Watershed Information Center & Conservancy of Napa County

AGENDA

REGULAR BOARD MEETING

Thursday, June 25, 2009
4:00 p.m.

2nd Floor Conference Room, Hall of Justice Building,
1125 Third Street, Napa CA

1. **CALL TO ORDER & ROLL CALL** (Chairman)

2. **APPROVAL OF ACTION MINUTES**
   Meeting of April 23, 2009 (Chairman)

3. **PUBLIC COMMENT**
   In this time period, anyone may comment to the Board regarding any subject over which the Board has jurisdiction, or request consideration to place an item on a future Agenda. No comments will be allowed involving any subject matter that is scheduled for discussion as part of this Agenda. Individuals will be limited to a three-minute presentation. No action will be taken by the Board as a result of any item presented at this time. (Chair)

4. **ANNOUNCEMENTS**:

   a. Announcement of **Rivers of a Lost Coast**, special outdoor showing at Napa Valley Museum, Saturday June 27th, 7:30pm reception with 8:30pm show time (Staff)

   b. Announcement of **Napa River Rutherford Reach Restoration Project** commencement of work in July (Lisa Micheli, RDRT Facilitator/Staff)

   c. Announcement of **WICC Board openings for Public at Large members** (4) and application deadline of July 10th at 5:00pm (Staff)

   d. Others (Board/Staff/Public)

5. **UPDATE, DISCUSSION AND POSSIBLE DIRECTION:**

   a. Report, discussion and possible **additional recommendations to the Board of Supervisors** regarding the **Revised Napa River Watershed Sediment Total Maximum Daily Load (TMDL)**, **Basin Plan Amendment (Implementation Plan)** and **Habitat Enhancement Plan** proposed by the San Francisco Bay Regional Water Quality Control Board (RWQCB) for the Napa River watershed (Staff)

b. Update and discussion on other **Regional Water Quality Control Board** and **State Water Resources Control Board water quality control plans and policies** affecting Napa County's watersheds, including Instream Flow Policy, Stream and Wetland Protection Policy, proposed revisions to portions of the State Board's Water Quality Enforcement Policy and other Basin Planning efforts (Staff)

6. **REPORTS, UPDATES AND DISCUSSION:**

   a. Report on **2009 Napa County Watershed Symposium** (Staff/Napa County RCD)

   b. Update on development of a locally based **Integrated Regional Water Management Plan (IRWMP)** for Napa County to assist in future funding opportunities and briefing on larger Bay Area and Sacramento River planning efforts (Staff)

   c. Report on **County groundwater study** to develop a comprehensive groundwater monitoring program (Staff)

   d. Report, update and discussion on **Draft WICC budget** for fiscal year 09-10 (Staff)

   e. Others (Board/Staff)

7. **PRESENTATIONS AND DISCUSSION:**

   a. **Overview of the Napa Valley Regional Rainfall and Stream Monitoring System** – a presentation on the system and its operation to provide current and historical rainfall, creek and river level monitoring data, using a collective network of approximately 50 rainfall and stream gauging sites owned by various local Napa County cities, County, Flood Control and Water Conservation District and other state, federal agencies (Paul Blank, Hydrologist, Napa County Resource Conservation District)

   b. **North Bay Watershed Association's Framework for Applying Indicators and Performance Measures in North Bay Watershed Plans** – a presentation of work funded by the Association to develop performance measures for watershed plans and a set of indicators of ecosystem function that can be applied across North Bay watersheds to track outcomes of watershed management activities, and request for input and feedback from the WICC Board (Lisa Micheli, Senior Scientist, Sonoma Ecology Center)

8. **FUTURE AGENDA ITEMS** (Board/Staff)

9. **NEXT MEETING** (Chairman)

   Regular Board Meeting: **July 23, 2009 – 4:00 PM** *(possible postponement to August 27, 2009)*
   Hall of Justice Building, 2nd floor Conference Room, 1125 Third Street, Napa

10. **ADJOURNMENT** (Chairman)

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, 1195 Third St., Suite 210, Napa CA 94559 to request alternative formats.

RIVERS OF A LOST COAST

Napa Valley Premiere

A DOCUMENTARY NARRATED BY

TOM SKERRITT

FROM *'A RIVER RUNS THROUGH IT'*

with special guest, co-filmmaker Palmer Taylor

7:30 pm, June 27, 2009

On the lawn, Napa Valley Museum

BYOB: Bring Your Own Blanket!

TICKETS: Available at the door.
Advance purchase: ph 707-252-4188x120, email frances@naparcd.org,
Napa Valley Museum, Sweeny's Sports Store

$7 adults (12+)
Free for kids

7:30 pm reception & exhibits
8:30 pm film

Refreshments from:

BERINGER SINCE 1876

CLOVER STORNETTA FARMS — It has been our privilege to support you. Please support your local cow!

DUCKHORN VINEYARDS — NAPA VALLEY

Cakebread Cellars

The LAGUNITAS BREWING COMPANY — LAGUNITAS IPA INDIA PALE ALE

Proceeds benefit the film and programs of the
Napa County Resource Conservation District and the Napa Valley Museum

NAPA COUNTY RCD Resource Conservation District

Sponsored by: Beringer, Trinchero Family Estates, Steelhead Wines, Quivira Vineyards, Duckhorn Wine Company, Cakebread Cellars, Coho Wines, Clover Stornetta Farms, Lagunitas Brewing Co.

WWW.RIVERSOFALOSTCOAST.COM

TROUT UNLIMITED · EF · WILD SALMON CENTER · Wild Steelhead Coalition · NATIVE FISH SOCIETY · ALAMEDA CREEK ALLIANCE · STEAMBOATERS · American Rivers Thriving By Nature · Tuolumne River Trust

SKINNY FIST PRODUCTIONS PRESENTS RIVERS OF A LOST COAST A FILM BY JUSTIN COUPE AND PALMER TAYLOR GRAPHIC DESIGN BY ASHTON TAYLOR OF DIGITAL MUD STUDIO
ORIGINAL MUSIC BY PALMER TAYLOR NARRATION BY TOM SKERRITT EXECUTIVE PRODUCER JEFF COUPE

SKINNY FIST PRODUCTIONS

dms DIGITAL MUD STUDIO

A Tradition of Stewardship
A Commitment to Service

County Executive Office

1195 Third Street, Suite 310
Napa, CA 94559
www.co.napa.ca.us

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Nancy Watt
County Executive Officer

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Committees & Commissions
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FOR IMMEDIATE RELEASE
June 8, 2009

Applicants sought for Watershed Information Center and Conservancy of Napa County (WICC)

(Napa, CA--) The County Executive Officer announces the openings of the following positions on the Board of Directors of the **Watershed Information Center and Conservancy of Napa County (WICC)** due to expiring terms. Terms will commence upon appointment and expire in August 2013. **Representing**

Four (4) Public at Large

The WICC Board serves as an advisory committee to Napa County Board of Supervisors. The WICC's role is to assist the Board of Supervisors in their decision-making process and serve as a conduit for citizen input by gathering, analyzing and recommending options related to the management of watershed resources. In that capacity, the WICC has a responsibility to publicly evaluate and discuss matters that they have been requested to review and comment upon by the Board of Supervisors. The Board of Supervisors has charged the WICC with making recommendations on matters relating to watershed restoration projects and resource protection activities, coordination of land acquisition, and development of a long-term watershed resource management program that provides public outreach and education, monitoring coordination, inventory and assessment, and data management. The WICC was created by the Board of Supervisors in May 2002. The WICC Board encourages collaboration, cooperation and consistency among those working in Napa County's watersheds by coordinating and facilitating partnerships among individuals,

-more-

agencies and organizations involved in improving watershed health; supporting watershed research activities and providing watershed information and education. The WICC Board meets the fourth Thursday of every month at 4:00 P.M. in the Hall of Justice, 1125 Third Street, Napa, CA 94559.

The Board consists of seventeen members and one alternate member as follows: One (1) member nominated by the Napa County Land Trust from among the Land Trust's Board of Directors; One (1) director or associate director nominated by the Napa County Resource Conservation District; One (1) representative from the Natural Resource Conservation Service; Two (2) members and one (1) alternate of the Napa County Board of Supervisors; One (1) member of the Napa County Conservation, Development and Planning Commission; One (1) representative from each city or town in Napa County nominated by their respective city or town council; and Six (6) Napa County residents from the public at large representing environmental, agricultural, development and community interests.

Those interested in consideration for appointment must submit a completed application form to the County Executive Office, 1195 Third Street, Room 310, Napa, 94559, telephone 253-4421 no later than **5:00 p.m. on Friday, July 10, 2009.** The application form and instructions are also available on the County website at www.co.napa.ca.us. Go to the main County page and click on "Committees" located in the menu under "Quick Links" on the right side of the page. You may submit your application directly online by clicking "online application for appointment" and following the application instructions.

The Board of Supervisors and staff of Napa County are dedicated to preserving and sustaining Napa County for present and future generations as a community with generous open space, a thriving agricultural industry and a quality human and natural environment. Visit us on the Web at www.co.napa.ca.us

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California Regional Water Quality Control Board
San Francisco Bay Region

Linda S. Adams
Secretary for
Environmental Protection

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay

Arnold Schwarzenegger
Governor

May 19, 2009

NOTICE OF PUBLIC HEARING
NOTICE OF FILING A DRAFT ENVIRONMENTAL DOCUMENT
for a

SEDIMENT TMDL and HABITAT ENHANCEMENT PLAN
for the
NAPA RIVER WATERSHED

NOTICE IS HEREBY GIVEN that the San Francisco Bay Regional Water Quality Control Board (Water Board) will consider re-adoption of a proposed amendment to the Water Quality Control Plan for San Francisco Bay Basin (Basin Plan) to:

- Establish a total maximum daily load (TMDL) and numeric targets for sediment in the Napa River watershed
- Incorporate an implementation plan to achieve and support the TMDL
- Adopt a Habitat Enhancement Plan for the watershed

On January 23, 2007, the Water Board took action to adopt a Basin Plan amendment. Subsequently, staff made changes to the amendment, which will be reconsidered at a Water Board hearing on September 9, 2009.

The revised amendment and supporting Staff Report are available for download and public review and comment at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/napariversedimenttmdl.shtml. The public comment period on revisions to these documents will close at 5 pm on July 6, 2009.

The public hearing will be held as follows:

DATE:	September 9, 2009
TIME:	9:00 a.m. (approximate)
LOCATION:	Elihu M. Harris State Building First Floor Auditorium 1515 Clay Street Oakland, CA 94612
STAFF CONTACT:	Michael Napolitano 510.622.2397 (phone) 510.622.2460 (fax) mnapolitano@waterboards.ca.gov

Paper copies of materials for review are available from Mike Napolitano at the phone, address, and email above.

All written comments, evidence, proposed testimony and exhibits on or concerning the proposed amendment shall be submitted no later than 5 pm on Monday, July 6, 2009 to Mike Napolitano; however, persons are not required to resubmit their previously submitted comments, evidence, proposed testimony, or exhibits, as they are already part of the record and will be considered by the Water Board. Non-evidentiary policy statements to be made at the hearing need not be submitted in advance.

The Water Board's action on the proposed amendment will be taken in accordance with a regulatory program certified under Section 21080.5 of the Public Resources Code as exempt from the requirement to prepare an environmental impact report under the California Environmental Quality Act (Public Resources Code Section 2100 et seq.) and with other applicable laws and regulations.

The public hearing will be conducted in accordance with 23 Cal. Code of Regs. § 649.3. Time limits may be imposed on oral testimony at the public hearings; groups are encouraged to designate a spokesperson.

A map and directions to the hearing are available online at http://www.waterboards.ca.gov/sanfranciscobay/about_us/directions.shtml . The hearing room is accessible to persons with disabilities. Individuals who require special accommodations are requested to contact Executive Assistant Mary Tryon, (510) 622 2399, mtryon@waterboards.ca.gov, at least five (5) working days before a meeting. TTY users may contact the California Relay Service at 1-800-735-2929 or voice line at 1-800-735-2922.

Bruce H. Wolfe
Executive Officer

The following text will be inserted into Chapter 7, Water Quality Attainment Strategies including Total Maximum Daily Loads (TMDLs).

Napa River Sediment Reduction and Habitat Enhancement Plan

The goals of the Napa River Sediment Reduction and Habitat Enhancement Plan (Plan) are to:

- Conserve the steelhead trout population
- Establish a self-sustaining Chinook salmon population
- Enhance the overall health of the native fish community
- Enhance the aesthetic and recreational values of the river and its tributaries

To achieve these goals, specific actions are needed to:

- Attain and maintain suitable gravel quality and diverse streambed topography in freshwater reaches of Napa River and its tributaries
- Protect and/or enhance base flows in tributaries and the mainstem of the Napa River
- Reduce the number and significance of human-made structures in channels that block or impede fish passage
- Maintain and/or decrease summer water temperatures in tributaries to the Napa River

The following sections establish:

1. A sediment total maximum daily load (TMDL) defining the allowable amount of sediment that can be discharged into the Napa River, expressed as a percentage of the natural background sediment delivery rate to channels
2. An implementation plan to achieve the TMDL and related habitat enhancement goals

Problem Statement

Steelhead and salmon populations in the Napa River and its tributaries have declined substantially since the late 1940s. Results of recent analyses of fisheries and sediment sources indicate that:

1. **Spawning and juvenile rearing habitat for salmon and steelhead are adversely affected by high concentrations of fine sediment (primarily sand) deposited in the bed of the Napa River and its tributaries.**

   Successful reproduction by salmon and steelhead depends on adequate flow through streambed gravels (permeability) in order for eggs to hatch and larvae to grow. As the concentration of fine sediment (primarily sand) in the streambed increases, permeability decreases, which in turn increases egg and larval mortality, and ultimately causes a decrease in the number of young fish that emerge from the streambed. Similarly, as the concentration of sand in the streambed increases, the frequency and extent of streambed scour is intensified, further increasing mortality between spawning and emergence by washing eggs and/or larvae out of the bed during common high flow events.

Even small increases in the concentration of fine sediment in the streambed may degrade the quality of rearing habitat for juvenile steelhead and salmon. Young steelhead need open spaces between clusters of large cobbles and boulders in order to escape high flows and predation during the winter. Similarly, as the concentration of fine sediment in the streambed increases, growth and survival of juvenile steelhead and salmon decreases as a consequence of lower biomass of aquatic insect prey species, and increasing activity level, aggressive behavior, and attacks between juvenile salmon and steelhead as they compete for food.

2. **Channel incision has greatly reduced the quantity and quality of spawning and rearing habitat for Chinook salmon in the Napa River watershed. Habitat losses as a result of incision exert a significant negative influence on freshwater growth and survival of juvenile salmon, and therefore, on the number of Chinook salmon that ultimately return to spawn.**

   Channel incision, the progressive lowering over time of streambed elevation as a result of net erosion, has lowered the streambed of the mainstem of the Napa River by more than two meters since the start of the current episode of incision, which began sometime after 1965. As a result, habitat is being degraded. The channel has become isolated from its flood plain and there has been a large reduction in the size and frequency of riffles, gravel bars, side channels, and sloughs. These habitats provide essential spawning and juvenile rearing habitat for Chinook salmon. Human activities that have contributed to channel incision in the River, include (but are not necessarily limited to) levee building, development projects that have increased peak runoff during storms, construction of large tributary dams, straightening of some mainstem channel reaches, filling of side channels, historical gravel mining, dredging to reduce flood risk, and intensive removal of large woody debris.

3. **Low flows and stressful water temperatures during the spring and dry season, and fish migration barriers exert a significant negative influence on the number (and fitness) of juvenile steelhead that migrate to the ocean from the watershed, and as such, on the number of adults that successfully return to spawn.**

   Drifting aquatic insects produced in riffles often are the primary source of food for juvenile steelhead. Low or no flow over riffles during the spring and dry season greatly reduces this food source. An association between low and/or negative growth rates in juvenile steelhead and poor baseflow persistence was documented in the summer and fall of 2001 in the Napa River watershed. Summer water temperatures in tributaries also are often stressful to juvenile steelhead, likely contributing to poor growth rates that were documented. If low growth rates in summer are not mitigated by high rates of growth during other times of the year, significant reductions in survival rates during all subsequent life stages may result.

   Poor access to and from potential spawning and rearing habitat due to man-made structures built in channels (e.g., dams, road crossings, weirs, etc.) and human water uses have reduced the size of the steelhead run in the Napa River watershed. For

example, approximately 30 percent of the land area in Napa River watershed drains into over 400 on-channel reservoirs.

Due to excess erosion and sedimentation in the Napa River Watershed, the narrative water quality objectives for sediment and settleable material are not being met and cold freshwater habitat, wildlife habitat, fish spawning, recreation, and preservation of rare and endangered species beneficial uses are impaired. In addition, channel incision has reduced the quantity of gravel bars, riffles, side channels, and sloughs, which threatens Chinook salmon and other fish and aquatic wildlife species. Channel incision is a controllable water quality factor that is contributing to a violation of the narrative water quality objective for population and community ecology.

Numeric Targets

Meeting the numeric targets listed in Table 1 will allow water quality in the Napa River and its tributaries to achieve the Basin Plan's narrative water quality objectives for sediment, settleable material, and population and community ecology.

Table 1. TMDL sediment targets for the Napa River and its Tributaries

Spawning gravel permeability	Median value $\geq$ 7000 cm/hr[a]
Streambed scour	Mean depth of scour $\leq$ 15 cm[b]

[a] Target applies to all potential spawning sites for steelhead and salmon in the Napa River and its tributaries, excluding those upstream of municipal water supply reservoirs.

[b] Target applies to the response of the streambed to peak flows less than the bankfull event at all potential spawning sites for salmon in gravel-bedded reaches of: 1) mainstem Napa River; and 2) alluvial reaches of tributaries where streambed slope is between 0.001 and 0.02. Potential spawning sites can be identified based on the following:1) dominant substrate size in the streambed surface layer is between 8 and 128 mm; 2) minimum surface area of gravel deposit is 0.2 square meters in tributaries and 1.0 square meter in mainstem Napa River; or 3) located within mainstem Napa River at a riffle head, pool tail, and/or pool margin or in tributary reaches where streambed slope < 0.03, or in tributary reaches where streambed slope > 0.03 in pool tails, backwater pools, and/or in gravel deposits associated with flow obstructions (e.g., woody debris, boulders, banks, etc.).

Sources

Field inventories conducted throughout the watershed provide credible estimates of the rates and sizes of sediment delivered to Napa River watershed channels between 1994 and 2004. Based on this work, and application of channel and reservoir mapping, the Water Board concludes that:

1. More than half of fine sediment delivered to the Napa River during the 1994–2004 period is associated with land use activities, including roads, human-caused channel incision, vineyards, intensive historical livestock grazing, and urban stormwater runoff.

2. In addition to its prominence in the sediment budget, channel incision is the primary agent for isolation of the channel from its flood plain and a reduction in the quantity and frequency of spawning and rearing habitat for salmon and steelhead in the Napa River and the lower reaches of its tributaries.

3. Channel sediment loads vary greatly depending upon nature of underlying bedrock or sediment deposits, land use activities, and the location of dams.

4. Thirty percent of the watershed drains into reservoirs constructed in tributary channels. These reservoirs capture all of the gravel and sand, and most of the finer sediment input to upstream channels. Nonetheless, anthropogenic activities, downstream of dams, are contributing enough sediment such that the fine sediment load is substantially elevated in the Napa River downstream of the reservoirs.

Mean annual sediment delivery rate to channels is estimated to have been 272,000 metric tons per year during the period from 1994 to 2004, which when considered in relation to the land area draining into the Napa River at Soda Creek (i.e., 584 km^2), equals 466 metric tons per km^2 per year (Table 2). The natural background rate of sediment delivery during this period, absent dams and human-caused erosion is estimated to have been 252 metric tons per km^2 per year, which is calculated from Table 2 as follows:

48,000 metric tons/year–*sediment deposited in tributary reservoirs*
7,000 metric tons/year–*sediment discharged through dams on tributaries*
92,000 metric tons/year–*input to channels downstream of reservoirs*
147,000 metric tons/year

147,000 metric tons/584 km^2–*land area draining to Napa R. at Soda Creek*
=252 metric tons/km^2/year

Therefore total sediment load in the Napa River at Soda Creek is estimated to have been 185 percent of natural background (i.e., 466/252 = 185%) during 1994-2004. Table 2 breaks down the sediment sources to the Napa River, with annual average rate calculated at Soda Creek over the 10-year study period.

Table 2. Mean Annual Sediment Delivery to Napa River at Soda Creek (1994-2004)

Source	Estimated Mean Annual Delivery Rate (metric tons/yr)
Land areas upstream of dams (fine sediment discharged from reservoirs)	
▪ Natural Processes	7,000
▪ Human Actions	11,000
Land areas downstream of dams	
▪ Natural Processes:	92,000
▪ Human actions:	
o Channel incision and associated bank erosion	37,000
o Road-related sediment delivery (all processes)	55,000
o Surface erosion associated with vineyards and/or livestock grazing	37,000
o Gullies and shallow landslides associated with vineyards, and/or intensive historical grazing	30,000
o Urban Stormwater Runoff and Wastewater Discharges	2,500
TOTAL	272,000

Notes: Drainage area for Napa River at Soda Creek = 584 km^2. Estimates above do not include sediment deposited and retained in tributary reservoirs, which includes all gravel and sand, and most of the finer sediment input to channels located upstream of the reservoirs. Approximately 104,000 metric tons per year of sediment are deposited in tributary reservoirs, 48,000 metric tons per year of which is derived from natural processes, Above estimates are rounded to the nearest thousandth

Total Maximum Daily Load and Allocations

The Napa River sediment TMDL is established at 185,000 metric tons per year, which is approximately 125 percent of natural background load (based on sediment load estimates from the 1994-2004 period) calculated at Soda Creek. Natural background load depends upon natural processes, and varies significantly. Therefore, the TMDL and allocations are expressed both in terms of sediment mass and percent of natural background. The percentage based TMDL, 125% of natural background, applies throughout the watershed. In order to achieve the TMDL, controllable sediment delivery resulting from human actions needs to be reduced by approximately 50 percent from current proportion of the total load (Tables 3a and 3b). TMDL attainment will be evaluated at the confluence of Napa River with Soda Creek, which approximates the downstream boundary of freshwater habitat for salmon and steelhead. Attainment of the TMDL will be evaluated over a 5-to-10-year averaging period.

Because dams trap almost all upstream sediment inputs to channels, natural sediment input to channels downstream of dams equals only 62 percent of the total natural background load (i.e. amount that would have been input to Napa River absent dams and human caused erosion). Almost 50 percent of the TMDL can be allocated to human-caused sources. The TMDL equal to

125 percent of natural background load, can be achieved if human-related sources are reduced to the level of the allocations shown in Tables 3a and 3b.

Table 3a. Load Allocations

Source category	Load during 1994-2004		Estimated reductions needed (percentage)	Load allocations	
	Metric tons/year	Percentage of Natural Background		Metric tons/year	Percentage of Natural Background
Land areas upstream of dams					
▪ Natural processes	7,000	4.8	0	7,000	4.8
▪ Human actions	11,000	7.5	51	5,000	3.6
Land areas downstream of dams					
▪ Natural processes	92,000	63	0	92,000	63
▪ Human actions:					
o Channel incision and associated bank erosion	37,000	25	51	18,000	12
o Roads	55,000	38	51	27,000	18
o Surface erosion associated with vineyards and grazing	37,000	25	51	18,000	12
o Gullies and shallow landslides associated with vineyards, and/or intensive historical grazing	30,000	20	51	15,000	10
TOTAL	269,000			182,000	123
Note: Above estimates for loads, percent reductions, and allocations are rounded to two significant figures					

Table 3b. Wasteload Allocations for Urban Runoff and Wastewater Discharges

Point Source Category	Current Load		Reductions needed (percentage)	Wasteload Allocations	
	Metric tons/year	Percentage of Natural Background		Metric tons/year	Percent of Natural Background
Construction Stormwater- NPDES Permit No. CAS000002	500	0.3	0	500	0.3
Municipal Stormwater NPDES Permit No. CAS000004	800	0.5	0	800	0.5
Industrial Stormwater NPDES Permit No. CAS000001	500	0.3	0	500	0.3
Caltrans Stormwater- NPDES Permit No. CAS000003	600	0.4	0	600	0.4
Wastewater Treatment Plant Discharges[a]					
City of St. Helena NPDES Permit No. CA0038016	30	<0.1	0	30	<0.1
Town of Yountville/CA Veteran's Home NPDES Permit No. CA0038121	30	<0.1	0	30	<0.1
City of Calistoga NPDES Permit No. CA0037966	40	<0.1	0	40	<0.1
TOTAL	**2500**	**2**		**2500**	**2**

a. For wastewater treatment plant discharges, compliance with existing permit effluent limit of 30 mg/L of TSS is consistent with these wasteload allocations

Note: Above estimates for loads, percent reductions, and allocations are rounded to two significant figures

IMPLEMENTATION PLAN

The ~~Implementation~~ actions described below, including the processes by which sediment and runoff control practices are proposed and implemented, are necessary to achieve TMDL targets and allocations and habitat enhancement goals. In addition, actions specified in this plan are expected to enhance steelhead run size and facilitate establishment of a self-sustaining Chinook salmon run. In order to minimize potential impacts to sensitive natural communities that may not be fully protected through County regulations, Basin Plan amendment compliance actions will not be required or approved beyond the development footprint authorized by local land- use authorities in any of the following sensitive natural communities within the Napa River watershed:

- Redwood forest

- Ponderosa Pine alliance
- Tanbark Oak alliance
- Oregon white oak woodland
- Mixed serpentine chaparral
- Wet meadow grasses NFD super alliance.
-

Locations for these sensitive natural communities and/or land-cover types in the Napa River watershed can be determined by review of the *Vegetation Map of Napa County, California* (Thorne et al., 2004; http://cain.ice.ucdavis.edu/regional/napavegmap/), the Baseline Data Report (Chapter 4, Jones & Stokes, 2005) and/or the *California Natural Diversity Database* (http://www.dfg.ca.gov/biogeodata/cnddb/).

Regulatory Tools

The only point sources of sediment identified in Tables 2 and 3b are those associated with urban stormwater runoff (e.g., municipal stormwater, runoff from State highways, and industrial and construction discharges) and wastewater treatment plants, which are regulated by NPDES permits. Table 4.0 shows implementation measures required of these sources.

The state's Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program requires regulation of nonpoint source discharges using the Water Board's administrative permitting authorities, including waste discharge requirements (WDRs), waiver of WDRs, Basin Plan Discharge Prohibitions, or some combination of these. Consistent with this policy, Tables 4.1 – 4.4 specify actions and performance standards by nonpoint source category, as needed to achieve TMDL sediment targets and allocations in the Napa River watershed. The Water Board will consider adopting conditions for waiving WDRs that apply to the nonpoint sources (vineyards, grazing, roads, etc.) listed in Tables 4.1 – 4.4, address all pollutants of concern, protect all beneficial uses, and balance the agricultural, environmental, recreational, and residential needs of the watershed.

Table 4.0 TMDL Implementation Measures for Sediment Discharges Associated with Urban Stormwater Runoff and Wastewater Discharges

Source Category	Actions	Implementing Parties
Urban Stormwater Runoff and wastewater discharges	Comply with applicable NPDES permits	Napa County, City of Napa, Town of Yountville, City of St. Helena, City of Calistoga, City of American Canyon, State of California, Department of Transportation, California Veterans' Home, owners or operators of industrial facilities and construction projects > 1 acre

Problems associated with channel incision, related rapid bank erosion, and loss of essential habitat features, reflect and integrate multiple historical and ongoing disturbances, some of which are local and direct, and others that are indirect and distal. Effectively addressing these issues will require cooperative and coordinated actions by multiple landowners, working with public agencies, over significant distances along the river. The most effective means of controlling channel incision and reducing related fine sediment delivery to the river is a channel

restoration program that re-establishes width-to-depth ratios and sinuosity values conducive to formation of alternate bars and a modest flood plain. The Water Board will work with stakeholders along the Napa River, through local stewardship groups, to implement such channel restoration/habitat enhancement projects. Tables 5.1 to 5.4 (Recommended Measures to Protect or Enhance Habitat), specify actions to address adverse impacts of channel incision on salmon habitat quantity and quality, and to accomplish habitat enhancement goals for flow, temperature, and fish passage for steelhead and salmon.

Individual landowners or coalitions may work with "third parties" to develop and implement sediment pollutant control programs. With regard to achievement of actions to protect or enhance baseflow, fish passage, habitat complexity, and stream temperature, the effectiveness of the recommended actions specified in Tables 5.1 through 5.4, will be evaluated as part of the adaptive implementation program.

Table 4.1 Required and Trackable TMDL Implementation Measures for Sediment Discharges Associated with Vineyards[1]

Land Use Category	Performance Standards	Actions	Implementing Parties	Completion Dates
Vineyards	**Surface erosion associated with vineyards**: Comply with conservation regulations (County Code, Chapter 18.108); **and** **Roads**: Road-related sediment delivery to channels ≤ 500 cubic yards per mile per 20-year period; **and** **Gullies and/or shallow landslides:** Avoid and control human-caused increases in sediment delivery from unstable areas to a less than significant level; **and** **Effectively attenuate significant increases in storm runoff**. Runoff from vineyards shall not cause or contribute to downstream increases in rates of bank or bed erosion.	Submit a Report of Waste Discharge[2] (RoWD) to the Water Board that provides, at a minimum, the following: a description of the vineyard; identification of site-specific erosion control measures needed to achieve performance standard(s) specified in this table; and a schedule for implementation of identified erosion control measures. Or Implement farm plan certified under Fish Friendly Farming Environmental Certification Program or other farm plan certification program, as approved as part of a WDR waiver policy. All dischargers applying for coverage under a WDRs waiver policy also will be required to file a notice of intent (NOI) for coverage, and to comply with all conditions of the WDR waiver policy[4].	Vineyard owner and/or operator	~~October 2012~~ October 2014
		Comply with applicable waste discharge requirements (WDRs) or waiver of WDRs.	Vineyard owner and/or operator	As specified in applicable WDRs or waiver of WDRs
		Report progress on implementation of site specific erosion control measures.[3]	Vineyard owner and/or operator	As specified in applicable WDRs or waiver of WDRs

[1] As needed to achieve TMDL allocations and consistent with the *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program* (State Board, 2004).

[2] Or compliance with applicable conditional waivers of WDRs that may be adopted by the Water Board.

[3] Reports may be submitted individually or jointly through a recognized third party.

[4] ~~This Basin Plan amendment recognizes farm plans certified under the Fish Friendly Farming Environmental Certification Program as effective with regard to control of pollutant discharges associated with vineyards.~~ Additional conditions ~~will~~ may be required under a General WDR and/or waiver program consistent with the *Policy for Implementation and Enforcement of the Non-Point Source Control Program* (State Board, ~~(~~2004), and/or as needed to avoid potentially significant environmental impacts.

Table 4.2 Required TMDL Implementation Measures for Sediment Discharges Associated with Grazing[1]

Land Use Category	Performance Standards	Actions	Implementing Parties	Completion Dates
Grazing	**Surface erosion associated with livestock grazing**: Attain or exceed minimal residual dry matter values consistent with University of California Division of Agriculture and Natural Resources guidelines **and** **Roads**: Road-related sediment delivery to channels ≤ 500 cubic yards per mile per 20-year period **and** **Gullies and/or shallow landslides:** Avoid and control human-caused increases in sediment delivery from unstable areas to a less than significant level	Submit a Report of Waste Discharge[2] to the Water Board that provides, at a minimum, the following: description of the property; identification of site-specific erosion control measures to achieve performance standard(s) specified in this table; and a schedule for implementation of identified erosion control measures.	Landowner and/or ranch operator	~~October 2012~~ October 2014
		Comply with applicable waste discharge requirements (WDRs) or waiver of WDRs.	Landowner and/or ranch operator	As specified in applicable WDRs or waiver of WDRs
		Report progress on implementation of site specific erosion control measures.[3]	Landowner and/or ranch operator	As specified in applicable WDRs or waiver of WDRs

[1] As needed to achieve TMDL allocations and consistent with the *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (State Board, 2004).*

[2] Or compliance with applicable conditional waivers of WDRs that may be adopted by the Water Board.

[3] These reports may be prepared individually or jointly or through a recognized third party.

Table 4.3 Required TMDL Implementation Measures for Sediment Discharges Associated with Rural Lands[1, 3]

Land Use Category	Performance Standards	Actions	Implementing Parties	Completion Dates
Rural Lands	**Roads**: Road-related sediment delivery to channels ≤ 500 cubic yards per mile per 20-year period; **and** **Gullies and/or shallow landslides:** Avoid and control human-caused increases in sediment delivery from unstable areas to a less than significant level.	Submit a Report of Waste Discharge[2] to the Water Board that provides, at a minimum, the following: description of the property; identification of site-specific erosion control measures to achieve performance standard(s) specified in this table; and a schedule for implementation of identified erosion control measures.	Landowners	~~October 2012~~ October 2014
		Comply with applicable Waste Discharge Requirements (WDRs) or waiver of WDRs.	Landowners	As specified in applicable WDRs or waiver of WDRs
		Report progress on implementation of site specific erosion control measures.[4]	Landowners	As specified in applicable WDRs or waiver of WDRs

[1] As needed to achieve TMDL allocations and consistent with the *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (State Board, 2004).*
[2] Or compliance with applicable conditional waivers of WDRs that may be adopted by the Water Board
[3] Rural lands, per Napa County definition include: non-farmed and non-grazing portions of parcels >10-acres that contain one or more residences, and/or a winery; vacant residential parcels >10-acres; and/or portions of 10-acre or larger parcels with secondary vineyard, orchard, and/or grazing
[4] These reports may be prepared individually or jointly or through a recognized third party.

Table 4.4 Required TMDL Implementation Measures for Sediment Discharges associated with Parks and Open Space, and/or Municipal Public Works[1]

Landowner Type	Performance Standards	Actions	Implementing Parties	Completion Dates
PARKS AND OPEN SPACE AND PUBLIC WORKS	**Roads**: Road-related sediment delivery to channels ≤ 500 cubic yards per mile per 20-year period[2]; **and** **Gullies and/or shallow landslides:** Avoid and control human-caused increases in sediment delivery from unstable areas to a less than significant level.	Submit a Report of Waste Discharge[2] to Water Board that provides, at a minimum, the following: description of the road network and/or segments; identification of erosion and sediment control measures to achieve performance standard(s) specified in this table; and a schedule for implementation of identified control measures. For paved roads, erosion and sediment control actions could primarily focus on road crossings to meet the performance standard. Adopt and implement best management practices for maintenance of unimproved (dirt/gravel) roads, and conduct a survey of stream-crossings associated with paved public roadways, and develop a prioritized implementation plan for repair and/or replacement of high priority crossings/culverts to reduce road-related erosion and protect stream-riparian habitat conditions.	Napa County Stormwater Management Program State of California, Department of Parks and Recreation State of California, Department of Transportation	~~October 2012~~ October 2014
		Comply with applicable Waste Discharge Requirements (WDRs) or waiver of WDRs.	Landowners	As specified in applicable WDRs or waiver of WDRs, and/or the SWMP
		Report progress on development and implementation of best management practices to control road-related erosion.[3]	Landowners	As specified in applicable WDRs or waiver of WDRs, and/or SWMP

[1] As needed to achieve TMDL allocations and consistent with the *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (State Board, 2004).*

[2] Or compliance with applicable conditional waivers of WDRs that may be adopted by the Water Board.

[3] These reports may be prepared individually or jointly or through a recognized third party.

Table 5.1 Recommended Actions to Reduce Sediment Load and Enhance Habitat Complexity in Napa River and its Tributaries

Stressor	Management Objective(s)	Actions	Implementing Parties	Completion Dates and Notes
Habitat degradation as a result of mainstem Napa River and lower reaches of its larger tributaries incising.	Reduce rates of sediment delivery (associated with incision and accelerated bank erosion) to channels, by 50 percent Enhance channel habitat as needed to support self-sustaining run of Chinook salmon and enhance the overall health of the native fish community.	1.1 Develop and implement plans to enhance stream-riparian habitat conditions, and reduce fine sediment supply in mainstem Napa River and lower tributary reaches	Landowners and/or designated agents, and reach-based stewardships	Comply with conditions of Clean Water Act Section 401 certifications (implementation of Rutherford Project completed by fall ~~2015~~ 2017, other projects by ~~2025~~ 2027)
Habitat degradation as a result of reduction in large woody debris in stream channels.	Enhance quality of rearing habitat for juvenile salmonids	1.2 Develop performance standards for protection of ecologically significant large woody debris in stream channels.	Napa County Stormwater Management Program and State Department of Parks and Recreation	Fall ~~2009~~ 2010

Table 5.2 Recommended actions to protect or enhance baseflow

Stressor	Management Objective	Action(s)	Implementing Parties	Schedule/Notes
Low flows during dry season	Maintain suitable conditions for juvenile rearing, and smolt migration to Napa River estuary	2.1 Local, state, and federal agencies to participate in a cooperative partnership to develop a plan for joint resolution of water supply reliability and fisheries conservation concerns	Local municipalities working with Water Board, State Water Board (Division of Water Rights), National Oceanic and Atmospheric Administration Fisheries Service (NOAA), and California Department Fish and Game (DFG)	Adopt plan by ~~fall 2010~~. fall of 2012
		2.2 Install and maintain dial-up water-level gage programs and implement public education program in 10 key tributaries for steelhead	Local public agencies	Accomplish by Spring of ~~2010~~ 2012
		2.3 Develop water-level guidelines to support juvenile salmonid rearing and migration	Local public agencies	Adopt guidelines by spring of ~~2010~~ 2012
		2.4 Conduct water rights compliance survey to protect fish and water rights	State Water Board(Division of Water Rights)	Schedule per consultation with NOAA, DFG, and Water Board

Table 5.3 Recommended Actions to Restore to Fish Passage

Stressor	Management Objective(s)	Action(s)	Implementing Parties	Schedule/Notes
Structures in channels that block or impede fish migration (note: flow-related barriers are addressed above)	No significant structural impediments to salmonid migration in mainstem or in 10 key tributaries for steelhead (including but not limited to the following): Dry, Milliken, Redwood, Sulphur, and York Designation of remaining tributaries will be determined in consultation with Napa County RCD, CDFG, NOAA Fisheries, and USEPA	3.1. Enhance conditions for adult and juvenile salmon and juvenile steelhead passage at Zinfandel Lane	Local public agencies and landowners	Project completed by fall of ~~2010~~ 2012
		3.2. Restore passage for adult and juvenile steelhead to-and-from York Creek upstream of Upper Dam	City of St. Helena	Schedule to be determined based on consultation with National Oceanic and Atmospheric Administration Fisheries Service (NOAA), and California Department Fish and Game (DFG)
		3.3. Identify and develop a plan to remedy all significant structural impediments to salmonid migration in ten key steelhead tributaries (including York)	Local public agencies and landowners	Complete comprehensive fish passage surveys in 10 key tributaries by Fall ~~2010~~ 2012. Schedule for barrier remediation to be determined based on consultation with NOAA and DFG.

Table 5.4 Recommended Actions to Protect and/or Enhance Stream Temperature

Stressor	Management Objective(s)	Action(s)	Implementing Parties	Schedule/Notes
Stressful summer water temperatures in tributaries	Protect and/or enhance baseflow	4.1. As described in Table 5.2	As indicated in Table 5.2	As described in Table 5.2
	Enhance amount of ecologically significant large woody debris in channels	4.2. As described in Table 5.1	As indicated in Table 5.1	As described in Table 5.1
	Enhance potential shade along riparian corridors	4.3.-Implement management actions to accelerate recovery of native riparian tree species	As indicated in Tables 4.1 to 4.4.	As described in Tables 4.1 to 4.4.

Agricultural Water Quality Control Program Costs

Implementation measures for grazing lands and vineyards constitute an agricultural water quality control program and therefore, consistent with California Water Code requirements (Section 13141), the cost of this program is estimated herein. This cost estimate includes the cost of implementing all actions to reduce sediment discharges and enhance habitat complexity as specified in the implementation plan, and is based on costs associated with technical assistance and evaluation, project design, and implementation of actions needed to achieve the TMDL. In estimating costs, the Water Board has assumed that owners of agricultural businesses (e.g., grape growers and ranchers), within the unincorporated area, own 75 percent of total land area on hillside parcels, and 95 percent of the land along Napa River and lower reaches of its tributaries. Based on these assumptions, we estimate total cost for program implementation for agricultural sources could be $1.9-to-3.4 million per year throughout the 20-year implementation period. More than two-thirds of these potential costs are associated with reducing sediment discharges and enhancing habitat conditions (to address channel incision) in the Napa River. Considering potential benefits to the public in terms of ecosystem functions, aesthetics, recreation, and water quality, it is anticipated that at least 75 percent of the cost of these actions will be paid for with public funds. Therefore, the total cost to agricultural businesses associated with efforts to reduce sediment supply and enhance habitat in Napa River is $800,000 to $1.7 million per year.

Evaluation and Monitoring

Three types of monitoring are specified to assess progress toward achievement of numeric targets and load allocations for sediment:

1) Implementation monitoring to document that required sediment control and habitat enhancement actions are implemented
2) Upslope effectiveness monitoring to evaluate effectiveness of sediment control actions in reducing rates of sediment delivery to channels
3) In-channel effectiveness monitoring (e.g., spawning gravel permeability and redd scour) to evaluate channel response to management actions and natural processes

Implementation monitoring will be conducted by landowners or designated agents. The purpose of this type of monitoring is to document that sediment control and/or habitat enhancement actions specified herein actually occur.

The Water Board will conduct upslope effectiveness monitoring to evaluate sediment delivery to channels from land use activities and natural processes. The first update will occur on or before the fall of 2017, when sediment delivery associated with land use activities should be reduced by 25 percent or more. A subsequent update may occur, assuming the numeric targets for sediment are not already achieved, on or before the fall of 2022, when sediment supply associated with land use activities should be reduced by 37 percent or more.

In-channel effectiveness monitoring should be conducted by local government agencies with scientific expertise and demonstrated capability in working effectively with private property owners (to gain permissions for access), as needed to develop a representative sample of stream

habitat conditions, in relation to sediment supply and transport within the watershed. In addition, the Water Board will conduct in-channel effectiveness monitoring as part of the Surface Water Ambient Monitoring Program. In-channel effectiveness monitoring needs to include measurements of redd scour and spawning gravel permeability to evaluate attainment of water quality objectives for sediment, settleable material, and population and community ecology. To establish a high level of statistical confidence in estimated values, spawning gravel permeability will need to be measured at 150 or more potential spawning sites located in ten-or-more tributaries, and 50 or more potential spawning sites in the mainstem of the Napa River. Redd scour will need to be measured in the mainstem Napa River at approximately 30 or more potential spawning sites, with 4 or more scour measurements per spawning site. Desired frequency for measurement of permeability and redd scour is once every two to three years. At a minimum, repeat surveys will be conducted once every five years.

In addition to the above described monitoring program to evaluate attainment of numeric targets for sediment, the Water Board will monitor turbidity and residual pool volume. Monitoring will be conducted in a subset of the channel reaches where spawning gravel permeability and/or redd scour are measured. Stream temperature and baseflow persistence will be monitored as part of the Surface Water Ambient Monitoring Program.

Adaptive Implementation

In concert with the monitoring program, described above, the Napa River Sediment Reduction and Habitat Enhancement Plan and TMDL will be regularly updated. Results of in-progress or anticipated studies that enhance understanding of the population status of steelhead trout and Chinook salmon in the Napa River watershed, and/or factors controlling those populations, may also trigger changes to the plan and TMDL. At a minimum, data in response to the following questions will be considered to guide research and monitoring efforts and focus each subsequent update of the TMDL.

Key Questions to be considered in the course of Adaptive Implementation:

1. What is the population status of steelhead and salmon in the watershed?
An improved understanding of the status of steelhead and salmon populations in the Napa River watershed is essential for guiding adaptive updates to the management actions recognized in this plan.

Two types of monitoring data may be needed to evaluate the population status of steelhead in the Napa River watershed: 1) "smolt" production and sizes, and 2) adult spawning run-size. Smolt refers to the life stage when juvenile salmon and trout migrate from freshwater to the ocean. Estimates of smolt production and sizes, and inter-annual variation in these parameters, can provide a strong basis for evaluating population status of ocean migrating species of trout and salmon, and influence of freshwater rearing habitat conditions on number of adults that successfully return to spawn. At least five years of monitoring (trapping) of ocean migrating smolts are needed to evaluate current steelhead population status. In addition to smolt trapping, three or more years of monitoring data are needed to estimate the number of adult

steelhead returning to spawn. This information, when combined with estimates of smolt production and sizes, would provide a basis for assessing the influences of ocean and freshwater habitat on steelhead run-size, for validating smolt production estimates and predictions regarding ocean survival, and ultimately for evaluating the status of the steelhead population in the watershed.

A similar monitoring program is needed to evaluate the population status of Chinook salmon in Napa River watershed. Such a program might include the following elements: 1) adult spawning run-size and genetic structure; 2) smolt production; and 3) egg survival from spawning to emergence (emergence trapping). During the past two years, the Napa County Resource Conservation District has conducted surveys to estimate the number of adult salmon returning to spawn. These surveys should continue for at least three more years, both to estimate the number of spawners and inter-annual variations, and to collect fin clips, as needed to evaluate origins of the spawning adults (e.g., returning adults or strays from hatcheries or other streams). The hypothesis that Chinook salmon experience very high rates of mortality during all freshwater life stages in the Napa River watershed, could be confirmed or rejected through direct monitoring of egg survival to emergence (emergence trapping), fry survival and growth, and smolt trapping.

2. *What are expected benefits of various actions to enhance habitat for steelhead and salmon?*
For steelhead, the results of in-progress studies of juvenile growth and survival will enhance understanding of the significance of dry season base flow and temperature as potential limiters on steelhead run-size. Other information needed to refine understanding of primary constraints on steelhead population size includes the following: a) comprehensive fish passage evaluations in all key tributaries that provide potential habitat for steelhead; b) dry season water-level monitoring in the same tributaries conducted over two-or-more consecutive years; and c) field surveys to evaluate winter rearing habitat quantity and quality. Given the above sources of information, it may be possible to accurately predict relative increases (high, medium, low) in smolt production associated with various management actions (e.g., baseflow enhancement, fish passage enhancement, reduction in fine sediment supply, etc.) in various locations throughout the watershed.

Key information sources needed to refine understanding of primary controls on Chinook salmon population size include egg survival-to-emergence and controls (e.g., redd scour, gravel permeability), fry survival and growth, and number and sizes of juvenile salmon migrating to the ocean. To this end, pre-and-post project monitoring associated with the proposed Rutherford channel enhancement project may provide an opportunity to determine the amount and types of habitat enhancement actions needed to support a self-sustaining run of Chinook salmon, and to enhance the overall health of the native fish community within the watershed. Key parameters that might be monitored to evaluate fisheries' response to channel enhancement could include: a) changes in quantity, quality, and frequency of key habitat types (e.g., riffles, pools, side channels, gravel bars); b) spawning gravel permeability and scour; c) base flow persistence and temperature; and d) relative abundance of native and introduced fish species.

RWQCB/SWRCB Policy/Program	Timeline													Compliance Deadline
	Fal 06	Win 07	Spr 07	Sum 07	Fal 07	Win 08	Spr 08	Sum 08	Fal 08	Win 09	Spr 09	Sum 09	Fal 09	Win 10	
Pathogen TMDL RWQCB (2) Tina Low, 510-622-5682, TLow@waterboards.ca.gov	Regional Board Adoption Mtg. (11/13/06)		State Board Public Comment (6/29/07)	State Board Hearing/ Adoption Mtg. (09/04/07)	Development of Waiver of WDRs	EPA/ Office of Adim. Law		State Board Sptic & Grazing waiver prog. Co. RFP out for consulting			Completion of Waiver of WDRs				Jan 2008 - 2010
Link to more information															
Sediment TMDL RWQCB (2) Mike Napolitano, 510-662-2397, mnapolitano@waterboards.ca.gov		Regional Board Adoption (1/23/07)						State Board Referral back to Regional Board (6/11/08)	Re-Notice for Public Comment (10/20/08)		Release of Revised Draft Policy (5/19/09)	Regional Board Re-Hearing/ Adoption (9/9/09)	Development of Waiver of WDRs	State Board Hearing/ Adoption (tentative)	Oct 2014
Link to more information															
Nutrient TMDL RWQCB (2) Tina Low, 510-622-5682, TLow@waterboards.ca.gov												Regional Board Internal Review of Draft	Regional Board Notice for Public Comment (tentative)	Regional Board Hearing/ Public Comment (tentative)	Unknown
Link to more information															
Instream Flow Policy SWRCB Division of Water Rights 916-341-5342, AB2121Policy@waterboards.ca.gov	Draft Policy/ Public Comment/ Workshops		Final Draft Policy/Public Comment		Draft Policy (12/28/07)		Public Comment Deadline (5/1/08)	~~Assembly/ Senate~~ Joint Hearing (7/30/08) Workshop (8/6/08)		Status report provided to State Board	Effort to develop alternative watershed approach		Re-Draft of Policy per Comments/Legislative Direction (tentative)	State Board Hearing/ Adoption (tentative)	Unknown
Link to more information															
Stream & Wetland Protection Policy RWQCB (1 & 2) Bruce Ho, 707-576-2460, BHo@waterboards.ca.gov	NOP/Public Comment (5/31)	Policy Update		~~Workshop~~ (6/13/07) Policy Summary to RWQCB 1 (7/11/07)		Draft Policy (12/07)	Regional (1) Board Update (4/24/08)	External Scientific Peer Review		ABAG mtg. w/Counties (3/5/09)		Draft Policy Notice for Public Comment (tentative)	Regional Board Hearing/ Adoption (tentative)	State Board Hearing/ Adoption (tentative)	Unknown
Link to more information															
Wetlands & Riparian Areas Policy SWRCB Dyan Whyte, 510-622-2441, dwhyte@waterboards.ca.gov								Phase 1 CEQA Scoping (8/19/08)	CEQA Comment Deadline (9/8/08)			Stakeholder Meetings (tentative)	Public Draft (tentative)	Final Policy Review/ Regional (1&2) Hearing(s) (tentative)	Unknown

RWQCB/SWRCB Policy/Program	Timeline														Compliance Deadline
	Fal 06	Win 07	Spr 07	Sum 07	Fal 07	Win 08	Spr 08	Sum 08	Fal 08	Win 09	Spr 09	Sum 09	Fal 09	Win 10	
Link to more information															
Addition of Unnamed Waterbodies & Beneficial Uses to SF Bay Basin Plan RWQCB Jan O'Hara, 510-622-5681, johara@waterboards.ca.gov									RWQCB Staff Announce Intention in South Bay (9/19/08	RWQCB Staff Expand Intention Regionwide (2/2/09)	Additional Uses, Names & Locations Requested by 4/30/09	2009 Basin Plan Triennial Review & Hearing (7/8/09)			***Unknown***
Link to more information															
Mercury Fish Tissue TMDL (San Francisco Bay) RWQCB (2) Carrie Austin, 510-622-1015, CAustin@waterboards.ca.gov	Regional Board Adoption (8/9/06)		State Board Public Comment (4/4/07)	State Board Adoption (7/17/07)	Office of Adim. Law (11/7/07)	EPA Approval (2/12/08)		Development of Waiver of WDRs	Completion of Waiver of WDRs						***2017***
Link to more information															
Irrigated Lands Regulatory Program RWQCB (5) Margie Read, 916-464-4624, mread@waterboards.ca.gov	Third year of Waiver Program Underway	General Prog. Membership Mtg. (1/18/07)	Third Annual Monitoring Report Due to RWQCB			Monitoring & Reporting Prog. Adoption (1/25/08)	Forth Annual Monitoring Report Due to RWQCB	Long-term Program Update Meeting (8/19/08)			Fifth Annual Monitoring Report Due to RWQCB				***Effective 2005***
Link to more information															
Water Quality Enforcement Policy SWRCB Ann Crum, 916-327-8195			Revised Public Notice (5/29/07)	Public Workshop (6/28/07)	Public Comments on Draft Policy Due (2/7/08)	Public Workshop (2/19/08) Draft Policy Revised (2/21/08)	State Board Announces Proposal to Improve Enforcement (5/28/08)			Public Workshop Comments Received (1/16/09)		Public Workshop on Draft Policy (6/4/09)			***2008 - 2010***
Link to more information															

SWRCB - State Water Resources Control Board (Statewide)
RWQCB - Regional Water Quality Control Board (1 = North Coast, 2 = San Francisco Bay, 5 = Central Valley)
NOP - Notice of Preparation
WDR - Waste Discharge Requirements
EPA - Environmental Protection Agency


Implementation Underway

State Water Resources Control Board

Linda S. Adams
Secretary for
Environmental Protection

Office of Enforcement
1001 I Street, 16th Floor, Sacramento, California 95814
P.O. Box 100, Sacramento, California 95812-0100
(916) 341-5272 ♦ FAX (916) 341-5896 ♦ http://www.waterboards.ca.gov

Arnold Schwarzenegger
Governor

NOTICE OF BOARD WORKSHOP

Workshop to Receive Comments Regarding Draft Water Quality Enforcement Policy

June 4, 2009
1:30 p.m. - 4:30 p.m.
Joe Serna, Jr. / Cal-EPA Building
Coastal Hearing Room
1001 I Street, 2nd Floor
Sacramento, California

SUBJECT OF WORKSHOP

The Office of Enforcement will be holding a Board workshop to consider proposed revisions to portions of the Water Quality Enforcement Policy. The proposed revisions can be found at http://www.waterboards.ca.gov/water_issues/programs/enforcement/policy_revisions.shtml .

BACKGROUND

The State Water Resources Control Board (State Water Board) and the Regional Water Quality Control Boards (Regional Water Board) (together "Water Boards") are the state agencies with primary responsibility for the coordination and control of water quality. In the Porter-Cologne Water Quality Control Act (Porter-Cologne), the Legislature declared that the "state must be prepared to exercise its full power and jurisdiction to protect the quality of the waters in the state from degradation…." (California Water Code section 13000). Porter-Cologne grants the Water Boards the authority to implement and enforce the water quality laws, regulations, policies and plans to protect the groundwater and surface waters of the State. Timely and consistent enforcement of these laws is critical to the success of the water quality program and to ensure that the people of the State have clean water. It is the policy of the State Water Board that the Water Boards will strive to be fair, firm and consistent in taking enforcement actions throughout the State, while considering the unique facts of each case.

On June 4, 2009, the State Water Board will hold its fourth workshop on proposed revisions to this Policy, and is asking stakeholders to submit comments on the draft and participate in a discussion of the revisions. The Board will not take any action on the Enforcement Policy at the workshop but will consider comments and feedback from stakeholders regarding the proposed changes.

PROCEDURAL MATTERS

The workshop will be informal. There will be no sworn testimony or cross-examination of participants, but the State Water Board and its staff may ask clarifying questions.

Participants should submit written comments prior to the workshop. At the workshop, participants will be given an opportunity to summarize and supplement their written materials with oral presentations. To ensure a productive and efficient workshop, and to ensure that all participants have an opportunity to participate, oral presentations may be given time limits. Participants with similar comments are requested to make joint presentations.

Participants are requested to provide written comments **by 12:00 noon on Thursday, May 28, 2009.** When submitting preliminary comments, the State Water Board requests that an original, plus one electronic copy be sent to:

Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
Office of Enforcement
1001 I Street
Sacramento, CA 95814

Written comments and electronic presentations are to be submitted to Ms. Townsend via email at commentletters@waterboards.ca.gov. Please indicate in the subject line: "**Water Quality Enforcement Policy Workshop 6/4/09**."

Hand and special deliveries should also be addressed to Ms. Townsend at the address above. Couriers delivering comments must check in with lobby security and have them contact Ms. Townsend at (916) 341-5600.

INFORMATION REGARDING WORKSHOP

Please direct any questions concerning this notice to Ann Marie Ore at (916) 327-8195.

PARKING AND ACCESSIBILITY

There is a parking garage across from the building with entrances on 10th and 11th Streets between "I" and "J" Streets, and metered parking spaces are in the vicinity of the building. For a map, see our Web site at: http://www.calepa.ca.gov/EPAbldg/location.htm.

Due to enhanced security precautions at the Joe Serna, Jr. (Cal/EPA) Building, all visitors are required to sign in prior to entering the building. Visitors can sign in and obtain badges in the Visitor and Environmental Services Center, which is just inside and to the left of the building's public entrance. Visitors may be asked to show valid picture identification. Valid identification can take the form of a current driver's license, military identification card, or state and federal identification cards. Depending on the size and number of meetings scheduled on any given day, the security check-in could take from three to fifteen minutes. Please allow adequate time to sign in before being directed to your meeting.

California Regional Water Quality Control Board
San Francisco Bay Region

Linda S. Adams
Secretary for Environmental Protection

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay

Arnold Schwarzenegger
Governor

NOTICE OF PUBLIC HEARING

TRIENNIAL REVIEW

WATER QUALITY CONTROL PLAN, SAN FRANCISCO BAY BASIN

April 6, 2009

The California Regional Water Quality Control Board, San Francisco Bay Region (Water Board) will conduct a public hearing to present a tentative resolution and supporting staff report adopting the 2009 Basin Plan Triennial Review. The staff report contains a listing of proposed Basin Plan water quality issues that may be investigated and addressed through Basin Plan amendments over the next few years. The proposed list of issues excludes TMDLs that are under development. The Basin Plan is the master policy document that contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the San Francisco Bay Region, including water quality standards.

The purpose of the triennial review is to examine and update the focus of Water Board planning efforts, excluding TMDL projects. Section 13240 of the Porter-Cologne Water Quality Control Act and Section 303 (c)(1) of the federal Clean Water Act require a review of basin plans at least once each three-year period to keep pace with changes in regulation, new technologies, policies, and physical changes within the region.

The public hearing on the Basin Plan Triennial Review will be held at the Water Board's regular monthly meeting:

DATE:	**Wednesday July 8, 2009**
TIME:	9 a.m.
LOCATION:	Elihu M. Harris State Building Main Auditorium 1515 Clay Street Oakland, California 94612

STAFF CONTACT: Naomi Feger, Senior Environmental Scientist
1515 Clay Street, Suite 1400
Oakland, CA 94612
(510) 622-2328 (ph)
(510) 622-2460 (fax)
email: nfeger@waterboards.ca.gov

Initial written comments on the Triennial Review from the public were accepted during a period from April 25, 2008 to May 19, 2008. Water Board staff also conducted a public workshop on May 30, 2008. During the workshop and comment period, the public had the opportunity to comment on the Triennial Review process and the Basin Plan, as well as recommend Basin Plan issues for investigation. Following a review of all issues submitted, the Water Board staff developed a technical report and tentative resolution describing a prioritized list of Basin Plan issues.

The 2009 Basin Plan Triennial Review Tentative Resolution and supporting staff report is available at the Water Board web site
http://www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml#triennialreview

All evidence, written testimony and exhibits proposed to be offered at the hearing must be submitted in writing to the Water Board staff contact no later than May 7, 2009 in order to be considered by the Water Board. Non-evidentiary policy statements to be made at the hearing need not be submitted in advance. Water Board staff will respond to written comments submitted by May 7, 2009.

The public hearings will be conducted in accordance with 23 Cal. Code of Regs. § 649.3. Time limits may be imposed on oral testimony at the public hearings; groups are encouraged to designate a spokesperson. All exhibits presented at the hearing, including charts, graphs, and other testimony must be left with the Water Board. They will become part of the administrative record.

A map and directions to the hearing are available online at
http://www.waterboards.ca.gov/sanfranciscobay/about_us/directions.shtml
The location of the hearings is accessible to persons with disabilities. Individuals who require special accommodations are requested to contact Executive Assistant Mary Tryon, (510) 622 2399, mtryon@waterboards.ca.gov, at least five (5) working days before a meeting. TTY users may contact the California Relay Service at 1-800-735-2929 or voice line at 1-800-735-2922.

Bruce H. Wolfe
Executive Officer

A Tradition of Stewardship
A Commitment to Service

Agenda Date: 5/12/2009
Agenda Placement: 7J

NAPA COUNTY BOARD OF SUPERVISORS
Board Agenda Letter

TO:	Board of Supervisors
FROM:	Hillary Gitelman - Director Conservation, Development & Planning
REPORT BY:	Hillary Gitelman, Director - 253-4805
SUBJECT:	Groundwater Monitoring

RECOMMENDATION

Director of Conservation, Development & Planning and Director of Public Works request approval of and authorization for the Chair to sign an agreement with Luhdorff and Scalmanini, Consulting Engineers for an amount not to exceed $230,394 for the term May 12, 2009 through June 30, 2009 with provision for automatic annual renewal to develop a comprehensive groundwater monitoring program consistent with action items included in the Conservation Element of the General Plan and the Board's six month strategic objectives.

EXECUTIVE SUMMARY

The proposed contract would allow Luhdorff & Scalmanini to review all available groundwater data for Napa County, establish and implement a data management system, review the County's hydrogeologic conditions, and advise the County regarding establishment of a comprehensive groundwater monitoring program. In a sense, the contract would tell us what we know, what we don't know, and what we need to know about groundwater resources in Napa County. This effort was identified as a priority during the 2008 General Plan Update, and again as part of the Board's recent strategic planning retreat. Luhdorff & Scalmanini was selected through a competitive Request for Proposal (RFP) process and their contract would be funded as a General Plan implementation item.

FISCAL IMPACT

Is there a Fiscal Impact?	Yes
Is it currently budgeted?	Yes
Where is it budgeted?	The General Plan Budget Unit 29200 includes general fund resources set

	aside for maintenance and implementation of the County's General Plan. This contract would implement key action items in the General Plan and is phased to utilize funds from FY08/09 and FY09/10.
Is it Mandatory or Discretionary?	Discretionary
Discretionary Justification:	The availability of groundwater is crucial to the County's agricultural economy and to almost every discretionary land use decision that the County makes. During the 2008 General Plan Update, it became clear that County policy makers needed substantial additional information about groundwater conditions, which vary greatly from place to place. This contract would begin the process of assembling that additional information, and would immediately improve the data and analysis available to decision makers.
Is the general fund affected?	Yes
Future fiscal impact:	The contract is phased to provide for $100,000 in FY08//09 and $130,394 FY09/10.
Consequences if not approved:	The County would continue to rely on limited staff resources to assemble and assess groundwater data, pushing out many years the implementation of key action items from the 2008 General Plan Update.
Additional Information:	

ENVIRONMENTAL IMPACT

ENVIRONMENTAL DETERMINATION: It has been determined that this type of project does not have a significant effect on the environment and is exempt from the California Environmental Quality Act. See Class 6 ("Information Collection") which may be found in the guidelines for the implementation of the California Environmental Quality Act at 14 CCR §15306.

BACKGROUND AND DISCUSSION

Napa County's General Plan was comprehensively updated in June 2008 and recognizes the importance of groundwater resources and the need to know more about those resources in order to protect the County's human and natural environment and its agricultural economy. The importance of groundwater monitoring and data collection has long been acknowledged, but no coordinated or comprehensive effort has been undertaken. As a result, the Board of Supervisors included several action items in the General Plan update, prioritizing groundwater data collection and groundwater monitoring. These action items include the following:

- Implement a countywide watershed monitoring program to assess the health of the County's watersheds and track the effectiveness of management activities and related restoration efforts…. (CON WR-4)
- Identify, map, and disseminate information on groundwater recharge areas, to the extent feasible, and provide educational materials and resource information on ways of reducing and limiting the development of non-pervious surfaces in those areas. (CON WR-5)
- Establish and disseminate standards for well pump testing and reporting and include as a condition of discretionary projects that well owners provide to the County upon request information regarding the locations, depths, yields, drilling and well construction logs, soil data, water levels and general mineral quality of any new wells. (CON WR-6)
- The County shall monitor groundwater and interrelated surface water resources, using County-owned

monitoring wells and stream and precipitation gauges, data obtained from private property owners on a voluntary basis, data obtained via conditions of approval associated with discretionary projects, data from the State Department of Water Resources, other agencies and organizations. Monitoring data shall be used to determine baseline water quality conditions, track groundwater levels, and identify where problems may exist. Where there is a demonstrated need for additional management actions to address groundwater problems, the County shall work collaboratively with property owners and other stakeholders to prepare a plan for managing groundwater supplies pursuant to State Water Code Sections 10750-10755.4 or other applicable legal authorities. (CON WR-8)

In light of these action items, County staff prepared a Request for Proposals (RFP) for consultant services related to groundwater monitoring data review, collection, and analysis, and provided that RFP to the Board of Supervisors for review and discussion on December 9, 2008. Subsequently, the RFP was issued and responding firms were interviewed, resulting in selection of the proposed contractor, Luhdorff & Scalmanini Consulting Engineers. Luhdorff & Scalmanini is a firm with extensive expertise in groundwater resources and is also assisting the County with the review of at least two individual development projects under separate contracts funded by project applicants.

The current contract is intended to form the basis of a comprehensive County program, and to complement community outreach funded through a grant from the State Department of Water Resources (DWR). This $50,000 DWR grant, which is currently frozen by the State, will provide the County with additional resources to conduct public outreach and stakeholder assessment, and evaluate potential volunteer monitoring well sites.

Under the terms of the current contract, Luhdorff and Scalmanini consulting engineers would (1) examine existing data and develop a data management system; (2) review existing hydrogeologic information and describe known conditions in the County's basins/subbasins including areas of recharge and saltwater intrusion; (3) recommend the scope of a comprehensive groundwater monitoring program, review the groundwater flow model available to the County, and recommend expanded precipitation and stream gauging activities; and (4) prepare a groundwater conditions report with monitoring program recommendations. As a separate task, the consultant would also review groundwater management approaches in neighboring counties, and recommend modifications to the County's groundwater ordinance and permit process.

While the current fiscal crisis has necessitated a dramatic reduction in County contracts, the Directors of Conservation, Development & Planning and Public Works are recommending that this contract proceed with funds set aside for General Plan implementation. Groundwater monitoring is considered vital to the County's future, and it is urgent that the County take a comprehensive (rather than a project-by-project) look at this issue. As an indication of the issue's importance, the proposed contract will be overseen by an interdepartmental working group consisting of staff from the departments of Conservation, Development & Planning, Public Works, Environmental Management, and County Counsel.

SUPPORTING DOCUMENTS

None

CEO Recommendation: Approve

Reviewed By: Helene Franchi

STATE CONTROLLER
COUNTY BUDGET ACT
1985

COUNTY OF NAPA
STATE OF CALIFORNIA
BUDGET UNIT EXPENDITURE DETAIL
FOR THE FISCAL YEAR 2009-2010

COUNTY BUDGET FORM
SCHEDULE 5

MAIN EXPENDITURE OBJECTS:
SALARIES & EMPLOYEE BENEFITS
SERVICES & SUPPLIES
OTHER CHARGES
EXPENDITURE TRANSFERS & REIMBURSEMENTS
FIXED ASSETS

BUDGET # 29400
BUDGET UNIT: WATERSHED INFO CTR & CONSERVAN
FUNCTION: Public Protection
ACTIVITY: Other Protection
FUND: 1000

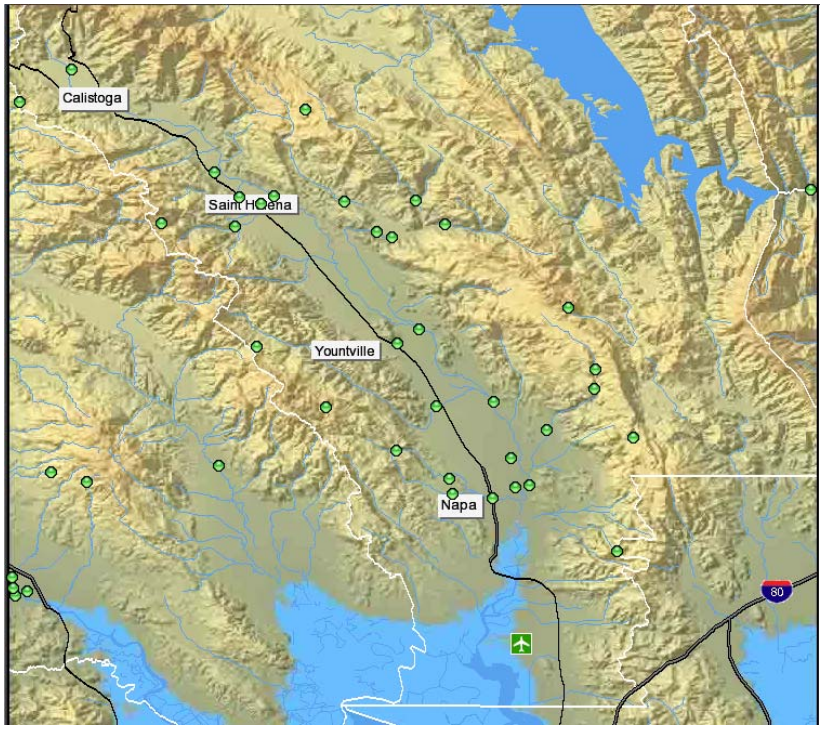
ACCOUNT	CLASSIFICATION	FINAL BUDGET 2008-2009	ADJUSTMENTS 2008-2009	ACTUALS 3/31 2008-2009	DEPT. REQUEST 2009-2010	CEO RECOM 2009-2010	VARIANCE REC. - FINAL
Services & Supplies							
52184000	PSS:WATER	200,000.00	$0.00	76,776.73	200,000.00	200,000.00	0.00
52185000	PSS:OTHER – WICC	100,000.00	$50,000.00	48,489.49	30,000.00	30,000.00	(70,000.00)
52235440	SDE:JOINT POWERS AGREE	0.00	$0.00	0.00	50,000.00	50,000.00	50,000.00
Total Services & Supplies		**$300,000.00**	**$50,000.00**	**$125,266.22**	**$280,000.00**	**$280,000.00**	**($20,000.00)**
*** **TOTAL EXPENSES - DEPT 29400** ***		**$300,000.00**	**$50,000.00**	**$125,266.22**	**$280,000.00**	**$280,000.00**	**($20,000.00)**

Real-Time and Historical Rainfall and Stream Level Data for the Napa Valley Area

The Napa Valley area website provides current and historical rainfall, creek and river level monitoring data. This website and the network of rainfall and stream level gage sites is a collaborative project of local Napa County cities, the County of Napa, and the Napa County Flood Control and Water Conservation District. This website, first operational in November 2006, is intended to replace the former "Storm Watch" website maintained by the City of Napa, by incorporating all of the former website functionality, plus provide improved features and an expanded network of approximately 50 site locations in the Napa Valley region where weather or stream data collection equipment are located. In this website you will find:

- Real-time rainfall and other local weather data
- Current water levels in area creeks and the Napa River
- Historical data for gage sites operated by Napa County agencies dating back to October 2001 for most locations
- Ability to view data within multiple map views or view lists of gage sites from the North Bay region down to selected portions of the Napa Valley
- Graphing and tabular data downloading functions for selectable time periods
- Links to regional weather and river level forecast sites for up to the minute severe weather and flooding outlook

This web interface incorporates data collected at gage sites maintained by the cities of Napa and St Helena, Napa County and the Flood Control District, as well as weather and stream gaging sites operated in the area by other agencies, such as the United States Geological Survey, local airports or other nearby cities and counties and is operated by OneRain, Inc., under contract to the Napa County Flood Control and Water Conservation District.



http://napa.onerain.com/home.php

Monitoring Sites		
Name	Site ID	Status
ANGWIN	ANG	
ATLAS PEAK	ATL	
Atlas Peak@Milliken	13	
Chiles Creek	24	
Conn Dam	20	
Conn Dam Spillway	25	
Conn Valley	26	
Corp Yard	5	
Dry Creek Fire	8	
Garnett Creek	10	
Hwy 29 @ Hopper Creek	16	
Hwy 29 @ Napa Creek	17	
Lincolin Bridge	3	
Lodi Lane	11	
Mc Cormick Lane	27	
Milliken Dam	19	
Milliken Inlet	21	
Mt George	9	
Mt St Helena	6	
Mt Veeder	1	
Napa	KAPC	
NAPA R NR NAPA CA	11458000	
NAPA R NR ST HELENA CA	11456000	
Petaluma D Street Bridge	31	
Petaluma Payran Bridge	33	
PETALUMA R A COPLAND PUMPING STATION A PETALUMA CA	11459150	
Petaluma Washington Crk	30	
Petaluma Willow Brook	35	
Petaluma Wilson Street	39	
Petrified Forest	7	
PUTAH C NR WINTERS CA	11454000	
Redwood@forest	4	
Redwood@mt Veeder	2	
Sage Creek Bridge	23	
Salvador Creek @ Big Ranch Rd	28	
SONOMA C A AGUA CALIENTE CA	11458500	
St Helena@sulphur Creek	14	
ST. HELENA 4WSW	SH4	
Sugarloaf Radio Site	18	
Sulphur Creek @ Pope St.	41	
Washington@drycreek	15	
York Creek @ HWY 29	29	
Yountville Cross Rd	12	

Progress Summary
NBWA Indicators Project
June 2009

The purpose of this document is to summarize the progress to date on the NBWA Indicators project in order to provide background to stakeholders who might be able to provide feedback on the project content. This document is meant to supplement the presentation *How healthy is your watershed? Indicators and Performance Measures for the North Bay* or some version of this presentation which will be given to various stakeholder groups between April and July 2009. This summary was written by Kat Ridolfi of the San Francisco Estuary Institute, and was reviewed and contributed to with the help of Peter Vorster (The Bay Institute), Lisa Micheli (Sonoma Ecology Center), and Harry Serydarian (NBWA). Other important contributors to this project include Jeff Sharp (Napa County Planning), and Chris Choo, Liz Lewis, and Terri Fashing (all from Marin County Public Works).

Background:
The North Bay Watershed Association (NBWA) seeks a clear set of indicators and performance measures to assess the success of the region's planning efforts in achieving established goals for North Bay watersheds. In 2006 NBWA developed goals and resource objectives for evaluation of Integrated Regional Water Management Plan (IRWMP) projects. Subsequently, the San Francisco Estuary Institute (SFEI) reported on possible monitoring approaches and recommended indicators for answering assessment questions for the North Bay (April 2007). The SFEI research showed that appropriate indicators of watershed condition were needed to measure the effectiveness of meeting the IRWMP goals. In addition, NBWA recognizes the need for appropriate performance measures to track implementation of the IRWMP and other management actions. This project seeks to fill those gaps by identifying indicators of watershed condition and stewardship, and management action performance measures that can be used in a wide range of plans, programs, and projects.

There are a few previous and ongoing efforts to develop indicators for the region. The Bay Institute developed a scorecard of Bay Health in 2003, and followed up with an update in 2005. This represents the first effort at scoring regional watershed health. Building on this work, currently there are several active efforts in the San Francisco Bay Delta Area which are developing indicators for the region or for sub-regions in the Bay Area based on the Watershed Assessment Framework, including the Sacramento River watershed, a group of North Bay/Delta watersheds, and for the entire San Francisco Estuary (12 Bay/Delta counties). In addition, a scorecard for water supply indicators is in development for the Napa River and Sonoma Creek watersheds.

Purpose
This project will build on existing work to identify appropriate indicators and performance measures most appropriate for the North Bay watersheds. These tools will help to inform questions such as: What are the problems in this watershed? How severe

are they? How can I track progress of meeting regulatory thresholds? Existing effective monitoring efforts provide important information regarding water and habitat quality. However, developing good indicators of watershed health can improve these monitoring efforts by providing a means to organize this data into a source of truly meaningful answers to assessment questions that are appropriate to a specific watershed or region. In addition, performance measures will help to determine how a plan is being implemented or to track progress towards achieving environmental conditions or other targets. Questions that can be answered by performance measures include: Are the objectives being met? Are management actions directly addressing the priorities of the plan? Are regional priorities being met? How far off from the target level of implementation are we? Over all, the goal is to provide information that will enable watershed managers to apply existing condition to make changes in management, which will result in improved conditions at a variety of scales (e.g. specific reach, watershed-wide, regional).

Scope

This project will take place over the course of one year, with the following work remaining or in progress (Table 1).

Table 1. Project schedule. Shaded rows indicate deliverables.

Item	Date
Outreach to indicator end-users	April-July 2009
Stakeholder Workshop (North Bay Watershed Council Meeting)	June 25 2009
Draft Report to NBWA for comments	September 2009
Final Report submitted to NBWA	November 2009

Indicator selection and organization

Indicator selection and organization requires three initial steps:

1) The first step in identifying indicators and performance measures was to pick a framework, in order to better organize information. Five categories of goals and objectives were identified in the 2006 North Bay IRWMP. Since one of the goals of this project is to link objectives to measurable indicators and performance measures, we decided to use these five categories for our indicator/performance measure framework:

- Water Supply
- Water Quality
- Habitat Enhancement
- Recreation and Public Education
- Flood Protection

2) Next, we evaluated a pool of potential indicators and performance measures. The candidates came from a combination of previous indicators work, and what we deemed appropriate given the goals and objectives of the IRWMP plan and knowledge of existing datasets. Because of the lack of comprehensive watershed wide habitat, biological, and water quality monitoring, many of our indicators are stewardship indicators. Indicators that track stewardship such as “water use” are somewhat a hybrid between the traditional

condition indicators and performance measures[1]. From this list of potential indicators, a culling process was necessary to make sure that we chose the most appropriate indicators for the North Bay's temporal, spatial, and geographic scales and management priorities. Other criteria were considered including:

> **Validity:** relevance to the IRWMP and North Bay watersheds
> **Meaning:** ability of the information to be interpreted and meaningful to local resource managers, residents, and political representatives; ability to demonstrate a trend; and ease of measurement
> **Availability:** supported by high quality, data that is immediately usable, and likely to continue and cost effective to analyze

3) Lastly, we organized the potential indicators into a nested hierarchy of index, indicator/performance measure, and metrics. Please see the glossary for definitions of these terms. For example, say you are interested in finding out what the status is of salmonids in a stream that was historically used for spawning, but has declined. This salmonid indicator would probably be grouped under a larger umbrella fish index for the watershed which could also include indicators of native fish, and distribution among tributaries. Since the goal is to assess salmonid populations, good metrics to use include # smolts, total #/length of stream bed, # redds.

Draft indicators and performance measures

After applying criteria to the potential indicators, we came up with a draft list of 23 indices made up of 52 indicators all arranged under five categories. We then went through a round of culling some indicators based on feedback from NBWA working groups and a more critical view of which indices met important criteria listed above. The revised list consists of 16 indices made up of indicators (Table 2). We realize that not every city, water district, or other stakeholder will need to use all of these suggested indices. The entire list aims to capture the breadth of needs of NBWA member agencies. Our hope is that the project will highlight the considerable benefits from using multiple indices to guide project decisions and monitoring efforts at a watershed or regional scale that would benefit agencies even if there is not an individual need to collect the data. We also hope that this effort will benefit a collective knowledge and strengthen the basis for understanding watershed health.

[1] Stewardship indicators show how effective management actions are that are not necessarily tied to a specific program but still act as an indicator of how resources managing are managed. They are an indirect or surrogate measure of health or condition.

Table 2. Draft Indices

Habitat Enhancement	Water Supply	Recreation and Public Education	Flood Protection	Water Quality
Fish index	Climate Context	Recreational Support	Innovative and integrated stormwater and flood management	water quality standards
Bird index	Streamflow	Education Promotion	Watershed runoff	Pollutant reduction
Riparian Habitat	Storage		Floodplain protection	Invertebrate index
Habitat Restoration	Water use			

Expected applications

There are several expected applications for the results of this work, including:

- Watershed Plans
- Stormwater Programs
- Specific projects (e.g. bank stabilization, flood control, vegetation)
- Regional planning efforts

For all of these applications, we expect that the application can be twofold: either to track progress at implementing projects or reaching other goals, or for measuring improved conditions for habitat or water quality over time.

Next Steps

The months of April through July will be spent attending NBWA subcommittee meetings (Habitat/Floodplains, Integrated Water Resources, and Water Quality) and getting additional groups of stakeholders together to share information about the project so far and to gain feedback on how the information can be more tailored to individual agency or watershed needs.

We expect that a finalized list of indices, which incorporates feedback from all stakeholders including the North Bay Watershed Council (which meets on June 25), will be available in September for the next NBWC meeting. The draft report will be submitted to NBWA in the fall, with a final version incorporating comments submitted one month after comments are received from NBWA.

GLOSSARY OF INDICATOR TERMS

North Bay Indicator Project

Goals describe desired outcomes for a watershed through a particular project or program in a stated timeframe.

Objectives are the tactics to achieve the goals. They recommend a course of action that can be taken to implement or reach goals. Objectives for watersheds can be defined as actions that help reach desired outcomes for particular aspects of watershed condition.

Indicators are measureable characteristics designed to represent and communicate the condition of a larger environmental system that includes human communities. Indicators are tools to inform the public and guide management actions.

Metrics are discrete measurements that constitute the building blocks of indicators. Examples of metrics can include dissolved oxygen concentration, temperature readings, smolt production, residential water use, or the number of students in an education program. One or more metrics are combined to comprise an indicator.

Performance measures are a means to track progress towards achieving an environmental condition or management response target.

Targets translate objectives into quantifiable guidelines or standards of success.

An ***Index*** is a composite of several, related indicators to express an environmental condition