



A Tradition of Stewardship
A Commitment to Service

February 14, 2011

Napa City/County Library
Community Room

Napa County Board of Supervisors Groundwater Workshop



- Workshop Agenda
- Presentation Handouts

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A Tradition of Stewardship
A Commitment to Service

Board of Supervisors

1195 Third St.
Suite 310
Napa, CA 94559
www.countyofnapa.org

Main: (707) 253-4421
Fax: (707) 253-4176

Bill Dodd
Chair

Napa County Board of Supervisors Groundwater Workshop

February 14, 2011 - 1:30pm
Napa City/County Library - Community Room

Objective of the Workshop:

Bring everyone to the same level of understanding about groundwater and County functions related to water resources, in preparation for a future agenda item consistent with the Board's Strategic Objective:

"Present to the Board of Supervisors for action a work plan for the development of a comprehensive county-wide policy and program for potable and recycled water."

Agenda

1:30 **Introduction/Overview:** Don Ridenhour/Hillary Gitelman

- Napa Valley 2050 Water Resources Study (2005) & Napa County General Plan Update (2008) identified the need for additional data collection/analysis
- Center for Collaborative Policy Study (2010) interviewed local stakeholders & suggested an extended outreach & planning process leading to GW management

1:45 **Groundwater Resources:** Presentation by Luhdorff & Scalmanini

- Groundwater Resources: what we know, what we don't know
- Monitoring and Data Management recommendations
- Regulatory Requirements – State legislation (SBx7 7, CASGEM, others)
- Recommendations/questions to be addressed
- Questions/Discussion

Brad Wagenknecht
District 1

Mark Luce
District 2

Diane Dillon
District 3

Bill Dodd
District 4

Keith Caldwell
District 5

Groundwater Workshop - Agenda

3:00 **Sonoma County's Recent Groundwater Experience:** Paul Kelley

- A Perspective on Sonoma County's Groundwater Ordinance Update
- Questions/Discussion

3:15 **Survey of County Roles & Responsibilities in Water:** Phill Miller

- An overview of the Roles/Responsibilities of County Departments and Districts
- Questions/Discussion

3:35 **Wrap-up & Immediate Next Steps:** County Staff

- Pursue funding for implementation of priority monitoring and data collection recommendations and designate the WICC as the data repository
- Retain the services of "on-call" hydrologists so we have the technical expertise we need available when we need it
- Establish a Community Advisory Committee to work with technical experts on revisions to the groundwater ordinance
- Aggressively defend groundwater as a County resource and actively facilitate water supply projects including recycled water & non-State Water Project supplies
- Formalize the inter-departmental working group and come back to the Board with recommendations regarding staff/resources for FY 2011/12

4:00 **Adjourn**

(Note: Timeframes are approximate and may vary depending on comments and discussion.)



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Departments of Public Works and Conservation, Development & Planning

Napa County Board of Supervisors

Groundwater Workshop

February 14, 2011

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A Tradition of Stewardship
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Groundwater Workshop

February 14, 2011

Departments of Public Works and Conservation, Development & Planning

Workshop Objective:

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Groundwater Workshop

February 14, 2011

Departments of Public Works and Conservation, Development & Planning

Agenda

1:30 – 1:45*	Introduction/Overview (Don Ridenhour, Hillary Gitelman)
1:45 – 3:00	Groundwater Resources (Luhdorff & Scalmanini)
3:00 – 3:15	Sonoma County's Recent Experience (Paul Kelly)
3:15 – 3:35	County Roles & Responsibilities in Water (Phill Miller)
3:35 – 4:00	Wrap-up & Immediate Next Steps (County Staff)

(*Timeframes are approximate and may vary depending on comments and discussion.)

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Groundwater Workshop

February 14, 2011

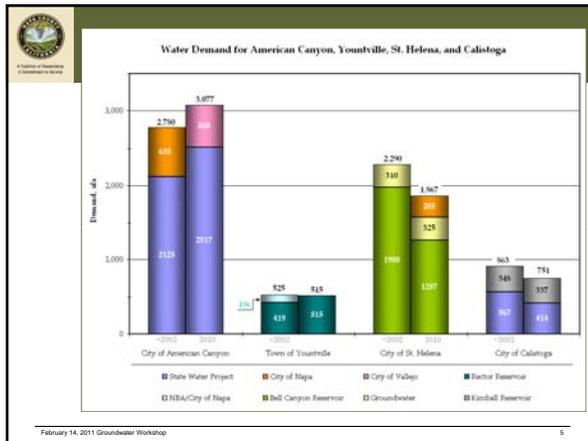
Departments of Public Works and Conservation, Development & Planning

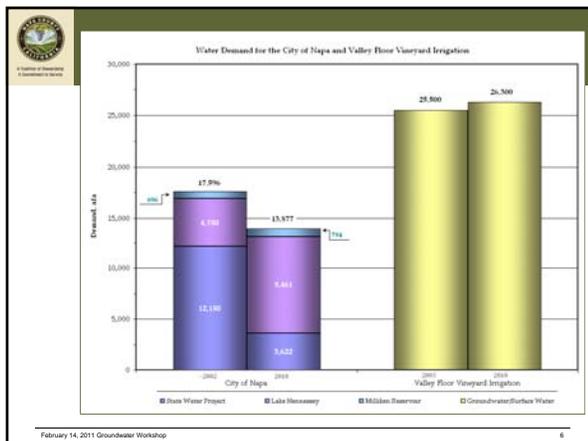
Introduction/Overview
(Don Ridenhour, Hillary Gitelman)

- Available Water Supplies in the County
- General Plan Update (2008) Implementation Actions
- Center for Collaborative Policy Study (2010)

1:30 – 1:45

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General Plan Update (2008) Action Items

- Monitor groundwater and interrelated surface water resources (CON WR-8)
- Identify groundwater recharge areas (CON WR-5)
- Establish well pump test and reporting standards (CON WR-6)
- Seek funding to expand groundwater monitoring & community-based planning efforts (CON WR-9.5)

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DWR Capacity Building Grant: Center for Collaborative Policy Assessment @ Sac State

- Third party assessment of public support for a voluntary groundwater monitoring program & related activities
- CCP interviewed 34 stakeholders representing a variety of interests
- Final report to be posted on the website (conclusions summarized below)

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CCP Key Findings:

- Majority interviewed had concerns about the rate of groundwater use, stressed the complexity of the issue, and the need for site specific info
- Several interviewees were concerned about the use of groundwater by cities/urban uses
- Several interviewees expressed strong concern about government involvement in groundwater
- Several interviewees recognized the potential for recycled water to reduce demands on groundwater and supported its use
- Numerous interviewees felt that groundwater use could reduce streamflows and threaten habitat, fish, etc.

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State of Nevada
Department of Conservation & Forestry

Departments of Public Works and Conservation, Development & Planning

CCP Key Findings:

- A few interviewees expressed concern about the scientific and technical expertise needed to address groundwater and suggested Public Works would be the most appropriate institutional locus
- Almost all interviewees emphasized that there are critical information needs
- Several interviewees criticized the lack of access to relevant County information and also expressed concern about the need for confidentiality
- Interviewees provided numerous examples of successful collaborative efforts in Napa County and emphasized that efforts should work through existing stakeholder networks

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State of Nevada
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Departments of Public Works and Conservation, Development & Planning

CCP Key Findings:

- Almost all interviewees were open to considering participation in a voluntary monitoring program if several conditions were met; a few said they would actively oppose any collaborative data gathering efforts
- Interviewees had divergent views of who should convene a process, but agreed it should have a clear purpose, executive commitment, and transparency
- A majority of interviewees felt that the work needed to be reframed to include a broader vision of inclusion and benefit for everyone in the County
- Almost all interviewees stressed that the effort must be tailored to site-specific conditions

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State of Nevada
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CCP Conclusions ("Conditions for Collaboration"):

- Clear desired outcomes; political leadership & commitment; economic resources; opportunities to create shared value; etc.

CCP Recommendations:

- Convene a Groundwater Resources Information Advisory Committee
- Synthesize existing information, assess the resource, identify critical regional information needs, and develop a data gathering framework
- Convene & support regional joint fact-finding teams
- Develop and implement an ongoing communication and education plan

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CCP Recommendations (Continued):

- Fact-finding teams would report to the Committee on an annual basis
- After three years of data gathering by the fact-finding teams, the Committee would synthesize findings to date, assess the resource and involve the public in identifying a vision and next steps
- Committee and fact-finding teams would operate by consensus & the process would take a total of seven years (!!)
- End result would be "a publicly-reviewed proposal for how to address outstanding groundwater issues in the different parts of the County" that could be submitted to the Board of Supervisors for approval and implementation.

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CCP Assessment: Staff Review

- Useful study based on limited outreach
- Does not reflect results of groundwater study that will be summarized here today
- Contains useful recommendations, such as:
 - formation of an advisory committee supported by technical consultants;
 - focusing on data collection and analysis;
 - recognizing site-specific variations;
 - emphasis on public participation and outreach
- We can design a process that is < 7 years!

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Groundwater Workshop

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Departments of Public Works and Conservation, Development & Planning

Groundwater Resources (Luhdorff & Scalmanini)

1:45 – 3:00

- Groundwater Resources:
 - *What we know and what we don't know*
- Monitoring & Data Management Recommendations
- Regulatory Requirements – State Legislation
- Recommendations, Questions & Discussion

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Napa County
Groundwater Monitoring Program Study and
Current Conditions Report

presentation by

Luhdorff & Scalmanini,
Consulting Engineers

February 2011



Presentation Overview

- Purpose of Study
- Study Components and Results
- Groundwater Planning, Ordinance, and Well Permitting
- State Regulations
- Recommendations



Overall Study Purpose

- Reconnaissance Level Evaluation
 - Compile Readily Available Data
- Assess Data Collection Procedures and Quality of Data
- Establish a Framework for Reporting
- Evaluate Countywide GW Conditions
- Provide Recommendations Related to GW Ordinance, Permitting, and Monitoring Program

Program Study Components

- Data Management System (DMS)
- Evaluation of Data and County GW Model
- Subarea Evaluation of Groundwater Levels and Quality
- Evaluation of Existing Well Permitting and Ordinance Review
- Evaluation of Current GW Planning
- Recommendations

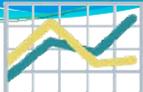
Data Management System



Purpose and Capabilities

- Establish Central Repository for GW Data for Integrated Water Resources Management
- Ability to Expand Content
- Produce Tables & Figures for Evaluation of GW Conditions
- Linkage to Geographic Information Systems (GIS) based Software
- Linkage to Map Interface Tools for Access to Data

Evaluation of Data



Historical Monitoring Data Distribution

- Historical GW Monitoring Sites (pre-2005) Exceeds Current (2005 to Present) Sites by 50 Percent
- GW Quality Data More Spatially Distributed than Level Data
- GW Level Data Primarily Collected from Napa Valley Floor Subarea

Study Subareas

17 Subareas

- Napa Valley Floor - 5 Subareas

Based on:

- Watershed Boundaries
- Groundwater Basins
- Planning Subareas



The map shows the Napa Valley region divided into 17 subareas. A legend indicates three types of boundaries: Watershed Boundaries (dashed line), Groundwater Basins (solid line), and Planning Subareas (dotted line). The map also shows major roads and geographical features like Lake Pillsbury and Lake Wappanog.

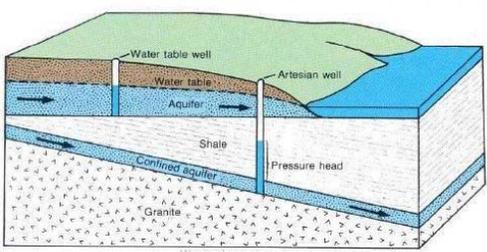
Evaluation of Data

Current Groundwater Monitoring

- GW Level Monitoring at 181 sites (compared to 382 historically)
- GW Quality Monitoring Sites at 182 sites (compared to 211 historically)
- Existing Data are Limited in Assigning Data to Specific Water-Bearing Aquifers

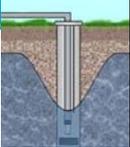
Evaluation of Data

Designation of Data to Specific Aquifers is Necessary Due to Variation in GW Conditions



The diagram illustrates a cross-section of the ground. From top to bottom, it shows: a water table well tapping into the water table; an aquifer layer with arrows indicating flow; a shale layer; a confined aquifer with a pressure head; and a granite base. An artesian well is shown tapping into the confined aquifer, with water rising above the ground surface. Arrows indicate the direction of groundwater flow from the aquifer towards the wells.

Evaluation of Data



Data Quality Issues

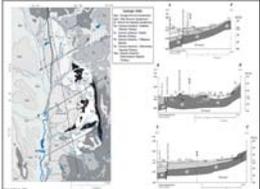
- **GW Level Data Influenced by Pumping**
- **Changes in Wellhead Reference Elevations**
 - To Convert Measurements to Elevation
- **Anomalous Groundwater Quality Data**
- **Well Location Coordinates that Need Refinement**

Evaluation of County GW Model

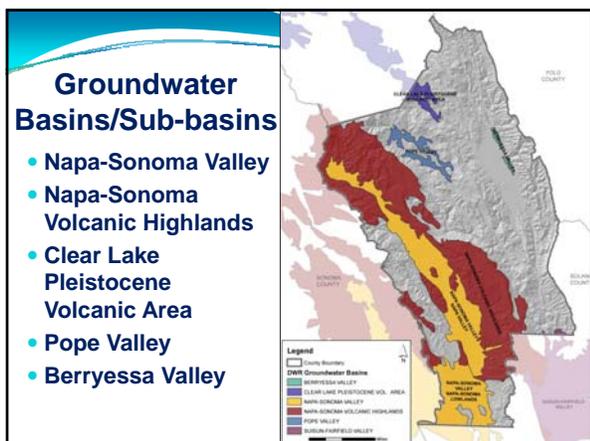


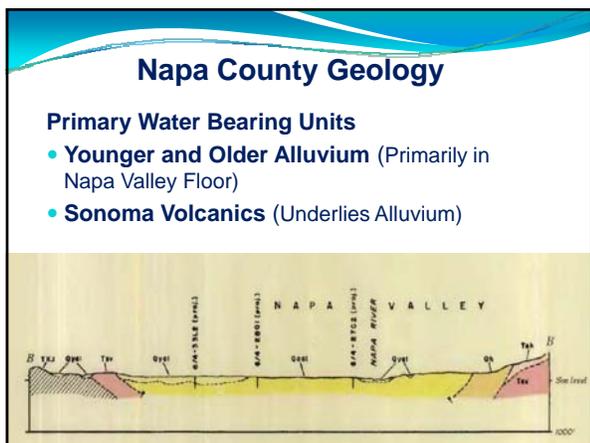
- **Reconnaissance Level Review**
- **Regional in Nature**
- **Limited Simulation Period**
- **Focus on Napa Valley, MST, and Carneros**
- **Comparison (Calibration) of Model and Measured Data was Limited**

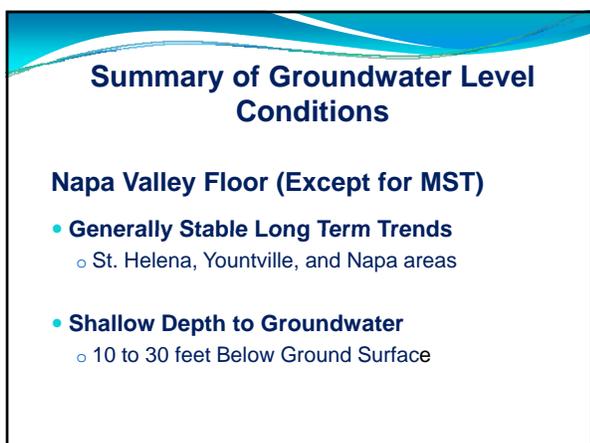
Subarea Evaluation of Monitoring Data

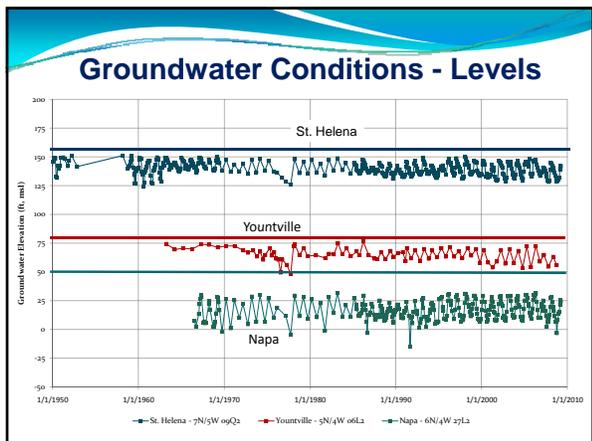


- **Napa County Groundwater Basins/Subbasins**
 - DWR
- **Geology**
- **Groundwater Conditions – Levels**
- **Groundwater Conditions - Quality**





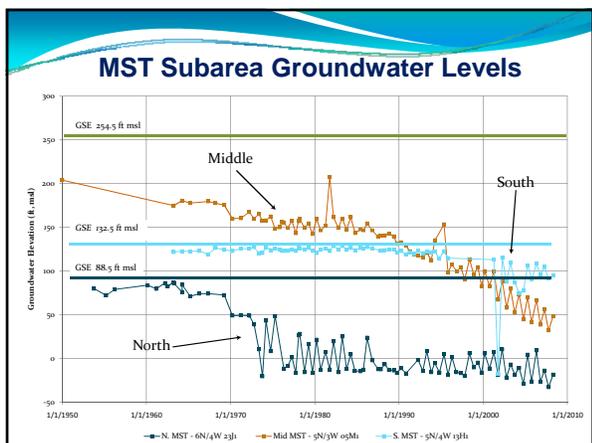




Groundwater Conditions - Levels

MST Subarea

- **Northern Area**
 - Decline in Late 1960s to 1970s, then Stable
- **Central Area**
 - General Long Term Decline, Increase in Decline Since the 1990s
- **Southern Area**
 - Shallow Depth to Groundwater, Historical Stable Trends with Recent Decline



Groundwater Conditions - Quality

- **Generally Good GW Quality**
- **Selected Areas of Elevated Constituents**
- **Calistoga Area of the Napa Valley Floor**
 - Geothermal Influences
- **Southern Napa County**
 - Elevated Total Dissolved Solids and Chloride
- **Napa Valley Floor**
 - Scattered Nitrate



Groundwater Planning, Ordinance, and Well Permitting

- **Overview of California GW Management**
- **Review of Neighboring Counties GW Planning and Ordinances**
- **Review of Napa GW Ordinance, Well Permitting, and Planning**
 - Consistency with County Policies and Goals



California Groundwater Legislation – AB 3030 & SB 1938 (Water Code 10753)

- **AB 3030:** 1992, Provided for Local Agencies to Adopt GW Management Plans
- **SB 1938:** 2002, Amendment to Water Code 10753
- **SB 1938:** Requires Inclusion of Certain Components/Elements to Receive Funds for GW Projects

SB 1938 (Required Elements)

- Public Participation Procedures (may appoint Advisory Committee)
- Coordination with Other Agencies
- Map of the Basin(s) and Basin(s) Agencies
- Basin Management Objectives
- Monitoring for GW Levels & Quality, SW Flow & Quality, and Land Subsidence (as applicable)

GW Sustainability Planning

- Benefits Local Planning Efforts to Ensure Good Quality and Sufficient Quantity
- Facilitate County's GP goals
- Development and/or Enhancement of GW and SW Monitoring Programs
- Encourage Regional and Local Agency Coordination, Enhance Community Education and Outreach
- Provides Funding Eligibility for DWR Grant Programs

Recommendations

- Data Management System
- CASGEM Monitoring Program
- Napa County Monitoring Program
- Hydrogeologic Conceptualization
- Groundwater Planning, Ordinance and Well Permitting

Data Management System

- Entry of Other Historical Data
- Develop and Implement Quality Control Protocols
- Establish User-Friendly Map Interface with the DMS
- Update DMS for Compatibility with DWR Data Requirements for the CASGEM Program
- Regularly Evaluate Countywide Data and Disseminate Information

CASGEM GW Monitoring Program

- Napa Co. Established as Lead Entity (Dec 2010)
- Coordinate Current Monitoring Program with DWR Objectives
- Establish Subset of Wells from Current Monitoring Network
- Identify Gaps in Monitoring Network
- Input Data into the DMS
- Establish Data Format to Meet DWR Guidelines for Electronic Data Transfer

Groundwater Monitoring Program

- Optimize and/or Expand GW Level and Quality Monitoring
 - Identify Data Gaps in Subareas
 - Aquifer Specific Monitoring
- Ongoing Evaluation of GW Conditions
- County as Lead Agency to Coordinate Monitoring and Data Collection Among County Agencies and Others

Hydrogeologic Conceptualization

- Interpret Available Geologic Data
- Develop Estimates of Groundwater Recharge, Discharge, and GW Storage Change in Subareas of Interest
 - Assess Water Supply Availability, Reliability, Sustainability
- Investigate Groundwater and Surface Water Interactions
- Modify and Update GW Model, if necessary

Groundwater Planning, Ordinance, and Well Permitting

- Recommended Code and Other Updates
 - Ordinance and Well Permitting
- Groundwater Elevation Monitoring (CASGEM)
 - County as Monitoring Entity
- Develop Groundwater Sustainability Planning



Discussion & Questions





Groundwater Workshop
February 14, 2011
Departments of Public Works and Conservation, Development & Planning

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3:00 – 3:15

Sonoma County's Recent Groundwater Experience (Paul Kelly)

- A Perspective on Sonoma County's Groundwater Ordinance Update
- Questions & Discussion

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Paul Kelley

Biography

Paul Kelley was born and raised in Sonoma County. He grew up just west of Santa Rosa, on Olivet Road. He attended local schools, graduating from Piner High and Santa Rosa Junior College. Paul attended San Francisco State University, graduating with a degree in Computer Science and a minor in History.

Paul began his career as an operations manager in a small chemical company. He spent a year working for Robert Young Vineyards in the office as well as in the vineyard. Utilizing his degree in Computer Science, he became a computer programmer and systems installer for several software firms.

He worked with Standard Structures, bringing a new computer system online. After Standard Structures, Paul worked as a private school teacher, teaching Junior High for the first year, then 5th and 6th graders. He taught Math and History and coached the basketball team. Paul has been active in his community. He was the Charter Secretary for the Windsor Kiwanis Club, playing a major role in its formation. Paul was involved in the incorporation of the Town of Windsor and was a member of a community committee.

In 1994, Paul ran for Sonoma County Supervisor and was elected in November, taking office in January 1995. Paul served four terms as County Supervisor from the 4th district. As Supervisor he also served as a director of the Sonoma County Water Agency. Over the years as County Supervisor Paul has been the boards key liaison and expert for the Water Agency and the Transportation Authority.

Paul has held numerous leadership positions as Chairman of the Board of Supervisor and Board of Directors of the Sonoma County Water Agency in 1998,2003,2006, and 2009. Paul also served as the Chairman of the Sonoma County Transportation Authority in 1997-98 and 2004-05.

Other assignments include; Russian River Public Policy Facilitating Committee, North Coast Air Pollution, North Coast Supervisors Association, Redwood Empire Association, Sonoma County Transportation Authority, North Coast Rail Authority, Eel-Russian River Association, Association of California Water Agencies, and Sonoma County Retirement Association.

Paul Kelley is currently the President of the Association of the California Water Agencies and is the Governors appointee to the California Water Commission.

In 2011 Paul left elected office and is now the principle consultant of Paul Kelley Consulting. A consulting practice dedicated to strategic initiative facilitation in the Water, Transportation, Government, and Business arenas.

Contact information:

Paul Kelley Consulting
707-484-2757

1787 Olivet Road
707-953-5166 (Cell)

Santa Rosa, CA 95401
paul@paulkelley.org

Napa Sanitation District	Napa County Resource Conservation District	Cities, Town & Districts	Flood Control & Water Conservation District	County Department of Public Works	County Conservation, Development & Planning Department	County Department of Environmental Management	County Department of Agriculture
Wastewater Conveyance Wastewater Treatment & Disposal Effluent Water Quality Monitoring Water Education Programming Recycled Water Supply and Distribution Recycled Water Supply/Demand Mgmt. Planning	Habitat & Watershed Assessment Watershed Stewardship & Education Development Restoration Design & Implementation Project Funding Erosion Control Consultation Hydrologic Modeling & Consultation Stream Gage and Precipitation Station Devel. & Monitoring	NPDES Program Participation Local Flood Control Planning Local Road Maintenance Measure A Project Implementation Potable Water Supply & Distribution Potable Water Quality Monitoring Wastewater Treatment Water Reuse & Recycling City/Town Water Conservation Programming	County-wide NPDES Program Coordination Stream Gage & Precipitation Monitoring (ALERT System) River & Tributary Surveying Watershed Maintenance & Operations Special Benefit Zones O&M Napa Flood Project: Capital Projects Napa Flood Project Operations & Mgmt. Flood Studies State Water Contract Management Water Conservation	NPDES Program Participation Flood Plain Management & Permitting Groundwater Ordinance & Analysis Groundwater Monitoring Unincorporated Area Measure A Programs & Projects Sediment TMDL Implementation/ County Road Maintenance Grading / Construction & Post-Construction Erosion Control Water District Management (LB & NB) Recycled Water Project Management	General Plan Implementation, (incl. groundwater monitoring/studies & water resource planning) Land Use Planning & Watershed Assessment Project Development & Permitting WICC/Watershed Education & Outreach; Agency coordination Agricultural Erosion Control Plan Approval County Natural Resource & Environmental Data Management	Drinking Water Quality Assessment & Reporting On Site Waste Water Disposal Systems Hazardous Materials Stormwater Monitoring Groundwater Permitting in the MST Well Construction & Demolition Permitting Environmental Education (waste, toxics, recycling,) Creek/River Pathogen Monitoring (TMDL)	Wellhead Protection Backflow Protection Pesticide Application & Storage


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Departments of Public Works and Conservation, Development & Planning

3:35 – 4:00

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Documents, Presentation Handouts & Information

www.countyofnapa.org/planning/groundwater

Contacts:
Don Ridenhour, Director of Public Works
(707) 253-4351
Don.Ridenhour@countyofnapa.org

Hillary Gitelman, Director
Conservation, Development and Planning Department
(707) 253-4417
hillary.gitelman@countyofnapa.org

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