Napa County

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Legislation Details (With Text)

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Title:	Interim Director of Planning, Building, and Environmental Services requests the Board of Supervisors receive an update regarding the watershed monitoring study of the Lake Hennessey and Milliken Reservoir Watersheds.		
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Date	Ver.	Action By	Action	Result

TO: Board of Supervisors

FROM: Brian Bordona, Interim Director, Planning, Building, and Environmental Services

REPORT BY: Jamison Crosby, Natural Resources Conservation Manager

SUBJECT: Status Update on Watershed Monitoring Study of the Lake Hennessey and Milliken Reservoir Watersheds

RECOMMENDATION

Interim Director of Planning, Building, and Environmental Services requests the Board of Supervisors receive an update regarding the watershed monitoring study of the Lake Hennessey and Milliken Reservoir Watersheds.

EXECUTIVE SUMMARY

The City and County have a shared interest in gathering additional data to further our understanding of how land use changes in the Lake Hennessey and Milliken Reservoir watersheds might impact the drinking water in these reservoirs. To that end, the City and County have been collaborating since 2017 on a watershed monitoring study which attempts to characterize the water quality of the watersheds contributing to these water bodies. The first water quality samples were collected in fall 2019. The Memorandum of Understanding guiding the work was amended on November 8, 2022, allowing the work to continue for an additional three years, through June 30, 2025.

FISCAL & STRATEGIC PLAN IMPACT

Is there a Fiscal Impact? No
County Strategic Plan pillar addressed: Vibrant and Sustainable Environment

ENVIRONMENTAL IMPACT

ENVIRONMENTAL DETERMINATION: The proposed action is not a project as defined by 14 California Code of Regulations 15378 (State CEQA Guidelines) and therefore CEQA is not applicable.

BACKGROUND AND DISCUSSION

The City of Napa owns the Lake Hennessey Reservoir and the Milliken Reservoir which serve as municipal drinking water supplies for the residents of Napa and over 2,000 customers in unincorporated Napa County. The Hennessey watershed drainage area is composed of approximately 34,000 acres reaching as far north as Angwin. Of this total area, the City owns just 2,822 acres. The Milliken watershed drainage area is composed of 6,200 acres of which the City owns nearly 2,200 acres. Both watersheds are located in the unincorporated area of the County; thus, the County approves zoning and land use laws, and processes land use permits for private development on these important lands.

In 2017, the City and County worked with Systech Water Resources, Inc. to develop a calibrated watershed analysis risk management framework (WARMF) model simulating hydrology and water quality, develop a water quality sampling and analysis plan, and provide a tool which the City and County can use for watershed management on an ongoing basis.

The WARMF model combines the physical characteristics of the watershed (topography, land use, soils, vegetation, stream locations etc.) with historical weather data (rainfall, wind etc.), known hydrology (stream flow and depth, lake elevations, diversions etc.) and available water quality data (total dissolved solids, pesticides, nitrogen, phosphorous, sulfates, dissolved oxygen, etc.) collected over time at various sampling points in the watersheds. The model was initially calibrated by comparing model simulations with known past events to verify accuracy. If the model accurately represents known events, it can be relied upon to predict future events.

After developing the WARMF model tool, the City and County developed a Water Quality Monitoring and Analysis Plan and on November 19, 2019, entered into a MOU to collect the samples and perform analyses during the winter rainy seasons of 2019/20 through 2021/22.

Sampling sites are accessible and repeatable to ensure consistency of data. Samples are gathered approximately monthly (generally late October through late May) depending on the rain year when tributaries are flowing due to rainfall runoff. It is recognized that it takes 5-10 years of data to establish a baseline for water quality parameters and start to recognize trends.

There are currently 21 established sample sites in the Hennessey watershed and 5 sample sites in the Milliken watershed. Samples are gathered throughout the rainy season representative of first flush, large runoff events, and average winter flows. The first two sampling seasons (2019/20 and 2020/21) coincided with significant droughts and there were limited opportunities to collect samples. The third sampling season, 2021/22 was the

first season in which there was significant enough runoff and samples were collected from October to May.

The number of samples gathered in each sample season is as follows:

2019/20 - 4 sample events in January and February (only 2 events at most sites)

2020/21 - 4 sample events in January to April

2021/22 - 8 sample events from October to May

Samples were collected by three, 2-person teams of City, County and Resource Conservation District staff. Strict protocols regarding sample collection, preservation and transport to the laboratory (Caltest) under chain of custody were followed. Sample results go through rigorous quality assurance/quality control procedures.

Preliminary results for general water quality parameters such as pH, electrical conductivity (EC), nutrients and dissolved organic carbon (DOC) show concentrations within expected ranges and below maximum contaminant levels (MCLs), where applicable. Results for pesticides, volatile organics, semi-volatile organics and polychlorinated biphenyls (PCBs) have been non detect (ND) thus far.

Monthly sample events are scheduled for the 2022/23 sample season and in the coming months, data collected in the current season will be integrated into the existing WARMF model, and City and County staff will be trained to use the model for predictive scenarios.