

TO: Board of Directors

FROM: Coyote Creek Flood Risk
Reduction Ad Hoc
Committee

SUBJECT: Coyote Creek Flood Risk Reduction Ad Hoc
Committee Meeting Summary for
April 29, 2019

DATE: May 28, 2019

This memorandum summarizes agenda items from the regular annual meeting of the Coyote Creek Flood Risk Reduction Ad Hoc Committee Meeting Summary for April 29, 2019

Attendees:

Valley Water Board members in attendance were: Director Tony Estremera, District 6, Director Barbara Keegan, District 2, and Director Richard P. Santos, District 3.

Staff members in attendance were: Kurt Arends, Glenna Brambill, Clelia Busadas, Rachael Gibson, Vincent Gin, Trisha Howard, Brian Hopper, Bassam Kassab, Michele King, Afshin Rouhani, Yasmin Rouholiman, Todd Sexauer, Dámaris Villalobos-Galindo and Jose Villarreal

Public attendees: Juanita Wilson, Jeff Daniels, Chris Hoem; Marc Herbert, Donald Lieberman, Patricia Long, Jolene Noel, Joann Noel, Roma Smith, Elliot Sowardsly, Ted Smith, Amanda Hawes, Kerry Duncan, Christophe LaBelle, Jeff Levine, Brian Fowler, Michael Pearce, Jeptece Alba, Susan Frey, David Goode, Brian Nguyen, Chanh La, Cary Gould, Sheila McGann-Tiedt, Huynh Kana, Lakeisha Bryant, Jeffrey Hare, Lisa Ruder, Imelda Rodriguez, Jean-Marie White, Mehedi Chowdhury and Garry Johnson

2. PUBLIC COMMENT

Two public speakers were:

Mr. Don Lieberman spoke regarding additional stakeholders for FEMA/FERC and California Safety of Dams, were they invited to this meeting? Also, 100-year flood control plan to consider a bypass culvert along 17th Street/Santa Clara with Bart will the bypass still happen and have they been advised about the flood zone issue?

Mr. Ted Smith is concerned about the timeline with the Anderson Dam, retrofitting of spillway and obtaining the necessary permits.

ACTION ITEMS

4.1 ANDERSON RESERVOIR OPERATION UPDATE

Mr. Kurt Arends reviewed the following:

Summary:

In October 2017, the Coyote Creek Flood Risk Reduction Ad Hoc Committee (Committee) considered two alternatives for achieving increased short-term incidental flood risk reduction on Coyote Creek. The Committee recommended operating the Anderson-Coyote Reservoir system at lower storage levels during the rainy season to reduce the chance that the Anderson-Coyote system will exceed the dam's seismic restriction. This provides greater incidental flood risk reduction along Coyote Creek.

On October 10, 2017, the Valley Water Board directed staff to operate the Anderson-Coyote Reservoir system following the 40% exceedance rule curve. As a result of staying below the seismic restriction, there is also a lower probability of Anderson Reservoir spilling and causing impacts downstream.

BACKGROUND:

After the February 2017 flooding along a reach of Coyote Creek in downtown San Jose, this Committee was formed and considered various options for providing short term flood risk reduction along Coyote Creek. The Committee looked at a “pump-over” option as well as options for re-operating the reservoirs. On October 5, 2017, the Committee made the recommendation to re-operate the Anderson-Coyote Reservoir system by lowering the reservoirs storage levels below the current seismic restriction before the start of the winter season and maintaining the lower level early in the season to provide more available storage volume through the winter season. These measures resulted in a new operation rule curve for the combined Anderson-Coyote Reservoir system at 40% exceedance probability (EP). The reservoirs would be lowered to a reduced storage at the start of the rainy season and would be managed at the lower curve until later in the season in order to leave additional room for potential extreme rain events. Typically, these rule curves are implemented and identified based on the probability of the storage level exceeding the target at the end of the season. For instance, the 40% exceedance probability rule curve is an operation curve where there would be a 40% chance that the reservoir storage would exceed the target at the end of the season, and a 60% chance that the storage would end up below the target. This recommended operation was approved by the full Valley Water Board on October 10, 2017 and has been in place since that time.

The current operational rule curve requires operating to lower combined storage levels than the seismic restricted levels set by the California Division of Safety of Dams (DSOD). Presently there is a permanent seismic restriction on Coyote Reservoir resulting in a restricted storage at 53% of reservoir capacity, or a restricted capacity of 11,843 acre-feet (AF), and a temporary seismic restriction on Anderson Reservoir of 58%, or a restricted capacity of 51,766 AF.

During the winters of 2017-18 and 2018-19, Valley Water operated the Anderson reservoir system based on the 2017 adopted 40% EP rule curve. The winter of 2017-18 was relatively dry resulting in reduced local runoff into our reservoirs including Anderson and Coyote. Because of the low water levels in Anderson Reservoir, imported water from the Central Valley Project was pumped into Anderson in April and May of 2018 to ensure there was an adequate supply of water to make releases to the stream throughout the summer. This low water level also precluded recreation on the reservoir in 2018.

The winter of 2018-19 was significantly wetter, experiencing several significant rain events throughout the year with rain continuing into April of 2019. While Anderson Reservoir was never in danger of spilling, Coyote Reservoir did fill and spill for several days. Following the 40% rule curve, the outlet of Anderson Reservoir was opened on February 5 and not closed until March 19, 2019. During those 42 days, approximately 35,000 AF of water was released from the reservoir. As of mid-April, Anderson Reservoir was at 54% of capacity, approximately 3,300 AF below its seismic restriction. As a result of the higher water levels, Santa Clara County opened both Anderson and Coyote reservoirs to boating on April 15, 2019.

A potential impact of the current operations is the need to draw down the reservoirs prior to the next winter season. Although water is released from Anderson Reservoir throughout the summer to recharge the groundwater basins and to support fish and wildlife, it is estimated that up to 6,650 AF may need to be sent to the water treatment plants to achieve the target storage elevation before winter. This will result in an equivalent amount of imported supplies needing to be stored outside the County instead of storing it in Anderson Reservoir.

Committee discussion:

Director Barbara Keegan had a clarifying question: 40% exceedance rule-curve was established to facilitate operating the reservoir in case of storms during flooding. By utilizing the rule-curve, over topping could happen but flooding would be at a lower occurrence.

The Committee took no action.

4.2 COYOTE CREEK FLOOD PROTECTION PROJECT, PROBLEM DEFINITION AND REFINED OBJECTIVES

Ms. Dámaris Villalobos-Galindo reviewed the following:

Summary:

Problem definition marks the beginning of the planning phase for the Coyote Creek Flood Protection project. The purpose of defining and understanding existing and historical site conditions is to establish a baseline to ultimately come up with practical solutions that can effectively and realistically reduce the risk of flooding to the various affected

communities. This memorandum is a summary of the project team's findings during the Problem Definition/Refined Objectives project phase by covering 1. Project Setting, 2. Project History and Description, 3. Project Status and Timeline, 4. Conceptual Solutions, and 5. Next Steps.

1. Project Setting

The Coyote Creek Flood Protection project comprises approximately 9 miles of Coyote Creek, between Montague Expressway and Tully Road, all within the City of San José. The project extent includes the sections of urbanized creek length that remain subject to risk of frequent flooding. While the project limits are clearly established, in order to understand the water flow dynamics within the project scope, it is necessary to look at the project from a holistic point of view. This will allow us to find solutions that have a lasting impact and that meet the project goals.

The Coyote Creek Flood Protection project is located in the mid to lower portion of Coyote Creek. The entire creek is approximately 62 miles long. Coyote Creek originates in Henry Coe State Park and surrounding hills within the Diablo Range Mountains. From there, the creek flows south approximately 8 miles, then northwest traversing both Coyote and Anderson Reservoirs, continuing north to San Francisco Bay. It crosses parts of the cities of Morgan Hill and San José, the City of Milpitas, and unincorporated areas of Santa Clara County. The creek traverses the western edge of the Coyote Watershed, with at least five major tributaries draining into it downstream of Anderson Dam, including Fisher Creek, Upper Silver Creek, Lower Silver Creek, Upper Penitencia Creek, and Lower Penitencia Creek.

Coyote Creek has a long history of flooding going back to the mid-19th century. While historical records mention flooding events observed since the 1850s to the end of the 19th century, records are not too clear on actual flow magnitudes. However, peak discharge data has been estimated starting in the beginning of the 20th century. According to Valley Water records, the largest flow recorded on Coyote Creek was 25,000 cubic feet per second (cfs) in 1911, followed by significant but smaller flood events in 1917 and 1932. Coyote and Anderson Dams were built in 1936 and 1950, respectively. The two dams were constructed primarily to capture seasonal stream flow for groundwater recharge and water supply storage; however, construction of the dams resulted in incidental flood reduction. This is reflected in the reduction of maximum peak discharge observed in the flood events following the construction of the dams. Prior to the February 2017 flood event, which saw the highest flows on Coyote Creek since the construction of Anderson Dam, the largest flood event observed along Coyote Creek happened during January 1997, which was approximately 6,280-cfs. During the January 1997 flood event, Coyote Creek topped its banks at several locations and caused damage to private and public property and transportation routes.

Due to recurring flooding along Coyote Creek, various capital improvement flood protection projects have been completed along different reaches including a Valley Water/U.S. Army Corps of Engineers (USACE) joint project completed in 1995 which provided flood protection to the Alviso community.

Past flooding events provide the opportunity to understand the effects of current watershed conditions and historic hydromodification. Historically, no direct tributaries to Coyote Creek existed north of Metcalf Road (Coyote Narrows), and all the runoff the creek received was from areas located upstream of present-day Anderson and Coyote Dams as well as small eastside tributaries in the Coyote Valley. To improve valley floor drainage, in 1852, Upper Penitencia Creek and areas downstream were connected to Coyote Creek, with Lower Penitencia Creek connected to the creek by 1895. By 1940, disconnected subwatersheds farther south were also artificially connected to the creek. Artificial connection of these subwatersheds increased the watershed area directly connected to Coyote Creek by an estimated 50%, which might explain why the 1911 flood event was so severe. However, construction of the Coyote and Anderson Dams in the mid-20th century reduced direct upper watershed connectivity to the Coyote Creek mainstem, attenuating previously observed peak discharges and effectively shifting functional watershed connectivity to the northern part of the watershed. Because of this historic hydromodification, currently there can be two main flow contributions to Coyote Creek in response to a major rainfall event: 1. Direct watershed input from local tributaries (lower watershed), and/or 2. Upper watershed input (from the drainage to Anderson and Coyote Dams).

A hydraulic model (HEC-RAS model) was calibrated to the February 20, 2017 storm event using gauge data and collected high water marks. Flow capacities were calculated at various points within the project scope and are being used by the project team to understand flooding threshold capacities during the development of conceptual and feasible alternatives.

2. Project History and Description

In November 2000, voters approved the Clean, Safe Creeks and Natural Flood Protection Plan (Measure B), a 15-year special parcel tax which allocated \$32 million dollars (1999 dollars) to the development of the Mid-Coyote

Creek Project. The project aimed to provide 100-year flood protection for homes, schools, businesses, and highways located along Coyote Creek from Montague Expressway to Highway 280. In 2011, Valley Water completed the Mid-Coyote Creek Project Planning Study. Numerous public meetings were also held during this period to better inform the project and to incorporate public input into the Mid-Coyote Creek Project alternatives.

The 2011 Mid-Coyote Creek Project Planning Study concluded that the cost for each feasible project alternative ranged between \$500 million and \$1 billion. To secure additional funding, Valley Water asked USACE to begin a feasibility study for the project three years in a row, but the USACE declined and no reason was given. With the limited available funding, Valley Water proceeded with initiating a design for the most downstream reach of the project, between Montague Expressway and Highway 880. However, the design was paused due to uncertainty about the potentially beneficial hydrologic impacts of the ongoing Anderson Dam Seismic Retrofit project and the Upper Penitencia Creek project on Coyote Creek.

In November of 2012, voters approved the Safe, Clean Water and Natural Flood Protection Program, a 15-year special parcel tax developed with input from more than 16,000 residents and stakeholders. While this program provided no additional funding to the Mid-Coyote Creek Project, the project and its remaining budget did carry forward into the new program.

During the 2016-2017 winter season, the entire state of California experienced precipitation at 190% of average. In Santa Clara County, various storm systems were constantly moving through the area, keeping the soil saturated and causing significant flooding events and unprecedented reservoir spills. On February 21, 2017, Coyote Creek overtopped its banks at several locations between Montague Expressway and Tully Road. This flood event prompted a modification of goals and the acceleration of the original Mid-Coyote Creek project. On June 13, 2017, the Valley Water Board approved the following modifications to the original Mid-Coyote Creek Project:

- Project extent will be from Montague Expressway to Tully Road
- Change of target protection from 100-year level flood event to a flood event equivalent to the February 2017 event (approximately a 20 to 25-year event).
- Use local funding to identify short-term flood relief solutions and begin implementation prior to the 2017-2018 winter season
- Use local funding to complete planning and design phases as well as to construct prioritized elements of preferred project
- Identification of additional federal-state-local partnership and alternative funding sources

The Coyote Creek Flood Protection Project's primary goal is to reduce the risk of flooding to homes, schools, businesses and highways from a flood event equivalent to the February 2017 event (approximately 20 to 25-year event), from Montague Expressway to Tully Road. Other project objectives include identify stream habitat enhancement opportunities, identify opportunities to improve water quality, identify opportunities to provide for public recreation and access, minimize the need for future operations and maintenance activities, and obtain community support and participation for the project.

Since the February 2017 event, short-term flood relief solutions implemented at Coyote Creek include the removal of invasive vegetation and stream blockages through a partnership with the City of San José that allows Valley Water access to city-owned property, repair of approximately 150 linear feet of a damaged levee running along the back of the South Bay Mobile Home Park community, repair and installation of visual stream gauges at various bridge locations, and construction of a 400 linear foot long vinyl sheet pile wall and a 500 linear foot long soil berm in November 2017 to protect the Rock Springs community.

To better study and define problem areas, the project extent has been divided into five reaches. Moreover, to give continuity to previously completed three reaches of downstream flood protection projects, the current project reaches were numbered 4 to 8:

- Reach 4: Montague Expressway to Old Oakland Road
- Reach 5: Old Oakland Road to Mabury Road
- Reach 6: Mabury Road to East Santa Clara Street
- Reach 7: East Santa Clara Street to I-280
- Reach 8: I-280 to Tully Road

3. Project Components, Status and Timeline

The project is currently in the planning phase with the project team presently working on developing conceptual alternatives. The draft Planning Study Report is scheduled to be completed in January 2020 followed by design and permitting, estimated to be completed at the end of 2021, with construction from 2022 to 2024.

4. Conceptual Solutions

To move this project along in an expedited manner, the project team is considering alternatives that, whenever possible, avoid extensive in-channel work and hardscape features, which increase permitting time. Flooding solutions being considered include invasive plant control, flood proofing and voluntary purchase of repeatedly flooding properties, installation of set-back floodwalls, berms and levees, and off-stream flood detention. Public input will be requested in the next few months to complement flooding solutions.

5. Next Steps

Public meetings are being scheduled at the end of May to incorporate comments to the problem definition and project objectives. The project team is currently developing conceptual alternatives, which are currently estimated to be completed by the end of Spring of this year, when they will be presented to the public to incorporate input.

Public speakers were: Ms. Jolene Noel, Mr. Garry Johnson, Mr. Brian Nguyen, Mr. Don Lieberman, Mr. Ted Smith, Mr. Jeffrey Hare and Ms. Susan Frey spoke on the following issues and/or concerns: litigation, mobile home pumping station problems, creek levels, 100-year flood planning, law suit cases not moving forward in a timely manner, Anderson spillage and garbage in the creeks.

The Committee took no action.

4.3 ANDERSON DAM SEISMIC RETROFIT PROJECT UPDATE

Mr. Christopher Hakes reviewed the following:

Summary:

Project Background

In 2011, the District completed a seismic study of Anderson Dam, which indicated that material at the base and foundation of the dam embankment would weaken due to liquefaction in a 7.25 magnitude earthquake [the maximum credible earthquake (MCE)] on the Calaveras Fault, located approximately 1.2 miles from the dam. This could significantly deform the dam embankment, risking an uncontrolled release from the Reservoir. The 2011 study also indicated that an MCE could trigger fault offset on the Coyote Creek-Range Front fault zone located in the vicinity of the dam, which would damage the existing outlet pipe, precluding safe drawdown of the reservoir.

The District initiated the Anderson Dam Seismic Retrofit Project in 2012 to address the seismic deficiencies at the dam and to meet the design requirements of the Federal Energy Regulatory Commission (FERC) and the California Department of Water Resources, Division of Safety of Dams (DSOD). The Project's planning phase was initiated in 2012 and completed in July 2013. The design phase was initiated in August 2013. As Project design work proceeded, an administrative draft of an Environmental Impact Report (EIR) was prepared in 2014, as required by the California Environmental Quality Act (CEQA) for the Project.

Between 2014 and 2016, detailed geotechnical and geologic investigations were performed on and around the dam embankment to further inform the seismic retrofit design. On December 10, 2016, staff presented the findings from these investigations to the Board and recommended that deconstruction and replacement of most of the existing dam would be necessary to address the dam's deficiencies. On January 23, 2018, staff informed the Board that the Project's 30% design documents had been completed, and included embankment reconstruction, outlet works, temporary stockpiles during construction, construction sequencing, reservoir operations during construction, and a spillway condition assessment.

The Project's 60% design was completed in April 2018, and in July 2018, the Board of Consultants (BOC), FERC, and DSOD reviewed the 60% design and requested supplemental geotechnical investigations and analysis be performed for the spillway, in-reservoir borrow and stockpiles areas, outlet works, and embankment reconstruction design before proceeding with further design of the Project.

CEQA Update

We are currently updating the project Environmental Compliance and Permitting schedule based on recent discussions with National Marine Fisheries Service (NMFS) and comments received from FERC. Based on the updated schedule we currently expect the Draft EIR to be released to the Public in early summer 2020; however, this is subject to change as we continue informal consultations with NMFS.

DSOD update

In late July 2018, FERC, DSOD, and the BOC held a meeting with the Anderson Dam Project team to review the 60% design plans that had been completed in late April 2018. The outcome of the review included a BOC recommendation for additional geotechnical borings to inform certain aspects of the embankment retrofit design, and a request from DSOD that the District further evaluate possible modifications to the unlined channel immediately downstream of the Anderson spillway chute. The results of these additional efforts may change the Project footprint and Project description which must be fully described in the Draft EIR. Subsequently, the Design Consultant's Agreement was amended to expand the scope of work accordingly.

Design and Construction Update

The Anderson Project team is proceeding with preparing the 90% design and continuing preparation of the Project's environmental documents and permitting efforts. If all the necessary permits are secured by Spring 2022, the Anderson Dam Project construction would be initiated in Fall 2022.

Coordination of Anderson Dam Retrofit and Coyote Creek Flood Protection Projects

The Anderson Dam Retrofit will require reservoir dewatering for a period of 3 years while the embankment is deconstructed and rebuilt. During the dewatering period, all of the Coyote Watershed's storm runoff that would normally be captured by Anderson Dam will be conveyed directly to Coyote Creek. Although these flows will be somewhat controlled by staff operations through the temporary diversion structure, a series of major storms may result in high volumes of discharge directly to Coyote Creek. Staff for the Anderson Dam Retrofit and Coyote Creek Flood Protection Projects are coordinating on the progress of both Projects and participating in flood potential analyses. The Coyote Creek Flood Protection Project team anticipates that some flood improvements to Coyote Creek may be completed prior to the Anderson Reservoir dewatering period. The Anderson Dam Retrofit Project Program Management Consultant team will be developing a Flood Mitigation Plan to develop recommendations in the event that the Coyote Creek improvements are not complete prior to Anderson's dewatering period.

Public speakers were: Mr. Don Lieberman, Mr. Jean Marie White and Mr. Brian Nguyen spoke on the following issues and/or concerns: dam events, seismic restrictions, who decides on how the funds are distributed and prioritized, releasing of water and permitting issues.

The Committee took no action.

A question from the Public was read into the record:

Can you put in a gate on creek before populated section to limit creek in event of impending flood, so that open land floods instead of structures?

Staff response: We cannot induce flooding on areas of creek that do not flood or increase their flooding. However, we will look into acquiring open lands and building flood detention as an alternative.

If you have any questions or concerns, you may contact me at, gbrambill@valleywater.org or 1.408.630.2408.

Thank you.

Glenna Brambill, Management Analyst II,
Board Committee Liaison
Office of the Clerk of the Board