



A Tradition of Stewardship
A Commitment to Service

Agenda Date: 5/14/2019

Agenda Placement: 10A

NAPA COUNTY BOARD OF SUPERVISORS Board Agenda Letter

TO: Board of Supervisors

FROM: Phillip Miller for Steven Lederer - Director of Public Works
Public Works

REPORT BY: Phillip Miller, Dep Dir PW-Flood Control & Water Resources - 707-259-8620

SUBJECT: Presentation and Acceptance of the Hennessey and Milliken Watersheds Study

RECOMMENDATION

Director of Public Works requests acceptance of the Hennessey and Milliken Watersheds Study conducted jointly by the City of Napa and the County and direction to staff regarding how to proceed.

EXECUTIVE SUMMARY

The City and County have a shared interest in how changes in the Hennessey and Milliken watersheds might impact the related lake and reservoir. The City owns the two water bodies, and the watersheds are located in the unincorporated area of the County. A study of the watersheds has been completed that was cost shared equally.

On June 26, 2017 a Request for Qualifications/Proposals was published for the Hennessey and Milliken Watersheds Study (Study). On July 28, 2017 proposals were received from four firms. A review committee consisting of staff members representing the City of Napa Water Department and County Planning, Building and Environmental Services and County Public Works was formed to review the proposals. The committee unanimously recommended award of a contract to Systech Water Resources, Inc. On September 26, 2017 the Board awarded the contract to them.

The work is now complete and staff will provide a presentation on the Study results and request direction regarding next steps to implement the sampling and analysis plan recommended in the Study.

The Napa County Strategic Plan Item 12F under Vibrant and Sustainable Environment states "Propose to Cities and Town to coordinate and develop a regional approach to municipal watershed studies and monitoring." Cooperating on evaluation the Lake Hennessey and the Milliken Reservoir watersheds advances this goal.

PROCEDURAL REQUIREMENTS

1. Staff reports.
2. Public comments.
3. Motion, second, discussion and vote on the item.

FISCAL IMPACT

Is there a Fiscal Impact? No

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 County and City have a shared interest in how changes in the Hennessey and Milliken watersheds might impact the related lake and reservoir. The City owns the two water bodies, and the watersheds are located in the unincorporated area of the County. Whereas some jurisdictions own all or a majority of the land making up the watershed above their water supplies, the City of Napa does not, leading to the need for the City, County, and private property owners to cooperate in order to protect the City's drinking water supply.

On June 20, 2017 the County and City approved a Memorandum of Understanding (MOU) regarding a study of the watersheds that would be cost shared equally. The County took the lead in preparing the Request for Qualifications/Request for Proposals in coordination with the City. On June 26, 2017 a Request for Qualifications/Proposals was published for the Hennessey and Milliken Watersheds Study. On July 28, 2017 proposals were received from four firms. A review committee consisting of three staff members representing the City of Napa Water Department and County Planning, Building and Environmental Services and County Public Works was formed to review the proposals. The committee unanimously recommended award of a contract to Systech Water Resources, Inc.

On September 26, 2017 the Board approved a professional services agreement with Systech to develop a calibrated watershed model simulating hydrology and water quality, develop a water quality monitoring plan, and provide a tool which the County and City could use to inform water supply and watershed management on an ongoing basis. The 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, etc.) collected over time at various sampling points in the watersheds. The model was calibrated by comparing model simulations with known past events to verify accuracy.

It should be noted that the model was developed based on existing and historical data. No new watercourse mapping, water quantity, or water quality information was developed as a result of the study. The scope of the approved study was limited to developing the model and developing a sampling and analysis plan to support future use of the model. The available water quality monitoring data from the creeks upstream of the reservoirs was sporadic for key water quality constituents and did not have the spatial distribution in the watersheds to clearly characterize the effects of landuse on water quality and how water quality varies with hydrologic conditions. A

preliminary water quality calibration of the watershed model was performed with the data available, but the sparse data for calibration adds uncertainty to the model's assessment of current sources of loading or predicted water quality under future conditions. Therefore, it is recommended that the County and City begin a water quality monitoring program measuring a broad suite of parameters at regular intervals at multiple locations in the watersheds as conceptualized in the Hennessey and Milliken Watersheds Sampling and Analysis Plan (attached) .

While the focus of the Sampling and Analysis Plan is to facilitate watershed model calibration, there are many benefits associated with monitoring of water resources. Consistent and comparable water-quality monitoring data allow for describing the status and trends of a water resource over time and under different climatic conditions. The Sampling and Analysis Plan outlines two conceptual monitoring options and recognizes that additional considerations and adaptive management must be implemented over time. One option identifies 25 sites with bi-weekly sampling between November and May and sampling during three storm events. The second option reduces the sites to 21, by eliminating redundant sites, and includes monthly sampling between November and May and sampling during 3 storm events. The cost of the highlighted options range between \$260,000 and \$528,000 per year for sample analysis. The estimates do not include sample collection or site development expenses. The actual cost will vary based on the number of sites available, rainfall etc.

It should also be noted that recommended sites in the Sampling and Analysis Plan were conceptually identified and that many of them are located on private property, where access to the sites will be needed prior to implementation. Sites will also need to be field-verified to ensure safe and consistent access. Given these site constraints, it is not feasible to implement a full water quality monitoring program for the coming rainy season. Other options may include a phased approach of starting with a subset of sites and adding sites as evidenced by data results and/or as additional sites become accessible.

Once sufficient monitoring data is available, which may take 5 to 10 years, the watershed model could be refined and recalibrated using the new data to provide more confidence in the model's outputs and predictions. Results could then be interpreted on their own or incorporated into separate models of the reservoirs themselves to predict reservoir behavior.

Staff requests direction related to amending the current MOU to expand the scope of work related to monitoring of the Hennessey and Milliken Creek watersheds and further requests direction regarding the scale of the desired monitoring effort. If so directed, staff will work with City staff to amend the MOU and will return with a scope and cost estimate for implementation of a sampling and analysis plan.

This item was originally presented on March 19, 2019 but not all of the Board's questions could be answered. Edits to the Watershed Study and associated Sampling and Analysis Plan were made in response to the March 19, 2019 discussion and the consultant will be attending to present their reports and answer remaining questions.

SUPPORTING DOCUMENTS

- A . Model Documentation Report
- B . Monitoring Report

CEO Recommendation: Approve

Reviewed By: Leigh Sharp