



**AGENDA**  
**COMMISSION ON THE ENVIRONMENT**  
**REGULAR MEETING**  
**WEDNESDAY, FEBRUARY 27, 2019**  
**6:00 PM**  
**CITY COMMUNITY ROOM**  
**420 CAPITOLA AVENUE, CAPITOLA, CA 95010**

**CALL TO ORDER**

Commissioners: Cathlin Atchison, Jacques Bertrand, Michelle Beritzhoff-Law, Meredith Keet, Peter Wilk

**ORAL COMMUNICATIONS** *(No action may be taken)*

*The Chair may announce and set time limits at the beginning of each agenda item.*

*The Committee Members may not discuss Oral Communications to any significant degree, but may request issues raised be placed on a future agenda.*

**APPROVAL OF MINUTES** of October 24, 2018

**OTHER BUSINESS**

1. Introduction of new commissioners Michelle Beritzhoff-Law and Meredith Keet
2. Elect Chair and Vice-Chair
3. Presentation – PureWater Soquel Project

**ITEMS FOR FUTURE AGENDAS**

**ADJOURNMENT** to May 22, 2019

**Notice:** The Commission on the Environment meets quarterly (February, May, August, November) at 6:00 PM in the Community Room located at 420 Capitola Avenue, Capitola.

**Agenda and Agenda Packet Materials:** The Commission on the Environment Agenda is available on the City's website: [www.cityofcapitola.org/](http://www.cityofcapitola.org/) on Friday prior to the Wednesday meeting. If you need additional information please contact the Public Works Department at (831) 475-7300.

**Americans with Disabilities Act:** Disability-related aids or services are available to enable persons with a disability to participate in this meeting consistent with the Federal Americans with Disabilities Act of 1990. Assisted listening devices are available for individuals with hearing impairments at the meeting in the City Council Chambers. Should you require special accommodations to participate in the meeting due to a disability, please contact the City Clerk's office at least 24-hours in advance of the meeting at 831-475-7300. In an effort to accommodate individuals with environmental sensitivities, attendees are requested to refrain from wearing perfumes and other scented products.



**DRAFT MINUTES**  
**Commission on the Environment**  
**Regular Meeting**  
**October 24, 2018**

**CALL TO ORDER**

Commissioners Present: Cathlin Atchison, Jacques Bertrand, Peter Wilk

Commissioners Absent: Megan Sixt, Bella Hammond

City Staff Present: Steve Jesberg, Katie Herlihy, Danielle Uharriet

**WRITTEN AND ORAL COMMUNICATIONS** – Steve Jesberg informed the Commissioners that their terms expire in December. The city clerk will be sending an email to all commissioners for reappointment or resignation.

Jacques Bertrand commented that there is a bike shed/rack behind the self-serve car wash on Bay Avenue that is an attractive nuisance. Steve Jesberg responded that Community Development and the City Manager's office are working with Redtree Properties to resolve the issue.

Peter Wilk inquired on the status of the Depot Hill bluff stabilization. Steve Jesberg responded there is nothing to report other than the City Council received a report.

**OTHER BUSINESS**

1. The minutes of August 22, 2018 were approved
2. The Commission adopted the 2019 meeting schedule
3. Bike Share Program Presentation –At the direction of the City Council, Katie Herlihy, Community Development Director gave a presentation on the city's progress to establishing a bike share program in Capitola. Katie highlighted the growth in bike share programs throughout the U.S. and the possibility of a regional effort. A public outreach and research-gathering survey has been ongoing and will conclude at the beginning of November. Staff has been researching best practices, including types of bikes, parking infrastructure, fleet size, bike safety. Several changes to the Municipal Code would be necessary to proceed with the program. The bike share program is consistent with several adopted plans: 2011 Bike Transportation Plan, 2014 General Plan and 2015 Climate Action Plan.  
The Commission supported the Bike Share Program as presented with a few specific concerns regarding bike safety, maintenance, location of docking stations, disposition of expired batteries.
4. Peery Park – Danielle Uharriet gave an update on the project. George McMenamin and a professional crew completed removal of invasive plants from the first section of Peery Park, from the end of Riverview to the bridge and down to the creek. A vegetated boarder was left at the base of the slope to help maintain slope stability along with installation of erosion control measures. George will maintain the area throughout the next year. If funding is available, the invasive removal will continue next September. Peter Wilk inquired if funding will be possible to continue the project. Katie Herlihy responded that the ordinance language will need to be modified clarifying the use of funds.
5. Central Coast Climate Collaborative – Jacques Bertrand gave a short update on the 4C's, the California Adaptation Forum recently held in Sacramento, and the availability of an information sheet/toolbox on the 4C website for agencies needing to complete a Local Hazard Mitigation Plan (LHMP).

6. Native Milkweed Campaign – Cathlin Atchison provided staff with the butterfly informational sheet to be distributed to Commissioners for comments before posting on the Environmentally Sustainable Living in Capitola pages on the City’s web site and create a handout for distribution. The Commission discussed distributing fliers to local nursery’s and garden centers and promoting native milkweed during Arbor Day or coordinating with the monarch migration with Natural Bridges State Park.

**ITEMS FOR NEXT AGENDA**

- Peery Park update
- 4C’s update
- Milkweed update
- Beach litter update

**ADJOURNMENT** to a Regular meeting on February 27, 2019

Approved at the meeting of February 27, 2019

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Danielle Uharriet  
Environmental Projects Manager

**CITY OF CAPITOLA  
COMMISSION ON THE ENVIRONMENT  
Agenda Report**

**Meeting Date: 27 February 2019**

**Agenda Item: 3**

**Subject: Pure Water Soquel Project**

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Soquel Creek Water District is currently planning a project to reclaim wastewater and recycle by using it to combat sea water intrusion. At the January 24, 2019 City Council meeting the Council supported the District's grant application request to help fund the Pure Water Soquel project.

Attached is some information on the project provided by the District. Representatives from Soquel Creek Water District will be giving a presentation on the Pure Water Soquel project.

It is recommended that the Commission consider formally supporting the project.



# PUREWater Soquel

# PROJECT OVERVIEW

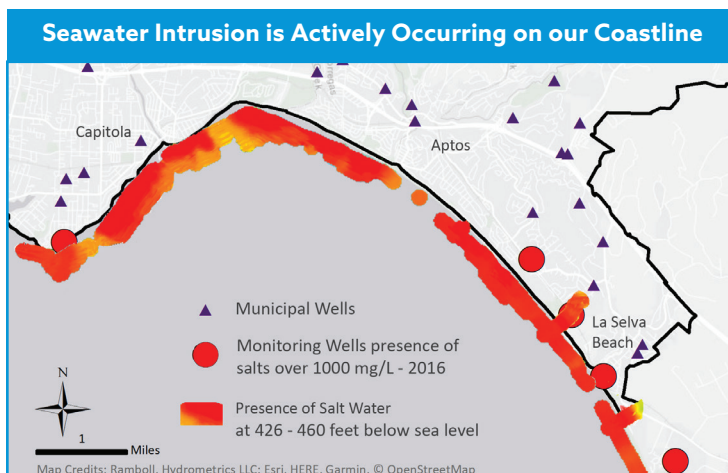
## Groundwater Replenishment and Seawater Intrusion Prevention Project

### WHY IS PURE WATER SOQUEL BEING IMPLEMENTED?

The State of California has declared the Santa Cruz Mid-County Groundwater Basin — which supplies water to the Soquel Creek Water District (District), Central Water District, City of Santa Cruz, and over a thousand private well users and private mutual systems — as critically overdrafted and mandated that the basin be brought into sustainability by 2040. This mandate affects all basin users, not just the District.

The District is solely dependent on groundwater as is most of the Santa Cruz Mid-County area. In addition to the groundwater basin being overdrafted, seawater intrusion is present in Pleasure Point, Aptos, Seascapes, and La Selva Beach; data collected in 2017 confirmed the entire coastline is at-risk.

The District continues to move forward with its Pure Water Soquel Project to address these challenges by promoting environmental stewardship and ensuring a diverse and reliable water supply for current and future generations.



### WHAT ARE THE PROJECT BENEFITS?

**PROVIDES A BARRIER AGAINST SEAWATER INTRUSION** — Helps prevent seawater intrusion from moving farther inland and contaminating drinking water wells. Southern Santa Cruz County, Monterey County, and many other communities around the world are challenged with seawater intrusion.

**RELIABLE AND DROUGHT-PROOF WATER SUPPLY** — Provides a diversified water portfolio that is available year-round and is drought-proof to supplement our overdrafted groundwater supply.

**HIGH-QUALITY WATER** — Using proven technology (see back), provides purified water that meets all state and federal water quality criteria and is cleaner than most bottled water.

**BENEFICIAL REUSE OF EXISTING SOURCE** — Eliminates one-quarter of the 8 million gallons a day (average) of treated wastewater that goes out into the Pacific Ocean. Instead of being discharged to the ocean, it can be put to beneficial reuse by storing it underground for environmental protection and to meet future community needs.

**TIMELINESS** — Water rights, that are typical of surface water projects, and marine issues, that are typical of desalination projects, will not apply to the District's purified water project, thus potentially reducing the time to acquire permits.

**ECONOMIC VITALITY** — the Project will support over \$900 million dollars in economic benefits to our community.

### WHAT IS PURE WATER SOQUEL?

Pure Water Soquel will involve taking already treated municipal wastewater from the City of Santa Cruz, purifying it through advanced water purification methods, replenishing the basin through recharge wells, and creating a seawater barrier.

Cost estimates of the Pure Water Soquel Project are about \$90 million. The District is actively seeking grant funding and low-interest loans to help offset these costs. The goal is to have the Project operational by 2022.

## WHY PURIFIED WATER?

Many communities with long-term water shortages have either implemented or are currently evaluating purified water projects. Orange County Water District has been purifying recycled water to use as groundwater replenishment for over 40 years. Utilities in San Diego, Los Angeles, the San Francisco Bay Area, Monterey, and Silicon Valley are all seriously considering purified water as a part of their water supply portfolios.



Orange County Water District's Groundwater Replenishment System has produced over 200 billion gallons of purified water and has been in operation for 40 years. (photo credit: Orange County Water District)

## PURE WATER SOQUEL TIMELINE AND MILESTONES

### 2014

- Soquel Creek Water District Board selects Purified Water for Groundwater Replenishment as a water supply option to further evaluate

### 2014-2018

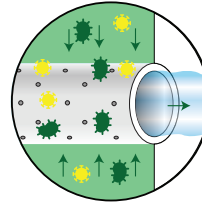
- District awarded over \$2 million in grant money for planning and technical evaluation from the State Water Resources Control Board and the US Bureau of Reclamation
- National Water Research Institute, a third party expert review panel, gives thumbs up and declares the Project is feasible and protective of public health
- District conducts environmental review under CEQA and certifies Environmental Impact Report
- District Board approves Project

### 2019-2022

- District continues to seek grant funding, potentially to reduce Project cost by half
- District conducts permitting, design, and construction
- Goals of the Project are to be operational by the end 2022 and aid in meeting state mandate of sustainability by 2040

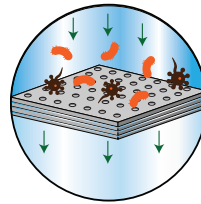
## UNDERSTANDING THE WATER PURIFICATION PROCESS

Currently, most advanced water purification processes involve a multi-stage process of micro-filtration, reverse osmosis, and ultraviolet light with advanced oxidation.



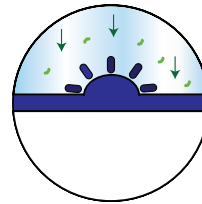
### MICROFILTRATION

Water moves through a bundle of filters (that look like straws). Each filter is perforated with small holes 1/300th the width of human hair! These holes allow water to pass through while capturing solids, bacteria, protozoa, and many viruses.



### REVERSE OSMOSIS

Contaminants 100x smaller than a virus and chemicals are stopped by this barrier, resulting in water that's near distilled quality. This same process is used by bottled water companies, baby food manufacturers, and for kidney dialysis.



### ULTRAVIOLET LIGHT & ADVANCED OXIDATION PROCESS

Concentrated light and oxidation, similar to the sun's rays and adding bleach, is responsible for destroying trace level chemicals and pharmaceuticals should they remain after reverse osmosis.

## TECHNICAL & ENVIRONMENTAL STUDIES

Numerous studies have been conducted to help inform the planning and implementation of the project. These include:

**Feasibility Study** — completed December 2017

**Geochemical Characterization** — Phase I completed October 2016, Phase 2 underway

**Water Quality/Constituents of Emerging Concern (CEC) Testing** — completed December 2017; Reviewed and approved by a scientific technical advisory panel

**Groundwater Modeling** — completed June 2018

**Cost Evaluation** — completed December 2018

**Environmental Impact Report** — completed December 2018

For more information contact:  
Melanie Mow Schumacher  
melanies@soquelcreekwater.org • 831-475-8500  
www.soquelcreekwater.org



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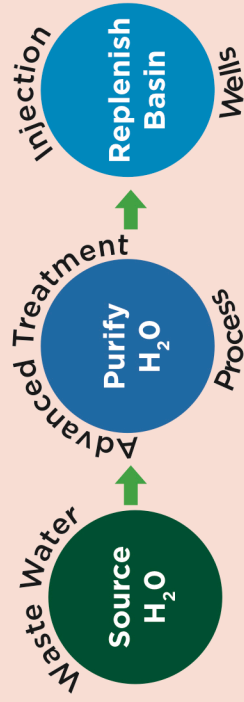
# PUREwater Soquel

Replenishing Mid-County Groundwater

## What is Pure Water Soquel?



**Pure Water Soquel** has been selected by the District Board as its preferred project for a new source of water. It involves taking municipal wastewater from the Santa Cruz County Sanitation District or the City of Santa Cruz and uses advanced water purification methods to produce 1,500 acre-feet per year (488 million gallons per year) of high-quality water. The purified water would then be injected into the ground to replenish the groundwater basin and provide a seawater barrier. The project is currently undergoing environmental review (see *project timeline on page 3*).



Cost estimates of the proposed Pure Water Soquel Project are preliminary since numerous component alternatives are being evaluated. Total preliminary project cost estimates range from \$50–70 million. The District is actively seeking state grant funding to help offset these costs.



Orange County Water District's Groundwater Replenishment System has produced over 200 billion gallons of purified water and has been in operation for 40 years. (photo credit: Orange County Water District)

## Why Purified Water? .....

Many communities with long-term water shortages have either implemented or are currently evaluating purified water projects. Orange County Water District has been purifying recycled water to use as groundwater replenishment for over 40 years. Utilities in San Diego, Los Angeles, the San Francisco Bay Area, Monterey, and Silicon Valley are all seriously considering purified water as a part of their water supply portfolios.

## What are the Project Benefits? .....

**PROVIDES A BARRIER AGAINST SEAWATER INTRUSION** — Helps prevent seawater intrusion from moving farther inland and contaminating drinking water wells. Southern Santa Cruz County, Monterey County, and many other coastal communities around the world are challenged with seawater intrusion.

**RELIABLE AND DROUGHT-PROOF WATER SUPPLY** — Provides a diversified water portfolio that is available year-round and is drought-proof to supplement our currently overdrafted groundwater supply.

**HIGH-QUALITY WATER** — Using proven technology with multiple treatment processes, provides purified water that meets all state and federal water quality criteria and is cleaner than most bottled water.

**BENEFICIAL REUSE OF EXISTING SOURCE** — Eliminates one-quarter of the 8 million gallons a day (average) of treated wastewater that goes out into the Pacific Ocean. This water can be diverted from being wasted, discharged to the ocean, and instead be put to beneficial uses. Once recycled and purified the water could be stored underground for environmental protection and to meet future community needs.

**TIMELINESS** — Purifying recycled water has been successfully implemented in other California communities. Water rights, that are typical of surface water projects, and marine issues, that are typical of desalination projects, will not apply to the District's purified water project, thus potentially reducing the time to acquire permits.

## Understanding the Water Purification Process .....

Currently, most advanced water purification processes involve a multi-stage process of micro-filtration, reverse osmosis, and ultraviolet light with advanced oxidation.

**STEP 1:** To purify recycled water, the first step is to pretreat the water through micro-filtration. Water is pumped through tubes filled with tiny membranes. Each membrane, made up of hollow fibers, is perforated with holes 1/300th the width of a human hair. Through this process, solids and bacteria are caught in the fibers and removed from the water.

**STEP 2:** The water is treated through reverse osmosis, a process that again forces the water through membranes, removing salt, micro-organisms and chemicals.

**STEP 3:** At this point the water is purified, but will go through one more step to ensure safety. The treated water is exposed to ultraviolet light with advanced oxidation causing any remaining organic chemicals to break down into simple elements such as oxygen, nitrogen and carbon.

*Images by Deguchi Design*

## Technical Studies

Technical studies have been conducted or are currently underway to help inform the environmental review. These include:

- **Feasibility Study** — draft completed March 2016
- **Geochemical Characterization** — currently being conducted
- **Water Quality/Constituents of Emerging Concern (CEC) Testing** — currently being conducted with a technical advisory panel
- **Groundwater Modeling and Particle Tracking** — currently being conducted

## Pure Water Soquel Timeline and Proposed Milestones .....

Year	2014	2014-2016	2016-2018	2018-2022
Soquel Creek Water District Board selects Purified Water for Groundwater Replenishment as its preferred water supply option and directs staff to further evaluate.	District receives State Water Resources Control Board grant and prepares a Feasibility Study.	District conducts environmental review to prepare Environmental Impact Report (EIR). District seeks additional grant funding.	District to conduct permitting, design, and construction	

