CITY OF SANTA CRUZ
City Hall
809 Center Street
Santa Cruz, California 95060

Water Department

WATER COMMISSION

Regular Meeting

June 03, 2019

7:00 P.M. GENERAL BUSINESS AND MATTERS OF PUBLIC INTEREST, COUNCIL CHAMBERS

*Denotes written materials included in packet.

The City of Santa Cruz does not discriminate against persons with disabilities. Out of consideration for people with chemical sensitivities, please attend the meeting fragrance free. Upon request, the agenda can be provided in a format to accommodate special needs. Additionally, if you wish to attend this public meeting and will require assistance such as an interpreter for American Sign Language, Spanish, or other special equipment, please call Water Administration at 831-420-5200 at least five days in advance so that arrangements can be made. The Cal-Relay system number: 1-800-735-2922.

APPEALS: Any person who believes that a final action of this advisory body has been taken in error may appeal that decision to the City Council. Appeals must be in writing, setting forth the nature of the action and the basis upon which the action is considered to be in error, and addressed to the City Council in care of the City Clerk.

Other - Appeals must be received by the City Clerk within ten (10) calendar days following the date of the action from which such appeal is being taken. An appeal must be accompanied by a fifty dollar ($50) filing fee.

Call to Order

Roll Call

Statements of Disqualification - Section 607 of the City Charter states that ...All members present at any meeting must vote unless disqualified, in which case the disqualification shall be publicly declared and a record thereof made.The City of Santa Cruz has adopted a Conflict of Interest Code, and Section 8 of that Code states that no person shall make or participate in a governmental decision which he or she knows or has reason to know will have a reasonably foreseeable material financial effect distinguishable from its effect on the public generally.

Oral Communications - No action shall be taken on this item.

1. Public Hearing – 2019 Public Health Goals Report (Pages 1.1 - 1.31)

That the Water Commission hold a Public Hearing for the purpose of accepting and responding to public comment on the Report on Public Health Goals and water quality relative to public health goals and MCLGs.

Announcements - No action shall be taken on this item.

Consent Agenda (Pages 2.1 - 6.1) Items on the consent agenda are considered to be routine in nature and will be acted upon in one motion. Specific items may be removed by members of the advisory body or public for separate consideration and discussion. Routine items that will be found on the consent agenda are City Council Items Affecting Water, Water Commission Minutes, Information Items, Documents for Future Meetings, and Items initiated by members for Future Agendas. If one of these categories is not listed on the Consent Agenda then those items are not available for action.

2. City Council Actions Affecting the Water Department (Page 2.1)

   Accept the City Council actions affecting the Water Department.

3. Water Commission Minutes from May 6, 2019 (Pages 3.1 – 3.7)

   Approve the May 6, 2019 Water Commission Minutes.

4. WSAS Quarterly Report (Pages 4.1 – 4.10)

   Accept the WSAS Quarterly Report.

5. Santa Cruz Water Program - Service Order No.5 with HDR, Inc. (Pages 5.1 – 5.13)

   Receive information on progress of the Santa Cruz Water Program and planned activities for Fiscal Year 2020.

6. Updated Water Commission 2019 Schedule (Page 6.1)

   Accept the updated Water Commission 2019 Schedule.

Items Removed from the Consent Agenda

General Business (Pages 7.1 - 9.7) Any document related to an agenda item for the General Business of this meeting distributed to the Water Commission less than 72 hours before this meeting is available for inspection at the Water Administration Office, 212 Locust Street, Suite A, Santa Cruz, California. These documents will also be available for review at the Water Commission meeting with the display copy at the rear of the Council Chambers.

7. Recommendations on a Memorandum of Understanding with the Soquel Creek Water District Resource Water and Tertiary Treatment Facility (Pages 7.1 – 7.19)

   Receive information about the proposed MOU with the Soquel Creek Water District and take action to recommend that the City Council approve the agreement in a form acceptable to the City Attorney and authorize the City Manager to execute the agreement.

8. Graham Hill Water Treatment Plant Concrete Tanks Replacement Project ISMND (Pages 8.1 – 8.62)

   Take action to support staff's recommendation to City Council to approve the Initial Study/Mitigated Negative Declaration for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project; adopt Findings of Fact and a Mitigation, Monitoring, and Reporting Program; and approve the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project.

9. WSAS Strategy and Work Plan (Pages 9.1 – 9.7)

   Receive information about potential next steps for revising the Water Supply Augmentation Strategy and WSAC Work Plan and Time Line to reflect potential opportunities for early action to improve water supply reliability, potential needs to potential changes in the WSAC recommended decision schedule, and provide feedback to staff to assist with further development of an updated strategy and work plan.

Subcommittee/Advisory Body Oral Reports - No action shall be taken on this item.

10. Santa Cruz Mid-County Groundwater Agency

11. Santa Margarita Groundwater Agency

Director's Oral Report - No action shall be taken on this item.

Information Items

Adjournment

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City of Santa Cruz Water Department Water Quality Relative to Public Health Goals for Calendar Years 2016 through 2018
California Water System # CA4410010

Executive Summary

Section 116470. (b) of the California Health and Safety Code requires that on or before July 1, 1998, and every three years thereafter, public water systems serving more than 10,000 service connections that detect one or more contaminants in drinking water that exceed the applicable public health goal, shall prepare and hold a brief written report presenting that information. Attachment 1 provides the relevant code language.

A triennial Public Health Goal (PHG) report in required to compare the City of Santa Cruz treated drinking water quality to the PHGs adopted by the California Environmental Protection Agency's (Cal-EPA) Office of Environmental Health Hazard Assessment. In the event that a California PHG does not exist for a particular contaminant, the law requires that the water quality data be compared to the United States Environmental Protection Agency (US-EPA) Maximum Contaminant Level Goals (MCLGs) for those contaminants.

It is important to note that in terms of the drinking water quality delivered to Santa Cruz customers, *neither PHGs nor MCLGs are enforceable standards but rather have been set as health goals and are not required to be met by any public water system.* PHGs and MCLGs are set much lower than the regulatory limits and reflect the level of a contaminant in water below which there would be no known effect on a person's health. In contrast, the Maximum Contaminant Levels (MCLs) are set by State and Federal regulators as the amount of contaminants allowable in water for the water to be determined to be safe to drink.

To prepare this report, all compliance and operational regulatory compliance monitoring data collected during 2016 through 2018 for the Santa Cruz Water Department (SCWD) was reviewed. None of the sampling results analyzed for this time period were found to have levels above the applicable PHGs and/or MCLGs, highlighting the high-quality treated drinking water produced by the SCWD. Attachment 2 is the

February 2019 California EPA Office of Environmental Health Hazard Assessment's Health Risk Information for Public Health Goal Exceedance Report. The Cal-EPA provides this information to determine whether any of the sampling results exceeded any of the PHGs or MCLGs covered in this document.

Background

This report is an opportunity to examine SCWD's water quality outside of the regulatory limits context by comparing laboratory results to the most conservative metrics for evaluating water quality as it relates to public health risk. For this reporting period, no contaminants were detected in the treated drinking water at concentrations above the PHGs or above the MCLGs. If an exceedance of PHGs were reported, this report would have included the category or type of risk to health that could be associated with each contaminant; the numerical public health risk associated with the PHG or MCLG for compounds with a carcinogenicity health risk; the best available technology that could be used to reduce the contaminant level; and an estimate of the cost to install that treatment if it is appropriate and feasible.

In the previous 2016 PHG report for calendar years 2013-2015, Arsenic and Hexavalent Chromium were detected above PHGs. The previously adopted Hexavalent Chromium MCL of 0.010 mg/L (ppm) in CA was withdrawn on September 11, 2017. Although this MCL was withdrawn, Hexavalent Chromium was again detected in the treated drinking water in 4 out of 7 samples during 2016, 2017 and 2018: three treated drinking water results were Non-Detect and below the PHG of 0.02 ug/L (ppb); and the other four detectable results ranged from 0.022-0.048 ug/L (ppb), which are very close to the PHG for Hexavalent Chromium.

A brief summary of previous PHG reports: no detections were recorded in the 2013 PHG report or 2010 PHG report; discussion of four contaminants (Arsenic, Copper, Tetrachloroethylene and Coliform bacteria) detected at levels above the PHGs in the 2007 PHG report; and a discussion of five contaminants (Aluminum, Arsenic, Copper, Lead and Tetrachloroethylene) in the 2004 PHG report.

What are PHGs and MCLGs?

PHGs are set by the California Office of Environmental Health Hazard Assessment (OEHHA), which is part of the Cal-EPA, and are based solely on public health risk considerations. A PHG is defined as the level of a chemical contaminant in drinking water that does not pose a significant risk to health. For cancer-causing chemicals, OEHHA scientists first compile all relevant scientific information available, which includes studies of the chemical's effects on laboratory animals and studies of humans who have been exposed to the chemical. The scientists use this data from these studies to perform a health risk assessment, in which they determine the levels of the contaminant in drinking water that could be associated with various adverse health

effects. When calculating a PHG, OEHHA uses all the information it has compiled to identify the level of the chemical in drinking water that would not cause significant adverse health effects in people who drink that water every day for 70 years. For cancer-causing chemicals, OEHHA typically establishes the PHG at the "one-in-one million" risk level. At that level, not more than one person in a population of one million people drinking the water daily for 70 years would be expected to develop cancer as a result of exposure to that chemical.

None of the practical risk-management factors that are considered by the US-EPA and the State Water Resources Control Board – Division of Drinking Water in setting drinking water standards (i.e. Maximum Contaminant Levels) are considered in setting these PHGs. Practical risk-management factors include considerations such as analytical detection limits and the availability, benefits, and costs of treatment technology.

Water Quality Data Considered

All compliance and operational treated water monitoring data collected between 2016 and 2018 were evaluated for this report. Data is derived from treated water sampling events at the point-of-entry to the distribution system (treated water leaving the water treatment plants) and water samples collected from within the distribution system. Annual compliance relative to primary drinking water standards of Maximum Contaminant Levels (MCLs) are summarized in the 2016, 2017 and 2018 Consumer Confidence Reports (CCR), which are made available electronically to all customers each June, following the reporting year. The most recent CCR for the year 2018 is included in Attachment 3 and is also available online at www.cityofsantacruz.com/ccr2018. MCLs are listed as maximum limits of contamination and serve as an upper acceptable reference to compare with the health goals of PHG values.

Guidelines Followed

The Association of California Water Agencies (ACWA) prepared guidelines for water utilities to use in preparing these PHG reports. The ACWA guidelines were used in the preparation of this report. Limited guidance was provided by State Water Resources Control Board staff.

Best Available Treatment Technology and Cost Estimates

Both the US-EPA and SWRCB adopt Best Available Technologies (BATs) that are the best-known methods for reducing contaminant levels below the MCL. Costs can usually be estimated for such treatment technologies. However, since many PHGs and all MCLGs are set much lower than the MCL, it is not always feasible to determine what treatment is needed to further reduce a contaminant to or near the PHG or MCLG, many of which are set at zero. Estimating the costs to further reduce a contaminant to zero is difficult, if not impossible, because it is not always possible to verify by analytical measurement

that the contaminant level has actually been lowered to near zero. In some cases, installing treatment to try and further reduce very low levels of one contaminant may cause adverse effects on other aspects of water quality.

Since no contaminants have been detected above the PHGs or MCLGs, cost estimates for reducing the contaminant concentrations are not relevant to this year's report.

Contaminants Detected that Exceed a PHG or a MCLG

In 2016, 2017 and 2018; no contaminants were detected in the treated drinking water at levels above the PHGs or MCLGs.

May 30, 2019

_____ _____

Hugh Dalton
Water Quality Manager

Date

Attachment No. 1

California Health and Safety Code

Public Health Goal Reporting Requirements

116470. (b) On or before July 1, 1998, and every three years thereafter, public water systems serving more than 10,000 service connections that detect one or more contaminants in drinking water that exceed the applicable public health goal, shall prepare a brief written report in plain language that does all of the following:

(1) Identifies each contaminant detected in drinking water that exceeds the applicable public health goal.

(2) Discloses the numerical public health risk, determined by the office, associated with the maximum contaminant level for each contaminant identified in paragraph (1) and the numerical public health risk determined by the office associated with the public health goal for that contaminant.

(3) Identifies the category of risk to public health, including, but not limited to, carcinogenic, mutagenic, teratogenic, and acute toxicity, associated with exposure to the contaminant in drinking water, and includes a brief plainly worded description of these terms.

(4) Describes the best available technology, if any is then available on a commercial basis, to remove the contaminant or reduce the concentration of the contaminant. The public water system may, solely at its own discretion, briefly describe actions that have been taken on its own, or by other entities, to prevent the introduction of the contaminant into drinking water supplies.

(5) Estimates the aggregate cost and the cost per customer of utilizing the technology described in paragraph (4), if any, to reduce the concentration of that contaminant in drinking water to a level at or below the public health goal.

(6) Briefly describes what action, if any, the local water purveyor intends to take to reduce the concentration of the contaminant in public drinking water supplies and the basis for that decision.

(c) Public water systems required to prepare a report pursuant to subdivision (b) shall hold a public hearing for the purpose of accepting and responding to public comment on the report. Public water systems may hold the public hearing as part of any regularly scheduled meeting.

(d) The department shall not require a public water system to take any action to reduce or eliminate any exceedance of a public health goal.

(e) Enforcement of this section does not require the department to amend a public water system's operating permit.

(f) Pending adoption of a public health goal by the Office of Environmental Health Hazard Assessment pursuant to subdivision (c) of Section 116365, and in lieu thereof, public water systems shall use the national maximum contaminant level goal adopted by the United States Environmental Protection Agency for the corresponding contaminant for purposes of complying with the notice and hearing requirements of this section.

(g) This section is intended to provide an alternative form for the federally required consumer confidence report as authorized by 42 U.S.C. Section 300g-3(c).

Attachment No. 2

Health Risk Information for Public Health Goal Exceedance Reports
February 2019

Attachment No. 3

2018 Annual Consumer Confidence Report

Public Health Goals

Health Risk Information for Public Health Goal Exceedance Reports

February 2019

Pesticide and Environmental Toxicology Branch
Office of Environmental Health Hazard Assessment
California Environmental Protection Agency

Health Risk Information for Public Health Goal Exceedance Reports

Prepared by

Office of Environmental Health Hazard Assessment
California Environmental Protection Agency

February 2019

Under the Calderon-Sher Safe Drinking Water Act of 1996 (the Act), public water systems with more than 10,000 service connections are required to prepare a report every three years for contaminants that exceed their respective Public Health Goals (PHGs).[1] This document contains health risk information on regulated drinking water contaminants to assist public water systems in preparing these reports. A PHG is the concentration of a contaminant in drinking water that poses no significant health risk if consumed for a lifetime. PHGs are developed and published by the Office of Environmental Health Hazard Assessment (OEHHA) using current risk assessment principles, practices and methods.[2]

The water system's report is required to identify the health risk category (e.g., carcinogenicity or neurotoxicity) associated with exposure to each regulated contaminant in drinking water and to include a brief, plainly worded description of these risks. The report is also required to disclose the numerical public health risk, if available, associated with the California Maximum Contaminant Level (MCL) and with the PHG for each contaminant. This health risk information document is prepared by OEHHA every three years to assist the water systems in providing the required information in their reports.

Numerical health risks: Table 1 presents health risk categories and cancer risk values for chemical contaminants in drinking water that have PHGs.

The Act requires that OEHHA publish PHGs based on health risk assessments using the most current scientific methods. As defined in statute, PHGs for non-carcinogenic

[1] Health and Safety Code Section 116470(b)
[2] Health and Safety Code Section 116365

chemicals in drinking water are set at a concentration "at which no known or anticipated adverse health effects will occur, with an adequate margin of safety." For carcinogens, PHGs are set at a concentration that "does not pose any significant risk to health." PHGs provide one basis for revising MCLs, along with cost and technological feasibility. OEHHA has been publishing PHGs since 1997 and the entire list published to date is shown in Table 1.

Table 2 presents health risk information for contaminants that do not have PHGs but have state or federal regulatory standards. The Act requires that, for chemical contaminants with California MCLs that do not yet have PHGs, water utilities use the federal Maximum Contaminant Level Goal (MCLG) for the purpose of complying with the requirement of public notification. MCLGs, like PHGs, are strictly health based and include a margin of safety. One difference, however, is that the MCLGs for carcinogens are set at zero because the US Environmental Protection Agency (US EPA) assumes there is no absolutely safe level of exposure to such chemicals. PHGs, on the other hand, are set at a level considered to pose no *significant* risk of cancer; this is usually no more than a one-in-one-million excess cancer risk (1×10^{-6}) level for a lifetime of exposure. In Table 2, the cancer risks shown are based on the US EPA's evaluations.

For more information on health risks: The adverse health effects for each chemical with a PHG are summarized in a PHG technical support document. These documents are available on the OEHHA website (http://www.oehha.ca.gov). Also, technical fact sheets on most of the chemicals having federal MCLs can be found at http://www.epa.gov/your-drinking-water/table-regulated-drinking-water-contaminants.

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Alachlor	carcinogenicity (causes cancer)	0.004	NA[5,6]	0.002	NA
Aluminum	neurotoxicity and immunotoxicity (harms the nervous and immune systems)	0.6	NA	1	NA
Antimony	digestive system toxicity (causes vomiting)	0.02	NA	0.006	NA
Arsenic	carcinogenicity (causes cancer)	0.000004 (4×10^{-6})	1×10^{-6} (one per million)	0.01	2.5×10^{-3} (2.5 per thousand)
Asbestos	carcinogenicity (causes cancer)	7 MFL[7] (fibers >10 microns in length)	1×10^{-6}	7 MFL (fibers >10 microns in length)	1×10^{-6} (one per million)
Atrazine	carcinogenicity (causes cancer)	0.00015	1×10^{-6}	0.001	7×10^{-6} (seven per million)

[1] Based on the OEHHA PHG technical support document unless otherwise specified. The categories are the hazard traits defined by OEHHA for California's Toxics Information Clearinghouse (online at: http://oehha.ca.gov/multimedia/green/pdf/GC_Regtext011912.pdf).
[2] mg/L = milligrams per liter of water or parts per million (ppm)
[3] Cancer Risk = Upper bound estimate of excess cancer risk from lifetime exposure. Actual cancer risk may be lower or zero. 1×10^{-6} means one excess cancer case per million people exposed.
[4] MCL = maximum contaminant level.
[5] NA = not applicable. Cancer risk cannot be calculated.
[6] The PHG for alachlor is based on a threshold model of carcinogenesis and is set at a level that is believed to be without any significant cancer risk to individuals exposed to the chemical over a lifetime.
[7] MFL = million fibers per liter of water.

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Barium	cardiovascular toxicity (causes high blood pressure)	2	NA	1	NA
Bentazon	hepatotoxicity and digestive system toxicity (harms the liver, intestine, and causes body weight effects[8])	0.2	NA	0.018	NA
Benzene	carcinogenicity (causes leukemia)	0.00015	1×10^{-6}	0.001	7×10^{-6} (seven per million)
Benzo[a]pyrene	carcinogenicity (causes cancer)	0.000007 (7×10^{-6})	1×10^{-6}	0.0002	3×10^{-5} (three per hundred thousand)
Beryllium	digestive system toxicity (harms the stomach or intestine)	0.001	NA	0.004	NA
Bromate	carcinogenicity (causes cancer)	0.0001	1×10^{-6}	0.01	1×10^{-4} (one per ten thousand)
Cadmium	nephrotoxicity (harms the kidney)	0.00004	NA	0.005	NA
Carbofuran	reproductive toxicity (harms the testis)	0.0007	NA	0.018	NA

[8] Body weight effects are an indicator of general toxicity in animal studies.

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Carbon tetrachloride	carcinogenicity (causes cancer)	0.0001	1×10^{-6}	0.0005	5×10^{-6} (five per million)
Chlordane	carcinogenicity (causes cancer)	0.00003	1×10^{-6}	0.0001	3×10^{-6} (three per million)
Chlorite	hematotoxicity (causes anemia) neurotoxicity (causes neurobehavioral effects)	0.05	NA	1	NA
Chromium, hexavalent	carcinogenicity (causes cancer)	0.00002	1×10^{-6}	none	NA
Copper	digestive system toxicity (causes nausea, vomiting, diarrhea)	0.3	NA	1.3 (AL[9])	NA
Cyanide	neurotoxicity (damages nerves) endocrine toxicity (affects the thyroid)	0.15	NA	0.15	NA
Dalapon	nephrotoxicity (harms the kidney)	0.79	NA	0.2	NA
Di(2-ethylhexyl) adipate (DEHA)	developmental toxicity (disrupts development)	0.2	NA	0.4	NA
Diethylhexyl-phthalate (DEHP)	carcinogenicity (causes cancer)	0.012	1×10^{-6}	0.004	3×10^{-7} (three per ten million)

[9] AL = action level. The action levels for copper and lead refer to a concentration measured at the tap. Much of the copper and lead in drinking water is derived from household plumbing (The Lead and Copper Rule, Title 22, California Code of Regulations [CCR] section 64672.3).

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
1,2-Dibromo-3-chloropropane (DBCP)	carcinogenicity (causes cancer)	0.0000017 (1.7×10^{-6})	1×10^{-6}	0.0002	1×10^{-4} (one per ten thousand)
1,2-Dichloro-benzene (*o*-DCB)	hepatotoxicity (harms the liver)	0.6	NA	0.6	NA
1,4-Dichloro-benzene (*p*-DCB)	carcinogenicity (causes cancer)	0.006	1×10^{-6}	0.005	8×10^{-7} (eight per ten million)
1,1-Dichloro-ethane (1,1-DCA)	carcinogenicity (causes cancer)	0.003	1×10^{-6}	0.005	2×10^{-6} (two per million)
1,2-Dichloro-ethane (1,2-DCA)	carcinogenicity (causes cancer)	0.0004	1×10^{-6}	0.0005	1×10^{-6} (one per million)
1,1-Dichloro-ethylene (1,1-DCE)	hepatotoxicity (harms the liver)	0.01	NA	0.006	NA
1,2-Dichloro-ethylene, cis	nephrotoxicity (harms the kidney)	0.013	NA	0.006	NA
1,2-Dichloro-ethylene, trans	immunotoxicity (harms the immune system)	0.05	NA	0.01	NA
Dichloromethane (methylene chloride)	carcinogenicity (causes cancer)	0.004	1×10^{-6}	0.005	1×10^{-6} (one per million)

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
2,4-Dichloro-phenoxyacetic acid (2,4-D)	hepatotoxicity and nephrotoxicity (harms the liver and kidney)	0.02	NA	0.07	NA
1,2-Dichloro-propane (propylene dichloride)	carcinogenicity (causes cancer)	0.0005	1×10^{-6}	0.005	1×10^{-5} (one per hundred thousand)
1,3-Dichloro-propene (Telone II®)	carcinogenicity (causes cancer)	0.0002	1×10^{-6}	0.0005	2×10^{-6} (two per million)
Dinoseb	reproductive toxicity (harms the uterus and testis)	0.014	NA	0.007	NA
Diquat	ocular toxicity (harms the eye) developmental toxicity (causes malformation)	0.006	NA	0.02	NA
Endothall	digestive system toxicity (harms the stomach or intestine)	0.094	NA	0.1	NA
Endrin	neurotoxicity (causes convulsions) hepatotoxicity (harms the liver)	0.0003	NA	0.002	NA
Ethylbenzene (phenylethane)	hepatotoxicity (harms the liver)	0.3	NA	0.3	NA
Ethylene dibromide (1,2-Dibromoethane)	carcinogenicity (causes cancer)	0.00001	1×10^{-6}	0.00005	5×10^{-6} (five per million)

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Fluoride	musculoskeletal toxicity (causes tooth mottling)	1	NA	2	NA
Glyphosate	nephrotoxicity (harms the kidney)	0.9	NA	0.7	NA
Heptachlor	carcinogenicity (causes cancer)	0.000008 (8×10^{-6})	1×10^{-6}	0.00001	1×10^{-6} (one per million)
Heptachlor epoxide	carcinogenicity (causes cancer)	0.000006 (6×10^{-6})	1×10^{-6}	0.00001	2×10^{-6} (two per million)
Hexachloroben-zene	carcinogenicity (causes cancer)	0.00003	1×10^{-6}	0.001	3×10^{-5} (three per hundred thousand)
Hexachloro-cyclopentadiene (HCCPD)	digestive system toxicity (causes stomach lesions)	0.002	NA	0.05	NA
Lead	developmental neurotoxicity (causes neurobehavioral effects in children) cardiovascular toxicity (causes high blood pressure) carcinogenicity (causes cancer)	0.0002	$<1\times10^{-6}$ (PHG is not based on this effect)	0.015 (AL[8])	2×10^{-6} (two per million)
Lindane (γ-BHC)	carcinogenicity (causes cancer)	0.000032	1×10^{-6}	0.0002	6×10^{-6} (six per million)
Mercury (inorganic)	nephrotoxicity (harms the kidney)	0.0012	NA	0.002	NA

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Methoxychlor	endocrine toxicity (causes hormone effects)	0.00009	NA	0.03	NA
Methyl tertiary-butyl ether (MTBE)	carcinogenicity (causes cancer)	0.013	1×10^{-6}	0.013	1×10^{-6} (one per million)
Molinate	carcinogenicity (causes cancer)	0.001	1×10^{-6}	0.02	2×10^{-5} (two per hundred thousand)
Monochloro-benzene (chlorobenzene)	nephrotoxicity (harms the kidney)	0.07	NA	0.07	NA
Nickel	developmental toxicity (causes increased neonatal deaths)	0.012	NA	0.1	NA
Nitrate	hematotoxicity (causes methemoglobinemia)	45 as nitrate	NA	10 as nitrogen (=45 as nitrate)	NA
Nitrite	hematotoxicity (causes methemoglobinemia)	3 as nitrite	NA	1 as nitrogen (=3 as nitrite)	NA
Nitrate and Nitrite	hematotoxicity (causes methemoglobinemia)	10 as nitrogen[10]	NA	10 as nitrogen	NA

[10] The joint nitrate/nitrite PHG of 10 mg/L (10 ppm, expressed as nitrogen) does not replace the individual values, and the maximum contribution from nitrite should not exceed 1 mg/L nitrite-nitrogen.

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
N-nitroso-dimethyl-amine (NDMA)	carcinogenicity (causes cancer)	0.000003 (3×10^{-6})	1×10^{-6}	none	NA
Oxamyl	general toxicity (causes body weight effects)	0.026	NA	0.05	NA
Pentachloro-phenol (PCP)	carcinogenicity (causes cancer)	0.0003	1×10^{-6}	0.001	3×10^{-6} (three per million)
Perchlorate	endocrine toxicity (affects the thyroid) developmental toxicity (causes neurodevelop-mental deficits)	0.001	NA	0.006	NA
Picloram	hepatotoxicity (harms the liver)	0.166	NA	0.5	NA
Polychlorinated biphenyls (PCBs)	carcinogenicity (causes cancer)	0.00009	1×10^{-6}	0.0005	6×10^{-6} (six per million)
Radium-226	carcinogenicity (causes cancer)	0.05 pCi/L	1×10^{-6}	5 pCi/L (combined $Ra^{226+228}$)	1×10^{-4} (one per ten thousand)
Radium-228	carcinogenicity (causes cancer)	0.019 pCi/L	1×10^{-6}	5 pCi/L (combined $Ra^{226+228}$)	3×10^{-4} (three per ten thousand)
Selenium	integumentary toxicity (causes hair loss and nail damage)	0.03	NA	0.05	NA

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Silvex (2,4,5-TP)	hepatotoxicity (harms the liver)	0.003	NA	0.05	NA
Simazine	general toxicity (causes body weight effects)	0.004	NA	0.004	NA
Strontium-90	carcinogenicity (causes cancer)	0.35 pCi/L	1×10^{-6}	8 pCi/L	2×10^{-5} (two per hundred thousand)
Styrene (vinylbenzene)	carcinogenicity (causes cancer)	0.0005	1×10^{-6}	0.1	2×10^{-4} (two per ten thousand)
1,1,2,2-Tetrachloro-ethane	carcinogenicity (causes cancer)	0.0001	1×10^{-6}	0.001	1×10^{-5} (one per hundred thousand)
2,3,7,8-Tetra-chlorodibenzo-*p*-dioxin (TCDD, or dioxin)	carcinogenicity (causes cancer)	5×10^{-11}	1×10^{-6}	3×10^{-8}	6×10^{-4} (six per ten thousand)
Tetrachloro-ethylene (perchloro-ethylene, or PCE)	carcinogenicity (causes cancer)	0.00006	1×10^{-6}	0.005	8×10^{-5} (eight per hundred thousand)
Thallium	integumentary toxicity (causes hair loss)	0.0001	NA	0.002	NA

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Thiobencarb	general toxicity (causes body weight effects) hematotoxicity (affects red blood cells)	0.042	NA	0.07	NA
Toluene (methylbenzene)	hepatotoxicity (harms the liver) endocrine toxicity (harms the thymus)	0.15	NA	0.15	NA
Toxaphene	carcinogenicity (causes cancer)	0.00003	1×10^{-6}	0.003	1×10^{-4} (one per ten thousand)
1,2,4-Trichloro-benzene	endocrine toxicity (harms adrenal glands)	0.005	NA	0.005	NA
1,1,1-Trichloro-ethane	neurotoxicity (harms the nervous system), reproductive toxicity (causes fewer offspring) hepatotoxicity (harms the liver) hematotoxicity (causes blood effects)	1	NA	0.2	NA
1,1,2-Trichloro-ethane	carcinogenicity (causes cancer)	0.0003	$1x10^{-6}$	0.005	2×10^{-5} (two per hundred thousand)
Trichloro-ethylene (TCE)	carcinogenicity (causes cancer)	0.0017	1×10^{-6}	0.005	3×10^{-6} (three per million)

Table 1: Health Risk Categories and Cancer Risk Values for Chemicals with California Public Health Goals (PHGs)

Chemical	Health Risk Category[1]	California PHG (mg/L)[2]	Cancer Risk[3] at the PHG	California MCL[4] (mg/L)	Cancer Risk at the California MCL
Trichlorofluoro-methane (Freon 11)	accelerated mortality (increase in early death)	1.3	NA	0.15	NA
1,2,3-Trichloro-propane (1,2,3-TCP)	carcinogenicity (causes cancer)	0.0000007 (7×10^{-7})	$1x10^{-6}$	0.000005 (5×10^{-6})	7×10^{-6} (seven per million)
1,1,2-Trichloro-1,2,2-trifluoro-ethane (Freon 113)	hepatotoxicity (harms the liver)	4	NA	1.2	NA
Tritium	carcinogenicity (causes cancer)	400 pCi/L	$1x10^{-6}$	20,000 pCi/L	$5x10^{-5}$ (five per hundred thousand)
Uranium	carcinogenicity (causes cancer)	0.43 pCi/L	1×10^{-6}	20 pCi/L	5×10^{-5} (five per hundred thousand)
Vinyl chloride	carcinogenicity (causes cancer)	0.00005	1×10^{-6}	0.0005	1×10^{-5} (one per hundred thousand)
Xylene	neurotoxicity (affects the senses, mood, and motor control)	1.8 (single isomer or sum of isomers)	NA	1.75 (single isomer or sum of isomers)	NA

Table 2: Health Risk Categories and Cancer Risk Values for Chemicals without California Public Health Goals

Chemical	Health Risk Category[1]	US EPA MCLG[2] (mg/L)	Cancer Risk[3] @ MCLG	California MCL[4] (mg/L)	Cancer Risk @ California MCL
Disinfection byproducts (DBPs)					
Chloramines	acute toxicity (causes irritation) digestive system toxicity (harms the stomach) hematotoxicity (causes anemia)	4[5,6]	NA[7]	none	NA
Chlorine	acute toxicity (causes irritation) digestive system toxicity (harms the stomach)	4[5,6]	NA	none	NA
Chlorine dioxide	hematotoxicity (causes anemia) neurotoxicity (harms the nervous system)	0.8[5,6]	NA	none	NA
Disinfection byproducts: haloacetic acids (HAA5)					
Monochloroacetic acid (MCA)	general toxicity (causes body and organ weight changes[8])	0.07	NA	none	NA
Dichloroacetic acid (DCA)	carcinogenicity (causes cancer)	0	0	none	NA

[1] Health risk category based on the US EPA MCLG document or California MCL document unless otherwise specified.
[2] MCLG = maximum contaminant level goal established by US EPA.
[3] Cancer Risk = Upper estimate of excess cancer risk from lifetime exposure. Actual cancer risk may be lower or zero. 1×10^{-6} means one excess cancer case per million people exposed.
[4] California MCL = maximum contaminant level established by California.
[5] Maximum Residual Disinfectant Level Goal, or MRDLG.
[6] The federal Maximum Residual Disinfectant Level (MRDL), or highest level of disinfectant allowed in drinking water, is the same value for this chemical.
[7] NA = not available.
[8] Body weight effects are an indicator of general toxicity in animal studies.

Table 2: Health Risk Categories and Cancer Risk Values for Chemicals without California Public Health Goals

Chemical	Health Risk Category[1]	US EPA MCLG[2] (mg/L)	Cancer Risk[3] @ MCLG	California MCL[4] (mg/L)	Cancer Risk @ California MCL
Trichloroacetic acid (TCA)	hepatotoxicity (harms the liver)	0.02	NA	none	NA
Monobromoacetic acid (MBA)	NA	none	NA	none	NA
Dibromoacetic acid (DBA)	NA	none	NA	none	NA
Total haloacetic acids (sum of MCA, DCA, TCA, MBA, and DBA)	general toxicity, hepatotoxicity and carcinogenicity (causes body and organ weight changes, harms the liver and causes cancer)	none	NA	0.06	NA
Disinfection byproducts: trihalomethanes (THMs)					
Bromodichloro-methane (BDCM)	carcinogenicity (causes cancer)	0	0	none	NA
Bromoform	carcinogenicity (causes cancer)	0	0	none	NA
Chloroform	hepatotoxicity and nephrotoxicity (harms the liver and kidney)	0.07	NA	none	NA
Dibromo-chloromethane (DBCM)	hepatotoxicity, nephrotoxicity, and neurotoxicity (harms the liver, kidney, and nervous system)	0.06	NA	none	NA

Table 2: Health Risk Categories and Cancer Risk Values for Chemicals without California Public Health Goals

Chemical	Health Risk Category[1]	US EPA MCLG[2] (mg/L)	Cancer Risk[3] @ MCLG	California MCL[4] (mg/L)	Cancer Risk @ California MCL
Total trihalomethanes (sum of BDCM, bromoform, chloroform and DBCM)	carcinogenicity (causes cancer), hepatotoxicity, nephrotoxicity, and neurotoxicity (harms the liver, kidney, and nervous system)	none	NA	0.08	NA
Radionuclides					
Gross alpha particles[9]	carcinogenicity (causes cancer)	0 (^{210}Po included)	0	15 pCi/L[10] (includes ^{226}Ra but not radon and uranium)	up to $1x10^{-3}$ (for ^{210}Po, the most potent alpha emitter
Beta particles and photon emitters[9]	carcinogenicity (causes cancer)	0 (^{210}Pb included)	0	50 pCi/L (judged equiv. to 4 mrem/yr)	up to $2x10^{-3}$ (for ^{210}Pb, the most potent beta-emitter)

[9] MCLs for gross alpha and beta particles are screening standards for a group of radionuclides. Corresponding PHGs were not developed for gross alpha and beta particles. See the OEHHA memoranda discussing the cancer risks at these MCLs at http://www.oehha.ca.gov/water/reports/grossab.html.

[10] pCi/L = picocuries per liter of water.

CITY OF SANTA CRUZ WATER DEPARTMENT
CONSUMER CONFIDENCE REPORT
2018

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

此份有關你的食水報告,內有重要資料和訊息,請找他人為你翻譯及解釋清楚。

WHAT IS THIS REPORT?

This annual Consumer Confidence Report provides a summary of the water quality tested in 2018 and has been prepared to inform the City of Santa Cruz Water customers about their drinking water quality. Included in this report are details about where your water comes from, what it contains, and how it compares to Federal and State drinking water standards. The City of Santa Cruz vigilantly safeguards its water supplies and provides thorough treatment to ensure that our customers receive high quality drinking water. We are committed to providing our customers with accurate information about their drinking water quality. **In 2018, as in years past, your tap water met all U.S. Environmental Protection Agency and State of California drinking water health standards.**

WHERE DOES OUR WATER COME FROM?

To provide water for our service area, the City of Santa Cruz depends on water supplies from four locales: the North Coast sources, San Lorenzo River, Loch Lomond Reservoir and the Live Oak Wells. Except for groundwater from the Live Oak Wells, all other water sources are from surface water diversions or groundwater under the direct influence of surface water, which are dependent on annual rainfall and runoff.

The North Coast sources consist of surface water diversions from three coastal streams and one natural spring. Due to the excellent water quality and the lowest production cost, these North Coast sources are used to the greatest extent. These source waters are conveyed to the City's Graham Hill Water Treatment Plant for treatment. The use of these sources by the City dates back to 1890.

San Lorenzo River flows are diverted to the Graham Hill Water Treatment Plant for treatment. Three wells (groundwater under the direct influence of surface water) located next to the San Lorenzo River and hydraulically connected, are included in the City's water right. Additionally, the City can divert water from the San Lorenzo River in Felton to store in Loch Lomond Reservoir. This water is used to supplement storage in the reservoir during dry years, when natural water inflow from Newell Creek is low.

Loch Lomond Reservoir, constructed in 1960, provides surface water storage on Newell Creek. Water from the reservoir is treated at the Graham Hill Water Treatment Plant. Additionally, the reservoir and surrounding watershed are used for public recreation purposes, including fishing, boating, hiking, and picnicking.

The Live Oak well system consists of four groundwater wells and two small groundwater treatment plants located in the southeast portion of the City's service area. Three of these wells draw directly from the Purisima Aquifer, while one well draws from both the Purisima and Santa Margarita Aquifers. During the late spring, summer and early fall seasons, when surface water flows may be inadequate to meet the daily customer water demand, this supplemental groundwater supply is pumped from the four Live Oak Wells and treated on site at two groundwater treatment plants and distributed to customers in the southeast service area.

IS OUR WATER VULNERABLE TO CONTAMINATION?

Since 1996, water suppliers who rely on surface water have been required to conduct assessments (called Watershed Sanitary Surveys) of their water sources to identify potential sources of contamination and their respective treatment plants' ability to treat those pollution sources. Assessments include a delineation of the area around water sources and a review of activities with the potential to release contaminants within the delineated area. A number of potentially contaminating activities exist in the area of the Santa Cruz water sources, including commercial cannabis cultivation, wastewater and urban runoff, confined animal facilities, unauthorized activity, roads (including timber harvest roads), mining/quarry activities, geologic hazards and fires including landslides after significant rains, chemical spills, pesticides and herbicides, among others. Also, a number of legacy land disturbances including historic timber harvest roads and isolated industrial operations that resulted in contaminant plumes which still have the potential to impact drinking water sources. To provide the highest quality drinking water possible, the City works proactively with a number of partners to reduce or eliminate potential contaminant sources and prioritizes the use of the highest quality source water during times when the drinking water system is most vulnerable (i.e. during storm runoff periods). This watershed protection effort also provides benefits to other "beneficial users" of the watersheds like steelhead trout and coho salmon. In 2018, the Watershed section of the City Water Department completed an update to the 2013 Drinking Watershed Sanitary Survey of the San Lorenzo Valley and North Coast Watersheds, which can be viewed at www.cityofsantacruz.com/SanitarySurvey2018

WHY ARE THERE CONTAMINANTS IN DRINKING WATER?

In order to ensure that tap water is safe to drink, U.S. EPA and the State Water Resources Control Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that provide the same protection for public health https://www.cdph.ca.gov/Programs/CEH/DFDCS/Pages/FDBPrograms/FoodSafetyProgram/Water.aspx

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U. S. EPA's Safe Drinking Water Hotline (1-800-426-4791).

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses, parasites and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- Radioactive contaminants that can be naturally-occurring or be the result of oil and gas production and mining activities.

The State Water Resources Control Board, Division of Drinking Water allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Cryptosporidium is a microbial pathogen (parasite) found in surface water throughout the United States. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Monitoring done in 2015-2017 indicates the presence of these organisms in our raw source waters. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. **However, immune-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immune-compromised individuals to consult with their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.** https://www.cdc.gov/parasites/water.html

INORGANIC CONTAMINANTS WITH ACTION LEVELS

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, young children and infants. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Santa Cruz Water Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in household plumbing components. **When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap water for 30 seconds to two minutes before using water for drinking or cooking. If you do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants.** If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/lead . In 2018, tap water samples were collected from 34 Santa Cruz area homes after their water sat unused overnight for 6 hours or more, then analyzed for lead and copper as required by the Lead and Copper Rule https://www.epa.gov/dwreginfo/lead-and-copper-rule . The City of Santa Cruz has a three year waiver for required Lead and Copper Rule monitoring frequency, the next study will be in 2021. **Eight K-12 schools within the Santa Cruz Water service area were tested for lead in 2018 with the remainder of schools to be tested in 2019.**

WATER QUALITY DATA TABLE

The Table of Detected Contaminants lists drinking water contaminants that were detected during the 2018 calendar year. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk.

To interpret the tables, you will need the following definitions:

MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

MCLG: Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

MRDL: Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG: Maximum Residual Disinfectant Level Goal: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

N/A: Not Applicable

PDWS: Primary Drinking Water Standard: MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

PHG: Public Health Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA).

LRAA: Locational Running Annual Average: The locational quarterly average of the most recent 12 months of data.

RAL: Regulatory Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

SDWS: Secondary Drinking Water Standards: MCLs for contaminants that may adversely affect the taste, odor or appearance of drinking water. These are aesthetic considerations that are not considered as health concerns.

TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

WATER QUALITY TABLE OF DETECTED CONTAMINANTS

Contaminants Regulated by Primary Drinking Water Standards

Contaminants (units)	PHG MCLG	PDWS MCL	Treated Water Average[2]	Source Water Range[1]		Sample Date	Violation	Typical Source of Contamination
				Low	High			
Aluminum (ppm)	0.6	1	0.02	< 0.02	0.03	2018	No	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic (ppb)	0.004	10	< 1.0	< 1.0	3.6	2018	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Fluoride (ppm)	1	2.0	0.2	< 0.1	0.6	2018	No	Erosion of natural deposits; discharge from fertilizer and aluminum factories
Gross Alpha particle activity (pCi/L)	0	15	< 3.00	< 3.00	< 3.00	2017	No	Erosion of natural deposits
Nitrate as Nitrogen (ppm)	10	10	0.26	< 0.02	0.64	2018	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits

Additional Contaminants Regulated by Primary Drinking Water Standards

Contaminants (units)	PHG MCLG	PDWS MCL	Treated Water Average[2]	Treated Water Range[2]		Sample Date	Violation	Typical Source of Contamination
				Low	High			
Turbidity (NTU)	TT	Maximum 1 and 95% < 0.3	0.08	0.04	2.6	2018	No	Soil runoff

Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Microbiological Contaminants

Contaminants	PHG MCLG	PDWS MCL	Treated Water[2]	Source Water[1]	Sample Date	Violation	Typical Source of Contamination
Total Coliform Bacteria	0	less than 5% positive	0 positive		2018	No	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present.
E. Coli	0	0	0 positive		2018	No	*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes.

Contaminants Regulated by MRDL

Contaminants (units)	PHG	PDWS MRDL	Treated Water Average[2]	Treated Water Range[2]		Sample Date	Violation	Typical Source of Contamination
				Low	High			
Chlorine (ppm)	4	4	0.90	0.02	1.57	2018	No	Drinking water disinfectant added for treatment

Disinfection Byproduct Contaminants under Stage 2 DBP Rule

Contaminants (units)	PHG MCLG	MCL	Treated Water[2]	Treated Water Range[2] Low	Treated Water Range[2] High	Sample Date	Violation	Typical Source of Contamination
TTHM [Total Trihalomethanes] (ppb)	N/A	80 (LRAA)	59 (LRAA)	8	61	2018	No	By-product of drinking water disinfection
HAA5 [Haloacetic Acids (five)] (ppb)	N/A	60 (LRAA)	45 (LRAA)	< 2	48	2018	No	By-product of drinking water disinfection

Inorganic Contaminants with Action Levels

Contaminants (units)	PHG	RAL	Tap Water 90th Percentile[3]	# of Samples Exceeding RAL[3]	Sample Date	Exceeds RAL	Typical Source of Contamination
Copper (ppm)	0.3	1.3	0.4	0/34	2018	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	0.2	15	< 2	0/34	2018	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

Contaminants with Secondary Drinking Water Standards (SDWS)

Contaminants (units)	SDWS MCL	Treated Water Average[2]	Treated Water Range[2] Low	Treated Water Range[2] High	Sample Date	Typical Source of Contamination
Iron (ppb)	300	<20	< 20	95	2018	Leaching from natural deposits; industrial wastes
Chloride (ppm)	500	26	20	55	2018	Runoff/leaching from natural deposits; seawater influence
Manganese (ppb)	50	2	< 2	12	2018	Leaching from natural deposits
Specific Conductance (µmhos/cm)	1600	470	405	760	2018	Substances that form ions when in water; seawater influence
Sulfate (ppm)	500	74	58	140	2018	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	1000	280	260	510	2018	Runoff/leaching from natural deposits

Other Monitoring Results

Other monitoring results are provided for consumer information.

Constituents (units)	Treated Water Average[2]	Treated Water Range[2] Low	Treated Water Range[2] High	Sample Date	Typical Source of Contamination
Hardness (ppm)	175	150	270	2018	A measure of the major cations, primarily calcium and magnesium
Sodium (ppm)	27	22	52	2018	Runoff/leaching from natural deposits; saltwater influence
Hexavalent Chromium (ppb) *	0.03	< 0.02	0.05	2018	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits.

*** There is currently no MCL for Hexavalent Chromium.** The previous MCL of 0.010 mg/L or 10 ug/L (ppb) was withdrawn on September 11, 2017. Some people who drink water containing hexavalent chromium in excess of 10 ug/L (ppb) over many years may have an increased risk of getting cancer.

Unregulated Contaminants – UCMR3

Contaminants (units)	Treated Water Average[2]	Treated Water Range[2] Low	Treated Water Range[2] High	Sample Dates
Chlorate (ppb)	180	73	320	2013/2014
Chromium-6 (ppb)	0.05	< 0.03	0.14	2013/2014
Molybdenum (ppb)	2.1	1.6	2.6	2013/2014
Strontium (ppb)	245	200	260	2013/2014
Vanadium (ppb)	0.3	< 0.2	0.7	2013/2014

[1]Untreated water from the raw sources [2]Treated water from treatment plants and/or water mains [3]Water from 34 customers' household taps

Unregulated contaminants are those for which U.S. EPA has not established drinking water standards. Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

Data Table Units:
NTU: Nephelometric Turbidity Units
pCi/L: picocuries per liter (a measurement of radioactivity)
ppm: parts per million or milligrams per liter (mg/L)
ppb: parts per billion or micrograms per liter (µg/L)
µmhos/cm: a measure of electrical conductivity

We hope this Consumer Confidence Report is valuable to you. If you have any questions or comments about your drinking water, please contact one of the City of Santa Cruz staff listed below.

WATER ADMINISTRATION
Rosemary Menard, Water Director
212 Locust St, Suite A
Santa Cruz, CA 95060
Phone: (831) 420-5200
Fax: (831) 420-5201

WATER QUALITY LABORATORY
Hugh Dalton, Water Quality Manager
715 Graham Hill Road
Santa Cruz, CA 95060
Phone: (831) 420-5484
E-mail: WaterQuality@cityofsantacruz.com
CCR2018:
www.cityofsantacruz.com/ccr2018

WATER RESOURCES
Chris Berry, Watershed Compliance Manager
715 Graham Hill Road
Santa Cruz, CA 95060
Phone: (831) 420-5483
E-mail:
WaterResources@cityofsantacruz.com

You can also find other information on the Water Department and its activities and events on the City's website http://www.cityofsantacruz.com/government/city-departments/water for information on Water Conservation, Loch Lomond Recreation Area, activities and projects of our Engineering Section, Water Commission and more. Meetings of the City Council and Water Commission provide excellent opportunities for you to get involved in issues related to drinking water. Their agendas are posted on the website listed above, at City Hall, or you can call the Water Department at (831) 420-5200 to find out more. We welcome your attendance and input.

SANTA CRUZ CITY COUNCIL
809 Center Street, Room 10
Santa Cruz, CA 95060
Phone: (831) 420-5020
E-mail: CityCouncil@cityofsantacruz.com

SANTA CRUZ WATER COMMISSION
Contact the Water Commission through the Water Department at (831) 420-5200
Water Commission meetings are scheduled for the first Monday of each month at 7:00 pm.

Other sources of information:

STATE WATER RESOURCES CONTROL BOARD
DIVISION OF DRINKING WATER
Monterey District Office
(831) 655-6939
http://www.waterboards.ca.gov/drinking_water/programs/index.shtml
http://www.swrcb.ca.gov/drinking_water/certlic/drinkingwater/Lawbook.shtml

U.S. ENVIRONMENTAL PROTECTION AGENCY (U.S. EPA)
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460
(202) 566-1729
http://water.epa.gov/drink/index.cfm

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WATER COMMISSION
INFORMATION REPORT

DATE: 5/29/2019

AGENDA OF: June 3, 2019

TO: Water Commission

FROM: Rosemary Menard, Water Director

SUBJECT: City Council Actions Affecting the Water Department

RECOMMENDATION: Accept the City Council actions affecting the Water Department.

BACKGROUND/DISCUSSION:

May 14, 2019

Newell Creek Dam Inlet/Outlet Replacement Project – Final Environmental Report and Project Approval

Resolution No. NS-29,514 was adopted certifying the Final Environmental Impact Report for the Newell Creek Dam Inlet/Outlet Replacement Project.

Resolution No. NS-29,515 was adopted adopting Findings of Fact and a Mitigation, Monitoring, and Reporting Program and approving the Newell Creek Dam Inlet/Outlet Replacement Project.

PROPOSED MOTION: Motion to accept the City Council actions affecting the Water Department.

ATTACHMENTS: None.

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Water Department

Water Commission
7:00 p.m. – May 6, 2019
City Council Chambers
809 Center Street, Santa Cruz

Summary of a Water Commission Meeting

Call to Order: 6:58 PM

Roll Call

Present: D. Engfer (Chair), J. Mekis, S. Ryan, D. Schwarm, L. Wilshusen

Absent: D. Baskin - with notification, W. Wadlow - with notification

Staff: R. Menard, Water Director; J. Becker, Finance Manager; C. Coburn, Deputy Director/Operations Manager; K. Crossley, Senior Professional Engineer; N. Dennis, Principle Management Analyst; T. Goddard, Conservation Manager; H. Luckenbach, Deputy Director/Engineering; J. Martinez-McKinney, Associate Planner; S. Perez, Associate Planner; B. Pink, Environmental Projects Analyst; K. Fitzgerald, Administrative Assistant III

Others: 8 members of the public.

Presentation: None

Statement of Disqualification: None

Oral Communications: None

Announcements: None

Consent Agenda

1. City Council Items Affecting Water
2. Water Commission Minutes from April 1, 2019
4. 2019 Annual Water Supply and Demand Assessment

Commissioners requested that the Minutes from the April 1st, 2019 include a list of the former WSAC members who attended the Joint Workshop with the Water Commission.

Commissioner Wilshusen moved the Consent Agenda as amended. Commissioner Mekis seconded.

VOICE VOTE: MOTION CARRIED
AYES: All

DRAFT

NOES: None
ABSTAIN: D. Schwarm, due to absence

Items removed from the Consent Agenda

Commissioner Engfer removed the 3rd Quarter FY19 Financial Report from the Consent Agenda**.**

3. 3rd Quarter FY19 Financial Report

What expenses are covered by the funds from the Revolving Line of Credit?

- Funds from the Revolving Line of Credit are used to fund capital improvement projects.

Why are the balances of some projects listed as complete on page 3.4, such as the North Coast System Repair Phases 1-3, under budget?

- Three of the planned six phases of the North Coast Pipeline Replacement Project have been completed over a multiple-year timeframe. The amount spent to date does not include the first phase of the $13 million already spent because the project number changed between Phases 1 and 2. The total cost for the project has not yet been updated with new estimates and future phases of the project will be assigned separate project numbers for clarification.

Are the budgets for each project shown on page 3.4 reflective of the validation process?

- No, not all projects have gone through the validation process, completed the validation process, or have any changes reflected here. Staff is working towards having the 4th quarter report reflect validation.

Commissioner Wilshusen moved the 3rd Quarter Financial Report as amended. Commissioner Schwarm seconded.

VOICE VOTE: MOTION CARRIED
AYES: All
NOES: None
ABSTAIN: None

General Business

5. Customer Survey Results

Ms. Menard introduced Mr. Gene Bregman to present the results of the Customer Survey. The Community Survey was conducted in February 2019 via telephone to customers who were registered voters with Santa Cruz County. The purpose of the survey was to capture the attitude of the community towards the directions the Water Department is taking to address the water supply reliability issues for the City.

Was there a difference in responses from customers living inside the City versus in the outside City service area?

- No.

DRAFT

Was the question regarding the favorability of recycled water framed so that the respondents knew the difference between potable and non-potable water use?

- Yes and a set of questions later asked in the survey addressed this topic.

Did the survey distinguish between respondents who pay rates inside the City and outside the City?

- Yes.

How does the Department intend to use the results of the survey?

- The results will be used to identify opportunities for community outreach and will be a useful tool for the development of strategies for community engagement.

Commissioners commented positively on the inclusion of water affordability questions in the community survey.

6. Recommendations on the FY2020 Operating and FY 2020-24 Capital Investment Program (CIP) Budgets

Ms. Menard introduced Ms. Dennis and Mr. Becker for the presentation of the FY2020 Operating and FY 2020-24 Capital Investment Program Budgets. Ms. Dennis discussed the FY 2020 Operating Budget and Mr. Becker discussed the FY 2020-24 CIP Budget.

Looking at the historical trends data, why is there an increase in benefits costs between the years 2016 and 2017?

- This is due to an increase in health care costs in addition to the higher pension costs to address unfunded PERS liability.

How is the Drinking Water State Revolving Loan Fund (DWSRF) application for the Newell Creek Dam Inlet/Outlet Replacement project affected if the Department continues to fund it through next year?

- The SRF program allows for expenditures already incurred on a project that is ultimately funded by the program to be included in the total project loan. This means that if the project is funded that the Water Operations Fund (711) would be reimbursed for those expenditures.

If water reliability and water redundancy are paired major goals of the Department, should "water redundancy" be included on basic goals slide of the first budget presentation to City Council?

- Redundancy is typically referenced more in the context of infrastructure, for example, having two pipelines that can deliver service to an area would provide redundancy.

Has the Department funded positions for other city departments within the city as it will be doing for the Business Systems Analyst II?

- Yes. The Department currently funds the SCADA Administrator position, which is based in the Information Technology (IT) Department, but works out of the Graham Hill Water Treatment Plant. A similar approach is used for the SCADA employee who works out of the Wastewater Treatment plant. This strategy is meant to support technical subject matter robustness, as well as provide for greater ability to call on relevant specialized services in the event that our assigned employee is ill, on vacation, or leaves the City.

DRAFT

Commissioners' suggested that staff clarify that the Department will be adding four new positions with one being in IT for the FY 20 Budget presentation to City Council.

In regards to ASR, will staff be looking at all capital expenses for ASR or is the identified funding entirely related to studies?

- The WSAC recommendations were divided into two phases; the study phase which will be followed by a decision phase by 2020 followed by an implementation phase. Following up on the information presented at the April 1st Water Commission meeting, we will be bringing some recommendations for near term actions, including implementation activities related to ASR in the Beltz wellfield to the Water Commission for discussion. Ultimately, these actions and other potential changes to the WSAC's recommend scope and work plan will need to be reviewed and acted upon by the City Council, and that process is tentatively scheduled for the fall of 2019. Commissioners suggested that staff identify and categorize which capital expense items related to Water Supply Augmentation Strategies are studies and which are implementation.

How are funds for multi-year contracts allocated?

- Historically, all the funds for any project were fully encumbered when the project was initiated. As many of the Department's projects take multiple years to complete, this approach has resulted in a very messy process of rolling over funds from one year to the next. One downside of rolling over funds is that it clouds cash-flow planning and management, which makes it difficult to time the issuance of debt. Beginning with FY 2020, the Department will be working with project managers to encumber funds needed for projects during each fiscal year, which should help with cash-flow planning and management as well as help project managers more clearly connect their projects annual work plan and schedule with the funds required to move projects forward in a timely manner.

Can staff clarify why debt service has increased for FY 2020?

- The debt service is increasing due to the planned conversion of short term borrowing from the Revolving Line of Credit into long term debt that will be reflected in additional debt service.

Commissioners suggested that staff provide clarification on why debt service will be increasing in FY 2020.

Why does spending for supplies under Water Rights increase, as shown on page 6.8 of the staff report?

- The spending has increased due to the work being done to amend the City's water rights, including using the environmental consulting firm, Dudek, to develop a draft Environmental Impact Report with a scheduled release during the fall of 2019 and also the work required to produce an administrative draft of the salmonid Habitat Conservation Plan (HCP),

Can staff clarify whether the budget summary on pages 6.59 through 6.60 will be presented to City Council?

DRAFT

- No, this table is for the Water Commission and is intended to highlight the changes in funding needed for the CIP.

Is staff pursuing an exemption to the low bid requirement and how does this affect contingency cost estimates for the Newell Creek Dam Inlet/Outlet Replacement project?

- Yes, the current plan is to have a Charter Amendment placed on the ballot for March 2020 to change that Charter's current requirement that all public works project be awarded to the low bidder (See 1415 CONTRACTS FOR PUBLIC WORKS at https://www.codepublishing.com/CA/SantaCruz/). However, because of the need to move the construction of the Newell Creek Dam Inlet/Outlet Replacement forward on its current scheduled in order to avoid a concurrent construction schedule with the Graham Hill Water Treatment Plant Upgrades, the Department is considering options for the contractor procurement process that begins with a contractor prequalification, which allows us to screen out contractors that do not meet certain criteria.
- Also, as a risk management strategy, contingencies for the Newell Creek Inlet/Outlet project that are higher than typical have been established for the construction phases of this project. We are also working to include language in the contract that gives the contractor a bid allowance to prevent the contractor from over running certain aspects of the project.

Has the 7.5% per year water rate increase after 2020 been approved by Council?

- No, this figure is an estimate of what will be needed to cover operating expenses during those years. The Department expects to take recommendations for rate increases and possibly rate structure changes to the Council for review and action in early 2021 following completion of a cost of service analysis. The Water Commission will be asked to take action on any recommendations prior to Council action.

What ways can Commissioners assist the Department in raising awareness and promoting support for grants to fund infrastructure replacement?

- The conversation regarding funding for water infrastructure in the State is currently more focused on water affordability rather than investing in infrastructure. There may be opportunities as the conversation moves forward.

How will any funds over the $10 million reserve target in the Rate Stabilization Fund be used?

- The 2016 Long Range Financial Plan includes an approach about how the Department should deal with this matter once the target is reached. It involves going to City Council to discuss whether the fee should be eliminated or if not how any additional funds should be used .

How is the Department determining whether to go with the DWSRF loan or bonded debt?

- Current interest rates on market rates bonds is estimated to be in the range of 3.5 % while SRF loan rates are currently in the range of 1.9 to 2%. This lower rate makes SRF loans highly desirable when compared to market rate debt, especially when you consider that repayment of DWSRF loan funds doesn't begin until the project has been completed.

Will the current work on Beltz wells 10 and 11 create the opportunity for ASR to be conducted at those sites?

DRAFT

- Work is currently taking place at Beltz wells 9, 10, and 11 and all of these wells are planned to be studied for potential ASR capabilities. Beltz 9 is likely to be the next pilot site for ASR.

Commissioners suggested that the text on page 6.31 on the description of improvements for the GHWTP should mention that the upgrades will enhance the ability to treat a wider range of source water qualities. Also, the description of improvements for the Newell Creek Inlet/Outlet Replacement should mention that the ability to dewater the reservoir in an emergency is a state requirement with the Division of Safety of Dams.

Why were horizontal wells no longer being considered at the Felton Diversion?

- A technical memorandum is being developed that will summarize the decision and will be presented to the Water Commission at a future meeting. That said, the short answer is that there are geological and contamination concerns, as well as water rights issues.

Has the Water Street Main Replacement project been awarded?

- Yes, the contract was awarded to the Don Chapin Company.

No public comments were received.

Commissioner Engfer made a motion to recommend that City Council approve the FY2020 Operating and FY20-24 CIP Budgets with suggested changes and authorize the Chair to sign a transmittal letter on behalf of the Water Commission.

Commissioner Schwarm moved the motion. Commissioner Mekis seconded.

VOICE VOTE: MOTION CARRIED
AYES: All
NOES: None
ABSTAIN: None

7. Newell Creek Dam Inlet/Outlet Replacement Project Final Environmental Impact Report (EIR) Certification

Ms. Menard introduced Ms. Luckenbach for the discussion of the EIR Certification for the Newell Creek Dam Inlet/Outlet Replacement Project. The Final EIR will be submitted to City Council for certification at their May 14th meeting.

Is the schedule for construction modifiable in the event that biological and archaeological findings are found in the area?

- The schedule thus far includes all the biological studies in the monitoring plan and ongoing work on permitting will define any needed actions to address biological or archaeological findings of note.

How many public comments been received on the EIR?

- Five letters of comment were received and the responses can be found on the City website at the link below (reference Chapter 8):

DRAFT

http://www.cityofsantacruz.com/government/city-departments/water/online-reports/environmental-documents/-fsiteid-1

Will a surveyor be present should aquatic vertebrates be found near the construction site?

- Yes, those details will be outlined in a 404 plan with the Army Corps of Engineers.

No public comments were received.

Commissioner Wilshusen made a motion to support staff's recommendation that Council certify the Final EIR and adopt the findings as stated in the staff report. Commissioner Mekis seconded.

VOICE VOTE: MOTION CARRIED
AYES: All
NOES: None
ABSTAIN: None

Subcommittee/Advisory Body Oral Reports

8. Mid-County Groundwater Agency
A joint meeting with the MGA Board will be held on May 16th at 7:00 pm. The final advisory committee meeting will be held on the June 19th at 7:00 pm. The draft Mid-County Groundwater Agency Groundwater Sustainability Plan is scheduled for release in mid-July to be followed by a sixty day public comment period, and a public hearing by the MGA Board to be held around September 19th. .

9. Santa Margarita Groundwater Agency
None.

Director's Oral Report: Ms. Menard announced that staff will be bringing to the June 3rd Water Commission meeting the mitigated negative declaration for the GHWTP Concrete Tanks project that is scheduled to City Council June 11th and an information item on Service Order 5 with HDR, Inc. Also at the June 3rd meeting, the Commission will hold a public hearing for the 2019 Public Health Goal report will also be held per state requirement, as well as have a discussion on the Pure Water Soquel project agreement with Soquel Creek Water District in regards to providing source water for the Pure Water Soquel project and allowing the tertiary treatment facility to be constructed a the City's wastewater treatment plant at Neary Lagoon.

Adjournment Meeting adjourned at 9:58 PM.

Respectfully submitted,

Katy Fitzgerald
Staff

DRAFT

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WATER COMMISSION
INFORMATION REPORT

DATE: 5/29/2019

AGENDA OF June 3, 2019

TO: Water Commission

FROM: Heidi Luckenbach, Deputy Director/Engineering Manager

SUBJECT: Water Supply Augmentation Strategy, Quarterly Work Plan Update

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RECOMMENDATION: Receive information regarding the status of the various components of the Water Supply Augmentation Strategy and provide feedback.

BACKGROUND and DISCUSSION: Following the completion of the Water Supply Advisory Committee (WSAC) process, the City Council accepted the Final Report on Agreements and Recommendations that included a detailed Implementation Plan and Adaptive Management Strategy. The WSAC work was adopted as part of the 2015 Urban Water Management Plan and is currently referred to as the Water Supply Augmentation Strategy (WSAS) that includes an Implementation Work Plan (Work Plan).

As per the Final Agreements and Recommendations of the Water Supply Advisory Committee (WSAC), the Water Commission shall receive quarterly updates on the status of the various elements of the recommended plan. This is the fourteenth quarterly update.

The content and format of this report will continue to be modified to reflect in a comprehensive yet concise way the progress and findings of the various elements of work. Commissioner requests are shown below; new items will be shown in italics, ongoing items will be in normal font, completed items will be struck for one quarterly report and then removed.

- ~~Organize by "Element" as defined by the WSAC. Reflected herein.~~
- Develop a spreadsheet that shows all the supply projects and portfolios of projects with all the metrics. As discussed in a separate item on the agenda, the WSAS work plan will be modified in the coming months which will be the best time to develop this spreadsheet.
- ~~Include an update on Santa Cruz Water Rights. Reflected herein.~~
- Develop a narrative and/or spreadsheet that shows the nexus between water supply projects specifically spelled out in the WSAC report and other projects and studies being performed by the Water Department. This is an ongoing effort. Narratives are added to each section below as appropriate. As the work plan is modified over the coming months, the process of capturing the nexus will be developed more fully.

- ~~For context, include an update on work being performed under the Sustainable Groundwater Management Act. A section has been added under ASR to provide an overview of work in both the Mid County and Santa Margarita Groundwater basins.~~

The Water Supply Augmentation Strategy (WSAS) consists of the following elements as defined by the WSAC:

- Element 0: Demand Management. Implementation of the Long Term Water Conservation Master Plan is foundational to the WSAS.
- Element 1: In Lieu. This alternative could include the sale of water to other agencies with or without the assumption of additional water back to the City during droughts.
- Element 2: Aquifer Storage and Recovery. Evaluations of both the Mid-County and Santa Margarita Groundwater Basins are being conducted.
- Element 3: Advanced Treated Recycled Water or Seawater Desalination

Progress and status of the various WSAS-related work are described in detail below as well as that of other projects related to but not specifically articulated in the WSAS.

ELEMENT 0: DEMAND MANAGEMENT

Overview: Element 0 of the City's Water Supply Augmentation Strategy consists of ongoing demand management activities. The primary goal of this element is to generate an additional 200 to 250 million gallons per year in demand reduction by year 2035 from expanded water conservation.

Summary: The following is a summary of the status of the selected measures in the water conservation plan.

No. 1 System Water Loss Reduction. Staff completed the 2018 distribution system water audit. The audit will be reviewed by a 3rd party validator before being forwarded to the state.

No. 3 Large Landscape Budget-Based Water Rates. Staff from the Water Conservation, Meter Shop, and Customer Service sections are working to make a minor but important adjustment to the meter reading and billing dates for dedicated irrigation accounts. All accounts are now being read on the same day at the end of each month to better align with their allotted monthly water budget. A notice was sent announcing the change to all irrigation account holders.

No. 4 General Public Information. Our new brochure "Helping You Save Water" that provides a brief description of all the services and offerings of the Water Conservation Office was sent out this May to all 25,000 +/- water account holders in the form of a utility bill insert.

No. 5 Home Water Use Report. The Home Water Use Report program is up and going with the second monthly report distributed in May. There are 5,195 active participants, of which 635 (12%) have registered on the Water Smart online portal. Staff continues to receive calls mainly about corrections to occupancy at a given household. Almost 40% now receive the report via email, and the rest by print mailings. Staff is working with the contractor to increase the number of reports delivered electronically.

Two new programs are currently are under development:

No. 6 Residential Leak Assistance. This program, as envisioned in the Water Conservation Master Plan, was intended to offer access to conservation services by lower-income residents. Staff is currently evaluating a low-income, water-energy collaborative program with a 3rd party administrator and PG&E. The Energy Assistance Program is an ongoing effort that provides a home energy assessment and energy efficiency upgrades for qualifying households. It is required of all investor-owned energy utilities by the state Public Utilities Commission. The program currently includes installation of various measures that save energy by reducing hot water use. The program administer for the central coast region is seeking to collaborate with water utilities to integrate additional cold water conservation measures (leak detection, direct installation of 0.8 gallons per flush toilets) into the program. This approach is attractive to us for several reasons:

- Income eligibility and screening is performed by the energy utility. It would be impractical for the Water Department to perform this task.
- Installation is performed by licensed contractors operating under strict standards.
- The program is targeted primarily to multifamily households, which are a hard-to-reach segment since they have no direct water account.
- While the Water Department is currently unable to offer a customer assistance program with discounted water rates, we can offer services which may indirectly help with utility costs.

We are currently collecting information and checking references with other participating water utilities. Assuming we can reach agreement on terms and conditions, the program could launch early in fiscal year 2020.

No. 32 Hot Water Recirculation Systems. Another one of the new programs identified in the Conservation Master Plan was the development of an incentive program for Hot Water Demand Recirculation Systems. These are systems that help address the water loss experienced when waiting for water to warm up when running the shower or faucet. For example, some customers can experience a wait time of several minutes when they first turn on a fixture to when the desired temperature water arrives. A recirculation system significantly shortens the wait time for hot water. These systems involve a pump that circulates water standing in the hot water line and sends it back to the water heater through the cold water line. When the water reaches the desired temperature, a control turns off the pump. Staff is in the process of researching product availability and prices. We are also looking into migrating to an online rebate application for this program.

Also in the last three months, staff became aware of a new state law, SB 7, regarding sub-meters in new multi-unit construction that passed in 2016 and took effect in 2018. For the next few years, until the California building and plumbing codes are updated, it will temporarily be the Water Department's responsibility to require the installation of either individual meters or sub-meters in multi-unit construction. The legislation carved out several exemptions for projects including low-income housing, long-term health and residential care facilities, and timeshare properties. Once the building and plumbing codes are updated, the responsibility to administer and enforce this law will shift over to local building departments. The engineering section has at least one project right now in Live Oak to which this law applies. Others are in the pipeline. We mention it as it is an action that is closely aligned with another new program listed in the Water Conservation Master Plan **No 34: Additional Building Codes for New Development**.

In addition to the foregoing, the Water Conservation Office over the last three months has:

- Agreed to participate with the California Department of Water Resources (DWR) as one of 17 utilities in a pilot project to develop service area-wide estimates of irrigable landscape area across California;
- Held one final Rain Barrel distribution event for the year;
- Completed the 2019 Water Supply and Demand Assessment;
- Attended a workshop sponsored by the State Water Resources Control Board and DWR on the implementation of 2018 Water Conservation legislation;
- Gave a presentation on forecasting water use from land use and population at an educational workshop for the Santa Cruz Mid-County Groundwater Agency;
- Co-sponsored a workshop with Soquel Creek Water District and Cabrillo College on irrigation management; and
- Provided public outreach and education at several events, including the annual Chamber of Commerce Business Fair, State of the San Lorenzo River Symposium, annual Earth day festival, and the Staff of Life 50th Anniversary Celebration.

ELEMENT 1: WATER TRANSFERS AND/OR WATER EXCHANGES

Overview: This work is considering the feasibility of sending excess City surface water to neighboring agencies for the purpose of passively recharging the groundwater basin(s). In-Lieu is now described as follows.

- Water Transfers: Selling water to neighboring agencies for the purpose of augmenting their supplies and possibly (passively) recharging the groundwater basin.
- Water Exchanges: Negotiating an agreement whereby water provided to neighboring agencies would, by allowing the groundwater basins to recharge, provide additional groundwater back to the City during water supply shortages.

Summary: The water transfer pilot began on December 3, 2018, using the existing interconnection located at Soquel Creek Water District's (SqCWD) O'Neill Ranch facility. Water transfers from the City's distribution system to SqCWD's system ended on April 30, 2019, with a total volume of approximately 54 MG (0.3 MGD) transferred to SqCWD's service area during the 5 month period. Collecting water quality information during the water transfer period has been a major focus of the work and will continue to be the focus over the next couple of months. Some of the preliminary findings and observations include the following:

1. SqCWD received three discolored water complaints and added meter sample ports at the addresses where the complaints came from to understand if the complaints were related to the water main or related to the customer's own galvanized plumbing. Since those initial complaints, no additional complaints have been received; however additional data from these sample ports is still being collected.

2. Due to constraints to the City's system related to the amount of water available from the North Coast Sources, (e.g., City's fish flow release requirements and the ability for the City to treat turbid water during major storms), the amount of water being delivered into SqCWD's service area was reduced for a brief period of time. Full transfers were resumed after operating at reduced transfers for about one week in mid-February.
3. Because the amount of water transferred was limited by the amount their service area could take, there was a potential for additional water that could have been transferred.
4. Water age in both systems needs to be managed so that THMs do not become an issue when the City is supplying mostly Newell Creek Dam (NCD) water. Results showed that when the City was supplying mostly NCD water concentrations of disinfection byproducts were higher.

Next Steps: Continue collecting water quality samples in the distribution system per the monitoring plan approved by the State Division of Drinking Water (DDW). City staff to participate in meetings and calls with SqCWD and Black & Veatch to discuss the benefits, limitations, issues, concerns, etc., of the pilot project and to make a decision to make transfers next winter and to expand the area of SqCWD's service area that receives water from the City of Santa Cruz. Black & Veatch, through a contract with SqCWD that is partially reimbursed by the City, will prepare a data summary and interpretation report for the data gathered during the water transfer period that ended on April 30th and post-transfer period (May 1- July 31, 2019). This report will be presented to the District Board and Water Commission as well as the State Division of Drinking Water.

Contract Update(s)

Purchase Order Agreement with SqCWD for cost share of Water Quality Sampling

- PO Opened: January 2017
- Project Partner(s): Soquel Creek Water District
- Engaged Stakeholders: None at this time.
- Original PO Amount: $60,000
- Amount Spent: $18,529.50
- Amount Remaining: $41,470.50

ELEMENT 2: AQUIFER STORAGE AND RECOVERY

Overview: Aquifer Storage and Recovery is being evaluated as a form of actively recharging the groundwater basin(s). Work in this area will include the Mid-County Groundwater Basin (MCGB) and the Santa Margarita Groundwater Basin (SMGB).

Summary: Evaluation of this element is divided into three phases of work: feasibility, pilot, and implementation. These phases overlap with one another, particularly the feasibility and piloting phases, and the work is iterative in nature. While a large portion of the Phase I work is complete, the groundwater modeling will continue through completion of Phase II. Additional

groundwater modeling scenarios were developed and are currently being run through the groundwater model.

Phase II work began in the MCGB at Beltz 12 on January 18, 2019, following approval from the Central Coast Regional Water Quality Control Board.

The table from the ASR Pilot Test Work Plan for Beltz 12 is repeated below.

Table 1. Summary of ASR Cycles

ASR	Injection					Storage	Recovery				
Cycle	Period	Rate	Total Volume		Radius	Period	Period	Rate	Volume		Discharge
No.	(days)	(gpm)	(mg)	(af)	(ft)	(days)	(days)	(gpm)	(mg)	(af)	Location
1	1	400	0.58	1.77	18	2	1	700	1.01	3.09	Storm Drain
2	7	400	4.03	12.4	46	14	6	700	6.05	18.6	Storm Drain
3	30	400	17.3	53.0	96	60	30	400	17.3	53.0	Distribution

Total Duration (days):	151
Total Injection Volume (mg):	21.9
Total Recovery Volume (mg):	24.3

The test program is being conducted in three testing cycles with Cycles 1 and 2 occurring during the previous quarter. The thirty-day injection portion of Cycle 3 ran from the first week in March through the first week in April. A total volume of approximately 16 million gallons was injected during Cycle 3 and a total volume of approximately 21 MG was injected during all 3 cycles of this pilot test. The storage period for Cycle 3 will end the first week in June and the thirty- day recovery period will end in early July.

No changes to the injection and extraction rates from those shown on the table above were made during Cycles 1 and 2; however, a change to decrease the injection rate from 400 gallons per minute (GPM) was made during Cycle 3 and resulted in an average injection rate of 376 GPM. Based on results from the injection portions of the pilot test, it appears that an injection rate of 0.5 MGD is feasible for Beltz 12. Staff from the City and Pueblo Water Resources will continue to interpret the data that is still being collected, and be able to make additional statements about feasibility at a future date.

Sustainable Groundwater Management Act

The City is actively engaged in the implementation of the Sustainable Groundwater Management Act (SGMA) in the two groundwater basins underlying and adjacent to its service area. These basins are the Santa Cruz Mid-County Groundwater Basin (MGB), and the Santa Margarita Groundwater Basin (SMGWB). The two basins are on different schedules for the completion of the Groundwater Sustainability Plans (GSP) required by the SGMA, with the MGB plan due to the state by the end of January 2020, and the SMGWB plan due to the state two years later.

Santa Cruz City Councilmember Cynthia Mathews and Water Commissioner David Baskin are the City's appointed members of the Mid-County Groundwater Agency (MGA) Board of

Trustees, and Water Commission Chair Doug Engfer is the City's appointed member of the Santa Margarita Groundwater Agency (SMGWA).

Planning efforts over the last two years by the MGA and the Advisory Committee it created will result in a draft GSP for the MGB being released to the public in mid-July 2019. The Pure Water Soquel Project, as well as the City's ASR and In-Lieu projects, are being included in the plan as projects that may be implemented as needed to address seawater intrusion. More details of the work done to date can be found on the MGA's website: www.midcountygroundwater.org. Work on the SMGWB's plan is just getting underway and interested parties can keep abreast of the details by accessing its website at www.smgwa.org.

Next Steps: Work over the next few months will include:

- Continue with piloting of ASR at Beltz 12; Cycle 3 will run through the first week in July. Water quality data will be forwarded to DDW to inform their approval for extraction, treatment and use in the water distribution system.
- Continue the evaluation of impacts to injection and extraction (recovery) at neighboring production wells and monitoring wells; no modifications for Cycle 3 are initially planned but will modify as needed after evaluation of data retrieved during the first weeks of extraction.
- Work with Pueblo Water Resources to develop a scope and budget to install a test well and monitoring wells in the City-owned Sky Park Property located in the City of Scotts Valley.
- Work with Pueblo Water Resources to develop a test plan for pilot testing in Beltz 9
- Continue with discussions on climate change modeling efforts that are used in the HCP (Habitat Conservation Plan) process, ASR groundwater modeling and the work being done for the Santa Cruz Mid-County Groundwater Agency.
- Develop a summary table of groundwater model scenarios that includes information about demand and climate assumptions, results from pilot testing, assumptions about other projects (e.g., Pure Water Soquel). This table will also summarize major assumptions that are included in the groundwater models per Commission's request. This task has a lower priority over those listed above so that we are positioned well to perform work over the summer and next injection season. Once the above items are complete staff will work with Pueblo Water Resources at developing this summary table.

Contract Update(s):

Consultant: Pueblo Water Resources (PWR) – Phase I

- Contract Signed: February 2016
- Project Partners: None at this time.
- Engaged Stakeholders: SqCWD, County of Santa Cruz, Scotts Valley Water District, San Lorenzo Valley Water District
- Original Contract Amount: $446,370
- Contract Amendment No. 1: $377,615
- Contract Amendment No. 2: $35,000
- Amount Spent: $632,582
- Amount Remaining: $226,403

- Status: On schedule for work in MCGB and delayed approximately 12 months for work in the SMGB.

Consultant: Pueblo Water Resources (PWR) – ASR Phase II – Beltz 12 ASR Pilot Test

- Contract Signed: October 2018
- Project Partners: None at this time.
- Engaged Stakeholders: SqCWD, County of Santa Cruz
- Original Contract Amount: $458,085
- Amount Spent: $194,662
- Amount Remaining: $263,423
- Status: On Schedule.

ELEMENT 3: ADVANCED TREATED RECYCLED WATER OR DESALINATION

Overview: Advanced Treated Recycled Water and Desalination were included within the same Element with the intention that, following feasibility-level work, just one would proceed for further evaluation and preliminary design.

Summary: Since the November 2018 City Council action to prioritize recycled water over desalination, staff has continued work on their recommendations to evaluate the opportunities and benefits of replacement and expansion of the existing tertiary treatment facility at the Wastewater Treatment Facility and evaluate treating wastewater to advanced treatment standards for potential groundwater replenishment and/or as surface water augmentation by sending to Loch Lomond Reservoir. Staff is working on a Phase 2 scope of work with Kennedy/Jenks Consultants Inc. to perform additional analyses of recycled water alternatives. During Phase 1, a very broad list of alternatives was reduced to the few that met the study goals of offsetting potable water demand or otherwise finding beneficial use of treated wastewater. The scope of work for Phase 2 will be shared with the Commission at their August meeting followed by Council action in late August or September. The other major effort during the past several months is ongoing work with Soquel Creek Water District on their Pure Water Soquel Project. A summary of this effort is on another agenda item.

Next Steps: The City Council will consider the Agreement at their June 11 meeting and the District will do take it to their Board at their June 18 meeting. And as stated previously, the Phase 2 scope of work will come to the Commission at their August meeting.

Contract Update(s):

Consultant: Kennedy/Jenks Consultants, Regional Recycled Water Facilities Planning Study (RWFPS)

- Contract Signed: February 2016
- Amount Spent: $561,663 (unchanged)
- Amount Remaining: $25,645 (unchanged)
- Schedule: The RWFPS is complete. Staff has been working with Kennedy/Jenks to develop Phase 2 work plan.

Consultant: DUDEK, Desalination Feasibility Update Study

- Contract Signed: May 2017
- Amount Spent: $135,880 (unchanged)
- Amount Remaining: $3,789 (unchanged)
- Schedule: Complete.

OTHER

The projects and programs reported below were not specifically identified in the WSAC work plan but are related in various ways. Staff is in the process of organizing this quarterly report in a manner that clearly describes the relationship, or nexus, between these items with those above. This is a work in progress and the format of this quarterly report will continue to evolve.

Source Water Monitoring

Source Water Monitoring project, the City strives to learn more about water quality in the San Lorenzo River, especially during high-flow, winter months. The second year of monitoring and reporting is complete. There are two attachments to the annual report that remain in draft form and should be finalized shortly. The third year of sampling is underway.
This understanding could facilitate the treatment of more water during the winter, increasing the feasibility of water CEC (contaminants of emerging concern) monitoring is ongoing since 2015 but has not been incorporated into the Source Water Monitoring report. In the near term, staff will generate an interim report that provides CEC data that has been collected since the initial CEC report was released with the goal of publishing in July. Long term, beginning with the next sampling year, CEC data will be incorporated into the annual Source Water Monitoring report.

Santa Cruz Water Rights Project

This project involves the modification of existing City water rights to increase the flexibility of the water system by improving the City's ability to utilize surface water within existing allocations. In addition to improved flexibility, the success of this project is necessary to facilitate future regional water supply projects.

On April 17, the State Water Resources Control Board sent a letter in response to our January 29 filing of Petitions for Change and Petitions for Extension of Time detailing additional information and clarifications necessary for the State Water Resource Control Board to act upon the petitions. A request within sixty days was requested. Staff is developing the requested information and will respond by June 15.

Additionally, city staff met again with State Water Resource Control Board members and staff on April 29 and 30. The meeting with Board Chair Joaquin Esquivel and Board Members Laurel Firestone and Dorene D'Adamo was intended to provide background on the proposed project, and the meeting with Board staff members was to review project details. Both meetings were well received with positive feedback on the project.

Work is continuing on the development of the Draft EIR, with current work focusing on refining the scope and extent of the project and associated impact modeling. The Draft EIR is expected to

be circulated for public review in fall 2019, and the Final EIR is expected to be completed in spring of 2020.

Outreach and Communication

Outreach during this quarter has included the following:

- Monthly email newsletters to WSAC email list.
- Annual Report on progress made on WSAC recommendations in 2018 to all customers in the service area.
- Joint public meeting of the Water Commission and former members of the WSAC, April 1.
- In-depth stories in Good Times (http://goodtimes.sc/santa-cruz-news/news/santa-cruz-water-recharge/) and the Sentinel (https://www.santacruzsentinel.com/2019/04/02/santa-cruz-may-pursue-alternative-water-security-concept/)
- Appearance on KSCO.
- Presentation to SLV Rotary.

FISCAL IMPACT: None.

PROPOSED MOTION: Receive information on the Water Supply Augmentation Strategy, Quarterly Work Plan Update.

ATTACHMENT(S):
None.

WATER COMMISSION
INFORMATION REPORT

DATE: 5/30/2019

AGENDA OF: June 3, 2019

TO: Water Commission

FROM: Kevin Crossley, Senior Engineer

SUBJECT: Santa Cruz Water Program Update

RECOMMENDATION: Receive information on the progress of the Santa Cruz Water Program and planned activities for Fiscal Year 2020.

BACKGROUND: In December 2017, the Water Department initiated a multi-year contract with HDR, Inc. for program management services. As program manager, HDR, Inc. will augment Water Department staff to execute or otherwise facilitate the planning, design, and construction of its Capital Investment Program (CIP), the Santa Cruz Water Program (Program). Significant portions of the water system's diversion, transmission, and treatment infrastructure is approaching the end of its service life and will require major upgrades or replacement over the next decade. In that same timeframe, the Department is on track to select and construct a supplemental water supply project as per the Water Supply Augmentation Strategy. The confluence of aging infrastructure and the need for new supply results in a 10-year CIP of approximately $340 million in today's dollars, representing a tripling of the Department's recent CIP output on an annual basis.

The Department has very capable, but relatively small engineering and operations groups who would be insufficient in size to deliver this magnitude of capital work. A program management approach provides access to the right expertise at the right time to assist with the highly varied technical and managerial requirements and needs of delivering a complex, diverse infrastructure program.

DISCUSSION: Fiscal year 2019 was a very busy and highly productive year. HDR, Inc. has been engaged as program manager for over a year now, and the additional support is discernable and visible in the progress being made on numerous fronts.

Planning work is wrapping up on the Newell Creek Pipeline project and design is nearly finished on two large projects, the Graham Hill Water Treatment Plant Concrete Tanks and the Newell Creek Dam Inlet/Outlet Replacement. On the environmental front: a final Environmental Impact

Report has been certified (for the Newell Creek Dam Inlet/Outlet Replacement project) and the Mitigated Negative Declaration document for Graham Hill Water Treatment Plant Concrete Tanks is nearly complete. Program-wide, work continues on enhancing cost control and schedule management systems, and the quality management efforts have ramped up. The construction management system is implemented and an initial assessment of the Department's existing asset management and systems is wrapping up.

A more detailed summary of recent accomplishments and planned work for 2020 is provided in Attachment 1: Fiscal Year 2020 Annual Work Plan. Like the previous work plan presented to the Commission in August 2018, the 2020 Annual Work Plan provides a summary of the projects, resources, and planned activities over the next year, as well as a summary program schedule and the program management fee.

Minor formatting changes have been made to the 2020 Annual Work Plan, in particular, the way in which the 2020 HDR, Inc. Fee Estimate is presented. The lesson learned from Fiscal Year 2019 is that it is very difficult, one year in advance, to accurately project how the program management administrative efforts/hours will be allocated across all the projects managed through the program. For this year and moving forward, the plan is to track and distribute the program management fees, and other non-project specific cost accrued for FY 2019 (around $1.6 Million) once the fiscal year closes and it is clearer to see how to allocate costs to each project.

The 2020 Annual Work Plan and Service Order 5 (which is the detailed scope of work) are scheduled to go to City Council on June 11, 2019.

FISCAL IMPACT: None.

PROPOSED MOTION: Receive information on the progress of the Santa Cruz Water Program and planned activities for Fiscal Year 2020.

ATTACHMENT(S)
Attachment 1: Fiscal Year 2020-Annual Work Plan

Fiscal Year 2020-Annual Work Plan

Santa Cruz Water Program

Introduction

The City of Santa Cruz's Water Department is implementing the Santa Cruz Water Program (Program) to address a number of critical needs for backbone infrastructure rehabilitation or replacement and to develop supplemental supply that would improve the reliability of the Santa Cruz water system. In the fall of 2017, the Water Department selected HDR to provide program management services to support implementation of the Program, and in December 2017, The City Council approved a five year Master Services Agreement that is the basis for developing specific task or service orders. This Annual Work Plan (AWP) summarizes Service Order 5 and covers HDR's anticipated program management activities, staffing, schedule, and fees in fiscal year 2020 (FY 2020), which covers the period of July 1, 2019 to June 30, 2020.

Overview of Work Performed during FY 2019

Over the past fiscal year, the Program team of city and HDR staff engaged in Program implementation in the areas of design and planning project management, program administration and controls, planning and preliminary engineering, construction management, and other program support areas such as environmental and right of way services. Table 1 summarizes the Program wide, and project level activities for fiscal year 2019.

Table 1 –Project Work Completed (Fiscal Year 2019)

No.	Projects	Phase	Key Work Completed
1.1, 1.2	North Coast System Diversion Rehab – Majors and Laguna	Planning	• Condition Assessment • Alternatives Analysis • Selected Coanda Screen for Laguna Diversion
1.3	Coast Pump Station / San Lorenzo River Diversion Rehab	Planning	• Condition Assessment
1.4	Felton Diversion and Pump Station Assessment	Planning	• Surge Analysis
1.5	Newell Creek Dam Inlet/Outlet Replacement Project	Design	• Value Engineering • Risk workshop • 90% Design
1.5.1	Newell Creek Dam Inlet/Outlet Project Spillway Bridge Replacement	Construction	• Construction COMPLETE
2.2	Newell Creek Pipeline Rehab/ Replacement:	Planning	• Hazard Analysis • Pipeline Prioritization • Alternative Analysis
2.3	Coast Pump Station Pipeline Replacement	Design	• 100% Design
3.1	Water Supply Augmentation	Planning	• In lieu water transfer pilot testing • Progressed approach for supply planning, including demand re-assessment and phasing of ASR planning by basin (Mid County and Santa Margarita). • Progressed development of Phase two of recycled water study
3.3	ASR and In-Lieu Feasibility Study	Planning	• Pilot testing at Beltz 12 wells
3.4	ASR and In-Lieu Delivery Infrastructure		• Identified infrastructure pipeline alignments

No.	Projects	Phase	Key Work Completed
3.5	Pipe Loop Study	Planning	• 100% Design
4.1	Graham Hill WTP Tube Settlers Replacement	Design	• Design COMPLETE
		Construction	• Construction 5% complete
4.2	Graham Hill WTP Flocculators Rehab/ Replacement	Design	• Alternatives Analysis • 90% Design
4.3	Graham Hill WTP Concrete Tanks	Design	• Risk workshop • 90% Design
4.4	Graham Hill WTP Upgrades (Facility Improvement Plan)	Planning	• Condition Assessment • Treatment Alternatives Analysis • Water Age Study • Chloramination Study • Second WTP Analysis • Lab scale & Pilot scale Testing • Operations Building seismic and architectural analysis (in progress) • 10% design (in progress) • Risk workshop
4.5	Riverbank Filtration Study	Planning	• Developed RBF study workplan • Completed conceptual site models for potential RBF sites • Evaluated multiple sites for suitability for RBF
4.6	Source Water Data Collection and Management	Planning	• Data Mgt. Procedures • Specification requirements for future LIMMS software
5.1	Main Replacement Model	Planning	• Model development TM • Program Approach TM • Investment forecasting tool
5.2	Advanced Metering Infrastructure	Planning	• Business Case Evaluation • Dedicated Irrigation Pilot
6.2	University Tank No. 5 Replacement	Design	• Design COMPLETE
		Construction	• Construction 30% complete
7.1	Water Rights Amendments	Planning	• Agreement on instream flow goals reached • Long-term financing analysis completed • Draft Admin Draft submitted for agency review • Draft SWRCB petitions filed • IS/NOP circulated • New CEQA consultant secured
7.2	Habitat Conservation Plans	Planning	• Agreement on instream flow goals reached • Long-term financing analysis completed • Draft Admin Draft submitted for agency review
N/A	Asset Management	Planning	• Database needs assessment • Standards and specifications • Implementation plan
N/A	Program Wide Items	N/A	• Risk management: quarterly reviews • Cost estimating guidelines • Contract “front end” standardization, re-organization

No.	Projects	Phase	Key Work Completed
			• Workforce development trainings including design management, schedules and claims analysis, and construction management. • Constructability reviews • Procurement approach • Updates to Program Management Plan • Program controls implementation: schedule, cost, change mgt., document mgt., key performance indicators (KPIs) • Delivery method assessment • Monthly Program reporting • Quality management implementation • Program safety guidelines • Construction mgt. software implementation

Figure 1 – Beltz Well Pilot Test Site for ASR Feasibility

Figure 2 – Construction for Newell Creek Dam Spillway Bridge Replacement Project

Figure 3 – Installation of Treatment System Pilot Plant Trailer at Graham Hill WTP

Figure 4 – Demolition of University Tank No. 5 in Preparation for Replacement

Overview of Planned Work during FY 2020

During FY 2019 of the Santa Cruz Water Program, the Program team of city and HDR staff implemented the Program Management Plan, an organizational framework with processes for managing and staffing individual capital projects that are at different stages of development. This work will be continued in FY 2020 as projects progress from planning to design and from design to construction. Table 2 lists the Program projects starting or ongoing in FY 2020 and divides them into their current phase of work: Planning Projects, Projects in Design and Projects in Construction.

Table 2 –Program and Project Work Planned by Phase[a] (Fiscal Year 2020)

Planning Projects	Projects in Design	Projects in Construction
Program wide: • Risk management: quarterly reviews, quantitative risk workshop • Constructability reviews • Technical expert support and deliverable reviews	• Program controls implementation: schedule, cost, change mgt., document mgt., key performance indicators (KPIs) • Design review software implementation	• Monthly Program reporting • Quality management implementation • Workforce development trainings (regular, refresher, and extended)
1.3.1 - San Lorenzo River Diversion Rehabilitation – in stream work 2.2 - Newell Creek Pipeline Rehab/ Replacement (ongoing, complete 10/2019) 3.3 – Aquifer Storage & Recovery Mid County Groundwater Basin 3.4 – Aquifer Storage & Recovery Santa Margarita County Groundwater Basin 3.6 – In-Lieu Transfers & Exchanges 4.4 - Graham Hill WTP Facilities Improvement Project (ongoing, complete 9/2019) 4.5 - River Bank Filtration Study (ongoing, complete 12/2020) 5.1 - Main Replacement Model Implementation Support (ongoing) 7.1 - Water Rights (ongoing) 7.2 - Habitat Conservation Plans (ongoing) Source Water Data Management – software implementation support Distribution System Water Quality Improvements Asset Management Implementation Computerized Maintenance Management System selection support SCADA system planning Program Projects Design Criteria Summary (ongoing)	1.1 - North Coast System Laguna Diversion Rehab 1.5 - Newell Creek Dam Inlet/Outlet Replacement 4.2 - Graham Hill WTP Flocculator Rehab/ Replacement 4.3 - Graham Hill WTP Concrete Tanks 4.4 - Graham Hill WTP Facilities Improvement Project 5.2 - Advanced Metering Infrastructure (AMI)	2.3 - Coast Pump Station 20-inch Raw Water Pipeline Replacement 4.1 - Graham Hill WTP Tube Settlers Replacement (ongoing, complete 2/2020) 4.2 - Graham Hill WTP Flocculator Rehab/ Replacement 4.3 - Graham Hill WTP Concrete Tanks 6.2 - University Tank No. 5 Replacement (ongoing, complete 12/2019)

a) Projects may be shown twice if they transition between phases, for example from design to construction.

This AWP includes a wide range of services focused on progressing each of the projects forward. Table 3 summarizes the types of services for each of the three categories of services that HDR will be providing during FY 2020 as part of Service Order 5.

Table 3 –Types of Services for each Project Phase (Fiscal Year 2020)

HDR Planning Services	HDR Design Management Services	HDR Construction Services
• Provide Planning lead • Review and document existing information and identify data gaps. • Conduct planning level studies to define technical feasibility and cost • Perform preliminary engineering, and the identification and analysis of alternatives • Prepare reports, presentations, and briefing materials to support decision making processes, • Develop implementation and sequencing plans and schedules for recommendations. • Facilitate planning meetings and workshops for Water Department Staff to discuss alternatives and coordinate with stakeholders. • Prepare infrastructure system alternatives evaluation and document recommendations. • Support Water Department Staff in the development and calibration of hydraulic models. • Support Water Department Staff in the implementation of a laboratory information management system. • Perform infrastructure condition assessments to support planning. • Assist the Department in financial analysis associated with program funding efforts, including providing support in applying for grants and low income loans. • Prepare a summary of design criteria for Program projects to facilitate cross project planning coordination. • Implement recommendations for asset management system improvements. • Assess and support establishment of standards for system wide instrumentation and controls. • Augment the city staff by providing Package Managers, PMs and project engineers for various projects	• Provide Design Management lead • Work with PMs to continue transition of existing consultants into program reporting and processes. • Support implementation of design management and cost estimating guidelines. • Augment the city staff by providing PMs and/or project engineers for various projects including: Newell Creek Dam Inlet/Outlet Pipeline, Concrete Tanks, GHWTP Upgrades, and Coast Pump Station Pipeline Replacement. • Assist in hiring design consultants, reviewing consultant deliverables, and conducting value engineering (VE) efforts or cost estimating, as requested. • Provide environmental planners to lead permitting support efforts associated with: ASR Feasibility Study, River Bank Filtration Study, Coast Pump Station Pipeline Replacement, Newell Creek Pipeline Rehab/Replacement, and Coast Pump Station/San Lorenzo River Diversion projects. • Continue ROW acquisition activities on Newell Creek Dam I/O project. Support obtaining permits-to-enter on the Riverbank Filtration project. • Assist with environmental documentation, including CEQA, NEPA, technical study, field surveys, or permit application. • Support Department Staff in the development and implementation of communications and community engagement plans. • Provide technical expert input as requested. • Support implementation of collaborative design review software.	• Implement Construction Management Strategy • Implement Construction Management software for new construction projects • Augment the city staff by providing PMs and/or project engineers for construction phase projects including: Concrete Tanks, and Coast Pump Station Pipeline Replacement. • Provide Construction Management project manager, resident engineer, and special inspector(s), as required, for the GHWTP Tube Settler Replacement project, GHWTP Flocculator Replacement project, GHWTP Concrete Tanks project, and the Coast Pump Station Pipeline Replacement project. • Provide post construction start-up operations support. • Assist with environmental mitigation, monitoring and/or procurement of such services.

HDR Planning Services	HDR Design Management Services	HDR Construction Services
including: Infrastructure Planning package, GHWTP Upgrades, Riverbank Filtration, ASR feasibility, and Water Supply Augmentation. • Assist in reviewing of planning consultant deliverables		

Figure 5 shows the schedule of activities planned for each project, with work broken down into several phases: planning, design, bidding, construction and project close out.

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Figure 5 – Santa Cruz Water Program Master Program Schedule

Project Name	2019-2028 Construction Estimates	Calendar Year 2019	Calendar Year 2020	Calendar Year 2021	Calendar Year 2022	Calendar Year 2023	Calendar Year 2024	Calendar Year 2025	Calendar Year 2026	Calendar Year 2027	Calendar Year 2028	2029+ **
Santa Cruz Water Department Annual Work Plan	$238,495,000											
1.1 - North Coast System Laguna Diversion Rehab	$ 1,000,000											
1.2 - North Coast System Majors Diversion Rehab	$ 1,100,000											
1.3.1 - San Lorenzo Diversion Rehab	$ 350,000											**
1.3.2 - Coast Pump Station Rehab/Replacement	$ 400,000											**
1.4 - Felton Diversion and Pump Station Assessment	$ 795,000											
1.5 - Newell Creek Dam Inlet / Outlet Replacement Project	$ 53,000,000											
2.1 - North Coast System Repair and Replacement Project	$ 17,000,000											
2.2 - Newell Creek Pipeline Rehab / Replacement	$ 16,000,000											**
2.3 - Coast Pump Station 20-inch Raw Water Pipeline Repla	$ 2,100,000											
3.3 - Aquifer Storage & Recovery Mid County Groundwater	$ 16,000,000											
3.4 - Aquifer Storage & Recovery Santa Margarita Groundw	$ 27,000,000											**
3.6 - In-Lieu Transfers & Exchanges	$ 750,000											
4.1 - Graham Hill WTP Tube Settlers Replacement	$ 1,200,000											
4.2 - Graham Hill WTP Flocculator Rehab / Replacement	$ 1,800,000											
4.3 - Graham Hill WTP Concrete Tanks Project	$ 22,000,000											
4.4 - Graham Hill WTP Facilities Improvement Project	$ 61,000,000											
4.5 - Riverbank Filtration Study	TBD											
5.2 - Advanced Metering Infrastructure	$ 10,000,000											
6.1 - University Tank No.4 Rehab / Replacement	$ 3,400,000											**
6.2 - University Tank No.5 Replacement	$ 3,600,000											

Planning Design Construction Environmental ** Construction goes beyond 2028

5.10

Staffing

The major resources being provided through the HDR Program Management Contract involves staffing services. These services are necessary because, on average, the Water Department's annual capital program expenditures are rising nearly three-fold over spending levels during the last decade. The Water Department's Engineering Section currently includes around 12 full time equivalent (FTE) positions supporting the capital program in various capacities, and recruitment for one vacant position, Assistant Engineer, is ongoing. The staffing analysis completed in 2018 during the Program Validation effort estimated total staffing needs required to manage and support the capital program in peak years at nearly 20 FTEs.

This staffing analysis was developed to support the implementation plans and schedules for each Program project. The staffing analysis integrates the Water Department's available staffing in Engineering and Operations and Maintenance. Engagement of Operations staff as critical stakeholders in virtually all of the projects in the Program is an important condition for success as they have much to contribute to project definition, planning efforts, and design. Due to the nature of many of the projects, a key focus of both City and HDR administrative and operating personnel who are part of the Program is ensuring that the Department's ability to produce and deliver a reliable supply of high quality drinking water to its customers is not compromised during project construction. Achieving this goal requires ongoing planning and coordination by all members of the team.

Part of the work on the Program to date has been in identifying HDR team members who will be part of the Program Team during FY 2020. Table 4 identifies HDR key staff in each of the three major Service Order 5 work areas.

Table 4 – Key Staffing for Planned HDR Program Management Services (Fiscal Year 2020)

HDR Planning Services	HDR Planning and Design Management Services	HDR Construction Services
Jeff Lawrence	**Greg Bradshaw**	**Ron Perkins**
Rich Stratton	Jeff Lawrence	Roger Hatton
Brian Watanabe	Jeff Wisniewski	Mitch Kyotani
Mason Beck	Jon Boitano	Shane Clements
Dave Kremer	Sathya Mathavan	Kyle Debacker
Allison McReynolds	Shane Clements	[Construction Inspector]
Ambarish Ravi	Jillian Brown	
Allan Scott	Ray Genato	
Tom McCormack	Leslie Tice (Environmental)	
	Betty Dehoney (Environmental)	

Ongoing Program management and administration will be led by Karen Pappas (Program Manager), Paul Karsen (Controls Manager), and Venkat Jayaraman (project scheduling). Implementation of the Santa Cruz Water Program also involves a range of ongoing administrative and quality control services including, for example:

- Monthly progress reporting including cost and schedule tracking, risk management and quality assurance;
- Document management and SharePoint site maintenance and updates; and
- Application and updating the Program Management Plan, implement health and safety plan.

All personnel to support the Program are identified in writing and authorized by the City's Program Director. The personnel and labor hours for the FY 2020 Work Plan represent the Program Team's best understanding of the strategic, technical, and administrative requirements for delivering the planned services. Actual requirements may vary and the City and HDR will work together to adjust the staffing and distribution of labor hours within this AWP to maintain progress toward delivery of the Program.

Estimated Fees

Table 5 presents the FY 2020 HDR fees for services for the work to be done on each project during the coming year.

Table 5 –Project Budget and Associated HDR Fee

Project	HDR FY20 Service Order Budget	Planning	Design	Bid	Construction
Newell Creek Dam Inlet-Outlet Pipeline Replacement Project	$563,000		X		
Newell Creek Pipeline Rehab/Replacement	$35,000	X			
North Coast System Laguna Creek Diversions Rehab	$23,000	X	X		
North Coast System Majors Creek Diversions Rehab	$0	X	X		
Coast Pump Station 20" Raw Water Pipeline Replacement	$206,000		X	X	X
Coast Pump Station/San Lorenzo River Diversion	$62,000	X	X	X	X
Graham Hill WTP Concrete Tanks Project	$175,000		X	X	X
Graham Hill WTP Upgrades	$165,000	X			
Graham Hill WTP Flocculator Rehab/Replacement	$97,000		X		
Graham Hill WTP Tube Settlers Replacement	$0			X	X
Riverbank Filtration Study	$34,000	X			
Distribution System Water Quality	$75,000	X			
Source Water Data Collection and Management	$8,000	X			
University Tank No. 5 Replacement	$27,000			X	X
University Tank No. 4 Rehab/Replacement	$0	X	X		
Automated Metering Infrastructure	$9,000	X			
Main Replacement Model Development	$43,000	X			
Felton Diversion Bladder Replacement & Pump Station	$36,000	X	X		
Augmentation Strategy Decision Planning Group	$80,000	X			
Aquifer Storage & Recovery (ASR)	$81,000	X			
Habitat Conservation Plan	$0	X			
Program Administration [a]	$2,113,000				
Other Program-Wide Work [b]	$1,394,000				
Total HDR FY20 Service Order 5 Budget	$5,226,000				

[a] General Program Administration, Risk Management, Document Management, Procurement & Contract Administration Implementation, SH&E Plan Implementation, Quality Assurance Implementation, PDM Implementation, Cost Estimating, Program Schedule, Annual Work Plan, Decision Log, Work Breakdown Structure, Program Contingency, Program Monthly Report, Workforce Development

[b] General Planning & Design Management, Water Rights Amendments, IT System, Design Review Software, SCADA Planning, Design Criteria Table, Asset Management, General CM, General Environmental, Communication & Public Outreach, Project Funding, Program Technical Support

Funding Source:

Funding for all activities planned as part of Service Order 5 is included in the Water Department's FY 2020 Capital Investment Program. Additional work planned for FY 2020 includes continuation of activities pre-authorized and funded within the prior Service Order 4. As many of the projects included in Water Program are large and will occur over multiple years, the Department developed the 2016 Long Range Financial Plan to identify the steps needed to fund these investments in rehabilitating or replacing existing water system infrastructure and developing a supplemental supply to improve the reliability of the Santa Cruz water system. That plan was approved by the City Council on June 14, 2016 and is guiding the Department's approach to planning for and funding this decade long capital reinvestment cycle.

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WATER COMMISSION
INFORMATION REPORT

DATE: 5/29/2019

AGENDA OF: June 3, 2019

TO: Water Commission

FROM: Rosemary Menard, Water Director

SUBJECT: Updated Water Commission Meeting Schedule for 2019

RECOMMENDATION: Approve the updated Water Commission meeting schedule for 2019.

BACKGROUND/DISCUSSION: All meetings are scheduled for the Santa Cruz City Council Chambers unless otherwise noted. Schedule updates for the Water Commission's approval are notated with an asterisk*.

January 2019
(01-07-19)

February 2019
(02-04-19)

March 2019
(03-04-19)

April 2019
(04-01-19)

May 2019
(05-06-19)

June 2019
(06-03-19)

July 2019
(07-01-19) *(Cancelled)**

August 2019
(08-05-19) *(Postponed to 8-26-19)**

September 2019
(09-02-19) *Labor Day (Cancelled)**

October 2019
(10-07-19)

November 2019
(11-04-19)

December 2019
(12-02-19)

FISCAL IMPACT: None

PROPOSED MOTION: Motion to approve the updated Water Commission meeting schedule for 2019.

ATTACHMENTS: None.

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WATER COMMISSION
INFORMATION REPORT

DATE: May 29, 2019

AGENDA OF: June 3, 2019

DEPARTMENT: Water

SUBJECT: Agreement between the City of Santa Cruz and Soquel Creek Water District Regarding Design, Construction and Operational Elements of the Tertiary Facility Component of the Pure Water Soquel Project

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RECOMMENDATION: That the Water Commission take action to support staff's recommendation to City Council to approve an Agreement between the City of Santa Cruz and Soquel Creek Water District regarding providing source water from the Santa Cruz Regional Wastewater Facility for the Pure Water Soquel Project and constructing the Tertiary Treatment Component of the Pure Water Soquel Project at the City Wastewater Treatment Facility.

BACKGROUND: Soquel Creek Water District (District) is solely reliant on groundwater from the Santa Cruz Mid-County Groundwater Basin. This basin has been identified by the State of California as being in a state of critical overdraft and is experiencing seawater intrusion at the coastline. The District has spent many years evaluating water supply alternatives to meet their demands while being protective of the groundwater basin, including partnering with the City on the **scwd**^{2} Regional Desalination Project. In addition to the District's independent efforts to address the condition of the basin, the District and regional partners have been working together for more than 20 years on groundwater management activities including most recently, forming a joint powers authority with the Central Water District, the County of Santa Cruz and the City of Santa Cruz to implement the requirements of the 2014 Sustainable Groundwater Management Act.

In 2015, the District published its Community Water Plan (updated in 2017), which is a multi-faceted plan that includes ongoing conservation, proactive groundwater management, and evaluation of supplemental water supplies that could include stormwater capture, desalination, surface water transfers, and the Pure Water Soquel (PWS) Project. The District continues to make progress with all elements of the plan, including a surface water transfer pilot study with the City of Santa Cruz Water Department through 2020; and, since 2015, exploring a groundwater replenishment project that would use advanced treated purified wastewater to replenish groundwater and prevent seawater intrusion which included conducting a tertiary treatment pilot study with the City of Santa Cruz Public Works Department in 2018.

Groundwater replenishment projects, or GRRPs, have a long history in California with projects in southern California dating back to the 1950s. The basic elements of a GRRP include a source of water (treated wastewater), treatment (tertiary and advanced purification facilities to meet

State of California water quality standards), pump stations and pipelines, and groundwater recharge and monitoring wells. The District has evaluated several alternative designs for the PWS project including various points of diversion, location of the infrastructure, and location of the treatment facilities.

The District does not own or operate a wastewater treatment facility, rather the County Sanitation District collects and pumps wastewater from the District's service area to the Santa Cruz Wastewater Treatment Facility (SCWWTF) for treatment and discharge to the Monterey Bay through a deep ocean outfall. The City's Wastewater Treatment Facility provides a high level of treatment (called "secondary biological treatment" or "secondary") for up to 17 million gallons per day (mgd) and up to 81 mgd during wet weather events. A small fraction of the secondary treated effluent is treated further to a water quality standard called "tertiary" for onsite operational use. The PWS Project will involve diversion of approximately 25% of the secondary treated effluent as the source water for the project. Diversion of this quantity of treated wastewater is not expected to interfere with any potential future needs of recycled water for the use by the City.

Along a parallel path, the City Water Department has been implementing the work plan of the Water Supply Advisory Committee (WSAC), that was accepted by the Council in November 2015 Several potential supplemental supply alternatives are being evaluated as the WSAC work plan is being implemented including surface water transfers, Aquifer Storage and Recovery (ASR), as well as the beneficial use of recycled water or desalination. At its November 27, 2018 meeting, the City Council supported staff's recommendation to prioritize the use of recycled water over desalination, a milestone decision prescribed in the WSAC work plan.

While surface water transfers and ASR remain priority supplemental supply alternatives, some form of recycled water use remains under consideration either as a means of reducing demand for potable water and/or recharge of the groundwater basins as a sustainability measure. As such, the City Water and Public Works Departments have been working together to evaluate the potential uses of treated wastewater, with participation from other agencies (District, County of Santa Cruz, Scotts Valley Water District) on the various projects that may involve their communities.

DISCUSSION: The City issued a letter to the District in June 2016 expressing its willingness to work with the District to make available up to 1.6 mgd of secondary treated effluent from the SCWWTF and also recognizing the potential value of wastewater as a resource that could be put to beneficial reuse in a variety of ways. In July 2017, the City and District furthered its collaboration by entering into a Memorandum of Understanding (MOU) related to the proposed PWS project that identified the preliminary terms and described the process for developing a subsequent agreement with more details following the completion of the required environmental review process. In December 2018, the District certified the final Environmental Impact Report for the Pure Water Soquel project and, specifically for the treatment components: "…prioritized project development and siting for tertiary treatment the Santa Cruz Wastewater Treatment Facility and the advanced water purification (AWP) treatment at the Chanticleer Site; while also coordinating with the City of Santa Cruz on the potential option to site the full advanced water purification treatment at the SCWWTF provided no delay occurs to project schedule."

Consistent with the 2016 letter and the 2017 MOU, staff from both agencies met numerous times to consider the opportunities and constraints with siting the full advanced water purification facility at the SCWWTF versus the tertiary components only, both using City secondary water as source water. Because the SCWWTF is very space-constrained, siting the full facility at that location would have two major impacts: it would eliminate almost entirely any future expansion of the tertiary or advanced purification for other purposes should that direction be taken; and, by producing advanced treated water, any side use of the product, such as irrigation, as the water is pumped across town to the District's GRRP replenishment wells would be an inappropriate and very costly use of the very highly purified water produced by the project.

On the other hand, and as stated above, the existing tertiary facility at the SCWWTF is at the end of its useful life, uses an older and less efficient technology, and cannot be expanded to accommodate any additional needs either on or off-site. Therefore, in 2019 the City Public Works and Water Departments and the District agreed to the following:

- The advanced water purification treatment process will be split between two facilities, the tertiary-level treatment (which can produce tertiary water, typically used for non-potable uses such as irrigation for parks, golf courses, and crops) and advanced purification treatment (which can produce purified water for groundwater replenishment).
- The proposed tertiary treatment facility will replace the City's existing sand media tertiary system with a membrane and UV-system to produce three types of tertiary water: (1) recycled water for in-plant uses, (2) Title 22 recycled water for potential irrigation and/or a bulk recycled water fill station, and (3) recycled water to convey to the advanced water treatment facility to further treated to purified water standards.
- The advanced purification processes would be located at the Chanticleer site. (See Attachment 1.)

Staff and legal counsel have been working on an agreement to address the various elements of the project including ongoing operations and the conceptual framework for financial arrangements between the parties. The Agreement has not been finalized and staff is working on several details with the City Attorney and the District's staff and attorneys. As this is a draft of the proposed Agreement it is appropriate to receive input at this time from the Commission. The key points of the draft agreement follow the previously agreed to MOU and are listed below:

- City will provide the space for the Tertiary Treatment Facility at the SCWWTF.
- District will fund the design and construction of the Tertiary Treatment Facility at the SCWWTF.
- The District will own the Tertiary Treatment Facility
- The facility will provide tertiary treated water for the District and City uses.
- The City will provide secondary treated water to the tertiary facility at no cost.
- The tertiary facility would be owned by the District and operated and maintained by the City.
- The cost to operate and maintain the tertiary treatment facility would be split between the District and the City based on the volume of water used by each party.

The agreement will be considered by the City Council at their June 11 meeting, and the District Board at their June 18 meeting. The City Public Works and Transportation Commission approved the draft project agreement's main points at its May 20 Meeting.

FISCAL IMPACT: The City will cover the cost of its staffs' time during the design and construction of the project as in-kind contributions to the Tertiary Treatment Facility; the District will cover other costs, including design and construction of the facility. Once the facility is constructed and in operation, the City will pay for their portion of tertiary water produced (approximately 10%) for their onsite use. That cost would increase should the city have additional demand requirements.

ATTACHMENTS:
Attachment 1: PWS Project Distribution Graphic
Attachment 2: Draft Agreement.

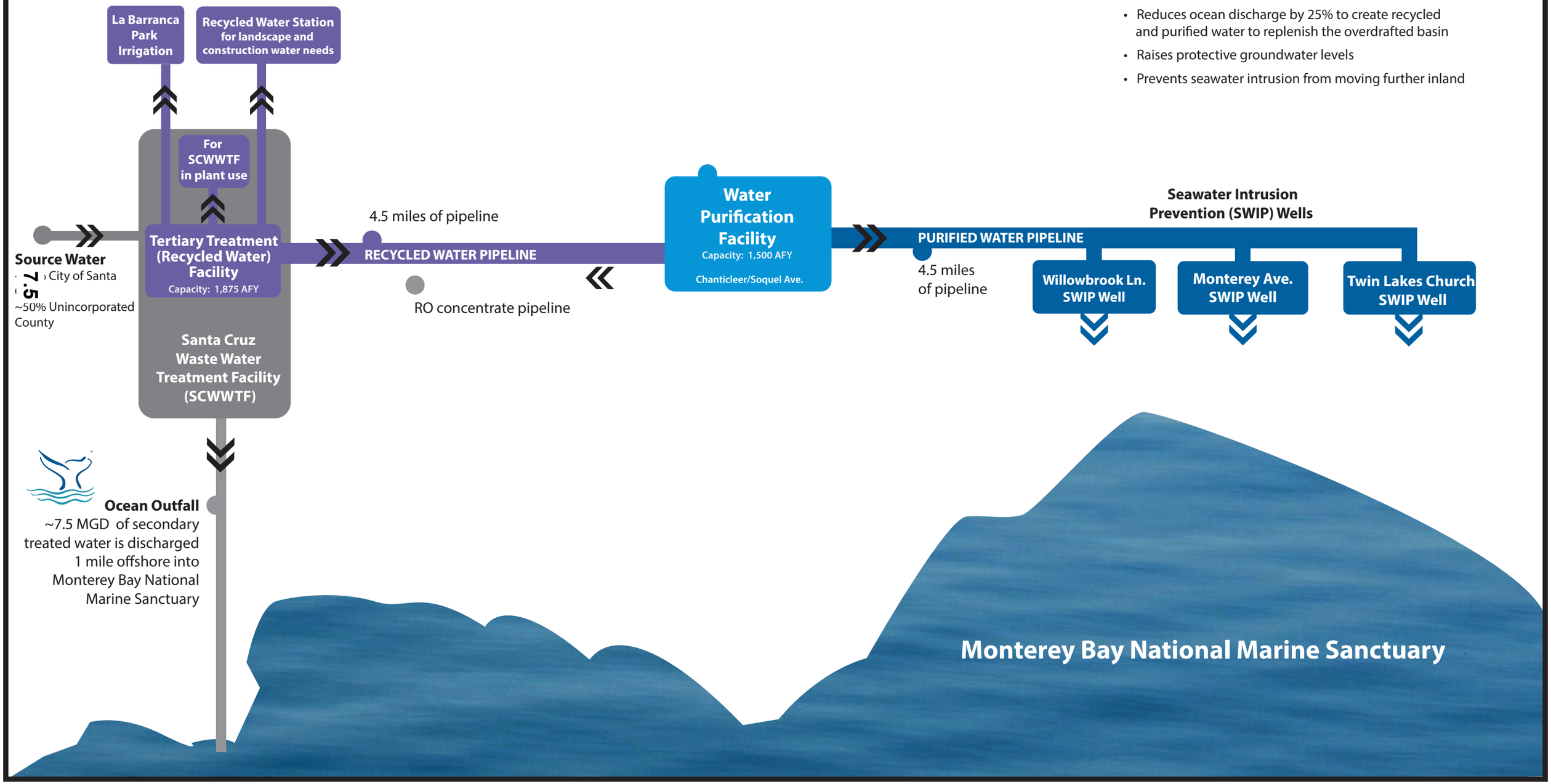
SOQUEL CREEK WATER DISTRICT
5180 Soquel Dr., Soquel, CA 95073
soquelcreekwater.org
831-475-8500

PUREWater Soquel

Replenishing Mid-County Groundwater & Preventing Further Seawater Intrusion

System Benefits

- Reduces ocean discharge by 25% to create recycled and purified water to replenish the overdrafted basin
- Raises protective groundwater levels
- Prevents seawater intrusion from moving further inland



AGREEMENT

BY AND BETWEEN SOQUEL CREEK WATER DISTRICT AND THE CITY OF SANTA CRUZ REGARDING SOURCE WATER, CONSTRUCTION, DESIGN, OWNERSHIP, OPERATION, REPAIR, AND MAINTENANCE OF THE TERTIARY FACILITY COMPONENT OF THE PURE WATER SOQUEL PROJECT

This Project Agreement is entered into and made effective this _____ day of June, 2019 (the "effective date"), by and between Soquel Creek Water District (District) and the City of Santa Cruz, a municipal corporation ("City"), together sometimes referred to herein as the parties.

RECITALS

A. The City owns and operates a regional wastewater treatment facility ("WWTF") that provides wastewater treatment and disposal services to the City of Santa Cruz, Santa Cruz County Sanitation District (including Live Oak, Soquel, Capitola and Aptos areas) and disposal services to the City of Scotts Valley; and
B. Wastewater generated by development in the service area of the District is conveyed through facilities owned and operated by the Santa Cruz County Sanitation District to the City of Santa Cruz WWTF for treatment and disposal, making the City's wastewater facility a regional asset for the treatment of wastewater; and
C. The WWTF pumps approximately on average eight (8) million gallons per day of treated water into the Monterey Bay Marine Sanctuary and reduction and recycling of this treated water would be considered a benefit; and
D. The Santa Cruz Mid-County Groundwater Basin (the "Basin") is currently the sole source of potable water supply for the water service area of the District; and
E. The Basin has been designated by the State of California as being in a state of critical overdraft and threatened by seawater intrusion that will, if not promptly and effectively addressed, cause irreparable damage to the Basin, making it unsuitable for continued use as a source of potable water; and
F. The District has prepared and is implementing a Community Water Plan that includes a range of possible approaches that would, if implemented, provide the means of reducing or eliminating the threat of seawater intrusion and contributing to the restoration of the Basin to sustainable levels, as required by the state's 2014 Sustainable Groundwater Management Act; and
G. A key conclusion from the Community Water Plan is that, in addition to ongoing water conservation and proactive groundwater management, a supplemental source of supply is required to eliminate the threat of seawater intrusion and begin the longer-term process of restoring the Basin to sustainable levels; and

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H. In accordance with the California Environmental Quality Act ("CEQA"), the Community Water Plan identified options the District evaluated, including at least the following range of potential water supply alternatives: 1) No Action; 2) Water Transfers and Exchanges using treated, available surface water from City of Santa Cruz's sources; 3) Desalination based on the proposed Deep Water Desal project that would be located in Moss Landing; and 4) Advanced Purified Water for groundwater replenishment; and

I. On June 29, 2016, the CITY first issued a letter indicating its willingness to collaborate with the DISTRICT on planning a proposed wastewater recycling facility; and

J. In November of 2016, the District issued a Notice of Preparation/Initial Study ("NOP/IS") in accordance with CEQA and began preparing an Environmental Impact Report ("EIR") for "Pure Water Soquel," an advanced purified groundwater replenishment project to utilize advanced treated wastewater to supplement natural recharge of the Basin with purified water, and thereby to increase the sustainability of the District's groundwater supply, reduce overdraft conditions in the Basin, protect against seawater intrusion, and promote beneficial reuse by reducing discharge of treated wastewater into the Monterey Bay National Marine Sanctuary; and

K. On June 22, 2017, the District issued a revised NOP/IS that an EIR would be prepared to reflect changes since the original NOP/IS was issued that included elimination of untreated/raw wastewater as a source option and the addition of two potential treatment sites (Chanticleer Ave. site and the SCWWTF) for the advanced water purification facility; and

L. On July 21, 2017, the Parties entered into a Memorandum of Understanding ("MOU") memorializing preliminary terms related to "Pure Water Soquel," an advanced purified groundwater replenishment project that would use secondary treated wastewater from the WWTF as a source of supply, and describing a forthcoming PROJECT AGREEMENT and OPERATIONS PLAN; and

M. The DISTRICT completed the environmental review with a Project Level Environmental Impact Report (EIR) and on December 18, 2018 the DISTRICT Board approved Resolution 18-30 which certified the EIR and approved Resolution 18-31 approving the PWS Project. That action met the precondition for the CITY agreeing to enter into the PROJECT AGREEMENT to provide tertiary treated water to DISTRICT.

N. On February 28, 2019, the CITY issued a letter further affirming that the DISTRICT had met those conditions; and

O. On April 16, 2019, the DISTRICT Board, after much consideration including ongoing collaboration with the CITY that took into account the City's expressed preferences, concluded that the PROJECT that would best serve the CITY and the DISTRICT would construct the TERTIARY TREATMENT FACILITY at the WWTF and construct the Advanced Water Treatment Facility at a central location in Live Oak; and

P. On November 15, 2018, the Board of Directors of the Santa Cruz Mid-County Groundwater Agency (MGA) directed staff to incorporate the Pure Water Soquel Project (among other projects) into the draft Groundwater Sustainability Plan (GSP) document currently under development by the MGA as part of the MGA's requirement to prepare and submit such a plan to the state by January 2020; and

Q. Nothing about anything in the City's agreement to provide assurances of source water availability as well as the volumes of treated effluent needed by the District pursuant to this AGREEMENT, in any way affects the City's commitment to implement the City Council accepted recommendations of the Water Supply Advisory Committee, including recommendations regarding the preference for using winter river flows to develop a supplemental source of supply for the City that would increase water supply reliability and reduce vulnerability to drought in the City's water service area; and

R. The Parties now desire to enter into this PROJECT AGREMENT regarding the source water, design, construction, ownership, and operation of a TERTIARY TREATMENT FACILITY to be located at the WWTF.

AGREEMENT

ARTICLE 1: DEFINITIONS

It is understood that the following words or phrases are used herein:

AFY:	Acre-feet per year
AWP:	Advanced Water Purification
CITY:	City of Santa Cruz
DISTRICT:	Soquel Creek Water District
MGD:	Million gallons per day
OPERATIONS PLAN:	Plan that includes the details related to the Operations of the TERTIARY TREATMENT FACILITY including but not limited to water quality standards, operational costs, maintenance, and emergency response.
THE ORDER:	Collectively, the following: (a) the California Regional Water Quality Control Board, Central Coast Region—any General Order Establishing General Water Reuse Requirements for Municipal Waste Water and Water Agencies, and any specific Order pertaining to the PROJECT; and (b) General Waste Discharge Requirements for Recycled Water Use, Water Quality Order 2014-009 adopted by the State Water Resources

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	Control Board on June 3, 2014, and any amendments or successor thereto.
PWS:	Overall Pure Water Soquel Program which includes the TERTIARY TREATMENT FACILITY, conveyance infrastructure, purified water facility, and the seawater intrusion prevention/recharge wells.
PUBLIC WORKS:	City of Santa Cruz Public Works Department
PURIFIED WATER FACILITY:	The portion of the PWS project to be built offsite of the SCWWTF that will receive tertiary treated recycled water and purify it through a multi-step advanced water purification process to create purified water that would be conveyed to seawater intrusion prevention/recharge wells in the Santa Cruz Mid-County region.
TERTIARY TREATMENT FACILITY:	The portion of the overall PWS project to be built within the WWTF boundaries to be further described in the plans and specifications as approved by the City the purpose of which is to treat secondary effluent to a tertiary treatment standard for use as a source water for the DISTRICT's PWS AWP facility, in to meeting the City's needs for tertiary treated water and to provide tertiary treated effluent.
WWTF:	Santa Cruz Regional Wastewater Treatment Facility

ARTICLE 2: COOPERATIVE AGREEMENT AND COOPERATION BETWEEN AGENCIES

The City and District have been collaborating on beneficial reuse of water since 2016, and the DISTRICT has established its target date of December 2022 for completion of the TERTIARY TREATMENT FACILITY discussed under this AGREEMENT, as part of its Pure Water Soquel Program objectives.

The CITY and DISTRICT agree to cooperate in 'good faith' to resolve any disputed issues that may arise in connection with the topics covered in this AGREEMENT.

The CITY and DISTRICT agree to remain open and transparent regarding the development of the design, operation, maintenance, and cost allocation for the TERTIARY TREATMENT FACILITY.

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The CITY and DISTRICT agree to hold regular meetings, at necessary intervals, to review, discuss, advance, and resolve any topics and issues related to the TERTIARY TREATMENT FACILITY discussed in this PROJEC AGREEMENT.

ARTICLE 3: PROJECT DESCRIPTION

The TERTIARY TREATMENT FACILITY consists of the proposed microfiltration/ultrafiltration membrane treatment process and other facilities to be constructed within the boundaries of the WWTF. The TERTIARY TREATMENT FACILITY will be owned and paid for by the DISTRICT, and operated by the CITY. The TERTIARY TREATMENT FACILITY would receive secondary treated effluent from the WWTF as the source water that would be further treated to standards suitable to be further treated and purified at the AWP Facility and ultimately used to replenish the Santa Cruz Mid-County Groundwater Basin to create a seawater intrusion barrier to prevent further seawater intrusion from occurring. The TERTIARY TREATMENT FACILITY would also produce water to meet the CITY's needs for tertiary treated recycled water for in-plant uses, for irrigation purposes at Las Barranca's Park, and for a CITY fill-station.

ARTICLE 4: SOURCE WATER QUALITY AND QUANTITY

4.1 SECONDARY EFFLUENT QUANTITY:

The CITY agrees to supply on average 2.32 MGD (nominally 2,600 AFY) of treated secondary effluent from the WWTF to the TERTIARY TREATMENT FACILITY to produce tertiary treated effluent for the District's use on average 1.67 MGD (nominally 1,875 AFY) which, in turn, will produce on average 1.34MGD (nominally 1,500 AFY) of purified water. A fraction of the CITY provided secondary effluent, nominally 330 AFY or 0.29 MGD on average), will also be produced in the TERTIARY TREATMENT FACILITY for the CITY's uses.

4.2 SECONDARY EFFLUENT QUALITY:

The City agrees to provide secondary treatment effluent that will conform to all requirements of the WWTF's regulatory permits and be use as a source water to produce Title 22 Restricted and Unrestricted water as a product of the TERTIARY TREATMENT FACILITY.

4.2.1 INDUSTRIAL PRETREATMENT AND SOURCEWATER CONTROL PROGRAM: The CITY agrees to maintain its ~~existing~~ comprehensive industrial wastewater pretreatment and pollutant source control program for controlling the discharge of wastes from point sources that could adversely affect the TERTIARY TREATMENT FACILITY and PURE WATER SOQUEL System's water quality or production. The CITY shall comply with all applicable legal requirements with respect to its source water control program.

4.2.2 RESPONDING TO FUTURE REGULATORY CHANGES; The Parties acknowledge that regulatory requirements evolve over time and that operating agencies have a responsibility to modify their operations and/or treatment processes as needed to respond to changed regulatory requirements. As the operator of the primary and secondary treatment processes for the WWTF, the City will make any changes to its treatment processes required to maintain compliance with secondary treatment regulations. Changes to the tertiary treatment process required to meet regulatory changes will be implemented by the Parties as needed. Any capital cost associated with changes to the TERTIARY TREATMENT FACILITY to meet future regulatory requirements will be the responsibility of the District. Any operating costs associated with of making changes to the TERTIARY TREATMENT FACILITY will be split between the City and the District based on their actual proportionate usage (by volume) of the tertiary treated wastewater produced by the TERTIARY TREATMENT FACILITY.

Any capital or operating cost associated with producing water that is of a higher quality than required by regulations in place or being specifically proposed at the time a proposal for producing enhanced water quality will be the responsibility of the Party making the proposal for that change unless the other Party expressly agrees to share in those costs.

ARTICLE 5: DESIGN, CONSTRUCTION, and START-UP RESPONSIBILITIES

The parties agree to work cooperatively on the design and construction of the facility.

5.1 PRELIMINARY DESIGN

5.1.1 The DISTRICT will fund and be the lead agency, with input from the CITY, during the procurement process and in development of the Request for Qualification (RFQ) and Request for Proposal (RFP) for the selection of Design-Build (D-B) Team for completing the detailed design and construction of the TERTIARY TREATMENT FACILITY using Progressive Design Build delivery method.

5.1.2 The DISTRICT and CITY will collaboratively work on furthering the TERTIARY TREATMENT FACILITY design concepts identified in the Feasibility Study (2017, Carollo) and the Environmental Impact Report (ESA, 2018) to develop a preliminary design to be incorporated into the RFP.

5.1.2 The preliminary design will include removal of the existing CITY tertiary treatment facility at the WWTF.

5.1.3 The DISTRICT will fund and prepare the basis of design report and preliminary design necessary to prepare the procurement documents for selection of the TERTIARY TREATMENT FACILITY D-B Team that would meet the DISTRICT's need for tertiary treated recycled water for the

PURIFIED WATER PROJECT as well as the City's existing tertiary treated recycled water needs for in-plant uses, and anticipated need for a recycled water fill-station and for irrigation at Las Barranca Park. The DISTRICT will collaborate with CITY during the preliminary design process and the City shall provide input.

5.1.4 The CITY will participate in the D-B Team selection process by providing up to two representatives to the RFQ/RFP evaluation and interview selection panel. The DISTRICT shall make the final decision as to the D-B Team selection and negotiation of the guaranteed maximum price ("GMP") provided, however, District will keep City informed of the progress on both decisions and City can attend negotiation sessions prior to final approval. DISTRICT's execution of the design-build contract and must seek the approval of other elements of the PROJECT provided for therein that the CITY determines may impact its WWTF operations, including, but not limited to, location, facilities design and, initial Project schedule.

5.1.5 After the D-B Team is selected and a Design-Build contract is awarded, DISTRICT and the CITY will work collaboratively to provide input to advance the design to approximately 60% design level and for achieving the GMPnegotiations milestone with the D-B Team.

5.2 PROJECT PERMITS AND ENTITLEMENTS

5.2.1 CITY and DISTRICT recognize the critical nature of the timeline for construction of this project. As well, CITY had the opportunity to comment on the EIR for the project, including potential impacts of the PROJECT and related pipeline conveyance systems. In order to provide an orderly process for the entitlements for the PROJECT and related conveyance systems, the PARTIES agree to the following process for addressing permit and entitlement issues.

5.2.2 The CITY will, within ___ days of approval of this Agreement, provide a description of all permits and entitlements required for the PROJECT and related conveyance systems within the City of Santa Cruz, including Coastal Permits and encroachment permits. That description will also include a clearly defined process for the review and approval process and submission requirements for each permit/entitlement.

5.2.3 The DISTRICT will initiate the permit review process through submission of all required documents at such time as the design process has progressed to the point that the needed submission materials are available.

5.2.4 Once DISTRICT submittals have been received, CITY will make all reasonable efforts to process all permits in a timely manner and will not unreasonably condition any approval of such permits.

_.4 In the event of an appeal of any approval of a Coastal Development Permit to the State Coastal Commission, the CITY will take reasonable actions to support their action before the Commission.

5.2 DETAILED DESIGN, CONSTRUCTION, AND CONSTRUCTION OVERSIGHT

5.2.1 The DISTRICT will fund and assign a project manager (the DISTRICT Project Manager) to oversee the entire TERTIARY TREATMENT FACILITY construction, including Construction Management Oversight.

5.2.2 The CITY may fund and assign a project manager or liaison to oversee the CITY's activities and coordinate with the CITY and DISTRICT staff on the Project including Construction Management Oversight at the WWTF.

5.2.3 In case of any unresolved disagreement regarding design preference, both agencies agree to seek professional opinion of an independent third party design consultant to assist in resolution of any outstanding design issues. If the two agencies fail to resolve the disagreement in a timely manner and the issue threatens to impact the project schedule, then DISTRICT reserve the right to have the final say to keep the project moving as long as CITY in good faith determines that the decision would not adversely impact the WWTF operations and regulatory compliance.

5.2.7 The DISTRICT and the CITY each agree to cover the cost of their own staffs' time for the design, procurement and construction, as in-kind contributions to the TERTIARY TREATMENT FACILITY.

5.2.8 DISTRICT reserves the right to make improvements and modifications to the TERTIARY TREATMENT FACILITY within the approved Project footprint to enhance the performance of the tertiary treatment system to support the PURE WATER SOQUEL project.

5.3 CHANGE ORDERS AND DESIGN DIRECTIVES DURING CONSTRUCTION

5.3.1 The DISTRICT will be the lead agency for reviewing and approving Change Orders and the CITY will have an opportunity to provide input in this process.

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5.3.2 Any design changes during the construction, having material cost and schedule impacts to the overall PROJECT, must be approved by the DISTRICT Project Manager.

5.3.3 The DISTRICT will fund District required change orders related to the TERTIARY TREATMENT FACILITY or its construction, provided, however, that any change orders requested by the CITY for the benefit of its WWTF operations or facilities shall be funded by the CITY.

5.4 STARTUP AND COMMISSIONING

5.4.1 The DISTRICT'S D-B Team will be primarily responsible for the Startup and Commissioning process and providing training to the CITY's operations staff. This shall include, but not be limited to, the preparation of operation and maintenance manuals, optimizing performance after substantial completion, and training of CITY operators and CITY maintenance personnel. CITY and DISTRICT shall jointly determine what training is necessary for CITY employees to operate and maintain the TERTIARY TREATMENT FACILITY.

5.4.2 Staff time, from both agencies, during the startup, commissioning and facility operations shall be accounted for in the Facility Operations Costs.

ARTICLE 6: OWNERSHIP, LAND ACCESS, OPERATIONS, AND MAINTENANCE

6.1 OWNERSHIP

6.1.1 The TERTIARY TREATMENT FACILITY shall be owned and built by the DISTRICT.

6.1.2 The DISTRICT shall retain ownership of the equipment and structures necessary to the TERTIARY TREATMENT FACILITY, and upon termination of this Agreement shall, at the CITY's option, either abandon said equipment and structures in place or restore the CITY site to a condition comparable to that which existed prior to the construction of the TERTIARY TREATMENT FACILITY.

6.1.3 The City reserves the right to purchase the entire TERTIARY TREATMENT FACILITY from the DISTRICT in the future by paying the book value at the time of the purchase. As used herein, "book value" shall be defined as (capitalized cost of construction less straight line depreciation based on the estimated useful life of the TERTIARY TREATMENT FACILITY), (minus the depreciated cost of any components of the TERTIARY TREATMENT FACILITY in excess of $____,000 that are replaced prior to the purchase), plus the capitalized cost of replacement for any TERTIARY TREATMENT FACILITY component costing in excess of $___,000, less straight line depreciation of such component based on its estimated useful life). City shall provide 1-year notice to the District regarding "intention to purchase" to initiate the process.

6.2 LAND ACCESS

6.2.1 Prior to commencement of construction, the CITY and DISTRICT shall negotiate the terms of and enter into a ground lease for construction, build-out and long-term operation of the TERTIARY TREATMENT FACILITY at the WWTF from the CITY at no cost to the DISTRICT for the term of this Project Agreement, plus any extension thereof entered into between the Parties.

6.2.2 The lease shall specify a temporary footprint area for construction of the TERTIARY TREATMENT FACILITY, and a footprint area of up to 120 ft by 60 ft for the ~~permanent~~ TERTIARY TREATMENT FACILITY structure and any appurtenances thereto, as shown in the figure in Attachment A.[NEED TO ADD]

6.2.3 Details of the LAND ACCESS shall be negotiated in good faith by the DISTRICT and the CITY in conjunction with the OPERATIONS PLAN, discussed below.

6.3 OPERATIONS and MAINTENANCE

6.3.1 CITY shall be responsible for operation, repair and maintenance of the TERTIARY TREATMENT FACILITY and shall employ best management practices to ensure that the tertiary components are operated, repaired, and maintained in good working order and in accordance with established industry standards.

6.3.2 The DISTRICT and the CITY shall be responsible for the cost of operations, maintenance, repair and replacement of the TERTIARY TREATMENT FACILITY components ("O&M Costs") based on the actual proportionate usage (by volume) of the finished water produced from the TERTIARY TREATMENT FACILITY.

6.3.3 CITY shall prepare an estimated annual (fiscal year) budget for operation, repair, and maintenance of the TERTIARY TREATMENT FACILITY and shall submit the estimated annual budget to the DISTRICT by April 30 of each year for approval. The CITY and the DISTRICT shall meet and confer as needed to reach agreement on the estimated annual budget for the upcoming fiscal year provided, however, that CITY shall make the final determination of O&M Costs, which shall include, but shall not be limited to:

6.3.3.1 All direct and indirect labor costs (indirect labor costs are defined as 3rd party vendors/contractors) required for operation, maintenance, repair or, to the extent necessary, replacement of the TERTIARY TREATMENT FACILITY.

6.3.3.2 Cost of maintenance, repair or replacement of any TERTIARY TREATMENT FACILITY related equipment and establishment

of adequate capital reserves (District will return the net interest on the account to the City annually).

6.3.3.3 Costs of insurance, regulatory compliance or reporting requirements, laboratory testing, consultants or services deemed necessary by CITY in connection with O&M.

6.3.3.4 Cost of utilities, including, but not limited to, electricity, telecommunications, water and/or sewer (to the extent that such utilities are not furnished by DISTRICT as part of its normal operations).

6.3.3.5 Cost of supplies, including but not limited to, chemicals, filter membranes, UV lamps etc.;

6.3.3.6 Administrative and overhead expenses in the amount of fifteen percent (15%) of the sum of items 6.3.2.1 through 6.3.2.3.

6.3.4 CITY shall track actual operation, repair, and maintenance costs for the TERTIARY TREATMENT FACILITY and shall invoice the DISTRICT for these costs on a quarterly basis.

6.3.5 CITY shall prepare and maintain accurate and complete books and accounting records for the costs related to the operations, repair, and maintenance of the tertiary components in accordance with practices established by or consistent with those utilized by the Controller of the State of California for public agencies.

6.3.5.1 DISTRICT shall pay Operation and Maintenance ("O&M") costs that relate to the operation of the TERTIARY TREATMENT FACILITY and its receipt of recyled water as set forth in this Section 6.3.5.

6.3.5.2 Annual Estimate. On or before the commencement of operations, and annually thereafter on or before the beginning of each fiscal year, CITY shall prepare and deliver to DISTRICT an estimate of the total annual O&M Costs (the “Annual Estimate”) for the TERTIARY TREATMENT FACILITY for the upcoming year.

6.3.5.3 Actual Cost True-Up. Within four months after the close of each fiscal year, CITY shall calculate its actual O&M Expenses compared to the Annual Estimate for the prior year, which amount shall be used to adjust, up or down as applicable, and the DISTRICT’S proportionate share of such O&M Cost (based on volume), to determine the amount owed by DISTRICT.

6.3.5.4 Payment Schedule. DISTRICT’ payment of O&M Costs in the amount of the Annual Estimate, as adjusted by 6.3.5.3 shall occur on the first of the month following the Delivery Commencement

Date, and thereafter shall be paid, in advance, within thirty (30) days of its receipt of the Annual Estimate.

6.3.6 CITY shall give immediate notice to DISTRICT, by telephone or per established emergency communication protocol, if the CITY is unable to continue normal operation of the TERTIARY TREATMENT FACILITY. CITY shall use every reasonable effort to restore operation as soon as possible.

6.3.7 In case where CITY is unable or unwilling to keep the RECYCLED WATER FAICILITY operational, CITY agrees to allow DISTRICT to bring an outside operator to keep the TERTIARY TREATMENT FACILITY operational.

6.3.8 As additional details regarding TERTIARY TREATMENT FACILITY operations become available, the DISTRICT and CITY shall prepare an OPERATIONS PLAN to determine the Operation and Maintenance costs allocation and negotiate in good faith. Details of such negotiations shall be captured in the OPERATION PLAN with periodic updates.

ARTICLE 7: ADDITIONAL COSTS/FUNDING

7.1 COST OF SECONDARY TREATED EFFLUENT.

The CITY shall provide secondary treated effluent for the TERTIARY TREATMENT FACILITY under this PROJECT AGREEMENT at no cost to the DISTRICT.

7.2 COST OF PERMITTING, DESIGN, CONSTRUCTION AND START-UP.

The DISTRICT shall provide the environmental review, permitting, design, construction, and start-up/commissioning of the TERTIARY TREATMENT FACILITY under this PROJECT AGREEMENT at no cost to the CITY.

ARTICLE 8: RELOCATION OF PROJECT FACILITIES

The responsibility and costs associated with relocation of the TERTIARY TREATMENT FACILITY, including planning, design, acquisition and construction of necessary supporting infrastructure, will be borne by whichever party requires the assets to be relocated.

ARTICLE 9: INDEMIFICATION

To the extent permitted by law, the parties shall each indemnify and hold the other, its officers, agents, and employees harmless from any and all losses, damages, liability on the account of personal injury, death, or property damage, or claim for personal injury, death,

or property damage of any nature whatsoever and by whomsoever made, arising out of the activities of the other party, its employees, subcontractors, or agents under this Agreement.

ARTICLE 10: ASSIGNMENT

The parties shall not assign, sell, or otherwise transfer interest under this Agreement without first receiving the prior written consent of the other party, which consent shall not be unreasonably withheld.

ARTICLE 11: SEVERABILITY

If any term, provision, covenant or condition of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions shall remain in full force and effect and shall in no way be affected, impaired, or invalidated.

ARTICLE 12: ENTIRE AGREEMENT

This Agreement is the full and entire understanding of the parties, and my not be altered except by a writing executed by the parties hereto. The parties agree that there are no warranties, either expressed or implied, no covenants or promises or expectations other than those contained and set forth in the writings of this Agreement.

ARTICLE 13: AMENDMENT

This Agreement may be amended only by a written instrument duly executed by the parties.

ARTICLE 14: WAIVER

The waiver or failure to declare a breach in this Agreement as a result of violation of any term or provision set forth in this Agreement shall not constitute a waiver of that term or condition and shall not provide the basis for a claim of estoppel.

ARTICLE 15: ALTERNATIVE DISPUTE RESOLUTION

Any dispute among the parties to this agreement shall be submitted to arbitration pursuant to the Code of Civil Procedure commencing with Section 1280, and the parties shall be bound by the decision.

ARTICLE 16: NOTICES

All notices shall be in writing and shall be sent as follows:

DISTRICT: General Manager
Soquel Creek Water DISTRICT
5180 Soquel Drive
Soquel, CA 95073
831-475-8500 Phone

City: City Manager
City of Santa Cruz
809 Center Street, Room 10
Santa Cruz, CA 95060
831-420-5011 Phone

ARTICLE 17: NO THIRD-PARTY BENEFICIARIES

This Agreement does not create, and shall not be construed to create, any rights enforceable by any person, partnership, corporation, joint venture, limited liability company, or other form of organization or association of any kind that is not a party to this Agreement.

ARTICLE 18: TERM

This Agreement shall remain in effect for a period of thirty-five (35) years from its effective date, with automatic five (5) year extension periods thereafter unless either party gives notice of termination at least twenty-four (24) months in advance of the term or extension period then in effect.

Authorized and approved for signatures on:

_____, 2019

ADD ALL THE SIGNATURES

DRAFT

WATER COMMISSION
INFORMATION REPORT

DATE: 05/28/19

AGENDA OF: June 3, 2019

TO: Water Commission

FROM: Heidi Luckenbach, Deputy Director/Engineering Manager

SUBJECT: Graham Hill Water Treatment Plant Concrete Tanks Replacement Project, Water Commission Consideration and Recommendation

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RECOMMENDATION: Take action to support staff's recommendation to City Council to adopt the Mitigated Negative Declaration for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project; adopt the Mitigation, Monitoring, and Reporting Program; and approve the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project.

BACKGROUND: Staff has been working with the Water Commission on an approach whereby the Commission would provide, as appropriate, recommendations to the City Council on project elements prior to subsequent action by City Council. This approach for the Department working with the Water Commission on these kinds of actions was introduced to the Commission at their March 2019 meeting, and at their April 2019 meeting the Commission received reports, aligned with the proposed approach, on two projects whose environmental documents were ready for City Council approval: the Newell Creek Dam Inlet/Outlet (NCD I/O) Replacement Project and the Graham Hill Water Treatment Plant (GHWTP) Concrete Tanks Replacement Project. The NCD I/O final Environmental Impact Report was on the Council's May 14, 2019 agenda; the GHWTP Concrete Tanks Mitigated Negative Declaration is scheduled for Council's June 11, 2019 meeting.

DISCUSSION: At the April 1st Commission meeting, the Commissioners received information on Agenda Item 5 Graham Hill Water Treatment Plant Concrete Tanks Replacement Project (provided for reference as Attachment 1) including information on the purpose, need, cost, scope, schedule, and environmental impacts. During that discussion, Commissioners requested that staff include a summary of prior presentations made to the Water Commission for projects that will be submitted to City Council to further demonstrate that the Commission has been given the opportunity to develop a thorough understanding of the project. Following is a list of prior presentations made to the Water Commission that included information on the Concrete Tanks Project:

- May 6, 2019 – Water Department's Proposed Fiscal Year (FY) 2020 Operating and FY 2020-24 Capital Investment Program (CIP) Budgets;

- April 1, 2019 – Graham Hill Water Treatment Plant Concrete Tanks Replacement Project, Water Commission Consideration;
- January 1, 2019 - Presentation of Capital Investment Projects;
- December 3, 2018 – Workshop on Water Treatment – GHWTP Condition Assessment, Seismic Assessment, Treatment Process Evaluation, Requirements for Ongoing Operations with Existing Sources and Water Quality Characteristics, and with Additional Winter Water Sources and Water Quality Characteristics;
- November 5, 2018 – Update on California Environmental Quality Act (CEQA) Processes for Various Water Projects Including the Newell Creek Dam Inlet/Outlet Replacement, the Graham Hill Water Treatment Plant Concrete Tanks Replacement and the Water Rights Amendment Project;
- August 27, 2018 – Santa Cruz Water Program Update;
- May 7, 2018 – Water Department's FY 2019 Recommended Operating and Capital Investment Program (CIP) Budgets;
- May 7, 2018 – Accept the City Council items affecting the Water Department (Resolution to Reimburse Capital Expenditures from Future State Water Resources Control Board Funding (WT));
- March 5, 2018 – Accept the City Council items affecting the Water Department (Resolution to Apply for State Water Resources Control Board Funding for the Graham Hill Water Treatment Plant Concrete Tanks (WT));
- March 5, 2018 – FY2019-2028 Capital Improvement Plan Summary;
- February 5, 2018 – Presentation of Capital Improvement Projects;
- March 7, 2017 – WSAC Work Plan Update;
- December 5, 2016 – Major Projects Update;
- March 3, 2016 – WSAC Work Plan Update; and
- January 6, 2014 – Major Projects Update and Basis of Cost Estimates.

Moving forward, the summary of prior presentations on a specific project will focus on key presentations. At this time, it is anticipated that projects will be presented at the following stages: Annual CIP Meetings, Quarterly WSAC Reports, 30% Design and CEQA approach, and at final Design or final CEQA document.

Attached for review by the Commissioners is the City Council Staff Report for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project – Adoption of a Mitigated Negative Declaration, Adoption of a Mitigation Monitoring and Reporting Program, and Project Approval which includes the Initial Study and Mitigated Negative Declaration, Comments and Responses, Mitigation and Monitoring Reporting Program, and Resolution.

Finally, please note that the attached resolution has been reviewed and approved the City Attorney.

FISCAL IMPACT: There is no fiscal impact associated with this item and the requested action. The cost of the project is being incorporated into the Department's financial planning efforts.

PROPOSED MOTION: Take action to support staff's recommendation to City Council to adopt the Mitigated Negative Declaration for the Graham Hill Water Treatment Plant Concrete Tanks

Replacement Project; adopt the Mitigation Monitoring and Reporting Program; and approve the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project.

ATTACHMENT(S):

1. Item 5 of April 1, 2019 Water Commission Meeting
2. City Council Staff Report, Graham Hill Water Treatment Plant Concrete Tanks Replacement Project – Adoption of a Mitigated Negative Declaration, Adoption of a Mitigation Monitoring and Reporting Program, and Project Approval
    a) Initial Study and Mitigated Negative Declaration for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project (available for review online and at the Water Department Engineering Counter). http://www.cityofsantacruz.com/government/city-departments/water/online-reports/environmental-documents
    b) Comments and Responses on the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project IS/MND
    c) Resolution adopting the Mitigated Negative Declaration for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project, adopting the Mitigation Monitoring and Reporting Program, and approving the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project
        i) Exhibit A - Mitigation and Monitoring Reporting Program for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project

WATER COMMISSION
INFORMATION REPORT

DATE: 03/27/19

AGENDA OF: April 1, 2019

TO: Water Commission

FROM: Heidi Luckenbach, Deputy Director/Engineering Manager

SUBJECT: Graham Hill Water Treatment Plant Concrete Tanks Replacement Project, Water Commission Consideration

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RECOMMENDATION: Receive information on the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project.

BACKGROUND: As with the prior Water Commission item, staff is in the process of developing a realistic approach that would provide the Water Commission the summary level information and links to additional, more detailed, information to support their ability to make recommendations to the City Council on various items. The Concrete Tanks project is also in the final phases of environmental review with a schedule as follows:

- April 1, 2019: Water Commission receives an FYI on the project (this item) for review and consideration.
- May 6, 2019: Water Commission receives a similar item on General Business for discussion. Staff's recommendation will be along the lines of "the Water Commission understands the project's purpose and need, financing capability, and environmental review and supports staff's recommendations to the City Council."
- May 14, 2019: City Council item to adopt the Mitigated Negative Declaration for the Project.

PROJECT SUMMARY

The Graham Hill Water Treatment Plant (GHWTP) was commissioned in the 1960's as a surface water treatment plant. The GHWTP currently treats water from Newell Creek (following storage in Loch Lomond Reservoir), the San Lorenzo River, and the North Coast.

In 2012, a work plan was developed specific to the GHWTP to identify projects to address aging infrastructure, further enhance plant reliability, and meet current and projected-future water quality regulations. Evaluation followed by rehabilitation or replacement of the four existing concrete tanks was selected as the second project in the work plan; the first was upgrades to the filter basins.

The treatment plant includes four large (0.5 – 1 million gallon) concrete tanks. These are original tanks that were designed and built in the late 1950s and early 1960s. In 2016, Kennedy/Jenks Consultants performed a condition assessment of the tanks and determined that the tanks have reached the end of their useful life. Indications of this are visible rebar and failing concrete. In addition, having been constructed decades ago, they do not meet current design standards, including seismic codes, and therefore may be vulnerable to a seismic event. The assessment done by Kennedy/Jenks recommended that three of the tanks be demolished and new pre-stressed concrete tanks be constructed to replace them. The condition of the fourth was confirmed as suitable for continued use.

Following a request for proposal process, West Yost Associates was hired in March 2017 for design and construction support services. West Yost Associates delivered the 75% set of plans and specifications in mid-March. The construction schedule is currently as shown below.

- Bid construction: Begins September 2019, ends November 2019
- Construction Start Date: January 2020
- Construction Substantial Completion: Fall 2022
- Post construction/close out: Fall 2023

The project team includes:

1. City staff, providing overall project management, contract management, and design review;
2. HDR, supporting city staff, providing project management;
3. West Yost, performing the design of the infrastructure improvements;
4. Harris & Associates, the environmental and permitting consultant;
5. Resource agencies, permitting the project elements.

Additional stakeholders include City water customers and neighbors to the project site.

An Open House was held at the GHWTP on February 28, 2019 to introduce the neighbors to department staff, the treatment plant, and the projects being considered at the plant over the next 8-10 years. Approximately 15 neighbors were in attendance.

<u>TECHNICAL</u>

The proposed project would replace three existing concrete tanks that are past their anticipated service life, in accordance with the structural analysis and recommendations made by Kennedy Jenks (October 2015).

The three tanks proposed for replacement are the 1.0 million gallon (MG) Filtered Water Storage Tank, the 0.7 MG Wash Water Reclamation Tank (Reclaim Tank), and the 0.7 MG Sludge Storage Tank. The proposed replacement tanks would not increase the capacity of GHWTP. These facilities and the associated appurtenances are a part of the existing GHWTP water treatment process.

The three replacement tanks would be constructed largely within the already disturbed areas of the GHWTP, in the lower pad area where the existing tanks are currently located. The existing lower pad would be expanded to accommodate the new tank configuration and construction sequencing, which would be phased to allow for the continued operation of the water treatment

plant during construction. The proposed project elements are described on the table below, excerpted from the Draft Initial Study/Mitigated Negative Declaration (IS/MND).

Table 1. Graham Hill Water Treatment Plant Concrete Tanks Project – Major Project Elements
Defined Project
Pump Stations
• Reclaim Pump Station • Wash Water Supply Pump Station • Decant Port Effluent Pump Station • Sludge Pump Station (Vault)
Tanks
• One (1) Filtered Water Tank – includes inner wall & roof (1 MG) (adding a raceway for chlorine contact) • One (1) Reclaim Tank (0.75 MG) • One (1) Sludge Storage Tank (0.75 MG)
Site/Grading
• Up to 5 Retaining walls • Expand existing lower pad to create new pad • Expand and improve existing access road • 36" flow meter vault • 42" flow meter vault • Replace access foot bridge and staircase from upper pad to lower pad
Other Project Elements
• Electrical Building • Accommodation for possible future ultraviolet (UV) disinfection and solids dewatering facilities • Installation of ancillary pipelines, instrumentation, and controls

ENVIRONMENTAL

A Notice of Exemption was prepared by staff and posted at the County Clerk's office between April 13, 2018 and May 13, 2018. The Exemption Statue taken was Categorical Exemption 15302, Replacement or Reconstruction of existing structures and facilities. No comments were received.

Subsequently, the scope of the project broadened and staff was not comfortable with the breadth of analysis provided by an NOE. In response, the City hired Harris & Associates in November 2018 for the preparation of a CEQA IS/MND. The Initial Study and Draft MND found that implementation of the proposed project may result in potentially significant environmental impacts to: biological resources, geology/soils, and noise which would be reduced to less than significant with mitigation measures identified in the IS/MND. No unavoidable significant environmental impacts were identified in the IS/MND. The draft document is in public review from March 8, 2019 – April 8, 2019. A public meeting was held on March 21, 2019 with three members of the community in attendance.

The following approvals are anticipated to be required for the proposed project: California Air Resources Board if portable construction equipment with engines exceeding 50 hP is used, Coverage under the Central Coast Regional Water Quality Control Board's Construction Storm Water General Permit, and an Encroachment Permit from the County of Santa Cruz Public Works Department. These applications will be obtained a few months prior to project construction.

FINANCIAL

The Department is in the process of applying to a low interest loan program offered through the State Water Resources Control Board, State Revolving Fund (SRF); these are currently set at 1.9% for 2019. Towards this effort, on February 2, 2018 the City Council adopted a resolution authorizing the Water Department to apply for the SWRCB loan; on March 27, 2018 the City Council adopted a resolution authorizing the Water Department to be reimbursed by the SWRCB for costs related to the project, and on November 13 the City Council adopted a resolution pledging water rate revenues to repay said loan. The loan amount included in the November 13 Council item was up to $30M; as seen in the cost estimate shared with the Commission at their March 2019 meeting, the current cost estimate is $28M. In the event the SRF application is not approved, the Department will be pledging water rate revenues to fund the project with revenue bonds.

FISCAL IMPACT: There is no fiscal impact associated with this item and the requested action. The cost of the project is being incorporated into the Department's financial planning efforts.

PROPOSED MOTION: Receive information.

ATTACHMENT(S):

1. Draft IS/MND (http://www.cityofsantacruz.com/home/showdocument?id=75299)

DRAFT CITY COUNCIL AGENDA REPORT

DATE: May 30, 2019

AGENDA OF: June 11, 2019

DEPARTMENT: Water

SUBJECT: Graham Hill Water Treatment Plant Concrete Tanks Replacement Project – Adoption of a Mitigated Negative Declaration, Adoption of a Mitigation Monitoring and Reporting Program, and Project Approval (WT)

RECOMMENDATION: *Resolution adopting the Mitigated Negative Declaration for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project, adopting the Mitigation Monitoring and Reporting Program, and approving the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project.*

BACKGROUND: The Graham Hill Water Treatment Plant (GHWTP) is a surface water treatment plant that provides the water treatment necessary to comply with both federal and state statutes that are designed to ensure delivered water meets public health and safety requirements. The GHWTP treats local waters from multiple sources: the San Lorenzo River, Majors Creek, Laguna Creek, Reggiardo Creek, Liddell Spring, and Loch Lomond Reservoir, producing 95% of all drinking water served to over 98,000 customers residing both in the City of Santa Cruz and in adjacent areas of unincorporated Santa Cruz County and parts of the City of Capitola. GHWTP construction was completed in 1961, expanded in 1968, and modernized in 1987. The modernization in 1987 was the last major upgrade at the GHWTP. The treatment plant site is within the City of Santa Cruz jurisdiction but is surrounded by developed properties within the unincorporated County of Santa Cruz.

The GHWTP will require extensive rehabilitation or replacement over the next decade. The Concrete Tanks Replacement Project (proposed project) is one of several projects designed to address aging infrastructure, improve resiliency and prepare the facility to meet changing future conditions, including adapting to the impacts of climate change. To that end, outreach to the neighbors of the GHWTP is a focus of the Water Department. On February 28, 2019 neighboring residents were invited to an open house at the GHWTP for tours and information on upcoming construction projects. The purpose of the open house was to establish relationships; to share information about the upcoming projects; and to receive input from and answer questions from neighbors. In addition, the City established a City staff person as the outreach point of contact and neighbors were encouraged to reach out with additional questions about projects. Subsequent meetings with interested neighbors have been held about specific topics.

The treatment plant includes four large (0.5 – 1 million gallon) concrete tanks, which make up a portion of the water treatment process. These are original tanks that were designed and built in the late 1950s and early 1960s. In October 2015, a condition assessment and a structural analysis of the concrete tanks was performed by a qualified engineering firm. This assessment identified several deficiencies in the tanks due to their age and general condition. The assessment recommended that three of the tanks be demolished and replaced, while the condition of the fourth was confirmed as suitable for continued use. Together with the significant differences between past and present design standards, it was determined that the three tanks had a remaining useful life of 5-10 years or less. In March 2017 a design contract was issued to West Yost Associates to provide a full range of technical and design services for the replacement of the three concrete tanks.

In March 2018 Harris & Associates was hired to provide technical assistance with California Environmental Quality Act (CEQA) compliance. Originally, the proposed project was determined to be Categorically Exempt from CEQA and a Notice of Exemption (NOE) was filed. The Exemption Statue taken was Categorical Exemption 15302, Replacement or Reconstruction of existing structures and facilities. Subsequently, the scope of the project broadened and staff was not comfortable with the breadth of analysis provided by an NOE. In response, the City hired Harris & Associates in November 2018 for the preparation of an Initial Study and Mitigated Negative Declaration (IS/MND). A MND was determined as the appropriate level of environmental review based on the IS which identified that the project's impacts could be avoided or reduced to less than significant levels when mitigation measures were applied.

In March 2019, the City released the IS/MND for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project and is today seeking adoption of the Final IS/MND (Attachment 1) and approval of the project. The IS/MND was prepared in accordance with the provisions of the CEQA. The following information focuses on the project components and need, and the environmental review process that culminated in the MND.

Proposed Project:

The proposed project would replace three existing concrete tanks at the GHWTP and related infrastructure that are nearing the end of their useful life. The tanks include a 1.0 million gallon (MG) filtered water storage tank, a 0.7 MG wash water reclamation tank, and a 0.7 MG sludge storage tank. In addition to replacing ageing infrastructure and thereby improving the reliability of the GHWTP, these modern facilities will add operational flexibility to optimize water treatment. Replacement of the tanks will not increase the capacity of the treatment plant and is essentially an in-kind replacement of the existing tanks. Since the project will use current rather than 1960s era seismic and structural construction standards the result will be a substantially improved facility on both counts. The proposed project also provides space for future treatment improvements, such as ultraviolet light disinfection, should there be a need for such technology in the future to address changing regulations or water quality impacts of climate change. These facilities and the associated pipelines and instrumentation are a part of the existing GHWTP water treatment process, and would continue to provide the same services throughout construction and following project implementation.

The existing concrete tanks are the infrastructure used to store and transfer treated drinking water to the water service area and to store and transfer residuals (or byproducts from the water treatment process) into and out of the GHWTP. Specifically each tank has the following function:

- The existing filtered water tank receives treated drinking water from the GHWTP for distribution into the City's water service area;
- The existing wash water reclamation tank collects water from the filter backwash cycle and returns the water to the GHWTP headworks for re-treatment;
- The existing sludge storage tank collects water treatment residuals from the pretreatment basins, the clarifiers, and occasionally the wash water reclamation tank. The sludge storage tank discharges to the City's Wastewater Treatment Plant or stores the material until it can be partially de-watered and hauled off-site.

Construction of the replacement tanks will be undertaken in a series of sequential phases to allow continued 24/7 operation of the water treatment plant and delivery of treated drinking water to customers in the service area. Construction of each new replacement tank will be followed by demolition of the existing tank that provides the same function. Project construction would take approximately 30 months and may begin as soon as winter of 2019/2020.

In addition to the replacement of the concrete tanks, the proposed project is comprised of the following primary components:

- Expansion of the asphalt pad to accommodate the new tank configuration;
- Construction of engineered retaining walls to provide slope support;
- Relocation and replacement of two pump stations and installation of two new pump stations;
- A new electrical building to house electrical equipment for the facilities;
- Site development to accommodate a possible future addition of ultraviolet (UV) disinfection and solids dewatering facilities;
- Widening and repaving the existing access road to accommodate construction vehicles and future solids hauling vehicles;
- Replacement of the existing access foot bridge and stairs to the tank site; and
- Installation of associated pipelines, instrumentation, and controls.

These proposed improvements would improve the City's overall operational efficiency, improve system performance, and maintain long-term reliable water treatment for the City's drinking water supply.

Environmental Review Process

As described above and in accordance with the CEQA an IS/MND was prepared for the proposed project. The City followed the required procedures to distribute the appropriate notices and environmental documents and went beyond the minimum noticing requirements. Specifically, the City circulated the IS/MND for a 30-day public review and issued a Notice of Intent (NOI) to Adopt a Mitigated Negative Declaration on March 8, 2019. The following list summarizes the noticing and distribution effort for the IS/MND:

- Posting of the NOI for 30 days in the Santa Cruz County Clerk's office;

- Transmittal of the MND to the State Clearinghouse which made the information available to interested agencies for review and comment;
- Distribution of the NOI to local and state agencies, organizations, and interested citizens that have requested notification;
- Direct mailing of the NOI to owners and occupants of property contiguous to the proposed project and to properties within 300 feet of the GHWTP property;
- Posting of legal ads of the NOI in the Santa Cruz Sentinel on March 10, 2019 and the Press Banner on March 8, 2019;
- Posting of the NOI at the entrance to the GHWTP and at the Santa Cruz City Hall communications bulletin board during the public review period, March 8, 2019 – April 8, 2019.

The IS/MND was made available for public review at the Water Department Engineering Counter, the Downtown Branch Public Library, and the Felton Branch Public Libraries. The IS/MND was also available on the City's website on the Water Department's Environmental Documents webpage.

In addition to the above an informational meeting for the proposed project was held at on March 21, 2019 at the Santa Cruz Police Department Community room, during the public review period, to provide information about the proposed project and to solicit comments from interested parties on the IS/MND.

DISCUSSION:
The IS/MND found that implementing the proposed project may result in potentially significant environmental impacts to biological resources, geology/soils, and noise which impacts would be reduced to less than significant with mitigation measures identified in the MND. Project construction Best Management Practices were also included within the project description to minimize project impacts to the environment.

A total of four letters commenting on the Draft IS/MND were received during the public review period from:

- Scott Morgan, Director, California Governor's Office of Planning and Research, State Clearinghouse and Planning Unit;
- David Frisbey, Planning and Air Monitoring Manager, Monterey Bay Area Resources District;
- Annette Olson and Ethan Sanford, neighboring residents; and
- Joshua Drews and Cara Sloman, neighboring residents.

The letter from the California State Clearinghouse to the City on April 9, 2019 confirmed that the City had complied with the State's environmental review process, pursuant to CEQA and that no state agencies submitted comments to the State Clearinghouse by that date.

The two letters from neighboring residents focused on three environmental resource areas: geology and soils; hydrology and water quality; and noise. Specifically, the two neighboring residents expressed concern over the stability of the hillslope that supports the proposed project; the long-term operational noise level that would result from the re-location of a pump station;

and the impacts to downslope properties and the existing storm drain system as a result of impervious area expansion. Some of the comments or questions received by neighbors fell outside the realm environmental resource conditions required by CEQA. In order to be responsive to their questions, a technical memorandum was prepared for the City by the project design team. The neighbors who submitted letters were invited to the GHWTP on March 27, 2019 and on May 1, 2019 to discuss and understand their specific concerns. Project engineers attended and reviewed technical aspects of the project related to geology and soils, hydrology and water quality, and noise. The technical memorandum was transmitted on May 1, 2019 at the meeting with the neighbors.

While the commenters were correct in their concern regarding the history of superficial erosion at the GHWTP, the geotechnical analysis conducted for the project did not identify any slope stability issues that could impact the neighboring properties. The geotechnical analysis showed that the project would improve the geologic stability of the project area, not deteriorate it. In addition, while the commenters were concerned about existing erosion caused by stormwater from the GHWTP, the erosion would not be exacerbated by the proposed project. The proposed project would eliminate stormwater discharge on the hillslopes as recommended by the project geotechnical engineer and instead would convey the water into the existing storm drain system that discharges into the San Lorenzo River thus improving the drainage on the GHWTP. The capacity of the storm drain system was analyzed and found to be more than sufficient by the project engineers. Finally, in response to neighborhood concerns regarding long-term operation noise, quiet models for new pump stations will be specified, specifically fully enclosed motors will be required. In addition, the designs include space for the installation of additional sound enclosures and the City will reassess and consider additional noise attenuation features if it is appropriate at the time. A detailed explanation of the above points is described in the technical memorandum described above.

In response to comments received, the project description, geology and soils, hydrology and water quality and noise sections of the IS/MND were revised to provide corrected or clarified text. These revisions include:

- Minor revisions to the proposed project BMPs;
- Addition of new BMPs to clarify design requirements for drainage to prevent runoff from flowing onto downhill slopes;
- Limiting excavation and grading activities during adverse weather;
- Clarifying construction hours for noise-generating activities;
- Specifying noise attenuation features and requirements for new pump stations;
- Updates to, but no changes to significance findings in the analyses of geology and soils, hydrology and water quality, and noise sections.

The further analyses and revisions did not change the significance of any impact determinations to environmental resources, or result in the addition of mitigation to offset project impacts on the environment; therefore, these changes did not result in a “substantial revision” as defined by CEQA and did not require recirculation of the IS/MND. Responses to comments were sent to commenting public agencies and neighboring residents electronically.

A summary of comments on the IS/MND and responses to comments was prepared and is included as part of the IS/MND (Attachment 2). A Mitigation Monitoring and Reporting Program is included in the IS/MND and Exhibit A to the resolution (Attachment 3).

The Water Commission received information on the purpose, need, cost, scope, schedule, and environmental impacts of the project on April 1, 2019 and action at its June 3, 2019 meeting to support the staff's recommendation that the City Council to adopt the MND and approve the project. It is therefore recommended that City Council, by resolution (Attachment 3), adopt the Mitigated Negative Declaration for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project; adopt the Mitigation Monitoring and Reporting Program; and approve the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project. The project would be bid following a future action by City Council to approve the plans and specifications in Fall 2019.

FISCAL IMPACT:
Adoption of the MND and project approval has no direct fiscal implications. However, future contracts related to project construction would be required to be approved by the City for project implementation.

Prepared by:	Submitted by:	Approved by:
Heidi Luckenbach Deputy Director/Engineering Manager	Rosemary Menard Water Director	Martín Bernal City Manager

ATTACHMENTS:

1. Initial Study and Mitigated Negative Declaration for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project (available for review online and at the Water Department Engineering Counter). http://www.cityofsantacruz.com/government/city-departments/water/online-reports/environmental-documents
2. Comments and Responses on the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project IS/MND
3. Resolution adopting the Mitigated Negative Declaration for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project, adopting the Mitigation Monitoring and Reporting Program, and approving the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project
    a. Exhibit A - Mitigation and Monitoring Reporting Program for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project

Harris & Associates

May 28, 2019

City of Santa Cruz Water Department
212 Locust Street
Santa Cruz, CA 95060

Subject: Graham Hill Water Treatment Plant Concrete Tanks Replacement Project – Comments and Responses on the IS/MND

The purpose of this memorandum is to document the comments received on the Initial Study/Mitigated Negative Declaration (IS/MND) prepared for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project (Project).

The IS/MND was circulated for a 30-day public review period from March 8, 2019, to April 8, 2019. It was submitted to the State Clearinghouse (SCH) and thus distributed to State agencies, including the California Department of Fish and Wildlife, Department of Water Resources, State Water Resources Control Board, Regional Water Quality Control Board and the Native American Heritage Commission.

Attached are the SCH letter, which acknowledges receipt and distribution of the IS/MND, and the following three comment letters received. The three comment letters and the individual comments within each letter have been bracketed and numbered in the right margin.

1. Annette Olson and Ethan Sanford, neighboring residents
2. Joshua Drews and Cara Sloman, neighboring residents
3. David Frisbey, Planning & Air Monitoring Manager, Monterey Bay Air Resources District

A summary of the comments received and responses to those comments are provided below in **Table 1**. The responses pertaining to the environmental issues evaluated in the IS/MND and the adequacy of the IS/MND were developed by Harris' environmental analysts, in coordination with the project engineers and City staff. Additionally, a technical memorandum was prepared for the City by West Yost Associates on May 1, 2019, to address additional project concerns and technical issues that fall outside the parameters of the CEQA analysis covered in the IS/MND. The responses in **Table 1** reference the West Yost memorandum where appropriate.

In response to the comments received, additional review and analysis was conducted for geology, hydrology, and noise to ensure the conditions were documented to a level necessary to accurately account for potential impacts. As a result, minor revisions have been made to the IS/MND in the geology/soils, hydrology/water quality, and noise sections for clarification or to provide additional information. These revisions do not result in any changes to the significance of any impact determinations or additional mitigation required to offset project impacts on the environment. Therefore, these changes did not result in a "substantial revision" as defined by CEQA (Section 15073.5[b]) and do not require recirculation of the IS/MND.

Table 1. Summary of Comments and Responses for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project IS/MND

Comment Letter Date	Comment Letter Number	Commenter Name	Comment Summary	Response to Comment
March 31, 2019	**1**	**Annette Olson and Ethan Sanford** Neighboring Residents	**1-1. Geology and Soils (a)(b)(c).** The commenter states that the IS/MND does not include adequate slope stability information, and that there is a risk to downslope neighbors as native soils and overlying fill slope do not meet County standards and may fail in the future. There are concerns about the stability of the fill wedge/slope area in relation to the safety of downhill neighbors.	**1-1.** CEQA requires identification of potential impacts caused by a proposed project, in comparison to existing (baseline) conditions for the respective environmental resources, such as geology and soils. CEQA does not require the analysis and mitigation of the impact of existing environmental conditions on a project's future users or residents, unless the project would exacerbate impacts from existing environmental hazards (*California Building Industry Association v. Bay Area Quality Management District*, December 26, 2015). As discussed in the Project Description and Geology and Soils sections of the IS/MND, the project would improve the drainage and geologic stability of the project area, resulting in a beneficial change to existing conditions. Furthermore, the overall safety of the project area would be improved through the replacement of the concrete tanks that are beyond their lifetime. The existing conditions and stability of the project area have been evaluated for static, seismic and varying groundwater conditions, as part of the studies that have been undertaken to prepare the Preliminary Geotechnical Report for the Graham Hill Water Treatment Plant Tank Improvement Project (Group Delta, March 2018). Testing included 26 borings, 3 cores, and the installation of 2 piezometers to verify groundwater, soil, and geologic conditions. It was determined through the slope stability analysis that the safety factors for the project are within the acceptable range; this means that the project has been designed within the range determined safe for the geologic features found within the project area. Furthermore, the project seismic performance was evaluated according to guidelines in the California Building Code and California Geologic Survey Special publications and were found to

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				be acceptable. The data collection and analyses conducted by Group Delta (2018) and the project engineers support the conclusion that no additional stabilization measures beyond those as designed in the project are required. Additionally, the geotechnical report prepared by Group Delta (2018) did not identify a plausible slope stability mechanism that could impact the neighboring properties. The loads from the new tanks would be transferred to bedrock and not to fill and/or underlying soils. In addition, the potential for water infiltration in the future is low because the new tanks would include a subdrain system to collect and intercept any leakage or groundwater around the tanks. Additionally, surface infiltration on the tank pad would be addressed through project design by an impervious asphalt surface and a storm drain collection system that discharges directly to the San Lorenzo River. The slope stability conclusions have been further validated by the performance of the slope over the past 60 years since it was constructed. While there has been some surficial erosion and sloughing, there are no indications of shallow or deep slope instability such as crest settlement or cracking. In addition, the GHWTP was subject to severe ground shaking during the 1989 Loma Prieta earthquake and remained both functional and stable in nature. The IS/MND has been revised to include additional technical information about existing conditions and project safety in the geology/soils and hydrology/water quality sections, and to include reference to the geotechnical report prepared by Group Delta (2018) that has been included as Appendix C. The minor revisions are for informational purposes, and there are no changes to the impact conclusions or identification of additional mitigation measures. The IS/MND does not need to be recirculated.
			1-2. Geology and Soils (a)(b)(c). The	**1-2.** The concerns about slope stability in relation to groundwater

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			commenter is concerned about slope stability in relation to groundwater conditions.	conditions have been addressed in a technical memorandum prepared by West Yost Associates (May 1, 2019). This memorandum is available upon request from the City. The IS/MND (Geology/Soils section) has been revised to include additional technical information about slope stability in relation to groundwater conditions. The minor revisions are for informational purposes, and there are no changes to the impact conclusions or identification of additional mitigation measures. The IS/MND does not need to be recirculated.
			1-3. Geology and Soils (a)(b)(c). The commenter is concerned that the project may result in a landslide onto neighboring properties which could result in damage to downslope properties or the risk of life.	**1-3.** Refer to Response 1-1 in addition to the below response. Regarding the commenter's reference to the previous "slide" problems on the slope north of the existing sludge storage tanks, addressed in the 2006 *Geotechnical Investigation for Santa Cruz Water Treatment Plant Slide Investigation* report that was prepared by Pacific Crest Engineering, water may have discharged over the slope and caused the surface to be eroded and experience surficial slumps. It is also possible that previously leaking tanks and surface infiltration temporarily resulted in groundwater seepage which outcropped at the toe of the slope. This local condition was mitigated by construction of the solider pile and lagging wall and backfilling the gully in the former slide area. As identified by the Pacific Crest Engineering report (2006), and confirmed by Group Delta (2018), the project has been designed with drainage improvements (surface and subsurface) to prevent runoff from flowing onto downhill slopes. These improvements include subdrains below the new tanks to collect and intercept any potential leakage from the tanks. Drainage benches will be included on cut slopes per the Group Delta recommendations. Surface infiltration on the lower pad will be mitigated by an impervious asphalt surface and a storm drain system. Furthermore, the storm drain collection and conveyance system that was installed as a result of the previous "slide" problems will be maintained with the

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				proposed project. The geology and soils section of the IS/MND has been revised to include information from the Group Delta (2018) geotechnical report that was prepared for the proposed project, and design requirements have been included in the construction BMPs and MMRPs. The minor revisions are for informational purposes, and there are no changes to the impact conclusions or identification of additional mitigation measures. The IS/MND does not need to be recirculated.
			1-4. Geology and Soils (a)(b)(c). The stability of the expanded access road should be further evaluated. Concerning issues include the potential for the widened road to undermine the stability of the existing wash water tank, and runoff collection that could occur behind the proposed retaining wall that could result in the destabilization of the slope.	**1-4**. The access road will be designed to direct water to the storm drain system. The existing lower tank pad area already includes an asphalt berm and the proposed project will include concrete curbs along the outboard side to prevent runoff from sheet flowing onto the downhill slope. The existing drainage culvert with the "Tee" discharge will be removed and runoff conveyed to the existing storm drain system that discharges directly to the San Lorenzo River. Regarding the impact of the retaining wall, located below the wash water supply tank, on slope stability, the alignment of the retaining wall is within an area of shallow bedrock. The wall will be conservatively designed to support soil loads associated with a sloping backfill condition and will be supported vertically and laterally into stable bedrock. Cuts into the slope will be fully supported by the new concrete walls such that local wall/slope stability will meet or exceed appropriate safety factors for sliding, bearing capacity, and overturning. In addition, the roadway cuts below the wall and will essentially unload the slope below the wall, thereby increasing existing rock slope stability. The IS/MND (geology/soils and hydrology/water quality sections), have been updated to reflect the March 2018 geotechnical report that was prepared for the proposed project by Group Delta. No additional mitigation will be required; however, additional

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				technical information will be added regarding the conditions and safety of the project. The minor revisions are for informational purposes, and there are no changes to the impact conclusions or identification of additional mitigation measures. The IS/MND does not need to be recirculated.
			1-5. Geology and Soils (a)(b)(c). Will the City's winter grading prohibition be adhered to? And, will the City of Santa Cruz Water Department apply for a building permit? There are concerns regarding discharge and runoff to adjacent properties from the GHWTP during both storm and potential tank overtopping events.	**1-5.** While the City of Santa Cruz Building & Safety Division does not issue grading permits for water infrastructure projects of this type, staff will consult with the Building & Safety Division regarding *Chapter 18.45 Excavation and Grading Regulations*. The proposed project is regulated under the National Pollutants Discharge Elimination System (NPDES) and requires coverage under the General Permit for Discharges of Storm Water associated with Construction Activity administered by the State Water Resources Control Board and the General Permit for Discharges of Storm Water from Small Municipal Separate Storm Sewer Systems (MS4) administered by the City of Santa Cruz. The proposed project will require in its specifications the preparation of a Stormwater Pollution Prevention Plan (SWPPP) and an Erosion Control Plan prepared by a qualified SWPPP Developer and a qualified Erosion Control Specialist, respectively. The inspection of the construction area before and after storms will also be required to evaluate stormwater discharge from the construction area, and to identify and implement additional erosion controls, where necessary. As included in the project BMPs, excavation and grading activities on or near slopes exceeding thirty percent will occur outside of the winter rainy season at the discretion of the City based on weather conditions and forecasts. All grading, regardless of the time of year or weather conditions, will employ best management practices (BMP's) as described in the Erosion Control Plan and SWPPP. Regarding concerns of overtopping from the tanks, the design of the proposed project includes an overflow device at each of the proposed concrete tanks to prevent water from overtopping the

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				tank walls. Overflow devices are required by the *American Water Works Association D100-13 Standard for Wire- and Strand-Wound, Circular, Prestressed Concrete Water Tanks 3.11.2.1*; and the *State of California Title 22 Code of Regulations, Chapter 16 – Water Works Standards, Article 6, 64585(b)(5)*. The project design is based on these standards thereby requiring the installation of an overflow device that will be sized to pass the maximum design tank inflow rate. The overflow devices will discharge into the existing storm drain conveyance system. Additionally, the GHWTP is staffed by State certified Water Treatment Operators twenty-four hours a day, three hundred and sixty-five days a year, and a central supervisory control and data acquisition system (SCADA) used to monitor and control the system facilities at all times. The water levels in each tank are monitored by Water Treatment Operators, and the tanks will have sensors and an alarm system to warn Water Treatment Operators of the potential for an impending overflow event so action can be taken to prevent the overflow. Therefore, an overflow event is unlikely, and should an overflow event occur identification of the problem and a quick response would be executed. The construction BMPs have been updated in the Project Description of the IS/MND to reflect this additional information. The minor revisions are for informational purposes, and there are no changes to the impact conclusions or identification of additional mitigation measures. The IS/MND does not need to be recirculated.
			1-6. Hydrology. The commenter is concerned that there has not been a stormwater drainage plan that has been prepared for the project area; therefore, there is not a basis for the IS/MND conclusion that there will be a less than significant impact. There is a concern whether the existing stormwater drainage system	**1-6**. A stormwater drainage plan would be prepared as part of the project design and specification documents. Through project implementation, the stormwater drainage system for the GHWTP would be improved. The existing stormwater drainage pipe leaving the GHWTP site has a maximum capacity of 23 cubic feet per second (cfs). Through implementation of the project, the 100-year design flow would be 21 cfs. As the existing storm drain pipe has sufficient capacity for the 100-year design storm event an

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			could convey the additional runoff that would be generated through the increase in impervious surfaces that would result from project implementation.	additional outlet is not warranted; however, the proposed project will be consistent with the existing stormwater drainage conditions, and will include features to continue to drain the site in compliance with the SWPPP requirements. The project also includes the elimination of the existing storm drain conveyance that terminates in a "Tee" diffuser with subsequent overland flow onto neighboring properties. The proposed improvements include capturing the runoff and conveying it to the existing storm drain pipeline that discharges directly to the San Lorenzo River. The designs for the project will include sheets for the Erosion Control Plan, site paving, grading and drainage. The project will be designed with drainage improvements (surface and subsurface) to prevent runoff from flowing onto the downhill slopes. The project specifications will identify the requirements for the SWPPP and the Erosion Control Plan. This will ensure that these drainage measures are implemented during the implementation of the project. The construction Best Management Practices in the Project Description, and the hydrology and water quality section of the IS/MND have been updated to reflect this additional information. The minor revisions are for informational purposes, and there are no changes to the impact conclusions or identification of additional mitigation measures. The IS/MND does not need to be recirculated.
			1-7. Hydrology. The commenter is concerned that the outboard edge of the road does not include a curb, and therefore, may result in sheet flow across unstable slopes.	**1-7.** Please refer to Geology and Soil response 1-4.
			1-8. Hydrology. The commenter is concerned that the project has not been designed in accordance with the 100-year flood assumptions to ensure that slope	**1-8.** Please refer to Geology and Soils response 1-1 and Hydrology response 1-6.

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			stability does not become a hazardous issue in the event of heavy rainfall.	
			1-9. Hydrology. The commenter is concerned that the project requires a safe overflow pipeline to ensure that, in the event of the breaking down or clogging of the existing pipeline, waters would continue to leave the project site safely, and would not result in erosion impacts or risks to adjacent properties.	**1-9**. Please refer to Geology and Soil response 1-5 and Hydrology response 1-6.
			1-10. Erosion. The commenter is concerned that the current "Tee" design for the storm drainage system is inefficient, and results in gullying on neighboring properties. This has resulted in a significant amount of erosion on neighboring properties.	**1-10.** Please refer to Geology and Soils response 1-5 and Hydrology response 1-6.
			1-11. Hydrology. The commenter is concerned that changes in the stormwater drainage system from the GHWTP that are included in the project must be included in the CEQA analysis.	**1-11.** Please refer to Geology and Soils response 1-5 and Hydrology response 1-6.
			1-12. Hydrology. The commenter is concerned that there is not ample space within the GHWTP for safe groundwater infiltration of runoff from the project area without risking slope stability issues. It is suggested that additional runoff that is generated by the project be piped offsite to the San Lorenzo River.	**1-12.** Please refer to Geology and Soils response 1-5 and Hydrology response 1-6.
			1-13. Noise. The commenter suggests that an ambient noise study be provided to ensure that the additional pumps proposed by the project would not result in a significant increase in noise levels	**1-13.** While the City noise ordinance is not applicable to water infrastructure projects of this type, the project would comply with the ordinance in order to minimize impacts to adjacent land uses throughout the construction of the project. This would also result in compliance with the similar County noise ordinance. This

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			following project implementation. The project should also comply with the County noise ordinance.	information is included within the Noise section of the IS/MND. In addition, the IS/MND includes BMPs for noise control; these include providing notification to the neighbors about upcoming construction activities, identification of a "Construction Coordinator" to provide information to the public and to respond to any local concerns about the project, implementation of practicable noise control measures throughout construction, and to utilize, where possible, quiet models of air compressors and other stationary noise sources. The project also includes Mitigation Measures NOI-1: Preparation and Implementation of a Noise Control Plan for Construction Activities within the Noise section that will require, through the project construction contract specifications, that the construction contractor submit to the City for review and approval a Noise Control Plan prepared by a qualified noise consultant at least 28 days prior to the onset of construction activities. The City shall be responsible for ensuring that the construction contractor designs and implements noise control measures correctly, and that the construction activities comply with the City noise ordinance. The following noise BMP has also been added to the IS/MND regarding on-going increases in ambient noise levels generated by the GHWTP: New at-grade motors will be fully enclosed and specifications will require the installation of quiet models. The pump stations will be designed to leave space for the installation of sound enclosures, as necessary, to limit noise generation. At a maximum, the proposed pumps would generate noise levels of 70dBA at 3 feet per testing conducted by the pump motor manufacturer. The minor revisions are for informational purposes, and there are no changes to the impact conclusions or identification of additional mitigation measures. The IS/MND does not need to be recirculated.

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			1-14. Summary of Specific Points. The response letter summarizes 13 specific topics that have been expressed throughout the comments letter.	**1-14.** The summarized specific points have been answered within the above responses; all specific points that have been identified were also included in a larger context within the letter. Concerns regarding engineering specifics for the project have been addressed in a technical memorandum that was prepared for the City of Santa Cruz Water Department by West Yost Associates on May 1, 2019, in response to the received comment letters for the project. In response to the comments, minor revisions have been made throughout the IS/MND for informational purposes, and there have been no changes to the impact conclusions or identification of additional mitigation measures. The IS/MND does not need to be recirculated.
April 5, 2018	**2**	**Joshua Drews and Cara Sloman** Neighboring Residents	**2-1. Location.** The residence of Joshua and Cara is located west of the project area, which is not acknowledged as an area that supports a residence; consideration for the location of the residence should be included in the IS/MND. Quail Crossing was also incorrectly identified as being south of the project area.	**2-1.** The western location of the residence has been included in the IS/MND. Aerial photographs were considered throughout the analysis of the project in the IS/MND, and, therefore, the location of this residence was considered. Quail Crossing has also been updated to reflect the correct western location in relation to the GHWTP. The IS/MND will be updated to reflect the location of this residence to the west, and the western location of Quail Crossing. The minor revision is for informational purposes, and there are no changes to the impact conclusions or identification of additional mitigation measures. The IS/MND does not need to be recirculated.
			2-2. Geology and Soils. There are concerns about the safety of the project regarding slope stability and potential damage to adjacent land uses. Further explanation is warranted regarding the proposed retaining walls adjacent to the relocated tanks. There are concerns about the stability of the toe slope of the slip area.	**2-2.** Please refer to Geology and Soils responses 1-1 and 1-3 through 1-5. The IS/MND will be updated to reflect the March 2018 geotechnical report that was prepared for the proposed project by Group Delta. No additional mitigation will be required; however, additional technical information has been added regarding the conditions and safety of the project. The minor revisions are for informational purposes, and there are no changes to the impact conclusions or

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				identification of additional mitigation measures. The IS/MND does not need to be recirculated.
			2-3. Hydrology. The commenter is concerned that the project does not include a stomwater management and drainage plan that accounts for 100-year events. Because of ongoing drainage issues, the increase in impermeable surfaces is concerning as an increase in sheet flow from the site would add to the amount of water entering neighboring land uses that is currently resulting in extensive erosion.	**2-3.** Please refer to Geology and Soils responses 1-4 and 1-5, and Hydrology responses 1-6.
			2-4. Noise. There are concerns that the project needs to conform with the noise ordinances that have been established for the area, and there are concerns about the additional pumps, both in number and location, resulting in a significant increase in the noise levels being generated by the GHWTP. Because the resident is located directly west of the property boundary for the site, and additional cement structures will be added through project implementation, there are concerns about the project noise impacts on the property. The project should also be required to obtain a building permit, and comply with the requirements of the permit.	**2-4.** Please refer to Geology and Soils response 1-5, and Noise response 1-13.

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April 8, 2019	**3**	**David Frisbey** Planning and Air Monitoring Manager Monterey Bay Air Resources District	**3-1. Air Quality.** There are concerns that the project should comply with required permits or registration requirements for portable construction equipment with engines greater than 50 Hp.	**3-1**. Under the Other Public Agencies Whose Approval is Required in the Project Description of the IS/MND, coordination to determine compliance requirements with the Monterey Bay Air Resources District has been identified in the event that equipment over 50 Hp will be used for project construction and implementation.
			3-2. Construction Equipment. Given the proximity of residences, the Monterey Bay Air Resources District recommends using cleaner construction equipment that conforms to EPA's Tier 3 or Tier 4 emission standards. We further recommend that, whenever feasible, construction equipment use alternative fuels such as compressed natural gas, propane, electricity or biodiesel.	**3-2.** The following Air Quality BMP has been added to the IS/MND: Given the nearby proximity of residences, the Air District recommends using cleaner construction equipment that conforms to EPA's Tier 3 or Tier 4 emission standards. Whenever feasible, construction equipment will use alternative fuels such as compressed natural gas (CNG), propane, electricity or biodiesel. This minor revision is for informational purposes, and there are no changes to the impact conclusions or identification of additional mitigation measures. The IS/MND does not need to be recirculated.
			3-3. Fugitive Dust. The BMPs for the project regarding fugitive dust are sufficient; however, they should also include the staging area, in the event that staging occurs offsite.	**3-3.** The following Air Quality BMP has been modified within the Project Description of the IS/MND to include the staging area: To reduce the generation of fugitive dust throughout project implementation, the construction contractor would be required to prepare and implement dust control measures at the construction and staging areas, which would include: water all active construction areas as needed based on the type of construction activity, soil, and wind exposure; maintain at least 2-feet of freeboard, or cover dirt and loose materials, in haul trucks throughout transportation; cover inactive storage piles and stock piles of dirt; and sweep any roadways/paths if loose soil material remains at the end of the work day. This minor revision is for informational purposes, and there are no changes to the impact conclusions or identification of additional mitigation measures. The IS/MND does not need to be recirculated.
			3-4. Tank Demolition and Trenching Activities. The project must comply with Air District Rule 424, National Emissions	**3-4.** The project will conform with Air District Rule 424, and the following BMP has been added to the Project Description of the IS/MND:

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			Standards for Hazardous Air Pollutants, as applicable. Rule 424 contains the investigation and reporting requirements for asbestos which includes surveys and advanced notification on structures being removed or demolished.	The IS/MND Hazardous Materials Impacts a through c, and Utilities and Services Impacts d and e, have add compliance with Air District Rule 424 where the handling of lead, asbestos and construction materials are discussed. This minor revision is for informational purposes, and there are no changes to the impact conclusions or identification of additional mitigation measures. The IS/MND does not need to be recirculated.

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Gavin Newsom
Governor

Kate Gordon
Director

April 9, 2019

RECEIVED
APR 11 2019
CITY OF SANTA CRUZ
WATER DEPT.

Jessica Martinez-McKinney
Santa Cruz, City of
212 Locust Street
Santa Cruz, CA 95060

Subject: GHWTP Concrete Tanks Replacement Project
SCH#: 2019039049

Dear Jessica Martinez-McKinney:

The State Clearinghouse submitted the above named MND to selected state agencies for review. The review period closed on 4/8/2019, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act, please visit: https://ceqanet.opr.ca.gov/2019039049/2 for full details about your project.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL 1-916-445-0613 state.clearinghouse@opr.ca.gov www.opr.ca.gov

Jessica Martinez-McKinney, Associate Planner
City of Santa Cruz Water Department
212 Locust Street, Suite C
Santa Cruz, CA 95060

Dear Ms. Martinez-Mckinney:

Thank you for the opportunity to comment on the tank replacement project initial study / mitigated negative declaration. We are downslope neighbors of the water treatment tank. I have worked for almost 15 years as a land use planner where writing initial studies is a routine part of my work. Although we are very much in support of the project, we do have comments regarding three areas: slope stability (Geology and Soils), stormwater management (Hydrology), and noise. We have included comments that may not be within the scope of the CEQA analysis but given that this is the primary opportunity for public comment, we include them here. We appreciate your consideration of the following comments which are divided into our three topics of concern with a summary section at the end.

1. **Geology and Soils (a)(b)(c)**

   A. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault, referring to Division of Mines and Geology Special Publication 42, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides;

   B. Result in substantial soil erosion or the loss of topsoil;

   C. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;

Because almost any no technical slope stability information was provided in the IS, it is impossible to evaluate whether or not a significant impact will result from the project. The only technical information used to support the findings of "less than significant" appears to be the 2006 Pacific Crest Engineering (PCE) geotechnical report.

PCE Report This report, which is now 13 years old, and for which no update letter was provided, is an analysis of the old and new slide areas which are a part of the failing fill wedge that supports the existing tank locations (it was not, as stated in the IS, prepared for the project). The report identifies **a clear and present life safety issue** to the occupants of the downslope residences posed by the improperly keyed fill wedges supporting the existing tanks. As outlined on page 9 of the report, the native soils and overlying fill slope do

1-1

not meet minimum County slope stability standards and can eventually fail on top of the adversely sloping bedrock surface.

At the community meeting on March 21, 2019, I learned that the new tanks will be placed on schist bedrock. Although it is a relief that the new tanks will be on (presumably) competent material, it is impossible to discern whether or not the toe of the fill wedge/slide areas has been, or will be, stabilized. As downhill neighbors, this continues to be a concern given the large volume of unstable fill and native soils identified in the 2006 PCE report. 1-1

Group Delta Report On March 22nd, Chris Coburn emailed me the project geotechnical report prepared by Group Delta (March 2, 2018). We were encouraged that a project-specific report had been prepared. However, the report is difficult for a layperson to understand and, although it finds higher factors of safety than the PCE report in several areas, the report corroborates PCE's analysis that the calculated pseudo static factor of stability for the area near the old slide (with groundwater assumed at 25 feet) is less than one and the minimum safety standard (page 11). The report does not provide the actual number and this number should be provided.

This finding is concerning. Amplifying this concern is the fact that Boring B-2 encountered a seep, i.e., water, at 16 feet. We also know that there is water in the slope from the biotic report which identified a .02 acre wetland in the vicinity. Would a pseudo static calculation done for actual conditions, i.e., water at 16 feet result in a lower factor of safety? Is it reasonable to assume that, if the failure plane is at 25 feet, the water encountered at 16 feet would eventually make its way to 25 feet? It is difficult to understand the implications of this report which speaks to the need for the initial study to provide a summary of the significant portions. 1-2

Although the stability of the existing, improperly keyed fill wedge may be considered to be a baseline condition, given the scope of work-- where thousands of cubic yards of soil will be graded with heavy equipment, retaining walls will be pounded into bedrock, slope profiles will change, and the simple fact that the water tank loads will be located in a different, if nearby, location-- the project itself may result in the destabilization of the slope.

The Group Delta report does not provide recommendations for stabilizing the toe of the slope, focusing its analysis on the stability of the water tanks and "proposed improvements." Consideration is not given to downhill properties. As noted above, if the fill wedge and native soils have not previously been stabilized such that they no longer pose a risk to downslope residents (which based upon the less than one safety factor identified by Group Delta, this does not appear to be the case), and if there is no plan for doing so as a part of the project, the project may result in a significant impact in the form of a landslide which could result in downslope property damage or even loss of life. As downhill neighbors, we are very concerned about this prospect. 1-3

In addition, it does not appear that the report evaluated the wash water tank's stability. The tank is located above our home. I understand that the wash water tank is not directly a part of the project. However, its stability should be evaluated given the intention to widen the road below it and install a retaining wall to protect the road. Borings B-7, B-8 and B-9 of the Group Delta report suggest that some evaluation occurred. Does widening the road have the potential to undermine the stability of that tank? And have the retaining walls been designed to ensure that runoff does not collect behind the walls which could potentially destabilize the slope? 1-4

Will plan review letters be provided by the project geotechnical engineer to confirm that the civil plans were prepared in conformance with the geotechnical report? Will the City's winter grading prohibition be adhered to? Will the Water Department apply for a building permit? All of these questions should be addressed in a recirculated initial study. 1-5

Hydrology

C. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site, substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or impede or redirect flood flows;

No stormwater management plan was provided so it is impossible to evaluate whether or not there will be significant impacts to slope stability or downstream erosion impacts[1]. There is no evidence to support the conclusion that impacts will be "less than significant." Even basic feasibility cannot be evaluated based upon the information provided since, for example, it is unclear whether or not the single 24-inch pipe[2] that is proposed to convey runoff off-site has the capacity to accept the additional runoff generated by the expanded impervious area. 1-6

Surface Water In addition, based upon information provided at the March 21, 2019 community meeting, it appears that there is at least one design flaw in the current plan. The outboard edge of the lower road does not currently include a curb. Unless the grade of the road ensures that no runoff surface flows could ever run west over the road bed, the current design would result in sheet flow onto the unstable slopes. If that is indeed the 1-7

[1] The author of the IS states, "Through project design, the increase in impermeable surfaces has been accounted for, and the project drainage plan will be developed to ensure the continued effective drainage of the site (76)." It is unclear how the increase in impermeable surface "have been accounted for" if no project drainage plan has been prepared. "Effective drainage" must consider downhill properties, not just the site.

[2] I learned about this 24-inch outlet pipe at the community meeting, not from the IS.

case, the design contravenes the recommendations of the 2006 PCE report which states in bold type, “No surface water runoff should be allowed to run over the face of any slopes in this area” (page 15). As a result, a significant impact in the form of erosion and slope instability may result. The obvious and easy fix would be to install a curb. 1-7

Design Storm Related to the capacity analysis noted above is the lack of information identifying the design storm. Given that the infiltration / retention of runoff cannot be allowed on the subject parcel’s unstable slopes, the design storm should be the 100-year event. Although it is unusual to design for such a large storm, this large storm event is an appropriate design storm given the known unstable slopes that support this critical community infrastructure (which almost 100,000 people rely upon for water) and the inability to infiltrate water into the unstable slopes. 1-8

Safe Overflow. Further, given the critical nature of the water treatment plant for our community and the potential deleterious downstream impacts if the drainage system becomes overwhelmed in a large storm event, a design for safe overflow should be provided. An additional outlet should be provided; relying on a single outlet—the 24-inch pipe—which could become blocked, corrode, or fail in a large storm event is not prudent. All of this said, in the absence of **any** stormwater management information (e.g. a stormwater management plan by a civil engineer, supported by a preliminary stormwater management report) provided in the IS, it is impossible to determine whether a significant impact would result from the project. 1-9

Erosion In addition, a 24-inch in diameter corrugated metal drainage pipe currently exits the wash water tank’s slope, crosses a graded bench, and releases runoff on the hillside. Although there is a “T” cap that dissipates some of the runoff’s energy, there are no other improvements west of the pipe’s termination other than an informal ditch downslope of the outlet. A portion of the drainage from this pipe flows into the ditch and, eventually, onto our property. In February, the runoff from that pipe overwhelmed the existing informal ditch, entered our property about 100 yards north of its historic path, eroded new channels, and caused a significant amount of erosion over a large area in a short period of time. The addition of this large volume of water above our house increases many unwelcome drainage impacts and, possibly, the likelihood of slope failure. 1-10

It is worth noting that the historic path of some portion of the runoff is into a large erosional feature on our property. Although there is no imminent threat to the pipes within the “tail” of the water treatment plant’s property, continued erosion of this area from water treatment plant runoff has the potential to erode the “tail” and undermine the pipes within it. The IS should include careful consideration of downstream erosion; even small changes to the existing system could have a significant downstream impact.

If this project includes any plan to alter the corrugated metal pipe[3] or the size of the area it collects, this must be identified in the IS and mitigations must be included to address any adverse impacts. We strongly encourage you to find a piped solution for handling this site's drainage (one that picks up the corrugated pipe's runoff too) since infiltration is not possible on the site's slopes. The water treatment plant already has a path for transporting water off-site: the treated water pipe. I understand there may be regulatory constraints limiting your ability to collect water from your facility's surfaces, but if you were allowed to collect, treat and release stormwater as drinking water, that would be an elegant solution. <u>In any scenario, a comprehensive, quantitative drainage plan is needed.</u>

1-11

Finally, the following should be corrected. On page 77 of the authors of the IS write,

> Implementation of the project would result in a net increase in impermeable surfaces with the expansion of the lower pad area and access road. However, the site would continue to support expanses of open lands that would continue to allow groundwater recharge. Furthermore, water would continue to drain throughout the site downhill, towards the San Lorenzo River, and would not be channeled into impermeable waterways.

1-12

As noted above, the PCE report expressly forbids the runoff onto the site's slopes because of their low stability factor. Given the location of the lower pad at almost the lowest elevation of the parcel and at its most western extent, the site does not have "expanses of open lands" for groundwater recharge. If by "site" the authors mean the neighboring properties, see discussion above, and be aware that it is standard to maintain the predevelopment (i.e. pre-project) release rate. Since it does not appear that there is any way to retain or detain the runoff on slopes, it's unclear how the pre-development rate could be maintained which, again, speaks to the need to hard pipe the runoff off the slopes to a safe outlet (e.g., the San Lorenzo River). Implementing LID and BMP standards, which typically call for infiltration, appear to be infeasible on this site.

<u>Noise</u>

A. Result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
B. Result in the generation of excessive groundborne vibration or groundborne noise levels; or

No acoustical study was provided nor was the threshold of significance identified for operational noise impacts. The water treatment plant is located adjacent to a rural neighborhood where there is very little ambient noise. As such, any new noise impacts may

1-13

[3] Given that the pipe now crosses the area where the road is proposed, it would appear that the pipe is in the way of the project and so must be altered.

be significant. However, because no acoustical information was provided, it is impossible to evaluate whether a significant impact will result from the project. Based upon the project description, it appears that a significant impact may occur. The project description on page three states that there will be three at-grade pumps and one pump placed in a vault.

The at-grade pumps, unless located with an acoustically-effective structure, are likely to generate a substantial amount of noise. It is unclear if other noise-generating equipment is included in the project or not, but, if so, that noise should be evaluated as well.

The initial study suggests that the baseline noise will be similar to the existing operational noise and, therefore, "less than significant." There is no evidence presented to support this conclusion and given the addition and relocation of pumps, this seems unlikely. As we know from our Crossing Street neighbors' experience, the replacement of just one of the water department's pump with a variable speed pump has resulted in noise far beyond "baseline." Actual data is needed to conclude that the operational noise impacts will be less than significant. It would be standard to provide an acoustical study with measured values for the ambient noise (night and day), calculated values for the project, with a comparison of both to the thresholds of significance[4], and, if needed, attenuation recommendations. 1-13

Our valley's acoustics can carry noise over a surprisingly long distance. We would like any potential noise impacts addressed as a part of the project design (and mitigations, if needed), not after construction when noise attenuation may be more difficult to implement.

Page 14 of the IS contains BMPs for Noise. Construction days and hours were not included. A standard BMP is to limit construction days/times to weekdays between 8 AM and 5 PM to allow neighbors the quiet enjoyment of their homes. Given that construction is anticipated to last 2.5 years (!), this would appear to be a reasonable request.

<u>Summary of specific points</u>

1. The Group Delta geotechnical report should provide the actual factor of safety for groundwater at 25 feet along cross section A (page 10 - 11).

2. The Group Delta geotechnical report should provide a solution for the low factor of safety identified in the report for the areas west of the proposed improvements. Recommendations for stabilizing the toe of the slides/failing fill wedge should be provided. 1-14

3. The Group Delta report should include additional stormwater management recommendations. A clear statement that water must be kept off the slope should be made as the PCE report does.

[4] Note that the County's noise standards are found in the General Plan Noise Element. Note the nighttime "penalty."

4. A plan review letter of the civil sheets by the project geotechnical engineer should be provided to ensure that the civil sheets are designed in accordance with the geotech's recommendations.

5. A building permit should be applied for to ensure that the project conforms with the CBC. As a part of the building permit, the Group Delta geotechnical report should be peer-reviewed.

6. A curb should be added to the outboard edge of the road accessing the lower tank area in order to keep runoff off of the slopes. For the same reason, that curb should extend to encircle the entire lower pad area.

7. In the BMP section, the City's winter grading prohibition should be identified (Municipal Code 18.45.040) and the project should comply with it.

8. Group Delta should evaluate the stability of the wash water tank slope, particularly the potential for the proposed retaining walls to destabilize the slope.

1-14

9. A comprehensive stormwater management plan designed for the 100-year storm should be provided. That plan should evaluate the downstream capacity and condition of the 24-inch drainage outlet. A minimum of a second outlet should be provided.

10. Safe overflow analysis should be provided. That safe overflow must consider the potential for tank overtopping and how, in that circumstance, those waters would be handled. Does designing a bathtub-like enclosure for the lower pad, for example, have merit?

11. If any change is proposed to the corrugated pipe that directs runoff toward our property, this must be identified now and the appropriate calculations to size the pipe and mitigations, if needed, should be provided.

12. Acoustical information about the project improvements should be provided and acoustically effective barriers should be included as a part of project design.

13. Noise BMPs should include construction days and hours, i.e., weekdays 8 AM to 5 PM.

Thank you again for your consideration of our comments. We very much appreciate the public outreach efforts that you and your team have made.

Sincerely,

Annette Olson and Ethan Sanford

Jessica Martinez-McKinney, Associate Planner
City of Santa Cruz Water Department
212 Locust Street, Suite C Santa Cruz, CA 95060

Dear Ms. Martinez-Mckinney

Thank you for the opportunity to provide public comments on the tank replacement project initial study / mitigated negative declaration. We have been immediate downslope neighbors of the water treatment plant since 2006. As an architect, I have considerable experience in the review of plans, geotechnical reports, etc. While we recognize and support the needs of the treatment plant to modernize and improve facilities, we have a number of concerns due to our location and proximity, including slope stability, storm water management, and noise and vibration (both during construction and long-term operational).

On page 16 under the heading "Environmental Setting and Surrounding Land Uses," it describes residences to the North, South, and East. It goes on to say "Extensive open space surrounds the Western portion of the plant…" However, our home is located directly West of the tanks, and appears from the satellite imagery to be the closest residence to the construction area. We are concerned that the design and measurement of negative impacts on the surrounding areas have ignored our very existence. 2-1

Slope Stability

The Initial Study provides very little information regarding slope stability, making it difficult to evaluate whether or not the project will have a significant impact. What is clear in the 2006 Pacific Crest Engineering geotechnical report is the identification of "a clear and present life safety issue to the occupants of the downslope residences posed by the improperly keyed fill wedges supporting the existing tanks." Clearly, stability of the tanks and safety for downslope neighbors needs to be improved as a result of this project. If the proposed tanks are to be placed at the same elevation as the existing tanks, how is it that they will now be placed on schist bedrock, and how will the issue of improperly keyed fill wedges be fixed?

It appears in Figure 1 "GHWTP Concrete Tanks Replacement Project Components" (pg.22) that the middle tank will move only slightly further back from the outbound edge of the slope, while the new Northernmost tank will move significantly closer to the edge in an area that has already been identified as a problem slide. A retaining wall is shown wrapping this Northernmost tank, however no details are provided to show how this will protect downslope residences. Presumably the portion of the retaining wall to the Eastern uphill side of the tanks is to retain earth post-excavation, but how does the portion of the retaining wall wrapping the West side of this tank function? Is it below grade supporting the base of the tank? If so, how deep does it go and what is it founded on? 2-2

I have not had a chance to review the more recent Group Delta report, but I understand from a neighbor that it focuses its analysis on the stability of the tanks without consideration of the downhill properties. Since historic fill wedge soils have not previously been stabilized, and if there is no plan to do so as a part of this project, then the proposed project which moves the location of the tanks and will include substantial excavation, extensive trenching for pipe systems, etc. may very well result in a significant adverse impact on slope stability for downhill properties. Given the importance of maintaining the City's water system in functioning order, and the life-safety threat to downhill

neighbors, it is imperative that this be designed above and beyond the minimum safety standard, which it does not appear to be.

2-2

Storm water Management / Hydrology

A stormwater management plan is not included in the I.S., so it is impossible to evaluate whether there will be significant impacts to slope stability, and no evidence is provided to support the conclusion of "less than significant impact". On page 76 the I.S. states "Through project design, the increase in impermeable surfaces has been accounted for, and the project drainage plan will be developed to ensure the continued effective drainage of the site." How has the increase in impermeable surfaces been accounted for if no project drainage plan has been prepared? We also take issue with the phrase "continued effective drainage of the site," as we can point to multiple uphill drainage issues that have occurred both before and during the time of our residency.

On page 77 the I.S. states,

> "Implementation of the project would result in a net increase in impermeable surfaces with the expansion of the lower pad area and access road. However, the site would continue to support expanses of open lands that would continue to allow groundwater recharge. Furthermore, water would continue to drain throughout the site downhill, towards the San Lorenzo River, and would not be channeled into impermeable waterways."

2-3

However, the PCE report forbids runoff onto the site's slopes due to their low stability factor. Furthermore, the tanks sit quite close to the Western property boundary and what undeveloped land there is in this area slopes steeply towards the several downhill properties between the tank site and the San Lorenzo river (ours included). We can attest from personal experience that there is often a substantial, and sometimes alarming amount of both surface runoff, and water welling up from below ground across much of our property.

Since the standard in this kind of scenario is to maintain the pre-project release rate, and retention/percolation on unstable slopes is forbidden by the PCE report, it seems implementing LID and BMP standards calling for infiltration are infeasible in this situation. Hard piping runoff from impermeable surfaces and away from slopes to a safe outlet would appear to be the safest alternative. Given the unknowns imposed by climate change, the importance of maintaining the functionality of the water treatment system for SC residents, and protecting downhill neighbors from known slope stability issues, designing the system to cope with the 100-year storm event would seem prudent. In any case, a comprehensive, quantitative drainage plan is an imperative.

Construction Noise

While we have been verbally assured by Water Dept. staff that construction activities will be limited to weekdays between 8am-5pm, we find no such assurances codified in writing. In the past, during much smaller, shorter-term construction projects at the treatment plant, noise and vibration disturbance has often begun before 6am in the form of large vehicles arriving at the site, idling, and "back-up beeping", all of which are audible inside our home with the windows closed and even earplugs in. Vibrations from a single large vehicle have been strong enough to rattle our high-quality double-pane windows and can be felt in every room of the house.

2-4

Once, extremely loud cutting of heavy metal pipe went on until well after 1 am. When I called the next day to enquire why, first I was told that it hadn't happened, but after insisting that it had happened led to further investigation, we were told that the contractor had "opted to work late to complete the project, rather than have to return for another day of work." There was no emergency or need to complete the project that night. We were deprived of a night's rest simply out of convenience for an out-of-town contractor.

On another occasion, during construction of an 8'+ tall retaining wall built with zero set-back from our property line shared with the water department, I had to stop an excavator which was picking up 1000+ lb boulders and intentionally tossing them down the hill on to the roots of redwood trees on our and our neighbor's property. The operator's explanation was that he had no idea the property line was there. I was confused as to how the water dept. had attained a permit to build such a large structure with no setback from the property line, but I have since come to the understanding that the water dept. does not necessarily need to attain permits, and this wall may very-well have been built without proper review for code compliance.

This proposed project will be substantially larger (in the number of vehicles and people involved) and last two to three years. For both these reasons we feel it is imperative that a project of this size and complexity attain a building permit, be thoroughly peer-reviewed, and a reasonable construction schedule be strictly adhered to, including no vehicles arriving at the site or being turned on prior to 8am. 2-4

Long-Term Operational Noise

No acoustical study was provided nor was the threshold of significance identified for operational noise impacts. While touring the facility it is clear that a number of structures / processes generate significant, and in some cases constant noise. This noise is already audible most of the time at our residence. While we would not describe it as "loud," we do consider it to be significant compared to the quiet rural nature of the site. In Figure 1. "GHWTP Concrete Tanks Replacement Project Components" (pg.22) Item #6 is labeled "Build new reclaim & decant pump stations." I believe this is the replacement for the equipment which is currently housed in a brown metal shed directly adjacent to the West side of the existing middle tank. The new location for these above-grade pumps is significantly closer to our residence and set extremely close to the outboard edge of the graded flat area surrounding the tanks, providing no obstruction in sound transmission from topography as is currently the case. Making the matter even worse, the pumps will be closely backed by two of the H20 tanks and a massive retaining wall, all of which will provide hard surfaces reflecting sound towards our residence. We feel it is imperative that long-term operational noise does not increase, and ideally it would decrease from its current level. How will this be accomplished, and how will sound transmission be measured? If initial mitigation steps are insufficient, what further actions will be implemented to insure that constant ambient background noise does not increase?

Thank you for your careful consideration of these comments which are of great importance to our family's safety and quality of life.

Sincerely,

Joshua Drews & Cara Sloman

Resident/Owners of 69 Quail Crossing, Santa Cruz CA. 95060

Monterey Bay Air Resources District
Serving Monterey, San Benito, and Santa Cruz Counties

24580 Silver Cloud Court
Monterey, CA 93940
PHONE: (831) 647-9411 • FAX: (831) 647-8501

April 8, 2019

Jessica Martinez-McKinney, Associate Planner
City of Santa Cruz Water Department
212 Locust Street, Suite C, Santa Cruz, CA 95060
Email: jmartinezmckinney@cityofsantacruz.com

Re: Concrete Tanks Replacement Project

Dear Ms. Martinez-McKinney:

Thank you for providing the Monterey Bay Air Resources District (Air District) with the opportunity to comment on the above-referenced project. The Air District has reviewed the document and has the following comments:

- **Permits Required** – Air District permits or registration with the California Air Resources Board (CARB) may be required for portable construction equipment with engines 50 Hp or greater. Please contact the Air District's Engineering Division at (831) 647-9411 if you have questions about permitting. 3-1
- **Construction Equipment** - Given the nearby proximity of residences, the Air District recommends using cleaner construction equipment that conforms to EPA's Tier 3 or Tier 4 emission standards. We further recommend that, whenever feasible, construction equipment use alternative fuels such as compressed natural gas (CNG), propane, electricity or biodiesel. 3-2
- **Fugitive Dust** - The Air District appreciates the inclusion of Best Management Practices and standard mitigation measures to reduce fugitive dust from construction activities. Please also apply dust mitigation measures in the project staging area. 3-3
- **Tank Demolition and Trenching Activities** - Air District Rule 424, National Emissions Standards for Hazardous Air Pollutants, may apply to this project. Rule 424 contains the investigation and reporting requirements for asbestos which includes surveys and advanced notification on structures being renovated or demolished. Air District notification is required at least ten days prior to renovation or demolition activities. If old underground piping or other asbestos containing construction materials are encountered during trenching activities, Rule 424 may also apply. Rule 424 can be found online at https://www.arb.ca.gov/drdb/mbu/cur.htm. Please contact Shawn Boyle, Air Quality Compliance Inspector, at (831) 647-9411 for more information regarding asbestos survey and notification requirements. 3-4

Best Regards,

David Frisbey
Planning and Air Monitoring Manager

cc: Richard Stedman, Shawn Boyle

RESOLUTION NO. ___

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SANTA CRUZ ADOPTING THE MITIGATED NEGATIVE DECLARATION, ADOPTING THE MITIGATION MONITORING AND REPORTING PROGRAM, AND APPROVING THE GRAHAM HILL WATER TREATMENT PLANT CONCRETE TANKS REPLACEMENT PROJECT.

WHEREAS, the City of Santa Cruz ("City") proposes to implement the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project (the "Project"); and

WHEREAS, pursuant to Public Resources Code section 21067 of the California Environmental Quality Act (Pub. Res. Code §§ 21000 et seq.) ("CEQA") and section 15367 of the State CEQA Guidelines (Cal. Code Regs, tit. 14, § 15000 et seq.), the City is the lead agency for the proposed Project; and

WHEREAS, the California Environmental Quality Act and the California Environmental Quality Act Guidelines, require a lead agency to prepare a Mitigated Negative Declaration for projects that could have a significant impact on the environment without mitigation; and

WHEREAS, a Notice of Intent ("NOI") to adopt a Mitigated Negative Declaration for the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project was issued by the Water Department of the City of Santa Cruz on March 8, 2019; and

WHEREAS, an Initial Study and Mitigated Negative Declaration was prepared and issued for agency and public review and comment on March 8, 2019, for a 30-day review period that ended on April 8, 2019; and

WHEREAS, the Mitigated Negative Declaration considered the potential environmental impact of the Project, including specific impacts to biological resources, geology/soils, and noise; and

WHEREAS, the Initial Study and Mitigated Negative Declaration outlined various mitigation measures that would avoid (i.e., render less than significant) the Project's significant effects on the environment, which are proposed as part of the Project and through implementation of the Mitigation Monitoring and Reporting Program; and

WHEREAS, during the public review period, the City of Santa Cruz received four (4) comment letters on the Initial Study and Mitigated Negative Declaration from public agencies and individuals; and

WHEREAS, a Mitigated Negative Declaration has been prepared consisting of the Initial Study, all comments received during the public review period, and a Mitigation Monitoring and Reporting Program. This Mitigated Negative Declaration was prepared on or about May 28, 2019; and

WHEREAS, the Mitigated Negative Declaration included minor revisions but no changes to significance findings of any impact determinations to environmental resources, and did not result in the addition of mitigation to offset project impacts on the environment; and

WHEREAS, Exhibit "A" to this Resolution is the Mitigation Monitoring and Reporting Plan prepared in order to comply with Public Resources Code Section 21081.6, subdivision (a); and

WHEREAS, the City Council recognizes the City's obligation, pursuant to Public Resources Code section 21081.6, subdivision (a), to ensure the monitoring of all adopted mitigation measures necessary to substantially lessen or avoid the significant effects of the Project; and

WHEREAS, the Initial Study and Mitigated Negative Declaration has been completed in compliance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq, the Guidelines for Implementation of the California Environmental Quality Act (14 Cal. Code Regs. Section 15000 et seq.) (the "State CEQA Guidelines") and local procedures adopted pursuant thereto; and

WHEREAS, the City of Santa Cruz Water Commission considered the Project at a meeting on June 3, 2019 and has received information on the purpose, need, cost, scope, schedule, and environmental impacts of the Project and the Project should proceed as scheduled, the next step of which would be for City Council to adopt the Mitigated Negative Declaration and approve the Project; and

WHEREAS, the City Council has reviewed and considered the Mitigated Negative Declaration; public comments and responses; and Mitigation and Monitoring Reporting Program public at a meeting on June 11, 2019 and intends to take actions on the Project in compliance with CEQA and the State of California Guidelines for the Implementation of the California Environmental Quality Act; and

WHEREAS, the Mitigated Negative Declaration, Initial Study, and Mitigation and Monitoring Reporting Program are, by this reference, incorporated into this Resolution as if fully set forth herein.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Santa Cruz as follows:

- The foregoing recitals are true and correct.

- The City Council has independently reviewed and analyzed, the Mitigated Negative Declaration together with the Initial Study and supporting documents, as well as the comments, written and oral, received prior to approving this resolution; and

- The City Council hereby finds that the Mitigated Negative Declaration, the Initial Study and supporting documents, have been completed in compliance with CEQA, the State CEQA Guidelines, and local procedures adopted pursuant thereto.

- The City Council hereby finds that the Mitigated Negative Declaration reflects the City's independent judgment and analysis, as required by Public Resources Code Section 21082.1.

- The City Council finds that the Mitigated Negative Declaration identified all potentially significant impacts to the environment, which can and will be avoided or mitigated to less than significant levels through adoption and implementation of the mitigation measures proposed as part of the Project and through implementation of the Mitigation and Monitoring Reporting Program.

- The City Council finds on the basis of the whole record before it and all information received that there is no substantial evidence that the Project, as mitigated, will have a significant effect on the environment.

- The City Council hereby adopts the Mitigation Monitoring and Reporting Program attached hereto as Exhibit "A".

- The City Council hereby adopts the Mitigated Negative Declaration for the Project.

- The City Council hereby approves the Project and directs City Staff to file within five (5) working days after approval of the Project a Notice of Determination commencing the 30-day statute of limitations for any legal challenge to the Project based on alleged non-compliance with CEQA; and

- All environmental documents and other materials that constitute the record of proceedings upon which this decision is based, are made available at the City of Santa Cruz Water Department Office, 212 Locust Street, Suite C, Santa Cruz, California 95060.

PASSED AND ADOPTED this ____ day of _____, 2019 by the following vote:

AYES:

NOES:
ABSENT:
DISQUALIFIED:

APPROVED:_____
Mayor

ATTEST:_____
City Clerk

Exhibit A

MITIGATION MONITORING AND REPORTING PROGRAM

GRAHAM HILL WATER TREATMENT PLANT CONCRETE TANKS REPLACEMENT PROJECT

City of Santa Cruz, California

May 2019

The City of Santa Cruz Water Department (City), as Lead Agency under the California Environmental Quality Act (CEQA) and State CEQA Guidelines, prepared the Initial Study and Mitigated Negative Declaration for the Graham Hill Water Treatment Plant Concrete Tanks Project. In accordance with CEQA, the lead agency must also adopt a program for reporting or monitoring mitigation measures that were adopted or made conditions of project approval (Public Resources Code [PRC] Section 21081.6[a]; State CEQA Guidelines Sections 15091[d], 15097).

This document represents the mitigation monitoring and reporting program (MMRP) for the Graham Hill Water Treatment Plant Concrete Tanks Project, and includes all measures required to reduce potentially significant environmental impacts to a less than significant level.

Table 1 includes the best management practices (BMPs) and mitigation measures, timing of implementation, the agency responsible for implementing the mitigation, and the agency responsible for monitoring the mitigation. **Table 2** includes the sequence for implementing project BMPs and mitigation measures.

Contact Information:

City of Santa Cruz
Water Department
212 Locust Street
Santa Cruz, CA 95060
Contact: Jessica Martinez-McKinney, Planner
(831) 420-5220

Table 1. Mitigation Monitoring and Reporting Plan – Graham Hill Water Treatment Plant Concrete Tanks Project			
Best Management Practices/Mitigation Measure	**Timing**	**Implementation Responsibility**	**Monitoring Responsibility**
Staging Area			
BMP -1. Staging Area Water Quality and Resource Protection Measures. The offsite staging area will be located on a site that has been previously disturbed. The site will be located within five (5) miles of the GHWTP, and will be approximately 100 x 200 feet in size. Any adjacent waterways and/or sensitive resources will be protected. Although the City has not determined a specific offsite staging area, one area being considered for use is APN 008-012-07, a vacant lot owned by the City on River Street. This lot is graveled and has been used by the City for materials storage in the past. This site is used regularly by the City for storage and staging purposes, and is fenced for security purposes. When in use, BMPs are implemented per the City's Stormwater management program to ensure that the adjacent San Lorenzo River and sensitive resources are protected from construction related impacts.	Pre-Construction Plans or Approvals Implement During Construction	Contractor	City, construction inspector or qualified consultant
BMP -2. Staging Area Materials Storage and Transportation Measures. The offsite staging location will be used for materials/equipment storage and/or employee parking. The contractor may include security fencing and/or personnel to ensure the safety of the equipment and materials used for project construction activities. In the event that the offsite area was used for employee parking, a daily shuttle will transport employees between the offsite parking location and the GHWTP. If spoils were transported and/or stored at the offsite staging area, water quality best management practices will be implemented to ensure that all materials remained contained on the site, and there will be no runoff to adjacent land uses. If an offsite staging area is used that deviates from these specifications, additional environmental evaluation and review may be required.	Pre-Construction Plans or Approvals Implement During Construction	Contractor	City, construction inspector or qualified consultant

Table 1. Mitigation Monitoring and Reporting Plan – San Lorenzo River Parkway Phase III Project			
Mitigation Measure	**Timing**	**Implementation Responsibility**	**Monitoring Responsibility**
Air Quality			
BMP-3. Fugitive Dust Measures. To reduce the generation of fugitive dust throughout project implementation, the construction contractor will be required to prepare and implement dust control measures at the construction and staging areas, which will include: water all active construction areas as needed based on the type of construction activity, soil, and wind exposure; maintain at least 2-feet of freeboard, or cover dirt and loose materials, in haul trucks throughout transportation; cover inactive storage piles and stock piles of dirt; and sweep any roadways/paths if loose soil material remains at the end of the work day.	Implement During Construction	Contractor	City, construction inspector or qualified consultant
BMP-4. Portable Construction Equipment Measures. If portable construction equipment that is used for project implementation includes engines 50 horsepower (Hp) in size or greater, the City will comply with required permits issued by MBARD, in compliance with the California Air Resources Board regulations.	Pre- Construction Plans and Approvals	City	City, construction inspector or qualified consultant
BMP-5. Compliance with Monterey Bay Area Resource District's (MBARD) Clean Construction Equipment Measures. Given the close proximity of residences, the City will comply with the MBARD's recommendation to use cleaner construction equipment that conforms to the Environmental Protection Agency's Tier 3 or Tier 4 emission standards. Wherever feasible, construction equipment will use alternative fuels such as compressed natural gas, propane, electricity or biodiesel.	Implement During Construction	Contractor	City, construction inspector or qualified consultant
BMP-6. Compliance with MBARD's National Emissions Standards for Hazardous Air Pollutants Rule 424. As necessary, the project will comply with MBARD Rule 424, National Emissions Standards for Hazardous Air Pollutants. Rule 424 defines the investigation and reporting requirements for asbestos which include surveys and advanced notification on structures being renovated or demolished. Air District notification will be required at least ten days prior to renovation or demolition activities. If old underground piping or other asbestos containing construction materials are encountered during trenching activities, Rule 424 may also apply.	Pre-Construction Plans and Approvals Implement During Construction	Contractor	City, construction inspector or qualified consultant

Table 1. Mitigation Monitoring and Reporting Plan – Graham Hill Water Treatment Plant Concrete Tanks Project			
Best Management Practices/Mitigation Measure	**Timing**	**Implementation Responsibility**	**Monitoring Responsibility**
Water Quality			
BMP – 7. Preparation of the Project Storm Water Pollution Prevention Plan (SWPPP). Implementation of the project will result in the ground disturbance of more than one acre and, therefore, will be regulated under the Clean Water Act through the National Pollutant Discharge Elimination System (NPDES) stormwater program, which requires compliance with the Construction General Permit. This permit requires the development and implementation of a SWPPP which must describe the site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, and non-stormwater management controls.	Pre-Construction Plans or Approvals Implement During Construction	City will file Notice of Intent to enroll under the Construction General Permit Contractor will develop SWPPP and submit to City Contractor will implement measures defined in the Project SWPPP	City, construction inspector or qualified consultant
BMP - 8. Measures for On-going Compliance with the SWPPP. The inspection of construction sites before and after storms is required to evaluate stormwater discharge from the construction site, and to identify and implement additional erosion controls, where necessary. Compliance with the NPDES-required SWPPP will reduce the overall risk of soil erosion.	Construction Monitoring/Periodic Inspection	City	City, construction inspector or qualified consultant

8.47

Table 1. Mitigation Monitoring and Reporting Plan – Graham Hill Water Treatment Plant Concrete Tanks Project			
Best Management Practices/Mitigation Measure	**Timing**	**Implementation Responsibility**	**Monitoring Responsibility**
BMP – 9. Compliance with City Storm Water Ordinances and the City Construction Work Best Management Practices. All construction and staging activities will be conducted in accordance with the City's Storm Water Ordinances (Chapters 16.19 Storm Water and Urban Runoff Pollution Control) and the City's Construction Work Best Management Practices, Chapter 4 of the Best Management Practices Manual for the City's Storm Water Management Program (revised June 2014). This includes the preparation and implementation of an Erosion Control Plan, which will specify detailed water quality protection and erosion/sediment control BMPs. The Erosion Control Plan will also include requirements for equipment and vehicle maintenance, materials storage, and other construction practices which could result in the inadvertent release of fuel, motor oil, and other hazardous fluids and materials. Measures to ensure proper disposal of construction and demolition waste, including asbestos, lead and other debris containing hazardous materials are also included. BMPs will be selected to represent the best available technology that is economically achievable, subject to review and approval by the City. The City will perform routine inspections of the construction area to verify the BMPs are being properly implemented and protection measures are being maintained. The City will notify the contractor immediately if there were a violation that will require immediate compliance.	Pre-Construction Plans or Approvals Installation Prior to Construction Start Implement During Construction Construction Monitoring/Periodic Inspection	Contractor will prepare an Erosion Control Plan City will review and approve Erosion Control Plan Contactor will install materials as necessary prior to the start of construction and throughout construction activities City will provide periodic inspection	City, construction inspector or qualified consultant
BMP – 10. Grading Measures to Protect Slope Stability. Excavation and grading activities on or near slopes exceeding thirty (30) percent will occur outside of the winter rainy season at the discretion of the City based on weather conditions and forecasts. All grading, regardless of the time of year or weather conditions, will employ BMPs as described in the Erosion Control Plan and SWPPP.	Pre-Construction Plans or Approvals Implement During Construction Construction Monitoring/Periodic Inspection	Contractor will prepare an Erosion Control Plan City will review and approve Erosion Control Plan Contactor will comply with the Erosion Control Plan, SWPPP and timing of grading activities City will provide periodic inspection	City, construction inspector or qualified consultant

Table 1. Mitigation Monitoring and Reporting Plan – Graham Hill Water Treatment Plant Concrete Tanks Project			
Best Management Practices/Mitigation Measure	**Timing**	**Implementation Responsibility**	**Monitoring Responsibility**
Biological Resources			
BMP – 11. Biological Resources Education Materials and Training. A binder with information containing any permits and environmental requirements for the project, including avoidance of special-status species and habitats, will be created and kept at the project area at all times. Prior to starting construction, all employees and contractors who will be present during project activities will receive training from a qualified individual on the contents of the binder, including species identification, avoidance and minimization measures, and stop work and reporting requirements.	Pre-Construction Trainings/ Inspections Implement During Construction	City will provide education program Contractor will comply with education program throughout project implementation	City, construction inspector or qualified consultant
BMP – 12. Measures to Implement Heritage Tree Protections. Pre-construction activities will include identifying, marking, and measuring the trees that will be removed or trimmed for project construction. Although the City of Santa Cruz Heritage Tree Ordinance is not applicable to the project, pursuant to California Government Code section 53091, any impacts to heritage trees (trees with a circumference of forty-four (44) inches, approximately fourteen (14) inches in diameter, measured at breast-height, approximately fifty-four (54) inches above existing grade) will be avoided to the greatest extent feasible, and pruning or removal will be performed by a state tree care license issued by the State of California in accordance with a consulting arborist report prepared for the project area. The City will also comply with mitigation requirements, in accordance with the project arborist report.	Pre-Construction Biological Surveys or Reviews Implement During Construction	City will prepare an arborist report. Contractor will comply with requirements of arborist report	City, construction inspector or qualified consultant
BMP – 13. Measures to Implement Heritage Tree Protection. The City will also comply with mitigation requirements as described in a consulting arborist report.	Post-Construction Measures	City will implement mitigation requirements	City staff or qualified consultant
BMP – 14. Surveys for Birds of Prey. To protect nesting birds, no tree or vegetation trimming or removal, or noise generating activities above existing ambient noise levels, could occur from February 1 through August 31 unless the following Avian Nesting Surveys are completed by a qualified biologist. A survey for nesting activities of birds of prey within the project area and a 500-foot radius within 14 days prior to starting project activities shall be undertaken. In the event that this area includes private property for which access is restricted, visual inspection of adjacent habitats will be undertaken. If any active nests are observed, these nests shall be designated as Environmentally Sensitive Areas (ESAs) and protected by a 500-foot avoidance buffer, to the greatest extent possible, within the project area, until the breeding season has ended, or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest site or parental care for survival.	Pre-Construction Biological Surveys or Reviews Implement During Construction	City will perform biological surveys prior to construction Contractor will comply with measures throughout project implementation	City, construction inspector or qualified consultant

Table 1. Mitigation Monitoring and Reporting Plan – Graham Hill Water Treatment Plant Concrete Tanks Project			
Best Management Practices/Mitigation Measure	**Timing**	**Implementation Responsibility**	**Monitoring Responsibility**
BMP – 15. Surveys for Other Avian Species. To protect nesting birds, no tree or vegetation trimming or removal, or noise generating activities above existing ambient noise levels, could occur from February 1 through August 31 unless the following Avian Nesting Surveys are completed by a qualified biologist. A survey for nesting activities within the project area and, to the greatest extent possible, a 250-foot buffer, within 14 days prior to starting project activities shall be undertaken. In the event that this area includes private property for which access is restricted, visual inspection of adjacent habitats will be undertaken. If any nesting activity is found, the City shall designate nests and nest substrate (trees, shrubs, ground, or burrows) as an ESA and protect with a 250-foot buffer until young have fledged and are no longer reliant on the nest site or parental care.	Pre-Construction Biological Surveys or Reviews Implement During Construction	City will perform biological surveys prior to construction Contractor will comply with measures throughout project implementation	City, construction inspector or qualified consultant
BMP – 16. Surveys for Bat Species. Pre-construction surveys of suitable roosting habitat features shall be conducted within the project area and a 250-foot buffer by a qualified biologist within 14 days prior to the start of project construction activity. In the event that this area includes private property for which access is restricted, visual inspection or echolocation monitoring of adjacent habitats will be undertaken. Surveys will be conducted during the appropriate time of day to maximize detectability to determine if bat species are roosting within or near the project area. Surveys may include observational methods or echolocation monitoring to determine whether bats are present. A survey report shall be completed that includes, but is not limited to, the survey methodology and biologist qualifications and, if bats are present, the colony size, roost location, and characteristics. If surveys confirm that bats daytime roost in areas impacted by the project, the permittee shall maintain a 300-foot buffer around bat roost sites during project activities, within the project area. If present, bats shall not be disturbed without specific notice to and consultation with CDFW.	Pre-Construction Biological Surveys or Reviews Implement During Construction	City will perform biological surveys prior to construction Contractor will comply with measures throughout project implementation	City, construction inspector or qualified consultant
BMP – 17. Surveys for American Badger. Pre-construction surveys for American badger and sign of their burrows shall be conducted within 14 days of the start of construction. Any American badger detected within the project area during project activities shall be allowed to move out of the work area of its own volition. If American badger is denning on or immediately adjacent to the project work area, CDFW shall be consulted to determine whether the animal(s) may be evicted from the den. Eviction of badgers will not be approved by CDFW unless it is confirmed that no dependent young are present.	Pre-Construction Biological Surveys or Reviews Implement During Construction	City will perform biological surveys prior to construction Contractor will comply with measures throughout project implementation	City, construction inspector or qualified consultant

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Table 1. Mitigation Monitoring and Reporting Plan – Graham Hill Water Treatment Plant Concrete Tanks Project			
Best Management Practices/Mitigation Measure	**Timing**	**Implementation Responsibility**	**Monitoring Responsibility**
BMP – 18. Surveys for San Francisco Dusky-Footed Woodrat. Pre-construction surveys for San Francisco dusky-footed woodrat and nests shall be conducted within 30 days of the start of construction. All active woodrat nests shall be avoided and protected during project construction activities with a minimum 25-foot buffer. If nests cannot be avoided by this buffer, the City shall consult with CDFW regarding a reduced buffer or to dismantle the nests prior to land clearing activities. CDFW may approve the dismantling of nests during the nonbreeding season, between October 1 and December 31, to allow animals to escape harm and to reestablish territories for the next breeding season.	Pre-Construction Biological Surveys or Reviews Implement During Construction	City will perform biological surveys prior to construction Contractor will comply with measures throughout project implementation	City, construction inspector or qualified consultant
BMP – 19. Measures to Limit Work Timing. Many of the special-status animals with a potential to occur within the project area are active at dusk and during the night. To avoid impacts to these species, all noise-generating work activities shall be confined to daylight hours.	Implement During Construction	Contractor will comply with measures throughout project implementation	City, construction inspector or qualified consultant
BMP – 20. Erosion Control Measures. To protect the small seep area adjacent to the project area at the bottom of the slope below the lower cement pad, erosion control measures, as identified if the project erosion control plan, shall be implemented and maintained along the southern edge of the project area. Erosion control shall be inspected and maintained until the project is complete.	Installation Prior to Construction Start Construction Monitoring/ Periodic Inspection	Contractor	City, construction inspector or qualified consultant
BMP – 21. Measures to Install Temporary Fencing to Protect Resources Outside of the Construction Zone. Prior to the onset of construction activities, the contractor will install temporary fencing between areas of disturbance and areas that will remain undisturbed throughout project implementation to prevent impacts beyond the construction area, specifically along the northern and western project boundaries. This will protect vegetation and trees, and associated wildlife species, including the Mount Hermon June beetle and common wildlife species present onsite.	Installation Prior to Construction Start Construction Monitoring/ Periodic Inspection	Contractor	City, construction inspector or qualified consultant
BMP – 22. Measures to Implement Biological Compliance Monitoring. In accordance with the HCP, compliance monitoring by a qualified biologist will occur throughout all construction activities and O&M activities in suitable or occupied MHJB habitat. The qualified biologist will ensure that all HCP measures are implemented. The qualified biologist will also be responsible for effects monitoring, which will include the calculation of areas of habitat disturbance and the number, if any, of individual MHJB relocated. All information gathered by the biologist will be included in the HCP annual report prepared by the City for the USFWS.	Construction Biological Monitoring Post-Construction Reporting	City will provide ongoing biological monitoring services and effects monitoring/ reporting	City, construction inspector or qualified consultant

Table 1. Mitigation Monitoring and Reporting Plan – Graham Hill Water Treatment Plant Concrete Tanks Project			
Best Management Practices/Mitigation Measure	**Timing**	**Implementation Responsibility**	**Monitoring Responsibility**
BMP – 23. Measures to Limit Construction Area. To the extent practical, the covered activities of the HCP that occur on the portion of the project area characterized by Zayante sands will be located either within, or immediately adjacent to, the footprint of the existing GHWTP facilities (i.e., existing buildings, water tanks, service roads, pipelines, etc.).	Pre-Construction Plans or Approvals	Contractor	City, construction inspector or qualified consultant
BMP – 24. Measures to Implement Temporary Fencing and Signage. Temporary fencing and signs will be erected before any vegetation clearing, excavation, or grading activities occur to clearly delineate the boundaries of the project's impact area between areas disturbed by construction activities and those that will remain in existing conditions, specifically in the northern and western perimeters of the project area. Warning signs will be posted on the temporary fencing to alert workers not to proceed beyond the fence. All protective fencing will remain in place until the construction activities have been completed. Signs will include the following language: "NOTICE: SENSITIVE HABITAT AREA. DO NOT ENTER."	Installation Prior to Construction Start	Contractor	City, construction inspector or qualified consultant
BMP – 25. Measures to Cover Disturbed Soils. If construction or other ground disturbing activities occur during any portion of the MHJB flight season (May 15 through August 15), all exposed Zayante soils within the impact area will be covered by tarps, plywood, erosion control fabric, or another suitable impervious material. Exposed soils should be covered between the hours of 7:00 p.m. and 7:00 a.m. daily by a qualified biologist. This will prevent adult males from burrowing into the exposed soils and subsequently being injured or killed by soil disturbance (digging, grading, covering, etc.).	Implement During Construction	Contractor	City, construction inspector or qualified consultant
BMP – 26. Measures to Control Dust. Appropriate dust control measures, such as periodically wetting down the work areas, will be used as necessary during excavation or any soil disturbing activities in the impact area or any other covered activities that generate dust.	Implement During Construction	Contractor	City, construction inspector or qualified consultant
BMP – 27. Measures to Comply with Lighting Requirements for MHJB. Adult MHJBs are active at dusk and may be distracted by incandescent, mercury vapor, sodium, and black light sources, which can disrupt normal behaviors and breeding activities. Thus, any new outdoor lighting installed as part of this project will use bulbs certified to not attract nocturnal insects.	Pre-Construction Plans or Approvals Implement During Construction	Contractor	City, construction inspector or qualified consultant
BMP – 28. Measures to Protect Habitat Conditions for MHJB. Because MHJB adults emerge from the soil to attract and search for mates, turf grass, dense ground covers (such as ivy), weed matting, aggregate, and mulch can degrade habitat conditions and will not be used in this project. Material for revegetation will use plants endemic to the Zayante Sandhills.	Pre-Construction Plans or Approvals Implement During Construction	Contractor	City, construction inspector or qualified consultant

8.52

Table 1. Mitigation Monitoring and Reporting Plan – Graham Hill Water Treatment Plant Concrete Tanks Project			
Best Management Practices/Mitigation Measure	**Timing**	**Implementation Responsibility**	**Monitoring Responsibility**
Cultural Resources			
BMP – 29. Cultural Resources Education Materials and Training. Prior to the onset of construction activities, a qualified archaeologist will provide an education program for the contractor and construction crew to provide an overview of cultural, historic and paleontological resources, and what resources may be discovered through ground disturbing activities. The program will include an overview of the steps that will be required in the event of an unexpected discovery of resources through the implementation of construction related activities at the GHWTP.	Pre-Construction Trainings/ Inspections Implement During Construction	City will provide education program Contractor will comply with education program throughout project implementation	City, construction inspector or qualified consultant
BMP – 30. Measures to Protect Unexpected Discovery of Cultural Resources. In the event that unexpected cultural, historic or paleontological resources are discovered by any person at the construction site, the City shall implement measures consistent with Section 24.12.430, Protection of Archaeological Resources, of the Santa Cruz Municipal Code. Work will be stopped in the event that unexpected occurrences of cultural, historic or paleontological resources are discovered through implementation of construction activities. If evidence of cultural resources are identified during ground disturbance associated with the proposed project, the construction crews will stop all work within 100 feet of the discovery until a qualified archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards as promulgated in 36 CFR 61 and who has experience with precontact, historic period, and tribal resources assesses the previously unrecorded discovery and provides recommendations.	Implement During Construction	Contractor will comply with the education program City will comply with requirements if unexpected resources are discovered	City, construction inspector or qualified consultant
Noise			
BMP – 31. Measures to Inform Neighbors of Construction Schedule. Notify neighbors located adjacent to the GHWTP of the construction schedule to ensure awareness of the upcoming project activities and projected duration of construction activities.	Pre-Construction Plans or Approvals Implement During Construction	City	City, construction inspector or qualified consultant

Table 1. Mitigation Monitoring and Reporting Plan – Graham Hill Water Treatment Plant Concrete Tanks Project			
Best Management Practices/Mitigation Measure	**Timing**	**Implementation Responsibility**	**Monitoring Responsibility**
BMP – 32. Measures to be Implemented by the Construction Coordinator. A "Construction Coordinator" will be identified by the City. The contact information for the Construction Coordinator will be included on notices distributed to neighbors regarding planned construction activities, and posted outside of the GHWTP. The Construction Coordinator will be responsible for responding to any local concerns about construction noise. The Construction Coordinator shall notify the City within 48 hours of a report, determine the cause of the concern, and implement, as feasible, reasonable measures to resolve the concern, as deemed acceptable by the City. A reporting program will be implemented by the Construction Coordinator that documents complaints received, actions taken to resolve problems and effectiveness of the actions.	Pre-Construction Plans or Approvals Implement During Construction	City	City, construction inspector or qualified consultant
BMP – 33. Noise Control Measures. To the extent practicable noise control measures will be implemented throughout the construction area, including a feasible combination of parapet walls, enclosures/housing for noisy equipment, locating enclosure openings/ventings away from neighboring residences and/or the construction of noise barriers.	Implement During Construction	Contractor	City, construction inspector or qualified consultant
BMP – 34. Measures to Quiet Stationary Noise. Where technology exists, quiet models of air compressors and other stationary noise sources will be required for use to the extent practicable.	Implement During Construction	Contractor	City, construction inspector or qualified consultant
BMP – 35. Measures to Quiet At-Grade Motors. New at-grade motors will be fully enclosed and specifications will require the installation of quiet models. The pump stations will be designed to leave space for the installation of sound enclosures, as necessary, to limit noise generation. At a maximum, the proposed pumps will generate noise levels of 70 dBA at 3 feet per testing conducted by the pump motor manufacturer.	Pre-Construction Plans or Approvals Implement During Construction	Contractor	City, construction inspector or qualified consultant
Traffic			
BMP – 36. Measures to Control Noise throughout Construction Implementation. Construction of the proposed project will occur during daylight hours. In addition, noise-generating project activities will be restricted to 8:00 a.m. through 5:00 p.m. Monday through Friday, unless prior approval by the Water Department Director is obtained, which is in accordance with the City and County noise ordinances.	Implement During Construction	Contractor	City, construction inspector or qualified consultant

8.54

Table 1. Mitigation Monitoring and Reporting Plan – Graham Hill Water Treatment Plant Concrete Tanks Project			
Best Management Practices/Mitigation Measure	**Timing**	**Implementation Responsibility**	**Monitoring Responsibility**
BMP – 37. Preparation of Traffic Control Plan. A traffic control plan will be prepared through the County encroachment permit process to minimize project effects on local traffic around the project area, including Graham Hill Road and the roadways around the offsite staging area, if offsite staging is required. The County approved traffic control plan will ensure that roadways and pedestrian/bicycle paths remain open throughout project construction to the greatest extent feasible, and that any lane and path closures will be safely and effectively managed, with detours clearly identified. Emergency access will be retained on all roadways during construction.	Pre-Construction Plans or Approvals	Contractor will prepare a Traffic Control Plan City will review and approve Traffic Control Plan	City, construction inspector or qualified consultant
BMP – 38. Implement Traffic Control Plan. Prior to the start of construction activities, signage will be installed on Graham Hill Road near the GHWTP, and will include the dates for construction, contact information for the Construction Coordinator to answer project specific questions, and detour information to minimize the effects of temporary pedestrian/bicycle path closures, as necessary. Additionally, the local safety personnel (e.g., police and fire department) will be informed of any detours or lane closures to maintain effective emergency service access throughout the duration of the project.	Pre-Construction Plans or Approvals Implement During Construction	Contractor will comply with Traffic Control Plan throughout project implementation City will provide periodic inspection	City, construction inspector or qualified consultant
BMP – 39. Designated Truck Routes within the Traffic Control Plan. City designated truck routes will be used by construction equipment to import and export material from the project area to the City of Santa Cruz Resource Recovery Facility on Dimeo Lane, or another approved waste disposal facility.	Implement During Construction	Contractor will comply with Traffic Control Plan throughout project implementation City will provide periodic inspection	City, construction inspector or qualified consultant
Mitigation Measures			
Mitigation Measure BIO-1: Creation and Management of an Off-Site Mitigation Area (Habitat Conservation Plan Implementation). To mitigate for incidental take, the HCP includes the creation and management of an off-site mitigation area: 17.0 acres at the City of Santa Cruz's Laguna Creek watershed property (APN 080-241-18) in Bonny Doon (Preserve) (HCP) (McGraw 2017). Although the City is already complying with the HCP, and impacts are already mitigated via implementation of the HCP, the identification of the habitat creation and management mitigation measure is included here to clearly link the impacts of this project to the mechanism that has already provided mitigation for them.	Pre-Construction Biological Surveys or Reviews	City	City, construction inspector or qualified consultant

8.55

Table 1. Mitigation Monitoring and Reporting Plan – Graham Hill Water Treatment Plant Concrete Tanks Project			
Best Management Practices/Mitigation Measure	**Timing**	**Implementation Responsibility**	**Monitoring Responsibility**
Mitigation Measure BIO-2: Revegetate the Area of Temporary Habitat Loss with Native Sandhills Plants (Habitat Conservation Plan Implementation). Temporarily impacted areas at the GHWTP will be cleared of vegetation or graded to assist in construction of the proposed project, but will not be permanently covered by new structures or other hardscape after the project is completed. This includes the area adjacent to the road widening and the trenching for the pipeline through the HCP area. After project completion, these temporarily impacted areas with Zayante soils will be revegetated with plants native to the Zayante Sandhills, including: sticky monkeyflower (Mimulus aurantiacus), deer weed (Lotus scoparius), silver bush lupine (Lupinus albifrons var. albifrons), Ponderosa pine and coast live oak. These native plants will provide suitable habitat conditions for MHJBs that might eventually colonize the temporarily impacted portion of the impact area. Revegetated areas will not include any landscape elements that degrade habitat for the MHJB, including mulch, bark, weed matting, rock, aggregate, or turf grass.	Post-Construction	Contractor	City, construction inspector or qualified consultant
Mitigation Measure GEO-1: Stop Work in the Event of Unexpected Paleontological Resources or Unique Geological Features during Construction. Per **BMP – 29. Cultural Resources Education Materials and Training,** an education program for cultural and paleontological resources will be undertaken for the construction crew prior to the onset of construction activities. If paleontological resources or unique geologic features are discovered during soil-disturbing activities by construction crews, all work will stop immediately and the City will notify a qualified paleontologist. A paleontologist will inspect the discovery and determine whether further investigation is required. If the discovery can be avoided, no further mitigation will be required. If the resource cannot be avoided, the qualified paleontologist will evaluate the resource and determine whether it meets the definition of "unique". If the resource is determined to not be unique, work may continue in the area. If the resource is determined to be unique, work will remain halted, and a preservation or recovery plan will be prepared. Preservation in place is the preferred protective measure. If preservation in place is not possible, resources and/or fossils will be recovered, prepared, identified, catalogued and analyzed according to current professional standards under the direction of the qualified paleontologist. Work may commence at the time of completion of the treatment. A final summary report will be completed and submitted to the City. The report will include a discussion of the methods used, stratigraphy exposed, fossils collected, and the significance of the recovered fossils. The report will also include an itemized inventory of all the collected and catalogued fossil specimens.	Implement During Construction	Contractor will comply with the education program specifications City will comply with requirements if unexpected resources are discovered	City, construction inspector or qualified consultant

8.56

Table 1. Mitigation Monitoring and Reporting Plan – Graham Hill Water Treatment Plant Concrete Tanks Project			
Best Management Practices/Mitigation Measure	**Timing**	**Implementation Responsibility**	**Monitoring Responsibility**
Mitigation Measure NOI-1: Preparation and Implementation of a Noise Control Plan for Construction Activities. The City will require, through the project construction contract specifications, that the construction contractor submit to the City for review and approval a Noise Control Plan prepared by a qualified noise consultant at least 28 days prior to the onset of construction activities. A qualified noise and vibration consultant is defined as a Board Certified Institute of Noise Control Engineering member or other qualified consultant or engineer approved by the City. The Noise Control Plan shall present noise control measures and Noise Performance Standards to ensure compliance with the standards established by the City noise ordinance and Santa Cruz County noise regulations. The City shall be responsible for ensuring that the construction contractor design and implements noise control measures correctly and that the construction activities comply with the project Noise Performance Standards.	Pre-Construction Plans or Approvals Construction Monitoring/ Periodic Inspection	Contractor will prepare a Noise Control Plan City will review and approve Noise Control Plan Contactor will comply with the Noise Control Plan City will provide periodic inspection	City, construction inspector or qualified consultant

8.57

Table 2. Mitigation Monitoring and Reporting Plan – Summary of BMPs and Mitigation Measure Implementation Sequence					
BMP/ Mitigation Measure Number	**Activity**	**City**			**Contractor**
		City Staff or Representative	**Biologist**	**Other Monitor**	
Pre-Construction Plans & Approvals					
BMP – 1	Staging Area Water Quality and Resource Protection Measures	✓			✓
BMP – 2	Staging Areas Materials Storage and Transportation Measures	✓			✓
BMP – 4	Portable Construction Equipment Measures	✓			
BMP – 6	Compliance with MBARD's National Emissions Standards for Hazardous Air Pollutants Rule 424				✓
BMP – 7	Preparation of the Project Storm Water Pollution Prevention Plan	✓			✓
BMP – 9	Compliance with City Storm Water Ordinances and the City Construction Work Best Management Practices	✓			✓
BMP – 10	Grading Measures to Protect Slope Stability	✓			✓
BMP – 12	Measures to Implement Heritage Tree Protections	✓			✓
BMP – 23	Measures to Limit Construction Area				✓
BMP – 27	Measures to Comply with Lighting Requirements for MHJB				✓
BMP – 28	Measures to Protect Habitat Conditions for MHJB				✓
BMP – 31	Measures to Inform Neighbors of Construction Schedule	✓			
BMP – 32	Measures to be Implemented by the Construction Coordinator	✓			
BMP – 35	Measure to Quiet At-Grade Motors				✓
BMP – 37	Preparation of Traffic Control Plan	✓			✓
BMP – 38	Implement Traffic Control Plan	✓			✓
MM NOI – 1	Preparation and Implementation of a Noise Control Plan for Construction Activities	✓			✓

8.58

Table 2. Mitigation Monitoring and Reporting Plan – Summary of BMPs and Mitigation Measure Implementation Sequence					
BMP/ Mitigation Measure Number	**Activity**	**City**			**Contractor**
		City Staff or Representative	**Biologist**	**Other Monitor**	
Pre-Construction Biological Surveys or Reviews					
BMP – 12	Measures to Implement Heritage Tree Protections	✓	✓		✓
BMP – 14	Surveys for Birds of Prey	✓	✓		✓
BMP – 15	Surveys for Other Avian Species	✓	✓		✓
BMP – 16	Surveys for Bat Species	✓	✓		✓
BMP – 17	Surveys for American Badger	✓	✓		✓
BMP – 18	Surveys for San Francisco Dusky-Footed Woodrat	✓	✓		✓
MM BIO – 1	Creation and Management of an Off-Site Mitigation Area (Habitat Conservation Plan Implementation)	✓	✓		
Installation Prior to Construction Start					
BMP – 9	Compliance with City Storm Water Ordinances and the City Construction Work Best Management Practices	✓			✓
BMP – 20	Erosion Control Measures				✓
BMP – 21	Measures to Install Temporary Fencing to Protect Resources Outside of the Construction Zone				✓
BMP – 24	Measures to Implement Temporary Fencing and Signage				✓
Pre-Construction Trainings/Inspections					
BMP – 11	Biological Resources Education Materials and Training	✓	✓		✓
BMP – 12	Measures to Implement Heritage Tree Protection	✓	✓		✓
BMP – 14	Surveys for Birds of Prey	✓	✓		✓
BMP – 15	Surveys for Other Avian Species	✓	✓		✓
BMP – 16	Surveys for Bat Species	✓	✓		✓
BMP – 17	Surveys for American Badger	✓	✓		✓

8.59

Table 2. Mitigation Monitoring and Reporting Plan – Summary of BMPs and Mitigation Measure Implementation Sequence					
BMP/ Mitigation Measure Number	**Activity**	**City**			**Contractor**
		City Staff or Representative	**Biologist**	**Other Monitor**	
BMP – 18	Surveys for San Francisco Dusky-Footed Woodrat	✓	✓		✓
BMP – 29	Cultural Resources Education Materials and Training	✓		✓	✓
Implement During Construction					
BMP – 1	Staging Area Water Quality and Resource Protection Measures	✓			✓
BMP – 2	Staging Areas Materials Storage and Transportation Measures	✓			✓
BMP – 3	Fugitive Dust Measures				✓
BMP – 5	Compliance with Monterey Bay Area Resource District's Clean Construction Equipment Measures	✓			
BMP – 6	Compliance with MBARD's National Emissions Standards for Hazardous Air Pollutants Rule 424				✓
BMP – 7	Preparation of the Project Storm Water Pollution Prevention Plan	✓			✓
BMP – 9	Compliance with City Storm Water Ordinances and the City Construction Work Best Management Practices	✓			✓
BMP – 10	Grading Measures to Protect Slope Stability	✓			✓
BMP – 11	Biological Resources Education Materials and Training		✓		✓
BMP – 12	Measures to Implement Heritage Tree Protections	✓			✓
BMP – 14	Surveys for Birds of Prey	✓	✓		✓
BMP – 15	Surveys for Other Avian Species	✓	✓		✓
BMP – 16	Surveys for Bat Species	✓	✓		✓
BMP – 17	Surveys for American Badger	✓	✓		✓
BMP – 18	Surveys for San Francisco Dusky-Footed Woodrat	✓	✓		✓

8.60

Table 2. Mitigation Monitoring and Reporting Plan – Summary of BMPs and Mitigation Measure Implementation Sequence					
BMP/ Mitigation Measure Number	**Activity**	**City**			**Contractor**
		City Staff or Representative	**Biologist**	**Other Monitor**	
BMP – 19	Measures to Limit Work Timing				✓
BMP – 25	Measures to Control Disturbed Soils				✓
BMP – 26	Measures to Control Dust				✓
BMP – 27	Measures to Comply with Lighting Requirements for MHJB				✓
BMP – 28	Measures to Protect Habitat Conditions for MHJB				✓
BMP – 29	Cultural Resources Education Materials and Training	✓		✓	✓
BMP – 30	Measures to Protect Unexpected Discovery of Cultural Resources	✓		✓	✓
BMP – 31	Measures to Inform Neighbors of Construction Schedule	✓			
BMP – 32	Measures to be Implemented by the Construction Coordinator	✓			
BMP – 33	Noise Control Measures				✓
BMP – 34	Measures to Quiet Stationary Noise				✓
BMP – 35	Measure to Quiet At-Grade Motors				✓
BMP – 36	Measures to Control Noise throughout Construction Implementation				✓
BMP – 37	Preparation of Traffic Control Plan	✓			✓
BMP – 38	Implement Traffic Control Plan	✓			✓
BMP – 39	Designated Truck Routes within the Traffic Control Plan	✓			✓
MM – GEO – 1	Stop Work in the Event of Unexpected Paleontological Resources of Unique Geological Features during Construction	✓		✓	✓
Construction Biological Monitoring					
BMP – 22	Measures to Implement Biological Compliance Monitoring	✓	✓		

8.61

Table 2. Mitigation Monitoring and Reporting Plan – Summary of BMPs and Mitigation Measure Implementation Sequence					
BMP/ Mitigation Measure Number	**Activity**	**City**			**Contractor**
		City Staff or Representative	**Biologist**	**Other Monitor**	
Construction Monitoring/Periodic Inspection					
BMP – 8	Measures for On-Going Compliance with the SWPPP	✓			
BMP – 9	Compliance with City Storm Water Ordinances and the City Construction Work Best Management Practices	✓			
BMP – 10	Grading Measures to Protect Slope Stability	✓			
BMP – 20	Erosion Control Measures				✓
BMP – 21	Measure to Install Temporary Fencing to Protect Resources Outside of the Construction Zone				✓
MM – NOI – 1	Preparation and Implementation of a Noise Control Plan	✓			
Post Construction Measures and Reporting					
BMP – 13	Measure to Implement Heritage Tree Protection	✓		✓	
BMP – 22	Measures to Implement Biological Compliance Monitoring	✓	✓		
MM – BIO – 2	Revegetate the Area of Temporary Habitat Loss with Native Sandhills Plants	✓	✓		✓

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WATER COMMISSION
INFORMATION REPORT

DATE: 5/29/2019

AGENDA OF: June 3, 2019

TO: Water Commission

FROM: Rosemary Menard, Water Director

SUBJECT: WSAS Strategy and Work Plan

RECOMMENDATION: That the Water Commission receive information about potential next steps for revising the Water Supply Augmentation Strategy and WSAC Work Plan and Time Line to reflect potential opportunities for early action to improve water supply reliability, potential needs to potential changes in the WSAC recommended decision schedule, and provide feedback to staff to assist with further development of an updated strategy and work plan.

BACKGROUND: At the Water Commission's April 1, 2019 meeting, staff presented a detailed status report on its work to date in implementing the Water Supply Augmentation Strategy that was developed by the 2014-2015 Water Supply Advisory Committee (WSAC) and accepted by the City Council in November 2015. The Department's report covered content in eight topic areas:

1. Climate Change
2. Water Demand
3. Water Treatment
4. Surface Water Augmentation
5. Recycled Water and Desalination
6. Infrastructure and Water Rights
7. Financial Challenges and Opportunities
8. Synthesis and Possible Next Steps.

The full set of meeting materials provided to Commissioners and the public, including the agenda packet and a presentation with a linked audio file can be accessed at http://scsire.cityofsantacruz.com/sirepub_watercom/mtgviewer.aspx?meetid=1254&doctype=AGENDA and: https://drive.google.com/file/d/13QH9BKSqi0svTJT4QlvBMR1WWUTcAYH8/view?usp=sharing, respectively.

At the end of the presentation, staff's synthesis of the work to date and some ideas about possible next steps were described. The goal at that time was not to have the Water Commission take action, but rather to provide Commissioners and the public with a preview of the staff's thinking and ideas for moving forward as a prelude to planned further discussion in subsequent Commission meetings.

DISCUSSION: The WSAC's Water Supply Augmentation Strategy Work Plan describes a series of actions through a fairly discrete 5-year planning phase, followed by 5-years of implementation of a project or series of projects. This plan was focused on making a major decision on a water supply augmentation project or portfolio of projects during calendar year 2020.

As summarized in the overview of all the WSAS implementation work at the April 1st Commission meeting, substantial progress has been made in completing the work the WSAC contemplated would need to be completed in order to make a supplemental supply decision in 2020. However, the WSAC work did not have the benefit of being informed by the more comprehensive assessment of the size or scope of the infrastructure rehabilitation and replacement initiative that has been developed to identify and begin implementing projects to address the condition of critical infrastructure and reinvest in the system in a manner that will improve overall resilience and prepare the system to adapt to climate change. The section of the April 1st agenda that described the capital intensive system reinvestment initiative ahead also outlined the financial challenges that the utility and its customers face in the years ahead. These financial challenges unavoidably impact the earlier thinking about supplemental supply and have informed staff's current thinking about next steps.

At a macro level, staff's thinking, as presented at the April 1st meeting included the following:

- We need to acknowledge that in the near term, water demand is likely going to be lower than we projected, which means that there are great reliability benefits of developing a smaller groundwater storage project;
- We need to look for ways to improve supply reliability in a way that takes advantage of City's existing infrastructure, as a first step, focusing groundwater storage strategies in the Beltz system;
- We need to leverage system reliability benefits of planned water treatment plant improvements; and
- We need to continue working to develop our understanding of the potential for future climate change to impact the availability of surface and groundwater resources in the region.

At a micro level, staff's recommendations for next steps include modifying the WSAC work plan to include near-term, no-regret actions described above, followed by long-term actions that would consider possible increases in demand, new implications of climate change, and the "unknown unknowns" that could influence decision-making and the timing of additional decisions.

With respect to the potential implications of climate change of the availability and reliability of local surface water resources, staff believes it will be important to continue working to increase its understanding of the trends, outcomes and implications of climate change. We know that we will not at any time be certain what the future holds; however, a key implication of the climate data sets is that they each reflect some aspect of what might be expected for future climate conditions. Our use of these projections to analyze the potential for significant climate stress to the water supply system provides a solid planning basis because we can identify commonalities to water supply strategies across the range of conditions, but also specific conditions that may require strategies not yet identified.

A conceptual level work plan, reiterated from the April Commission meeting, is included as Attachment 1. The actions generalized in the schedule are described below. Dates are approximate and will be refined over the next 2-3 months.

FY2020

- Design ASR using existing infrastructure in MCGB (2020-22)
- Convert Beltz 12 to permanent ASR or, more likely, prep for second year of piloting
- Prep Beltz 9 for ASR pilot and pilot
- Install monitoring well in Tu at the coast
- Develop a work plan for SMGB/Develop CEQA work plan for SMGB
- Continue work with
    - Fiske (supply modeling)
    - Balance (climate change modeling)
    - M-Cubed (updated demand forecast, in preparation for the 2020 Urban Water Management Plan)
    - Corona (system stress testing, risk analysis and portfolio development)
- Begin Energy Plan
- Ongoing ASR and In-lieu infrastructure planning work

FY2020/21

- Implement ASR using existing infrastructure (Beltz 12)
- Design ASR using existing and possible new infrastructure in MGB (2020-22)
- Ongoing CEQA for SMGB (2020-21)
- CEQA for ASR existing and new infrastructure in MBG
- Install test well in SMGB
- Pilot in SMGB
- Continue work with
    - Fiske (supply modeling)
    - Balance (climate change modeling)
    - M-Cubed (demand projections)
    - Corona (risk analysis and portfolio development

FY2022

- Implement ASR using existing infrastructure (Beltz 9)
- Potential purchase of well sites for ASR New Infrastructure (2022-24)
- Consider Purchasing Property(s) in SMGB for advanced planning/CEQA
- Design ASR using existing and new infrastructure in MCGB (2020-22)
- Design treatment for potential new ASR in MCGB (2020-2022)
- Treatment Improvements to GHWTP (2022-2025)

FY2023

- Construct potential new wells, treatment, pipelines in MCGB (2023-25)

FY2025/26

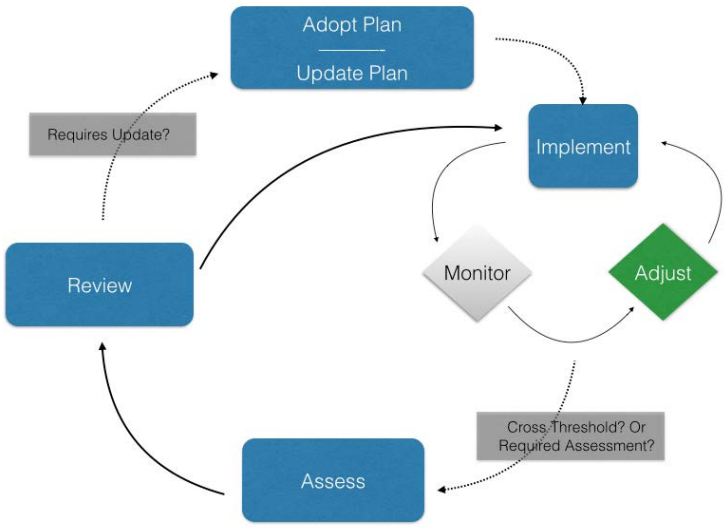
- Ongoing evaluation of recycled water opportunities/begin work in SMGB

Updating and Modifying the WSAC Work Plan

Staff's analysis of the proposed work plan summarized above is that it constitutes a change in the WSAC's recommended plan. WSAC members were wise and realistic about the potential need for modifying or adapting the work plan they developed. They knew that developing new information could lead to a need to adapt the plan and they created a mechanism to support that process, ensuring that any efforts to change the agreed-upon strategy and approach would be done in a transparent way and would be criteria based. The goal of the agreed upon change management strategy was to avoid trying to address each possible eventuality, and to focus on overall program goals rather than implementation specifics. Once a threshold issue has prompted an assessment, other considerations captured in the Guiding Principles, such as regional collaborations or the collateral benefits of an approach, may be taken into consideration.

The figure below was included in the WSAC's Final Report on Agreements and Recommendations[1]. The figure is an elaboration on the standard "Plan, Do, Check, Act" approach to project or program development and implementation.

[1] See Section 3.24 of the WSAC report, which you can find at:
http://www.santacruzwatersupply.com/meeting/wsac-final-reportrecommendation-appendices



The model contemplated two kinds of change: an **adjustment**, which was defined as is a change in implementation that helps the Plan stay on track. In a continuous feedback loop, the Water Department will make adjustments to help achieve (or exceed) performance targets for the various Plan Elements. Adjustments were contemplated as being part of the small circle shown on the right-hand side of the figure.

An **adaptation**, on the other hand, was defined as a shift from an Element or a set of Elements to another Element or set of Elements within the Plan's Adaptive Pathway. An adaptation may be recommended when certain thresholds are reached. **Thresholds** were defined as the set of information that leads to an Assessment of the Plan and possible adaptation.

The Committee identified thresholds for the key issues that need to be considered during decision-making about a possible Adaptation. The thresholds are:

- Cost
- Yield
- Timeliness

The WSAC Final Report on Agreements and Recommendations identified specific steps for adjusting the Plan. It includes three components: Assessments, Reviews and Update to Plan

1. An **Assessment** is performed by the Water Department and includes updated information and a recommendation about whether a change to the Plan is needed.
2. The Water Department submits a report to the Water Commission for its **Review, including development of recommendations to the Council**. Following Water Commission action, the recommendation is forwarded to the Council for its consideration.
3. If the Council so chooses, the Plan will be **updated**.

Staff considers this Water Commission Agenda Item to be an initial discussion of a range of potential changes to the WSAC recommended plan that would be followed by more specific analyses that would be developed to further inform any proposed revisions before any Water

Commission action to recommend an adjustment to the plan to the City Council for its considerations. Staff's goal for the Commission discussion on June 3rd is to hear your feedback about the ideas first presented on April 1st as part of the "Synthesis and Next Steps" report and reiterated as part of this agenda item and reach agreement about additional work to be completed in preparation for a potential discussion with Council about adapting the WSAC plan, which would be tentatively scheduled sometime in the fall of 2019.

FISCAL IMPACT: None. Funding for ongoing work on supplemental supply options has been included in the FY 2020 Operating and Capital Budgets.

PROPOSED MOTION: Motion to provide feedback to staff to assist with further development of an updated WSAS strategy and work plan.

ATTACHMENT(S):
Attachment 1 – Draft Conceptual Level Work Plan, March 2019

Draft Conceptual Level Work Plan,March 2019

Activity	2016 Year 1 Q1 Q2 Q3 Q4	2017 Year 2 Q1 Q2 Q3 Q4	2018 Year 3 Q1 Q2 Q3 Q4	2019 Year 4 Q1 Q2 Q3 Q4	2020 Year 5 Q1 Q2 Q3 Q4	2021 Year 6 Q1 Q2 Q3 Q4	2022 Year 7 Q1 Q2 Q3 Q4	2023 Year 8 Q1 Q2 Q3 Q4	2024 Year 9 Q1 Q2 Q3 Q4	2025 Year 10 Q1/2 Q3/4	2026 Year 11 Q1/2 Q3/4	2027 Year 12 Q1/2 Q3/4
Element 1 - In lieu (water transfers, exchanges)												
Planning: develop prelim. agreements, CEQA & water rights, define infra. issues, prelim. design, etc.												
Implementation: final design, construction, upgrades to GHWTP, agreements, etc												
Planning: develop prelim. agreements, CEQA & water rights, define infra. issues, prelim. design, etc.												
Implementation: final design, construction, upgrades to GHWTP, agreements, etc												
Element 2 - Aquifer Storage & Recovery												
Planning: modeling, piloting, cost estimating preliminary design, etc.												
Implementation												
Planning: modeling, piloting, cost estimating preliminary design, etc.												
Implementation												
Element 3 - Advanced Treated Recycled Water or Desalination												
Planning: define RW project alts; update desal study; select preferred alt; complete design, ceqa, permits												
Implemenation: final design, construction, start up												
Planning: define RW project alts; update desal study; select preferred alt; complete design, ceqa, permits												
Implementation: final design, construction, upgrades to GHWTP, agreements, etc												

Existing Beltz

NewBeltz

SMGB

Complete RW Analysis

Advance RW As-Needed