



Board of Directors

Susan Boswell
Barry Christian
Liz Colby
Tosha Comendant
Anne Cottrell
Diane Dillon
Marita Dorenbecher
Geoff Ellsworth
David Graves
Jason Lauritsen
Kenneth Leary
Alfredo Pedroza
Bill Pramuk
Kimberly Richard
Scott Sedgley
Pamela Smithers
Donald Williams

Alternates

Mariam Aboudamous
Jeffrey Durham
Doris Gentry
Ryan Gregory
Mary Koberstein
Irais Lopez-Ortega
Brent Randol

Staff

Patrick Lowe,
Secretary
Natural Resources
Conservation Mgr.,
Public Works

Jeff Sharp,
Principal Planner,
Public Works

804 First Street,
Napa, CA
94559-2623

Tel: 707-259-8600

info@napawatersheds.org

AGENDA

REGULAR MEETING

Thursday, September 26, 2019, 3:00 p.m.

2751 Napa Valley Corporate Drive, South Campus, Building A
First Floor, Willow Conference Room, Napa CA 94558

--- Note Meeting Location/Map ---

1. **CALL TO ORDER AND ROLL CALL** (Chair) (2 min)
2. **APPROVAL OF ACTION MINUTES – July 25, 2019** (Chair) (2 min)
3. **PUBLIC COMMENT** – In this time period, anyone may address the Council regarding any subject over which the Council has jurisdiction but which is not on today's posted agenda. In order to provide all interested parties an opportunity to speak, time limitations shall be at the discretion of the Chair. As required by Government Code, no action or discussion will be undertaken on any item raised during this Public Comment period (Chair)
4. **PRESENTATIONS AND DISCUSSION**
 - a) Harmful Algal Blooms: the Good, the Bad, the Algae - an overview of freshwater harmful algal blooms (HABs), their impacts on water quality, public health concerns, and resources available from the State Waterboards Freshwater HABs program (Keith Bouma-Gregson, Ph.D., State Waterboards) (20 min)
 - b) Overview of new projects the Solano County Water Agency is doing to protect the Putah Creek watershed, including water quality sampling and education to manage sedimentation and aquatic invasive species (Sabrina Colias, Associate Water Resources Specialist, Solano County Water Agency) (20 min)

(cont.)

5. **UPDATES AND REPORTS**

- a) Report on local Coastal Cleanup Day results, ongoing Waterway Keeper efforts to remove litter and how to participate in creek and river stewardship (Ashley Kvitek, Napa County Resource Conservation District) (15 min)
- b) Update on Napa County's Groundwater Sustainability Program, including response to the Department of Water Resources assessment of the County's Alternative Groundwater Sustainability Plan, next steps in groundwater model development, deployment of new well monitoring equipment, work underway to identify groundwater dependent ecosystems, and outreach plan development (20 min)

6. **INFORMATIONAL ANNOUNCEMENTS:**

Exchange of informational announcements and events (Staff/Council/Public) (5-10 min)

7. **FUTURE AGENDA ITEMS:**

Discussion of possible items for future agendas (Staff/Council) (5 min)

- Presentation on Valley Oak viability under climate change - utilizing Napa and Sonoma depth to groundwater data to assess restoration nodes, by San Francisco Estuary Institute
- Other items

8. **NEXT MEETING:**

Next scheduled meeting: **November 21, 2019 – 3:00 p.m.**
2751 Napa Valley Corporate Drive, South Campus, Building A
First Floor, Conference Room, Napa CA 94558

Note – This meeting is a week earlier due to Thanksgiving holiday

9. **ADJOURNMENT (Chair)**

Note: If requested, the agenda and documents in the agenda packet shall be made available in appropriate alternative formats to persons with a disability. Please contact Jeff Sharp at 707-259-5936, 804 First St., Napa CA 94559-2623.

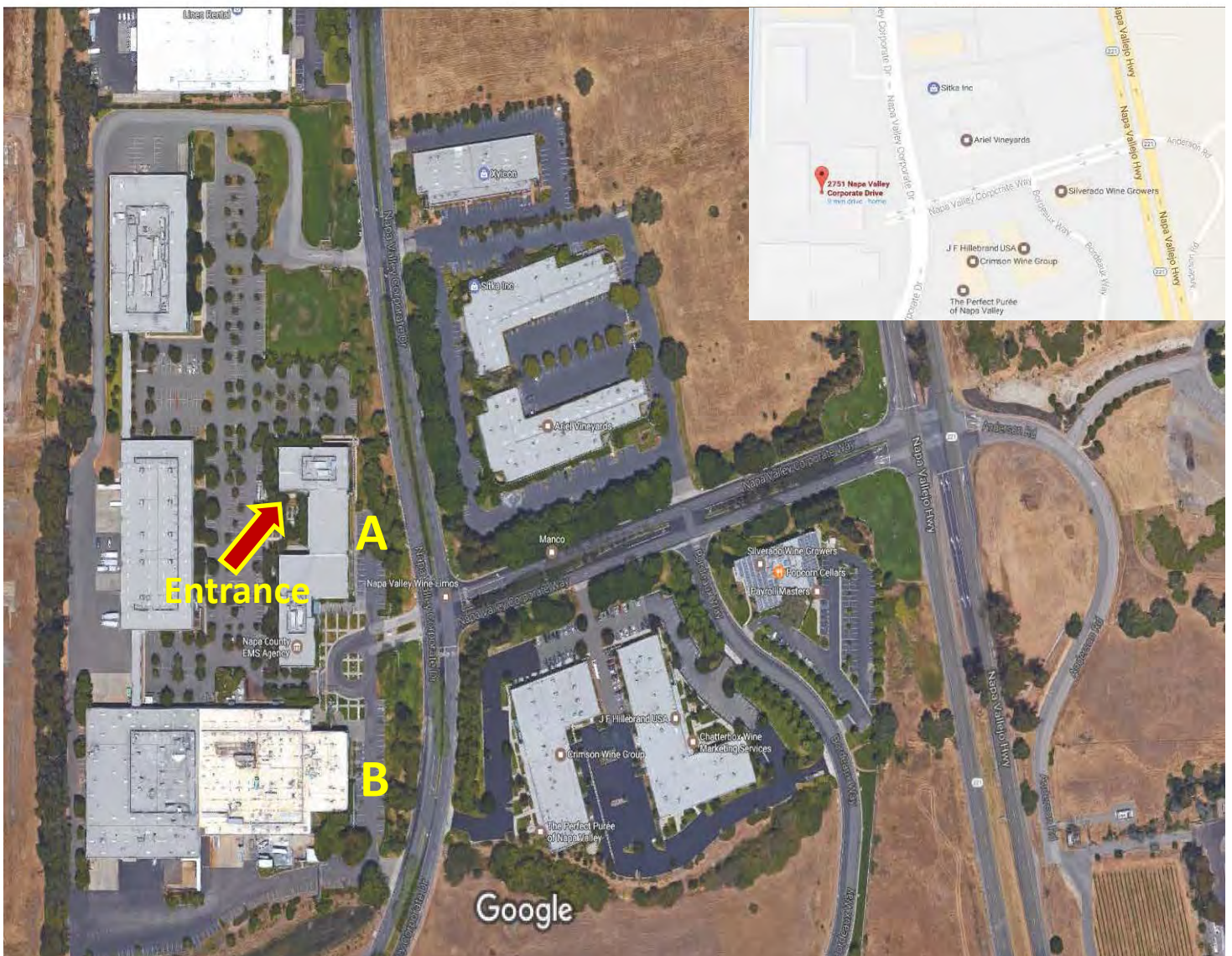




Meeting Location Map

The meeting room is located on the first floor in the southwest corner of Building A (see arrow)

2751 Napa Valley Corporate Drive, South Campus, Building A, First Floor, Conference Rooms, Napa CA 94558





-- ACTION MINUTES --

REGULAR MEETING

Thursday, July 25, 2019, 3:00 p.m.

**2751 Napa Valley Corporate Drive, South Campus, Building A
First Floor, Willow Conference Room, Napa CA 94558**

--- Note Meeting Location/Map ---

Board of Directors

- Susan Boswell
- Barry Christian
- Liz Colby
- Tosha Comendant
- Anne Cottrell
- Diane Dillon
- Marita Dorenbecher
- Geoff Ellsworth
- David Graves
- Jason Lauritsen
- Kenneth Leary
- Alfredo Pedroza
- Bill Pramuk
- Kimberly Richard
- Scott Sedgley
- Pamela Smithers
- Donald Williams

Alternates

- Mariam Aboudamous
- Jeffrey Durham
- Doris Gentry
- Ryan Gregory
- Mary Koberstein
- Irais Lopez-Ortega
- Brent Randol

Staff

- Patrick Lowe,
Secretary
Natural Resources
Conservation Mgr.,
Public Works

- Jeff Sharp,
Principal Planner,
Public Works

804 First Street,
Napa, CA
94559-2623

Tel: 707-259-8600

info@napawatersheds.org

1. CALL TO ORDER AND ROLL CALL (Chair) (2 min)

Members Present: Barry Christian, Tosha Comendant, Anne Cottrell, Diane Dillon, David Graves, Jason Lauritsen, Kenneth Leary, Alfredo Pedroza, Bill Pramuk, Kimberly Richard, Pamela Smithers, Donald Williams

Members excused: Susan Boswell, Liz Colby, Marita Dorenbecher, Geoff Ellsworth, Scott Sedgley

Members absent:

Staff present: Patrick Lowe, Jeff Sharp

2. APPROVAL OF ACTION MINUTES – March 24, 2019 (Chair) (2 min)

Approved as presented

SB	BC	LC	TC	AC	DD	MD	GE	DG	JL	KL	AP	BP	KR	SS	PS	DW
E		E				E	E							E		

3. PUBLIC COMMENT – In this time period, anyone may address the Council regarding any subject over which the Council has jurisdiction but which is not on today's posted agenda. In order to provide all interested parties an opportunity to speak, time limitations shall be at the discretion of the Chair. As required by Government Code, no action or discussion will be undertaken on any item raised during this Public Comment period (Chair)

Chris Malan commented on Napa Valley College expansion for student housing and questioned the development's impact to wetlands, the river and inundation – public comments can be provided Aug 22nd.

4. UPDATES AND REPORTS

a) Report on the 2019 Watershed Symposium held May 16th at Copia/CIA (Frances Knapczyk, Program Director, Napa RCD) (10 min)

(cont.)

Frances Knapczyk reported that 140 attended, 13 speakers presented, 14 sponsors supported, exhibitors, teachers, students were in attendance, and 31 “watershed organizations” participated in whirlwind tour – in all making the event a great success. Presentations included: the beauty of our watershed and how art can engage the public, a survey of local ecology and an overview or natural resource monitoring.

Participant feedback recommended more youth involvement/attendance, presentations on what local winegrowers are doing to benefit the watershed, move the Symposium to November and make Symposium more accessible to the general public by not having it on a workday. Suggested future symposium topics included: highlighting “Putah Creek” area of the county, and Native American management and use of natural resources. Presentations provided at the Symposium are available on the WICC website. The Council and public commented that the aesthetic components of the Symposium was a nice addition to the scientific elements, and that reinstating the whirlwind tour was insightful.

- b) Report on the The Honoring Project, a proposed Living River art installation in the Oxbow Commons to honor and reflect on the lives of the original people who lived along the Napa River and within Napa County before settlers arrived (Lowell Downey, Art & Clarity) (10 min)

Mr. Downey provided background on the project – an art installation in the Oxbow Commons honoring the original people that lived along the Napa River – and introduced Charlie Toledo, Director of the Suscol Intertribal Council. The project idea started 5yrs ago. Mr. Downey showed the Council a few conceptual images that portrayed the theme of the project. Once finalized, the artwork will be lightly sandblasted into the concrete throughout the Oxbow Commons area. The artwork will not require any maintenance, will endure through severe weather conditions, and will not affect the integrity of the structures. Mr. Downey has met with the City of Napa, Friends of the Napa River, Flood Control District and others who have guided the vision and provided input on the project. The artwork will be commissioned in consultation with regional tribal members. The next stage of the project is to seek funding from public and private sources.

- c) Update on Napa County State Water Project allocation, water supply conditions and contingent planning (Phil Miller, District Engineer, Napa County Flood and Water Conservation District) (10 min)

Mr. Miller provided a presentation reporting on California’s precipitation to date and State Water supply allocations to north of delta water agencies. California currently has no areas in drought at this time. All state reservoirs are essentially full. The Napa County Flood Control and Water Conservation District’s (District) allocation from the State Water Project is currently 85%, down from 100% in the 2016-2017 season. Since the District (who sells state water to various Napa municipalities) currently has more water than it can consume, is looking for potential customers within the Bay Area for possible water transfers/sales. In prior water-years of excess water, the District sold/transferred \$2 million of water from its state water project allocation to others who needed it. The District and the Department of Water Resources are working towards an amended State Water Contract, with improvements to tools used in determining how state water is transferred and managed. Charlie Toledo commented on the relative scarcity of water across the globe, and noted that although California reservoirs are full, the headwaters have been drying out seasonally for many years. Mr. Miller said that we are now in cycles of climate extremes – one year may be very good and the next may be a drought. California is living with continual drought in mind and conservation messaging must continue. Mr. Graves asked about Napa’s cost-share for the Oroville spillway repairs and relocation of the North Bay aqueduct alternative intake in the delta. Mr. Miller said it is uncertain at this time what the local cost will be for the spillway and that the alternative intake project is too costly and that funding is being sought to bring down the local cost. Chris Malan mention the requirements to release water from our local reservoirs for fish and that it is ironic there is talk of selling water. Mr. Graves noted that

those reservoirs are operated by the City of Napa and the State and not by the District. Mr. Miller said that the City of Napa does release water from Lake Hennessy, however there is a large sand/gravel area (subsurface geologic formation) and the water goes subsurface into groundwater and does not make it to the river as surface flow in that location. Mr. Miller noted that Conn Creek in that location is part of an alluvial aquifer and water does not stay on the surface. Mr. Leary asked about the Sites Reservoir (large project in the northern Sacramento valley). Mr. Miller said that project is slow but moving ahead. Ms. Smithers asked about who gets the money from the sale of water. Mr. Miller said it offsets the statement of charges from the State for the water (essentially cost recovery for the three cities). Mr. Margadant asked about the State water rights and the administration cost of State water. Mr. Miller said that costs associated with the management of the State Water Contract is a (1:1, no markup) pass through to the cities as is the cost of the water itself. It was suggested that the WICC have a larger discussion on our local/regional water system and its management. Mr. Miller mentioned that the District, along with Napa County cities and Napa Sanitation, are working on a Drought Contingency Plan for the entire Napa Valley. This work is partly funded by a grant from the Bureau of Reclamation. Once the grant contract is signed by the Bureau of Reclamation, it will be a two-year effort.

5. PRESENTATIONS AND DISCUSSION – Napa County’s Groundwater Sustainability Program

- a) Update on the Department of Water Resources Basin Prioritization of the Napa-Sonoma Lowlands Subbasin and tentative decision on Napa County’s Alternative Groundwater Sustainability Plan for the Napa Valley Subbasin - Basin Analysis Report (Staff) (20 min)

Patrick Lowe provided an overview and update on the Department of Water Resources (DWR) groundwater basin reprioritization efforts, which began in 2015. Mr. Lowe said that last year DWR looked at reprioritizing 458 of California’s 515 groundwater basins across the state. Initially, in 2015, the Napa-Sonoma Lowlands Subbasin (Carneros area south to Mare Island) was prioritized as a very low priority, DWR’s initial reassessment of the basin indicated that it should be a medium priority, however after receiving comments, DWR has since recommended that the Napa-Sonoma Lowlands Subbasin remain a very low priority. DWR’s reassessment should be finalized soon. Mr. Lowe also reported on DWR’s preliminary decision on the Napa Valley Subbasin Alternative Groundwater Sustainability Plan (GSP), which was submitted to DWR in December of 2016. DWR has been focusing their efforts on critical basins elsewhere in CA and has struggled to address the alternatives that were submitted for review back in late 2016. Notification from DWR last week stated that their preliminary recommendation is not to recommend the Plan for approval at this time. DWR requested clarification of and additional reference information to support the Plan, essentially to further demonstrate that the Subbasin has indeed operated within its sustainable yield. The County has 30-days, until August 16, 2019 to respond to DWR. DWR is expected to make their final decision in mid-October or possibly mid-November provided an extension of time request is granted. If the Plan is approved, Mr. Lowe said work will continue on the Plan update (due in 2022), expanding outreach and groundwater model development. If the Plan is not approved, the County would have 180 days to form a Groundwater Sustainability Agency (GSA) and commence work on developing a Groundwater Sustainability Plan (GSP), which would need to be submitted to DWR by 2022. Mr. Lowe said that the WICC website, as well as the County groundwater website, will have updates as they are given by DWR. DWR’s notification about Napa County’s Alternative Groundwater Sustainability Plan for the Napa Valley Subbasin is available on their SGMA Alternative Plan webpage. The Council asked Mr. Lowe clarifying questions about the additional evidence DWR is requesting and the process of DWR’s review. Chris Malan noted her involvement in tracking the Sustainable Groundwater Management Act (SGMA) and that she submitted substantive comments on the County’s Alternative Plan, stating that there was not enough evidence that the County has managed the basin in a sustainable way. Mr. Lowe noted that DWR, as stated in their staff report, does not conclude that the Napa Valley Subbasin is or has been managed unsustainably, and that DWR is looking for more evidence related to the measurable criteria provided in the Alternative Plan. Ms. Smithers asked if we have the data to answer

DWR's concerns. Mr. Lowe said yes we have the data and will be submitting it to DWR. He also noted that spring groundwater levels in the Subbasin averaged 14' and since 1988 groundwater levels have been sustainable. When available, the County's response to DWR will be posted on the WICC and County Groundwater websites.

- b) Report on Groundwater Stakeholder Survey Responses and Communication and Engagement Plan development (Staff/Reid Bryson, Luhdorff & Scalmanini Consulting Engineers) (15 min)

Jeff Sharp provided the Council background on prior groundwater outreach and the goal of the recent groundwater stakeholder survey – to better understand the community's needs and level of understanding/knowledge around local groundwater resources. The survey was designed under DWR's outreach guidance, with input from the WICC, and based upon research of other stakeholder surveys used around the state. The survey was emailed/received by over 1,000 recipients, there were 74 responses to date from a diverse group (private well owners, Ag users, public water system customers, environmental groups, owners of springs). Interesting feedback (questions) received from the (15-question) survey include: what are small well owners' rights; what monitoring is being conducted; what does commercial development and pumping do to streamflow and the fish; what is the condition of our groundwater supply; what are the pumping interactions between wells; what is the impact of climate change on the groundwater resource; how groundwater data/information informing management? When asked what can be done better, respondents recommended persistent outreach, hold more educational events meetings/workshops at accessible times and locations. The results from the survey will be summarized and applied towards the development of a Groundwater Communication and Engagement Plan that will be consistent with GSP regulations. The survey is still open and available on the WICC and County website. The Council and public provided input on other avenues to get the survey out to a broader audience, discussed the goals of the survey, and stressed need to get input from as many stakeholders as possible.

- c) Presentation on Groundwater Model development – building upon earlier models and water budget results, model objectives and capabilities, dataset enhancement, and opportunities for public engagement (Randy Hanson, One-Water Hydrologic) (60 min)

Reid Bryson (LSCE) provided the Council with a summary of spring 2019 groundwater levels; which averaged 14' below the surface. Mr. Bryson then provided background on past groundwater studies and current efforts now underway to develop a robust groundwater hydrologic model of the Napa Valley Subbasin. Past efforts involved a numerical subbasin-scale-water budget and sustainable yield analysis. A hydrologic model would greatly benefit our understanding of groundwater and how best to management it into the future. The model would develop water budgets on a biweekly time steps, could be used to evaluate local-scale conditions, and could offer simulations of future conditions to evaluate options to maintain groundwater sustainability. The model will focus on the Napa Valley floor and will include inputs from upper watershed areas. Mr. Bryson introduced Randy Hanson, who is the developer behind the One-Water model, an open source modeling tool supported by USGS, DWR and others. Mr. Hanson provided an overview of the One-Water model, how it can support Napa's groundwater planning (water budgets and sustainability goals), how the model can identify and track thresholds and undesirable results, and what the model can provide as far as reports for outreach. Mr. Hanson provided a number of illustrations that outlined the challenges, design, components, inputs and outputs of the model. He gave examples of the model applied elsewhere in CA and TX, and how it can benefit the Napa Valley, particularly in the area of surface water and groundwater interactions. Next steps of the model development process include: updating spatial water demand datasets and expanding spatial geologic datasets. Charlie Toledo asked of longer historical periods in the range of 100s to 1,000s of years were considered for the model. Mr. Hanson said those period of records (past mega droughts) have been looked at elsewhere but not in the context of this analysis. Chris Malan said that DFW has information on streamflow and SWRCB has data on water diversion. Mr. Bryson said the

SWRCB does have diversion right information, but not where the water is applied; that information is in paper form in Sacramento and not very accessible. There was concern voiced that use of a history based predictive model will limit our ability to see the future with its drastic climatic swings, including human behavior and fire. Mr. Hanson mentioned that some level of human behavior is embedded in the model, such as hardened demand and that fire can be addressed by linkages to predictive fire models.

6. INFORMATIONAL ANNOUNCEMENTS:

Exchange of informational announcements and events (Staff/Council/Public) (5-10 min)
No comments provided.

7. FUTURE AGENDA ITEMS:

Discussion of possible items for future agendas (Staff/Council) (5 min)
Charlie Toledo requested consideration of Tribal Elder representation on the Council

8. NEXT MEETING:

Next scheduled meeting: **September 26, 2019 – 3:00 p.m.**
 2751 Napa Valley Corporate Drive, South Campus, Building A
 First Floor, Conference Room, Napa CA 94558

9. ADJOURNMENT (Chair)

Motion and approval to adjourn.

<i>SB</i>	<i>BC</i>	<i>LC</i>	<i>TC</i>	<i>AC</i>	<i>DD</i>	<i>MD</i>	<i>GE</i>	<i>DG</i>	<i>JL</i>	<i>KL</i>	<i>AP</i>	<i>BP</i>	<i>KR</i>	<i>SS</i>	<i>PS</i>	<i>DW</i>
<i>E</i>		<i>E</i>				<i>E</i>	<i>E</i>							<i>E</i>		

Note: If requested, the agenda and documents in the agenda packet shall be made available in appropriate alternative formats to persons with a disability. Please contact Jeff Sharp at 707-259-5936, 804 First St., Napa CA 94559-2623.



Voting Key

If not unanimous, votes will be tallied (N = No; A = Abstained, E = Excused) using the following Board Member abbreviations: SB = Susan Boswell; BC=Barry Christian; LC = Liz Colby; TC = Tosha Comendant; AC=Anne Cottrell; DD = Diane Dillon; MD = Marita Dorenbecher; GE = Geoff Ellsworth; DG=David Graves; JL = Jason Lauritsen; KL = Kenneth Leary; AP = Alfredo Pedroza; BP=Bill Pramuk; KR=Kimberly Richard; SS = Scott Sedgley; PS = Pamela Smithers; DW=Donald Williams; Alternates: MA = Mariam Aboundamous, JD = Jeffrey Durham, DG2 Doris Gentry, RG = Ryan Gregory, ILO = Irais Lopez-Ortega, BR=Brent Randol.

Example Key:

<i>SB</i>	<i>BC</i>	<i>LC</i>	<i>TC</i>	<i>AC</i>	<i>DD</i>	<i>MD</i>	<i>GE</i>	<i>DG</i>	<i>JL</i>	<i>KL</i>	<i>AP</i>	<i>BP</i>	<i>KR</i>	<i>SS</i>	<i>PS</i>	<i>DW</i>
	<i>N</i>				<i>A</i>			<i>A</i>							<i>E</i>	

COASTAL CLEANUP DAY

SEPT 21 • 9AM - 12PM

FIND YOUR SITE

NAPARCD.ORG



McKinlay Rogers, Big Surf ©Tom Killion 2014

CALIFORNIA COASTAL CLEANUP DAY

SATURDAY
SEPTEMBER 21ST
9AM TO NOON



2019 Napa County Coastal Cleanup Day Sites:

Napa – Contact: Ashley Kvitek – Ashley@NapaRCD.org or 707-690-3117

- Downtown Napa: corner of Main and Pearl Streets near Napa Creek
- Oxbow Commons: meet at the west side of the CIA Copia building; park in the valet spots
- South Wetlands: south end of Jefferson Street
- Kennedy Park: boat dock
- Napa Valley Vine Trail: Hartle Ct. next to Napa County Animal Shelter
- Salvador Creek/Vintage High School: quad, off Trower Rd
- Riverside Drive: LOCATION CANCELLED

American Canyon – Contact: Stacey Johnson – SJohnson@cityofamericancanyon.org or 707-647-5333

- Community Park 2: 20 Benton Way

Lake Berryessa – Contact: Marianne.Butler@SolanoRCD.org or 567-674-5611

- Markley Cove: behind the store
- Steele Canyon: by the boat launch
- Pope Creek Bridge (Ground, Dive, Canoe, & Kayak): Park in the paved parking lot

Calistoga – Contact: Melissa Velasquez – MVelasquez@ci.calistoga.ca.us or 707-942-2828

Meet at Community Center: at 1307 Washington Street at 9:00 a.m
Oat Hill Mine Trailhead, Intersection of Lincoln Ave (Hwy 29) & Silverado Trail
Old Pacific Railroad Right-of-Way (Lincoln to Little League Field)
Napa River adjacent to Pioneer Park
Napa Valley Vine Trail (Washington Street – Lincoln to Dunaweal lane)

St. Helena – Contact: Michael Fontana- MFontana@cityofstheleena.org or 707.967.2794

- Jacob Meily Park

The CA Coastal Commission has produced an interactive map of cleanup locations in Napa County, along with every corner of the state:

www.coastalcleanupday.org

Questions?

<http://naparcd.org/coastalcleanupday/>

Email Ashley@NapaRCD.org or Call 707-690-3117

[Napa Valley Integrated Hydrologic Model Overview](#)

In 2016, Napa County approved an updated Sustainability Goal and management criteria for the Napa Valley Groundwater Subbasin consistent with the requirements of California's Sustainable Groundwater Management Act (SGMA). The sustainability criteria approved in 2016 resulted in an extension of groundwater management efforts underway by the County since 1991 and additional technical studies of groundwater and watershed conditions funded by the County since 2008.

“to protect and enhance groundwater quantity and quality for all the people who live and work in Napa County, regardless of the source of their water supply. The County and everyone living and working in the county will integrate stewardship principles and measures in groundwater development, use and management to protect economic, environmental and social benefits and maintain groundwater sustainability indefinitely without causing undesirable results, including unacceptable economic, environmental, or social consequences.” – Napa County Groundwater Sustainability Goal

The 2016 Sustainability Goal update and SGMA management criteria were supported by a water budget and sustainable yield analysis for the Napa Valley Groundwater Subbasin developed by Lohdorff & Scalmanini Consulting Engineers (LSCE), all of which were presented in a report titled *Napa Valley Groundwater Sustainability: A Basin Analysis Report for the Napa Valley Subbasin* (Basin Analysis Report).¹ The water budget and sustainable yield analysis relied on Napa Valley land use information, Napa Valley geologic data, and Napa Valley hydrologic data, to evaluate groundwater and surface water inflows and outflows over a 28-year period from 1988 through 2015. The sustainable yield analysis identified a volume of groundwater that can be extracted annually without causing undesirable results, consistent with SGMA requirements. The 2016 water budget and sustainable yield analysis addressed the entire 46,000-acre Napa Valley Groundwater Subbasin, which covers the length of the valley from north of Calistoga to the Highway 12 Napa River overpass south of Napa.

Napa County and LSCE are beginning work on a new modeling tool to implement recommendations included in the 2016 Basin Analysis Report for the Napa Valley Subbasin, based in part on stakeholder comments and the County's desire to develop a more robust and integrated tool to inform management actions. Utilizing open-source software developed by the U. S. Geological Survey, LSCE and Napa County are developing a mathematical groundwater flow model for the Napa Valley Subbasin and Napa-Sonoma Lowlands Subbasin, covering an area of approximately 87,000 acres (**Figure A**). The new model will serve as a tool to advance the understanding and management of interconnected groundwater and surface water resources in Napa Valley consistent with the County's Groundwater Sustainability Goal. Additional information about the model software, including downloadable software files, technical

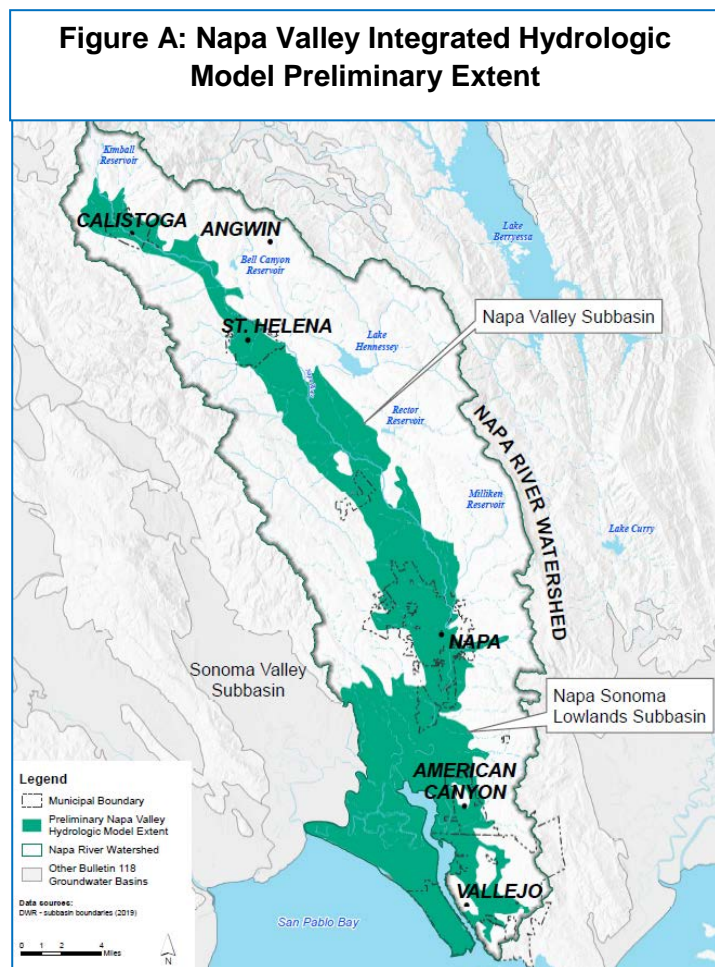
¹¹ The Basin Analysis Report and additional background information are available on the WICC website. <https://www.napawatersheds.org/sustainable-groundwater-management>

documentation, and training examples, are available from the U.S. Geologic Survey's California Water Science Center website: <https://ca.water.usgs.gov/modeling-software/one-water-hydrologic-model.html>.

The July 2019 the Watershed Information and Conservation Council (WICC) of Napa County held a public meeting that included a presentation summarizing the capabilities of the One-Water Hydrologic Model software that is being used to develop the Napa Valley Integrated Hydrologic Model (Napa Valley Model). The presenters included Randy Hanson, a former research hydrologist with the USGS and lead developer of the One-Water software platform. Mr. Hanson presented a number of examples of the One-Water software that have been implemented in other parts of California and the western U.S. Several of those examples are presented in reports available at the U.S. Geological Survey's California Water Science Center website (see the link above). Mr. Hanson will serve as an advisor to the County and LSCE during the development of the Napa Valley Model.

The Napa Valley Model includes the following objectives:

1. Develop water budgets with biweekly time steps for the entire model area and for key areas of interest within the model area to accurately reflect historical and current hydrologic conditions
2. Simulate hydrologic responses to climate change and future land uses
3. Test the efficacy of projects and management actions to maintain sustainability, including expanded use of recycled water, actions to increase groundwater recharge, and potential controls on groundwater use
4. Inform the public, stakeholders, and decision-makers about anticipated future conditions, and
5. Evaluate the groundwater monitoring network coverage and data gaps to refine data collection efforts



Use of the One-Water software provides several new capabilities relevant to the objectives of the Napa Valley Integrated Hydrologic Model:

1. Tracking inflows, outflows, and groundwater conditions for the entire model area, including flows to and from the surrounding Napa River Watershed (Figure A)
2. Tracking inflows, outflows, and groundwater conditions for localized areas including, the Napa River and riparian forests (i.e., groundwater dependent ecosystems) that rely on groundwater
3. The ability to verify model performance and accuracy using monitoring data, including groundwater level data collected around Napa Valley, as well as stream flow data
4. Evaluating changes in land use and water demands that may affect the rate and intensity of water use and changed to groundwater recharge
5. The ability to simulate how future groundwater conditions will compare to management criteria established for the Napa Valley Subbasin, including criteria for streamflow depletion, groundwater level declines, groundwater storage depletion, seawater intrusion and land subsidence
6. Coordination with drought planning efforts by municipal water systems through simulations of future water demand scenarios
7. Transparent analysis through the use of open-source, peer-reviewed software

The One-Water model software provides the direct simulation of the following:

- Evapotranspiration, runoff, and soil moisture content
- Irrigation supply and demand, including groundwater, surface water, and recycled water
- Surface water diversions by all users
- Groundwater pumping by all users
- Natural and artificial groundwater recharge
- Groundwater and surface water flows within the model area
- Potential land subsidence rates

Development of the Napa Valley Model is occurring now through fall 2021, with ongoing opportunities for stakeholder input. Stakeholder input is encouraged in order to provide the best representation of Napa Valley hydrology and water uses, under both current conditions and potential future scenarios. Input is most useful when documented in writing, although opportunities for input will continue to occur at future WICC meetings.

Model Timeline

July 2019 – December 2019

- Receive stakeholder input on water uses, management practices, and stakeholder priorities.
- Finalize model design including area-specific water budget subregions.

January 2020 – June 2020

- Develop input datasets for groundwater and surface water conditions in areas adjacent to the model area (for example, inflows of water from the Napa River Watershed and tidal water levels)

in San Pablo Bay and the lower Napa River). The software will use these boundary condition datasets for calculations to simulate conditions in Napa Valley.

- Execute model and report results at public meetings.

July 2020 – June 2021

- Model calibration to improve the ability to accurately represent current and future hydrologic conditions.
- Develop scenarios and run the model to evaluate effects of future land use changes, climate change, and a range of potential management actions.

Questions or comments about the Napa Valley Integrated Hydrologic Model or local SGMA implementation and groundwater outreach efforts are welcomed by email to info@napawatersheds.org or by mail to: Watershed Information and Conservation Council, 804 First St., Napa CA 94559.