

CITY OF SANTA ROSA
BOARD OF PUBLIC UTILITIES

TO: BOARD OF PUBLIC UTILITIES
FROM: COLIN CLOSE, SENIOR WATER RESOURCES PLANNER,
SANTA ROSA WATER
SUBJECT: FREEWAY WELL PLANNING PROJECT FEASIBILITY STUDY

AGENDA ACTION: MOTION

RECOMMENDATION

It is recommended by Santa Rosa Water staff that the Board of Public Utilities, by motion, accept the Freeway Well Planning Project Feasibility Study report.

EXECUTIVE SUMMARY

Freeway Well was constructed in 1957 and served as a primary City water supply well for 30 years. Routine water quality testing in 1987 detected volatile organic compounds at levels above drinking water regulatory standards due to contamination at sites in the vicinity. The well was taken offline and has not been used since. In 1994, the well was disconnected from the City's distribution system, as required by the State Water Resources Control Board, Division of Drinking Water (formerly Department of Public Health). In 2018, the City was awarded a Proposition 1 grant to help fund 50 percent of the \$977,866 cost to implement the Freeway Well Planning Project to assess options for alternatives for groundwater cleanup and/or protection. Staff will provide an update on the project and present the Feasibility Study for acceptance by the Board of Public Utilities.

BACKGROUND

The City constructed Freeway Well at 1304 Cleveland Avenue in 1957. The well was reportedly a high-producing well capable of supplying approximately 1 million gallons per day. The City operated Freeway Well sustainably for 30 years, until routine water quality testing in 1987 detected volatile organic compounds (VOCs) at levels above drinking water regulatory standards which were contributed to various known contamination sites in the vicinity. The well was taken offline and has not been used since. In 1994, the well was disconnected from the City's distribution system, as required by the State Water Resources Control Board, Division of Drinking Water.

Over the ensuing years, the City wanted to evaluate the water quality risks in the vicinity

and study the feasibility of alternatives for treating the groundwater or replacing Freeway Well on site but lacked the resources to do so. In 2016, the State Water Resources Control Board (State) expressed interest in aiding these efforts and invited the City to submit a grant application to aid in studying a range of alternatives for groundwater cleanup and/or protection at the site. The City submitted a grant application for the Freeway Well Planning Project in 2017. The proposed scope of work included conducting a Remedial Investigation and Feasibility Study.

The Remedial Investigation examined Freeway Well and the area around it to characterize the groundwater contamination problem more fully. Tasks included: installing a monitoring well complex onsite; conducting aquifer pump testing and monitoring groundwater levels in private wells (with permission) to better understand the lithology and deep aquifer hydrology; sampling groundwater onsite; completing a thorough records review to gather all known data and information; and compiling and analyzing all available historic and current data.

The Feasibility Study was designed to assess implementable options for groundwater cleanup and/or protection for Freeway Well. Tasks included researching best available technologies for removing VOCs and examining the feasibility of implementing a range of alternatives for groundwater cleanup and/or protection. The grant scope of work also included project and contract management, environmental compliance, permitting, development of a Monitoring and Reporting Plan, development of a Quality Assurance Project Plan, formation and coordination of a multi-agency Freeway Well Planning Project Technical Advisory Committee (TAC), public outreach and information, quarterly reporting and invoicing for reimbursements, and grant administration. The application was successful and provided a state-funded grant covering 50 percent of the \$977,866 total project budget.

The Remedial Investigation and Feasibility Study have now been completed. The Remedial Investigation Report was submitted to, reviewed by, and accepted by the State in February 2021. This provided the basis for focusing and conducting the Feasibility Study. On July 14, 2021, the draft Feasibility Study Report was submitted to the Freeway Well TAC for review. The TAC includes staff from the State Water Resources Control Board, the Regional Water Quality Control Board, City staff from Water and Public Works, and staff from the engineering consulting firm West Yost & Associates, Inc. The TAC met virtually on July 28, 2021, to discuss the draft report and provide comments. Representatives from State Water Resources Control Board and Regional Water Quality Control Board all indicated they are satisfied with the quality and completeness of the Study and accept its findings. Minor changes were requested for clarification.

Staff are presenting the Feasibility Study to the Board of Public Utilities and requesting acceptance of the report in order to complete the Freeway Well Planning Project. The Study found that the groundwater cleanup alternatives were not feasible. Further, potential operation of the existing well could further jeopardize the City by contributing to the movement of existing groundwater contamination plumes in the vicinity. Replacing

the well on the site was also found to be not feasible. Abandonment of the Freeway Well to protect the aquifer from migration of contaminants is being recommended. The report will be finalized and submitted to the State by the grant funding required deadline of September 30, 2021.

PRIOR BOARD OF PUBLIC UTILITIES REVIEW

On August 17, 2017, staff provided a briefing to the Board of Public Utilities on the Freeway Well Planning Project and grant application.

On March 1, 2018, the Board of Public Utilities approved, by Resolution No. 1156, a recommendation to the Council to: 1) authorize the Director of Santa Rosa Water or designee to negotiate and execute a grant funding agreement with the State Water Resources Control Board for the Freeway Well Planning Project (Project); 2) authorize and designate the Director of Santa Rosa Water or designee as a City representative for the Project; 3) authorize use of existing non-General Funds to match the State funds being awarded; and 4) authorize the Chief Financial Officer to increase appropriations in the amount of the grant award.

On April 4, 2018, City Council approved the recommendations by Resolution No. RES-2018-047.

On September 6, 2018, the Board of Public Utilities approved, by motion, a Project Work Order under the Master Professional Services Agreement with West Yost & Associates, Inc. of Pleasanton, California, to provide services for the Freeway Well Planning Project, with a total amount, including a 5% contingency, of \$557,731.00.

On August 1, 2019, the Board of Public Utilities received a comprehensive staff presentation on the Freeway Well Planning Project and invited public comments. The presentation was provided to update the Board of Public Utilities on the project status and to comply with a grant requirement that the City hold a publicly noticed meeting to inform the general public about the project and receive their comments.

ANALYSIS

To better inform how the City might achieve its goals for the Freeway Well site, a Feasibility Study was completed, including the following four overarching tasks:

1. Identification, description and evaluation of treatment technologies and alternatives for VOC removal from the Freeway Well;
2. A cost-benefit analysis of the economic feasibility of project alternatives. Costs included conceptual cost estimates of capital costs (design, construction, start-up) and annual operation, monitoring, residuals management, and maintenance costs, including materials and operating consumables (e.g., electricity). Benefits included estimates of financial and economic benefits of bringing Freeway Well back into service;

3. Ranking of project alternatives based on defined project objectives, including the cost-benefit analysis; and
4. Providing a recommended alternative and rationale for its selection.

The following alternatives were examined:

- Groundwater treatment options
- Retrofitting Freeway Well
- Replacement with a new well on the site
- Abandonment of Freeway Well

The study of these alternatives resulted in the following determinations:

- Utilizing the existing Freeway Well would require wellhead treatment for VOCs and manganese removal. The estimated cost for constructing treatment alternatives ranges between \$4 million and \$5 million. While treatment to remove VOCs and manganese is technically feasible, implementation is not feasible because the parcel's size and configuration cannot accommodate the space needed for treatment facilities and equipment.
- Furthermore, due to the time needed to disinfect and verify adequate disinfection of the well and treatment facilities after a long-term shut down (two to three full days), Freeway Well could not alternatively serve as an emergency supply well.
- Due to the extent of draw down caused when pumping Freeway Well, operating it as a production well would likely cause further migration of known and unknown contaminant plumes over an extensive area. This raises significant concerns about the impacts to private wells and the potential for new types of contaminants to reach the Freeway Well. Even if wellhead treatment were feasible, using the well for production would not be recommended.
- Modifying the existing well casing to block off aquifer zones that have higher VOC concentrations is not considered feasible because the existing well has a gravel pack that extends almost the full depth of the well. It would not be possible to prevent vertical flow of contaminated water through the gravel pack. Additionally, as discussed above, operating the well could cause further migration of known and unknown contaminant plumes over an extensive area.
- Replacing the well with a new boring that is selectively screened to avoid higher levels of contamination in the upper aquifers would be technically feasible. However, the resulting well would still have VOC contamination, and groundwater treatment would still be needed (but would not fit on the site). Additionally, it is likely to be less productive than the existing well due to observed low yield of the deeper water-bearing zones. As discussed above, operating the well could cause further migration of known and unknown contaminant plumes over an extensive area. Furthermore, it would be more cost effective to construct a new well at a site with clean groundwater.
- Properly abandoning Freeway Well is feasible and recommended. This would entail blast perforating the casing and filling it with a sand-cement slurry to eliminate the well as a conduit for the migration of contaminants between aquifer zones.

FISCAL IMPACT

Accepting the Feasibility Study does not obligate the City to act on the findings. As such, it does not incur a fiscal impact.

The total budget for the Freeway Well Planning Project is \$977,866. Half of the cost (\$488,836) is reimbursed through a grant agreement with the state. The sources of funds for the remaining project costs include in-kind services (staff time and previous expenses deemed eligible by the State) and cash match which was previously appropriated in the FY2018-19 Water Budget.

ENVIRONMENTAL IMPACT

Pursuant to the California Environmental Quality Act (CEQA), City Council adopted a Mitigated Negative Declaration (MND) on September 19, 2013, for the Ground Water Master Plan, which included ground water testing as a component of the project. Section 15162 of the CEQA Guidelines identifies the threshold for requiring an update or addendum to an adopted CEQA document. There are no substantial changes in the project, no substantial changes in circumstances, and no new information of substantial importance. The scope of the originally adopted MND was such that there are no new or more severe adverse impacts associated with the proposal currently under consideration and no additional environmental review is necessary.

Furthermore, at the start of this project, senior Planning staff reviewed the project pursuant to the California Environmental Quality Act and determined that the site investigation and feasibility study work qualified for a Class 6 categorical exemption in that this work involved basic data collection which would not result in a serious or major disturbance to an environmental resource.

BOARD/COMMISSION/COMMITTEE REVIEW AND RECOMMENDATIONS

Not applicable

NOTIFICATION

Not applicable

ATTACHMENTS

- Attachment 1 - Draft Freeway Well Feasibility Study Report

CONTACT

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