



Staff Reports

File #: 1945-2019, **Version:** 1

To: Honorable Mayor and Members of City Council

From: Philip Brun, Utilities Director

Prepared By: Joy Eldredge, Deputy Utilities Director

TITLE:

Lake Hennessey and Milliken Reservoir Watershed Water Quality Monitoring

RECOMMENDED ACTION:

Authorize the Utilities Director to execute a Memorandum of Understanding with Napa County for Water Quality Monitoring of the Lake Hennessey and Milliken Reservoir Watersheds.

DISCUSSION:

The City and County have a shared interest in gathering additional data to learn how land use changes in the Hennessey and Milliken watersheds might impact the drinking water in the related lake and reservoir. The City owns the Lake Hennessey Reservoir and the Milliken Reservoir which serve as municipal drinking water supplies for the residents and businesses 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 comprised 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 establishes zoning and land use laws, and processes land use permits for private development, on these important lands.

On June 20, 2017 the County and City entered into a Memorandum of Understanding (MOU) regarding a study of the watersheds that would be cost shared equally.

On September 26, 2017 the City Council and County Board of Supervisors approved a professional services agreement with Systech 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 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.

On March 19, 2019 staff presented to Council the report that documents the inputs to the model and how the model works, and recommended a Water Quality Monitoring and Analysis Plan. (see Attachment 1) Council gave staff direction to field verify sampling locations and to develop a Memorandum of Understanding (MOU) with the County to gather the samples and perform analyses during the 2019/20 winter rainy season.

Historical rainfall data shows that most reservoir recharge occurs during a handful of large storms during winter months. City and County staff have identified sites, and field-verified logistics to gather water samples from the main tributaries that feed the drinking water reservoirs. The proposed sites are accessible and repeatable to ensure consistency of data. Maps of the sites for both watersheds are included. (See Attachment 2) Samples will be gathered during or immediately after rain events at least monthly throughout the rainy season (generally November through May) depending on the rain year. City and County staff have developed the final MOU.

Staff recommends the City Council authorize staff to execute the MOU with the County to implement the water quality sampling and analysis plan. The terms of the MOU ensure both City and County staff are involved in all decisions, review information simultaneously, coordinate all efforts such that both City and County staff participate and are included on all verbal and written communications with any and all contracted parties. City and County staff have cooperated throughout this process. All staff efforts and costs will be shared equally (50% City:50% County) for the scope of work under the next phase that includes three years of tributary water sampling at up to 32 locations (25 in Hennessey watershed and 7 in Milliken watershed), laboratory analyses, development of the database for holding water quality information, stakeholder outreach and if necessary, model integration. There is standard language included in the MOU that states either party has the right to terminate the Agreement if funds are not appropriated in the fiscal year. City and County staff are committed to requesting said funds to their respective Council and Board for approval.

FINANCIAL IMPACTS:

It is intended that the City and County (Parties) will split the costs of this effort equally (50% each). The sampling and analysis plan includes cost estimates for more than 25 field and laboratory analyses of water quality parameters. (see Attachment 3) Each party will contribute 50% of the labor efforts for sampling. In the event staff from one entity is unavailable, costs for labor hours contributed above 50% by the other party will be reimbursed by the party who is unable to provide labor. If a party contracts with a third party for laboratory or other services, the non-contracting party will reimburse 50% of the contract costs to the contracting Party. The estimated cost to each entity is up to \$250,000 annually for a period of three years. Funds are available in the nonrecurring water supply account 53905-53201 anticipating that funds from FY19 are carried over into FY20.

CEQA:

The Utilities Director has determined that the Recommended Action described in this staff report is exempt from CEQA, pursuant to CEQA Guidelines Section 15306 (Class 6), which exempts basic data collection activities which do not result in a serious or major disturbance to an environmental resource.

DOCUMENTS ATTACHED:

ATCH 1 - Hennessey and Milliken Reservoir Watershed Study Hydrology and Water Quality

Monitoring and Analysis Plan

ATCH 2 - Map of Proposed Lake Hennessey and Milliken Reservoir Watershed Sampling Sites

ATCH 3 - List of Water Quality Parameters for the sampling and analyses of the tributaries in the Hennessey and Milliken Watersheds

ATCH 4 - Presentation Describing Implementation of Water Quality Sampling and Analysis Plan

NOTIFICATION:

None.