appreciation for the District's continued odor management improvement efforts.

In addition, staff participated as members of the West Oakland Community Action Plan (CAP) Steering Committee. The steering committee was formed in response to California Assembly Bill 617 which established a Community Air Protection Program focused on reducing air quality impacts on selected communities in the state, including West Oakland. The multi-stakeholder committee was comprised of a diverse group of interested parties, such as the West Oakland Environmental Indicators Project, the Port of Oakland, Caltrans, the City of Oakland, neighborhood groups, and local businesses. The committee developed a draft CAP for emission and exposure reduction, including odor management. The CAP was released for public comment on July 23, 2019. On August 17, 2019, a public workshop will be held in West Oakland to present the CAP. By the end of the year, the final CAP will be presented to the California Air Resources Board for approval.

NEXT STEPS

Managing odors from the MWWTP continues to be a priority. The District strives to be a good neighbor, and recognizes that odors from the MWWTP can affect neighbors' quality of life. Staff will continue efforts to reduce potential odors through capital investments, optimized maintenance of existing facilities, and ongoing engagement with the West Oakland community.

ARC:EMW:ys

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: August 8, 2019

MEMO TO: Board of Directors

THROUGH: Alexander R. Coate, General Manager *ANC*

FROM: David A. Briggs, Manager of Water Operations *DB*

SUBJECT: Duffel Photovoltaic Renewable Energy Project Update

INTRODUCTION

The project site for the District's proposed Duffel Photovoltaic (PV) Renewable Energy Project (Project) is located on District-owned watershed property within the City of Orinda on the west side of Bear Creek Road. The Project would generate up to 5 megawatts (MW) under Pacific Gas and Electric's (PG&E's) Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) Program. On August 30, 2019, the Initial Study/Mitigated Negative Declaration (IS/MND) for the Project will be available for public review. This item will be presented at the August 13, 2019 Planning Committee meeting.

DISCUSSION

Project Purpose and Description

The Project would utilize approximately 20 acres of available San Pablo watershed property to construct a large-scale, 5 MW PV system. The solar panels would track the sun to maximize generation and minimize the Project footprint. Implementing this Project would significantly accelerate the District's Energy Policy goal to be carbon-free for indirect emissions by 2040. The Project would generate an estimated 12,000 MW hours of renewable energy per year and would offset approximately 2,200 metric tons of greenhouse gas emissions annually.

A long-term Power Purchase Agreement (PPA) would be used to implement the Project, allowing the District to purchase electricity directly from a third-party owned and operated PV system. The purchased electricity would be directly credited to a maximum of 50 District electric accounts under the RES-BCT Program. Only government entities are eligible for the program, which is limited to 105 MW (60 percent of the program's capacity remains available for new projects).

Review of Environmental Impacts

Pursuant to the California Environmental Quality Act, staff prepared an IS/MND analyzing the Project's potential environmental impacts and proposing mitigation measures for those impacts. The IS/MND determined the Project may have potentially significant impacts related to biological resources, agricultural and forestry resources, and land use and planning. The IS/MND also identifies mitigation measures that would reduce those potentially significant impacts to less than significant levels.

Public Outreach

In May 2018, staff met with the City of Orinda to discuss preliminary Project concepts. On March 5, 2019, staff presented the Project to the Orinda City Council and reviewed consistency with the Orinda General Plan and zoning ordinances. The Orinda City Council and public made comments related to potential undergrounding of electrical connections, inverter noise, wildfire risk, and glare from the panels. On July 9, 2019, staff presented the Project to the Orinda Planning Commission. The Commission and public commented on compatibility with the Project site's general plan designation, potential benefit to Orinda, erosion potential, compatibility with an on-site community garden, undergrounding electrical connections, and visual screening for the Project.

Postcards will be sent to nearby residents, those with views of the Project site, and others who notify the District of their interest in the IS/MND. A public outreach meeting is scheduled for September 11, 2019 in the City of Orinda following the scheduled release of the IS/MND.

NEXT STEPS

The IS/MND will be made available for a 30-day public review period beginning on August 30, 2019. Following the public review period, staff will prepare the Final IS/MND. The Board of Directors will be asked to consider the adoption of the Final IS/MND as well as approval of the Project in November 2019. In 2020, staff anticipates moving forward with Project permitting efforts, including securing necessary state and federal environmental permits and seeking a City of Orinda use permit. Anticipated future Board actions include approval of an interconnection agreement with PG&E and approval of the PPA. Construction is estimated to begin in 2021.

ARC:DAB:sd