NEWS FROM MARIN CONSERVATION LEAGUE

January—Febraury 2017

MMWD reviews water supply options

by Ann Thomas

Marin Municipal Water District (MMWD) is currently preparing a long-term supply plan to help ensure adequate water for district customers in the event of prolonged drought or other emergency. Work on the Water Resources Plan (WRP) 2040 began in 2015 with preparation of the Urban Water Management Plan (Plan), a plan that is required by the state for all water suppliers that serve 3,000 or more connections. In September, the board determined that an "Epic Drought" could compromise the reliability of the District's water system and proceeded to expand the WRP 2040 by identifying almost 40 water supply options for further study.

Long-term planning urgency

A new urgency about the need for long-term water supply planning that is resilient to extreme conditions has developed statewide following the dramatic reduction in rainfall in 2013-2014 and ominous awareness that this could be prelude to a megadrought for which California is woefully unprepared. Most concern centers on the reduced Sierra snowpack, largely affecting Central and Southern California, but alarm bells have also been rung in the North Bay.

At the end of 2012, MMWD's reservoirs were full, but in the following calendar year (2013) they received less

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Sea level rise

BayWAVE study completed

Photo courtesy Marin County Dept. of Public Works

A flooding event in January 1973 inundated the Lucky Drive area in Corte Madera, a spot that continues to be of concern today.

by Nona Dennis

It comes as no surprise that Marin County is vulnerable to sea level rise. Sea level at the Golden Gate tide gauge has risen 8 inches over the past century and is projected to rise 66 inches by 2100, and in a worst case, 70 inches. Maps show projected San Francisco Bay levels extending well into Marin County. This is not news! What is news is the extent and asset value of county areas and activities that may be affected—thousands of acres of developed land; thousands of residents, commuters, and major land owners; miles of roadways, utilities and other infrastructure; and billions of dollars.

The Marin BayWAVE (Bay Waterfront Adaptation and Vulnerability Evaluation) report will provide local governments, property owners, and public with the data they need to better understand just how widespread and disruptive the impacts of sea level rise are likely to be along Marin's San Francisco and San Pablo Bay shoreline, from north of Novato to the Golden Gate Bridge. (See also MCL Newsletter May-June 2016). It should also prompt the next level of planning—that is, developing coordinated strategies to avoid, design for, and adapt to the emerging reality.

In October, Chris Choo, Principal Planner in the County Department of Public

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A Message from the President—Our work in 2017

As we begin a new year, we face a shifting political landscape and challenges to environmental protections on a national scale. Here in Marin, the Marin Conservation League, with the support of our members, will concentrate on fulfilling our mission to protect, preserve, and restore the natural assets of Marin County.

One of MCL's guiding principles is to give environmental concerns first priority. Accordingly, we will continue in 2017 to closely track the County's Road and Trail Management Plan process, preserve by preserve, advocating for the protection of sensitive habitats and for limiting the effects of recreational uses where they are destructive. We will continue to support water conservation and efficiency strategies as the preferred, low-impact tools for long term local water supply planning in a changing climate. In keeping with our support for local, sustainable agriculture, MCL will continue to support conservation practices and the future of ranching within Point Reyes National Seashore.

While our work as an independent organization is strong, we believe that engaging with a sound network of organized environmental and conservation efforts provides a broader impact. For this reason, MCL will continue to build relationships and collaborate with others who have common goals. MCL is currently partnering with MCE in promoting Deep Green, 100% electricity generation from renewable energy sources, as a preferred power source. And, MCL actively campaigned with others in June for the successful passage of Measure AA, the "Clean and Healthy Bay" parcel tax measure.

Perhaps the largest current threat to the protection of the environment is the potential unraveling of hard won national and international climate policies and agreements. Although this is of global scale, MCL's Climate Action Working Group, is working locally, regularly meeting with local climate leaders to support regional courses of action, including implementation of local climate action plans and multi-jurisdictional adaptation planning for sea level rise.

In 2017 MCL will continue to carry forward its legacy of advocating for environmental interests with both tenacity and passion. We appreciate your support.

Kate Powers

Editorial—County Vegetation and Biodiversity Management Plan

When is a Plan not a Plan?

On November 8 the Marin County Open Space District Board of Directors (Board of Supervisors) voted not to certify an EIR and to "accept" but not "approve" the Vegetation and Biodiversity Management Plan (VBMP) as a "background document." This was the ambiguous outcome of an eight-year planning and environmental process that was intended to comprehensively guide management of 16,000 acres of open space on 34 preserves and 3,000 acres of private lands on which the County Open Space District holds conservation easements. How can this ambiguity be explained and, more to the point, be translated into a robust program for protecting all these acres under county stewardship?

In earlier hearings in October, MCL and other conservation organizations testified that the management of diverse open space lands requires that all professional approaches, strategies, and tools of Integrated Pest Management (IPM) be available. Other speakers focused on just one of those tools and called for a total ban on any herbicide use, no matter what justification might be offered or cautions assured. Rather than take action, the Board requested staff to return with several options to consider.

Options before the Board

On November 8, Open Space District staff, supported by County Counsel, offered three options: 1) Approve the VBMP and certify the EIR as is; 2) "Accept" the VBMP as an information document and not certify the EIR; and 3) Develop and analyze a new "Without Herbicide Alternative" and recirculate the EIR, at an additional expense of about $200,000 and considerable delay.

Approving the first option raised the threat of a legal challenge to the adequacy of the EIR by the small but determined group of opponents. The third option might have resolved the "adequacy" question by analyzing a "without herbicides" alternative, but that would require considerable expense and time without resolving the opposition. It would also skew the VBMP away from its original purpose as a high-level decision framework for managing diverse vegetation conditions with an array of approaches and tools, toward becoming a single-purpose document focused on herbicide use. Additionally, it would require developing hypothetical projects for which impacts of "with herbicides" and "without herbicides" alternatives could be compared, contrary to the broad purposes and non-prescriptive nature of the Plan.

The second option, recommended by staff and adopted by the Board, seemed like a way out—that is, continue current practice, using the VBMP as an information resource. This is roughly equivalent to adopting the "No Project Alternative," even though the EIR concluded that the No Project Alternative would have "greater impacts" than the preferred Plan. By failing to certify the EIR, however, the Board would throw away more than $400,000 dollars of work on the EIR, in effect rendering the EIR unnecessary and further, relegating the

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Status Updates—Revisiting Old Projects in the New Year

Tracking pending projects and development applications requires a long memory, patience, and persistence. Forty years between inception of a project and its implementation—or failure to be implemented—may be a record, but it is not unusual for planning matters such as updating general plans to remain active for years, if not decades. Each New Year merely opens a new calendar; as we begin 2017 the processing of pending projects and programs will continue through the year and, in many cases, beyond.

Tam Ridge Residences

The 180—unit **Tam Ridge Residences ("Wincup")** complex in Corte Madera continues to creep backward rather than forward. A year ago, MCL expressed hope in this *Newsletter* (January—February 2016) that the complex, which was approved as a component of the Corte Madera General Plan and EIR in 2009, would be occupied by 2016 and would then have a chance to prove whether it would function as compact, transit-oriented development within walking and biking distance of shops, services, and schools. Instead, the buildings are vacant and continue to be plagued by technical and financial woes: leaks resulting from insufficient or absent flashing are being temporarily remedied with plastic around doors and windows and bright factory-colored panels are being painted with more muted hues. The new landscaping is being maintained, but no one predicts when the complex will open. As drivers stopped in traffic on Tamal Vista or 101 glance at the shrouded buildings and note the few workers still on site, they must wonder: "Will anyone *ever* live here?"

Above—The Tam Ridge Residences project in Corte Madera.
Below—Silviera Ranch in unincorporated northern San Rafael.

Photos by Dru Parker

St. Vincent's/Silveira Ranch

Sometimes patience is rewarded with "no project" as the year turns. This is the case with the lands of **St. Vincent's and Silveira Ranch in Marinwood**. For years, the last remaining dairy ranch in East Marin and its bucolic Archdiocese-owned neighbor were the object of development proposals—2,000 homes, reduced to 1,500, and then to 750, and finally, with adoption of the 2007 Countywide Plan, to a cap of 221 residential units, or their rough equivalent in traffic generation. Several development concepts, such as for senior housing, have been advanced in recent years, but none has materialized. For the foreseeable future, travelers inch along in traffic on 101, they can enjoy watching the cows doing what cows do—peacefully graze the morning grass.

Easton Pt., Tiburon

Easton Pt. on the Martha Property on Tiburon Ridge is 40-year project-in-waiting. The spectacular, environmentally constrained 110-acre site has been the subject of a land use debate since 1976, when a federal judge signed a stipulated judgment that would allow the property owners to develop 43 residences. Marin Conservation League has followed the Easton Point development process since 1992, and reported on it in numerous MCL *Newsletter* articles. In previous years two EIRs were withdrawn prior to certification. In 2014, a third EIR was rejected by the Board of Supervisors due to unresolved mitigation issues. In the meantime, to support local efforts to acquire the site as open space, MCL has twice written the owners encouraging them to meet with representatives of the Trust for Urban Land, who has offered to help broker its acquisition. During the past year, however, the owners have stepped up their demands that the County act on their application, so we are likely to see some action in 2017. At least two issues remain under dispute: the owner's proposal to mitigate the loss of endangered plants at an off—site location; and their inability to identify a suitable site for a new water storage tank to deliver adequate water pressure.

Soccer Facility at San Rafael Airport

Over a period of six years, MCL and others who opposed the proposed 85,700 sq. ft. indoor **Soccer Facility at San Rafael Airport** invested untold hours reading plans, critiquing EIRs, and attending meetings. For numerous reasons MCL believed it was a massive project in the wrong place: it threatened the Gallinas Creek population of endangered Ridgeway's rail; its site within the airport's safety zone posed a hazard to outdoor event spectators; it was inconsistent with City policy, and it would

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Status Updates *from page 3*

be visually intrusive in the low surrounding marshlands. Nonetheless, the project got the green light from San Rafael City Council in December 2013. Three years later, we are told that the developers have gained their permits and can go ahead replacing the entry bridge. Presumably construction of the facility will follow this year. MCL and other critics will be tracking mitigation measures to ensure that adequate protections of marsh habitat along the creek are installed and monitored during and following construction. This will be a large investment on a site that one day could be under several feet of water due to sea level rise!

Whalers Point Hotel

Also in the path of rising sea levels is the Richardson Bay shoreline site of the erstwhile Whalers Point Hotel proposal. The first application for an 8—story hotel was submitted in the late 1970s. Subsequent applications over the year have been either rejected by the County or withdrawn by the applicant due to unresolved issues. The most recent application in 2014 was for a three—story hotel. Even though drastically reduced from the original plan, the proposed development still exceeds policies in the Tamalpais Area Community Plan. The site, which has a dry land dimension of only 1.6 acres, is marginal at best for hotel development. It is underlain by seismically vulnerable bay mud and is highly susceptible to flooding from rising sea level; a hotel would be visually intrusive for travelers descending Waldo Grade on Highway 101 and compromise views of the bay from neighborhoods to the west; it would place additional pressure on adjacent Richardson Bay salt marsh and mudflats that are vital habitats for shorebirds; it would exacerbate chronic weekend traffic congestion bound for Shoreline Highway; and it would force parking onto adjacent streets that are habitually flooded in extreme high tides, or into commuter parking areas. In the meantime, the site is used to store heavy equipment.

The Whalers Point site is on Richardson Bay between Sausalito and Mill Valley, behind the outdoor teak dealer.

Novato's Downtown Core includes this area of Redwood Blvd. (top) which has potential for mixed-use commercial and residential development such as the Tresch building (bottom) on the next block.

Photos by Dru Parker

Novato General Plan 2035

Updating general plans is always arduous, but the North Marin Unit of MCL has been engaged in one of the longer general plan processes we know of. Novato began updating its 1996 General Plan with a series of public workshops in early 2009. Seven years later, the draft Novato General Plan 2035 became available for public review this past summer. Public outreach on the Plan continues into 2017. Although the city has grown in the intervening years, the draft Plan does not present any significant land use changes; it holds fast to traditional small town character, environmental protection and restoration, historic preservation, economic vitality, and sustainability.

At the same time, the draft Plan does identify certain focus areas where limited development and redevelopment could occur. These include the North Redwood Boulevard Corridor between Olive and San Marin, long an area of debate and the North—Novato Boulevard Corridor, between San Marin Drive and Birkenstock offices, west of Hwy 101, where some high-quality office buildings and research and development uses could develop. The Plan proposes that the "Downtown Core" become more pedestrian-friendly and allow residential mixed use with updated design guidelines. The Northwest Quadrant Neighborhood, centered around Vallejo St. west of Redwood, could accommodate small scale multi-family housing to complement existing single family residences consistent with principles of form-based zoning. Novato's Urban Growth Boundary (UGB), which the North Marin Unit spearheaded in 1997, expires in November 2017. Although the proposed Plan includes the UGB, members of MCL's North Marin Unit are encouraging its extension by a public vote to ensure that it cannot be easily changed. The Plan is scheduled to go to the city's commissions and City Council in early 2017. (See Novato.org/generalplan for more information.)

On the trail: updates

Marin County preserves

Marin County Parks Department continues to move forward with its Road and Trail Management Plan (RTMP) and is now well into its second year of designating which roads and trails in the 34 preserves will become—or remain—part of its adopted system. (See marincountyparks.org/depts/pk/divisions/open-space/main/os-systems-designation.) Having completed designation of Regions 1 and 2, the department recently posted a map of designated trails for Region 3, which includes such popular preserves as Indian Valley, Lucas Valley and Ignacio Valley. Next on the agenda will be Region 4, which includes Indian Tree, Mt. Burdell, Verissimo Hills, Little Mountain, and Rush Creek Open Space Preserves. A public workshop is planned for May at the Margaret Todd Center, date to be announced.

Following the protocol that has been shaped by the experience of three previous public workshops, the department staff will bring to the table(s) a draft map showing existing roads and trails in Region 4 preserves, and indications as to which unofficial ("social") trails might be decommissioned for reasons of non-sustainability or other considerations, which trails might be added to the system inventory, and/or which fire roads deemed to be non-essential for emergency access might be narrowed to become trails. The department is posting all projects on its general web site (marinparks.org), whether they are proposed, are in planning or budgeting stages, or were implemented during the 2016 construction season.

MCL continues to track the RTMP process closely and to comment on proposed trail projects to "...ensure that the management of Marin's road and trail networks avoids adverse impacts due to recreation, ensures that the natural environment and the wildlife it sustains will persist into the future, and assures users of their safety and well-being." (For the MCL Trail Policy, go to conservationleague.org/images/stories/pdfs/advocacy/ADV_POS_MCL-Trail-Policy_2015.03.17.pdf.)

Eva Buxton

The proposed Azalea Hill Trail alignment,with Mt. Tamalpais manzanita (Arctostaphylos montana ssp. montana), a species limited to serpentinite.

MMWD watershed

Long an object of future planning, the proposed multi-use MMWD Azalea Hill Trail that would connect Bullfrog Road at Bon Tempe Reservoir with the top of Azalea Hill. An Initial Study and Negative Declaration of Impact will be available for public review in early 2017. Watershed staff has conducted numerous public hikes of the 435-foot elevation rise alignment, much of which would follow the old Liberty Gulch Road that predates the construction of Bon Tempe Dam. Views from the upper slopes of Azalea Hill are among the most spectacular on the watershed. The project would enable mountain bikers to reach the Pine Mt. areas of the watershed without having to dodge automobiles on the narrow Bolinas-Fairfax Road. It would also restore habitat by removing 4.5 miles of non-system trails that currently cross sensitive serpentine habitat on the hill, and will realign the overly-steep existing Azalea Hill trail. MCL representatives have hiked the alignment and are anticipating further study of how sensitive serpentine habitats along the restored and new alignments would be protected from intensified biker and hiker use and likely off-trail incursion, and how invasion of non-native weeds would be prevented. MCL also will pay particular attention to how the descending trail could be designed to control bike speed and preserve the safety and well-being of visitors on foot or horseback (See MCL Trail Policy, above).

Dru Parker

The 1,627-acre Mt. Burdell Preserve (left) is one of the Region 4 areas and is easily accessed via San Marin Drive in Novato.

Cautionary message from Mt. Tam Science Summit

The gathering of scientists, resource managers, and conservation interests at the recent October 28-29 symposium "2016 Mt. Tam Science Summit" delivered a cautionary message on the state of health of Mount Tamalpais. Some of Mt. Tamalpais's plant communities, such as old growth redwoods and Sargent cypress forests, appear to be thriving, while many communities, such as second-growth redwoods, grasslands, chaparral, open-canopy oak woodlands, and serpentine barrens are in decline due to ecological stressors.

Invasion by non-native species, invasion by *native* species like Douglas fir, plant disease, varied effects of climate change, decades of fire suppression, and the impact of people "loving the mountain to death" are all taking their toll. According to several indicators, wildlife species appear to be doing fairly well, bird communities overall are in good health, but populations of coho salmon and steelhead trout are in perilous condition. Many indicators of Mt. Tam's ecological health remain unknown. Gaps in available data reveal that invertebrate communities are largely unknown; bats have not been studied; lichen species, which are abundant on the mountain, and the condition of seeps and springs and riparian areas on the mountain all need further study.

These are just a few of the many observations that emerged in the symposium, which was organized by the Tamalpais Lands Collaborative (TLC), a collaboration of the four agencies that manage parts of the mountain—Marin Municipal Water District, Mt. Tamalpais State Park, Golden Gate National Recreation Area, including Muir Woods National Monument, and Marin County Open Space district—in partnership with Golden Gate National Parks Conservancy. Under the banner of "One Tam," the collaboration brought together an impressive assemblage of ecologists, ornithologists, wildlife biologists, botanists, other scientists, public land managers, conservation organizations, and environmental specialists from around the San Francisco Bay area. Researchers were eager to share their knowledge of the many indicators—bird and mammal species, plant communities, rare and endangered plant and wildlife species—that explain why Mt. Tam is a renowned biodiversity "hot spot."

What makes Mt Tam unique is its setting within an intensely urban region.

Photos by Alison Taggart-Barone

The Mt. Tam Science Summit consisted of a variety of lectures (right), interactive displays (above) and breakout groups, all geared to a better understanding of Mt. Tam's plant and animal communities.

In a global context, the mountain is a part of 34 biodiversity hotspots in the world, each one distinct. Mt. Tam's distinction is the product of its maritime environment, whose seasons are driven by tides and currents, a complex geology associated with the San Andreas Fault, highly variable soils and microclimates in which rain and fog are related to elevation and exposure. Adding to the complexity are geologic "islands" that support rare plant communities, such as serpentine barrens and Sargent cypress forests. What makes Mt. Tam truly unique,

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Tam Summit *from page 6*

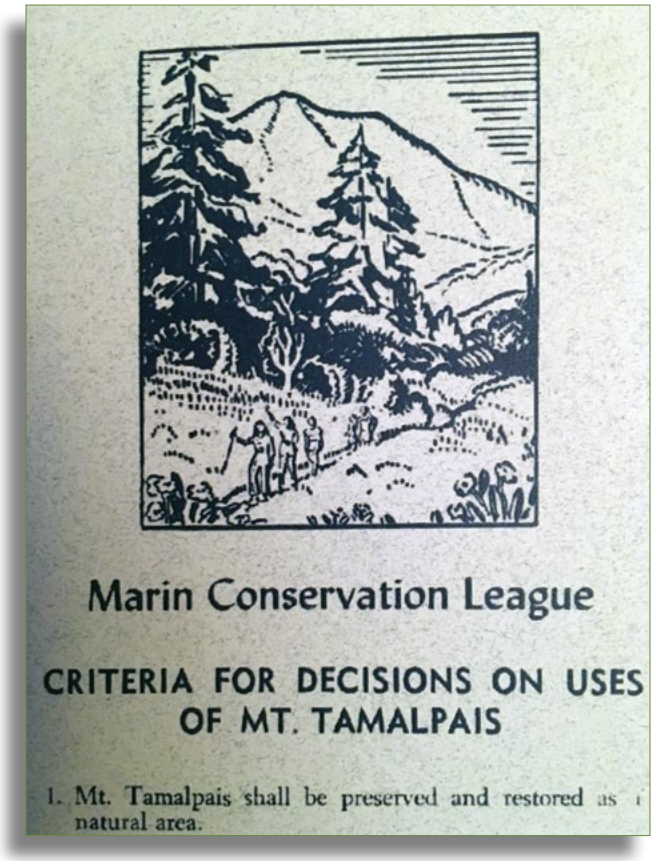
however, is its setting within an intensely urban region. Said Joe Mueller, long-time professor of biology and environmental studies at College of Marin: "Mt. Tam is surrounded by a lot of people!" but has managed to retain its rich biological diversity.

Looking forward

The symposium can be viewed, on the one hand, as the culmination of a successful year-long effort to assemble the knowledge and expertise of scientists and conservation interests from around the Bay region centered on the ecological conditions of the mountain. It was the primary impetus behind the writing and publication of a white paper: "Measuring the Health of a Mountain: A Report on Mount Tamalpais Natural Resources (2016)." This report presents in systematic detail the state of current knowledge of ecological resources on the mountain, along with the best judgment of researchers and land managers on how these conditions register as "ecological health" and how their health may be trending. The report provides a baseline on which to design ongoing and future monitoring and direct research programs, for example, toward comprehensive mapping of plant communities or filling data gaps in knowledge of invertebrates, which probably represent the largest number of species on the mountain.

The symposium can also be viewed as opening a door to heightened interest in understanding of the conditions on Mt. Tam. The gathering was notable for the number of young researchers, interns, and volunteers that the TLC has been engaging in projects on Mt. Tam. The second day of the symposium also was an opportunity for long-standing nonprofits like MCL, Friends of Mt. Tam, and Environmental Forum of Marin, and natural resource public agencies to exhibit their conservation activities, acquaint attendees with their work, and share with each other their experience and mutual interests in caring for Mt. Tam.

Every observer of Mt. Tam has asked a similar question: Can the lands that make up what we now call "One Tam" be "*preserved for all time, as far as possible, in their natural and wild state*" as William Kent hoped in 1903 when he proposed that it become a national park? The ultimate goal of the TLC and community partners like MCL is to address this question by being better stewards of the mountain's resources. Together, the symposium and report are an essential step toward that goal.



Fifty years ago, MCL's concern for the health of Mt. Tam led to developing widely acclaimed criteria for decisions on uses of the mountain.

Plan *from page 2*

VBMP to the status of a "background document" and not a real Plan to guide management of the preserves.

MCL believes that the problem of the "uncertifiable EIR" likely could have been resolved by preparing an Addendum to the EIR, a common way to address issues that are not fully resolved without prompting recirculation of the entire EIR. The Addendum could have addressed two Board concerns: explain how the VBMP will accomplish the County's stated goal to reduce use of herbicides over time; and acknowledge that while the herbicide glyphosate continues to be under scientific scrutiny, the Open Space staff will carry out its vegetation management programs according to the "best available science." These two points could have been included in an Addendum at a fraction of the cost of analyzing a new "non-herbicide alternative" and allowed the EIR to be certified, probably without legal challenge.

When is a Plan not a "Plan"?

In effect, the VBMP and EIR were obstructed by a small group of advocates who would ban herbicides from any use by the County's land managers to manage vegetation on the open space preserves—the same tool kit that is used by the vast majority of professionals in managing public open space lands. Unfortunately, in its reluctance to certify the program EIR and *approve*, not just *accept*, the Plan (Option 2), the Board has left future work plans and projects that might include the use of herbicide along with other tools open to continuing debate and need for CEQA compliance. MCL's hope is that the District, nonetheless, can move forward with a reasonable and transparent public process that allows staff to do its much-needed work: that is, apply current practices to control invasive plants, protect rare and sensitive habitats as well as public health, and adequately manage the hazards of fire fuels, as documented in the VBMP "background document."

—Editor

MMWD *from page 1*

than 11 inches of rain, surpassing the prior record low of 19 inches set in 1929. By January 2014, storage levels had dropped to 30 percent below normal, and a high pressure system, referred to in MMWD reports as the "Ridiculously Resilient Ridge" was stalled over the Pacific, preventing storms from reaching much of California. That month the Governor declared a drought emergency, and the State Water Board called for a 25 percent voluntary water use reduction.

Marin County's water does not rely on state and federal water projects, including Sierra runoff and the over-drawn Colorado River, on which much of California relies. MMWD's water comes largely from Mount Tamalpais watershed runoff stored in five reservoirs, runoff into two reservoirs in West Marin, a modest amount of recycled water, and about 25 percent purchased from Sonoma County Water Agency. Chartered in 1912, MMWD's storage system has grown from 9,600 acre feet of storage capacity in 1940 to almost 80,000 acre feet in 1982 when Kent Lake was more than doubled.

The district has also pursued increased conservation in the past two decades that has reduced the amount of water used by its customers, and continues to see conservation as a primary tool to boost supply. In 1989, for example, the District's Water Management Plan projected annual water demand would increase from nearly 35,000 acre-feet to 40,100 acre-feet in 2025. Instead, annual production of potable water decreased to 24,000 acre-feet as of August 2016, a reduction of 11,000 acre-feet, or 31 percent.

The evolving climate and warmer winters, along with recent unusual precipitation patterns, are part of water supply planning. MMWD, along with North Marin Water District, participates in climate forecasting programs to obtain information regarding their service areas and impacts on water supply. All the models predict that the North Bay will experience hotter weather, more frequent drought, greater evapotranspiration, and more frequent and intense wildfires. All these have implications for water use.

In the course of preparing the WRP 2040 report, the staff considered other factors in addition to a possible six-year drought event that could disrupt or affect water supply. These include the following:

- Climate change, using four climate change hydrology sets developed by the US Geological Survey.
- Wildfire impacts to water quality at Kent, Bon Tempe, and Alpine Lakes.
- Earthquakes that could cause outages to Bon Tempe and San Geronimo treatment plants, and to imported supply.
- Landslides that could causes outages at water treatment plants.

Wide ranging supply options

The draft WRP 2040's supply options fall into several categories: conservation, efficiency, recycling and water reuse, purchases and interties with other North Bay, East Bay, and more distant water agencies, expanded reservoir storage capacity , groundwater, Bay and ocean desalination, and emerging options including cloud-seeding, fog capture, and thinning of vegetation to increase runoff capture. Controversial options such as desalination, construction of a Richmond-San Rafael Bridge pipeline, and direct potable reuse of treated wastewater, have been put under the microscope. Factors considered for each option are capital cost, annual cost, cost per acre-foot, estimated yield for both dry and average years, and reliability. Evaluation criteria also include institutional complexity, local control, environmental impacts, technical complexity, and public support. A number of options dropped to the bottom of the list due to high cost, unreliability, or environmental considerations.

A draft report will be available January 20 for public review.

The preliminary conclusion of the draft WRP 2040 narrows the options to a realistic set of alternatives that would enable the district to meet demand during a six-year drought: conservation, spot market transfers, indirect potable reuse with new or upgraded treatment facilities, upgrading the Kastania pump station to serve water from the North Marin aqueduct, and partnering with a city or agency that draws water from the Santa Rosa Plain groundwater basin to enable transfers.

Finally, the draft WRP 2040 recommends that the District continue with water conservation and efficiency programs that have proved to be beneficial, further investigate low- or no- infrastructure alternatives such as groundwater exchange, and continue to track hydrologic conditions and demand patterns and adapt as necessary. Draft conclusions and recommendations were presented December 7, and the draft report will be available January 20 for public review and comment. Final action by the board is anticipated in April 2017.

Marin County Board of Supervisors

Dennis Rodoni elected to District 4

MCL welcomes Dennis Rodoni of Olema as the newest member of the Marin County Board of Supervisors. Rodoni will represent the geographically vast and socially diverse District 4, which includes West Marin, parts of East San Rafael, Corte Madera, Mill Valley's Homestead Valley, and areas of Novato. Rodini takes the seat previously held by Steve Kinsey, who is stepping down after 20 years.

A Marin native, Rodoni was raised in West Marin, and attended Inverness and West Marin Schools and Tomales High School before earning a BA in Economics and a teaching credential from California State University at Chico. He has been a licensed General Contractor since 1981 and works mostly on residential projects in West Marin.

Rodoni has served six terms on the North Marin Water District Board of Directors. He currently lives with his family in Olema.

BayWAVE *from page 1*

Works (DPW), reported to MCL's Climate Action Working Group on progress of the 18-month effort she is directing, working with the BayWAVE team in DPW and the Community Development Agency (CDA). As of December, the draft report was undergoing administrative review and will be released to the public early in 2017.

Inundation scenarios and assets

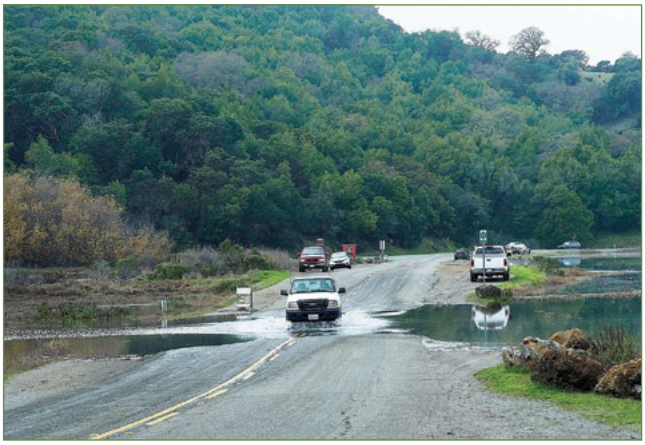
Taking its direction from the recent C-SMART vulnerability study of Marin's ocean coastline, the BayWAVE study began with 2009 baseline imagery of the bayshore taken from aerial LiDAR surveys. The BayWAVE team developed six scenarios based on "Our Coast—Our Future" models (data.pointblue.org/apps/ocof/cms/) to identify and map areas along the shoreline vulnerable to inundation. Scenarios 1, 3, and 5 show inundation from a 10-inch sea level rise in the near term (approximately 2030), a 20-inch rise in the medium term (approx. 2050), and a 60-inch rise in the long term (approx. 2100), respectively. Each of Scenarios 2, 4, and 6 adds three feet from a 100-year storm to the preceding scenario.

The types of assets along the urbanized bay shoreline vulnerable to inundation are considerably more extensive than those along the coast. They include municipal and private properties, above and below-ground structures of parcels and buildings (residences are aggregated), all modes of transportation, including public transit, highways, and ferries, communications infrastructure, utilities such as water and wastewater treatment, grazing and other agricultural lands, emergency services, historic and cultural features, recreation, and tidal marshes and beaches, among others. These, in turn are broken up by municipality and unincorporated community; each has its own vulnerability profile.

The report identifies 115 entities that manage assets along the shoreline. All of them were engaged in the study. Over a six month period, the BayWAVE team conducted more than 100 interviews with "asset managers"—e.g., land owners, city, town and special district officials and staff—to determine what assets would be valuable, and how to value them. The study also engaged interior communities and districts, whose connections with the rest of Marin would be highly impacted by tidal flooding.

The vulnerable Marin shoreline

In general terms, almost all buildings along Marin's bay shoreline are vulnerable to flooding, erosion, and saltwater. The likely effects, however, would vary with location, elevation, and construction materials. Although the majority of the lands at risk are in incorporated and unincorporated Novato and San Rafael, the towns of Corte Madera, Larkspur, Mill Valley, Sausalito, Tiburon, and Belvedere are all directly exposed. Municipalities situated on higher ground, such as San Anselmo, Fairfax and Ross, and communities like Lucas Valley and San Geronimo Valley, would all experience the loss of major transportation routes as well as power and other communication systems and water delivery and sanitation. Under a long-term worst case scenario in 2100, losses to the county and its residents as a whole would add up to billions in assessed property value.



Stephen Sarhad, California King Tides Photo Initiative, Flickr

December 2016 King Tide at China Camp.

Next steps

This first phase of the BayWAVE program does not include adaptation planning, which is being planned as a second phase by the CDA. In conjunction with the vulnerability assessment, BayWAVE is developing an "adaptation tool-kit" showing both hard-engineered solutions, such as levees and flood walls, and soft-engineered solutions, such as horizontal vegetated levees and expanded tidal wetlands. On a regional level, the San Francisco Bay Conservation and Development Commission is identifying and mapping the most vulnerable areas along Marin and other bay county shorelines. The Bay Area Integrated Regional Water Management Program is using Proposition 1 to fund adaptation planning for disadvantaged communities, which could include East San Rafael.

In the meantime, the BayWAVE team and a County consultant are developing a public outreach program to begin in 2017. Education will be a key component. Several lessons pop out of the extensive data. Essentially everyone in Marin will be affected, not just those who live on low ground. The County is accustomed to flooding, so a future with more flooding might not come as a big surprise—except that it won't always be temporary. Eventually it will become permanent. Planning for the future must cross jurisdictional boundaries and be collaborative. By engaging all twelve cities, towns and County elected officials and technical staff, the BayWAVE study has laid the groundwork for future coordination. Furthermore, agencies within the County government, like DPW, CDA, and Marin County Parks, are breaking down traditional silos and working together. Regulatory agencies like the San Francisco Bay Water Board and California Department of Fish and Wildlife are slowly shifting their processes to make permitting more efficient, but this continues to be challenging.

With so many social, economic, and natural resource issues at stake, MCL will review the report when it is released to the public and continue to monitor adaptation planning as it moves beyond the data collection phase and into uncharted waters in the public arena. Watch for public meeting announcements in coming months.

Events

Ranching in the Park Workshop #4

As the MCL November-December 2016 *Newsletter* went to press, three of the four scheduled "**Ranching in the Park—Not by Accident**" workshops had taken place successfully. The fourth and final workshop on October 25—"Hopes and Dreams"—turned attention to the future of ranching on Point Reyes National Seashore and featured a younger generation of ranchers who are continuing family traditions in the 21st century.

Jolynn Mendoza McClelland is of Portuguese and Swiss descent. Her great-grandfather came from the Azores and began dairy ranching on Point Reyes in 1919. She and her husband Robert have reopened the L Ranch and also operate a farm in Sonoma. Her brother Jarrod restocked the B Ranch after their late father Joe, Jr., had been forced to sell off his herd of Holsteins in 2010 when milk prices were down and it appeared impossible to make financial ends meet. It was a difficult decision to bring cows back to the ranch, they admitted, but between the two they now manage 450 head on the two ranches. As they bring up their own young children in the ranching tradition they agreed that it is a cherished way of life but not an easy one. Jolynn is proud to carry on, but admitted that "you have to put a lot into your farm; sometimes it means making sacrifices to your family." Added Jarrod: "It's hard work, but it's cool to see your products in a store."

Jackie Grossi and her husband Rich manage beef cattle on M Ranch. She feels fortunate to have her children and grandchildren living nearby. Her daughter Joyce partners with her parents in managing the operation. Joyce spoke of her deep personal satisfaction in helping with the birth of a newborn calf and in working in a community of ranchers. But with two daughters in college and starting families of their own, she said: "You need to figure out what to do..." She wants to leave a profitable legacy for her children, but every year the profit margin goes down as the beef industry goes through big consumer and market shifts and new technologies come on board.

Bob McClure, 4th generation dairyman, shared the stage with his daughter Michelle, who recently graduated from Cal Poly San Luis Obispo in Agricultural Business Management. Bob's father came from Ireland in 1896 and began ranching on I Ranch. Cheese was the main product in the early days; now it is bulk milk sold to local processors like Stornetta. Since graduating, Michelle has worked for Sonoma County Farm Bureau, but she confessed that she isn't certain where her career will take her; will it be back to the ranch?

Asked "how is it going with your ranching partnership with the Park?" Jackie Grossi hoped that the Ranch Comprehensive Management Plan will solve some problems. Jarrod responded that the rancher and the Park staff may have different views, but things can be worked out given time, and some streamlining would be nice. Jackie called this process "compromise," wherein the rancher and the Park may want the same thing but go about doing it in different ways. Jolynn spoke of the long-standing good relationship her family has had with Park staff, and Bob McClure agreed, but also acknowledged that a five-year lease is "as good as you get right now," and even that does not allow long-term investment, for example, in riparian restoration. They agreed, however, that "something is working. We're still here!"

Due to an ongoing lawsuit, National Park Service staff were not able to participate in any of the workshops to provide the Park's perspectives. MCL will continue to track the Ranch Comprehensive Management Planning process and will use as a resource the valuable perceptions gained from the workshops. Videos of all four workshops are posted to conservationleague.org/resources/videos.html.

MCL Holiday Party

MCL members and guests paired conservation with conversation on December 2 during MCL's annual holiday celebration. Our generous guests contributed a full barrel of food and cash to SF-Marin Food Bank. Thank you!

Photos by Kirsten Nolan

Clockwise from top left: Doug Karpa, Pamela Reaves; Heather Furmidge, Jana Haehl, Sally Gale; guests mingle during the party.

New Director Profile

Arlin Weinberger, San Rafael

Arlin grew up in San Francisco and moved to Marin in 2004. Her association with the outdoors and particularly Mt. Tamalpais extend back many years. While she was still living in the city, she joined Friends of Mt. Tam (formerly Mt. Tam Interpretive Association), the non-profit partner of Mt. Tamalpais State Park, and served on the board for nine years, six as president. She also served on the board of Tamalpais Conservation Club for eight years, producing its newsletter. Arlin is now in her ninth year as chair of the California Alpine Club Foundation. The foundation awards small grants up to $2,000 to environmental organizations in Marin and the Tahoe area, where the historic Alpine Club sits on Echo Summit. Recently, she has become a community "ambassador" for One Tam, the initiative of Tamalpais Lands Collaborative. Arlin has been hiking Mt. Tam for over 20 years with her weekly Wednesday group. Her professional background is in corporate communications.

Marin Conservation League Business Member Profile

California Native Plant Society, Marin Chapter

by Linda Novy

The Marin Chapter of the California Native Plant Society (CNPS) is one of 34 chapters in an organization that boasts 10,000 members statewide. The Chapter joined Marin Conservation League in 2004. Kristin Jakob, Co-Vice President of the organization, said that CNPS's vision and mission is to: "...conserve California native plants and their natural habitats, and increase understanding, appreciation, and horticultural use of native plants." CNPS promotes a future vision in which Californians "value native plants, plant communities and healthy ecosystems" and strive to preserve the state's "extensive and interconnected natural habitats" as essential to the wellbeing of all living things. These goals are in alignment with MCL's conservation mission. We are grateful for CNPS' support of MCL, not only through their membership but also through their active participation in MCL's Parks & Open Space Committee and Invasive Plant Subcommittee.

CNPS outreach programs help educate the Marin community about what people can do to preserve and protect our native plants and plant communities. Kristin went on to say that with more people seeking to recreate in nature, there comes with it more pressure on our native vegetation and wildlife habitats but also more opportunities for stewardship. Toward that goal, CNPS is interested in supporting the efforts of public land managers to sustain habitats. One example is the monitoring and preparation of native plant lists on public lands, by trail or area. Long time chapter members continually update and post these lists on the web. Non-native invasive plants are listed, too, in order to help Marin residents identify those that don't belong in public lands or in their home landscapes!

The Point Reyes "3rd Thursday Weeders"

CNPS board members lead an ongoing effort to remove invasive plants through the "3rd Thursday Weeders" group (pictured) in the Point Reyes National Seashore. Tiburon's Middle Ridge Preserve also is host to a group of board members and volunteers who remove non-native grasses to help protect the rare Tiburon jewel flower.

Other CNPS programs include a twice-yearly native plant sale at Falkirk Mansion in San Rafael, now done in collaboration with Marin Master Gardeners; and an effort to help local schools develop native gardens as wildlife habitat. CNPS provides financial support to other agencies' outreach efforts, such as the recent Mt. Tam Science Summit (see page 6). They also offer grants and scholarship programs to students studying native plants. And, if you are interested in exploring some of Marin's trails and learning about native plants firsthand, join one of the CNPS field trips, which are always fun and informative. These have been going on since the Chapter was established more than 40 years ago. Beginning plant enthusiasts are welcome!

The Marin Conservation League supports CNPS deep roots in Marin and throughout the state for its active conservation programs. Go to the CNPS web site at cnps-marin.org for more information.

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Board of Directors meetings are held at 7:00 PM on the 3rd Tuesday of the month at the MCL office and are open to the public.

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Issue Committee Meeting Schedule (subject to change—check website)

Land Use and Transportation:
1st Wed. of the month, 9:00—11:00 AM

Parks and Open Space:
2nd Thurs. of the month, 3:00—5:00 PM

Invasive Plant Subcommittee of POS:
3rd Wed. of the month, 3:00—5:00 PM

Climate Action Working Group: 3rd Fri. of the month, 9:00—11:00 AM

Agricultural Land Use: meets quarterly; Water and Watersheds, North Marin Unit: Check website for times and locations

Marin Conservation League was founded in 1934 to preserve, protect and enhance Marin County's natural assets. MCL is a non-profit 501(c)3 organization. All contributions and memberships are tax-deductible to the extent allowed by law.

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