

## **Cambria's Emergency Water Supply Project: Questions and Answers (Updated November 3, 2014)**

Here are some questions you may have about the emergency water supply project that the Cambria Community Services District is undertaking to ensure an adequate supply exists in response to the extreme drought. Be sure to revisit this page to check for updates. We will be adding new information to it as the project proceeds.

### **What is the San Simeon Creek Emergency Water Supply project?**

The project on CCSD property off San Simeon Creek Road will treat brackish groundwater in the lower San Simeon Creek aquifer. The water will go through several stages of treatment to remove solids, salt, organic chemicals and other contaminants so that it is safe to drink. It will then be re-injected into the aquifer's freshwater supply. The brackish water to be treated is a combination of creek underflow, percolated wastewater treatment plant effluent, and a mix of freshwater and seawater that is within a deeper saltwater wedge. The extracted brackish water will have salt concentrations much lower than that of pure seawater. The project's intake well and treatment plant will be at least one-half mile inland from the ocean.

### **Why is it needed?**

Cambria residents and businesses can already see that the water shortage has an impact on their daily lives and livelihoods. They have responded to the emergency with remarkable efforts at conservation. Cambria's water use in September 2014 was down 43% from the same month a year earlier, and the community cut its consumption 36% in the first nine months of 2014. But Cambrians can cut back only so far before reductions in water use lead to health hazards and force businesses to shut down. The emergency water project is being built to prevent the current shortage from reaching that point. Currently, the CCSD estimates that its primary water source, the San Simeon Creek aquifer, will stay above critical levels into late fall as long as aggressive conservation efforts continue. At that point, the new project will be available to recharge the aquifer.

### **How does the water treatment process work?**

The brackish water is first pumped from an existing well. The processing starts with microfiltering, which removes fine particles from the brackish water. Next comes reverse osmosis, which removes salt. The water then goes through an advanced oxidation process. Here, ultraviolet light and hydrogen peroxide are used to destroy any remaining chemicals. Final post-treatment disinfects and stabilizes the water to prevent corrosion in pipes and the injection well. The treated water is then injected back into the ground. To meet state health standards, the injection well is located to ensure that the treated water travels underground at least two months before it reaches the wells that supply potable water.

**You note that the brackish-water treatment facility will process water that includes some treated effluent? Is this safe?**

Yes, the treated water will be every bit as safe to drink as the water now being provided to Cambrians. The project meets strict state standards that provide multiple layers of protection. The source water will be filtered, desalinated, oxidized and sterilized. The plant will be monitored continuously and shut down if there is any malfunction. Once the treated water is injected back into the ground, it will be sampled with sentinel wells as it moves to the potable well field.

This is a proven technology. It is used by a number of California water agencies, including the Orange County Water District and the Water Replenishment District of Southern California. Also, much of the potable water drawn from the Sacramento River and Delta system has previously passed through wastewater treatment plants.

### **How much water will the facility produce?**

The San Simeon Creek Road facility will produce approximately 300 gallons per minute of potable water. This is about 1.32 acre-feet per day or nearly 40 acre-feet per month. The plant is expected to run mainly during the dry months, supplying about 240 acre-feet of water in a six-month dry season. This is about one-third of the community's normal water consumption for a full year.

### **When will the project be completed?**

We expect the project to be completed by Nov. 14, 2014. This will be followed by several weeks of periodic testing, staff training and other start-up activities. However, the project would be capable of producing potable water on an emergency basis during this time. In any event, the new supply will become available before the water in the San Simeon Creek aquifer is in danger of running too low to pump.

### **Will the project have an immediate impact on our water situation, or will we have to wait several months for relief?**

The purified water will take about two months to travel from injection wells to the CCSD's freshwater well field. However, the project will have an immediate beneficial impact in the San Simeon Creek aquifer. The injected water will serve to balance water levels in the aquifer, preventing a "reverse gradient" that could pull salt water and treated waste water toward the upstream freshwater well field. This will allow more pumping of water from the existing freshwater wells than would have been safe without the emergency project.

### **Will the emergency water restrictions end when the project goes on line?**

It is the District's intent to end the emergency water restrictions as soon as it is prudent to do so. The emergency water supply project makes an earlier return to normal more likely, though the final decision will depend on well levels and rainfall. In any event, Cambria will be able to get through future droughts with the emergency supply in place. Without

it, the community stands a real chance of literally running out of water, forcing Cambrians to shut businesses and possibly even leave homes.

### **How much will the project cost?**

The cost of the project is currently estimated at \$9.13million. That figure will be adjusted upward as exact costs of change orders and environmental mitigations required by permitting agencies are determined. This includes both soft costs (hydrogeological modeling, engineering and permitting fees) as well as hard costs (construction and equipment). The total also includes money already spent or committed out of CCSD general funds, as well as funds yet to be disbursed.

### **How is the project being paid for?**

The CCSD is financing the project primarily through an \$8.939 million loan from Torrey Pines Bank, a subsidiary of Western Alliance Bank. The loan, finalized on August 7, 2014, has a 20-year term and an interest rate of 4.11%. It will be repaid out of proceeds from increased commercial and residential water rates that were adopted by the CCSD on July 24, 2014. The CCSD has also applied for a grant from the California Department of Water Resources; the final award announcement is expected soon.

### **What effect will the project's cost have on my water bills?**

Starting with the two-month billing period that began on September 1, 2014, Cambria water customers have been paying increased rates to cover the construction and operating costs of the emergency water supply project. For a detailed description of the new rate structure and its impact on customers, see the Prop. 218 Notice, Guidelines and Fact Sheet sent to CCSD customers and [posted](#) on the CCSD website. The impact on water bills varies with usage amounts and customer type (residential or commercial).

Here is one example: For a household using eight units (800 cubic feet or 5,984 gallons) every two months, the new rate structure adds \$50 to each bimonthly water bill when the project is operating, and \$32 when it is not. The project will normally run only during the dry season, for four months. So in a typical year the household in our example pays a total of \$228 in charges related to the project. This averages out to \$38 per billing period, or \$19 per month.

The project's impact on water bills also will depend on how much the facility is used in a given year. As a backup water source, the plant would not normally run during rainy seasons except in severe droughts. Electric power is a significant part of operating costs, and water customers would only have to pay for it when the facility is running. Operating costs could also be reduced with capital improvements such as more efficient treatment technology and solar panels to provide electricity.

### **What permits/approvals does the project need from other government agencies?**

The Emergency Water Supply project is being built under an emergency Coastal Development Permit (CDP) from San Luis Obispo County. This allows the facility to be operated during a Stage 3 drought emergency such as the current one. As required by the emergency CDP, the CCSD is applying for a *regular* CDP, the terms of which will determine how much flexibility the CCSD will have in making optimal use of the facility for the benefit of its customers. The regular CDP permit requires approval by the County, and the County's action can be appealed to the Coastal Commission. The project also requires permits covering health, safety and groundwater/watershed protection from the California Department of Public Health and the Central Coast Regional Water Quality Control Board. These will be before the Central Coast Regional Water Quality Control Board for approval on Nov. 14, 2014.

**How does the emergency water supply project affect our existing water allotment? Will our current pumping from the San Simeon Creek aquifer be further restricted because we now have another source?**

Under state regulations, the CCSD is allowed to pump a total of 1,230 acre-feet a year from the San Simeon Creek and Santa Rosa Creek aquifers. This is far more than the amount (roughly 700 to 750 acre-feet) that Cambria uses in a year. However, the CCSD's dry-season pumping from the San Simeon Creek (when surface water is not flowing in the creek) is limited to 370 acre-feet. These allocations will not change. The purpose of the new water treatment facility is to enable the CCSD to take its full allotment during droughts. Currently, it sometimes is unable to do so because pumping that amount will lower well levels too far and raise the risk of saltwater intrusion, which would destroy the freshwater aquifer.

**How does the emergency project fit into long-term planning to meet Cambria's water needs?**

The current project is being built for near-term drought relief, but it is also a modified version of an alternative identified by the Army Corps of Engineers in a study of permanent supplemental water supplies. (For details on the Corps study, see the November 27, 2013 Engineering Technical Memorandum on Cambria Water Supply Alternatives posted on the CCSD [website](#)). The Corps study found that a San Simeon brackish water supply project – Alternative 5 in the Technical Memorandum -- was the most technically feasible. This alternative was subsequently simplified to become the current emergency project. Unlike the original design studied by the Corps, the emergency project fits entirely onto the CCSD-owned property off of San Simeon Creek Road, employs as much of the existing CCSD infrastructure as possible, uses prefabricated major equipment in modular shipping containers, and uses a special PVC piping that can be laid aboveground as opposed to requiring trenching and burial. Changes such as these have lowered the cost of the project from the Corps' Alternative 5 estimate of \$15.3 million to the current cost of just over \$9 million.

The Corps is currently evaluating how their earlier alternative could incorporate the emergency project into their project to develop a long-term supply solution.. Updates to the brackish water Alternative 5 may include adding solar arrays to offset power demands while also mitigating greenhouse gas emissions, burying the temporary pipelines,

enclosing equipment within a building, and determining whether an off-site pipeline can be added to back up, or possibly replace, the emergency project's evaporation pond. Once Alternative 5 is further defined, the Corps environmental consultant will complete the long-term supply project's draft environmental report, which will then be circulated for public review and comment.

**Some people say that a brackish water project will lead to growth. What effect, if any, will the emergency water supply project have on building in Cambria?**

The emergency water project is intended to serve the needs of Cambria's current residents and businesses. It does not alter current growth limits imposed by San Luis Obispo County. Currently the County's land use ordinance caps Cambria growth at 0%, where it will remain unless and until the ordinance is changed.

**What work is being done to increase water production from the Santa Rosa Creek aquifer?**

Older wells along the lower Santa Rosa Creek have been refurbished, along with an existing water treatment plant that filters and removes iron and manganese. This is similar to the treatment that occurs at the primary Santa Rosa well SR-4, which is further upstream from the older wells and is located behind Coast Union High School. A well near Tin City (SR-3) has been revamped and is now in operation. The SR-3 water is being processed through the rehabilitated iron and manganese removal filter and is being added to the potable water supply.

**How much more water will be produced from the Santa Rosa Creek well upgrades?**

The Santa Rosa Creek improvements can produce about 114 acre-feet a year.

**Explain the "tracer study" for the emergency project. What were its results?**

As part of the process to determine if the emergency water supply project can be operated safely, a test was performed to determine the time that treated water will take to travel from injection wells to the existing CCSD intake wells. Water was pumped from the intake wells and piped to where the treated water will be injected. The water was injected back into the ground with a small amount of potassium bromide "tracer" added. Water was then sampled from nearby monitoring wells to see if any of the tracer is present.

The test was completed on September 29, 2014. It found that, at a volume of 454 gallons per minute, the injected water took 57 days to reach the closer of the two San Simeon intake wells, and more than 60 days to reach the farther one. State Title 22 regulations require a travel time of at least 60 days. A recalibrated test model showed that the travel time to the closer of the two wells would stay above this 60-day limit at a volume of 400 gpm. This is still higher than the injection and extraction volume at which the emergency project will actually operate. So the test has shown that the project can run as planned and stay within state safety standards.

**Water levels in CCSO wells in the San Simeon Creek aquifer have been below normal but above historical lows. Does this mean that we don't have a real emergency?**

Water levels in the lower reaches of the Santa Rosa Creek and San Simeon Creek aquifers can rise quickly after rainstorms, even during a severe drought. This year has been no exception. However, these levels can fall quickly unless there is adequate underflow throughout the dry season from springs and tributaries that are further upstream. Rainfall last winter and spring was too little to fully replenish those upstream sources, which were already under stress from two previous drought years. Of particular concern is whether a repeat of last year's delayed start of the rainy season were to occur. Current long-term forecasts are for a weak El Nino, peaking in early winter. Such a pattern historically does not appear to have a significant effect on Central Coast rainfall.