



A Tradition of Stewardship
A Commitment to Service

Departments of Public Works and Conservation, Development & Planning

Napa County Board of Supervisors

Groundwater Workshop

February 14, 2011



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Groundwater Workshop

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Departments of Public Works and Conservation, Development & Planning

Workshop Objective:

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.”



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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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1:30 – 1:45

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Introduction/Overview

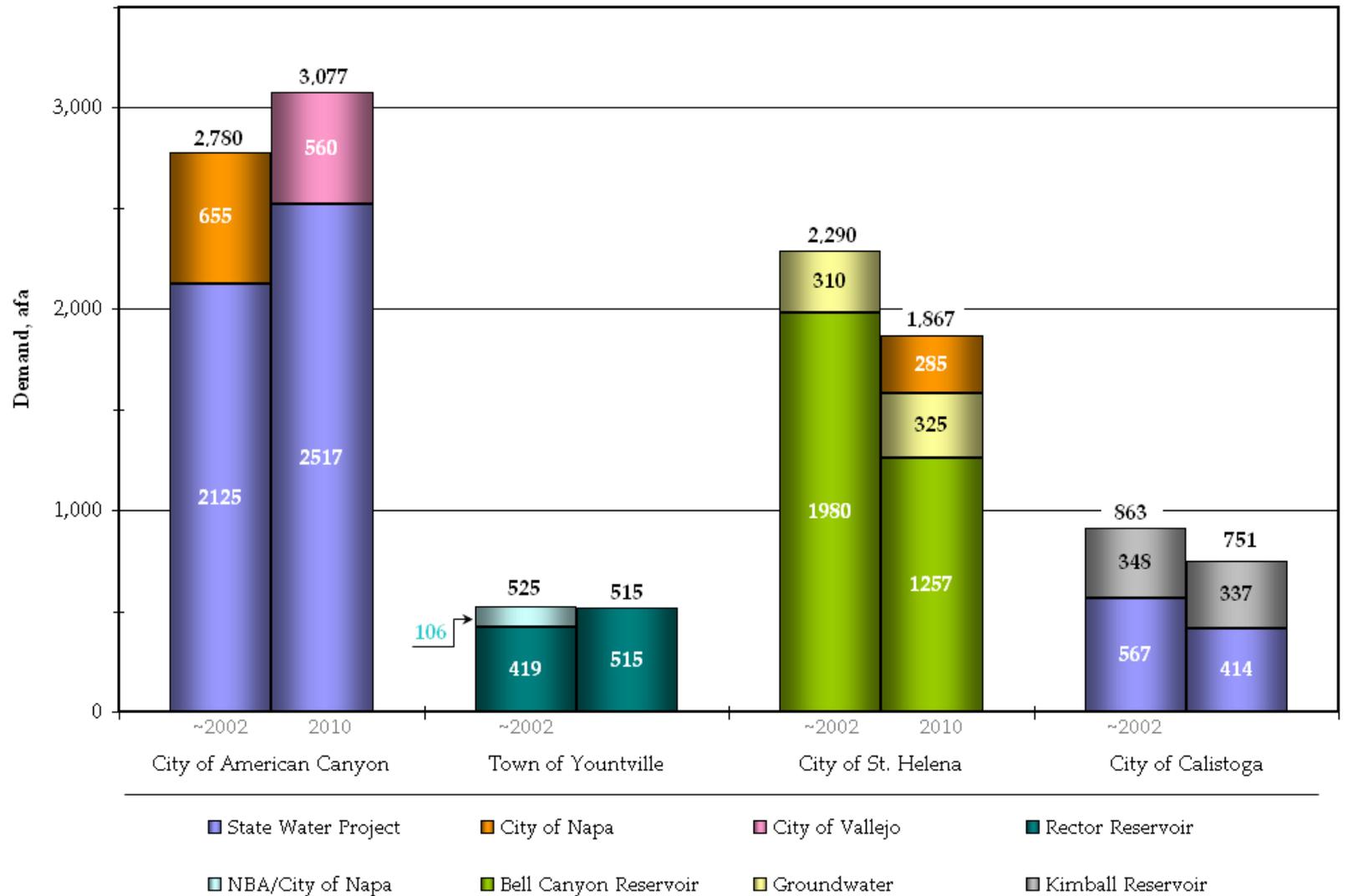
(Don Ridenhour, Hillary Gitelman)

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



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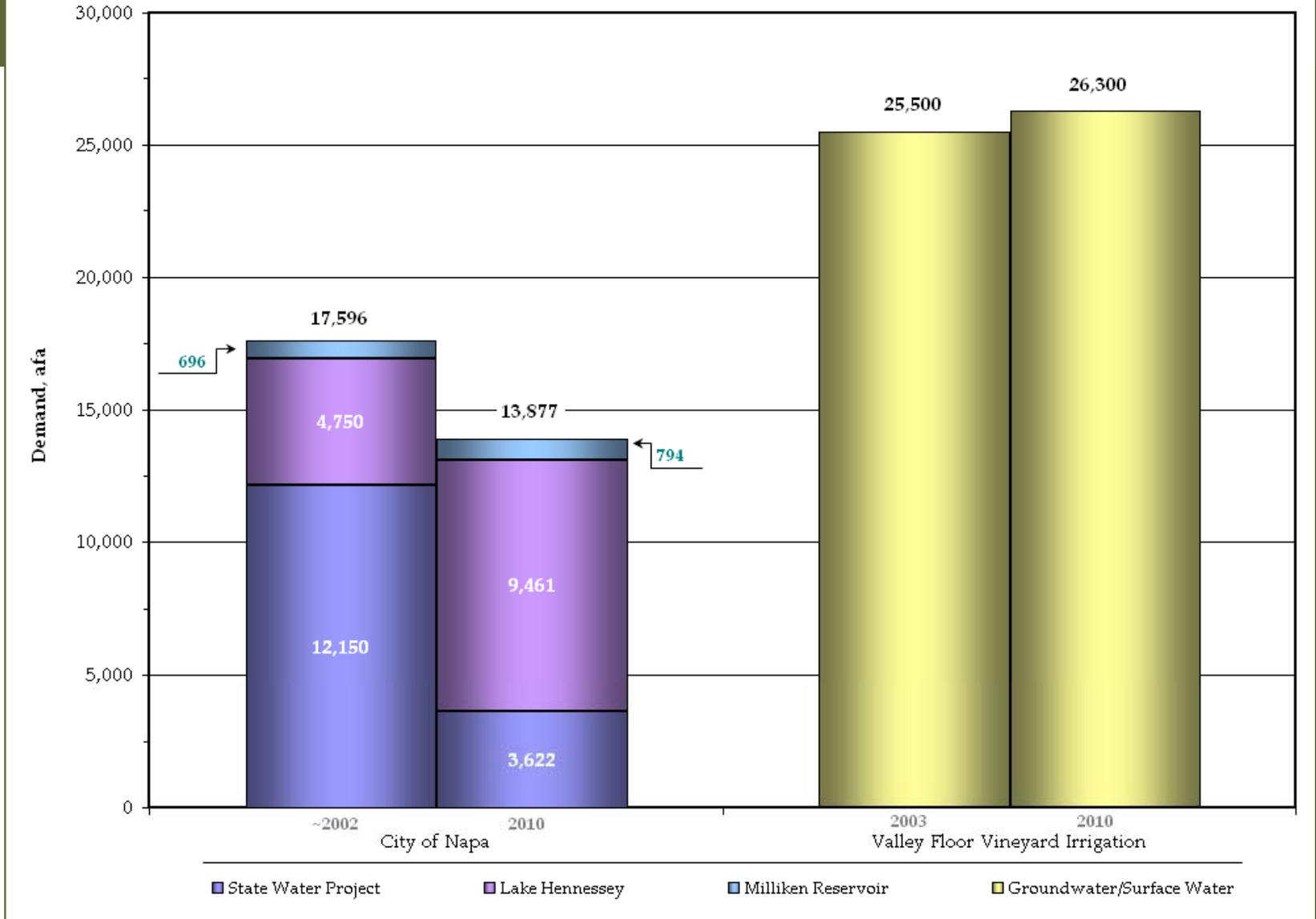
Water Demand for American Canyon, Yountville, St. Helena, and Calistoga





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Water Demand for the City of Napa and Valley Floor Vineyard Irrigation





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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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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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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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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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1:45 – 3:00

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Groundwater Resources (Luhdorff & Scalmanini)

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

Napa County Groundwater Monitoring Program Study and Current Conditions Report

presentation by

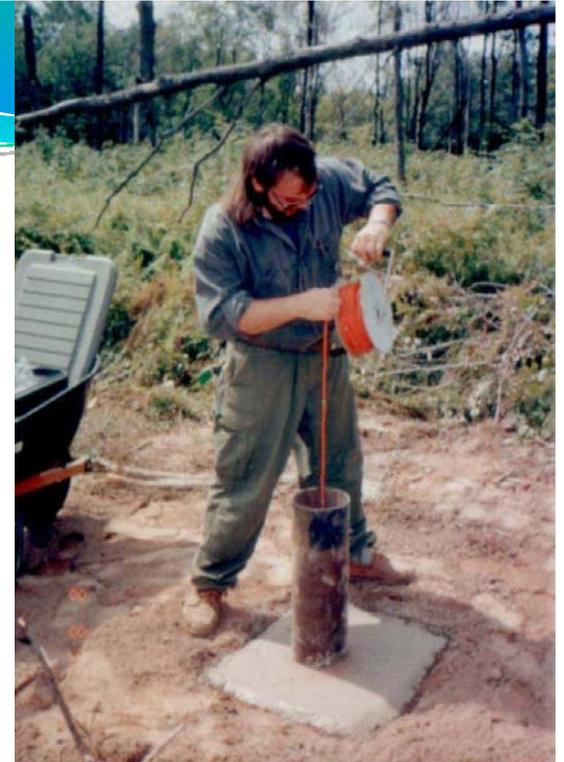
**Luhdorff & Scalmanini,
Consulting Engineers**

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**

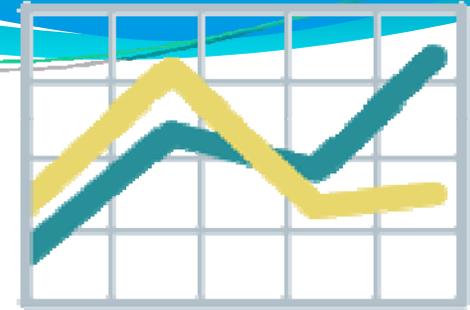
Data Management System



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**

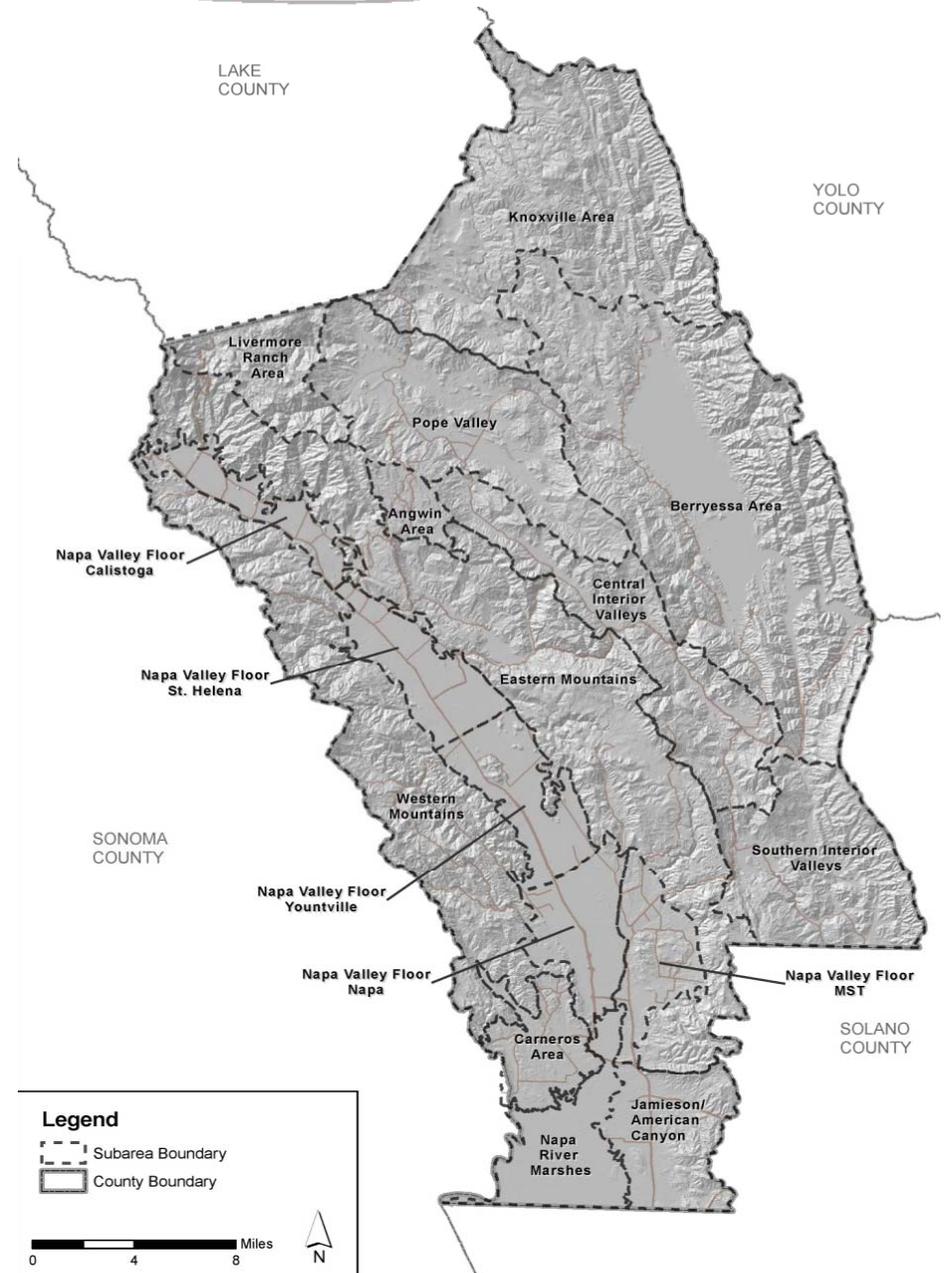
Study Subareas

17 Subareas

- Napa Valley Floor - 5 Subareas

Based on:

- Watershed Boundaries
- Groundwater Basins
- Planning Subareas





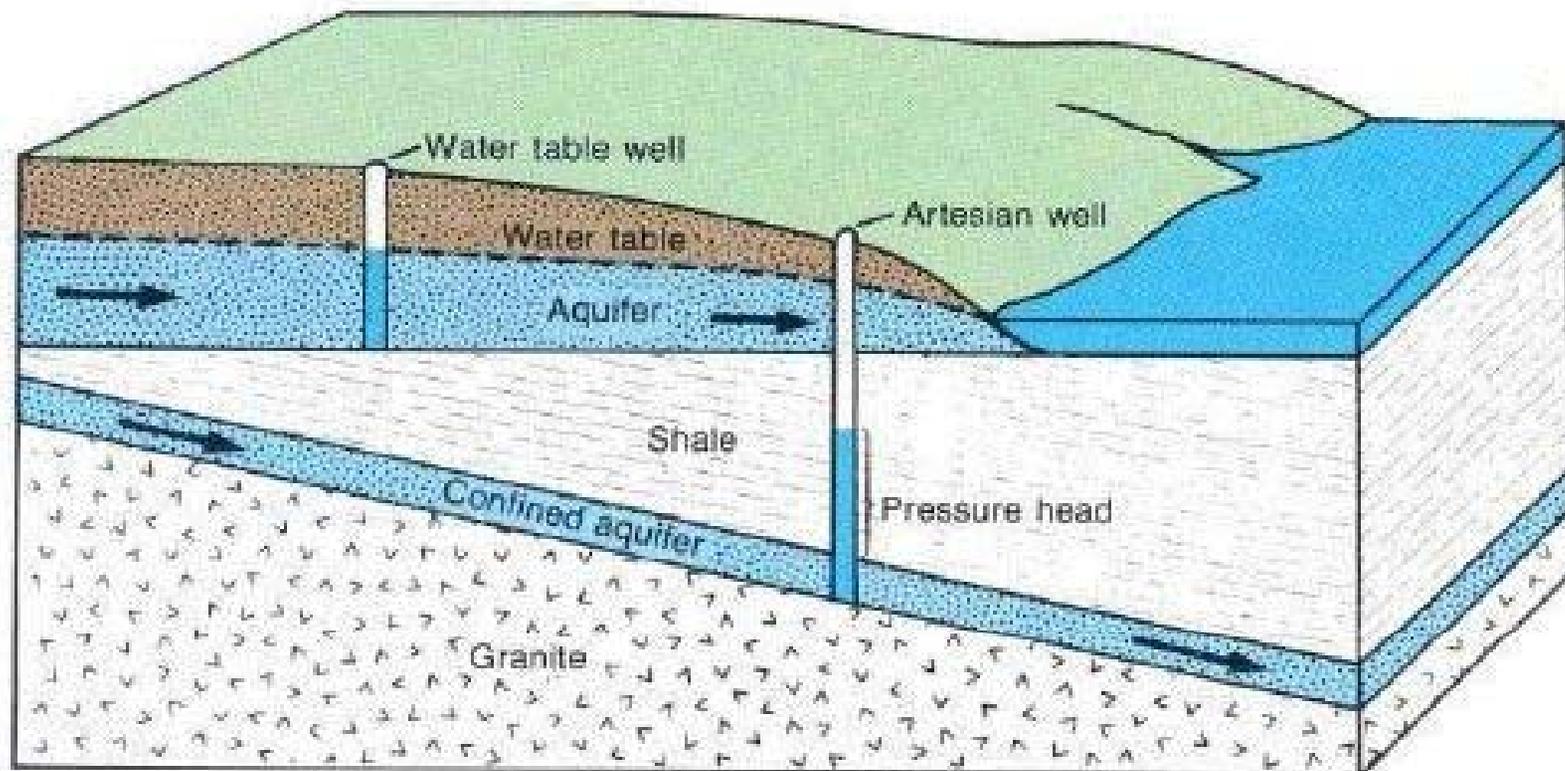
Evaluation of Data

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

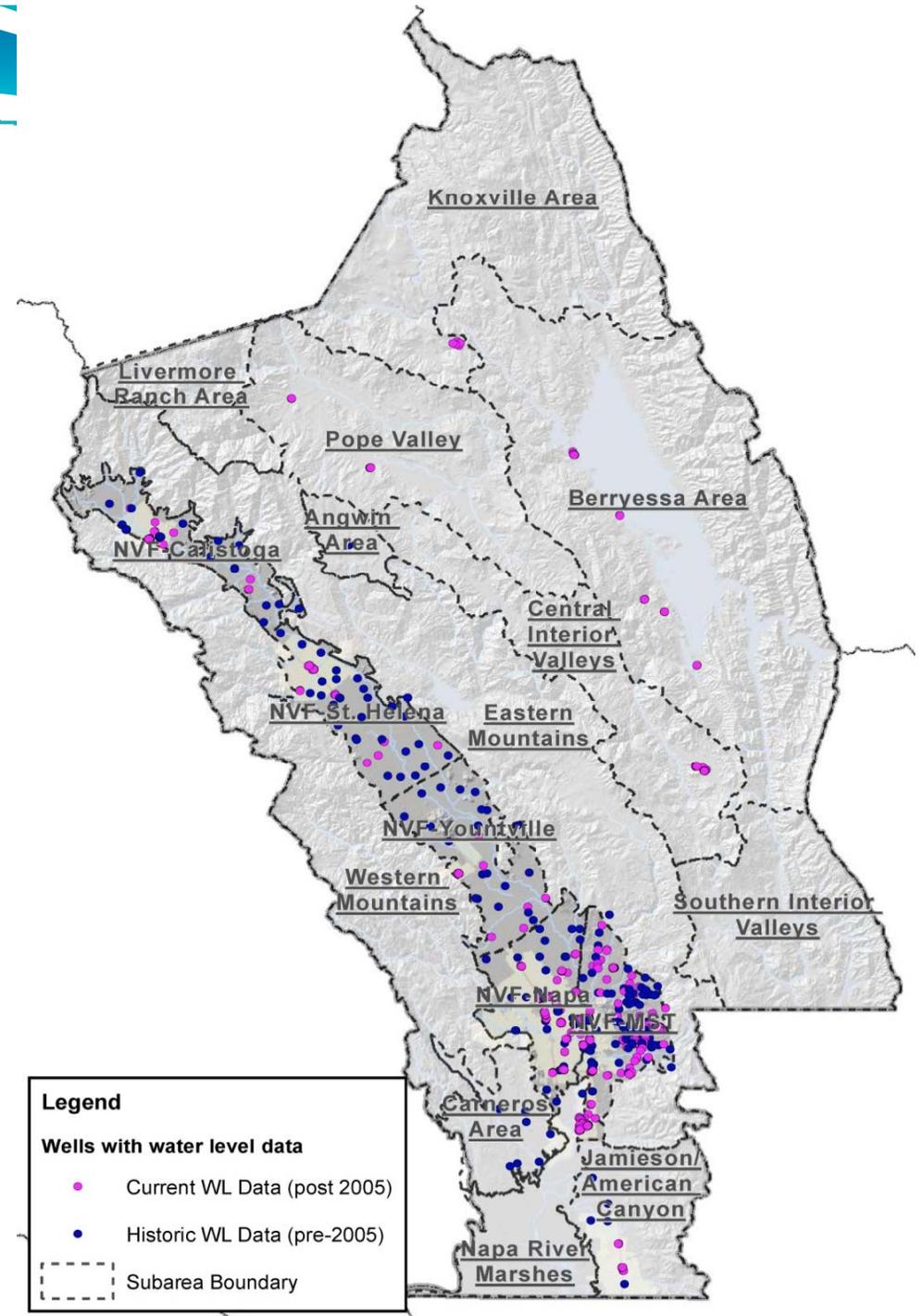
Designation of Data to Specific Aquifers is Necessary Due to Variation in GW Conditions



Data Distribution

Groundwater Levels

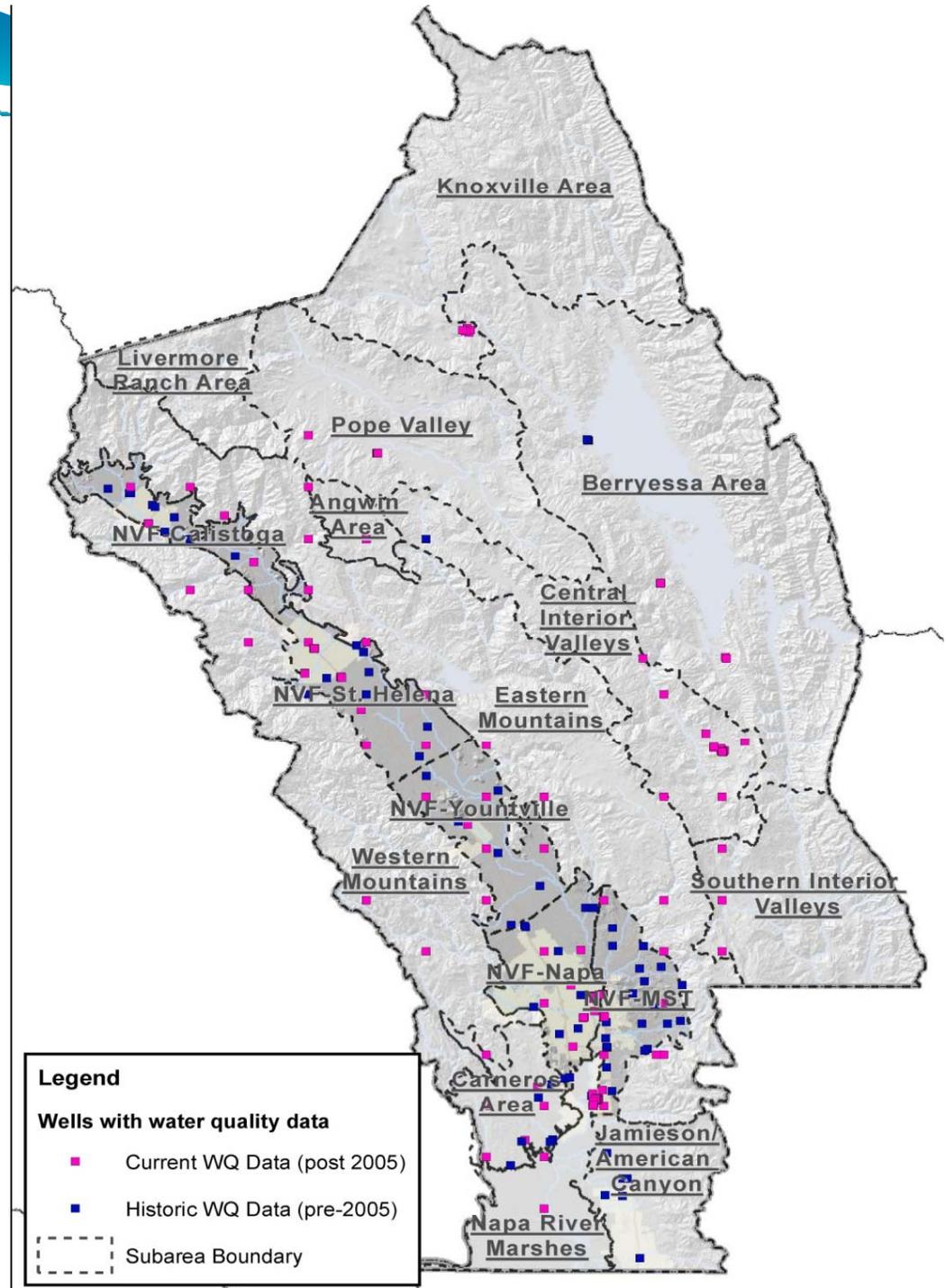
- Dense
 - MST Subarea
- Scattered
 - Remaining Subareas of Napa Valley Floor
- Sparse
 - Other Subareas



Data Distribution

Groundwater Quality

- Scattered
 - Napa Valley Floor
- Scattered
 - MST Subarea
 - Primarily pre-2005
- Sparse
 - Other Subareas



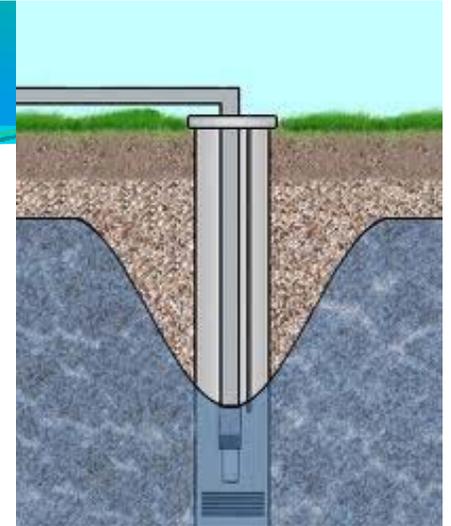
Evaluation of Data

Monitoring Frequency

- **GW Level Monitoring**
 - Semi-Annual Basis (Spring and Fall)
- **GW Quality Monitoring**
 - Annual or More Frequent Basis
- **Contaminated Sites**
 - Variable Monitoring Frequency



Evaluation of Data

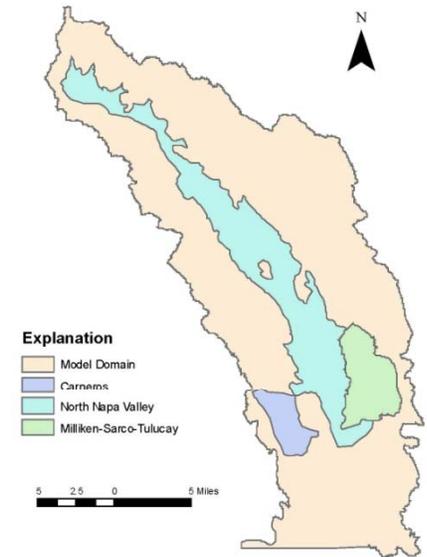


Data Quality Issues

- **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**

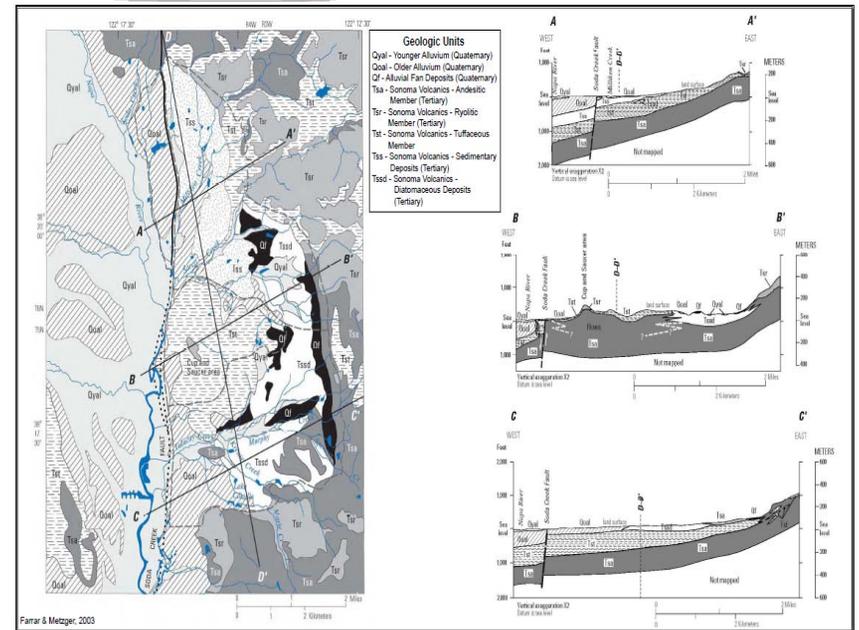
Evaluation of County GW Model

- 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

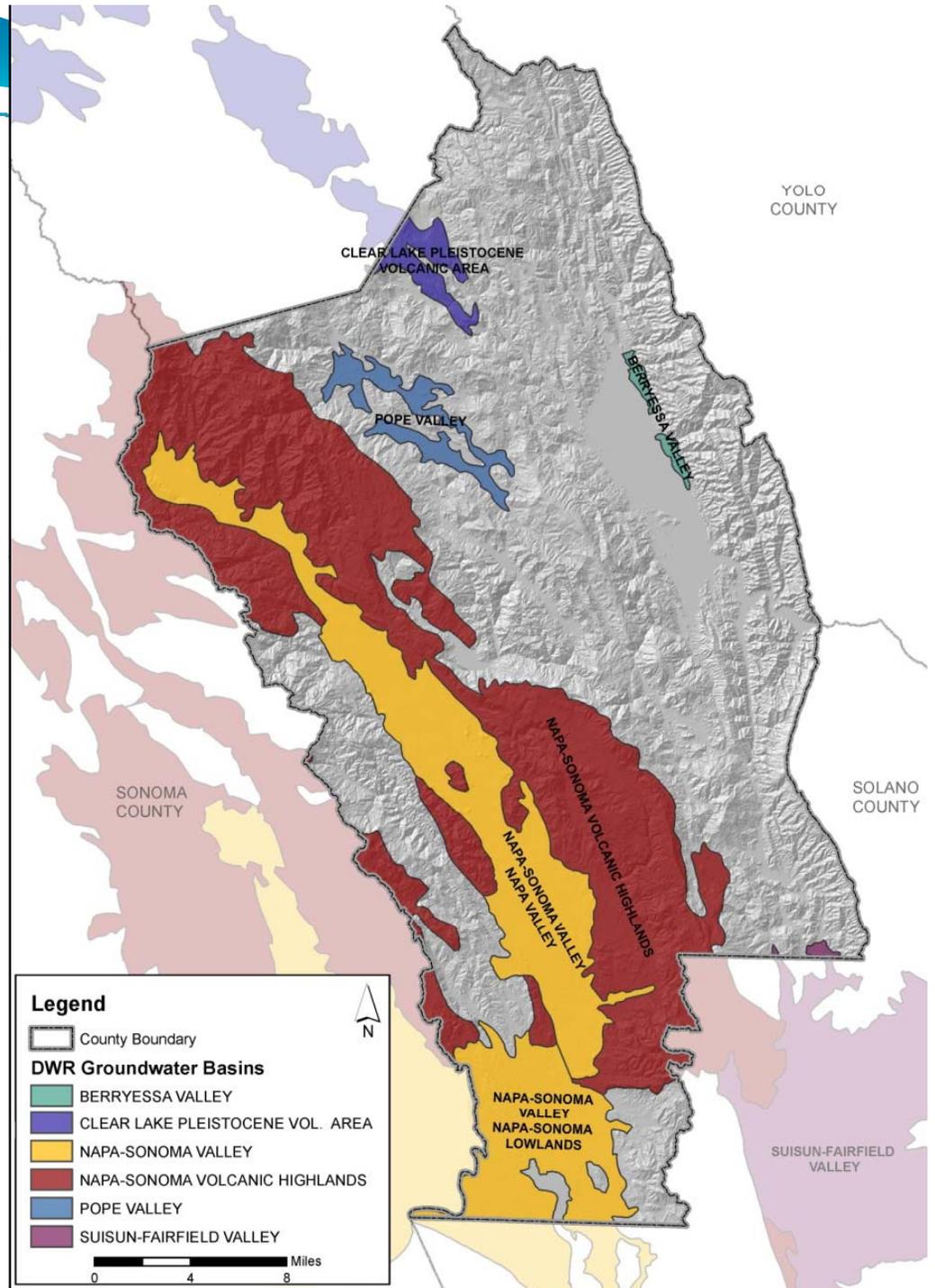
- Napa County Groundwater Basins/Subbasins
 - DWR
- Geology



- Groundwater Conditions – Levels
- Groundwater Conditions - Quality

Groundwater Basins/Sub-basins

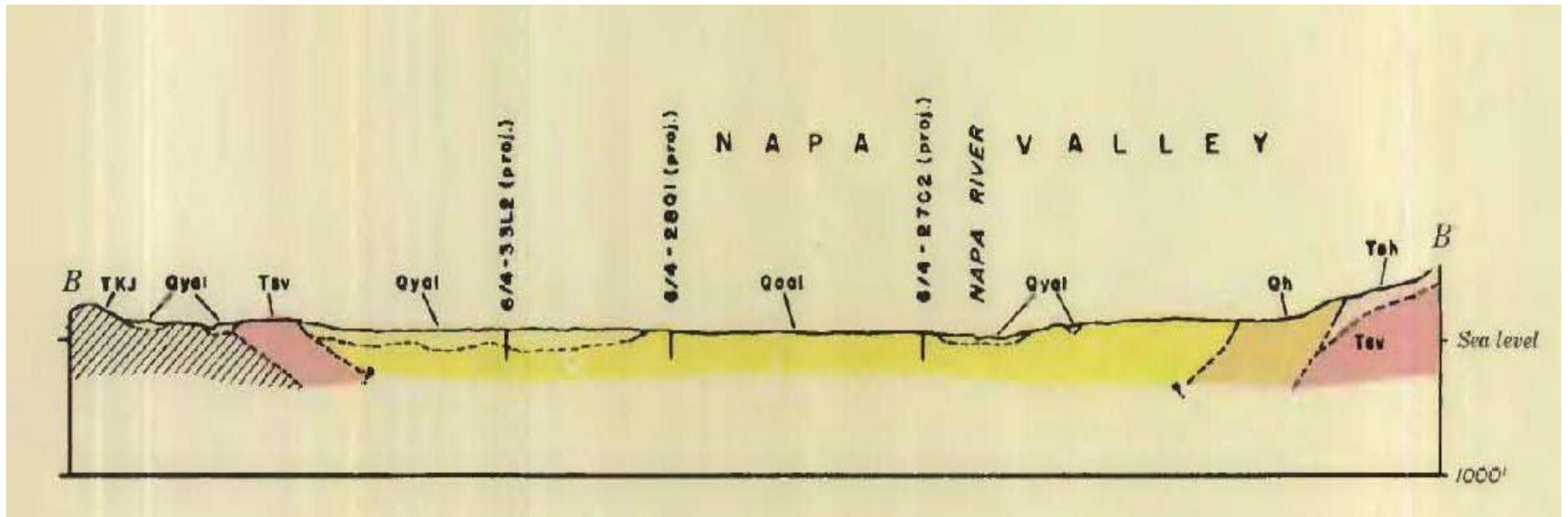
- Napa-Sonoma Valley
- Napa-Sonoma Volcanic Highlands
- Clear Lake Pleistocene Volcanic Area
- Pope Valley
- Berryessa Valley



Napa County Geology

Primary Water Bearing Units

- **Younger and Older Alluvium** (Primarily in Napa Valley Floor)
- **Sonoma Volcanics** (Underlies Alluvium)



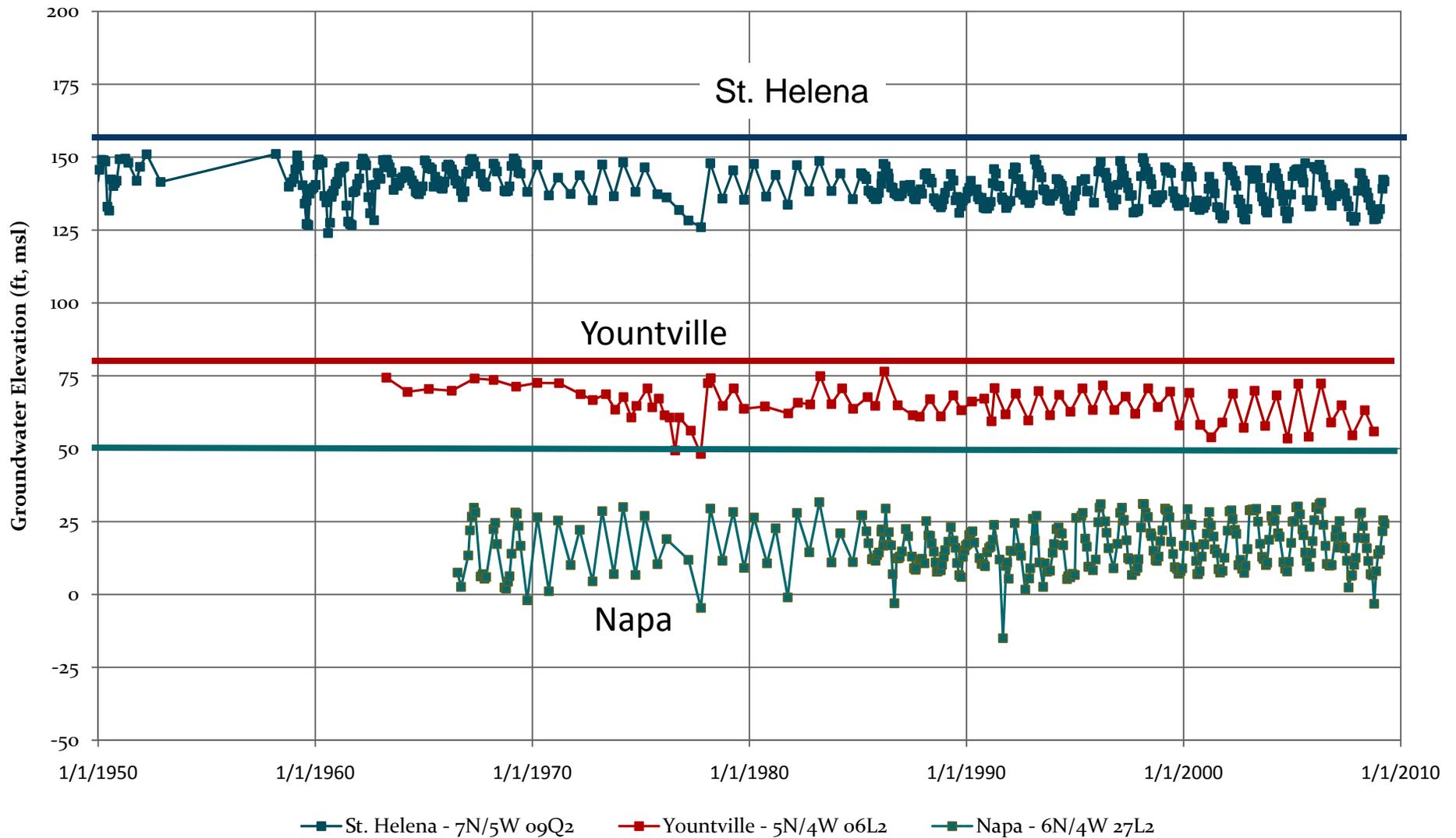


Summary of Groundwater Level Conditions

Napa Valley Floor (Except for MST)

- **Generally Stable Long Term Trends**
 - St. Helena, Yountville, and Napa areas
- **Shallow Depth to Groundwater**
 - 10 to 30 feet Below Ground Surface

Groundwater Conditions - Levels





Groundwater Conditions - Levels

MST Subarea

- **Northern Area**

- Decline in Late 1960s to 1970s, then Stable

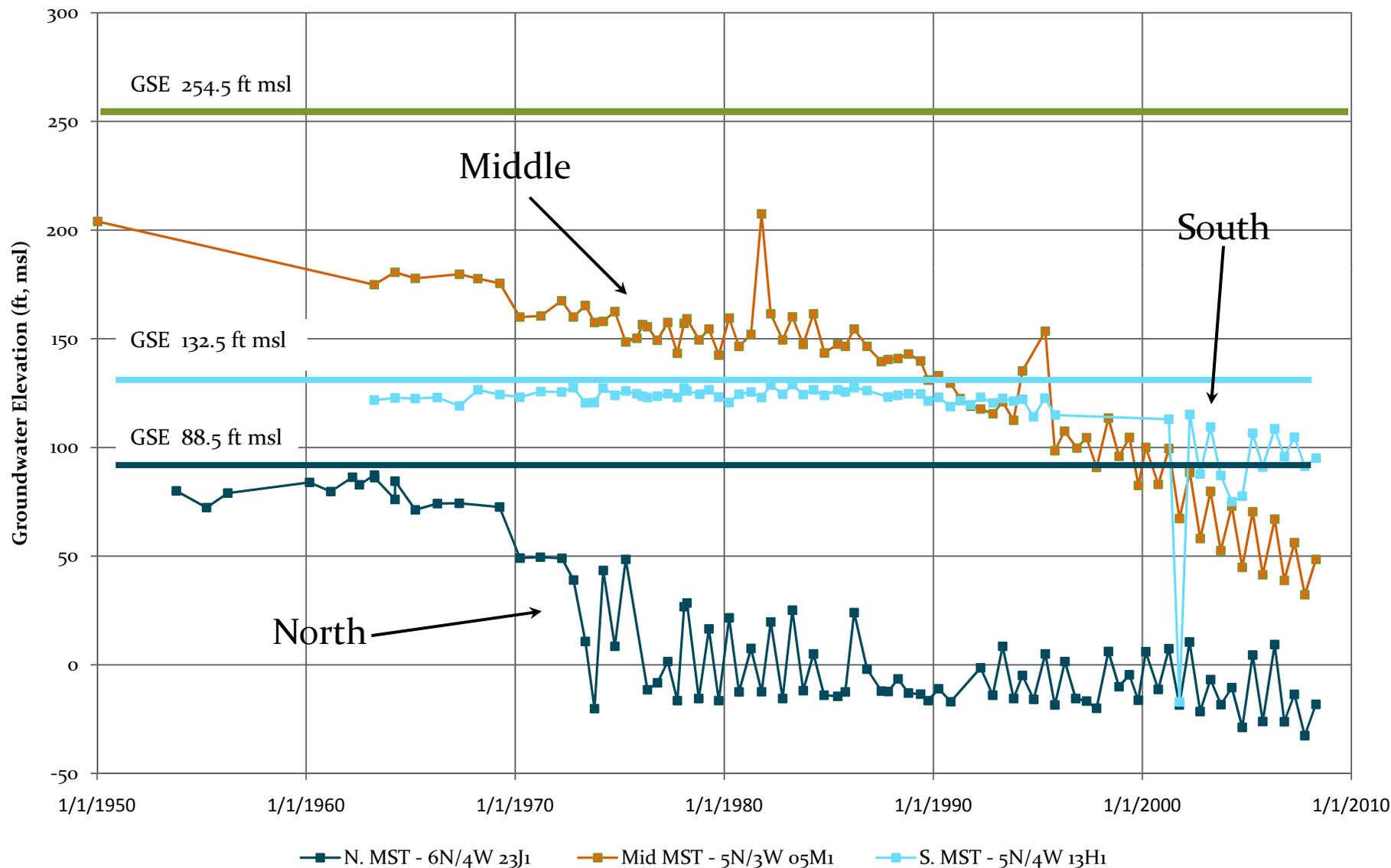
- **Central Area**

- General Long Term Decline, Increase in Decline Since the 1990s

- **Southern Area**

- Shallow Depth to Groundwater, Historical Stable Trends with Recent Decline

MST Subarea Groundwater Levels



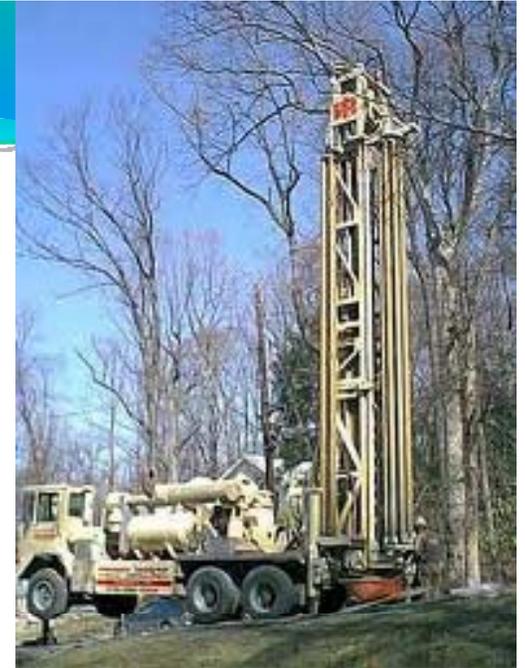
Groundwater Conditions - Quality

- **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**

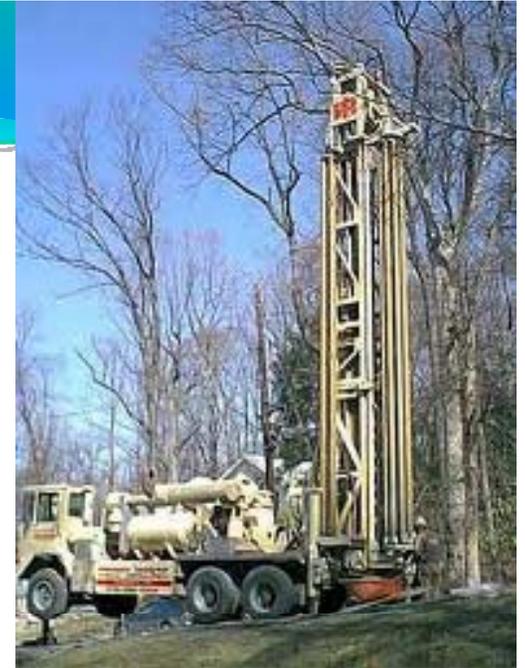


Hydrogeologic Conceptualization

- **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





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3:00 – 3:15

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Sonoma County's Recent Groundwater Experience (Paul Kelly)

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



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3:15 – 3:35

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Summary of County Roles & Responsibilities in Water (Phill Miller)

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



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



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3:35 – 4:00

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Wrap-up & Immediate Next Steps (County Staff)

- Pursue funding for implementation of priority monitoring & data collection recommendations & 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 & actively facilitate water supply projects including recycled water & non-State Water Project supplies
- Formalize the inter-departmental working group & come back to the Board with recommendations regarding staff/resources for FY 2011/12



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Documents, Presentation Handouts & Information

www.countyofnapa.org/planning/groundwater

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