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

WATER COMMISSION

Regular Meeting

April 4, 2022

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

COVID-19 ANNOUNCEMENT: This meeting will be held via teleconference ONLY.

In order to minimize exposure to COVID-19 and to comply with the social distancing suggestion, the Council Chambers will not be open to the public. The meeting may be viewed remotely, using the following sources:

- Online:https://ecm.cityofsantacruz.com/OnBaseAgendaOnline/Meetings/Search?dropid=4&mtids=124
- Zoom Live (no time delay): https://us06web.zoom.us/j/86714504957
- Facebook: https://www.facebook.com/SantaCruzWaterDepartment/?epa=SEARCH_BOX

PUBLIC COMMENT:
If you wish to comment during on items 1-7 during the meeting, please see information below:

- Call any of the numbers below. If one number is busy, try the next one. Keep trying until connected.
  +1 346 248 7799
  +1 253 215 8782
  +1 301 715 8592
  +1 312 626 6799
  +1 646 558 8656
- Enter the meeting ID number: 867 1450 4957
- When prompted for a Participant ID, press #.
- Press *9 on your phone to "raise your hand" when the Chair calls for public comment.
  - It will be your turn to speak when the Chair unmutes you. You will hear an announcement that you have been unmuted. The timer will then be set to three minutes.
  - You may hang up once you have commented on your item of interest.
  - If you wish to speak on another item, two things may occur:
    1) If the number of callers waiting exceeds capacity, you will be disconnected and you will need to call back closer to when the item you wish to comment on will be heard, or
    2) You will be placed back in the queue and you should press *9 to "raise your hand" when you wish to comment on a new item.

NOTE: If you wish to view or listen to the meeting and don't wish to comment on an item, you can do

so at any time via the Facebook link or over the phone or online via Zoom.

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

Announcements

Consent Agenda (Pages 1.1 – 4.1) 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.

1. City Council Actions Affecting the Water Department (Page 1.1)

   Accept the City Council actions affecting the Water Department.

2. Water Commission Minutes from March 7, 2022 (Pages 2.1 – 2.3)

   Approve the March 7, 2022 Water Commission Minutes.

3. Water Supply Augmentation Strategy (WSAS) Quarterly Report (Pages 3.1 – 3.10)

Receive an update regarding the status of the various components of the Water Supply Augmentation Strategy and supporting studies and provide feedback.

4. Working Draft of the Water Commission 2022 Work Plan (Pages 4.1)

Accept the Working Draft of the Water Commission 2022 Work Plan.

Items Removed from the Consent Agenda

General Business (Pages 5.1 – 7.85) 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.

5. 2022 Annual Water Supply and Demand Assessment (Pages 5.1 – 5.12)

Recommend to the Council that no water restrictions be implemented for 2022 demand season.

6. Framework for Decision-Making on Securing Our Water Future (Pages 6.1 – 6.17)

1. Accept information about the proposed framework for decision-making on Securing Our Water Future and provide feedback to staff; and
2. Accept recommendations on the range of project alternatives to be evaluated in the Securing Our Water Future decision-making process and provide feedback to staff.

7. Newell Creek Pipeline Improvement Project - Final Environmental Impact Report (Pages 7.1 – 7.85)

Support staff's recommendation to City Council to certify the Final Environmental Impact Report for the Newell Creek Pipeline Improvement Project; adopt Findings of Fact, Statement of Overriding Considerations, and a Mitigation, Monitoring, and Reporting Program; and approve the Newell Creek Pipeline Improvement Project.

Subcommittee/Advisory Body Oral Reports

8. Santa Cruz Mid-County Groundwater Agency

9. Santa Margarita Groundwater Agency

Director's Oral Report

Information Items

Adjournment

WATER COMMISSION
INFORMATION REPORT

DATE: 03/28/2022

AGENDA OF: April 4, 2022

TO: Water Commission

FROM: Rosemary Menard, Water Director

SUBJECT: City Council Actions Affecting the Water Department

RECOMMENDATION: That the Water Commission accept the City Council actions affecting the Water Department.

BACKGROUND/DISCUSSION:

March 8, 2021

No items to report.

March 22, 2021

3rd Quarter FY 2022 Water Department Capital Investment Program Transfer – Budget Adjustment (WT)

Resolution No. NS-29,950 was adopted amending the FY 2022 budget and transferring budget appropriations within the Water Department Capital Investment Program (CIP) to update various project budgets with current cost forecasts.

PROPOSED MOTION: Accept the City Council actions affecting the Water Department.

ATTACHMENTS: None.

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Water Commission
7:00 p.m. – March 7, 2022
Council Chambers/Zoom Teleconference
809 Center Street, Santa Cruz

Summary of a Water Commission Meeting

Call to Order: 7:00 PM

Roll Call

Present: D. Alfaro (via Zoom); J. Burks (Vice Chair) (via Zoom), T. Burns (Via Zoom), D. Engfer (via Zoom), S. Ryan (Chair) (via Zoom), G. Roffe (via Zoom)

Absent: A. Páramo, with notification

Staff: D. Baum, Water Chief Financial Officer (via Zoom); C. Coburn, Deputy Director/Operations Manager (via Zoom); M. Kaping, Management Analyst (via Zoom); L. Neun, Water Quality Manager (via Zoom); K. Fitzgerald, Administrative Assistant III (via Zoom); Jay Mims, Water Facilities Mechanical Supervisor (via Zoom); Dustin Holtzclaw, Water Treatment Supervisor (via Phone)

Others: Three members of the public (via Zoom)

Presentation: None.

Statements of Disqualification: None.

Oral Communications: None.

Announcements: C.Coburn announced that the Loch Lomond reservoir is just below 90% capacity, which is equivalent to approximately 2.3 billion gallons of supply. Additionally, the reservoir has received approximately 200 million gallons from Felton Diversion. Felton Diversion was taken offline today in order to maintain bypass flow obligations.

Consent Agenda

1. City Council Items Affecting the Water Department

2. Water Commission Minutes From February 7, 2021

K. Fitzgerald announced that the following correction from Commissioner Engfer will be made to the February 7th, 2022 minutes: "Commissioner Engfer nominated Commissioner Burks for Vice Chair."

No public comments were received.

Commissioner Engfer moved the Consent Agenda with the correction to the February 7th, 2022 minutes. Commissioner Burns seconded.

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

Items Pulled from the Consent Agenda – None.

General Business

3. Water Year 2021 Source Water Quality Report

C. Coburn introduced L. Neun for the presentation and discussion of the 2021 Source Water Quality Monitoring Program.

Coburn presented the Graham Hill Water Treatment Plant FIP Design Considerations.

Has cannabis cultivation affected water quality?

- There have been no observed impacts on water quality from cannabis cultivation activities with the watershed to date.

Are all chemical analyses performed in the City's lab?

- The City's lab is not equipped with more sensitive analytical equipment with specialized instrumentation that can detect low levels of chemicals such as PFAS and contaminants of emerging concern (CECs). The analyses for these chemicals are performed in outside laboratories contracted with the City, Eurofins and Eaton Analytical, both of which are California-certified labs.

Has there been any effort to collaborate with neighboring agencies such as the County or San Lorenzo Valley Water District (SLVWD) on water quality testing and results?

- Not actively. There were outreach efforts when the program was first being developed but other agencies water quality monitoring focused on other areas that did not quite match the goals of the City's program. The only notable collaboration effort was during the remodel of the City's lab after it flooded, City staff were able to utilize the County's lab to conduct micro-bacteriological tests.

No public comments were received.

There was no action taken on this item.

4. FY 2022 2nd Quarter Unaudited Financial Report

C. Coburn introduced D. Baum for the presentation and discussion of the FY 2022 2nd Quarter Unaudited Financial Report.

Do the cash fund balances include funds drawn from the line of credit?

- The $50 million line of credit could be used to top off these reserves but to date, the line has been used to pay for short-term capital costs until reimbursement from the State Revolving Fund (SRF) or other long-term debt is received.

M. Kaping presented the Capital Investment Program portion of the presentation.

How has Measure W improved efficiencies in the City's CIP since its passage in 2020?

- Since the passage of Measure W, the only Design-Build project that has been done is the Graham Hill Water Treatment Plant Facilities Improvement project (FIP). While this was a complicated bid solicitation, overall the process went smoothly and the work is progressing in a positive direction with the Design-Build team.

Why are expenditures for capital projects are lower than expected?

- This is primarily because, despite the best efforts between project managers and vendors, not all planned work gets completed mostly due to unexpected delays and other unforeseen circumstances.

No public comments were received.

There was no action taken on this item.

Subcommittee/Advisory Body Oral Reports

5. Santa Cruz Mid-County Groundwater Agency (MGA)

Chair Ryan reported that the next MGA meeting will be held on March 17th and agenda items will include a first review of the budget and other updates including the County's approach to SB 552.

6. Santa Margarita Groundwater Agency (SMGWA)

Commissioner Engfer reported that the ad hoc governance committee has not met since the last Water Commission meeting. The ad hoc committee did submit recommendations for a grant application for administration funding to the board at the February 24th meeting which were accepted. There was also a rigorous discussion regarding the SMGWA's letters of support policy. The next SMGWA will be held on March 24th.

Chair Ryan reported that, after years of requests from California groundwater sustainability agencies, the Department of Water Resources will be hosting its first forum on May 25th on agency funding and implementation and Chair Ryan will be presenting on the activities of the MGA and SMGWA.

Director's Oral Report: C. Coburn reported that between half a million and a million gallons of water per day has been injected into the Mid-County basin at Beltz wells.

Adjournment Meeting adjourned at 9:01 PM.

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WATER COMMISSION
INFORMATION REPORT

DATE: 03/28/2022

AGENDA OF: April 4, 2022

TO: Water Commission

FROM: Heidi Luckenbach, Deputy Director/Engineering Manager

SUBJECT: Water Supply Augmentation Strategy (WSAS) Quarterly Report

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RECOMMENDATION: That the Water Commission receive an update regarding the status of the various components of the Water Supply Augmentation Strategy and supporting studies 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 WSAC Final Agreements and Recommendations, the Water Commission shall receive quarterly updates on the status of the various elements of the recommended plan. This is the 24th quarterly update.

New Items/Highlights:

1. Aquifer Storage and Recovery (ASR)
   ASR Demonstration Studies began at existing Beltz production wells 8 and 12. Injection began in mid-January and is planned to continue through April. Average injection rates are 310 gallons per minute (gpm) and 330 gpm at Beltz 8 and Beltz 12, respectively. Total injection volumes to date are 12 million gallons (MG) and 27.5 MG at Beltz 8 and Beltz 12, respectively.

2. Santa Cruz Water Rights Project
   The project's Final Environmental Impact Report (EIR) was certified by City Council at their December 14, 2021 meeting. The City and San Lorenzo Valley Water District (SLVWD) executed two agreements to resolve the protests effective on January 12, 2022: the Water Rights Protest Resolution Agreement and the Water Supply Collaboration Agreement.

   Water Department staff also met State Water Resources Control Board (SWRCB) Chair Joaquin Esquival, Vice-chair Dorene Dadamo, and legal counsel David Rose, as well as

SWRCB staff Sam Boland-Brian on January 25, 2022 to provide an update on the City's EIR, resolution of protest with SLVWD, and next steps to progress the petitions.

3. Vulnerability Study
   Preliminary results of the Santa Cruz Water Model (SCWM) were reviewed and compared with outputs from the existing Confluence water supply model for validation testing. Assumptions about each element of the water system are being carefully scrutinized for use in the SCWM to be able to make meaningful predictions regarding the long-term reliability of the system.

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 items are described here in detail.

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.

As reported to the Water Commission at their March 1, 2021 meeting, the future of conservation programs and demand management is being rethought given the continuing low levels of demand. Given that Santa Cruz customers and the community have achieved levels of water conservation beyond the levels anticipated in the Water Conservation Master Plan, and that the Santa Cruz customers are already at an indoor water use level considered to be the "floor" of indoor use, staff are in the midst of discussions about the future of our programs and how water use efficiency programs can be adapted to meet the current needs of our customers.

Summary: The Water Conservation section has been actively working on the following items during this reporting period.

- Working closely with customers as new meters are installed as part of the meter replacement program. As new meters are installed, more leaks are appearing in the utility metering software. Water Conservation staff is taking time to assist customers with getting signed on to the WaterSmart customer portal and setting up their portal to ensure that leak notifications are enabled. Staff is also identifying and notifying customers about leaks and discussing leak diagnosis with them.

- The above-mentioned formal program for leak detection and notification will be under development. Based on work done by a consultant on behalf of the department, a profile

of leaks detected in 2021 revealed that 57% of the single-family residential 5/8" meters already in the AMI system (3,754 meters at that time) had at least one leak during the year and that the total leaked water for the year from this meter population was 2,917,901 gallons. A formalized leak program will attempt to address the loss of water as a result of leaks and reduce the duration that leaks persist. This will save water and reduce utility costs for customers. Such a program will encompass the full scope of activities from initial leak notification/alerting, to customer outreach and providing assistance, through to code enforcement activities. The program will capitalize on the interval data from the new water meters and also tie the offering of any future leak forgiveness to a customer first signing up for WaterSmart and setting up leak notifications. A formalized leak program will require establishment of criteria for what constitutes a leak and what the leak thresholds will be for each customer class.

- Conservation staff is taking the necessary steps to repeal and wrap up the plumbing fixture retrofit program and ordinance. This program officially expired on March 11, 2022. Final steps include removing recordations from approximately 70 outstanding properties that still had recordations on their property as a result of the program. Once the recordations are removed there will no longer be any administrative obligations left for staff. Lastly, work will be done to inform the public and the real estate community of the program's expiration.

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 treated surface water to neighboring agencies for the purpose of augmenting their own water supplies and possibly (passively) recharging the groundwater basin if less groundwater was used by the neighboring agencies.
- Water Exchanges: Negotiating an agreement whereby treated surface 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 second five-year pilot test period begins on November 1, 2021. Staff from Soquel Creek Water District and the City meet on a regular basis to discuss objectives for this test period.

No water has been transferred between the two agencies since January 2021 due to a lack of availability.

Contract Update(s)

Purchase Order Agreement with the District for cost-sharing of Water Quality Sampling and Development of Water Quality Results Technical Memorandum (TM). <u>This contract has been closed as complete.</u>

- PO Opened: January 2017 (Phase 1 Bench-scale work)
- Project Partner(s): Soquel Creek Water District

- Engaged Stakeholders: None at this time.
- Original PO Amount: $60,000
- PO Change Order (Phase 2 Water Quality Monitoring/Pilot Test): $45,000
- Amount Spent: $76,349 (unchanged)
- Amount Remaining: $28,651

ELEMENT 2: AQUIFER STORAGE AND RECOVERY

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

Summary: As defined by the WSAC, this work has three phases: Phase I consists of higher-level feasibility work; i.e., site-specific injection capacity and geochemical analyses, groundwater modeling and development of a pilot test program; Phase II includes the pilot testing; and Phase III is project implementation. It is worth noting that several schedule adjustments have been made using the WSAC adaptive management process:

1. WSAC supported the evaluation of ASR as a general concept without detailing which groundwater basin.
2. In 2019, City Council approved a modified implementation schedule that split the analysis between the Mid-County and the Santa Margarita Groundwater Basins as well as split the analysis of ASR wells in the MCGB between using existing infrastructure from that of new infrastructure.
3. Work in the SMGWB has been slowed to inform the development of the GSP for the GSA of the SMGWB. With this GSP being submitted to DWR, work can now proceed on development of projects and management actions described in that GSP.

Contracting and permitting were completed to begin the ASR Demonstration Studies at Beltz 8 and Beltz 12 as planned in January 2022. Injection began in mid-January and is expected to continue through April, after which the injected water will be stored in the aquifer for a minimum period of one month. The Demonstration Studies are similar to the pilot studies in that infrastructure will not be improved or made permanent, and data collection objectives are established to inform a permanent facility, but differ in that the scale (i.e., the seasonal nature of injections and extractions, injection and extraction rates and seasonal volumes) matches that of a full-scale permanent operation. With respect to data collection objectives at Beltz 8, although there continues to be little concern for elevated levels of arsenic based on the pilot study results, the demonstration study will continue to evaluate arsenic concentration as well as other operational characteristics such as sustainable flow rates, plugging characteristics, overall well operations, etc. At Beltz 12, current data indicates notable differences in water quality between the native groundwater and water extracted during ASR pilot testing, indicating that ASR could benefit water quality at this well. Therefore, one of the primary objectives of the study is to better understand how ASR affects ammonia and hydrogen sulfide, specifically near the end of the ASR extraction period when the well begins to produce a mixture of ASR injected water and native groundwater.

The City is planning for the demonstration study to cover two injection/extraction cycles but is contracting with Pueblo one year at a time. The ASR water recovered during this study will be

placed into the distribution system assuming all drinking water standards are met. Average injection rates are 310 and 330 gpm at Beltz 8 and Beltz 12, respectively. Total injection volumes to date are 12 and 27.5 MG at Beltz 8 and Beltz 12, respectively.

Next Steps:

- Complete Phase I ASR Groundwater Modeling Final Report – Summer 2022
- Determine long-term sustainable injection/extraction rates at Beltz 8 and complete Beltz 8 ASR Pilot Summary of Operations Report – Summer 2022
- Complete first year of operations for the ASR Demonstration Studies at Beltz 8 and 12 and evaluate impacts in the Mid County Basin – Fall 2022
- Contract with CDMSmith to evaluate the existing Beltz water treatment plant in Live Oak with and without ASR – Spring 2022
- Site-specific feasibility assessment for consideration of pilot test at Beltz 10/11 – Summer/Fall 2022 (noting that an outcome of this consideration may be a decision to pursue a new well in a different location)

Contract Update(s):

Consultant: Pueblo Water Resources – Phase I

- Contract Signed: February 2016
- Project Partners: None at this time.
- Engaged Stakeholders: Soquel Creek Water District, 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
- Contract Amendment No. 3: $193,390 (for IPR modeling but funded by Recycled water)
- Amount Spent: $864,616
- Amount Remaining: $187,758

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

- Contract Signed: October 2018
- Project Partners: None at this time.
- Engaged Stakeholders: Soquel Creek Water District, County of Santa Cruz
- Original Contract Amount: $458,085
- Amount Spent: $433,796 (unchanged)
- Amount Remaining: $24,289
- **Status: Complete.**

Consultant: Pueblo Water Resources (Pueblo) – ASR Phase II – Beltz 8 ASR Pilot Test

- Contract Signed: January 2020
- Project Partners: None at this time.
- Engaged Stakeholders: Soquel Creek Water District, County of Santa Cruz
- Original Contract Amount: $1,051,945
- Contract Amendment No. 1 (Increase in monitoring well depth): $47,172
- Contract Amendment No. 2: $133,104
- Amount Spent: $1,200,676
- Amount Remaining: $31,545

- Status: Cycle 3a pilot testing at Beltz 8 was completed June 2021.

Consultant: Pueblo Water Resources – ASR Phase II – Beltz 12 ASR Demonstration Study

- Contract Signed: November 2021
- Early notice to proceed - $55,304
- Engaged Stakeholders: Soquel Creek Water District
- Original Contract Amount: $ 262,744
- Amount Spent: $63,712
- Amount Remaining: $199,032
- Status: Injection is ongoing through April 2022.

Consultant: Pueblo Water Resources – ASR Phase II – Beltz 8 ASR Demonstration Study

- Contract Signed: November 2021
- Original Contract Amount: $202,580
- Amount Spent: $43,902
- Amount Remaining: $158,678
- Status: Injection is ongoing through April 2022.

ELEMENT 3: ADVANCED TREATED RECYCLED WATER AND DESALINATION

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

Summary:
Construction of the Pure Water Soquel (PWS) project is underway with the construction of the treatment components by Black and Veatch Construction Inc. Work at the City's WWTF is underway although procurement issues are delaying the construction of the 6" recycled water line.

The draft Groundwater Sustainability Plan for the SMGWB has been submitted to DWR. At their March 24, 2022 meeting the Board considered next steps towards advancing the projects and management actions in the GSP and supported staff's recommendation to prepare a presentation that identifies a major project that each SMGWA member and partner agency would lead going forward. Ongoing work would include development of work plans to perform the necessary technical and financial analyses, and development and implementation of scopes of work and corresponding schedules and budgets for completing the work plan. Staff is working towards presenting the work at the SMGWA's April meeting. Several PMAs include the use of recycled water indicating that work on this element will be advanced in this basin

Next Steps:

- Advance the evaluation of a regional recycled water project in the SMGWB.
- Pursue groundwater modeling of several recycled water options in the Mid-County basin including partnerships with the PWS project, combination with a City ASR project, and/or a seawater intrusion barrier well in the City's portion of the MCGB. Temporarily

on hold, pending finalization of the Round 1 SGMA grant agreements. (See below under funding.)

Contract Update(s):
Consultant: Kennedy Jenks, Recycled Water Feasibility Study – Phase 2

- Contract Signed: December 20, 2019
- Project Partners: City Public Works
- Engaged Stakeholders: Scotts Valley Water District, Soquel Creek Water District, County of Santa Cruz
- Original Contract Amount: $260,000
- Contract Amendment No. 1: $496,205
- Contract Amendment No. 2: Administrative only
- Contract Amendment No. 3: $350,000
- Amount Spent: $405,909
- Amount Remaining: $700,296
- Schedule: Contract is seeing an ongoing delay due to issues related to groundwater modeling, and overall alignment of all components of the supply augmentation analysis.

OTHER

Water Supply Augmentation Implementation Plan (WSAIP)
Dr. Casey Brown from the University of Massachusetts, Amherst (UMass) provided an update on this work at the August 2, 2021 meeting. Below is a tentative schedule to complete this body of work and a summary of the status.

~~August 2021~~
~~Status update of hydrologic and systems models~~
~~Status of weather generator~~

May 2022
Review climate change hydrologic model (i.e. weather generator) and water system model. Present preliminary assessment of existing climate-change vulnerabilities.

June 2022
Review adaptation scenarios.

August 2022
Establish trigger points.

Water System Model and Resilience Assessment: Develop a water system model and identify challenging climate and system demand scenarios. The UMass team (Dr. Casey Brown together with colleagues from Hydrosystems Research Group (HRG) at UMass) are in the process of completing this effort and validating the water system model against historic operational information (2000-2019) and modeling outputs generated from the Confluence model (Gary Fiske and Associates, 2022). This has been a data-intensive effort with the current focus now being accuracy around flow rules (e.g. fish bypass requirements, water rights, turbidity, etc.), system capacity (e.g. pumps, pipelines), groundwater production, and system demands. The

utility of this model, once complete, will be a long-term planning tool to assist the City with understanding the vulnerability of the system and risk of shortages.

Vulnerability Assessment and Adaption Planning: Integration of decision-scaling analysis of climate change and other critical uncertainties, and associated risks for future water supply reliability. To reiterate what Dr. Brown shared with the Commission at their August meeting, the vulnerability assessment requires a chain of computer simulation models to simulate changes in climate and weather, river flow, and operations of the water system. The UMass/HRG scope includes development of the Weather Generator and the water system model. UMass has completed development of a peer-reviewed Weather Generator and is currently working on calibration/validation of the water system model (see above). The Weather Generator, water system model and preliminary results of the vulnerability assessment will be presented at the next Commission meeting; currently scheduled for May.

Water Supply Augmentation Implementation Plan (WSAIP): Assess relevant water supply enhancement options using a triple bottom line (TBL) approach and develop an adaptive management-based plan. „. As mentioned previously, staff has shifted some of the work previously within the Raucher scope of services into the Kennedy Jenks (KJ) contract. On February 23, 2022, KJ attended a kick-off meeting with the City to discuss project objectives, scope, budget and schedule. KJ is currently in the process of compiling relevant background information and collaborating with the UMass team on adaptation scenarios.

Source Water Monitoring

Last month the WY2021 Source Water Quality Report was presented to the Water Commission. The report includes data from enhanced source water monitoring that was initiated following the CZU Lightning Complex fire as well as increased stormwater sampling. The data is being used to inform the design of the Facilities Improvement Project at the Graham Hill Water Treatment Plant. The staff report and presentation from the Water Commission's March 7th, 2022 meeting can be found on the City's website here: https://ecm.cityofsantacruz.com/OnBaseAgendaOnline/Meetings/ViewMeeting?id=1881&doctype=1

The Source Water Quality Report can be found on the City's website here: https://www.cityofsantacruz.com/home/showpublisheddocument/88314/637824955372530000.

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 water supply projects.

The Santa Cruz Water Rights Project Final EIR was presented to the Water Commission at its December meeting and subsequently certified by City Council on December 14, 2021. A Notice of Determination was filed with the County Clerk and State Clearinghouse on December 15, 2021.

The State Water Resources Control Board (SWRCB) noticed the City's change petitions on February 10, 2021, and accepted protests through March 12, 2021. Two protest letters and one

letter of support were received during the public noticing period. Letters of protest were received from the San Lorenzo Valley Water District (SLWVD) (letter from Nossaman LLP) and the San Andreas Land Conservancy (SALC) (letter from David Kossack), and a letter of support was received from California Department of Fish and Wildlife. The City and SLVWD executed two agreements to resolve the protest effective on January 12, 2022: the Water Rights Protest Resolution Agreement and the Water Supply Collaboration Agreement. Both agreements have been transmitted to SWRCB. SWRCB is considering requesting SALC to produce additional evidence to resolve that outstanding protest.

At the SWRCB Board Meeting on January 19, 2022, Councilmember and former Mayor Donna Meyers and Water Commissioners Doug Engfer and Sierra Ryan provided public comments to the Board in support of the Water Rights project. Water Department staff also met SWRCB Chair Joaquin Esquival, Vice-chair Dorene Dadamo, and legal counsel David Rose, as well as SWRCB staff Sam Boland-Brian on January 25, 2022 to provide an update on the City's certification EIR, resolution of protest with SLVWD, and next steps to progress the petitions.

Next steps in the change petition process are for the City to develop and submit proposed water rights accounting methodology to SWRCB. SWRCB is reviewing the SALC protest to determine if they will request additional information and/or if a hearing will be held prior to action on the petitions. SWRCB indicated that resolution of the petition process could occur as early as the end of 2022, but additional time may be needed depending on their workload. Water Department staff is currently working on drafting the requested water rights accounting methodology.

Outreach and Communication

WSAC-related outreach during this quarter has included the following.

- Monthly Our Water, Our Future email newsletters to WSAC email list.
- National Community Survey, including questions about residents' opinions on water supply.

Funding Considerations

Below describes two recent funding awards:

In mid-March, announcements were released for disbursement from the FY 2022 federal appropriations package. $5.9 million was appropriated to Representative Jimmy Panetta's 20th District to support the implementation of eight community projects. $1,000,000 has been appropriated to the City of Santa Cruz to fund the ~$14,000,000 ongoing meter replacement project. By replacing the approximately 27,000 aging water meters system-wide, customers will have tools to better manage their water usage with their new meter. The project is also training and employing a local workforce, imparting transferrable skills to a handful of local people.

The Santa Cruz Mid County Groundwater Agency (MGA) is awaiting the announcement of an anticipated award of $7.6M from the Department of Water Resources (DWR). The award is tentatively scheduled for mid-April and the MGA should anticipate an executed grant Agreement by end of May. Once the MGA has the final grant agreement, the sub-grantee agreements with the Member Agencies will be developed (spring, early summer) and go to the respective Member Agency Boards for approval (summer). Projects specific to the City of Santa Cruz include a new aquifer storage and recovery well in the Mid County Groundwater Basin, and developing

additional supply projects in the Mid-County basin through groundwater, hydraulic, and water quality modeling.

FISCAL IMPACT: None.

PROPOSED MOTION: This item is for information and discussion only. No motion is required.

ATTACHMENT(S):
None.

WORKING DRAFT

Water Commission Work Plan – March 2022 through December 2022

(3/29/2022)

Major Water Commission Work Plan Item	Anticipated City Council Action on Water Commission Recommendations
April 4, 2022	
➢ Recommendation on Annual Water Supply Forecast	➢ April 12 Briefing on Annual Water Supply Forecast – no recommendation for Council Action
➢ Water Supply Augmentation Decision Framework "Securing Our Water Future"	➢ FYI to Council: Securing Our Water Future Work Plan
➢ Securing Our Water Future – Water Reliability Projects for Evaluation	➢
➢ WSAC Quarterly Report (consent)	➢
➢ Recommendation on FEIR for Newell Creek Pipeline Replacement	➢ Council Action to Certify the FEIR and Approve the Project on May 10th or May 24th agenda
May 2, 2022	
➢ FY 2023 Budget and Capital Program – First Look	➢
➢ Update – U Mass Vulnerability Analysis Work	➢
➢ Securing Our Water Future – Priority setting and approval of Evaluation/Decision-Making Criteria --	➢
June 6, 2022	
➢ Recommendation on FY 2023 Budget and Capital Program	➢ June 14 or 28 – Council action on FY 2023 Budget and Capital Program
➢ Triennial Public Health Goals Report (required public hearing)	➢
➢ Securing Our Water Future – Project Evaluations, Part 1	➢
➢ 3rd Quarter Financial Report (consent)	➢
July 4, 2022 (Cancel)	
July/August/September reschedule for two meetings tentatively mid-July and late August	
➢ U Mass Vulnerability Analysis	➢
➢ Securing Our Water Future – Project Evaluations, Part 2 (building in vulnerability analysis results)	➢
➢ WSAC Quarterly Report	➢
September 5, 2022 (Cancel)	
October 3, 2022	
➢ Securing Our Water Future – Draft Council Policy/Resolution and Direction for projects to include in the Water Supply Augmentation Implementation Plan and any necessary CEQA analysis	➢
➢ WSAS Quarterly Report (consent)	➢
November 7, 2022	
➢ Recommendation – Securing Our Water Future – Council Policy/Resolution and Direction for projects to include in the Water Supply Augmentation Implementation Plan and any necessary CEQA analysis	➢ November 22 – Council action on Securing Our Water Future Council Policy/Resolution and Direction for projects to include in the Water Supply Augmentation Implementation Plan and any necessary CEQA analysis
➢ 4th Quarter Financial Report (consent)	➢
December 3, 2022	
➢ Forward Looking Water and Wastewater Service Affordability Analysis	➢
➢	➢
January 2, 2023 (Holiday – Cancel or Reschedule)	
➢	➢

WATER COMMISSION
INFORMATION REPORT

DATE: 03/29/2022

AGENDA OF: April 4, 2022

TO: Water Commission

FROM: Ben Pink, Environmental Programs Analyst

SUBJECT: 2022 Annual Water Supply and Demand Assessment

RECOMMENDATION: That the Water Commission recommend to the Council that no water restrictions be implemented for the 2022 demand season.

BACKGROUND: Every year during the winter season, the Water Department monitors local rainfall, runoff, and reservoir storage levels to prepare near-term water supply assessments. These assessments describe current water conditions and discuss the water supply outlook for the year ahead.

Toward the end of winter, an analysis is conducted to forecast water supplies, to compare supplies with expected demands, and to project how much water will be available in Loch Lomond Reservoir at the end of the dry season. The analysis includes factors such as anticipated fish flow releases, anticipated water demand and available supplies. The reason for performing this analysis is to determine whether restrictions on water use are needed in the current year to help preserve reservoir storage for a subsequent dry year.

Water Year 2022 (WY2022) is turning out to be interesting in the sense that early season precipitation in October and December is saving what would otherwise be a third consecutive year of concerning dry conditions. In fact, while most of the state is dealing with the effects of a third dry year, Santa Cruz is in a relatively stable and safe position, despite there being very little precipitation since January 1,2022.

Specifically, this water supply and demand assessment starts with a reservoir that is 90% full in late March. This represents approximately 2.57 billion gallons (BG) in stored water that can be used later in the season when flowing surface water sources are further diminished. The amount of water that is expected to be used from the reservoir this peak season is approximately 385

MG. Even conservative modeling of supply and demand shows that the reservoir is not likely to go below approximately 70% of capacity by the end October 31, 2022, the traditional end of the dry season.

Hydrologically, the water year will most likely be classified as dry or possibly just reaching the normal category by the end of September. However, it is clear that if not for the early accumulated runoff, particularly that resulting from the December storms, this water year would also have been critically dry.

The key data inputs to the annual water supply and demand assessment include the following:

1. Monthly and cumulative rainfall, both in the city and the watershed area
2. Reservoir storage, and specifically the lake elevation at the time of forecast
3. Cumulative runoff for the San Lorenzo River and the corresponding water year classification
4. The instream fish flows that govern the diversion, availability, and municipal use of water from the North Coast sources and the San Lorenzo River that the city voluntarily provides
5. Projected water demand

All the factors described above are incorporated into a model that produces one of the key results of the analysis: a projection of Loch Lomond reservoir elevation at the end of the water year. This projection is shown in Figures 5 and 6.

In terms of monthly precipitation, as of March 23rd, Santa Cruz is at 68% of the long-term average for the water year to date (Figure 1).

In terms of cumulative precipitation (Figure 2) the city is running similar to WY2021 for this time of year and well below the long-term average. While significant rainfall was received in October and December, the period January through March 2022 has been one of the driest winter periods on record state-wide as well as locally. Additional spring rainfall is not likely to change the overall picture.

Cumulative runoff for the San Lorenzo River is currently in the dry category. Early season rainfall and runoff, especially in December, contributed to the cumulative total runoff that moved us out of the critically dry category by the end of December. The current cumulative runoff amount as of March 29th is just 45,134 acre-feet (Figure 4). Figure 4 also shows that runoff this year is well ahead of annual cumulative runoff for both water years 2020 and 2021.

On the production side, the amount of water available from North Coast sources is again somewhat limited this year. For the last two years, production was limited from Majors Creek due to a landslide that occurred in the watershed in December 2019 that caused damage to the Majors Creek Pipeline. The pipeline has recently been repaired and it is possible that limited production may be available this peak season. Regarding Laguna Creek, again this year the flows

have been too low, given current fish flow requirements, to generate any production from this source. Production continues to be available from Liddell Spring, serving as the only significant North Coast source to be used to estimate available supplies.

As was the case the last two years, water availability from flowing sources – while currently serving as the city's main source of supply - remains substantially below normal for the year. The City relies on river and stream flows for the majority of its water supply and the yield of those sources is expected to slowly decline over the season. The driest hydrologic condition was used for modeling the instream flow releases on the San Lorenzo River at Tait Diversion using a rearing base flow of 8 cubic feet per second during peak season.

In contrast to March of 2021 when reservoir storage was about 71% of capacity, this year's reservoir storage isstarting with a very healthy capacity of 90% as a result of the early season rainfall and runoff. It should also be noted that due to available water in the San Lorenzo River during the period from late December to the end of February, some water was pumped from Felton Diversion into the reservoir. The total amount of water that was pumped into the reservoir was 207.1 MG. This pumping, along with some base flow infiltration, contributed to the amount of water in storage slowly increasing.

The forecast model predicts that the reservoir will only drop to about 70% of capacity by the end of October, leaving approximately 1.98 billion gallons as carryover storage (Figure 6). This is a much better situation than the last two years.

Overall water demand has been low and is expected to remain low, continuing the trend from 2020 due to the COVID-19 crisis. For the purposes of the model, 2020 peak season demand levels were chosen to simulate demand for the upcoming season. Demand did decline in 2021 due to water restrictions put in place. Demand is expected to increase slightly in 2022 and reflect approximately 2020 levels.

Figure 7 shows the three-month weather outlook produced by NOAA; this map shows the three-month *temperature* outlook. The outlook, produced on March 17th, shows the probability of above or below normal temperatures for the country for the next three months. For the Santa Cruz area and coastal California, it shows that there are equal chances for both above or below normal temperatures.

The 2021 Water Supply and Demand Assessment is provided in Figure 5, and the projected reservoir drawdown is illustrated in Figure 6. The forecast from these water supply indicators provides the basis for staff's recommendation to not implement water restrictions for the upcoming 2022 peak demand season.

DISCUSSION: The determination of whether or not there should be a water shortage declaration is based on the results of the modeling, including consideration of the projected end of year reservoir level as described above, as well as consideration of what may happen in the following water year should there be another dry winter. WY2022 is a mixed bag; early season rainfall and runoff allowed for Loch Lomond Reservoir to fill to 90% of capacity, however, rainfall and runoff have been very low since January 1st. Overall surface water availability is expected to decline throughout the summer and we are already seeing flows in the San Lorenzo River that mirror critically dry years.

Overall, based on the healthy reservoir storage and low system demand, the situation is secure enough that Water Department staff have determined that no water restrictions are needed to reduce demand further this coming peak season. Reservoir storage is not expected to decline below 70% by the end of the water year, providing us with healthy carryover storage into water year 2023. Even if WY2023 turns out to be dry again, having 70% reservoir capacity as a starting point leaves us in a position no worse than we faced in March 2021.

The unique circumstances that have been described for this water year show how having the limited capacity of Loch Lomond Reservoir to store water plays such a huge role in the water supply reliability issues that have affected Santa Cruz for decades. The size of Loch Lomond was designed to support an "annual depletion and refill" cycle based on weather patterns where fall and winter rains that provided the water necessary for the "annual refill" part of the cycle were relatively consistent. Water storage facilities in areas of the country more subject to routine dry conditions, for example, southern California, the southwest, and the Rocky Mountain front, design their storage facilities to provide supply for multiple dry years in a row, sometimes as many as seven or even 10 years of back to back droughts. As our climate shifts to longer, deeper, and more frequent droughts, Loch Lomond's storage limitations become more and more obvious and present a greater and greater vulnerability that calls for urgent action to respond.

Water Department staff certainly do everything they can every year to maximize the system's ability to provide critically important water service to its customers and the community. One thing we can't do, however, is manage the weather. So, while others in the state are looking for mandatory restrictions, in Santa Cruz our recommendation is for customers to continue to exercise their long-standing commitments to using water efficiently through the coming summer and fall and to recognize that what's driving the need for additional supply isn't current or even future customer demand, but a shifting climate that doesn't match up with the capacities of the water system that we've long depended on to meet the needs of our customers and community.

Next Steps: A summary presentation of this material will be made to the City Council during their April 12th meeting. The recommendation to Council will be that no water restrictions are needed for the upcoming demand season. Therefore, no shortage declaration will be prepared or presented.

FISCAL IMPACT: None.

PROPOSED MOTION: Motion to recommend to the Council that no water restrictions be implemented for 2022 demand season.

ATTACHMENTS:
1. Figure 1 Monthly Rainfall Totals
2. Figure 2 Cumulative Precipitation
3. Figure 3 Mean Monthly Stream Flow
4. Figure 4 Cumulative Runoff
5. Figure 5 2021 Water Supply and Demand Assessment
6. Figure 6 Projected Reservoir Drawdown
7. Figure 7 NOAA three month temperature outlook dated 3.17.2021

Figure 1

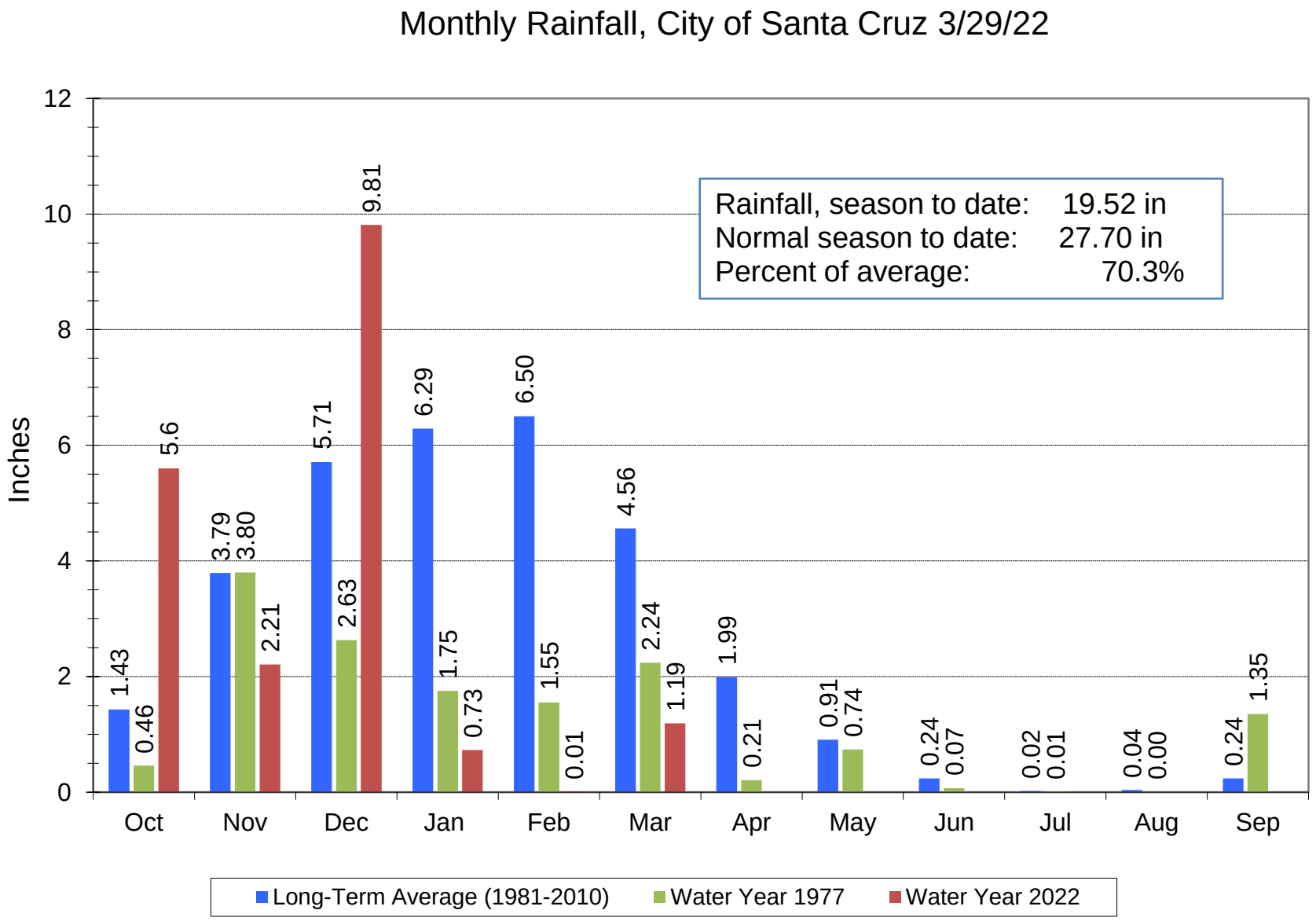

Monthly Rainfall, City of Santa Cruz 3/29/22
Inches
12
10
8
6
4
2
0
Rainfall, season to date: 19.52 in
Normal season to date: 27.70 in
Percent of average: 70.3%
1.43
0.46
5.6
3.79
3.80
2.21
5.71
2.63
9.81
6.29
1.75
0.73
6.50
1.55
0.01
4.56
2.24
1.19
1.99
0.21
0.91
0.74
0.24
0.07
0.02
0.01
0.04
0.00
0.24
1.35
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Long-Term Average (1981-2010)
Water Year 1977
Water Year 2022

Figure 2

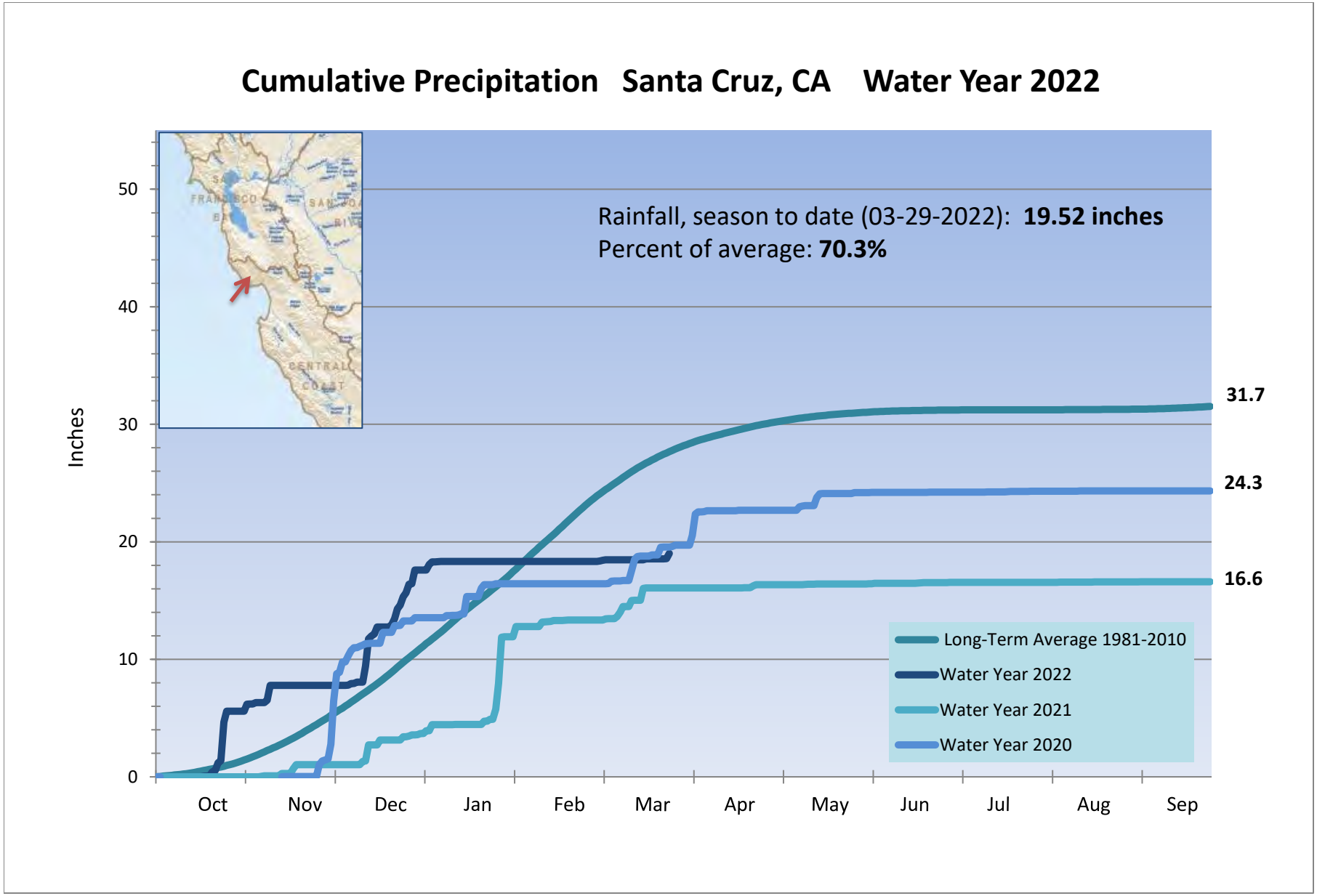

Cumulative Precipitation Santa Cruz, CA Water Year 2022
Rainfall, season to date (03-29-2022): 19.52 inches
Percent of average: 70.3%
Inches
0
10
20
30
40
50
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
31.7
24.3
16.6
Long-Term Average 1981-2010
Water Year 2022
Water Year 2021
Water Year 2020

Figure 3

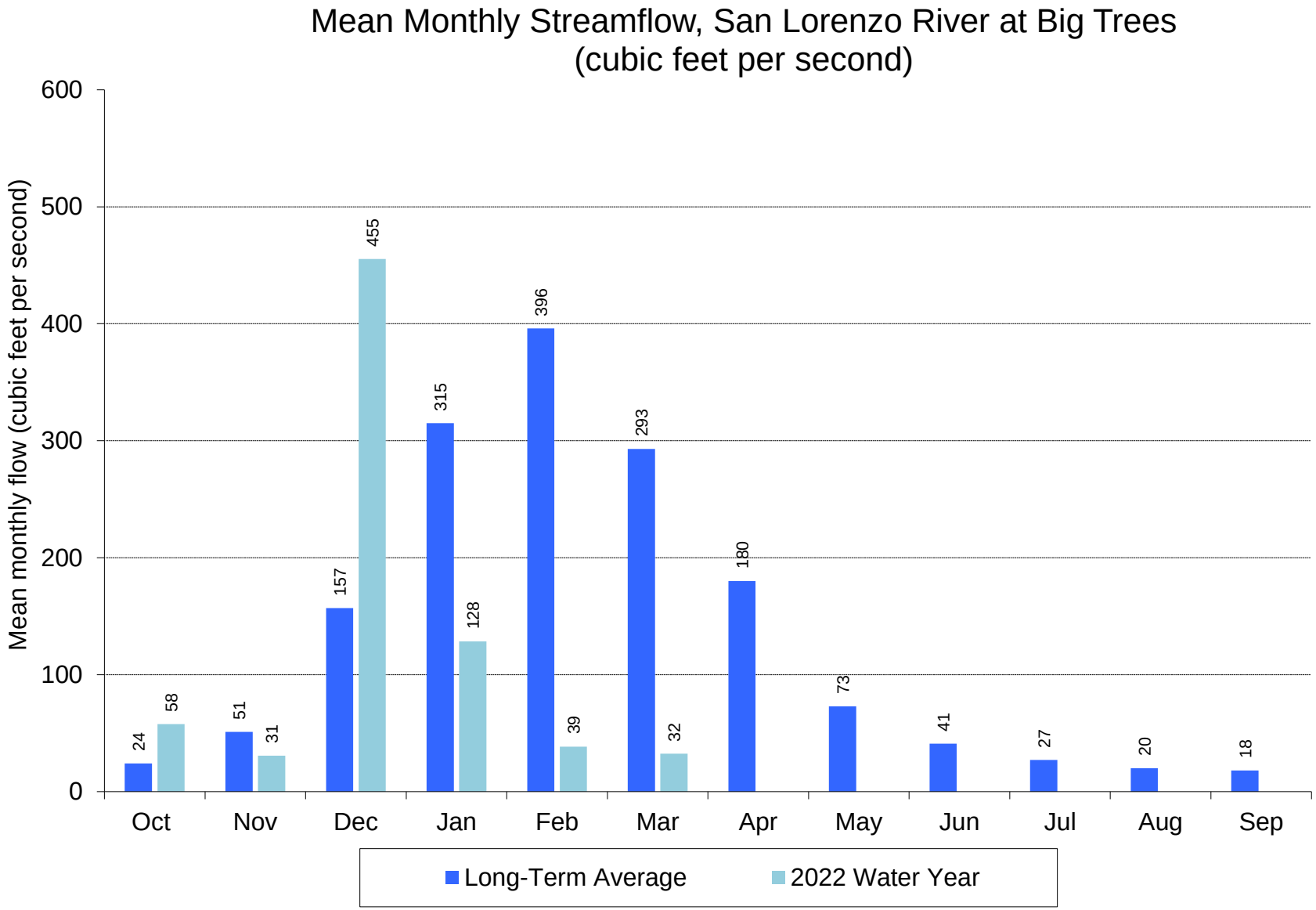

Mean Monthly Streamflow, San Lorenzo River at Big Trees
(cubic feet per second)
Mean monthly flow (cubic feet per second)
600
500
400
300
200
100
0
24
58
51
31
157
455
315
128
396
39
293
32
180
73
41
27
20
18
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Long-Term Average
2022 Water Year

Figure 4

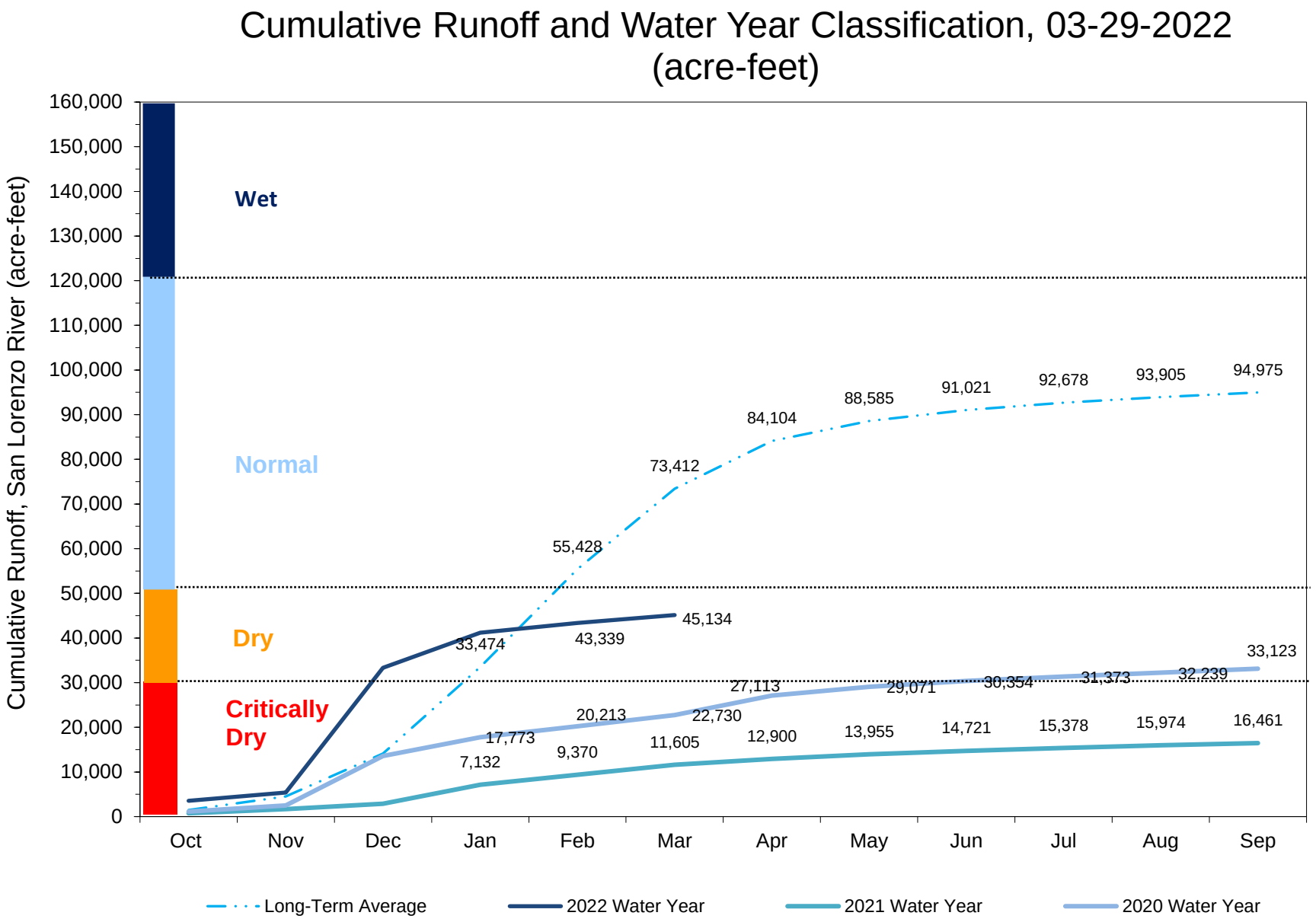

Cumulative Runoff and Water Year Classification, 03-29-2022
(acre-feet)
Cumulative Runoff, San Lorenzo River (acre-feet)
160,000
150,000
140,000
130,000
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Wet
Normal
Dry
Critically Dry
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
55,428
73,412
84,104
88,585
91,021
92,678
93,905
94,975
33,474
43,339
45,134
7,132
9,370
11,605
12,900
13,955
14,721
15,378
15,974
16,461
17,773
20,213
22,730
27,113
29,071
30,354
31,373
32,239
33,123
Long-Term Average
2022 Water Year
2021 Water Year
2020 Water Year

Figure 5

2022 Water Supply Scenario No. 1

SCWD Production Forecast (million gallons)	April	May	June	July	August	September	October	Total
	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
North Coast (gross production)	28	28	28	28	28	28	28	196
North Coast (net production)	21	21	21	21	21	21	21	147
San Lorenzo River	190	160	130	100	100	40	40	760
Beltz WTP	0	0	25	25	25	25	25	125
Beltz 12	0	0	19	19	9	0	0	47
Ground Water Total	**0**	**0**	**44**	**44**	**34**	**25**	**25**	172
ASR Injected Water	0	0	0	0	0	0	0	0
Total Production without Lake	211	181	195	165	155	86	86	1,079
Projected System Demand (row 48)	159	164	202	215	223	230	202	1,395
Curtailed System Demand								
Beginning Lake Volume	**2,568**	**2,551**	**2,525**	**2,489**	**2,405**	**2,301**	**2,127**	
Projected Inflow from Newell Creek	12	7	3	4	3	2	6	38
Lake Production Needed to Meet Demand	**0**	**0**	**7**	**50**	**69**	**144**	**116**	**385**
Evaporation (feet)	0.2	0.3	0.3	0.4	0.4	0.3	0.2	2.1
Evaporation (mil gal)	9	13	13	18	18	13	9	93
Fish Release (mil gal)	20	20	20	20	20	20	20	140
End of Month Lake Volume	**2,551**	**2,525**	**2,489**	**2,405**	**2,301**	**2,127**	**1,988**	
End of Month Lake Elevation (ft above msl)	**571.3**	**570.8**	**570.1**	**568.5**	**566.4**	**562.8**	**559.8**	
Monthly change in elevation	-0.4	-0.5	-0.7	-1.6	-2.1	-3.6	-3.0	
Cumulative change in elevation	-0.4	-0.9	-1.6	-3.2	-5.3	-8.9	-11.9	
Percent of capacity (%)	90.1	89.2	87.9	85.0	81.3	75.1	70.2	
Actual Storage, percent of capacity								
Date Forecast Finaled: Month __, 2022	By: _____							
Beginning lake level:	**571.8**	**3/21/2022**						

Figure 6

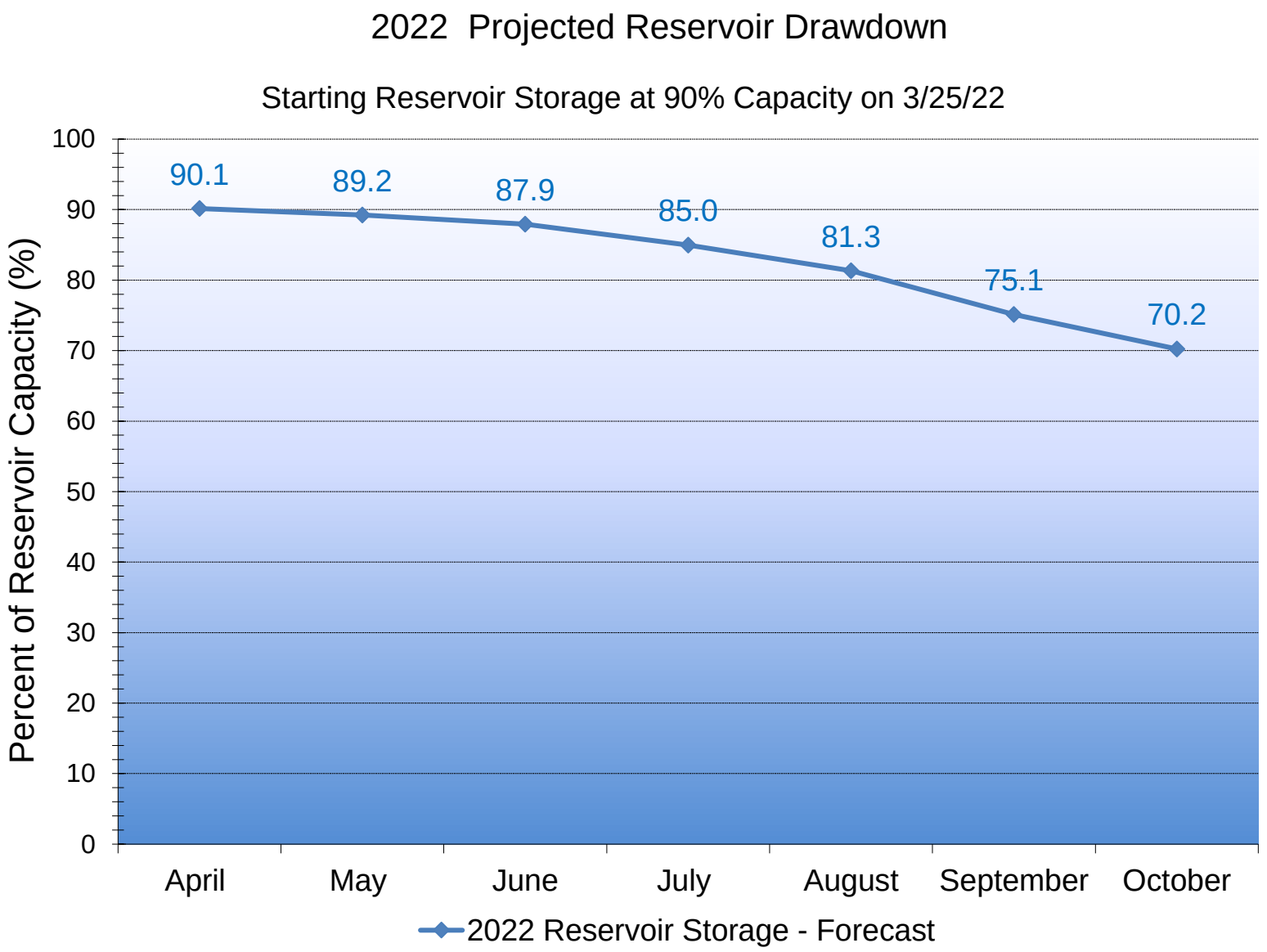
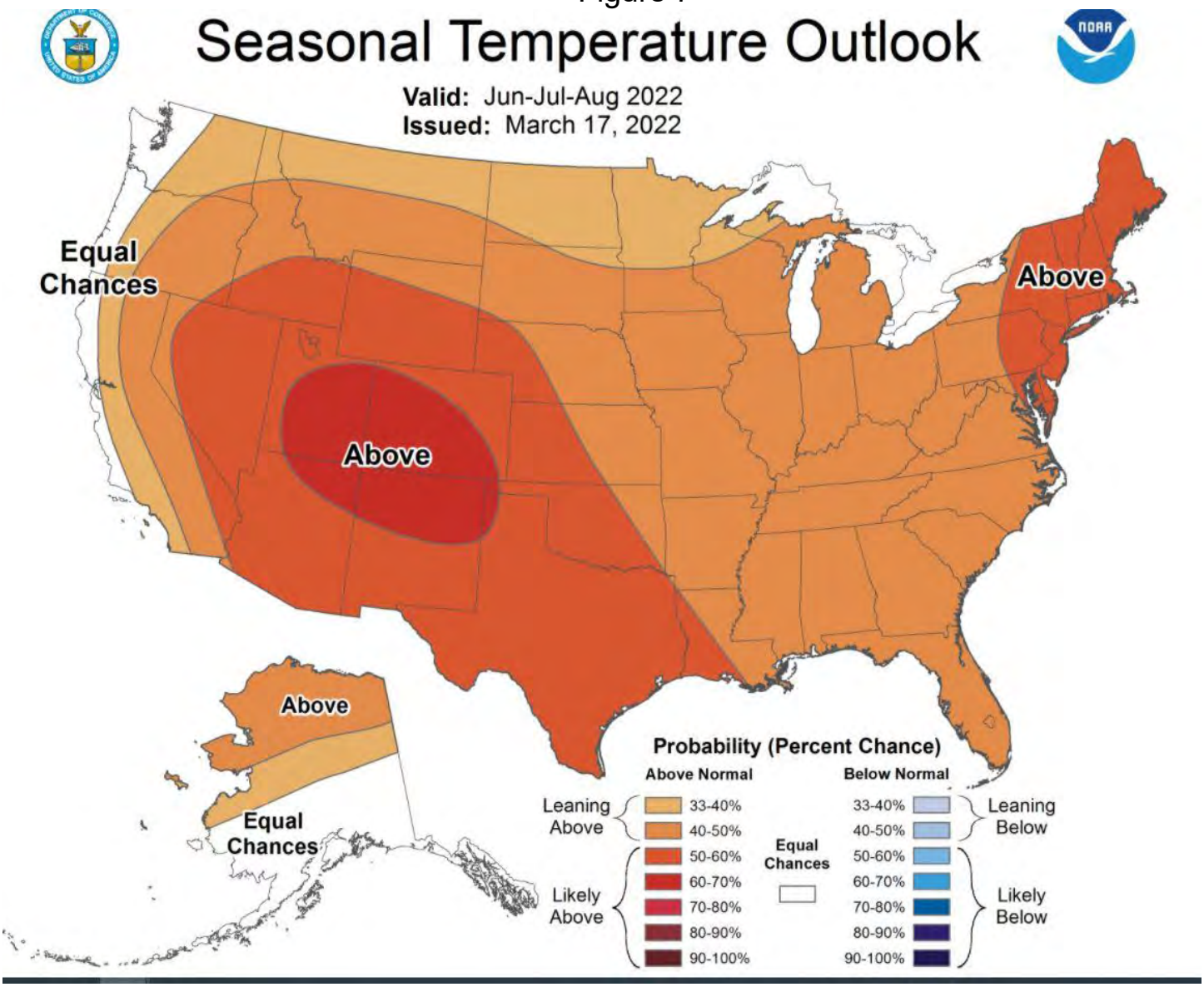

2022 Projected Reservoir Drawdown
Starting Reservoir Storage at 90% Capacity on 3/25/22
Percent of Reservoir Capacity (%)
100
90
80
70
60
50
40
30
20
10
0
90.1
89.2
87.9
85.0
81.3
75.1
70.2
April
May
June
July
August
September
October
2022 Reservoir Storage - Forecast

Figure 7


Seasonal Temperature Outlook
Valid: Jun-Jul-Aug 2022
Issued: March 17, 2022
Equal Chances
Above
Above
Above
Equal Chances
Probability (Percent Chance)
Above Normal
Below Normal
Leaning Above
33-40%
40-50%
Likely Above
50-60%
60-70%
70-80%
80-90%
90-100%
Equal Chances
33-40%
40-50%
50-60%
60-70%
70-80%
80-90%
90-100%
Leaning Below
Likely Below

WATER COMMISSION
INFORMATION REPORT

DATE: 3/30/2022

AGENDA OF: April 4, 2022

TO: Water Commission

FROM: Rosemary Menard, Water Director

SUBJECT: Framework for Decision-Making on Securing Our Water Future

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RECOMMENDATION: That the Water Commission:

1. Accept information about the proposed framework for decision-making on Securing Our Water Future and provide feedback to staff; and
2. Accept recommendations on the range of project alternatives to be evaluated in the Securing Our Water Future decision-making process and provide feedback to staff.

SUMMARY: The 2015 City Council accepted recommendations of the Council-appointed Water Supply Advisory Committee (WSAC) that called for the City to further develop options for using surface water, advanced purified recycled water or desalinated ocean water to make critically necessary improvements to its water supply reliability. The recommendations specified completing additional planning and technical feasibility analysis work, including pilot testing if and as needed so that options from all sources could be evaluated and compared for their cost, yield and ability to be implemented within a reasonable timeframe. From this evaluation, one or more supplemental supply projects would be selected for implementation.

Between 2016 and 2021, Water Department staff has initiated and completed a significant body of work that provide additional details about cost, yield and timeliness of using the available sources, that is, surface water, advanced treated recycled water, and desalinated water, to improve supply reliability. In addition, Water Department staff has worked with other utility and community interests in the region to complete two required Groundwater Sustainability Plans. This work has resulted in a significantly improved understanding of groundwater sustainability challenges in both the Santa Cruz Mid-County and Santa Margarita groundwater basins and provides important information to be integrated into the City's work to consider a range of options to improve supply reliability.

While all possible options for all possible sources of supply have not been developed to a consistent level of detail, Water Department staff is confident that the information that has been developed on the range of project options that is being prepared for presentation and discussion at the April 4th Commission meeting represents a reasonable set of realistic alternatives and

provides an adequate group of options to use in completing the WSAC's recommended evaluation and project selection process.

In preparing the approach for completing the WSAC recommended evaluation and decision-making process, staff recognizes, as the WSAC did, that phased implementation of one or more supply augmentation projects is the most likely approach to ultimately addressing the water system's long-standing reliability issue.[1] Moreover, given the reality of impacts of climate change on water supply, for example, the ongoing drought conditions across the state, staff believes that now is the time to complete the WSAC recommended evaluation process so that phased implementation can begin.

This agenda item covers four main topics:

1. It presents in the Background section a high-level summary of the WSAC's work that provides important context for the approach to completing project evaluations to inform City policy making and setting the direction on the supply reliability project or portfolio of projects to pursue to improve supply reliability;
2. It presents the framework that staff has developed to be used in completing the project evaluations and develop policy recommendations and set direction for implementation;
3. It presents a proposed Securing Our Water Future work plan and schedule; and
4. It provides an overview of the wide range of supplemental supply strategies and project options that have been under consideration following completion of the WSAC work briefly describes staff's work to sort through the long list to select projects for inclusion in the Securing Our Water Future policy-making and direction-setting process.

1. WSAC Background:[2]

In late 2013, the Santa Cruz City Council took action to pause progress on a regional desalination project sponsored by the City and the Soquel Creek Water District that had been under development for most of a decade. Instead, the Council initiated a community-based process to review and develop recommendations on how to address Santa Cruz's long-standing water supply reliability problem. In early 2014, the Council appointed 14 community members to a group that became known as the Water Supply Advisory Committee (WSAC or Committee) and gave them the charge to develop recommendations for Council consideration.

Through a process that ultimately lasted 18 months, the WSAC completed a thorough review of Santa Cruz's water supply situation, developed a problem statement, identified and evaluated dozens of water supply augmentation strategies, created and evaluated a variety of scenarios to fill a 1.2 billion gallon per year projected worst-year water supply shortage, and developed a set of agreements and recommendations for how to move forward with the additional work needed to solve the problem they had identified.

[1] It is notable that Santa Cruz's water supply has not been augmented since the development of Loch Lomond reservoir in 1960 and the Felton Diversion in 1970 and that the system's supply reliability issue was identified more than 40 years ago following the 1976-1977 drought.

[2] See Water Supply Advisory Committee October 2015 Final Report on Agreement and Recommendations: https://www.cityofsantacruz.com/home/showpublisheddocument/84832/637594497619670000

In November 2015, the City Council voted unanimously to accept the WSAC's recommendations. In addition, Council directed staff to integrate the WSAC's work into the 2015 Urban Water Management Plan, and to implement follow-up work to fully develop a range of potential solutions for improving the reliability of Santa Cruz's water supply. These efforts were to culminate in a set of recommendations to the City Council for a project or portfolio of projects to achieve water supply reliability. The work plan for this follow-up work is known as the Water Supply Augmentation Strategy (WSAS) and City staff has conducted its work and has reported on progress to the Water Commission on a quarterly since 2016.

In November 2019, following consultation with the Water Commission, and in a joint meeting of the Water Commission and the City Council, Santa Cruz Water Department staff proposed an adaptation to the November 2015 City Council accepted WSAS work plan, which the City Council voted to approve. The reasons and methods for developing an adaptation to the WSAS were included in the Change Management section of the WSAC's Final Report on Agreements and Recommendations. The WSAC understood that it was important to provide an approach for dealing with changed circumstances and built the Change Management Process to serve this purpose.

The WSAS work plan change involved revising the WSAC timeline to acknowledge the opportunity for early action to pursue aquifer storage and recovery (ASR) in the Santa Cruz Mid-County Groundwater Basin (MGB). The work on ASR in the MGB completed between 2016 and 2019 indicated that there was an increment of water storage that could be developed on a shorter timeline by using existing infrastructure for delivery of treated drinking water to the City's existing Beltz wellfield, for injection and extraction of treated drinking water in to and out of the MGB, and the for treatment of the extracted water. The Department recommended that this work should proceed ahead of the comprehensive evaluation of alternatives outlined by the WSAC both because of the significant water supply reliability benefit of developing any additional storage and also because proceeding with an expedited project would provide valuable information that would be useful in further considering options for further development of an ASR project in the MGB or possibly in the Santa Margarita Groundwater Basin (SMGWB).

As a result of receiving City Council approval for pursuing an expedited project in late 2019, the Department took action to include elements of an ASR project in the MGB in the Santa Cruz Water Rights Project and its environmental review process. The Draft Environmental Impact Report (EIR) for the Santa Cruz Water Rights Project included an evaluation of utilizing existing infrastructure to support an ASR project at the project-specific level of analysis and, following the required public comment period, the Water Rights Final EIR was prepared and released. Underground Storage Supplements, which are required permits from the State Water Resources Control Board for ASR, were also developed and evaluated as part of the EIR. In December 2021, the Santa Cruz City Council acted to certify the EIR and approve the project, and the water rights change portion of the project are now before the State Water Resources Control Board for their review and action. Finally, as of winter 2021-2022, water is currently being injected into both Beltz 12 and Beltz 8 wells as part of ongoing evaluation of ASR.

At the same time as the Department's ongoing work on water supply augmentation to address the City's significant vulnerability to long-term droughts, required groundwater sustainability planning efforts have been completed in both the MGB and in the Santa Margarita Groundwater

Basin (SMGB). The Department has engaged with other regional partners in preparing the two Groundwater Sustainability Plans (GSP) for the MGB and the SMGB, as required by the 2014 Sustainable Groundwater Management Act.

These plans, and the process used to develop them, have been very useful in creating a clearer understanding of the current and future sustainability opportunities and challenges in the two basins. An example of a challenge in the MGB is operating groundwater systems in a manner that maintains protective groundwater elevations along to coast, which is required in order to protect the aquifer from seawater intrusion.

The two GSPs provide a critically important context for the Department to use in assessing water supply augmentation options that may involve storing treated drinking water or advanced purified recycled water in local groundwater basins. This is important because any supplemental supply project the City might pursue to increase drought supply would need to be developed and operated to contribute to both the supply reliability objectives for the City's water system and the groundwater sustainability objectives in each basin and their respective GSPs.

The goal of today's discussion with the Water Commission is to outline the proposed approach for identifying a range of viable projects compared as part of a policy-making and direction setting process that will support development and implementation of supplemental water supply projects in the months and years ahead to address and resolve Santa Cruz's long-standing water supply reliability issues.

2. Proposed Approach to Water Supply Reliability Policy-Making and Direction Setting.

Water Department staff are calling the proposed process for policy-level decision-making for water supply augmentation projects "Securing Our Water Future." In effect, it is intended to be the "final act" of the formalized WSAC effort. Realistically, however, even with the proposed policy level direction set, implementation of supply augmentation projects will inevitably be an ongoing effort that will need to continuously consider and respond to additional information that is always generated as part of project development efforts. Appropriately, WSAC developed criteria, values and considerations have been thoroughly integrated into the way the Department does its business and will continue to be influential as work proceeds over time.

In this section, staff presents information that provides context for the proposed approach and lays out the proposed "inputs" and "outputs" of the policy-setting and direction-setting process.

A. The Need for Urgent and Durable Action

Given the realities of climate change already occurring in Santa Cruz and the very efficient water use patterns of Santa Cruz's water customers, the water supply reliability situation in Santa Cruz is actually worse than was portrayed during the WSAC's work. The key drivers of this situation are the persistence of weather extremes that bring either very dry or very wet conditions. In very dry conditions the system's limited storage is a huge vulnerability, particularly in the multi-year droughts that are becoming more common.

Without additional supply, customer demand curtailments through approaches such as water rationing, are typically used. However, in Santa Cruz, curtailments are no longer an effective strategy because customers have already adopted and implemented water-conserving practices that leave little more water available to be eliminated under restrictions. Without supply reliability improvements, in serious shortage conditions, the City will be required to enforce restrictions that would result in impacts to the local economy and potentially threaten community health and safety. From a water supply reliability perspective, the very real possibility of these kinds of outcomes occurring further increases the urgency for decision-making and implementation of a project or portfolio of projects to augment supply.

Within this context, there are two key considerations for the proposed Securing Our Water Future direction-setting and decision-making process:

The first is that it is not possible to compare fully fleshed-out project options for every conceivable supplemental supply approach. For one thing, it is unrealistic for every option to have had the same level of information developed for it, as many details of these kinds of projects are site-specific and only emerge when site-specific design and construction work is underway. Another factor is that, due to long-standing concerns about seawater intrusion in the MGB, projects in that basin are much more developed than are options in the Santa Margarita basin. So while it may not be possible to compare every detail about every project, it is possible to compare projects at a conceptual level that is consistent over the full range of project options. This is what staff is proposing. Projects to be compared have been developed in a way that benefits from the significant amount of work that has been completed on both ASR and advanced treated recycled water by the Santa Cruz Water Department and Soquel Creek and Scotts Valley water districts. Further discussion of how the proposed approach to policy-setting and direction setting is included following presentation of the Securing Our Water Future work plan and schedule.

The second consideration for the Securing Our Water Future process is the need to develop directions and decisions that will stand the test of time. Our community's water reliability issues are long-standing. While earlier attempts to address these issues have resulted in Santa Cruz becoming a state leader in water efficiency, that accomplishment, as recognized by the WSAC in its problem statement, has not and cannot resolve our water supply reliability problem. The WSAC recognized the challenges of creating an adaptable and long-lasting path forward. The Securing Our Water Future proposed approach is purposefully designed to address this need.

B. Elements of the Securing Our Water Future Framework

a. Framework Inputs:

1. WSAS Quarterly Reports to the Water Commission and Technical Memos and Feasibility Analyses Reports 2016 – 2022

   Along with regular quarterly updates on the WSAS implementation work that have been provided to the Water Commission, a number of technical memos and feasibility analyses have been developed and discussed with the Water Commission during the last six years. Examples of these include both the 2018 Phase 1 Recycled Water Analysis and the 2018

Desalination Feasibility Update Review, which included a cost estimate update on the desalination project that was under development prior to 2014. These two reports informed the November 2019 staff recommendation and eventual City Council action to prioritize advanced treated wastewater as the preferred alternative for supply augmentation, should surface water not be available or adequate to meet the defined drought storage targets.

In addition, other analyses and reports focusing on ASR have been completed, including a number of technical memos on the various phases of work on ASR in the MGG and groundwater modeling of ASR projects conducted as part of the MGB and SMGB GSPs.

2. Technical Memoranda on Project Comparisons

At the time of their work, the WSAC recognized that the level of information about the potential water supply augmentation options was too uneven to allow for across the board comparisons to inform final decision-making about which supplemental supply project or projects to pursue. They wanted to ensure that decisions about supply augmentation projects would be made using better information than was available to them so created recommendations to create the information necessary to support the data-driven and criteria-based decision-making processes needed to provide the transparency that they believed is necessary for success.

The WSAC did quite a bit of work on criteria for decision-making[3], and this work is definitely going to be reflected in the project comparison work that will be developed in the months ahead. In the Securing Our Water Future work plan and schedule, Water Commissioners will see that the decision criteria from both WSAC and other sources, for example, GSPs for the MGB and the SMGWB, will be presented, discussed and prioritized. Staff is working on an exercise that will be similar to the Water Pricing Objective exercise used in the water rate making work to and resulting in prioritized water pricing policy objectives to be achieved through the design of water rate structures.

b. Framework Outputs

Staff has looked carefully at strategies and tools the City has used to provide durable direction and decisions. A key goal is to find an approach that provides one or more products that allow clear, strong, and reasonably complete information to tell a clear story about what the issues are, what the recommendations are, and why action is both necessary and appropriate. With this goal in mind, the proposed actions for the City Council would include two products: first, a Council Resolution and second, a Council Policy.

1. Council Resolution

[3] Attachment A to this staff report includes excerpts of the WSAC Final Report on Agreements and Recommendations that lays out the WSAC's evaluation criteria.

The structure of Council resolution includes a set of recitals that provide the context for the action section of the resolution. The recitals typically begin with a set of "Whereas" statements, and when the context has been adequately laid out in the recitals the Council's statement of direction or confirmation of decision is included following a "Now Therefore" statement.

The benefit of using a resolution is that it provides for a certain durability of the Council's direction; a subsequent Council action would be needed to rescind or modify it. It also has the benefit of packaging information in a form that is readily consumable and, if well crafted, presents a complete enough story of the situation and why the decision or direction that was taken makes sense. This is a significant benefit over the more conventional alternative of packing the explanatory information supporting a Council action in an often 100+ page technically oriented document, even one with a good executive summary.

2. Council Policy

On occasion, the City Council has taken action following completion of a major piece of work to adopt a policy statement. An example is Council Policy 11.3 on Timber Harvest on Watershed Area and Preservation of Old Growth Trees,[4] which was adopted by the Council following completion of a task force's work in the late 1990s. In general, the concept behind this approach would take language included in the "Now Therefore" section of the resolution (discussed above,) and use it as the centerpiece of the Council policy.

3. Proposed Securing Our Water Future Work Plan and Schedule

In the Working Draft of the Water Commission's Work Plan (included with the meeting packet for the Commission's April 4, 2022 meeting,) work plan items and schedules are proposed that would bring recommendations to the Council in late November 2022. Included are the following:

- April 4, 2022 –
  - Presentation, discussion of and feedback on the Securing Our Water Future Framework
  - Presentation on the Water Reliability Projects to be evaluated
- May 2, 2022 –
  - Presentation on and Approval of Evaluation/Decision-Making Criteria
  - Update on the water system vulnerability analysis work being done in collaboration with the University of Massachusetts team.
- June 6, 2022 –
  - Phase 1 of Project Evaluations
- July/August/September – dates to be determined likely 2 meetings
  - University of Massachusetts work on climate change vulnerability analysis

[4] https://www.cityofsantacruz.com/government/city-council/council-policy-manual

    - Phase 2 of Project Evaluations, including the impact/influence of the vulnerability assessment work
- October 3, 2022 –
    - Draft final technical memoranda on project comparisons, draft Council Resolution and draft Council Policy
- November 7, 2022
    - Water Commission action on recommendations to Council on Securing Our Water Future, including all the elements described in this report, for Council action on November 22, 2022.

The direction set through this process would inform a follow-up strategy to develop an implementation plan for supply augmentation projects - the Water Supply Augmentation Implementation Plan (WSAIP). The WSAIP is intended to be an implementation road-map including project descriptions, implementation schedules and planning level budgets. Required California Environmental Quality Act (CEQA) analysis would be developed in parallel with the WSAIP, likely building from the certified Water Rights EIR.

4. Supplemental Supply Project Alternatives

Table 1[5] below shows the wide range of supplemental supply projects that have been developed or explored as part of the WSAS work plan between 2016 and the present. As Commissioners may know, many of these options are included in SMGWB and MGB GSPs in Sections 4 and 5, Projects and Management Actions, and Implementation Plan, respectively. All the options that explore active recharge of either or both groundwater basin, whether the supply is treated drinking water or advanced purified wastewater, are under active discussion in both basins, although those in the MGB are generally further along than those in the SMGWB.

Through the work that has been completed, some conclusions about some of these project options allow them to be eliminated from the list as potential stand-alone options for meeting the City's 1.2 billion gallons per projected year worst-year water supply shortage.

For example, as the WSAC concluded and made clear as part of its problem statement, water conservation alone cannot close the gap. In addition, the 2018 Phase 1 Recycled Water Study identified and evaluated a number of potential irrigation-oriented non-potable reuse options but concluded that overall demand for irrigation water is relatively low and highly decentralized, making it both expensive and not particularly beneficial from a supply augmentation perspective to pursue these options. And, while water transfers and exchanges may be effective elements to include as part of an ASR project, in order for Santa Cruz to develop the necessary drought supply some form of active recharge would be needed to meet the City's yield goal.

At the April 4th Water Commission meeting, staff will present its recommendations for the projects from Table 1 to be included in the comparative analysis work that will be conducted in

[5] Acronyms used in Table 1 include:
GW = groundwater; RW = recycled wastewater; NPR = non-potable reuse, e.g., water for irrigation; AWTP = advanced water treatment plant for wastewater recycling; WWTF/SCWWTF = wastewater treatment facility/Santa Cruz wastewater treatment facility; GHWTP = Santa Cruz's Graham Hill surface water treatment plant for drinking water

the proposed Securing Our Water Future policy-making and direction-setting process and ask for the Commission's feedback on those recommendations.

Table 1

Santa Cruz Supplement Water Supply Alternative Matrix

WSAC Alternatives	Lead	Alternative	Description	Source Water
Conservation	SCWD	Increse water conservation where feasible	Evaluate opportunities remaining for the City to improve efficiency while considering equitable water rates	City's Potable Water
In Lieu Transfers and Exchanges	SCWD - SqCWD SVWD - SLVWD	In Lieu Water Transfers/Exchanges with SqCWD	Evaluate opportunities to utilize existing interties/infrastructure to transfer/exchange supply	City's Potable Water, SqCWD GW or RW?
		In Lieu Water Transfers/Exchanges with SVWD	Evaluate opportunities to utilize existing interties/infrastructure to transfer/exchange supply	City's Potable Water, SVWD GW or RW?
		In Lieu Water Transfers/Exchanges with SLVWD	Evaluate opportunities to utilize existing interties/infrastructure to transfer/exchange supply	City's Potable Water, SLVWD GW or SW?
Aquifer Storage and Recovery (ASR)	SCWD	Mid County Groundwater Basin (MCGB)	ASR Injection wells at Beltz Wells 8, 9, 10 and 12	City's Potable Water
			ASR Injection wells at Beltz Wells and HB5, SC2, SC4, SC10	City's Potable Water
	SCWD - SVWD	Santa Margarita Groundwater Basin (SMGB)	ASR Injection wells near Hanson's Quarry. Infrastructure needs TBD	City's Surface Water
Recycled Water	SCWD	NPR Baseline	New Tertiary Treatment to serve in-plant and nearby irrigation uses - *part of Pure Water Soquel (PWS) Project* -	Santa Cruz WWTF
		NPR Phase I	Increase reuse near the SCWWTF; Expand tertiary treatment with new conveyance to serve nearby schools	Santa Cruz WWTF
		NPR Phase II	Turnout from PWS Conveyance Pipeline to meet Pasatiempo Golf Course irrigation demands.	Santa Cruz WWTF
		NPR Phase III	Serve NPR uses on the East Side City from expanded tertiary treatment at the PWS Chanticleer Site	Santa Cruz WWTF
	SCWD - SqCWD	MCGB Indirect Potable Reuse (IPR)	IPR at Beltz Wellfield from expanded PWS AWPF. No ASR	Santa Cruz WWTF
				Santa Cruz WWTF
			IPR at Beltz Wellfield from expanded PWS AWPF used ONLY as a backup to ASR	Santa Cruz WWTF
			New well(s) east of Chanticleer to inject purified water from the PWS AWPF. Extracted water transfer/exchange between SqCWD and City.	PWS Purified Water
			New sea water instrusion barrier well(s) south of Beltz Wellfield using purified water from expanded PWS AWPF - with or without ASR (TBD)	PWS Purified RW for SW Barrier Wells
	SCWD - SVWD	SMGB IPR	Purified water from PWS AWPF conveyed to Scotts Valley for recharge in the SMGB	Santa Cruz WWTF
			New AWTP in Scotts Valley (location TBD) with recharge at or near Hansen Quarry and El Pueblo wells	Santa Cruz WWTF + SVWD WWTF
	SCWD	Surface Water Augmentation (SWA)	SWA via a new City AWPF with blending in Loch Lomond Reservoir	Santa Cruz WWTF
		Direct Potable Reuse via Raw Water Augmentation	DPR via a new City AWPF with raw water blending prior to treatment at GHWTP	Santa Cruz WWTF
Desalination	SCWD	Seawater Desalination	New local seawater desalination facility to operate year-round or during droughts, similar to scwd2 project. Consider with or without partnerships	Monterey Bay

FISCAL IMPACT: None at this time.

PROPOSED MOTION: Motion to accept information about the proposed framework for decision-making on Securing Our Water Future and provide feedback to staff; and
Motion to accept recommendations on the range of project alternatives to be evaluated in the Securing Our Water Future decision-making process and provide feedback to staff.

ATTACHMENTS:

1. Attachment A – Excerpts from the 2015 WSAC Final Report Recommendations and Agreements

Attachment A

The WSAC did quite a bit of work on decision-criteria to be used in selecting supplemental supply projects or a portfolio of projects that would be implemented to address Santa Cruz's water supply reliability issue. For example, at one stage of their process, WSAC engaged in an exercise using a multi-criteria decision-making tool. Table 11 below comes from the WSAC's Final Report on Agreements and Recommendations and presents the criteria used by the WSAC in that exercise. Although not explicitly incorporated into the WSAC's decision criteria, the range of topics covered in Table 11 were regularly discussed throughout their work and continue to be discussed among staff in considering the various project alternatives

The materials that follow Table 11 below come from a later section of the WSAC's final report and provide details about the Guiding Principles and related community values recognized by the Committee and incorporated into their work. The table below lists the key Guiding Principles and Values:

Guiding Principles	Community/Community Values
• Public Health • Public Acceptance • Regional Collaboration • (Meeting the) Plan Goal • Incremental Implementation	• System Robustness • System Resiliency • System Redundancy • Adaptive Flexibility • Sustainability, particularly related to energy use

The Committee also identified three key metrics that it considered to be major criteria to be used in comparing alternatives:

- The Cost Metric –
  - After considerable discussion, the cost metric to be used was the Annualized Cost per million gallons of Average Year Yield (ACAYY).
  - The Committee also agreed to an ACAYY cost of surface water augmentation of up to 130% of the ACAYY cost for other alternatives.
- Yield Metric –
  - As was the case in the Guiding Principle on Plan Goal, the yield metric is specifically designed to establish the amount of water needed to meet 100% of demand 100% of the time. This volume, as understood during the WSAC work, was 1.2 billion gallons, which was the shortage in water to meet all customer demand during worst-year shortage conditions.
  - The Committee recognized that this volume was/is subject to change based on ongoing changes in customer demand and the implications of climate change that is already being experienced on existing available supply.
  - Changes in customer demand have, in fact, occurred and been incorporated into updated water demand forecasts for 2020 to 2045. Work is ongoing to assess the vulnerability of local surface water resources to climate change, and the results of this vulnerability analysis will be

available for the evaluation and selection of one or more projects to provide drought supply needed to meet 100% of customer demand 100% of the time.

- Timeliness Metric
  - The Committee felt strongly that Santa Cruz's water supply reliability issue was/is of long-enough standing and enough of a priority that it should be resolved within a 10 year window. While that goal may be difficult to fully achieve, incremental implementation can and will provide incremental benefits from each project as it comes on line.

Excerpts of the Water Supply Advisory Committee's October 2015 Final Report on Agreements and Recommendations

Table 11– WSAC Evaluation Criteria

Criterion	Questions
Technical Feasibility	How likely is each Plan to be technically successful? For Plan B, consider the technical feasibility at the time the plan would actually start
Time Required to Demonstrate Technical Feasibility	How much time is required to demonstrate whether a Plan is technically feasible? When rating Plan B, start from the time Plan B actually begins.
Time Required to Full Scale Production	What is the time required to full scale production? For all Plans, start the clock when the Plan is permitted, has all needed rights and property ownership issues resolved and is ready to proceed.
Adaptive Flexibility (includes Scalability)	What benefits in terms of adaptive flexibility is each Plan likely to contribute in the face of external conditions such as climate change, demand levels or streamflow requirements?
Supply Reliability	How likely would each Plan be to improve the reliability of the Santa Cruz water system in the face of different operating conditions such as turbidity, low flows, etc.?
Supply Diversity (Portfolio Level Only)	How does the Portfolio affect the diversity of Santa Cruz water supply portfolio?
Energy Profile	How much energy does each Plan require? Units are megawatts of energy per million gallons produced, mw/mg expressed as weighted average by Plan.
Environmental Profile	What is the environmental profile of each Plan? Note: this criterion covers a range of issues and a diversity of Plans. This is a great place to provide details about your rating using the comment button.
Regulatory Feasibility	How easy or difficult would the regulatory approval process be for these Plans?
Legal Feasibility	How easily and within what time period are these Plans likely to obtain the necessary rights in the form needed? When considering a Plan B that would start after a trigger, start the clock at the point at which the trigger actually occurs.
Administrative Feasibility	To what degree do each of the Plans require cooperation, collaboration, financial participation, and/or intergovernmental agreements to succeed? How likely is it that these can be obtained?

Criterion	Questions
Potential for Grants or Special Low Interest Loans for Engineering and/or Construction	What is the potential for these Plans to qualify for grants and/or special low interest loans?
Political Feasibility	What level of political support is each Plan approach likely to have? When rating Plan B, take into account the impacts of additional time and the (hypothetical) failure of Plan A would have on Santa Cruz's political landscape.
Cost Metrics	How much do each of these Plans cost? Metric is annualized unit cost in dollars per million gallons, $/mg.

WSAC Guiding Principles:

The Committee recommends that the following Guiding Principles be taken into account in all applications of the Change Management Strategy:

- **Public Health** – public health protection is every water utility's most fundamental duty. The SCWD, as an organization, and as individual employees, work every day to produce and deliver an adequate and high quality supply of water that complies with numerous public health-based regulatory standards and is used for human consumption, sanitation, for other domestic and commercial use and for fire protection.

  WSAC recommends that, prior to reaching a decision on a potential preferred supply augmentation project; the City will consult with experts (recommended by the Water Department and approved by City Council) in public health, endocrinology and water chemistry to evaluate and report on local water quality data and the public health implications of the preferred choice. This consultation would take place with ample opportunity for public review and input.
- **Public Acceptance** –The Committee was aware that the most important reason for convening the WSAC was to address the public's concerns about the proposed desalination plant. The Committee notes public acceptance issues were raised during the WSAC process about costs, including overall costs and costs to rate-payers, energy consumption, schedule for implementation and public health concerns.

  The WSAC has, throughout its process, created and applied criteria reflecting the community's values. Along with the yield, costs, timeliness and technical feasibility of various supply augmentation alternatives (including conservation), the Committee also considered energy use, and environmental impacts of the alternatives. Accordingly, these considerations and criteria should be taken into account in any future decision-making.
- **Regional Collaboration** – Where consistent with the goal of achieving a sufficient water supply, the City should promote regional collaboration to improve water supplies, reversing or slowing seawater intrusion, and support habitat restoration.
- **Plan Goal**: The Committee agrees that, to improve the sufficiency and reliability of Santa Cruz's supply using groundwater storage, an additional 2.4 billion gallons of water needs to be accessible from regional aquifers in a timely manner which will require storage of a larger volume. This additional storage, along with other key infrastructure modifications outlined in the Plan, would provide water needed to meet a worst year peak season shortage of 1.2 billion gallons under forecasted climate change and DFG5 flows.
- **Incremental Implementation:** An important premise of the Water Supply Augmentation Plan is incremental implementation. The Committee worked to develop a phased

approach to develop the additional water supply needed and to integrate this approach into the Adaptive Pathway and Change Management Strategy. A significant benefit of this approach is that it will help the City avoid investing resources before they are needed and justified based on performance and other metrics.

WSAC Change Management Strategy (with decision criteria)

As the Water Department implements this Plan, the Committee recommends that staff apply the following Committee agreements in making adjustments and recommending adaptations:
For Adjustments:

1. Diligently implement the groundwater storage strategy: when implementing Plan Elements related to groundwater storage, the City will take all reasonable and necessary steps to explore and demonstrate the technical feasibility of these approaches.
2. In addition, the City will adopt and implement communication practices that support the goals of transparency and accountability about Adjustments or Adaptations.

For Adaptations:

1. Prefer groundwater storage strategies: before making a choice to move away from groundwater storage, diligently pursue all reasonable measures to make the groundwater strategies work.
2. Should the choice need to be made between options available within Element 3, the Committee's preference is for advanced treated recycled water, rather than desalination, which is estimated to cost more and use more energy than advanced treated recycled water. The Committee viewed recycled water as more sustainable than desalinating seawater and therefore more aligned with the community's values. However, if the City determines that recycled water cannot provide sufficient yield then desalination should be pursued.
3. System robustness, resilience, redundancy, and adaptive flexibility are important values.

Thresholds are an important element of the overall Change Management Strategy. The Committee developed its agreements based on assumptions and information available to it at the time it did its work and recognized that new information would be developed as the Plan is implemented. Establishing thresholds (which could, themselves, be updated as new information is developed and analyzed) gave the Committee a way to provide parameters within which to continue developing an Element as well as clear sign posts for when the Plan or an Element might be failing to perform as anticipated. Exceeding a threshold value would not necessarily result in stopping work on an Element, but would trigger an Assessment. There are three key types of thresholds:

1. Cost
2. Yield
3. Timeliness

For several of these thresholds there is no fixed number or value. This is because for items such as cost and timeliness, the threshold value is necessarily relative to the other options available at the time the threshold is reached. The achievable schedule for implementing the Elements will become clearer as additional work is done. At a decision node, the most up-to-date information should be considered.

The Committee understood that new information would be being developed as the Plan was implemented and therefore what was important was to set the threshold metric rather than the threshold value. And, in addition, the Committee understood that numbers produced by planning level analyses cannot be considered exact and thus applying an acceptable range around a threshold metric would be an appropriate way to express the Committee's values and provide flexibility in implementing the Plan.

While thresholds may operate as independent triggers for an assessment, once an assessment is undertaken it would look at each Plan Element's status as it relates to each of the thresholds as well as to the Guiding Principles. Taking this more comprehensive approach to the Assessment is intended to avoid unintended consequences that could result from applying a more narrow focus.

(i) Cost Metric

Cost-effectiveness is an important consideration in making pathway changes. Any decision on cost-effectiveness will require comparing the costs of available alternatives at the time a decision is made.

After considering the range of possible cost metrics to evaluate cost-effectiveness, the Committee recommends the threshold Cost Metric be the Annualized Cost per million gallons of Average Year Yield (ACAYY). This is the cost identified in Line k of the Project Elements Summary Table included in Appendix 8, Cost Data and Cost Analysis, which table is incorporated by reference.

This metric adds the amortized annual cost of capital investments and the annual operating and maintenance cost and divides it by the estimated project average year yield.

Amortized annual cost is preferred because it takes into account the amortized capital investment as well as operation and maintenance costs. *Average year yield* is preferred because *yield* focuses on benefits to the overall system and *the average year yield* allows comparison among options. While other costs may be considered in future decision-making, this Cost Metric was favored because it focuses on the cost of the yield produced in an average year.

(ii) Committee Preference Statement Related to Cost

Recognizing the cost differential between some of the strategies the Committee considered in developing its recommendations, the WSAC agreed to express its preference for Strategy One over Strategy Two, and has agreed that as long as the ACAYY for implementing Strategy One is not more than 130% of the ACAYY for Strategy Two, Strategy One should be pursued provided Strategy One meets other threshold metrics.

(iii) Yield Metric

The Yield Metric is the most straight-forward, the most quantifiable, and the least flexible of the thresholds. As described earlier in this document, the supply-demand gap has been established at 1.2 billion gallons per year (bgy) for the worst year, based on Confluence modeling of the frequency and severity of shortages. The analysis takes into account DFG-5 fish flows and a plausible estimate of climate change impacts.

Updating the supply-demand gap requires both new demand forecasts and the kinds of analyses described earlier in Section 3.05 of the WSAC report. This analysis will be refreshed every five years as part of the Urban Water Management Plan update.

(iv) Timeliness Metric

For the Timeliness Metric, the Committee has agreed that a 10-year window is a reasonable target for achieving water supply sufficiency, defined as having a fully functional water system able to meet the supply-demand gap forecasted during extended droughts.

Assessments, Reviews and Update to Plan

1. Procedural Steps
   a. An **Assessment** is performed by the Water Department and includes updated information and a recommendation about whether a change to the Plan is needed.
   b. 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.
   c. If the Council so chooses, the Plan will be **updated**.
2. Information Sharing
   a. The Water Department will report to the Water Commission and the City Council
      i. At all decision nodes identified in the Plan;
      ii. Informally, as part of the Water Director's Oral Report at each Water Commission meeting, providing specific information about work in progress, successes and failures, and challenges and opportunities;
      iii. Quarterly in the spring, summer and fall, as an agenda item with accompanying staff report on the Water Commission agenda for discussion, public comment, and action as needed; and
      iv. Formally and annually to the Water Commission and the City Council in the winter of each year during the budget cycle, including Plan performance and significant adjustments
   b. As part of the Water Commission's and City Council's review of an updated Urban Water Management Plan, including
      i. Performance
      ii. Significant adjustments
      iii. Updated Plan Goals and Assumptions (including demand, climate change, systems improvements etc.)
3. If the Water Department recommends an adaptation, such a report must contain a synthesis of each Strategy and/or Element's actual performance or most current projected performance against the most current Thresholds and an evaluation of whether the performance of individual Elements warrants making a change to the Plan as a whole, or to one or more Elements within the Plan.

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WATER COMMISSION
INFORMATION REPORT

DATE: 03/28/2022

AGENDA OF: 04/04/2022

TO: Water Commission

FROM: Danny DeBrito, Associate Planner

SUBJECT: Newell Creek Pipeline Improvement Project - Final Environmental Impact Report

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RECOMMENDATION: That the Water Commission take action to support staff's recommendation to City Council to certify the Final Environmental Impact Report for the Newell Creek Pipeline Improvement Project; adopt Findings of Fact, Statement of Overriding Considerations, and a Mitigation, Monitoring, and Reporting Program; and approve the Newell Creek Pipeline Improvement Project.

BACKGROUND: Since 2019, staff has been implementing an agreed-upon approach whereby the Water Commission provides, as appropriate, recommendations to the City Council on project elements prior to subsequent action by City Council. Previous staff reports have followed a template that covers the following subject areas: Project Summary, Technical, Environmental, and Financial. The attached staff report consolidates this information as it was previously provided in detail for the project at the November 1, 2021 Water Commission meeting.

City staff has been planning and preparing environmental documentation pursuant to the California Environmental Quality Act (CEQA) for the Newell Creek Pipeline Improvement Project since April 2020, and progress updates on the environmental review process and project design were provided in the November 1, 2021 Water Commission meeting. Since that time, the Newell Creek Pipeline Improvement Project Draft Environmental Impact Report (DEIR) was released for a 45-day public review period on November 22, 2021. Following the release of the DEIR and facilitation of public comments on the environmental document, the Final Environmental Impact Report (FEIR) has been prepared in response to public comments received and to make clarifications and/or corrections to the analysis contained in the DEIR. The FEIR was released on March 25, 2022 and will be on the Council's May 10, 2022 agenda.

DISCUSSION: Attached is the City Council staff report for the project and two resolutions. With these documents, the Water Commission has received information on the purpose, need, cost, scope, schedule, and environmental impacts of the project. With the Commission's recommendation, the project should proceed as scheduled, the next step of which would be for City Council to certify the Final EIR and approve the project. The project would be put out to bid

in late 2022 or early 2023, following City Council's action of approval of the plans and specifications.

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 certify the Final Environmental Impact Report for the Newell Creek Pipeline Improvement Project; adopt Findings of Fact, Statement of Overriding Considerations, and a Mitigation, Monitoring, and Reporting Program; and approve the Newell Creek Pipeline Improvement Project.

ATTACHMENTS:

1. Web link to Item 5 of the November 1, 2021 Water Commission Meeting: https://ecm.cityofsantacruz.com/OnBaseAgendaOnline/Documents/ViewDocument/Summary%20Sheet%20for%20-%20Commission%20Update%20on%20Pipeline%20Planning%20and%20Design%20Projects.pdf?meetingId=1782&documentType=Agenda&itemId=18617&publishId=24454&isSection=false
2. City Council Staff Report, Newell Creek Pipeline Improvement Project – Final Environmental Impact Report and Approval
    a. Figure 3-5A from the Final EIR
    b. Figure 3-5B from the Final EIR
    c. Resolution certifying the Final Environmental Impact Report for the Newell Creek Pipeline Improvement Project
    d. Resolution adopting Findings of Fact, a Statement of Overriding Considerations, and a Mitigation and Monitoring Reporting Program and approving the Newell Creek Pipeline Improvement Project
    e. Draft and Final Environmental Impact Report (available for review at: https://www.cityofsantacruz.com/Home/Components/BusinessDirectory/BusinessDirectory/171/2089)

City Council
AGENDA REPORT

DATE: 03/28/2022

AGENDA OF: May 10, 2022

DEPARTMENT: Water

SUBJECT: Newell Creek Pipeline Improvement Project – Final Environmental Impact Report and Project Approval (WT)

RECOMMENDATION: Resolution certifying the Final Environmental Impact Report for the Newell Creek Pipeline Improvement Project.

Resolution adopting Findings of Fact, Statement of Overriding Considerations, and a Mitigation, Monitoring, and Reporting Program and approving the Newell Creek Pipeline Improvement Project.

BACKGROUND: The City's Newell Creek Pipeline (NCP) is a critical water transmission facility which conveys raw water to and from Loch Lomond Reservoir for storage and later use by the City to meet system demands, particularly during drought periods or when storm events impact water quality at other sources. The existing pipeline extends approximately 9 miles through unincorporated Santa Cruz County areas between the Graham Hill Water Treatment Plant (GHWTP) on the south and Newell Creek Dam on the north. The pipeline was constructed circa 1960 and is experiencing increased frequency of breaks due to age, pipe condition (corrosion), and unstable geologic conditions along the alignment. In addition, subsequent development near the pipeline has created differing conditions along the pipeline alignment, which has resulted in access constraints for maintenance and repair activities. The proposed Newell Creek Pipeline Improvement Project (Proposed Project) is intended to address these issues. The following objectives have been identified for the project:

1. Address identified deficiencies in the NCP conditions in order to maintain full system functioning without interruption, in order to protect water supply reliability and service to the City's customers.
2. Improve long-term reliability of the City's water supply infrastructure between Loch Lomond Reservoir and the GHWTP such that it can continue to function as an integral part of the City's overall water supply system.
3. Improve access to the NCP to facilitate inspection, maintenance, and repair of the pipeline system, while minimizing the potential for environmental and property damage impacts.
4. Site the NCP to consider constructability, optimize accessibility for maintenance, and minimize the potential for future failures during the life of the pipeline.
5. Implement NCP project segments that are cost-effective in terms of both capital and operation/maintenance costs.

DISCUSSION: The Proposed Project consists of replacement of 8.75 miles of the existing NCP with a new, primarily 24-inch pipeline, with one segment consisting of 30-inch pipeline. The pipeline would generally be installed within existing road pavement, right-of-way (ROW), and/or City easements. The Proposed Project would make minor realignments of the existing pipeline to take the pipeline out of inaccessible, geologically unstable, or environmentally sensitive areas where feasible, or to avoid private property. The northern segment of the project, from Newell Creek Dam to the Felton Booster Pump Station, would generally replace the pipeline in the same location, with minor realignments to avoid private properties. The southern segment of the project, from the Felton Booster Pump Station to GHWTP, would largely relocate the pipeline from its current alignment along Pipeline Road in Henry Cowell Redwoods State Park into the Graham Hill Road ROW. Once the replacement pipeline is installed, the existing NCP would generally be abandoned in place and above-ground appurtenances would be removed. Attachment 1 and 2 show a detailed overview of the Proposed Project northern and southern segments, respectively.

The project was broken out into separate phases of construction to be implemented between approximately 2023 and 2032. The highest priority segments for replacement were identified as the Brackney North segment and the Felton to Graham Hill segment; engineering design for these segments is underway under individual capital improvement projects and construction is anticipated to commence in 2023, following completion of design and Council approval of plans and specifications for these segments. Design and construction of the remaining pipeline segments are planned for subsequent years.

City staff and consultants have been planning and preparing environmental documentation pursuant to the California Environmental Quality Act (CEQA) for the Proposed Project since April 2020. The City contracted with Dudek to complete the environmental review for the Proposed Project under the Master Services Agreement for CEQA Compliance and Environmental Permitting for a total of $604,415. An Environmental Impact Report (EIR) was identified as the most appropriate level of environmental review for the Proposed Project. The EIR was based on engineering designs when available, and a conservative disturbance corridor was assumed for the remaining segments of the pipeline without designs; thus, the EIR constitutes a project-level review for the replacement of the entire alignment. Comments on the scope and content of the EIR were accepted during the Notice of Preparation (NOP) public review period from January 15, 2021 to February 16, 2021, and a public scoping meeting that was held on February 2, 2021. The NOP was uploaded to the State Clearinghouse and mailed to local, regional, and federal agencies, interested residents adjacent to the alignment, and the Water Commission. Notices of the public scoping meeting and comment period were provided in the Santa Cruz Sentinel and Press Banner newspapers, posted at the Church Street bulletin board at City Hall, and uploaded to the City's environmental documents webpage. The City received one (1) public comment on the NOP from the Native American Heritage Commission, which detailed statutory obligations for tribal consultation under Assembly Bill (AB) 52 and Senate Bill (SB) 18. Pursuant to these statues, the City contacted the Native American Heritage Commission (NAHC) for a list of tribal contacts culturally affiliated with the project area and provided opportunities for consultation with each of the contacts provided by the NAHC. No requests for formal consultation pursuant to AB 52 were received.

The Newell Creek Pipeline Improvement Project Draft Environmental Impact Report (DEIR) was released for a 45-day public review period from November 22, 2021 to January 5, 2022, and a public meeting was held on December 9, 2022. The same outreach methods were followed as

with the NOP. Additionally, hard copies of the DEIR were provided at the Water Department and Planning Department public counters, the Santa Cruz Downtown Branch Library, and the Felton Branch Library.

Pursuant to CEQA Guidelines Section 15128, the various possible effects of the Proposed Project that were determined to not be significant were disclosed but not analyzed in detail in the DEIR. These environmental resource topics included: aesthetics, agriculture and forest resources, land use, mineral resources, population and housing, public services, recreation, and utilities and service systems. The DEIR included a detailed analysis of the following environmental issue areas:

- Air Quality
- Biological Resources
- Cultural Resources and Tribal Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise and Vibration
- Transportation
- Wildfire
- CEQA-Required Sections: Significant Unavoidable Impacts, Significant Irreversible Changes, Growth Inducement, Cumulative Impacts, and Alternatives

The DEIR disclosed impacts to Biological Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, and Noise and Vibration. All of the identified impacts would be reduced to a less-than-significant level with the application of mitigation measures or Standard Construction Practices (see Attachment 5 for the Mitigation Monitoring and Reporting Program), with the exception of limited nighttime noise impacts at two locations. Nighttime noise impacts would be the result of 24-hour pipeline activities during the installation of the Brackney pipeline. This section of new pipeline will be installed with a trenchless technique called horizontal direction drilling, or HDD. As the name implies, HDD is a horizontal drilling activity requiring 24-hour operation until completed to avoid borehole collapse, or seizing of the drilling equipment.

A total of five (5) comment letters were received on the DEIR: from the Federal Emergency Management Association (FEMA), State Water Resources Control Board (SWRCB), California Department of Fish and Wildlife (CDFW), California Department of Parks and Recreation (State Parks), and Santa Cruz County Fire Department (County Fire). The comments received raised several environmental issues including impacts to regulatory floodways, special-status species, requirements to comply with federal and statewide regulations (e.g., California Fish and Game Code) prior to and during construction, and wildfire impacts.

The Final Environmental Impact Report (FEIR) was prepared in response to public comments received and to make clarifications and/or corrections to the analysis contained in the DEIR.

Comments and responses are provided in Chapter 7 of the FEIR. The FEIR was released on March 25, 2022 and notification was provided to all commenting agencies.

Given the long, linear nature of pipeline construction, and the project's location within or adjacent to urban or rural residential areas, temporary disruptions to the community are anticipated. In particular, the replacement pipeline segment along Graham Hill Road will be placed primarily within the public right-of-way, necessitating temporary road closures to install the pipe. As Graham Hill Road is a highly traveled arterial roadway, used both for commuter traffic between Felton and Santa Cruz and for residential access, construction along its length will require careful traffic control and signage, in coordination with the County through their encroachment permit process. It is anticipated that changeable message signs would be set up in the north by the Graham Hill Road/Highway 9 intersection and in the south by Ocean Street in Santa Cruz to inform the public to expect delays on Graham Hill Road. Additionally, City staff completed a construction traffic analysis to evaluate the benefit of rerouting traffic to other roadways, as opposed to temporarily closing one lane on Graham Hill Road and routing traffic using flaggers, signs, and striping as needed. It was found that with a closure length of ½-mile, excessive queueing or delays would not occur and that alternative routes would result in greater delays than temporary road closures of that length.

Additional community impacts also related to project construction include noise that residents along the alignment may experience. Construction noise was analyzed in detail in the EIR and standard construction practices and mitigation measures are incorporated into the project to reduce noise impacts during construction where feasible. The City will identify a construction noise coordinator to respond to all community complaints during the project and respond accordingly. Further, the City's typical communication channels, such as regular project updates on the project webpage and/or specific outreach with interested residents, will be used to ensure there is clear and consistent communication throughout the duration of construction.

The Water Commission has received information on the purpose, need, cost, scope, schedule, and environmental impacts of the project and has found the analyses to be sound. With the Water Commission's comprehensive review of the project and support of staff's recommendation, the next step would be for City Council to certify the Final EIR and approve the project. It is therefore recommended that City Council, by resolution, (1) certify the Final EIR for the Newell Creek Pipeline Improvement Project and (2) adopt Findings of Fact, Statement of Overriding Considerations, and a Mitigation Monitoring and Reporting Program and approve the Newell Creek Pipeline Improvement Project.

FISCAL IMPACT: Certification of the Final EIR 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. The cost of the project is being incorporated into the Department's financial planning efforts.

Prepared By:	**Submitted By:**	**Approved By:**
Danny DeBrito	Rosemary Menard	Matt Huffaker
Associate Planner	Water Director	City Manager

ATTACHMENTS:

1. Figure 3-5A from the Final EIR
2. Figure 3-5B from the Final EIR

3. Resolution certifying the Final Environmental Impact Report for the Newell Creek Pipeline Improvement Project
4. Resolution adopting Findings of Fact, Statement of Overriding Considerations, and a Mitigation and Monitoring Reporting Program and approving the Newell Creek Pipeline Improvement Project
5. Draft and Final Environmental Impact Report (available for review at: https://www.cityofsantacruz.com/Home/Components/BusinessDirectory/BusinessDirectory/171/2089)

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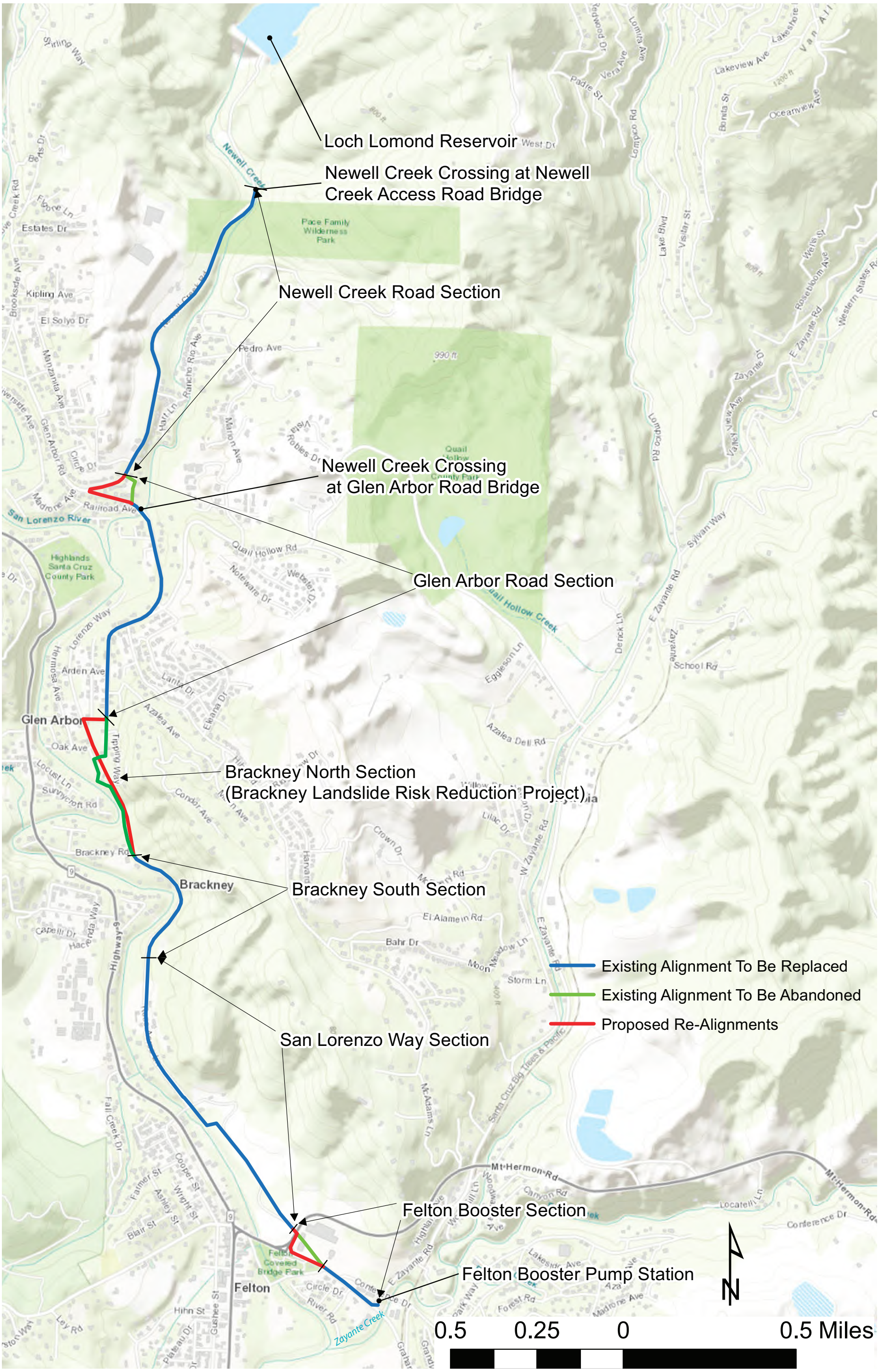
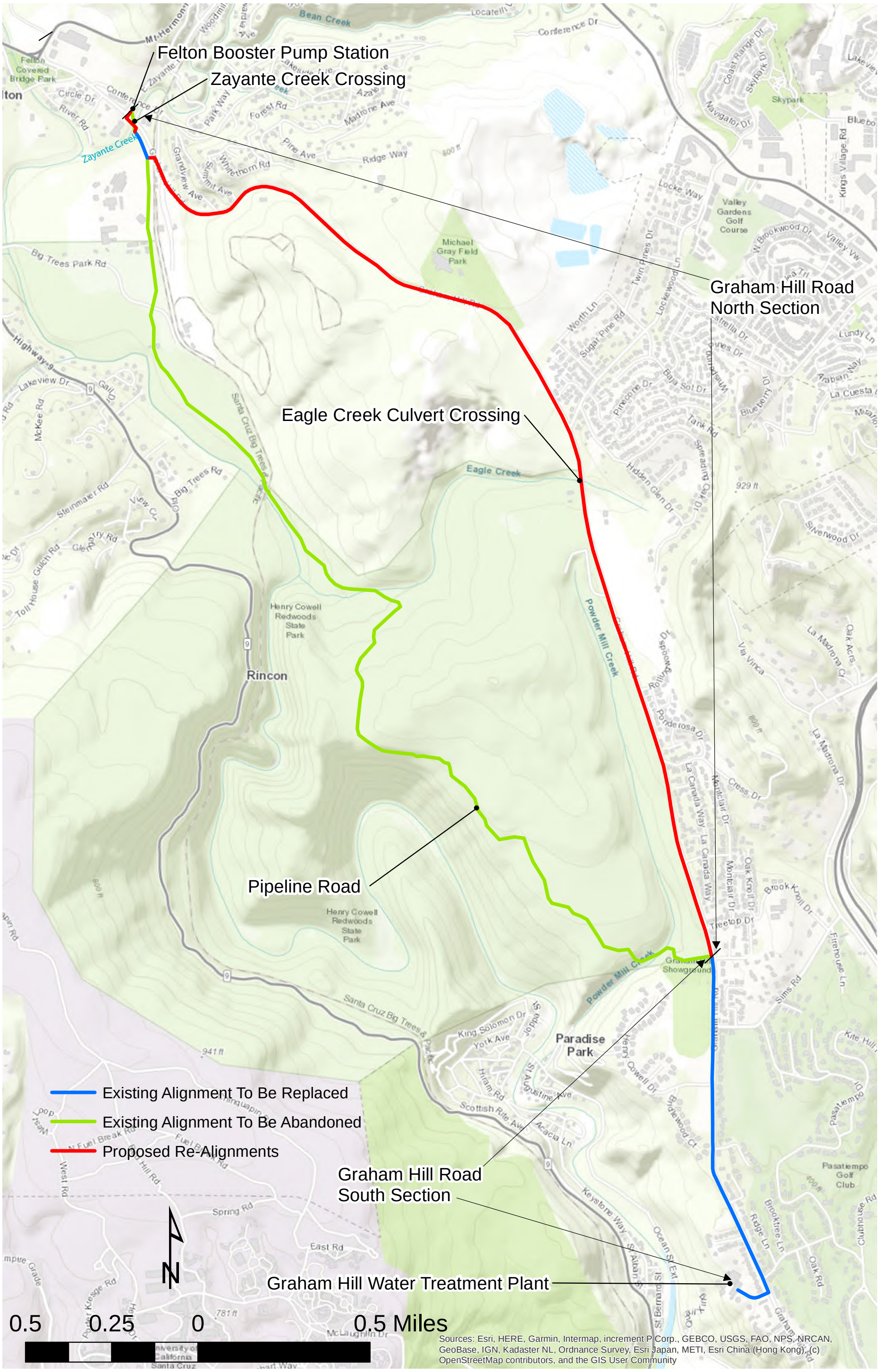


SOURCE: City of Santa Cruz Water Department 2020

FIGURE 3-5A

Proposed Newell Creek Pipeline Improvement Project Northern Segment



SOURCE: City of Santa Cruz Water Department 2020

FIGURE 3-5B

Proposed Newell Creek Pipeline Improvement Project Southern Segment

RESOLUTION NO. NS-xx,xxx

RESOLUTION OF THE CITY COUNCIL
OF THE CITY OF SANTA CRUZ CERTIFYING THE FINAL
ENVIRONMENTAL IMPACT REPORT FOR THE
NEWELL CREEK PIPELINE IMPROVEMENT PROJECT

WHEREAS, the City, as lead agency under the California Environmental Quality Act (Pub. Res. Code Section 21000 et seq.) and the State CEQA Guidelines (14 Cal. Code Regs. Section 15000 et seq.) (collectively "CEQA"), has completed the Final Environmental Impact Report ("Final EIR") [State Clearinghouse No. 2021010166] for the Newell Creek Pipeline Improvement Project (the "Proposed Project") in compliance with CEQA; and

WHEREAS, in accordance with Section 15082 of the CEQA Guidelines, the City released a Notice of Preparation ("NOP") for the Draft EIR for the Proposed Project on January 15, 2021 and received comments from one (1) public agency in response to the NOP, which is included in Appendix A of the Draft EIR and Final EIR; and

WHEREAS, one (1) EIR public scoping meeting was duly noticed and held on February 2, 2021 to solicit public and agency comments on the scope of issues to be addressed in the Draft EIR; and

WHEREAS, the Draft EIR was prepared and the City filed a Notice of Completion of the Draft EIR with the Governor's Office of Planning and Research State Clearinghouse on November 22, 2021, which commenced a 45-day state public agency review period commencing on November 22, 2021 and ending on January 5, 2022; and

WHEREAS, the City filed a Notice of Availability of the Draft EIR with the Santa Cruz County Clerk on November 22, 2021, which commenced a 45-day local public review period beginning on November 22, 2021 and ending on January 5, 2022; and

WHEREAS, the Notice of Availability of the Draft EIR was also posted on the City Water Department's website and City hall bulletin board, and the Draft EIR document was available for review at the Water Department's public counter, the Planning and Community Development Department, the City's website and at two (2) local libraries; and

WHEREAS, the City, in accordance with CEQA Guidelines Section 15088, considered and evaluated five (5) comment letters received on the Draft EIR from public agencies and subsequently prepared a comprehensive Final EIR, which contains the comment letters and written responses addressing all significant environmental issues in these comment letters; and

WHEREAS, the comprehensive Final EIR consists of the entire EIR document, responses to comments received on the Draft EIR, modifications made to the text of the Draft EIR that are also included in the Final EIR, appendices to the Final EIR, and all documents and resources referenced and incorporated by reference in the Final EIR; and

WHEREAS, on March 25, 2022, the City provided the Notice of Availability of the Final

EIR to commenting agencies, thereby satisfying the City's obligations under Public Resources Code section 21092.5, subdivision (a); and

WHEREAS, the Water Commission held a duly noticed and agendized public meeting on the Proposed Project and the Final EIR on April 4, 2022 and issued recommendations to the City Council; and

WHEREAS, the City Council considered the Final EIR at a duly noticed and agendized public meeting on May 10, 2022;

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Santa Cruz hereby finds and determines the following:

1. The foregoing recitals are true and correct and are included herein by reference as findings.

2. The City Council certifies that the Final EIR has been completed in compliance with CEQA, the State CEQA Guidelines, and local procedures adopted pursuant thereto.

3. The City Council hereby finds that the Final EIR reflects the independent judgment and analysis of the City, as required by Public Resources Code Section 21082.1.

4. The City Council has independently reviewed and analyzed the Final EIR and considered the information contained therein and all comments, written and oral, received prior to approving this resolution.

5. The City Council therefore hereby certifies the Final EIR for the Project.

PASSED AND ADOPTED this_____day of_____, 2022 by the following vote:

AYES:

NOES:

ABSENT:

DISQUALIFIED:

APPROVED: _____
Mayor

ATTEST: _____
City Clerk Administrator

RESOLUTION NO. NS-xx,xxx

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SANTA CRUZ ADOPTING CEQA FINDINGS OF FACT; A MITIGATION MONITORING AND REPORTING PROGRAM; AND A STATEMENT OF OVERRIDING CONSIDERATIONS FOR THE NEWELL CREEK PIPELINE IMPROVEMENT PROJECT AND APPROVING THE PROJECT

WHEREAS, the City Council of the City of Santa Cruz ("City Council"), by adoption of Resolution No. _____, has certified the Final Environmental Impact Report ("Final EIR") for the Newell Creek Pipeline Improvement Project ("Project"); and

WHEREAS, prior to approving any proposed project for which an EIR has identified significant environmental effects, the City Council, as the decision-making body, is required pursuant to Public Resources Code section 21081, subdivision (a), and CEQA Guidelines section 15091, to adopt findings demonstrating that the City Council has considered and adopted all feasible mitigation measures or feasible project alternatives that can substantially lessen or avoid any significant project-related environmental effects; and

WHEREAS, pursuant to these provisions, proposed CEQA findings have been prepared for the Project, which are attached hereto as Exhibit A regarding the significant environmental effects of the Proposed Project, proposed mitigation measures identified in the Final EIR, and the feasibility of alternatives set forth in the Final EIR; and

WHEREAS, pursuant to those provisions, a Statement of Overriding Considerations, which is included within Exhibit A attached hereto, has been prepared for the Project setting forth the benefits that the City Council concludes outweigh the significant and unavoidable environmental effects of the Project, therefore justifying approval of the Project despite such effects; and

WHEREAS, the City Council is required by Public Resources Code section 21081.6, subdivision (a), to adopt a mitigation monitoring and reporting program to ensure that the mitigation measures adopted by the City Council are carried out; and

WHEREAS, pursuant to this provision, staff has prepared the Mitigation Monitoring and Reporting Program, attached hereto as Exhibit B and incorporated by reference herein, that incorporates the mitigation measures identified in the Final EIR; and

WHEREAS, the City Council has independently reviewed and considered the CEQA Findings and Statement of Overriding Considerations, and Mitigation Monitoring and Reporting Program required for approval of the Project; and

WHEREAS, the City Council finds that the Project is necessary for the City to reliably serve the residents, other customers and members of the public who use water from the City's water system.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Santa Cruz

hereby finds and determines the following:

1. The foregoing recitals are true and correct and are included herein by reference as findings.

2. The City Council has considered the Final EIR, all information provided by City staff and consultants pertaining to the Project, and all other pertinent documents relating to the Project.

3. The City Council finds, pursuant to Public Resources Code section 21081 and CEQA Guidelines section 15091, that the proposed mitigation measures as set forth in Exhibits A and B are feasible, and will therefore become binding on the City when the Project is approved. The City Council further finds that, for the reasons set forth in Exhibit A, none of the alternatives to the Project, as set forth in the Final EIR, are feasible. The City Council hereby adopts the CEQA Findings of Fact and Statement of Overriding Considerations attached hereto as Exhibit A and incorporated herein by reference, pursuant to Public Resources Code section 21081 and CEQA Guidelines section 15093.

4. The City Council adopts, pursuant to Public Resources Code section 21081.6 and CEQA Guidelines section 15097, the Mitigation Monitoring and Reporting Program attached hereto as Exhibit B and incorporated herein by reference. The City Council further determines that the Mitigation Monitoring and Reporting Program is designed to ensure that, during implementation of the Project, all other responsible parties implement the components of the Project and comply with the mitigation measures identified in the Mitigation Monitoring and Reporting Program.

5. The City Council approves the Project, as described in Resolution No. NS-xx,xxx, and therefore authorizes and directs the City to take the actions necessary to construct and implement the Newell Creek Pipeline Improvement Project as described in the Final EIR's Project Description.

6. The City Council directs City Staff to file with the County Clerk and the Office of Planning and Research in Sacramento 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.

PASSED AND ADOPTED this_____day of_____2022 by the following vote:

AYES:

NOES:

ABSENT:

DISQUALIFIED:

APPROVED: _____
Mayor

ATTEST: _____
City Clerk Administrator

List of Exhibits (Incorporated by Reference):

Exhibit A Findings and Statement of Overriding Considerations

Exhibit B Mitigation Monitoring and Reporting Program

Exhibit A: Findings of Fact and Statement of Overriding Considerations

FINDINGS OF FACT AND STATEMENT OF OVERRIDING CONSIDERATIONS

City Council of the City of Santa Cruz

Newell Creek Pipeline Improvement Project Environmental Impact Report

State Clearinghouse Number 2021010166

MAY 10, 2022

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
CDFW	California Department of Fish and Wildlife
CEG	Certified Engineering Geologist
CEQA	California Environmental Quality Act
City	City of Santa Cruz
CNPS	California Native Plant Society
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
ESA	Federal Endangered Species Act
FBPS	Felton Booster Pump Station
GHG	greenhouse gas
GHWTP	Graham Hill Water Treatment Plant
HCP	Habitat Conservation Plan
HDD	horizontal directional drilling
NCP	Newell Creek Pipeline
NOP	Notice of Preparation
PPE	personal protective equipment
PRIMP	Paleontological Resources Impact Mitigation Program
Proposed Project	Newell Creek Pipeline Improvement Project
RGE	Registered Geotechnical Engineer
ROW	right-of-way
SVP	Society of Vertebrate Paleontology
USFWS	U.S. Fish and Wildlife Service
WEF	wildlife exclusion fencing

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1 Introduction

The City of Santa Cruz (City), as lead agency, prepared an environmental impact report (EIR) for the Newell Creek Pipeline (NCP) Improvement Project (Proposed Project). In its entirety, the EIR consists of the November 2021 Draft EIR (Draft EIR) and the March 2022 Final EIR (Final EIR). The EIR is a project-level EIR pursuant to Section 15161 of the CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.).

The underlying purpose of the Project is to: address identified deficiencies in existing pipeline conditions; improve long-term reliability of the City's water supply infrastructure between Loch Lomond Reservoir and the Graham Hill Water Treatment Plant (GHWTP) such that it can continue to function as an integral part of the City's overall water supply system; improve access to the NCP to facilitate inspection, maintenance, and repair of the pipeline system, while minimizing the potential for environmental and property damage impacts; site the NCP to consider constructability, optimize accessibility for maintenance, minimize the potential for future failures due to unstable terrain, and avoid risks (e.g., public safety, property damage) and impacts to adjacent uses associated with pipeline failures during the life of the pipeline; and implement NCP project segments that are cost-effective in terms of both construction and operation/maintenance costs.

Having been constructed in approximately 1960, the NCP is reaching the end of its reliable life and is experiencing increased frequency of breaks due to corrosion and land movement along portions of its alignment due to geological conditions. In addition to the age of the existing pipeline, development throughout Santa Cruz County over the past 60 years has created differing conditions along the pipeline alignment from its original installation, which has resulted in constraints to accessing the pipeline for maintenance and repair activities due to intervening private development. Various surface improvements were made as part of the pipeline installation (unpaved access roads, drainage crossings, appurtenant features), which have also experienced approximately 60 years of wear, including pipe corrosion, and are in need of replacement and/or rehabilitation. (Final EIR p. 3-11).

These findings, as well as the accompanying statement of overriding considerations in Section 9, have been prepared in accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) and its implementing guidelines, the CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.). Specifically, the findings are prepared pursuant to Public Resources Code Section 21081, subdivision (a), and CEQA Guidelines Section 15091, subdivision (a). The statement of overriding considerations has been prepared pursuant to Public Resources Code Section 21081, subdivision (b), and CEQA Guidelines Section 15093.

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2 Project Description

2.1 Project Location and Setting

The existing NCP is located in the Santa Cruz Mountains, primarily in the unincorporated San Lorenzo Valley area of Santa Cruz County, except for the portion of the NCP that extends onto the City's GHWTP property, which is located within the City of Santa Cruz, but is surrounded by unincorporated lands. Both the existing NCP and the Proposed Project extend approximately 9 miles between GHWTP on the south and Newell Creek Dam, a City facility that impounds Loch Lomond Reservoir, on the north. The project location and vicinity is shown in Figure 3-1 of the Final EIR.

The existing NCP and Proposed Project alignment are located within a primarily semi-rural area. The areas surrounding the existing NCP and Proposed Project are characterized by forested terrain with rural and semi-rural, low-density residential neighborhoods and limited commercial development, as well as areas of California State Parks land. Several streams are present in the general vicinity of the NCP, including San Lorenzo River, Zayante Creek, and Newell Creek. The existing NCP alignment and an overview of the Proposed Project alignment are shown on Figures 3-2 and 3-4, respectively, of the Final EIR.

2.2 Project Objectives

The objectives for the Proposed Project are as follows:

1. Address identified deficiencies in the NCP conditions in order to maintain full system functioning without interruption, in order to protect water supply reliability and service to the City's customers.
2. Improve long-term reliability of the City's water supply infrastructure between Loch Lomond Reservoir and the GHWTP such that it can continue to function as an integral part of the City's overall water supply system.
3. Improve access to the NCP to facilitate inspection, maintenance, and repair of the pipeline system, while minimizing the potential for environmental and property damage impacts (such as may occur in State Parks and other sensitive areas).
4. Site the NCP to consider constructability, optimize accessibility for maintenance, minimize the potential for future failures due to unstable terrain, and avoid risks (e.g., public safety, property damage) and impacts to adjacent uses associated with pipeline failures during the life of the pipeline.
5. Implement NCP project segments that are cost-effective in terms of both capital and operation/maintenance costs. (Final EIR p. 3-11).

2.3 Project Description

The Proposed Project consists of replacement of 8.75 miles of the existing NCP with a new 24-inch ductile iron or polyvinyl chloride (PVC) pipeline, except for one section that will be a 30-inch high-density polyethylene (HDPE) pipe. The pipeline generally would be installed within existing road pavement, road right-of-way (ROW), which includes road pavement and unpaved shoulders adjacent to the paved road, and/or existing or new City easements.

Additional easements would be acquired in some locations. In order to focus the environmental review on specific locations along the 8.75-mile pipeline, the alignment was separated into a northern segment and a southern segment; these segments were further delineated into specific sections as described below.

The proposed northern NCP segment from the Newell Creek Access Road Bridge to the Felton Booster Pump Station (FBPS) generally follows the existing NCP alignment. The proposed southern NCP segment from the FBPS to the GHWTP generally includes a new pipeline section along Graham Hill Road, except the existing pipe would be removed and replaced in the southern part of the pipeline alignment. Figure 3-4 of the Final EIR provides an overview of the proposed NCP alignment. Other components of the Proposed Project include cathodic protection and installation and/or replacement of minor appurtenances, such as air release valves and isolation valves. Key features of the Proposed Project are further described below. Pipe sections within the northern and southern segments are shown on Figures 3-5A and 3-5B of the Final EIR, respectively.

The proposed northern NCP segment from the Newell Creek Access Road Bridge just south of Newell Creek Dam to the Felton Booster Pump Station (FBPS) generally follows the existing NCP alignment. There are six distinct sections that comprise the northern segment, generally named for the roads in proximity to the pipe or other notable features nearby: Newell Creek Road, Glen Arbor Road, Brackney North, Brackney South, San Lorenzo Way, and Felton Booster Pump Station. The northern segment of the proposed NCP is described in detail in Section 3.5.2.1 of the Final EIR.

The proposed southern NCP segment from the FBPS to the GHWTP generally includes a new pipeline alignment along Graham Hill Road, except where it already exists in Graham Hill Road between the southern edge of Henry Cowell State Park and the GHWTP. The new pipe would replace the existing pipe that is located within Pipeline Road in Henry Cowell Redwoods State Park by relocating it into the new alignment. The southern segment is comprised of two sections, Graham Hill Road North and Graham Hill Road South. The southern segment of the proposed NCP is described in detail in Section 3.5.2.2 of the Final EIR.

Three pipeline sections have been prioritized for replacement in the near term: two sections along Graham Hill Road, comprising the entire southern segment that would replace the existing pipe through Henry Cowell Redwoods State Park, and the Brackney North section in the northern segment. The engineering design phase for these sections is underway. For the remainder of the pipeline alignment, a conservative project scenario is assumed, which includes installation of the new pipeline within specified construction disturbance corridors. (Final EIR p. 3-12.)

Once the new pipeline is installed and the interconnections are made, the existing NCP generally would be abandoned in place, and above-ground appurtenances would be removed. Generally, all above-ground features of the existing pipeline would be removed including air valves, nine hydrants at Henry Cowell Redwoods State Park, and vent pipes. Upon completion of construction, construction sites would be revegetated and/or restored in accordance with the City's Standard Construction Practices, and disturbed roadways would be repaved in accordance with County requirements. (Final EIR p. 3-12.)

Operation of the Project would entail continued implementation of pump start-up and valve operations at the FBPS when needed to pump water to/from Loch Lomond Reservoir and intermittent, periodic inspections and maintenance of air valves with access provided to the pipeline sections by existing roads and easements. (Final EIR p. 3-52.)

The Proposed Project is scheduled to be constructed in phases over multiple years from approximately late 2023 to 2032. The Brackney North, Graham Hill Road North, and Graham Hill Road South pipe sections would be

constructed first, with an estimated construction schedule of about 24 months for the Graham Hill Road sections and approximately 9 months for the Brackney North section, including pipeline installation, road repaving, abandonment of the existing NCP, and post-construction revegetation where needed. The remaining pipe sections in the northern segment are expected to be constructed by 2032. A summary of the planned construction schedule for each pipe section is presented in Table 3-4 of the Final EIR.

The majority of the Proposed Project would be installed using conventional (open cut) trenching methods, except in the Brackney North section, potentially the Brackney South section, and under the existing rail crossing in the Graham Hill Road North section, where trenchless methods would be used. The proposed Horizontal Directional Drilling (HDD) method at the Brackney North and potentially Brackney South sections are described in Sections 3.6.6.2 and 3.6.6.3 of the Final EIR. Proposed trenchless construction methods under the existing rail crossing are described in Section 3.6.6.5 of the Final EIR. Special construction techniques would be utilized at creek crossings as described in Section 3.6.6.4 of the Final EIR. As described in Section 3.5.1, the Proposed Project generally would be constructed within existing road pavement, road ROW and/or existing or new City easements, except acquisition of additional permanent and temporary construction easements and/or property would be required for the Brackney North section. In accordance with the City's Standard Construction Practices, described in Section 3.6.5 of the Final EIR, best management practices would be implemented where necessary to prevent erosion and water quality degradation and/or to protect sensitive natural and cultural resources.

Construction staging/laydown areas have been identified in areas that are already fairly level along the existing roadways, and temporary work areas will be established for the Brackney North section as explained in Section 3.6.2.2 in the Final EIR and shown on Figures 3-6, 3-7, 3-9, 3-10 and 3-19 in the Final EIR.

On average, approximately 12-18 construction workers are estimated to be working at the Project site each day for construction in the southern segment and 8-12 daily construction workers are estimated for pipe sections in the northern segment. Construction generally would occur during normal weekday work hours, between 8 AM and 5 PM and in accordance with County of Santa Cruz encroachment permit requirements. However, construction along Graham Hill Road would be limited to the hours of 8 AM to 4 PM with temporary lane closures restricted to 9 AM to 3 PM. The HDD installation method proposed for the pipe in the Brackney North section would require approximately one day of continuous 24-hour installation.

Construction of the Graham Hill Road North and South pipe sections will be phased to keep the existing NCP in service as long as possible while the new pipeline is constructed. Prior to taking the existing pipeline out of service, the new pipeline would be pressure tested and ready for service, should it need to be put into service for an emergency. The existing pipeline also would need to be taken out of service to construct the new pipeline in the southern part of the alignment, approximately from Henry Cowell Drive to the GHWTP where the new pipeline is in the same location as the existing pipeline. Construction will progress from Henry Cowell Drive south to the GHWTP to allow for an emergency connection between the new pipeline and existing pipeline if an immediate return to service is needed.

2.3.1 Standard Construction Practices

The City has adopted standard construction practices that would be implemented by the City or its contractors during construction activities associated with the Proposed Project. The Proposed Project includes 16 relevant standard construction practices, which are described in Section 3.6.6 of the Final EIR, to avoid or minimize erosion

and water quality degradation, protect sensitive species and habitat, reduce potential impacts to cultural resources, and reduce air quality and noise impacts. Upon completion of construction, construction sites would be revegetated and/or restored, and disturbed roadways where trenching occurred to install the pipeline would be repaved in accordance with County requirements. (Final EIR p. 3-19.)

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3 Environmental Review Process

In accordance with Section 15082 of the CEQA Guidelines, the City issued a Notice of Preparation (NOP) of a Draft EIR on January 15, 2021. Pursuant to CEQA Guidelines Sections 15023, subdivision (c), and 15087, subdivision (f), the State Clearinghouse in the Office of Planning and Research was responsible for distributing environmental documents to state agencies, departments, boards, and commissions for review and comment. The City followed required procedures with regard to distribution of the appropriate notices and environmental documents to the State Clearinghouse. The State Clearinghouse made that information available to interested agencies for review and comment. The NOP was circulated for a 30-day review period from January 15 to February 16, 2021. Additionally, one public scoping meeting regarding the scope of the analysis for the EIR was held on February 2, 2021 to receive comments regarding the scope of issues to be addressed in the EIR. The NOP and all comments received on the NOP are presented in Appendix A of the Final EIR and summarized in Chapter 2, Introduction, of the Final EIR. (Final EIR pp. 24 – 25.)

Pursuant to CEQA Guidelines Section 15128, the various possible effects of the Proposed Project that were determined to not be significant were disclosed but not analyzed in detail in the DEIR. These environmental resource topics included: aesthetics, agriculture and forest resources, land use, mineral resources, population and housing, public services, recreation, and utilities and service systems. The EIR includes an analysis of the following issue areas:

- Air Quality
- Biological Resources
- Cultural Resources and Tribal Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Transportation
- Wildfire
- CEQA-Required Sections: Significant Unavoidable Impacts, Significant Irreversible Changes, Growth Inducement, Cumulative Impacts, and Alternatives

On November 22, 2021, the City released the Draft EIR to public agencies, other interested parties, the general public, and the State Clearinghouse for a 45-day public review period that ended on January 5, 2022 (Final EIR p. 25). The Final EIR was published on March 25, 2022. The Water Commission considered the Final EIR and the Project at a public meeting held on April 4, 2022. The City Council considered the Project and Final EIR at a regularly scheduled public meeting on May 10, 2022.

4 Record of Proceedings

In accordance with Public Resources Code Section 21167.6, subdivision (e), the record of proceedings for the City's decision on the project includes the following documents:

- The NOP (January 2021), including related comments from agencies, organizations, and individuals, and all other public notices issued by the City in conjunction with the Project;
- The Draft EIR for the Project (November 2021) and all appendices, as well as all documents cited or referenced therein;
- The Final EIR for the Project (March 2022) and all appendices, as well as all documents cited or referenced therein;
- Any minutes and/or verbatim transcripts of all information sessions and public meetings held by the City in connection with the Project;
- Any documentary or other evidence submitted to the City at such information sessions and public meetings;
- Any and all resolutions adopted by the City Council regarding the Project, and all staff reports, analyses, and summaries related to the adoption of those resolutions;
- Matters of common knowledge to the City, including, but not limited to federal, state, and local laws and regulations;
- Any documents expressly cited in the Draft and Final EIRs and these findings, in addition to those cited above; and
- Any other materials required for the record of proceedings by Public Resources Code Section 21167.6, subdivision (e).

The City Council has relied on all of the documents listed above in reaching its decision on the Project, even if not every document was formally presented to the City Council or City Staff as part of the City files generated in connection with the Project.

The documents constituting the record of proceedings are available for review by responsible agencies and interested members by appointment at the City of Santa Cruz Water Department Engineering Counter, located at 212 Locust Street, Suite C, Santa Cruz, California 95060.

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5 Findings Required Under CEQA

Public Resources Code Section 21002 provides that "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects[.]" The same statute provides that the procedures required by CEQA "are intended to assist public agencies in systematically identifying both the significant effects of projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects." Section 21002 goes on to provide that "in the event [that] specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof."

The mandate and principles announced in Public Resources Code Section 21002 are implemented, in part, through the requirement that agencies must adopt findings before approving projects for which EIRs are required. For each significant environmental effect identified in an EIR for a project, the approving agency must adopt a written finding reaching one or more of three permissible conclusions. The first such finding is that changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR. The second permissible finding is that such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency. The third potential conclusion is that specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR. (CEQA Guidelines, § 15091, subd. (a).) Under CEQA, "feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, legal, and technological factors. The concept of "feasibility" also encompasses the question of whether a particular alternative or mitigation measure promotes the underlying goals and objectives of a project. (*Sequoyah Hills Homeowners Assn. v. City of Oakland* (1993) 23 Cal.App.4th 704, 715.) Moreover, "'feasibility' under CEQA encompasses 'desirability' to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, legal, and technological factors." (*City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 410, 417 (*City of Del Mar*); see also *Cal. Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 1001–1002.)

For purposes of these findings, the term "avoid" refers to the effectiveness of one or more mitigation measures to reduce an otherwise significant effect to a less-than-significant level. In contrast, the term "substantially lessen" refers to the effectiveness of such measure or measures to substantially reduce the severity of a significant effect, but not to reduce that effect to a less-than-significant level. CEQA requires the lead agency to adopt feasible mitigation measures or, in some instances, feasible alternatives, to substantially lessen or avoid significant environmental impacts that would otherwise occur.

With respect to a project for which significant impacts are not avoided or substantially lessened, a public agency, after adopting proper findings, may nevertheless approve the project if the agency first adopts a statement of overriding considerations setting forth the specific reasons that the agency found the project's benefits outweigh its unavoidable adverse environmental effects. One significant unavoidable environmental effect was identified for the Project: Impact NOI-2, Substantial Increase in Ambient Noise Levels in Excess of Standards, discussed in Section 4.10, Noise.

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6 Mitigation Monitoring and Reporting Program

A Mitigation Monitoring and Reporting Program has been prepared for the Project and is included in the Final EIR as Chapter 8. The Mitigation Monitoring and Reporting Program has been approved by the City Council by the same Resolution that adopts these findings. The City will use the Mitigation Monitoring and Reporting Program to track compliance with project mitigation measures. The Mitigation Monitoring and Reporting Program will remain available for public review during the compliance period.

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7 Environmental Effects and Mitigation Measures

The Final EIR identified significant environmental effects (or impacts) resulting from the implementation of the Project. Specifically, significant environmental effects were identified during the construction phase of the Project. Most of these construction effects can be avoided by the adoption of feasible mitigation measures or alternatives. Other construction effects specifically related to temporary construction noise associated with pipe installation, however, cannot be avoided by the adoption of feasible mitigation measures, and thus will be significant and unavoidable. While Alternative 1A would lessen the severity of the one identified significant unavoidable impact to a less-than-significant impact with mitigation, this alternative would result in increased severity of other identified significant impacts. Moreover, for reasons discussed in Section 8 below of these findings, none of the alternatives that avoid significant unavoidable impacts are feasible in the judgment of the City Council. In addition, for reasons set forth in Section 9 of this document, the City Council has determined that overriding economic, social, and other considerations outweigh these significant, unavoidable effects which would occur during construction of the Project.

The City's findings with respect to the project's significant effects and mitigation measures are set forth below for each significant impact. The following statement of findings does not attempt to describe the full analysis of each environmental impact contained in the EIR. Instead, it provides a summary description of each impact, describes the applicable mitigation measures identified in the Final EIR and adopted by the City, and states the City's findings on the significance of each impact after imposition of the adopted mitigation measures. Full explanations of these environmental findings and conclusions can be found in the Final EIR. These findings hereby incorporate those explanations by reference. In making these findings, the City Council ratifies, adopts, and incorporates into these findings the analysis and explanation in the Final EIR and ratifies, adopts, and incorporates in these findings the determinations and conclusions of the Final EIR relating to environmental impacts and mitigation measures.

7.3 Impacts Determined to be Less than Significant

The following impacts were evaluated in the EIR and determined to be below a level of significance due to the design, location, and scope of the Project and/or through adherence with existing laws, codes, and statutes. Based on the environmental analysis presented in the Final EIR and the comments received from the public on the Draft EIR, substantial evidence indicates that, even in the absence of mitigation, the Project would not have potentially significant impacts with respect to the environmental categories listed below. Support for the environmental impact conclusions listed below is provided throughout Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, of the Final EIR.

7.3.1 Impacts Not Found to be Significant

Issues related to aesthetics, agriculture and forestry, land use and planning, mineral resources, population and housing, public services, recreation, and utilities and service systems were found not to be significant.

7.3.2 Air Quality

Impact AIR-1: Criteria Pollutant Emissions. The Proposed Project would result in emissions of criteria pollutants, but would not exceed adopted thresholds of significance, violate any air quality standard or contribute substantially to

an existing or projected air quality violation. Therefore, the Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

Impact AIR-2: Exposure of Sensitive Receptors. The Proposed Project would not expose sensitive receptors to substantial pollutant concentrations.

Impact AIR-3: Result in Other Emissions (Odors) Adversely Affecting a Substantial Number of People. The Proposed Project would not result in other emissions that would adversely affect a substantial number of people.

Impact AIR-4: Cumulative Air Quality Impacts. The Proposed Project emissions, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to air quality, and the Proposed Project's contribution would not be cumulatively considerable.

7.3.3 Biological Resources

Impact BIO-4: Wildlife Movement. The Proposed Project would not substantially degrade the quality or interfere with the use of a wildlife corridor or migratory route, or otherwise impede wildlife movement or use of native wildlife nursery sites.

Impact BIO-5: Cumulative Biological Resources Impacts. The Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to biological resources.

7.3.4 Cultural Resources and Tribal Cultural Resources

Impact CUL-1: Historical (Built Environment Resources). Construction of the Proposed Project would not result in a substantial adverse change in the significance of a historical built environment resource.

Impact CUL-2: Archaeological Resources and Human Remains. Construction of Proposed Project would not cause a substantial adverse change in the significance of unique archaeological resources or historical resources of an archaeological nature, and/or disturb human remains.

Impact CUL-3: Tribal Cultural Resources. Tribal Cultural Resources. Construction of the Proposed Project would not cause a substantial adverse change in the significance of a tribal cultural resource.

Impact CUL-4: Cumulative Cultural Resource and Tribal Cultural Resource Impacts. Construction of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to cultural resources and tribal cultural resources.

7.3.5 Energy

Impact ENE-1: Result in Wasteful, Inefficient or Unnecessary Consumption of Energy Resources. The Proposed Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources.

Impact ENE-2: Conflict with an Applicable Renewable Energy or Energy Efficiency Plan. The Proposed Project would not result in conflicts with or otherwise obstruct a state or local plan for renewable energy or energy efficiency.

Impact ENE-3: Cumulative Energy Impacts. The Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to energy.

7.3.6 Geology and Soils

Impact GEO-1: Seismic Hazards. The Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death resulting from seismic ground shaking or seismic-related ground failure, including liquefaction.

Impact GEO-3: Expansive Soil. The Proposed Project would potentially be located on expansive soil, as defined by the 2019 California Building Code, but would not create substantial direct or indirect risks to life or property.

Impact GEO-5: Cumulative Geologic Hazards. The Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to geology and soils.

Impact GEO-6: Cumulative Paleontological Resources Impacts. The Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to paleontological resources.

7.3.7 Greenhouse Gas Emissions

Impact GHG-1: Greenhouse Gas Emissions. The Proposed Project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Impact GHG-2: Conflict with an Applicable Greenhouse Gas Reduction Plan. The Proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Impact GHG-3: Cumulative Greenhouse Gas Impacts. The Proposed Project, in combination with past, present, and reasonably foreseeable future development, would result in a significant cumulative impact related to greenhouse gas emissions, but the Proposed Project's contribution to this impact would not be cumulatively considerable.

7.3.8 Hazards and Hazardous Materials, and Wildfire

Impact HAZ-1: Routine Transport, Use, or Disposal of Hazardous Materials. The Proposed Project would require use and transportation of petroleum products and small quantities of hazardous materials but would not result in a significant hazard to the public or environment.

Impact HAZ-2: Reasonably Foreseeable Upset or Accident Conditions. The Proposed Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Impact HAZ-3: Hazardous Emissions Near Schools. The Proposed Project would handle hazardous materials, petroleum products, and associated waste within 0.25 mile of existing schools but would not result in a significant hazard to the occupants of those schools.

Impact HAZ-5: Cumulative Hazardous Materials Impacts. The Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to: 1) routine transport, use, disposal, or accidental release of hazardous materials, 2) hazardous emissions or hazardous materials use within 0.25 mile of an existing or proposed school, or 3) hazardous materials sites compiled pursuant to Government Code Section 65962.5.

7.3.9 Hydrology and Water Quality

Impact HYD-2: Alteration of Drainage Patterns. The Proposed Project would not 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: i) result in substantial erosion or siltation on or off site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site; iii) 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 iv) impede or redirect flood flows.

Impact HYD-3: Cumulative Water Quality Impacts. The Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to water quality or alteration of drainage patterns.

7.3.10 Noise

Impact NOI-1: Substantial Permanent Increase in Ambient Noise Levels. Operation of the Proposed Project would not result in generation of a substantial permanent increase in ambient noise levels.

Impact NOI-3: Groundborne Vibration. Construction of the Proposed Project would result in the potential generation of excessive groundborne vibration or groundborne noise levels.

Impact NOI-4: Cumulative Noise Impacts. Construction and operation of the Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to noise and vibration.

7.3.11 Transportation

Impact TRA-1: Conflict with Program, Plan, Ordinance, or Policy Addressing the Circulation System. Construction and operation of the Proposed Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Impact TRA-2: Vehicle Miles Traveled. Construction and operation of the Proposed Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b) or cause an increase in VMT which is greater than 15% below the regional average VMT.

Impact TRA-3: Emergency Access. Construction of the Proposed Project would not result in inadequate emergency access or impair implementation of or interfere with an emergency evacuation plan.

Impact TRA-4: Cumulative Transportation Impacts. The Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to transportation.

7.3.12 Wildfire

Impact WIL-1: Wildfire Hazards. The Proposed Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Impact WIL-2: Cumulative Wildfire Impacts. The Proposed Project, in combination with past, present, and reasonably foreseeable future development, would not result in a significant cumulative impact related to significant risk of loss, injury, or death involving wildland fires.

7.4 Significant Impacts That Can Be Mitigated to a Less-Than-Significant Level

The following summary describes impacts of the Project that, without mitigation, will result in significant adverse impacts. However, upon implementation of the mitigation measures provided in the EIR, these impacts will be reduced to less-than-significant levels.

7.4.1 Biological Resources

Potential Effects. Potentially significant effects were identified for the Project in the following categories for biological resources:

- **Impact BIO-1A: Special-Status Plant Species.** The Proposed Project could have a substantial adverse effect on special-status plant species during construction.
- **Impact BIO-1B: Special-Status Wildlife Species.** The Proposed Project could have a substantial adverse effect on special-status wildlife species during construction.
- **Impact BIO-2: Sensitive Vegetation Communities.** The Proposed Project could have a substantial adverse effect on sensitive vegetation communities and habitats during construction.
- **Impact BIO-3: Jurisdictional Aquatic Resources.** The Proposed Project would not have a substantial adverse effect on jurisdictional wetlands, but could have a substantial adverse effect on jurisdictional non-wetland waters during construction that would result in both temporary and permanent impacts.

Support for these environmental impact conclusions is fully discussed in Section 4.3, Biological Resources, of the Final EIR. (Final EIR pp. 4.3-34 – 4.3-46.)

Mitigation Measures. Consistent with CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts related to special-status species, sensitive vegetation communities, and jurisdictional non-wetland waters were developed for the Project and are listed below.

MM BIO-1 **Project Siting (Applicable to all Proposed Project sections).** The City shall protect the specific locations of any sensitive biological resources, including special-status plants, special-status wildlife, sensitive vegetation communities and habitat areas, and jurisdictional aquatic resources, that are outside of but adjacent to construction work areas to minimize disturbance to these resources. These locations shall be identified prior to construction and impacts to such resources will be avoided and minimized through placement of protective measures, such as fencing, staking and/or flagging to prevent equipment or workers from temporarily encroaching within these areas. Warning signs shall be posted on the temporary fencing to alert workers not to proceed beyond the fence, including the following language: "Notice: Sensitive Habitat Area. Do Not Enter." The specific locations of sensitive biological resources to be protected will be identified by a qualified biologist and protective measures will be installed prior to the commencement of construction.

Minimize ground disturbing activities that will occur outside existing developed areas and maintained road rights-of-way (ROW) to the maximum extent feasible to avoid and minimize impacts to special-status plants, special-status wildlife, sensitive vegetation communities, sensitive habitats, and aquatic resources.

MM BIO-2 **Special-Status Plant Surveys (Applicable to all Proposed Project sections).** To identify special-status plants or plant patches to be avoided under MM BIO-1, a qualified botanist shall survey Proposed Project work areas not covered in 2021 surveys in accordance with standard protocols (CNPS 2001, CDFW 2018, USFWS 2000) prior to construction. The botanist shall also revisit the 2021 botanical survey area to confirm the absence of special-status plants from any direct impact areas (e.g., staging areas, excavation footprints) included in final construction drawings (areas outside direct impact areas that were surveyed in 2021 would not need to be rechecked). The botanist or another qualified biologist with native plant identification training shall be present on site during the placement of protective fencing, staking, and/or flagging so that plants and their root zones are adequately protected from construction activities.

MM BIO-3 **Special-Status Plant Compensation.** If any special-status plant occurrences are found in future surveys and cannot be avoided, a plan focused on compensating for impacts to these species shall be developed by the City prior to construction and implemented. This plan shall be a component of the project's overall Habitat Mitigation and Monitoring Plan described in MM BIO-11 and include the following elements:

a. Description and quantification of special-status plant occurrences that would be impacted by the project;
b. Identification and evaluation of on- or off-site areas for preservation of existing special-status plant occurrences or propagation of new occurrences using seeds from impacted occurrences;
c. Analysis of appropriate and viable planting or propagation techniques, seed-collection techniques, and seeding rates for impacted species;
d. A description of specific performance standards, including a required replacement ratio and minimum success standard of 1:1 for impacted individuals or populations;
e. A monitoring and reporting program to ensure mitigation success; and
f. A description of adaptive management and associated remedial measures to be implemented in the event that performance standards are not achieved.

MM BIO-4 **Sandhills Special-Status Wildlife Protection and Compensation (Applicable to Proposed Project Newell Creek Road, Glen Arbor, Graham Hill Road North and Graham Hill Road South sections).** Direct temporary impacts to suitable Sandhills habitat for the Mount Hermon June beetle and/or Zayante band-winged grasshopper (and individuals) shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the federal Endangered Species Act (ESA) of 1973, as amended. Alternatively, the City may seek concurrence with USFWS that implementation of appropriate avoidance and minimization measures set forth in the existing O&M HCP and GHWTP HCP would ensure approved levels of incidental take are not exceeded due to project activities. These include six minimization measures (locate project activities on and adjacent to current development, delineate boundaries of the impact area, cover exposed soils, dust control, landscaping elements that degrade habitat, and time habitat management activities to avoid key times of the year) and three mitigation measures (protect Sandhills habitat at the City's property in Bonny Doon, purchase conservation credits at the Zayante Sandhills Conservation Bank, and revegetate the area of temporary habitat loss with native Sandhills species). Additionally, compensatory mitigation for the temporary loss of suitable habitat (and individuals) shall be provided at a minimum 1:1 ratio or at other ratios as determined through consultation with USFWS. The City has available acreage at its existing Bonny Doon mitigation site which provides high quality Mount Hermon June Beetle habitat, per the Low-Effect HCP issued for GHWTP activities; this site may be utilized to compensate for any temporary impacts to Mount Hermon June Beetle resulting from the Proposed Project. Once the take authorization has been provided for the Proposed Project, if necessary, relevant conservation measures shall be implemented.

MM BIO-5 **Mount Hermon June Beetle Protection (Applicable to Proposed Project Newell Creek Road, Glen Arbor, Graham Hill Road North and Graham Hill Road South sections).** To reduce potential impacts to Mount Hermon June Beetle, exposed soils disturbed in areas of Zayante soils shall be covered during the active breeding season (May 15 through August 15) between the hours of 7pm and 7am daily. All exposed soils shall be covered by tarps, plywood, erosion control fabric, or other suitable impervious material. This will prevent adult males from burrowing into the exposed soils and subsequently being injured or killed by soil disturbance.

MM BIO-6 **Conduct Special-Status Amphibian and Reptile Species Survey and Monitoring (Applicable to Proposed Project Newell Creek Road, Glen Arbor Road, and Graham Hill Road North sections).** A pre-construction survey for Santa Cruz black salamander, California giant salamander, and western pond turtle shall be conducted within 48 hours prior to the initiation of ground disturbance in suitable habitat for these species (i.e., damp upland areas near/adjacent to existing aquatic features associated with creeks, and the wetted portion of creeks). The survey area shall include all suitable habitat within work areas, plus a 50-foot buffer. Following the survey, the contractor, under the direction of a qualified biologist, shall install wildlife exclusion fencing (WEF) along the boundary of the work area containing suitable habitat to prevent special-status amphibians and reptiles from entering the work area. WEF must be trenched into the soil at least 4 inches in depth, with the soil compacted against both sides of the fence for its entire length, and must have intermittent exit points. Turn-arounds shall be installed at access points to direct amphibians and reptiles away from gaps in the fencing. A daily pre-construction sweep for wildlife within all staging and work areas shall be conducted and a qualified biologist shall inspect WEF at least weekly when work is conducted within suitable habitat.

If any individuals of Santa Cruz black salamander, California giant salamander or western pond turtle are observed during the pre-construction survey or construction, their location(s) shall be recorded and they should be allowed to move out of the area on their own. Alternatively, they shall be moved to the nearest appropriate habitat outside of the work area by a qualified biologist with applicable regulatory approvals to capture, handle, and translocate these species.

To avoid entrapment of special-status as well as common amphibian and reptiles during construction, any trenches or pits measuring 1 foot or greater in depth that must be left open at the end of a day's construction activities shall be either covered or encircled with WEF, or the end of any open walls shall be ramped at an approximate 2:1 slope to allow any wildlife that enters the excavation to escape. A qualified biologist may approve the use of an alternative method to prevent ingress or entrapment.

MM BIO-7 **Conduct San Francisco Dusky-Footed Woodrat Survey and Relocation (Applicable to Proposed Project Newell Creek Road, Brackney North, Brackney South, San Lorenzo Way, Felton Booster Pump Station, and Graham Hill Road North sections).** A pre-construction survey to locate woodrat middens shall be conducted by a qualified biologist no more than 14 days prior to the onset of construction activities. The survey area shall include all suitable habitat within the work areas, plus a 50-foot buffer. Woodrat middens found shall be photographed, mapped and flagged with high visibility flagging tape or fenced for avoidance. If middens are found and complete avoidance is not feasible, the following measures shall be implemented after obtaining approval from CDFW to avoid and reduce impacts on San Francisco dusky-footed woodrat:

a. A qualified biologist shall dismantle the nest by hand to allow for adult San Francisco dusky-footed woodrat individuals to escape (this work shall be conducted outside of the breeding season for this species which is April through June);

b. If young are observed during the dismantling process, the qualified biologist shall stop work for a minimum of 24 hours to allow the adult woodrats to relocate their young;

c. Once the nest is determined to be vacant, the dismantling process shall be completed and the nest materials shall be collected and moved to another suitable location nearby and outside of the construction footprint to allow for nest reconstruction; and

d. Where feasible, piles of cut vegetation and slash generated by project clearing and grubbing activities shall be left outside of, but near the work area, to provide refuge for woodrats that may become displaced by project activities.

MM BIO-8 **Conduct Preconstruction Nesting Bird Surveys (Applicable to Proposed Project Graham Hill Road North section, Brackney North section, and any section where tree or vegetation removal is proposed).** Vegetation removal activities shall be conducted outside the bird nesting season (February 1 through August 31) as much as possible to avoid direct impacts to nesting birds. For construction and vegetation removal activities occurring during the nesting season, an avian nesting survey of the work areas and contiguous habitat within 300 feet of all impact areas must be conducted for protected migratory birds and active nests. The avian nesting survey shall be performed by a qualified wildlife biologist within 14 days prior to the start of vegetation removal or construction activities. Once construction has started, if there is a break in activities that exceeds 14 days, then another avian nesting survey shall be conducted. If an active bird nest is found, the nest shall be flagged and mapped on the construction plans along with an appropriate no

disturbance buffer, which will be determined by the biologist based on the species' sensitivity to disturbance. The nest area shall be avoided until the nest is vacated and the juveniles have fledged. The no disturbance buffer shall be demarcated in the field with flagging and stakes or construction fencing as determined appropriate by the biologist.

MM BIO-9 **Conduct Preconstruction Roosting Bat Survey (Applicable to Proposed Project Newell Creek Road, Brackney North, Brackney South, San Lorenzo Way, Felton Booster Pump Station, and Graham Hill Road North sections).** To the extent practicable, tree removal should occur outside peak bat activity timeframes when young or overwintering bats may be present, which generally occurs from March through April and August through October, to ensure protection of potentially occurring bats and their roosts within work areas. Additionally, daily restrictions on the timing of any construction activities should be limited to daylight hours to reduce disturbance to roosting (and foraging) bat species. Additionally, a visual bat survey should be conducted within 30 days prior to the removal of any trees and commencement of construction activities. The survey should include a determination on whether any active bat roosts are present on or within 50 feet of the project work areas. If a non-breeding and non-wintering bat colony is found, the individuals shall be evicted under the direction of a qualified biologist to ensure their protection and avoid unnecessary harm. If a maternity colony or overwintering colony is found within the work areas, then the qualified biologist shall establish a suitable construction-free buffer around the location. The construction-free buffer shall remain in place until the qualified biologist determines that the nursery is no longer active.

MM BIO–10 **Biological Construction Monitoring (Applicable to all sections with off-pavement ground disturbance).** A qualified biologist shall monitor vegetation removal and initial ground disturbing construction activities for off-pavement work and conduct periodic monitoring inspections for all other construction activities. The monitor shall check any installed WEF (MM BIO-6) and buffers for any active nesting birds (MM BIO-7) encountered at least once a week, and if nesting birds are determined to be present, shall verify when the young have fledged before commencement of construction activities in proximity to the nest. The biologist shall have stop-work authority in the event that a protected species is found within the active construction footprint. During construction, the biological monitor shall keep a daily observation log and a photo log to describe monitoring activities, remedial actions, non-compliance, and other issues and actions taken. These logs shall be kept on-site or tracked in a digital database and made available for inspection by agency personnel.

MM BIO-11 **Sensitive Vegetation Communities Compensation (Applicable to Proposed Project Newell Creek Road, Glen Arbor Road, Graham Hill Road North, and Graham Hill Road South sections).** Direct temporary impacts to sensitive vegetation communities shall be mitigated via on-site rehabilitation or enhancement at a 1:1 mitigation ratio. All areas temporarily impacted shall be returned to conditions similar to those that existed prior to grading and/or ground-disturbing activities. It is anticipated that a one-time restoration effort at the completion of the project followed by monitoring and invasive weed removal for a minimum of 3 years would adequately compensate for the direct temporary impacts to these vegetation communities. If mitigation cannot be fully accomplished on site due to spacing constraints, the remaining compensatory mitigation shall be accomplished off site via rehabilitation, enhancement, and/or preservation of in-kind vegetation in the same

watershed. A Habitat Mitigation and Monitoring Plan shall be prepared and implemented to compensate for the loss of all sensitive vegetation communities (see below).

Rehabilitation and enhancement activities with Zayante soils will be revegetated with plants native to the Sandhills habitat (on Zayante soils), such as sticky monkeyflower (*Mimulus aurantiacus*), deer weed (*Lotus scoparius*), and silver bush lupine. These native plants will provide suitable habitat conditions for special-status species that might eventually colonize the temporarily impacted portion of the impact area. These revegetated areas will not include any landscape elements that degrade habitat for the special-status species, including mulch, bark, weed matting, rock, aggregate, or turf grass.

The Habitat Mitigation and Monitoring Plan shall detail the habitat restoration activities and shall specify the criteria and standards by which the revegetation and restoration actions will compensate for impacts of the Proposed Project on sensitive vegetation communities and shall at a minimum include discussion of the following:

a. The rehabilitation and enhancement objectives, type, and amount of revegetation to be implemented taking into account enhanced areas where non-native invasive vegetation is removed and replanting specifications that take into account natural regeneration of native species when applicable.
b. The specific methods to be employed for revegetation.
c. Success criteria and monitoring requirements to ensure vegetation community restoration success.
d. Remedial measures to be implemented in the event that performance standards are not achieved.

MM BIO-12 **Aquatic Resource Avoidance.** Future refinements to the Proposed Project shall avoid jurisdictional aquatic resources regulated by the U.S. Army Corps of Engineers, Regional Water Control Board, and California Department of Fish and Wildlife, to the maximum extent practicable. As described in MM BIO-1, where feasible and appropriate, all jurisdictional aquatic resources not directly affected by construction activities will be avoided and protected by establishing staking, flagging or fencing between the identified construction areas and aquatic resources to be avoided.

MM BIO-13 **Aquatic Resource Compensation**. For any unavoidable impacts to jurisdictional aquatic resources, the City shall ensure that there is no net loss of such resources. This shall be accomplished by providing compensatory mitigation at a minimum ratio of 1:1 for temporary impacts and 2:1 for permanent impacts, or at other ratios as determined through negotiations with the regulatory agencies. A project-specific mitigation plan shall be developed for submittal to the U.S. Army Corps of Engineers, Regional Water Control Board, and/or California Department of Fish and Wildlife, as appropriate, through their respective regulatory permitting processes, and implemented. The mitigation plan shall specify the criteria and standards by which the mitigation will compensate for impacts of the Proposed Project and include discussion of the following:

a. The mitigation objectives and type and amount of mitigation to be implemented;
b. The location of the proposed mitigation site(s) (within the San Lorenzo River watershed, if possible);

c. The methods to be employed for mitigation implementation (jurisdictional aquatic resource establishment, re-establishment, enhancement, and/or preservation);
d. Success criteria and a monitoring program to ensure mitigation success; and
e. Adaptive management and remedial measures in the event that performance standards are not achieved.

Finding. The City Council finds that the above mitigation measures are feasible, are adopted, and will reduce the potentially significant biological resources impacts of the Project to less-than-significant levels. Accordingly, the City Council finds that, pursuant to Public Resources Code Section 21081(a)(1) and CEQA Guidelines Section 15091(a)(1), changes or alterations have been required in, or incorporated into, the Project that avoid the potentially significant biological resources impacts of the Project identified in the EIR.

7.4.2 Geology and Soils

Potential Effects. Potentially significant effects were identified for the Project in the following categories for geology and soils:

- **Impact GEO-2: Unstable Geologic Unit or Soils.** The Proposed Project could potentially cause adverse effects involving landslides or be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Proposed Project, and potentially result in on- or off-site landslide, slope failure/instability, subsidence, or collapse.
- **Impact GEO-4: Paleontological Resources.** The Proposed Project could potentially directly or indirectly destroy a unique paleontological resource or site during construction. However, the Proposed Project would not directly or indirectly destroy a unique geological feature.

Support for these environmental impact conclusions is fully discussed in Section 4.6, Geology and Soils, of the Final EIR. (Final EIR pp. 4.6-30 – 4.6-34.)

Mitigation Measures. Consistent with CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts related to seismic hazards and paleontological resources were developed for the Project and are listed below.

MM GEO–1: **HDD Geologic Monitoring (Applicable to Brackney North section).** A California Certified Engineering Geologist (CEG) or Registered Geotechnical Engineer (RGE) shall monitor horizontal directional drilling (HDD) operations for potential ground subsidence or soil collapse along the HDD alignment. In the event that ground subsidence or soil collapse is observed, HDD operations shall cease pending completion of remedial measures. Remedial measures shall include adjustments to drilling operations to preclude additional ground failure, as well as remedial measures to repair the area of ground failure.

MM GEO–2: **HDD Inadvertent Fluid Return Plan (Applicable to Brackney North and Brackney South sections).** An inadvertent fluid return contingency plan shall be prepared and implemented, including measures for training, monitoring, worst-case scenario evaluation, equipment and materials, agency notification and prevention, containment, clean up, and disposal of released drilling mud. Site-specific contingency measures shall be developed for the proposed HDD alignment, taking into

consideration terrain, access, resource sensitivities, and proximity of suitable areas for staging inadvertent fluid return equipment. Preventative measures would include incorporation of recommendations by a professional engineer, based on geotechnical investigations, to determine the most appropriate drilling mud mixture and drilling pressures. Drilling pressures shall be closely monitored by a CEG or RGE such that those pressures do not exceed pressures required to penetrate the rock formation. Monitoring by a minimum of two monitors, which could include the CEG or RGE, shall occur throughout drilling operations to ensure swift response in the event of inadvertent fluid return. In the event of inadvertent fluid return and if containment becomes necessary, containment shall be accomplished through construction of temporary berms/dikes and use of silt fences, straw bales, absorbent pads, straw wattles, and plastic sheeting. Any required clean up shall be accomplished with plastic pails, shovels, portable pumps, and other equipment and materials identified in the contingency plan. The inadvertent fluid return contingency plan shall be submitted to the City for review and approval.

MM GEO–3: **Paleontological Resources Impact Mitigation Program and Paleontological Monitoring (Applicable to Newell Creek Road, Glen Arbor Road, Brackney North, Brackney South, and Graham Hill Road North sections).** Prior to commencement of any trenching activity on site, the City shall retain a qualified paleontologist per the Society of Vertebrate Paleontology (SVP) (2010) guidelines. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the Proposed Project. The PRIMP shall be consistent with the SVP (2010 or most current version) guidelines and outline requirements for preconstruction meeting attendance and worker environmental awareness training; paleontological monitoring as required based on geological mapping, construction plans, and/or geotechnical reports; procedures for adequate paleontological monitoring and discoveries treatment; paleontological methods (including sediment sampling for microinvertebrate and microvertebrate fossils); reporting; and collections management. The qualified paleontologist shall attend the preconstruction meeting and a qualified paleontological monitor shall be on site during all trenching and other significant ground-disturbing activities (including augering) in previously undisturbed, Lompico Sandstone, Monterey Formation, and Santa Margarita Sandstone deposits, as defined by the PRIMP. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery will be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor will allow grading to recommence in the area of the find.

Finding. The City Council finds that the above mitigation measures are feasible, are adopted, and will reduce the potentially significant geology and soils impacts of the Project to less-than-significant levels. Accordingly, the City Council finds that, pursuant to Public Resources Code Section 21081(a)(1) and CEQA Guidelines Section 15091(a)(1), changes or alterations have been required in, or incorporated into, the Project that avoid the potentially significant geology and soils impacts of the Project identified in the EIR.

7.4.3 Hazards and Hazardous Materials

Potential Effects. Potentially significant effects were identified for the Project in the following category for hazards and hazardous materials:

- **Impact HAZ-4: Hazardous Materials Sites.** The Proposed Project would be located adjacent to sites included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public or the environment.

Support for this environmental impact conclusion is fully discussed in Section 4.8, Hazards and Hazardous Materials, of the Final EIR. (Final EIR pp. 4.8-20 – 4.8-22.)

Mitigation Measures. Consistent with CEQA Guidelines Section 15126.4(a)(1), a feasible measure that can minimize significant adverse impacts related to hazardous materials was developed for the Project and is listed below.

MM HAZ-1: **Hazardous Materials Management.** Prior to initiation of Project construction, the City shall complete soil sampling within the proposed pipeline route, adjacent to the former Santa Cruz Lumber Yard site at 5843 Graham Hill Road, and in the Brackney Road and Rose Acres Lane neighborhoods, including the Brackney North and Brackney South pipeline sections. Soil samples shall be collected to a depth of 3 feet below ground surface and analyzed for California Administrative Manual (CAM) (i.e., California Title 22) metals.

In the event that Title 22 metals are detected at concentrations in excess of regulatory action levels, as determined by the California Department of Toxic Substances Control (DTSC) and/or Santa Cruz County Environmental Health Division, a Soil Management Plan shall be developed prior to construction that requires potential metals-impacted soils to be segregated and sampled to determine proper disposal options (i.e., hazardous versus nonhazardous landfill) or reuse (e.g., trench backfill). The City shall direct the contractor to consult with an industrial hygienist to determine the appropriate level of personal protective equipment (PPE), if any, that would be required for construction personnel during handling of potential metals-contaminated soil. The contractor shall implement the recommendations by the industrial hygienist to minimize potential exposure of construction personnel to metals concentrations in sediments during construction. All recommendations shall be completed in accordance with Occupational Safety and Health Administration (OSHA) Training Requirements (29 CFR 1910.132 and 1910.134, Subpart I – Personal Protective Equipment).

Finding. The City Council finds that the above mitigation measure is feasible, are adopted, and will reduce the potentially significant hazardous materials impact of the Project to a less-than-significant level. Accordingly, the City Council finds that, pursuant to Public Resources Code Section 21081(a)(1) and CEQA Guidelines Section 15091(a)(1), changes or alterations have been required in, or incorporated into, the Project that avoid the potentially significant hazardous materials impact of the Project identified in the EIR.

7.4.4 Hydrology and Water Quality

Potential Effects. Potentially significant effects were identified for the Project in the following category for hydrology and water quality:

- **Impact HYD-1: Surface Water Quality Standards and Waste Discharge Requirements.** Construction and operation of the Proposed Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality, except for potential inadvertent

release of drilling fluids in the Brackney North pipe section. In addition, the Proposed Project would not conflict with or obstruct implementation of a water quality control plan related to surface water.

Support for this environmental impact conclusion is fully discussed in Section 4.9, Hydrology and Water Quality of the Final EIR (Final EIR pp. 4.9-16 – 4.9-20).

Mitigation Measures. Consistent with CEQA Guidelines Section 15126.4(a)(1), a feasible measure that can minimize significant adverse impact related to surface water quality standards and waste discharge requirements was developed for the Project and is listed below.

MM GEO-2: **HDD Inadvertent Fluid Return Plan (Applicable to Brackney North and Brackney South sections).** An inadvertent fluid return contingency plan shall be prepared and implemented, including measures for training, monitoring, worst-case scenario evaluation, equipment and materials, agency notification and prevention, containment, clean up, and disposal of released drilling mud. Site-specific contingency measures shall be developed for the proposed HDD alignment, taking into consideration terrain, access, resource sensitivities, and proximity of suitable areas for staging inadvertent fluid return equipment. Preventative measures would include incorporation of recommendations by a professional engineer, based on geotechnical investigations, to determine the most appropriate drilling mud mixture and drilling pressures. Drilling pressures shall be closely monitored by a CEG or RGE such that those pressures do not exceed pressures required to penetrate the rock formation. Monitoring by a minimum of two monitors, which could include the CEG or RGE, shall occur throughout drilling operations to ensure swift response in the event of inadvertent fluid return. In the event of inadvertent fluid return and if containment becomes necessary, containment shall be accomplished through construction of temporary berms/dikes and use of silt fences, straw bales, absorbent pads, straw wattles, and plastic sheeting. Any required clean up shall be accomplished with plastic pails, shovels, portable pumps, and other equipment and materials identified in the contingency plan. The inadvertent fluid return contingency plan shall be submitted to the City for review and approval.

Finding. The City Council finds that the above mitigation measure is feasible, are adopted, and will reduce the potentially significant impact of the Project related to surface water quality standards and waste discharge requirements to a less-than-significant level. Accordingly, the City Council finds that, pursuant to Public Resources Code Section 21081(a)(1) and CEQA Guidelines Section 15091(a)(1), changes or alterations have been required in, or incorporated into, the Project that avoid the potentially significant surface water quality standards and waste discharge requirements impact of the Project identified in the EIR.

7.5 Significant Unavoidable Impacts

This section identifies the significant unavoidable impacts that require a statement of overriding considerations to be issued by the City Council, pursuant to Public Resources Code Section 21081, subdivision (b), and CEQA Guidelines Section 15093 if the Project is approved. Based on the analysis contained in the Final EIR, the following impact has been determined to be significant and unavoidable:

7.5.1 Noise

Potential Effects. Potentially significant effects were identified for the Project in the following category for noise:

- **Impact NOI-2: Substantial Increase in Ambient Noise Levels in Excess of Standards.** Construction of the Proposed Project would result in generation of a substantial temporary increase in ambient noise levels in the vicinity of some Proposed Project pipe sections in excess of applicable standards established in local general plans or noise ordinances.

Support for this environmental impact conclusion is fully discussed in Section 4.10, Noise, of the Final EIR. (Final EIR pp. 4.10-25 – 4.10-30). Significant and unavoidable noise impacts will result from limited nighttime construction (one 24-hour period for HDD pipeline pullback operations) for the Brackney North, and potentially Brackney South, pipeline sections.

Mitigation Measures. Implementation of MM NOI-1 identified in the EIR will reduce the impact on noise, but not to a less-than-significant level; therefore, the impact will remain significant and unavoidable.

MM NOI-1: **Construction Noise (Applies to all segments).** The Proposed Project shall implement the following measures related to construction noise:

- Restrict construction activities and use of equipment that have the potential to generate significant noise levels (e.g., use of concrete saw, mounted impact hammer, jackhammer, rock drill, etc.) to between the hours of 8:00 AM and 5:00 PM, unless specifically identified work outside these hours is authorized by the City's Water Director as necessary to allow for safe access to a construction site, safe construction operations or efficient construction progress, such as required by the HDD pullback operations for the Brackney North segment.
- Construction activities requiring operations continuing outside of the standard work hours of 8:00 AM and 5:00 PM (e.g., HDD operations for the Brackney North and Brackney South sections) shall locate noise generating equipment as far as possible from noise-sensitive receptors, and/or within an acoustically rated enclosure (meeting or exceeding Sound Transmission Class [STC] 27), shroud or temporary barrier as needed to limit the propagation of sound into the surrounding areas in excess of the 60 dBA nighttime (10:00 PM to 8:00 AM) criteria at the nearest sensitive receptor. Noisy construction equipment, such as aboveground conveyor systems, and impact tools will likely require location within such an acoustically rated enclosure, shroud or barrier to meet the above criteria. Impact tools, in particular, shall have the working area/impact area shrouded or shielded whenever possible, with intake and exhaust ports on power equipment muffled or suppressed.
- Use of temporary or portable, application-specific noise shrouds, barriers, enclosures, or other noise-reducing equipment or methods shall be required, if needed, to shield nearby noise-sensitive receptors from equipment and operations that have the potential to generate noise levels in excess of the 75 dBA daytime (8:00 a.m. to 10:00 p.m.) criteria, as measured at nearby sensitive receptors. This generally corresponds with a distance of 125 feet from construction activities to the nearest sensitive receptor, however site-specific factors will need to be taken into consideration, such as the specific construction

equipment mix, duration of exposure, and intervening structures or topography that may result in associated noise reductions below the acceptable daytime noise threshold.

- Portable and stationary site support equipment (e.g., generators, compressors, and cement mixers) shall be located as far as possible from nearby noise-sensitive receptors.
- Construction equipment and vehicles shall be fitted with efficient, well-maintained mufflers that reduce equipment noise emission levels at the project site. Internal-combustion-powered equipment shall be equipped with properly operating noise suppression devices (e.g., mufflers, silencers, wraps) that meet or exceed the manufacturer's specifications. Mufflers and noise suppressors shall be properly maintained and tuned to ensure proper fit, function, and minimization of noise.
- Construction equipment shall not be idled for extended periods of time (i.e., 5 minutes or longer) in the immediate vicinity of noise-sensitive receptors.

Finding. The City Council finds that the above mitigation measure is feasible, is adopted, and will substantially lessen, but not avoid, the significant noise impact of the Project. Accordingly, the City Council finds that, pursuant to Public Resources Code Section 21081(a)(1) and CEQA Guidelines Section 15091(a)(1), changes or alterations have been required in, or incorporated into, the Project that substantially lessen, but do not avoid the significant noise impact of the Project identified in the EIR. In other words, the significant impact of the Project related to construction noise cannot be mitigated to a less-than-significant level despite the imposition of MM NOI-1, which has been required or incorporated into the Project. However, this impact is temporary, and the effects of this impact will only be present during construction activities associated specifically with pipeline installation in the Brackney North segment and potentially Brackney South segment if HDD installation is also utilized there. The City hereby directs that this mitigation measure be adopted. Specific economic, legal, social, technological, or other considerations make infeasible any additional mitigation measures, or the project alternatives identified in the EIR that will avoid or reduce the significant impact related to construction noise to a less-than-significant level. See Section 8, Project Alternatives, of these findings and Section 9, Statement of Overriding Considerations, of this document for additional information.

8 Project Alternatives

8.1 Basis for Alternatives-Feasibility Analysis

As noted earlier, Public Resources Code Section 21002 provides that "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects[.]" Where a lead agency has determined that, even after the adoption of all feasible mitigation measures, a project as proposed will still cause one or more significant environmental effects that cannot be substantially lessened or avoided, the agency, prior to approving the project as mitigated, must first determine whether, with respect to such impacts, there remain any project alternatives that are both environmentally superior and feasible within the meaning of CEQA. Although an EIR must evaluate this range of *potentially* feasible alternatives, an agency decision-making body (here, the City Council) may ultimately conclude that a potentially feasible alternative is actually infeasible. (*Cal. Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 981, 999.) As explained earlier, grounds for such a conclusion might be the failure of an alternative to fully satisfy project objectives deemed to be important by decision-makers, or the fact that an alternative fails to promote policy objectives of concern to such decision-makers. (*Id.* at pp. 992, 1000–1003; see also *City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 410, 417 ["'feasibility' under CEQA encompasses 'desirability' to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, and technological factors"]; *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490, 1506-1509 [upholding CEQA findings rejecting alternatives in reliance on project objectives]; *Citizens for Open Government v. City of Lodi* (2012) 296 Cal.App.4th 296, 314-315 [court upholds agency action where alternative selected "entirely fulfill" a particular project objective and "would be 'substantially less effective' in meeting" the lead agency's "goals"]; and *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1165, 1166 (Bay-Delta) ["feasibility is strongly linked to achievement of each of the primary program objectives"; "a lead agency may structure its EIR alternative analysis around a reasonable definition of underlying purpose and need not study alternatives that cannot achieve that basic goal"].) Alternatives may also be determined to be economically infeasible and can be rejected on that ground. (*The Flanders Foundation v. City of Carmel-by-the-Sea* (2012) 202 Cal.App.4th 603, 621–623.) Thus, even if a project alternative will avoid or substantially lessen any of the significant environmental effects of a Project as mitigated, the decision-makers may reject the alternative as infeasible for such reasons.

Under CEQA Guidelines Section 15126.6, the alternatives to be discussed in detail in an EIR should be able to "feasibly attain most of the basic objectives of the project[.]" For this reason, the objectives described above in Section 2.2, Project Objectives, of these findings provided the framework for defining possible alternatives. Based on the objectives, the City developed three alternatives in addition to the No Project Alternative that were addressed in detail in the Final EIR.

Per CEQA Guidelines Section 15126.6 and the project's objectives, the following alternatives to the Project were identified:

- No Project Alternative – Required by CEQA
- Alternative 1A – Alternative Pipe Alignment: Quail Hollow Road in the northern segment
- Alternative 1B – Alternative Pipe Alignment: Mount Hermon Road in the southern segment
- Alternative 2 – Brackney North Pipe Section Alternative Construction Methods

The City Council finds that a good faith effort was made to evaluate a range of potentially feasible alternatives in the EIR that are reasonable alternatives to the Project and could feasibly obtain most of the basic objectives of the Project, even when the alternatives might impede the attainment of the Project's objectives and might be more costly.

8.1.1 No Project Alternative

Section 15126.6(e) of the CEQA Guidelines requires that an EIR evaluate a "no project" alternative, along with its impact. As stated in this section of the CEQA Guidelines, the purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the Project with the impacts of not approving the Project. CEQA Guidelines Section 15126.6(e) generally provides that "[t]he 'no project' analysis shall discuss the existing conditions at the time the notice of preparation is published, … as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." Section 15126(e)(3)(B) provides that, where, as here, a Project is something "other than a land use or regulatory plan," the "No Project" Alternative is "the circumstance under which the project does not proceed." "[W]here failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment." (CEQA Guidelines Section 15126.6[e][3][B]).

Under the No Project Alternative, the Proposed Project would not be constructed, and the existing NCP would remain in use. The City would continue to repair and/or replace pipeline sections as failures occurred or conditions worsened.

Environmental Effects. Under the No Project Alternative, the Project would not be implemented. Therefore, the potentially significant impacts associated with constructing and/or operating new or upgraded infrastructure facilities identified in this EIR would not occur, such as those related to biological resources (Impacts BIO-1A, BIO-1B, BIO-2, and BIO-3), slope stability hazards (Impact GEO-2), paleontological resources (Impact GEO-4), hazardous materials release (Impact HAZ-2), and inadvertent release of drilling fluids into the San Lorenzo River (Impact HYD-1). In particular, the significant unavoidable construction noise impact due to temporary increase in noise in excess of standards during pipeline installation in the Brackney North and South segments (Impact NOI-2) would not occur with the No Project Alternative.

However, the No Project Alternative likely would require future repairs to the existing NCP, especially along Pipeline Road in Henry Cowell Redwoods State Park. As indicated in the Final EIR in Section 6.3.3.2, the existing Pipeline Road alignment transverses numerous unstable and extreme slopes with a long history of failures that have threatened or compromised the integrity of the pipeline. While some slides were repaired with soldier pile walls, the roads and soldier walls are experiencing further damage which would require additional engineering controls to stabilize the area if this alignment were continued to be used. The Pipeline Road section has the highest recent break history primarily associated with corrosion, land movement, and clogged or undersized culverts, resulting in significant washout exposing the pipeline and limiting access to make repairs. In addition to affecting water supply reliability, pipe breaks can cause sediments to enter drainages and creeks, resulting in potential water quality impacts. In addition, the remote terrain along this section creates difficulty for City operations to access the alignment for operations and maintenance which is a high priority goal of the City for future reliability of the system. Furthermore, the narrow corridor also presents problems for construction equipment access.

In order to make this alignment a reliable and accessible route for the new pipeline, if it were to be repaired or replaced in the same location, significant improvements to the existing road would be required to allow installation of a new drainage system to reduce erosion damage to the pipeline that has been experienced in the past. Retaining walls would also be needed to stabilize many of the active slopes threatening the existing road and pipeline. These improvements could result in potential significant, temporary, construction-related impacts to special status species and sensitive habitat due to presence of Sandhills and Special Forest sensitive habitats, which could result in a more severe significant impact than would occur with the Project due to presence of these habitats throughout the Pipeline Road alignment.

Finding. The City Council rejects the No Project Alternative as infeasible, despite the fact that it would avoid the one significant and unavoidable effect of the Project (Impact NOI 2: Substantial Increase in Ambient Noise Levels in Excess of Standards), which involves temporary construction-related noise. Measured against the Project, the No Project Alternative represents an undesirable policy outcome that would not meet any of the identified project objectives. In particular, the No Project Alternative would not address deficiencies in the existing NCP (Objective #1), improve long-term reliability of the City's water infrastructure between Loch Lomond Reservoir and GHWTP (Objective #2), or improve access to the NCP to facilitate inspection, maintenance and repair (Objective #3). The No Project Alternative also would not meet project objectives related to siting the NCP to optimize accessibility and minimize the potential for future failures (Objective #4), and implementing NCP project segments that are cost-effective in terms of both capital and operation/maintenance costs (Objective #5). (Final EIR p. 6-17.) Furthermore, substantial improvements would be needed to the existing road and alignment to repair and/or replace segments of the pipeline in its existing location, which would result in potentially significant water quality and biological resource impacts similar to or greater than the proposed project due to these improvements occurring within known sensitive habitats.

8.1.2 Alternative 1A: Alternative Northern Segment Alignment-Quail Hollow Road

The Alternative 1A alignment in the northern segment of the Proposed Project would follow Quail Hollow Road from Glen Arbor Road to East Zayante Road and then follow East Zayante Road to the FBPS at Graham Hill Road for a total distance of approximately 5.7 miles. As with the Proposed Project, the Alternative 1A alignment would include the Newell Creek Road and Glen Arbor Road sections, which include the replacement of two existing crossings of Newell Creek. The Alternative 1A alignment would completely replace the Brackney North, Brackney South, San Lorenzo Way, and Felton Booster Pump Station sections and part of the Glen Arbor Road section that are part of the Proposed Project. The Proposed Project southern segment would remain the same under this alternative.

As with the Proposed Project, it is expected that the pipe would be installed in existing paved and unpaved roadways or ROW. It is expected that construction would consist of conventional open trench methods similar to what is planned for the Proposed Project, except in Brackney North and potentially Brackney South sections, where trenchless methods are planned for most of the Brackney North section and potentially for the Brackney South section. Other components would include installation of minor appurtenances, such as air release valves and isolation valves as with the Proposed Project. Once the new pipeline is installed and the interconnections are made, the existing NCP generally would be abandoned in place. As indicated above, Standard Construction Practices would be implemented as with the Proposed Project. Upon completion of construction, construction sites would be revegetated and/or restored, and disturbed roadways where trenching occurred to install the pipeline would be repaved in accordance with County requirements as with the Proposed Project.

The Alternative 1A alignment has a maximum elevation of approximately 655 feet above mean sea level (amsl), which would require an additional pump station due to the elevation gain required. It is estimated that approximately 5,000-10,000 square feet would be needed for a pump station, although a specific location, facility footprints, and equipment characteristics and sizing are not known at this time. Given typical pump stations in Santa Cruz County, these types of facilities are expected to be single-story buildings with outdoor paved areas surrounded by security fencing. They would also include security lighting that would be limited to low-wattage, shielded outdoor lighting, directed onto the site. (Final EIR p. 6-18.)

Environmental Effects. Under Alternative 1A, the pipeline is expected to be installed in the paved road, thus avoiding permanent impacts to sensitive habitat. However, construction could result in inadvertent impacts to special status plant and wildlife species associated with Sandhills habitat as well as potential temporary disturbance to sensitive sandhills habitat along both roads, requiring the same mitigation as with the Proposed Project. Potentially significant indirect impacts to sensitive riparian habitat at Newell Creek would remain the same as with the Proposed Project. While some seasonal wetlands would be avoided and impacts to jurisdictional wetlands could be lessened, the Alternative 1A route has at least 18 culverted stream crossings where jurisdictional wetlands may be present. Depending on the location and siting of a pump station, new significant impacts to special status species and sensitive habitat, particularly Sandhills habitat and species could occur with Alternative 1A. Therefore, Alternative 1A would not avoid or substantially lessen impacts to special status species, sensitive habitat or jurisdictional wetlands. (Final EIR p. 6-19.)

Alternative 1A would avoid impacts related to unstable geologic units or soils and water quality impacts related to potential inadvertent release of drilling fluids into the San Lorenzo River that would occur under the Proposed Project, because the pipeline would be installed in Quail Hollow Road instead of in the Brackney North and Brackney South sections where the identified impacts would occur. Construction under Alternative 1A would avoid sensitive geologic formations with potential paleontological resources in the Brackney North and Brackney South sections. However, most of the Quail Hollow Road area and part of the East Zayante Road area are located in the sensitive Santa Margarita formation, which covers more area in the northern segment than with the Proposed Project. Thus, Alternative 1A could potentially result in more significant impacts to paleontological resources than the Proposed Project as a larger area is in sensitive formations. Therefore, Alternative 1A would not avoid or substantially lessen potential significant impacts to paleontological resources, and could result in increased impacts. (Final EIR p. 6-19.)

Alternative 1A would substantially lessen the impact related to hazardous materials sites as the alignment along Quail Hollow Road and East Zayante Road is not located in proximity to any identified California Department of Toxic Substance Control hazardous sites or leaking underground storage tanks (LUST) sites. (Final EIR p. 6-20.)

Alternative 1A would eliminate the significant and unavoidable noise impact that would occur under the Proposed Project by installing the pipe in Quail Hollow Road and avoiding the Brackney North and Brackney South sections. However, construction would result in temporary construction-noise impacts to residents along Quail Hollow Road and East Zayante Road, requiring mitigation as with the Proposed Project. Thus, Alternative 1A would substantially lessen significant construction-related noise impacts. However, depending on the location and siting of the pump station, there could be new operational noise-related impacts associated with this facility. (Final EIR p. 6-20.)

Other less-than-significant impacts that would result from construction of the Proposed Project are expected to remain the same or be similar to the Proposed Project under Alternative 1A.

Because the pipeline length is longer with Alternative 1A than the Proposed Project (approximately 8.0 miles compared to approximately 4.5 miles with the Proposed Project), Alternative 1A could result in increased construction days and associated construction-relation emissions, although it would not be expected to substantially increase daily emissions or exceed Monterey Bay Air Resources District criteria pollutant emission standards. Similarly, construction would result in increased greenhouse gas (GHG) emissions, but similar to criteria air pollutants, would not be expected to exceed thresholds; even with a doubling in GHG emissions, Alternative 1A would not exceed GHG emissions thresholds as amortized over a 30-year period.

The pump station needed with Alternative 1A would result in increased permanent energy demand, and indirect emissions due to operations and worker trips, although it would not be expected to result in inefficient or wasteful use of energy resources.

Given the narrow width of East Zayante Road, construction may result in temporary road closure, requiring detours for local traffic. However, closures would only occur during the work day and would be short term and temporary and would not significantly impact emergency access. Therefore, Alternative 1A would result in new traffic-related delays on roads in the northern segment that were not identified for the Proposed Project, but with required traffic controls and detours, would not preclude emergency access to the area. (Final EIR pp. 6-20 – 6-21.)

Overall, of the alternatives considered, Alternative 1A would eliminate or reduce the severity of more identified significant impacts than the other alternatives reviewed and also attain most of the project objectives. Therefore, Alternative 1A is considered the environmentally superior alternative of the CEQA alternatives reviewed. (Final EIR p. 6-29.)

Finding. The City Council rejects Alternative 1A as infeasible, despite the fact that it would avoid the significant and unavoidable effect of the Project (Impact NOI 2: Substantial Increase in Ambient Noise Levels in Excess of Standards), which involves temporary construction-related noise. Alternative 1A would meet most of the project objectives, including addressing deficiencies in the existing NCP (Objective #1), improving long-term reliability of the City's water infrastructure between Loch Lomond Reservoir and GHWTP (Objective #2), and improving access to the NCP to facilitate inspection, maintenance and repair (Objective #3). Alternative 1A would partially meet the project objective related to siting the NCP to optimize accessibility and minimize the potential for future failures (Objective #4) due to the increased length in the pipeline. However, Alternative 1A would not meet the project objective regarding cost-effectiveness (Objective #5) as additional operation/maintenance costs would be incurred with construction of a pump station needed to support a pipeline for the Alternative 1A alignment. Additionally, substantial construction and material costs would be incurred relative to the Proposed Project due to the increased length of pipeline (4.5 miles for the Proposed Project compared to 8.0 miles for Alternative 1A). Measured against the Project, Alternative 1A would result in increased construction and operational costs and increased energy demand associated with operation of a new pump station. The alternative would also result in more severe significant impacts related to biological resources (sensitive habitat and special status species) and paleontological resources due to the increased length of construction in sensitive habitat areas and geological formations that potentially contain paleontological resources. In addition, the City Council agrees with the EIR that Alternative 1A is the environmentally superior alternative of the CEQA alternatives considered, but in the City Council's policy judgment, the increased costs and impacts resulting from Alternative 1A outweigh the effect of the unavoidable significant impact related to construction noise that would occur for a limited nighttime duration in two potential locations. Therefore, the City Council finds that, when taking into account the economic and environmental factors considered for this alternative, Alternative 1A is not feasible.

8.1.3 Alternative 1B: Alternative Southern Segment Alignment-Mount Hermon Road

The Alternative 1B alignment in the southern segment would extend from the FBPS to Mount Hermon Road to La Madrona Drive to Sims Road and then west along Sims Road to Graham Hill Road, tying into the existing Graham Hill Road pipeline alignment, for a total distance of approximately 6.5 miles. It is expected that the pipeline would be installed in existing road pavement or ROW. This alignment would replace existing pipeline sections (Pipeline Road, Henry Cowell State Park, and San Lorenzo Lumber Yard), completely bypassing Henry Cowell Redwoods State Park. Alternative 1B also would realign 1,050 feet of the current Graham Hill Road alignment. The Proposed Project northern segment would remain the same under this alternative.

This alignment has a maximum elevation of 611 feet amsl, and would not require a new pump station, although there would be one crossing of Zayante Creek and one crossing of Bean Creek. The route starts on East Zayante Road from the FBPS and heads north until connecting with Mount Hermon Road; however East Zayante Road extends under Mount Hermon Road. This results in approximately 450 feet of elevated road over both East Zayante Road and Zayante Creek which would require an elevated bridge dedicated to the new NCP.

Except for the creek crossings, it is expected that the pipe would be installed in existing paved roadways or ROW as with the Proposed Project. It is expected that construction would consist of conventional open trench methods similar to what is planned for the Proposed Project. Other components would include installation of minor appurtenances, such as air release valves and isolation valves as with the Proposed Project. Once the new pipeline is installed and the interconnections are made, the existing NCP generally would be abandoned in place. As indicated above, Standard Construction Practices would be implemented as with the Proposed Project. Upon completion of construction, construction sites would be revegetated and/or restored, and disturbed roadways where trenching occurred to install the pipeline would be repaved in accordance with County requirements as with the Proposed Project. (Final EIR pp. 6-21 – 6-22.)

Environmental Effects. The pipeline is expected to be installed in the paved road, thus avoiding permanent impacts to sensitive habitat. However, construction could result in inadvertent impacts to special status plant and wildlife species associated with Sandhills habitat if present in the area during construction, as well as potential temporary disturbance to sensitive sandhills habitat along both roads, requiring the same mitigation as with the Proposed Project. The impact would be similar to the Proposed Project, and possibly greater because the Alternative 1B alignment is longer than the Proposed Project.

Potentially significant indirect impacts to sensitive riparian habitat at Newell Creek would remain the same as with the Proposed Project. A crossing over Zayante Creek would be required and given the steep terrain, a bridge to support the pipe would be considered. Additionally, a second crossing over or under Bean Creek would be required. Riparian vegetation could be temporarily removed or impacted during construction at these locations. Additionally, dewatering and stream bypass may also be required for the additional creek crossings, which could result in additional impacts to aquatic species. Thus, impacts to riparian habitat would remain unchanged or potentially be greater than those with the Proposed Project. While some seasonal wetlands would be avoided and impacts to jurisdictional wetlands could be lessened along Graham Hill Road, Alternative 1B also has the potential to temporarily disturb jurisdictional wetlands adjacent to culverted drainages and other intermittent drainages present along the roads in Alternative 1B. Therefore, Alternative 1B would not avoid or substantially lessen impacts to special status species, sensitive habitat or jurisdictional wetlands.

The Proposed Project would potentially cause adverse effects involving landslides or be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Proposed Project, and potentially result in on- or off-site landslide, slope failure/instability, subsidence, or collapse due to the proposed HDD method proposed at the Brackney North pipe section. This impact would remain the same as the Proposed Project as Alternative 1B does not change the alignment in the northern segment. The alignment would traverse an area of potential liquefaction in Scotts Valley that would require additional review.

The Proposed Project could potentially destroy a unique paleontological resource during construction. Construction under Alternative 1B would avoid sensitive geologic formations with potential paleontological resources in the Graham Hill Road section. Alternative 1B also would traverse sensitive Santa Margarita formation that has high sensitivity for paleontological resources. It appears that a similar area is covered in this formation as the Proposed Project. Therefore, potential impacts to paleontological resources under Alternative 1B would be similar to those with the Proposed Project, and Alternative 1B would not avoid or substantially lessen potential significant impacts to paleontological resources, and could result in increased impacts.

The Proposed Project would be located adjacent to sites included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public or the environment. There are several existing hazardous materials sites on Mount Hermon Road, as well as several LUST sites. Therefore, Alternative 1B would be potentially exposed to release of hazardous materials during construction as with the Proposed Project, requiring the same mitigation. Therefore, Alternative 1B would not avoid or substantially lessen potential significant impacts to paleontological resources, and could result in increased impacts.

Construction and operation of the Proposed Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality, except that the HDD construction method proposed in the Brackney North section could result in release of drilling fluids into San Lorenzo River without mitigation. This impact would remain the same as the Proposed Project with Alternative 1B since the alternative does not change the alignment in the northern segment. The less-than-significant impact related to drainage would remain similar to the Proposed Project as construction would not result in new impervious surfaces that would alter drainage patterns or indirectly cause erosion, flooding or exceed capacity of stormwater systems.

Construction of the Proposed Project would result in generation of a substantial temporary increase in ambient noise levels in the vicinity of some Proposed Project pipe sections in excess of applicable standards established in local general plans or noise ordinances, with a significant unavoidable impact in the Brackney North and potentially Brackney South sections due to limited nighttime construction. Alternative 1B would not eliminate the significant unavoidable impact at Brackney North section as Alternative 1B does not change the alignment in the northern segment. Construction would result in temporary construction-noise impacts to residents, particularly along Sims Road and a portion of La Madrona Drive. The majority of land uses along Mount Hermon Drive are non-residential without sensitive receptors. Therefore, Alternative 1B could result in some lessening of construction-related noise impacts because there are fewer sensitive receptors along the alignment than with the Proposed Project.

Other less-than-significant impacts that would result due to construction of the Proposed Project are expected to remain the same or be similar to those resulting from the Proposed Project.

Because the pipeline length is longer with Alternative 1B than the Proposed Project (approximately 6.5 miles compared to approximately 4.5 miles with the Proposed Project), Alternative 1B could result in increased

construction days and associated construction-relation emissions, although it would not be expected to substantially increase daily emissions or exceed Monterey Bay Air Resources District criteria pollutant emission standards, but would extend the number of construction days with emissions. Similarly, construction would result in increased GHG emissions, but similar to criteria air pollutants, would not be expected to exceed thresholds; even with a doubling in GHG emissions, Alternative 1B would not exceed GHG emissions thresholds as amortized over a 30-year period. Similarly, there could be some increase in constructed-related fuel use with the longer alignment and additional construction days. However, such consumption would not be expected to result in inefficient or wasteful use of energy resources, similar to the Proposed Project.

Mount Hermon is a 4-lane arterial road, but East Zayante, La Madrona, and Sims Roads are all 2-lane roads. Given the narrow width of East Zayante Road, construction may result in temporary road closure, requiring detours for local traffic (HDR 2019a). However, closures would only occur during the work day and would be short term and temporary and would not significantly impact emergency access. Adequate road width is available on the other roads so temporary, daily lane closures likely would occur but not complete road closures (HDR 2019a). Therefore, Alternative 1B would result in new traffic-related delays on roads in the northern segment that were not identified for the Proposed Project, but with required traffic controls and detours, would not preclude emergency access to the area. (Final EIR pp. 6-22 – 6-24.)

Finding. The City Council rejects Alternative 1B as infeasible. Alternative 1B would meet most of the project objectives, including addressing deficiencies in the existing NCP (Objective #1), improving long-term reliability of the City's water infrastructure between Loch Lomond Reservoir and GHWTP (Objective #2), and improving access to the NCP to facilitate inspection, maintenance and repair (Objective #3). Alternative 1B would partially meet the project objective related to siting the NCP to optimize accessibility and minimize the potential for future failures (Objective #4) due to the increased length in the pipeline. However, Alternative 1B would not meet the project objective regarding cost-effectiveness (Objective #5) as additional construction and material costs would be incurred relative to the Proposed Project due to the increased length of pipeline (4.5 miles for the Proposed Project compared to 6.5 miles for the Alternative 1B alignment. (Final EIR p. 6-24.) Furthermore, Alternative 1B would not avoid or substantially lessen the significant unavoidable impact related to temporary construction noise or significant impacts related to biological resources, geology/soils, water quality and hazardous materials and could result in more severe significant impacts related to geological hazards and hazardous materials than the proposed project.

In the City Council's policy judgment, this alternative is not feasible due to increased costs and potential impacts resulting from Alternative 1B. Therefore, the City Council finds that, when taking into account the economic and environmental factors considered for this alternative, Alternative 1B is not feasible.

8.1.4 Alternative 2: Brackney North Pipe Section Alternative Construction Methods

Several trenchless construction methods were evaluated by the City and its design engineers for construction in the Brackney North section. The microtunnel Alternative 2 consists of a near horizontal excavation originating from a launch or jacking shaft and ending at a reception or receiving shaft. Generally, microtunneling is a guided and steered trenchless construction method that does not require person entry. Microtunneling utilizes a highly automated and mechanized tunnel boring machine called a microtunnel boring machine (MTBM) which is advanced through the ground using the pipe jacking method. Other features of the method include earth and hydrostatic

counter balancing methods to control ground and groundwater inflow into the tunnel. Microtunneling can be performed in soil, rock, and mixed face conditions, has the ability to complete drive lengths up to 2,000 feet or more, and can navigate horizontal and/or vertical curves in the alignment. Diameters range from 16 inches to 16 feet, though the minimum diameter increases with tunnel length to ensure the machine has enough thrust force to complete the longer lengths. A variety of casing materials are available with the most typical being steel, reinforced concrete, and centrifugally cast glass-fiber-reinforced polymer mortar (CCFRPM) as manufactured by Hobas®.

Several microtunnel options were considered, all of which would be installed via a two-pass system. The first pass consists of an oversized initial support system installed behind the boring machine, shield, or excavator. The second pass consists of the installation of the carrier pipe within the completed tunnel. The space between the initial support and carrier pipe is typically backfilled with low strength material but can remain open if desired.

- Tunnel Option A - Tunnel launch would be from Brackney Road, and tunnel reception would be within the Caledonium Avenue public ROW. The alignment is approximately 1,400 feet long and consists of two 800-foot radius curves. The depths of shafts are approximately 50 feet at Brackney Road and 55 feet at Caledonium Avenue.
- Tunnel Option B - Tunnel launch would be the same as Tunnel Option A, and tunnel reception would be at the end of Fremont Avenue. The alignment is approximately 1,150 feet long and consists of one 800-foot radius curve. The depths of shafts are approximately 45 feet at Brackney Road and 35 feet at Fremont Avenue.
- Tunnel Option C – Tunnel launch would be the same as Tunnel Options A and B, but the tunnel reception would be within Schaaf Road. The alignment is approximately 1,700 feet long and consists of one 800-foot radius curve. The depths of shafts are approximately 35 feet at Brackney Road and 35 feet at Schaff Road (Mott MacDonald 2021). (Final EIR pp. 6-25 – 6-26.)

Environmental Effects. The northern end of the construction zone for the microtunneling construction method is within a sensitive Sandhills habitat area, and thus, potentially significant impacts related to special status species and temporary disturbance to Sandhills habitat and jurisdictional wetlands would remain the same as the Proposed Project in this location, thus requiring similar mitigation. Therefore, Alternative 2 would not avoid or substantially lessen impacts to special status species, sensitive habitat or jurisdictional wetlands.

The Proposed Project would potentially cause adverse effects involving landslides or be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Proposed Project, and potentially result in on- or off-site landslide, slope failure/instability, subsidence, or collapse due to the proposed Horizontal Directional Drilling (HDD) method proposed at the Brackney North pipe section. This impact would not be avoided or substantially lessened under Alternative 2 as the microtunneling construction method also could result in inadvertent release of fluids during construction.

All tunnel alignment alternatives cross the Ben Lomond fault, which is assumed to be inactive, and therefore, the risk of fault rupture is very low, same as the Proposed Project. However, conventional bored tunneling may encounter problems within the fractured rock near a fault zone including highly adverse groundwater and ground inflow. Mitigation of adverse ground and groundwater conditions usually entails pre-excavation ground treatment (i.e., grouting or dewatering), pressurized face tunneling such as microtunneling, or a combination of the two. As long as the tunnel alignment is located fully within rock, the risk of triggering a landslide during construction should be low. The tunnel should be located deep enough to reduce the risk of encountering low-points in the soil/rock profile which could lead to ground loss.

The Proposed Project could potentially directly or indirectly destroy a unique paleontological resource or site during construction. Construction under Alternative 2 would not avoid or substantially reduce impacts to sensitive geologic formations with potential paleontological resources as this alternative includes the same work area as the Proposed Project. It is noted that only a small portion of the pipe section at the southern end is within a paleontologically sensitive (Monterey Formation) area.

The Proposed Project would be located adjacent to sites included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, could create a significant hazard to the public or the environment. However, the Brackney North section is not located in proximity to identified hazardous materials sites, and no changes are made to other sections of the Proposed Project under Alternative 2. Therefore, Alternative 2 would not avoid or substantially lessen impacts related to hazardous materials sites.

Construction and operation of the Proposed Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality, except that the HDD construction method proposed in the Brackney North section could result in release of drilling fluids into San Lorenzo River without mitigation. This impact would not be avoided or substantially lessened under Alternative 2 as the alternative microtunneling construction method has the same potential for inadvertent release of fluids as the Proposed Project.

Construction of the Proposed Project would result in generation of a substantial temporary increase in ambient noise levels in the vicinity of some Proposed Project pipe sections in excess of applicable standards established in local general plans or noise ordinances, with a significant unavoidable impact in the Brackney North and potentially Brackney South sections due to limited nighttime construction. For microtunneling, the primary sources of noise are the slurry separation plant and generator that could result in significant noise impacts, and depending on the selected method, construction of the shafts can cause noise and vibrations. Rock excavation for the shafts could require impact-type excavation methods, such as hoe-rams, however blasting is not anticipated based on potential rock types and geophysics results. Tunneling can also cause vibrations at the surface though the tunnel alternatives are considered deep enough to mitigate these impacts. Therefore, Alternative 2 would not avoid or substantially lessen noise impacts associated with the HDD construction method of the Proposed Project, and could potentially result in temporary increased vibration levels during construction.

Other less-than-significant impacts that would result due to construction of the Proposed Project are expected to remain the same under Alternative 2 related to cultural resources and wildfire impacts. No recorded cultural resources were identified in the Brackney North area as part of the project archaeological investigation. Because the microtunneling method would result in a similar construction duration period as the Proposed Project, less-than-significant impacts related to air quality, energy, GHG emissions, and transportation are expected to be the same or similar to the Proposed Project. (Final EIR pp. 6-26 – 6-28.)

Finding. The City Council rejects Alternative 2 as infeasible. Alternative 2 would meet most of the project objectives, including addressing deficiencies in the existing NCP (Objective #1), improving long-term reliability of the City's water infrastructure between Loch Lomond Reservoir and GHWTP (Objective #2), improving access to the NCP to facilitate inspection, maintenance and repair (Objective #3), and siting the NCP to optimize accessibility and minimize the potential for future failures (Objective #4). However, Alternative 2 would not fully meet the project objective to regarding cost-effectiveness (Objective #5) as the microtunneling alternative is estimated to cost approximately $14-18 million dollars, which is about three times the cost of the Proposed Project. Furthermore, Alternative 2 would not avoid or substantially lessen the significant unavoidable impact related to temporary

construction noise or significant impacts related to biological resources, geology/soils, water quality and hazardous materials. In the City Council's policy judgment, this alternative is not feasible due to increased costs and potential impacts resulting from Alternative 2. Therefore, the City Council finds that, when taking into account the economic and environmental factors considered for this alternative, Alternative 2 is not feasible.

9 Statement of Overriding Considerations

As set forth in the preceding sections, the Santa Cruz City Council's approval of the Project will result in significant and adverse environmental effects that cannot be avoided even with the adoption of all feasible mitigation measures; and there are no feasible project alternatives that would mitigate or substantially lessen all of these impacts. Despite the occurrence of these effects, however, the City Council, in accordance with CEQA Guidelines Section 15093, chooses to approve the Project because, in the Council's considered judgment, the economic, social, environmental, and other benefits that the Project will produce will render the significant effects acceptable.

9.1 Significant and Unavoidable Impacts

As described above in Section 7.5, Significant Unavoidable Impacts, of these findings, the Project will result in the following potentially significant and unavoidable impacts associated with temporary construction noise impacts during pipeline installation in the Brackney North and South segments, even with the implementation of all feasible mitigation measures:

- **Impact NOI-2: Substantial Increase in Ambient Noise Levels in Excess of Standards.** Construction of the Proposed Project would result in generation of a substantial temporary increase in ambient noise levels in the vicinity of some Proposed Project pipe sections in excess of applicable standards established in local general plans or noise ordinances.

Notably, this impact is temporary, and the effects of this impact will only be present during a portion of the construction activities associated specifically with pipeline installation in the Brackney North and South segments. All other potentially significant effects can be rendered less than significant through the adoption of feasible mitigation measures.

9.2 Overriding Considerations

In the City Council's judgment, the Project and its benefits outweigh its unavoidable significant effects due to temporary construction-related noise. The following statement identifies the specific reasons why, in the City Council's judgment, the benefits of the project as approved outweigh these unavoidable significant effects. Any one of these reasons is sufficient to justify approval of the Project. Thus, even if a court were to conclude that not every reason is supported by substantial evidence, the City Council would stand by its determination that each individual reason is sufficient. The substantial evidence supporting the various benefits can be found in the preceding findings.

1. **The Project will address identified deficiencies in the existing NCP in order to maintain full functioning without interruption in order to protect water supply reliability and service to the City's customers.**

   The Newell Creek Pipeline is a critical water transmission facility which connects the City's only surface water storage facility at Loch Lomond Reservoir to the Graham Hill Water Treatment Plant. This facility is reaching the end of its useful life and repair of this facility is essential to ensure resiliency of the overall water system in the future in the face of prolonged droughts or other system outages that could affect the City's other water

sources. Further, the Newell Creek Pipeline has a nexus with other planned future capital improvement efforts throughout the water system, and a reliable conveyance pipeline is necessary for their successful implementation.

2. **The Project will reduce the need for ongoing pipeline repairs in areas with limited accessibility, sensitive environmental resources, and private property conflicts.**

   Replacement of the existing aging pipeline with the Proposed Project will result in overall improvement to the condition of the Newell Creek Pipeline, which is currently deteriorating and subject to breaks. The Proposed Project's relocation of some pipe segments will provide improved accessibility for maintenance and repairs compared to what currently exists for some segments, while avoiding sensitive habitat areas and areas of steep slopes that are prone to landslides. Implementation of the Proposed Project will reduce the need for costly and time-intensive repairs of the pipeline in areas with difficult accessibility, in addition to reducing ongoing environmental impacts that may occur from erosion, leaks, or associated repairs. Further, the Proposed Project would make minor relocations to the existing alignment to take the pipeline out of private property and into the public right-of-way, where feasible, which would reduce potential private property damage and/or conflicts.

3. **The Project will help implement the City's General Plan 2030 objectives and policies regarding the City's water system.**

   The Project will upgrade aging infrastructure and help maintain and improve the integrity of the City's water system as set forth in the City's General Plan 2030 Goal CC3 for a safe, reliable and adequate water supply. In doing so, the Project would help achieve Policy CC3.4.3, optimize storage, transmission, and distribution capacities and efficiencies, and Policy CC3.4.4, evaluate and improve the water system so as to minimize water outages due to emergencies and disasters.

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Exhibit B: Mitigation Monitoring and Reporting Program

8 Mitigation Monitoring and Reporting Program

Section 15097 of the California Environmental Quality Act (CEQA) Guidelines requires that, whenever a public agency approves a project based on a mitigated negative declaration or an environmental impact report (EIR), the public agency shall establish a mitigation monitoring or reporting program to ensure that all adopted mitigation measures are implemented.

This mitigation monitoring and reporting program (MMRP) for the Newell Creek Pipeline (NCP) Improvement Project (Proposed Project) has been prepared pursuant to CEQA (Public Resources Code Section 21000 et seq.) and the CEQA Guidelines (14 California Code of Regulations, Chapter 3, Sections 15074 and 15097). This is a new chapter that was not included in the Draft EIR. This MMRP is intended to be used by City of Santa Cruz Water Department (SCWD) staff, its contractors and mitigation monitoring personnel to facilitate compliance with mitigation measures during project construction and implementation. Mitigation measures identified in this MMRP were developed during the preparation of the EIR prepared for the Proposed Project. A master copy of this MMRP shall be kept in the office of the SCWD and shall be available for viewing upon request.

The EIR for the Proposed Project presents a detailed set of mitigation measures required for implementation. As noted above, the intent of the MMRP is to facilitate the effective implementation and enforcement of all adopted mitigation measures. The MMRP includes all mitigation measures identified in the EIR and, for each measure, the party responsible for implementation and implementation timing (see Table 8-1). The MMRP also includes the City's standard construction practices, which are described in Chapter 3, Project Description, and would be implemented by the City and its contractors during project operations and construction activities.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
MITIGATION MEASURES IDENTIFIED IN THE ENVIRONMENTAL IMPACT REPORT		
Biological Resources		
MM BIO-1: Project Siting (Applicable to all Proposed Project sections). The City shall protect the specific locations of any sensitive biological resources, including special-status plants, special-status wildlife, sensitive vegetation communities and habitat areas, and jurisdictional aquatic resources, that are outside of but adjacent to construction work areas to minimize disturbance to these resources. These locations shall be identified prior to construction and impacts to such resources will be avoided and minimized through placement of protective measures, such as fencing, staking and/or flagging to prevent equipment or workers from temporarily encroaching within these areas. Warning signs shall be posted on the temporary fencing to alert workers not to proceed beyond the fence, including the following language: "Notice: Sensitive Habitat Area. Do Not Enter." The specific locations of sensitive biological resources to be protected will be identified by a qualified biologist and protective measures will be installed prior to the commencement of construction. Minimize ground disturbing activities that will occur outside existing developed areas and maintained road rights-of-way (ROW) to the maximum extent feasible to avoid and minimize impacts to special-status plants, special-status wildlife, sensitive vegetation communities, sensitive habitats, and aquatic resources.	City responsible for hiring a qualified biologist to identify locations of sensitive biological resources that are outside of but adjacent to construction work areas. City responsible for inclusion of measure in construction specifications and contracts and periodic inspection. Contractor responsible for implementation in coordination with biologist.	Qualified biologist to identifysensitive locations: Prior to construction. Include measure in construction specifications and contracts: Prior to construction. Limit construction activities to designated areas: Prior to and during construction. Periodic inspections: During construction.
MM BIO-2: Special-Status Plant Surveys (Applicable to all Proposed Project sections). To identify special-status plants or plant patches to be avoided under MM BIO-1, a qualified botanist shall survey Proposed Project work areas not covered in 2021 surveys in accordance with standard protocols (CNPS 2001, CDFW 2018, USFWS 2000) prior to construction. The botanist shall also revisit the 2021 botanical survey area to confirm the absence of special-status plants from any direct impact areas (e.g., staging areas, excavation footprints) included in final construction drawings (areas outside direct impact areas that were surveyed in 2021 would not need to be rechecked). The botanist or another qualified biologist with native plant identification training shall be present on site during the placement of protective fencing, staking, and/or flagging so that plants and their root zones are adequately protected from construction activities.	City responsible for hiring qualified botanist/biologist to conduct surveys and be present on site during placement of protective measures.	Conduct focused plant survey: Prior to construction and during appropriate bloom period. Botanist/biologist monitoring: During placement of protective measures.
MM BIO-3: Special-Status Plant Compensation. If any special-status plant occurrences are found in future surveys and cannot be avoided, a plan focused on compensating for impacts to these species shall be developed by the City prior to construction and implemented. This plan shall be a component of the project's overall Habitat Mitigation and Monitoring Plan described in MM BIO-11 and include the following elements: a. Description and quantification of special-status plant occurrences that would be impacted by the project; b. Identification and evaluation of on- or off-site areas for preservation of existing special-status plant occurrences or propagation of new occurrences using seeds from impacted occurrences;	City responsible for hiring qualified botanist/biologist to prepare plan according to specifications in measure. City responsible for implementation of the plan.	Plan preparation if special-status species are found: Prior to construction. Plan implementation: During or after construction per requirements of the plan.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
c. Analysis of appropriate and viable planting or propagation techniques, seed-collection techniques, and seeding rates for impacted species; d. A description of specific performance standards, including a required replacement ratio and minimum success standard of 1:1 for impacted individuals or populations; e. A monitoring and reporting program to ensure mitigation success; and f. A description of adaptive management and associated remedial measures to be implemented in the event that performance standards are not achieved.		
MM BIO-4: Sandhills Species Wildlife Protection and Compensation (Applicable to Proposed Project Newell Creek Road, Glen Arbor, Graham Hill Road North and Graham Hill Road South sections). Direct temporary impacts to suitable Sandhills habitat for the Mount Hermon June beetle and/or Zayante band-winged grasshopper (and individuals) shall be addressed through either the Section 7 or Section 10(a)(1)(B) process under the federal Endangered Species Act (ESA) of 1973, as amended. Alternatively, the City may seek concurrence with USFWS that implementation of appropriate avoidance and minimization measures set forth in the existing O&M HCP and GHWTP HCP would ensure approved levels of incidental take are not exceeded due to project activities. These include six minimization measures (locate project activities on and adjacent to current development, delineate boundaries of the impact area, cover exposed soils, dust control, landscaping elements that do not degrade habitat, and time habitat management activities to avoid key times of the year) and three mitigation measures (protect Sandhills habitat at the City's property in Bonny Doon, purchase conservation credits at the Zayante Sandhills Conservation Bank, and revegetate the area of temporary habitat loss with native Sandhills species). Additionally, compensatory mitigation for the temporary loss of suitable habitat (and individuals) shall be provided at a minimum 1:1 ratio or at other ratios as determined through consultation with USFWS. The City has available acreage at its existing Bonny Doon mitigation site which provides high quality Mount Hermon June Beetle habitat, per the Low-Effect HCP issued for GHWTP activities; this site may be utilized to compensate for any temporary impacts to Mount Hermon June Beetle resulting from the Proposed Project. Once the take authorization has been provided for the Proposed Project, if necessary, relevant conservation measures shall be implemented.	City responsible for consultation with USFWS and implementing any compensatory mitigation. Contractor responsible for implementing avoidance and minimization measures during construction	Consultation with USFWS: Prior to construction. Implementation of avoidance and minimization measures : During construction. Compensatory Mitigation: To be determined based on consultation with USFWS.
MM BIO-5: Mount Hermon June Beetle Protection (Applicable to Proposed Project Newell Creek Road, Glen Arbor, Graham Hill Road North and Graham Hill Road South sections). To reduce potential impacts to Mount Hermon June Beetle, exposed soils disturbed in areas of Zayante soils shall be covered during the active breeding season (May 15 through August 15) between the hours of 7pm and 7am daily. All exposed soils shall be covered by tarps, plywood, erosion control fabric, or other suitable impervious material. This will prevent adult males from burrowing into the exposed soils and subsequently being injured or killed by soil disturbance.	City responsible for inclusion of measures in construction specifications and contracts and periodic inspection. Contractor responsible for covering soils.	Include measure in construction specifications and contracts: Prior to construction. Cover soils: During construction. Periodic inspections: During construction.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
MM BIO-6: Conduct Special-Status Amphibian and Reptile Species Survey and Monitoring (Applicable to Proposed Project Newell Creek Road, Glen Arbor Road, and Graham Hill Road North sections). A pre-construction survey for Santa Cruz black salamander, California giant salamander, and western pond turtle shall be conducted within 48 hours prior to the initiation of ground disturbance in suitable habitat for these species (i.e., damp upland areas near/adjacent to existing aquatic features associated with creeks, and the wetted portion of creeks). The survey area shall include all suitable habitat within work areas, plus a 50-foot buffer. Following the survey, the contractor, under the direction of a qualified biologist, shall install wildlife exclusion fencing (WEF) along the boundary of the work area containing suitable habitat to prevent special-status amphibians and reptiles from entering the work area. WEF must be trenched into the soil at least 4 inches in depth, with the soil compacted against both sides of the fence for its entire length, and must have intermittent exit points. Turn-arounds shall be installed at access points to direct amphibians and reptiles away from gaps in the fencing. A daily pre-construction sweep for wildlife within all staging and work areas shall be conducted and a qualified biologist shall inspect WEF at least weekly when work is conducted within suitable habitat. If any individuals of Santa Cruz black salamander, California giant salamander or western pond turtle are observed during the pre-construction survey or construction, their location(s) shall be recorded and they should be allowed to move out of the area on their own. Alternatively, they shall be moved to the nearest appropriate habitat outside of the work area by a qualified biologist with applicable regulatory approvals to capture, handle, and translocate these species. To avoid entrapment of special-status as well as common amphibian and reptiles during construction, any trenches or pits measuring 1 foot or greater in depth that must be left open at the end of a day's construction activities shall be either covered or encircled with WEF, or the end of any open walls shall be ramped at an approximate 2:1 slope to allow any wildlife that enters the excavation to escape. A qualified biologist may approve the use of an alternative method to prevent ingress or entrapment.	City responsible for hiring qualified biologist to conduct surveys, monitoring, and inspections, and implement relocation, if needed. Contractor responsible for installing and maintaining WEF and ensuring trenches and pits are left in specified condition at the end of the workday.	Pre-construction survey: 48 hours prior to initiation of ground-disturbing activities in suitable habitat. Installation of fencing: Prior to construction. Weekly fence inspection and maintenance: During construction. Daily monitoring: During construction. Trench and pit condition: at the end of each construction workday.
MM BIO-7: Conduct San Francisco Dusky-Footed Woodrat Survey and Relocation (Applicable to Proposed Project Newell Creek Road, Brackney North, Brackney South, San Lorenzo Way, Felton Booster Pump Station, and Graham Hill Road North sections). A pre-construction survey to locate woodrat middens shall be conducted by a qualified biologist no more than 14 days prior to the onset of construction activities. The survey area shall include all suitable habitat within the work areas, plus a 50-foot buffer. Woodrat middens found shall be photographed, mapped and flagged with high visibility flagging tape or fenced for avoidance. If middens are found and complete avoidance is not feasible, the following measures shall be implemented after obtaining approval from CDFW to avoid and reduce impacts on San Francisco dusky-footed woodrat: a. A qualified biologist shall dismantle the nest by hand to allow for adult San Francisco dusky-footed woodrat individuals to escape (this work shall be conducted outside of the breeding season for this species which is April through June);	City responsible for hiring qualified biologist to conduct survey and implement relocation, if needed.	Pre-construction survey: Within 14 days prior to commencing construction activities in suitable habitat. Relocation, if needed: Prior to construction.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
b. If young are observed during the dismantling process, the qualified biologist shall stop work for a minimum of 24 hours to allow the adult woodrats to relocate their young; c. Once the nest is determined to be vacant, the dismantling process shall be completed and the nest materials shall be collected and moved to another suitable location nearby and outside of the construction footprint to allow for nest reconstruction; and d. Where feasible, piles of cut vegetation and slash generated by project clearing and grubbing activities shall be left outside of, but near the work area, to provide refuge for woodrats that may become displaced by project activities.		
MM BIO-8: Conduct Preconstruction Nesting Bird Surveys (Applicable to Proposed Project Graham Hill Road North, Brackney North section, and any section where tree or vegetation removal is proposed). Vegetation removal activities shall be conducted outside the bird nesting season (February 1 through August 31) as much as possible to avoid direct impacts to nesting birds. For construction and vegetation removal activities occurring during the nesting season, an avian nesting survey of the work areas and contiguous habitat within 300 feet of all impact areas must be conducted for protected migratory birds and active nests. The avian nesting survey shall be performed by a qualified wildlife biologist within 14 days prior to the start of vegetation removal or construction activities. Once construction has started, if there is a break in activities that exceeds 14 days, then another avian nesting survey shall be conducted. If an active bird nest is found, the nest shall be flagged and mapped on the construction plans along with an appropriate no disturbance buffer, which will be determined by the biologist based on the species' sensitivity to disturbance. The nest area shall be avoided until the nest is vacated and the juveniles have fledged. The no disturbance buffer shall be demarcated in the field with flagging and stakes or construction fencing as determined appropriate by the biologist.	City responsible for hiring qualified biologist to conduct surveys and identify appropriate no disturbance buffers, as needed.	Pre-construction survey: Within 14 days prior to initiation of construction activities or vegetation removal during the nesting season; subsequent survey(s) required if construction is paused for more than 14 days during the nesting season. Installation of fencing/flagging: Following any observed nesting activity within or adjacent to project work areas.
MM BIO-9: Conduct Preconstruction Roosting Bat Survey (Applicable to Proposed Project Newell Creek Road, Brackney North, Brackney South, San Lorenzo Way, Felton Booster Pump Station, and Graham Hill Road North sections). To the extent practicable, tree removal should occur outside peak bat activity timeframes when young or overwintering bats may be present, which generally occurs from March through April and August through October, to ensure protection of potentially occurring bats and their roosts within work areas. Additionally, daily restrictions on the timing of any construction activities should be limited to daylight hours to reduce disturbance to roosting (and foraging) bat species. Additionally, a visual bat survey should be conducted within 30 days prior to the removal of any trees and commencement of construction activities. The survey should include a determination on whether any active bat roosts are present on or within 50 feet of the project work areas. If a non-breeding and non-wintering bat colony is found, the individuals shall be evicted under the direction of a qualified biologist to ensure their protection and avoid unnecessary harm. If a maternity colony or overwintering colony is found within the work areas, then the qualified biologist shall establish a suitable construction-free buffer around the location. The	City responsible for hiring qualified biologist to conduct survey and identify no disturbance buffers or implement relocation, as needed	Pre-construction survey: Within 30 days prior to tree removal or initiation of construction activities. Installation of fencing/flagging: Following any observed maternity or overwintering colony of bats within or adjacent to project work areas.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
construction-free buffer shall remain in place until the qualified biologist determines that the nursery is no longer active.		
MM BIO-10: Biological Construction Monitoring (Applicable to all sections with off-pavement ground disturbance). A qualified biologist shall monitor vegetation removal and initial ground disturbing construction activities for off-pavement work and conduct periodic monitoring inspections for all other construction activities. The monitor shall check any installed WEF (MM BIO-6) and buffers for any active nesting birds (MM BIO-7) encountered at least once a week, and if nesting birds are determined to be present, shall verify when the young have fledged before commencement of construction activities in proximity to the nest. The biologist shall have stop-work authority in the event that a protected species is found within the active construction footprint. During construction, the biological monitor shall keep a daily observation log and a photo log to describe monitoring activities, remedial actions, non-compliance, and other issues and actions taken. These logs shall be kept on-site or tracked in a digital database and made available for inspection by agency personnel.	City responsible for hiring qualified biologist to conduct construction monitoring.	Monitoring: During construction.
MM BIO-11: Sensitive Vegetation Communities Compensation (Applicable to Proposed Project Newell Creek Road, Glen Arbor Road, Graham Hill Road North, and Graham Hill Road South sections). Direct temporary impacts to sensitive vegetation communities shall be mitigated via a combination of on-site and off-site measures. On-site measures shall include rehabilitation for areas temporarily impacted at a 1:1 mitigation ratio. All areas temporarily impacted shall be returned to conditions similar to those that existed prior to grading and/or ground-disturbing activities. It is anticipated that a one-time restoration effort at the completion of the project followed by monitoring and invasive weed removal for a minimum of 3 years would adequately compensate for the direct temporary impacts to these vegetation communities. If mitigation cannot be fully accomplished on site due to spacing constraints, the remaining compensatory mitigation shall be accomplished off site via rehabilitation, enhancement, and/or preservation of in-kind vegetation in the same watershed. A Habitat Mitigation and Monitoring Plan shall be prepared and implemented to compensate for the loss of all sensitive vegetation communities (see below). Rehabilitation and enhancement activities with Zayante soils will be revegetated with plants native to the Sandhills habitat (on Zayante soils), such as sticky monkeyflower (*Mimulus aurantiacus*), deer weed (*Lotus scoparius*), and silver bush lupine. These native plants will provide suitable habitat conditions for special-status species that might eventually colonize the temporarily impacted portion of the impact area. These revegetated areas will not include any landscape elements that degrade habitat for the special-status species, including mulch, bark, weed matting, rock, aggregate, or turf grass. The Habitat Mitigation and Monitoring Plan shall detail the habitat restoration activities and shall specify the criteria and standards by which the revegetation and restoration actions will compensate for impacts	City responsible for hiring qualified biologist to prepare plan and implement rehabilitation and monitoring in accordance with specifications in the plan.	Plan preparation: Prior to construction. Rehabilitation and plan implementation: After completion of construction activities. Monitoring/weed removal: At least 3 years following rehabilitation.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
of the Proposed Project on sensitive vegetation communities and shall at a minimum include discussion of the following: a. The rehabilitation and enhancement objectives, type, and amount of revegetation to be implemented taking into account enhanced areas where non-native invasive vegetation is removed and replanting specifications that take into account natural regeneration of native species when applicable. b. The specific methods to be employed for revegetation. c. Success criteria and monitoring requirements to ensure vegetation community restoration success. d. Remedial measures to be implemented in the event that performance standards are not achieved.		
MM BIO-12: Aquatic Resource Avoidance. Future refinements to the Proposed Project shall avoid jurisdictional aquatic resources regulated by the U.S. Army Corps of Engineers, Regional Water Control Board, and California Department of Fish and Wildlife, to the maximum extent practicable. As described in MM BIO-1, where feasible and appropriate, all jurisdictional aquatic resources not directly affected by construction activities will be avoided and protected by establishing staking, flagging or fencing between the identified construction areas and aquatic resources to be avoided.	City responsible for hiring qualified biologist to identify aquatic resources to be avoided and coordinate with contractor to establish protective fencing or flagging.	Establish fencing and flagging: Prior to construction.
MM BIO-13: Aquatic Resource Compensation. For any unavoidable impacts to jurisdictional aquatic resources, the City shall ensure that there is no net loss of such resources. This shall be accomplished by providing compensatory mitigation at a minimum ratio of 1:1 for temporary impacts and 2:1 for permanent impacts, or at other ratios as determined through negotiations with the regulatory agencies. A project-specific mitigation plan shall be developed for submittal to the U.S. Army Corps of Engineers, Regional Water Control Board, and/or California Department of Fish and Wildlife, as appropriate, through their respective regulatory permitting processes, and implemented. The mitigation plan shall specify the criteria and standards by which the mitigation will compensate for impacts of the Proposed Project and include discussion of the following: a. The mitigation objectives and type and amount of mitigation to be implemented; b. The location of the proposed mitigation site(s) (within the San Lorenzo River watershed, if possible); c. The methods to be employed for mitigation implementation (jurisdictional aquatic resource establishment, re-establishment, enhancement, and/or preservation); d. Success criteria and a monitoring program to ensure mitigation success; and e. Adaptive management and remedial measures in the event that performance standards are not achieved.	City responsible for hiring qualified biologist to prepare plan. City responsible for implementing plan.	Plan preparation: Prior to construction. Plan implementation: After completion of construction activities, or as specified in the plan.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
Geology and Soils		
MM GEO-1: HDD Geologic Monitoring (Applicable to Brackney North section). A California Certified Engineering Geologist (CEG) or Registered Geotechnical Engineer (RGE) shall monitor horizontal directional drilling (HDD) operations for potential ground subsidence or soil collapse along the HDD alignment. In the event that ground subsidence or soil collapse is observed, HDD operations shall cease pending completion of remedial measures. Remedial measures shall include adjustments to drilling operations to preclude additional ground failure, as well as remedial measures to repair the area of ground failure.	Contractor responsible for monitoring drilling operations. City responsible for providing a full-time inspector under the direction of a qualified geologist or engineer to oversee monitoring.	Drilling operations monitoring: During construction.
MM GEO-2: HDD Inadvertent Fluid Return Plan (Applicable to Brackney North and Brackney South sections). An inadvertent fluid return contingency plan shall be prepared and implemented, including measures for training, monitoring, worst-case scenario evaluation, equipment and materials, agency notification and prevention, containment, clean up, and disposal of released drilling mud. Site-specific contingency measures shall be developed for the proposed HDD alignment, taking into consideration terrain, access, resource sensitivities, and proximity of suitable areas for staging inadvertent fluid return equipment. Preventative measures would include incorporation of recommendations by a professionalengineer, based on geotechnical investigations, to determine the most appropriate drilling mud mixture and drilling pressures. Drilling pressures shall be closely monitored by a CEG or RGE such that those pressures do not exceed pressures required to penetrate the rock formation. Monitoring by a minimum of two monitors, which could include a CEG or RGE, shall occur throughout drilling operations to ensure swift response in the event of inadvertent fluid return. In the event of inadvertent fluid return and if containment becomes necessary, containment shall be accomplished through construction of temporary berms/dikes and use of silt fences, straw bales, absorbent pads, straw wattles, and plastic sheeting. Any required clean up shall be accomplished with plastic pails, shovels, portable pumps, and other equipment and materials identified in the contingency plan. The inadvertent fluid return contingency plan shall be submitted to the City for review and approval.	Contractor responsible for preparing a fluid return contingency plan under review of the contractor's engineer and conducting monitoring during drilling operations. City to provide oversight of monitoring during inspections under the direction of a qualified geologist or engineer.	Plan preparation: Prior to construction. Drilling operations monitoring: During construction.
MM GEO-3: Paleontological Resources Impact Mitigation Program and Paleontological Monitoring (Applicable to Newell Creek Road, Glen Arbor Road, Brackney North, Brackney South, and Graham Hill Road North sections). Prior to commencement of any trenching activity on site, the City shall retain a qualified paleontologist per the Society of Vertebrate Paleontology (SVP) (2010) guidelines. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the Proposed Project. The PRIMP shall be consistent with the SVP (2010 or most current version) guidelines and outline requirements for preconstruction meeting attendance and worker environmental awareness training; paleontological monitoring as required based on geological mapping, construction plans, and/or geotechnical reports; procedures for adequate paleontological monitoring and discoveries treatment; paleontological methods (including sediment sampling for microinvertebrate and microvertebrate fossils); reporting; and collections management. The qualified paleontologist shall attend the preconstruction	City responsible for hiring qualified paleontologist to prepare the PRIMP and conduct worker training and monitoring. City responsible for inclusion of paleontological resource protection measures in construction specifications and contracts.	Include measure in construction specifications and contracts: Prior to construction. PRIMP preparation and worker training: Prior to site grading or excavation. Monitoring: During grading and ground disturbance as specified in the PRIMP.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
meeting and a qualified paleontological monitor shall be on site during all trenching and other significant ground-disturbing activities (including augering) in previously undisturbed, Lompico Sandstone, Monterey Formation, and Santa Margarita Sandstone deposits, as defined by the PRIMP. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery will be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor will allow grading to recommence in the area of the find.		
Hazards and Hazardous Materials		
MM HAZ-1: Hazardous Materials Management. Prior to initiation of Project construction, the City shall complete soil sampling within the proposed pipeline route, adjacent to the former Santa Cruz Lumber Yard site at 5843 Graham Hill Road, and in the Brackney Road and Rose Acres Lane neighborhoods, including the Brackney North and Brackney South pipeline sections. Soil samples shall be collected to a depth of 3 feet below ground surface and analyzed for California Administrative Manual (CAM) (i.e., California Title 22) metals. In the event that Title 22 metals are detected at concentrations in excess of regulatory action levels, as determined by the California Department of Toxic Substances Control (DTSC) and/or Santa Cruz County Environmental Health Division, a Soil Management Plan shall be developed that requires potential metals-impacted soils to be segregated and sampled to determine proper disposal options (i.e., hazardous versus nonhazardous landfill) or reuse (e.g., trench backfill). The City shall direct the contractor to consult with an industrial hygienist to determine the appropriate level of personal protective equipment (PPE), if any, that would be required for construction personnel during handling of potential metals-contaminated soil. The contractor shall implement the recommendations by the industrial hygienist to minimize potential exposure of construction personnel to metals concentrations in sediments during construction. All recommendations shall be completed in accordance with Occupational Safety and Health Administration (OSHA) Training Requirements (29 CFR 1910.132 and 1910.134, Subpart I – Personal Protective Equipment).	City responsible for hiring consultant to conduct soil sampling. City responsible for hiring qualified consultant to prepare a Soil Management Plan , if needed. City responsible for inclusion of requirement to consult with an industrial hygienist in construction specifications and contracts. Contractor responsible for implementation of industrial hygienist's recommendations for PPE.	Soil sampling: Prior to construction. Plan preparation: Prior to construction. Consultation with industrial hygienist, if needed: Prior to construction. Implementation of PPE requirements: During construction.
Noise		
MM NOI-1: Construction Noise (Applies to all segments). The Proposed Project shall implement the following measures related to construction noise: • Restrict construction activities and use of equipment that have the potential to generate significant noise levels (e.g., use of concrete saw, mounted impact hammer, jackhammer, rock drill, etc.) to between the hours of 8:00 AM and 5:00 PM, unless specifically identified work outside these hours is authorized by the City's Water Director as necessary to allow for safe access to a construction site, safe construction operations or efficient construction progress, such as required by the HDD pullback operations for the Brackney North segment.	City responsible for inclusion of construction noise requirements in construction specifications and contracts. Contractor responsible for implementation during construction.	Include measures in construction specifications and contracts: Prior to construction. Implementation of measure: During construction.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
• Construction activities requiring operations continuing outside of the standard work hours of 8:00 AM and 5:00 PM (e.g., HDD operations for the Brackney North and Brackney South sections) shall locate noise generating equipment as far as possible from noise-sensitive receptors, and/or within an acoustically rated enclosure (meeting or exceeding Sound Transmission Class [STC] 27), shroud or temporary barrier as needed to limit the propagation of sound into the surrounding areas in excess of the 60 dBA nighttime (10:00 PM to 8:00 AM) criteria at the nearest sensitive receptor. Noisy construction equipment, such as aboveground conveyor systems, and impact tools will likely require location within such an acoustically rated enclosure, shroud or barrier to meet the above criteria. Impact tools, in particular, shall have the working area/impact area shrouded or shielded whenever possible, with intake and exhaust ports on power equipment muffled or suppressed. • Use of temporary or portable, application-specific noise shrouds, barriers,enclosures or other noise-reducing equipment or methods shall be required, if needed, to shield nearby noise-sensitive receptors from equipment and operations that have the potential to generate noise levels in excess of the 75 dBA daytime (8:00 a.m. to 10:00 p.m.) criteria, as measured at nearby sensitive receptors. This generally corresponds with a distance of 125 feet from construction activities to the nearest sensitive receptor, however site-specific factors will need to be taken into consideration, such as the specific construction equipment mix, duration of exposure, and intervening structures or topography that may result in associated noise reductions below the acceptable daytime noise threshold. • Portable and stationary site support equipment (e.g., generators, compressors, and cement mixers) shall be located as far as possible from nearby noise-sensitive receptors. • Construction equipment and vehicles shall be fitted with efficient, well-maintained mufflers that reduce equipment noise emission levels at the project site. Internal-combustion-powered equipment shall be equipped with properly operating noise suppression devices (e.g., mufflers, silencers, wraps) that meet or exceed the manufacturer's specifications. Mufflers and noise suppressors shall be properly maintained and tuned to ensure proper fit, function, and minimization of noise. • Construction equipment shall not be idled for extended periods of time (i.e., 5 minutes or longer) in the immediate vicinity of noise-sensitive receptors.		
STANDARD CONSTRUCTION PRACTICES INCLUDED IN THE PROPOSED PROJECT		
Erosion and Air Quality Control		
1. Implement erosion control best management practices for all construction activities occurring in or adjacent to jurisdictional aquatic resources (resources subject to permitting under the Clean Water Act, Clean Water Act, Porter-Cologne Water Quality Act and/or California Fish and Game Code). These measures may include, but are not limited to, (1) installation of silt fences, fiber or straw rolls, and/or bales along limits of work/construction areas and from the edge of the water course; (2) covering of	City responsible for inclusion of measure in construction specifications and contracts and periodic inspection.	Prior to construction, include measure in construction specifications and contracts.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
stockpiled spoils; (3) revegetation and physical stabilization of disturbed graded and staging areas; and (4) sediment control including fencing, dams, barriers, berms, traps, and associated basins.	Contractor responsible for implementation.	Implement measure during construction. Periodic inspection during construction to ensure no violations.
2. Provide stockpile containment and exposed soil stabilization structures (e.g., Visqueen plastic sheeting, fiber or straw rolls, gravel bags, and/or hydroseed).	City responsible for inclusion of measure in construction specifications and contracts and periodic inspection. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.
3. Provide runoff control devices (e.g., fiber or straw rolls, gravel bag barriers/chevrons) used during construction phases conducted during the rainy season. Following all rain events, runoff control devices shall be inspected for their performance and repaired immediately if they are found to be deficient.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.
4. Implement wind erosion (dust) controls, including the following: • Use a water truck; • Water active construction areas as necessary to control fugitive dust; • Hydro seed and/or apply non-toxic soil binders to exposed cut and fill areas after cut and fill operations; • Cover inactive storage piles; • Cover all trucks hauling dirt, sand, or loose materials off site; and • Install appropriately effective track-out capture methods at the construction site for all exiting trucks.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.
Water Quality Protection		

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
5. Locate and stabilize spoil disposal sites and other debris areas such as concrete wash sites. Sediment control measures shall be implemented so that sediment is not conveyed to waterways or jurisdictional aquatic resources (resources subject to permitting under the Porter-Cologne Water Quality Act Section 13000 et seq, Clean Water Act Section 404, Clean Water Act Section 401, and/or California Fish and Game Code).	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.
6. Minimize potential for hazardous spills from heavy equipment by not storing equipment or fueling within a minimum of 65 feet of any jurisdictional aquatic resource unless approved by permitting agencies along with implementation of additional spill prevention methods such as secondary containment and inspection.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.
7. Ensure that appropriate measures are taken to prevent gas, oil, or any other substances that could be hazardous to aquatic life or pollute habitat from contaminating the soil or entering jurisdictional aquatic resources by storing these types of materials within an established containment area. Vehicles and equipment will have spill kits available, be checked daily for leaks, and will be properly maintained to prevent contamination of soil or water from external grease and oil or from leaking hydraulic fluid, fuel, oil, and grease. Any gas, oil, or other substance that could be considered hazardous shall be stored in water-tight containers with secondary containment. Emergency spill kits shall be on site at all times.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.
8. Prevent equipment fluid leaks through daily equipment inspections.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
		Periodic inspection during construction to ensure no violations.
9. Implement proper waste/trash management.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.
In-Channel Work and Fish Species Protection		
The City's Standard Construction Practices for In-Channel Work and Fish Species Protection (Practices #10-12) are not applicable to the Project because no work would occur within flowing water.		
General Habitat Protection		
13. Minimize disturbance of riparian vegetation to the maximum extent feasible when working in or adjacent to an active stream channel.	City responsible for inclusion of measure in construction specifications and contracts, and periodic inspections. Contractor responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction. Periodic inspection during construction to ensure no violations.
14. Restore all temporarily disturbed sensitive natural communities areas by replanting native vegetation using a vegetation mix appropriate for the site.	City responsible for replanting.	Upon completion of construction.
The City's Standard Construction Practice for decontamination of tools and equipment prior to entering waterways (Practice #15) is not applicable to the Project because no work would occur within flowing water.		
16. A qualified biologist shall conduct a training-educational session for project construction personnel prior to any mobilization-construction activities within the project sites to inform personnel about species that may be present on site. The training shall consist of basic identification of special-status species that may occur on or near the project site, their habitat, their basic habits, how they may be	City responsible for hiring qualified biologist or trained designee to conduct training.	Training: Prior to construction and prior to new work crews coming onto the site.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
encountered in the work area, and procedures to follow when they are encountered. The training will include a description of the project boundaries; general provisions of the Migratory Bird Treaty Act, California Fish and Game Code, and federal and state Endangered Species Acts; the necessity for adhering to the provision of these regulations; and general measures for the protection of special-status species, including breeding birds and their nests. Any personnel joining the work crew later shall receive the same training before beginning work.		
Dewatering		
The City's Standard Construction Practices for Dewatering (Practices #17-23) are not applicable to the Project because no work would occur within flowing water.		
Inadvertent Discoveries of Archaeological Resources and Human Remains		
24. Any unrecorded archaeological resources (sites, features, and/or artifacts) exposed during construction are subject to protection and consideration under CEQA and the California Public Resources Code (PRC) as well as Section 106 of the National Historic Preservation Act (NHPA) as detailed in the Code of Federal Regulations (CFR). The CEQA Guidelines Section 15064.5(f) specifically addresses provisions the City of Santa Cruz will make regarding accidental discovery of historical or unique archaeological resources during construction. The responsibilities of the lead federal agency to avoid, minimize or mitigate adverse effects to a "historic property" (36 CFR Section 800.16) are detailed in 36 CFR Section 800.13[b] and would be applicable for a project with federal involvement by way of funding, permitting, approval authority, or other means. In general, the implementation procedures under CEQA and the NHPA in the case of an inadvertent archaeological discovery during construction are similar and are as follows: • If archaeological resources are exposed immediately stop any construction work occurring within 100 feet which may further disturb the find. NOTE – This is a general guideline for the initial response, the exclusion zone may be contracted or expanded depending on the nature of discovery and type of construction activity proposed in the vicinity of the find. The duration of the exclusion zone will be determined by the City and the federal lead agency and is contingent on the approved course of action in response to the discovery. • Immediately notify the City Project Manager who shall immediately notify the Water Department Deputy Director/Engineering Manager • A qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards will evaluate the state and federal significance of the find for eligibility to the California Register of Historical Resources (CRHR) and the National Register of Historic Places (NRHP) in coordination with City staff.	City responsible for inclusion of measure in construction specifications and contracts. Contractor and City responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
• The City will notify the lead federal agency within 24 hours of discovery. The notification shall describe the assessment of the NRHP eligibility of the resource, specify the NRHP criteria used to evaluate the property's eligibility, and propose actions to resolve any adverse effects. • The federal lead agency will contact the State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (ACHP), and any interested locally affiliated Native American tribes. The SHPO, ACHP, and Native American tribes will respond within 48 hours of the notification. The federal lead agency shall consider any recommendations regarding National Register eligibility and proposed actions and notify the City of the appropriate actions. The federal lead agency official shall provide the SHPO and the ACHP a report of the actions when they are completed. • Avoidance and/or minimization of impacts/effects is the preferred course of actions under both state and federal guidelines. If preservation in place is not feasible, additional study will likely be required. In coordination with the lead federal agency, the City will prepare a data recovery/treatment plan for retrieving important archaeological data relevant to the site's significance. The data recovery/treatment plan will be submitted to participating tribes and agencies for review and comment prior to implementation. • If the inadvertent discovery location cannot be avoided, and continuing work would have an adverse effect on the site, the federal agency, in coordination with the City, SHPO, and Native American tribes as appropriate, will need to draft and finalize a Memorandum of Agreement for the treatment of the historic property before work can proceed. • Implementation of the data recovery/treatment plan may include archaeological excavations, technical and laboratory analysis, and further consultation and coordination with Native American tribal representatives. • A full written report will be prepared to include the results of all technical analyses and special studies and will be provided to participating tribes and agencies for review and comment. The report will be filed with the Northwest Information Center and will also provide for the permanent curation of recovered materials.		
25. In California, the illegal possession of human remains is a felony, punishable by imprisonment (California Penal Code Section 1170[h]; Public Resources Code 5097.99[a] and [b]). Inadvertent discoveries of human remains exposed during construction on non-federal lands are subject to protection under CEQA and the NHPA. In accordance with Section 7050.5 of the California Health and Safety Code and the NHPA, if potential human remains are found, immediately notify the City, the lead federal agency, and the Santa Cruz County Coroner of the discovery. The Santa Cruz County Coroner will provide a determination within 48 hours of notification. No further excavation or	City responsible for inclusion of measure in construction specifications and contracts. Contractor and City responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
disturbance of the identified material, or any area reasonably suspected to overlie additional remains, can occur until a determination has been made. • If human remains are exposed **immediately stop any construction work occurring within 100 feet** which may further disturb the find. NOTE – This is a general guideline for the initial response, the exclusion zone may be contracted or expanded depending on the nature of discovery and type of construction activity proposed in the vicinity of the find. The duration of the exclusion zone is contingent on the course of action mandated by the City and lead federal agency. • If the Santa Cruz County Coroner determines that the remains are, or are believed to be, Native American, the coroner will notify the Native American Heritage Commission (NAHC) within 24 hours and all the actions described in these Standard Construction Practices regarding Inadvertent Archaeological Discoveries shall be followed. • In accordance with California Public Resources Code, Section 5097.98 and Section 106 of the NHPA, the NAHC must immediately notify those persons it believes to be the Most Likely Descendant (MLD) from the deceased Native American. • Within 48 hours of this notification, the MLD will recommend to the City and lead federal agency her/his preferred treatment of the remains and associated grave goods. • The ultimate disposition of the remains will be coordinated between the City, the federal agency, the MLD, the landowner, and the NAHC (if necessary). • The lead federal agency will have additional government-to-government consultation requirements per the requirements of Section 106 [36 CFR § 800.2(c)(2)(ii)] which cannot be delegated to non-federal entities.		
Other Practices		
26. Notify adjacent property owners of nighttime construction schedules. A Construction Noise Coordinator will be identified. The contact number for the Construction Noise Coordinator will be included on notices distributed to neighbors regarding planned nighttime construction activities. The Construction Noise Coordinator will be responsible for responding to any local complaints about construction noise. When a complaint is received, the Construction Noise Coordinator shall notify the City within 48 hours of the complaint, determine the cause of the noise complaint, and implement as possible reasonable measures to resolve the complaint, as deemed acceptable by the City.	City responsible for inclusion of measure in construction specifications and contracts. Contractor and City responsible for implementation.	Prior to construction, include measure in construction specifications and contracts. Implement measure during construction.
27. For construction in wildlands or in the wildland-urban interface, internal combustion engine equipment shall include spark arrestors, fire suppression equipment (e.g. fire extinguishers and shovels) shall be stored onsite during use of such mechanical equipment, and construction activities shall not be conducted during red flag warnings issued by the California Department of Forestry and Fire	City responsible for inclusion of measure in construction specifications and contracts.	Prior to construction, include measure in construction specifications and contracts.

Table 8-1. Mitigation Monitoring and Reporting Program

Mitigation Measures and Standard Practices	Party Responsible for Implementation	Implementation Timing
Protection (CAL FIRE) unless adequate fire protection measures are implemented in compliance with federal, state, and local fire prevention and protection regulations and guidance. Fire safety measures will be detailed in a Fire Safety Program on a project-by-project basis. Red flag warnings and fire weather watches are issued by CAL FIRE based on weather patterns (low humidity, strong winds, dry fuels, etc.) and listed on their website (https://www.fire.ca.gov/programs/communications/red-flag-warnings-fire-weather-watches/).	Contractor responsible for implementation.	Implement measure during construction.

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