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Title: The Technical Advisory Group (TAG) members will receive a status update on the evaluation of evapotranspiration (ET) data collection activities and preliminary data analysis. This will include an overview of previous discussions, current outreach activities, and presentation of collected data. This is an informational item to inform the TAG members of ongoing work occurring in relation to quantifying total consumptive use of water.

Sponsors: Groundwater Technical Advisory Group

Indexes:

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Attachments: 1. Update on Evaluating ET - Presentation

Date	Ver.	Action By	Action	Result
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TO: Technical Advisory Group for the Napa County Groundwater Sustainability Agency

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

REPORT BY: Jamison Crosby, Natural Resources Conservation Manager

SUBJECT: Update on Evaluating ET across the Napa Valley Subbasin

RECOMMENDATION

The Technical Advisory Group (TAG) members will receive a status update on the evaluation of evapotranspiration (ET) data collection activities and preliminary data analysis. This will include an overview of previous discussions, current outreach activities, and presentation of collected data. This is an informational item to inform the TAG members of ongoing work occurring in relation to quantifying total consumptive use of water.

EXECUTIVE SUMMARY

An initial presentation on ET data was provided at the October 2022 TAG meeting with a presentation from Tom Shapland (Tule Technologies). New technologies in remotely sensed ET estimates from OpenET was presented at the November 2022 TAG meeting by the technical team. Outreach activities to vineyard managers to collect measured ET data from Tule Technologies sensors have been actively pursued since that time. To date, data from 14 sensors have been volunteered by growers for use by the technical team. The data from these sensors are currently being used to evaluate OpenET algorithms in Napa County. The initial evaluation of ET

showed a bias in OpenET to underestimate when compared to locally measured ET estimates.

Procedure

Staff introduces.

Questions and answers with the TAG.

Public comments.

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 use of remotely sensed ET estimates was originally developed for the Napa Valley Integrated Hydrologic Model (NVIHM). These estimates used data from 2014 to develop crop coefficients for black and white grapes in Napa Valley. These crop coefficients provided the foundation for applied water requirements, for both surface and groundwater, for irrigated acreages within the NVIHM. Refining the estimates of applied water is a priority during GSP implementation.

Field measurements of ET using surface renewal methods by Tule Technologies was presented at the October, 2022 TAG meeting. The measured data provide daily, field-scale measurements of ET. Based on conversations by the TAG, the use of local data was necessary to use for refining crop coefficients in Napa County. An overview of remotely sensed ET measurement technologies, OpenET, was presented at the November 2022 TAG meeting. OpenET is an online platform that uses the best available science and publicly available data to provide satellite-based ET estimates. OpenET has been used in multiple applications across the Western US as well as for multiple Groundwater Sustainability Agencies (GSA) within California.

Outreach to vineyard managers and other users of Tule Technologies sensors began in Spring 2023 and was led by the Napa County Resource Conservation District (RCD). To date, data from 14 sensors have been volunteered by growers from the region. A comparison of measured ET estimates with remotely sensed ET estimates is being conducted at the locations of these sensors. The initial evaluation of ET showed a bias in OpenET to underestimate when compared to locally measured ET estimates.

Data from multiple sources of ET will continue to be evaluated to provide refined estimates of total consumptive use.

SUPPORTING DOCUMENTS

A. Presentation - Update on Evaluating ET