A Tradition of Stewardship
A Commitment to Service

Napa County
Groundwater Resources
Advisory Committee

AGENDA

REGULAR COMMITTEE MEETING

Thursday, June 28, 2012, 2:00 p.m.

Agricultural Commissioner's Office/UCCE Conference Room
1710 Soscol Avenue, Napa CA

Committee Members

Michelle Benvenuto
Franklin Tucker Catlin
John Alan Galbraith
Donald Gleason
David Graves
Michael Haley
Peter McCrea
Charles Slutzkin
Steve Soper
Marilee Talley
William Trautman
James Frederick Verhey
Susanne von Rosenberg
Duane Wall
Dale Withers

1. CALL TO ORDER & ROLLCALL

2. WELCOME & OPENING REMARKS
   (Staff, Consultant, Committee)

3. ORGANIZATIONAL ITEMS *(10 min)*
   (Staff, Consultant, Committee)
   a. APPROVAL OF ACTION MINUTES & MEETING SUMMARY
   b. REVIEW MEETING AGENDA AND PROCESS

4. PUBLIC COMMENT

In this time period, anyone may comment to the Committee regarding any subject over which the Committee 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 Committee as a result of any item presented at this time. *(Chair)*

5. PRESENTATIONS AND DISCUSSION ITEMS :

COMMITTEE REVIEW, DISCUSSION & DIRECTION

a. REVIEW & ADOPT THE GRAC MISSION STATEMENT *(25 min)*
   (Peter McCrea, GRAC Chair)

b. REVIEW DRAFT NAPA COUNTY GROUNDWATER MONITORING PLAN *(75 min)*
   (Vicki Kretsinger Grabert (LSCE); Patrick Lowe, Deputy Director/CDPD)
   - Presentation of draft Groundwater Monitoring Plan chapters
   - Discussion of Goals/Objectives and Priority Actions
   - Q&A - Discuss GRAC questions

➢ COMMITTEE BREAK

1195 Third Street,
Suite 210
Napa, CA
94559

Tel: 707-253-4417
Fax: 707-253-4336

5. PRESENTATIONS AND DISCUSSION ITEMS : (cont'd)

COMMITTEE REVIEW, DISCUSSION & DIRECTION

c. PRESENTATION OF DRAFT COMMUNICATION AND EDUCATION PLAN *(25 min)*
(Michael Haley/Ad-Hoc Committee; Patrick Lowe, Deputy Director/CDPD; Deborah Elliott, Water Resources Specialist/Flood District)

d. REVIEW DRAFT AGENDA FOR JOINT MEETING WITH THE WATERSHED INFORMATION & CONSERVANCY BOARD (WICC) *(10 min) (Patrick Lowe, Deputy Director/CDPD)*

6. OTHER BUSINESS

a. UPDATE ON THE GRANT APPLICATION FOR GROUNDWATER MONITORING WELLS *(5 min) (Patrick Lowe, Deputy Director/CDPD; Vicki Kretsinger Grabert (LSCE)*

b. UPDATE ON THE CALIFORNIA STATEWIDE GROUNDWATER ELEVATION MONITORING (CASGEM) PROGRAM *(10 min) (Phil Miller, Deputy Director/Public Works)*

7. ANNOUNCEMENTS

a. UPDATE ON THE REORGANIZATION OF NAPA COUNTY DEPARTMENTS OF PUBLIC WORKS, CONSERVATION, DEVELOPMENT & PLANNING, & ENVIRONMENTAL MANAGEMENT *(5 min)*
(Hillary Gitelman, Director/CDPD; Steve Lederer, Interim-Director/Public Works)

b. OTHERS

8. FUTURE AGENDA ITEMS

9. ADJOURNMENT to the NEXT MEETING (*Chair)*

Thursday, July 26, 2012 – 4:00pm
Yountville Community Center
6516 Washington St, Yountville, CA

Note: Where times are indicated for agenda items they are approximate and intended as estimates only, and may be shorter or longer, as needed. 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 Greg Morgan at 707-259-8621, 804 First St., Napa CA 94559 to request alternative formats.

A Tradition of Stewardship
A Commitment to Service

Napa County Groundwater Resources Advisory Committee

ACTION MINUTES
NAPA COUNTY GROUNDWATER RESOURCES ADVISORY COMMITTEE MEETING
April 26, 2012

1. CALL TO ORDER & ROLL CALL

The Napa County Groundwater Resources Advisory Committee (GRAC) met in regular session on Thursday, April 26, 2012 with the following members present:
Michelle Benvenuto; Vice Chair Tucker Caitlin; Alan Galbraith; Dave Graves; Michael Haley; Chair Peter McCrea; Steve Soper; Marilee Talley; Bill Trautman; Jim Verhey; Susanne von Rosenberg; Duane Wall; and Dale Withers. Don Gleason arrived during Item 3.a; and Charles Slutzkin and was excused.

2. WELCOME & OPENING REMARKS

None.

3. ORGANIZATIONAL ITEMS

a. APPROVAL OF ACTION MINUTES AND MEETING SUMMARY

Action Minutes and Meeting Summary approved.

MB	TC	AG	DG1	DG2	MH	PM	CS	SS	MT	BT	JV	SVR	DW1	DW2
							X							

b. REVIEW MEETING AGENDA AND PROCESS

(Discussed after Item 4.) Dorian Fougères, Ph.D., Mediator, Center for Collaborative Policy, CSUS, briefly reviewed the background and purpose of each agenda item and referenced the item handouts. Mr. Fougères also noted Steve Lederer and Alan Galbraith would be discussing item 6.b after Mr. Lederer's presentation of Item 5.b.

c. REVIEW & ADOPT MISSION STATEMENT

Chairperson Peter McCrea entertained comments from the committee on the draft Mission Statement. Bill Trautman suggested changing "Valley" to "County" in the first paragraph. Dave Graves suggested changing, "…surface-to-groundwater interactions" to, "…the interaction between surface water and groundwater" in the second bullet point on the first page. Michelle Benvenuto and Don Gleason had additional comments. Mr. McCrea suggested tabling the item to the next meeting for further committee discussion due to time constraints.

4. PUBLIC COMMENT

None.

5. PRESENTATIONS AND DISCUSSION ITEMS

a. HYDROLOGIC CHARACTERIZATION/GW MONITORING/RECHARGE

Phil Miller, Deputy Director-Flood Control and Water Resources, Public Works, presented a PowerPoint presentation on groundwater conditions and monitoring recommendations from Luhdorff & Scalmanini Consulting Engineers' (LSCE) 2011 report. The presentation included the groundwater basins and sub-basins located within Napa County; key findings of the report, such as groundwater quality conditions, groundwater level conditions, historic record and data quality; and recommendations for Countywide groundwater level and quality network priorities, updated conceptualization and characterization of hydrogeologic conditions, and the plan for ongoing Countywide groundwater monitoring. Vicki Kretsinger Grabert, Principal Hydrologist, LSCE, presented a PowerPoint presentation on LSCE's scope of work in updating conceptualization and characterization of hydrogeologic conditions. The presentation focused on four tasks of the project's purpose: 1) Update hydrogeologic conceptualization and characterization for priority areas; 2) Identify supplemental groundwater monitoring wells for high priority areas; 3) Refine and further characterize areas with greatest recharge potential; and 4) Guidance for CEQA-related issues and analysis of surface water to groundwater interactions. A handout updating the committee's questions on groundwater from December 12, 2011 was also distributed.

b. HISTORY & UPDATE ON THE MILLIKEN-SARCO-TULOCAY (MST) BASIN

Steve Lederer, Interim Director, Public Works, presented a PowerPoint presentation on the history of the policy and the management of the MST groundwater deficient area. The presentation went over the MST boundaries, the intent of the County's Groundwater Ordinance, CEQA permitting requirements for new development, exemptions under the Ordinance, and the proposed recycled water pipeline that would be funded by assessment to property owners in the MST area. Phil Miller, Deputy Director-Flood Control and Water Resources, Public Works, added that the design of the pipeline project was essentially at 100%, but there will have to be a redesign of the pump station site to eliminate a proposed truck fill station. There will be a meeting on May 3 at the Napa Valley Country Club to present ranges of costs to potential users and to try to move the assessment district ahead that would fund project. The plan is to obtain construction funding through the State Revolving Loan Fund and repay the loan via the assessment district, which would be made up of voluntary users of the recycled water.

c. REVIEW OF THE DRAFT NAPA COUNTY GROUNDWATER MONITORING PLAN ANNOTATED OUTLINE

Rick Thomasser, Watershed and Flood Control Operations Manager, Flood Control and Water Conservation District, went over the proposed monitoring plan outline provided in the agenda packet and also presented a PowerPoint presentation. Main components of the plan include the purpose and organization of the plan, hydrogeology of Napa County, groundwater monitoring objectives, groundwater monitoring well network, groundwater data management, annual update and review of the monitoring plan and well network, and reporting. The committee made the following suggestions for the annotated outline:

- **Section 3, second bullet – Remove "avoid" and reword sentence (MB and PM).**
- **General – Would like to see in the plan where it "connects the dots" back to the creating documents and the program that actually talks about the goals (MT).**
- **General – There should be an initial conceptualization of how the data will be used either in the plan or somewhere else (SVR).**
- **Section 3.1, fourth bullet – Replace "refine" with "understand" (DG).**
- **Section 3.2, third bullet – Should not limit types of contaminates (SVR).**
- **Section 5.1.2 – Confidentiality should not be further discussed until the monitoring program is defined (PM).**

Mr. Thomasser stated that staff's goal is to have a draft of the groundwater monitoring plan at the next meeting for review and discussion. Hillary Gitelman, Director, Conservation, Development and Planning, added that discussion of the plan's objectives and priorities can be included with this item.

6. OTHER BUSINESS

a. UPDATE ON DRAFT PLAN FOR PUBLIC OUTREACH/EDUCATION

Michael Haley reported that the outreach ad-hoc committee met recently and will meet again in a couple of weeks. More detailed information will be shared at the next meeting.

b. UPDATE ON ACTIONS BY ST. HELENA CITY COUNCIL RE: WELLS

(Discussed after Item 5.b.) Steve Lederer, Interim Director, Public Works, noticed the number of well permits being pulled in St. Helena has increased over the years and reported this to the St. Helena City Council on December 22, 2011, which has since passed an ordinance to limit the number of wells that could be drilled within its city limits. From the time the ordinance was passed on March 27 to the time it took effect at 5:00 p.m. on April 25, there have been 25 applications for well permits, noticeably more than the average of 5 per year. Alan Galbraith added that the ordinance prohibits any new wells except for agriculture purposes and the well owner must report elevation data annually, taken twice a year, and the wells must be metered.

c. DISCUSSION OF REPORTING OUT VIA MEETING SUMMARY

Hillary Gitelman, Director, Conservation, Development and Planning, stated there was a previous question from a committee member regarding what would be the best media to send to colleagues and associates to update them on the GRAC's activities – the Action Minutes, Meeting Summary, or Meeting Synopsis. It is up to the committee members, but Ms. Gitelman suggested sharing the one-paragraph Meeting Synopsis that is emailed to the committee and the other documents if additional information is requested. Ms. Gitelman also suggested if the outreach subcommittee comes up with a general informational brochure of the GRAC's functions that it could be sent as well.

7. ANNOUNCEMENTS

None were mentioned.

8. FUTURE AGENDA ITEMS

- **Draft Napa County Groundwater Monitoring Plan**
- **Draft Communication and Education Plan**
- **Preparation for Joint Meeting with WICC – July 26**

9. ADJOURNMENT to the NEXT MEETING

Adjourned to the next regular meeting of the Napa County Groundwater Resources Advisory Committee on Thursday, June 28, 2012 at 2:00 p.m.

_____
PETER McCREA, Chairperson

ATTEST:

_____
PATRICK LOWE, Secretary

_____
By: GREG MORGAN, Supervising Office Assistant

Voting Key

If not unanimous, member votes will be tallied (N = No; X = Excused; A = Abstained) using the following Committee Member abbreviations:

MB = Michelle Benvenuto; TC = Tucker Catlin; AG = Alan Galbraith; DG1 = Donald Gleason; DG2 = Dave Graves; MH = Michael Haley; PM = Peter McCrea; CS = Charles Slutzkin; SS = Steve Soper; MT = Marilee Talley; BT = Bill Trautman; JV = Jim Verhey; SVR = Susanne von Rosenberg; DW1 = Duane Wall; DW2 = Dale Withers

Example Key:

MB	TC	AG	DG1	DG2	MH	PM	CS	SS	MT	BT	JV	SVR	DW1	DW2

MEETING SUMMARY

Napa County Groundwater Resources Advisory Committee Meeting
April 26, 2012

Produced by the Center for Collaborative Policy, CSUS

Meeting Synopsis

The Napa County Groundwater Resources Advisory Committee (GRAC) held its fourth meeting on April 26, 2012. The meeting marked the start of the development phase for the groundwater monitoring program update. Mr. Phil Miller, Deputy Director of Public Works, introduced the Luhdorff and Scalmanini Consulting Engineers (LSCE) presentation by first summarizing the 2011 LSCE groundwater study and recommendations. Ms. Vicki Kretsinger Grabert of LSCE then outlined their current scope, which includes conceptualizing and characterizing the hydrogeological conditions in Napa County. LSCE's work and the GRAC's efforts to develop a non-regulatory groundwater monitoring program will be completed in tandem, and inform each other. Ms. Kretsinger Grabert also addressed questions previously submitted by GRAC on groundwater, monitoring data and other potential considerations for the program. Mr. Steve Lederer, Interim Director of Public Works, shared key lessons learned from the Milliken-Sarco-Tulocay (MST) Basin experience. He addressed common misconceptions with the MST groundwater ordinance and highlighted current efforts to help slow overdraft with water conservation education and the potential introduction of recycled water. Mr. Lederer also provided an update on the recently implemented St. Helena well ordinance that places limits on the number of wells drilled each year. Mr. Rick Thomasser, Operations Manager for the Napa County Flood Control District, presented a draft outline of the groundwater monitoring program update, inviting GRAC feedback on the components and overall direction of the program. The GRAC provided initial comments, some recommended changes to wording, and noted the need to identify key objectives and principles to guide the work program. Lastly, Mr. Michael Haley of the GRAC reported that the ad-hoc Communication and Education committee has met and plans to present a draft Communication & Education Plan and materials for discussion at the June meeting. Please see the GRAC's webpage (www.countyofnapa.org/bos/grac) for copies of the April 26, 2012 presentations and handouts.

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Action Items

1. **COUNTY STAFF** will make the minor edits suggested for the draft mission statement in advance of the June 28 meeting, in preparation for further discussion.
2. **MS. KRETSINGER GRABERT** will affirm whether the County DMS includes the city of St. Helena wells by the June 28th meeting.
3. **MS. KRETSINGER GRABERT** will provide GRAC with the logic behind cross-section selection in presentation materials provided for GRAC members by the June 28th meeting.
4. **MR. LOWE** will send an email to GRAC members highlighting where they may find stream gauging information on their CD or County website.
5. Rainfall and evaporation information will be considered as an addition to future reports.

1. Call to Order & Roll Call

All members of the Napa County Groundwater Resources Advisory Committee (GRAC) were in attendance except for Mr. Charles Slutzkin.

2. Welcome & Opening Remarks

The Napa County Groundwater Resources Advisory Committee (GRAC) Chair, Mr. Peter McCrea, opened the meeting. Chair McCrea invited feedback on the draft mission statement sent to GRAC members in advance of the meeting for comment. He added a caveat in that, if significant discussion seemed warranted, discussion would be postponed and added as a formal agenda item for June 28th meeting.

DISCUSSION:

- **Valley versus County.** Comment: For consistency, either the word "County" or "Valley" should be used throughout the mission statement.

  AGREEMENT: Members agreed to amend the first paragraph to reflect "County."

- **Two-way interaction for surface and groundwater.** Comment: The second bullet text "surface-to-groundwater interactions" infers a one-way relationship. Amending the language to "the interaction between surface water and groundwater" would better reflect this two-way interaction.

  AGREEMENT: Members agreed to the suggested language change to reflect the two-way interaction.

- **Recommendations as part of GRAC's charge.** Comment: The Board of Supervisor resolution indicated GRAC would make recommendations regarding a list of items for the monitoring program. This does not need to be in the mission statement; however it is important for GRAC to consider this part of their charge.

- **Concise versus detailed statement.** Comment: Given the mission statement will appear in public education materials, the statement should be short, crisp and easy to read and understand. The current draft seems lengthy.

It was decided the mission statement discussion would be postponed and added as a discussion item on the GRAC June 28th agenda.

ACTION ITEM: County staff will make minor language changes to the draft mission statement to reflect "County" in the first sentence and "the interaction between surface water and groundwater" in the second paragraph in advance of the June 28th meeting, in preparation for further discussion.

3. Organizational Items

a. Approval of Action Minutes & Meeting Summary

AGREEMENT: The February 23rd meeting minutes were approved.

b. Review Meeting Agenda and Process

Mr. Dorian Fougeres, Facilitator, reviewed the agenda and goals with each of the planned presentations.

4. Public Comment

Chair McCrea invited public comments. No public comments were provided.

5. Presentations and Discussion Items

a. Hydrological Characterization/GW Monitoring/Recharge

As a preface to the LSCE presentation, Mr. Phil Miller, Deputy Director of Public Works, summarized presentations made at previous GRAC sessions on the 2011 LSCE groundwater conditions report and monitoring recommendations. He reiterated that, except for MST subarea, water levels in the Napa Valley floor have generally shown long-term stable trends. Water quality is generally good. A few areas demonstrated elevated contaminants due to natural geothermal or land-use reasons. Mr. Miller also reviewed some of the data quality issues such as a reduced number of wells monitored, lack of well construction data, erroneous well location coordinates, outliers, and so forth. The County has allocated resources to explore these issues.

Ms. Vicki Kretsinger Grabert of LSCE then covered the purpose of and progress with updating conceptualization and characterization of groundwater conditions within Napa County.

LSCE is working with MBK Engineers, a firm specializing in surface water, to understand Napa's hydrogeological conditions and surface water and groundwater interactions. Ms. Kretsinger Grabert outlined current tasks, progress to date and preliminary data with:

Task 1: Geologic cross-sections
Task 2: Supplement groundwater monitoring in high priority subareas
Task 3: Further characterization of areas of greatest recharge potential
Task 4: Analysis of surface water and groundwater interactions

She stressed that, at this time, it is not the density of the network, but the data quality and the information that a data point provides which is important in data point selection. For consideration, LSCE collected roughly 6,300 driller reports and 250 additional reports from DWR. LSCE is in the process of evaluating the quality of these

reports for purposes of the geologic cross sections. Lastly, her presentation included data trends and addressed questions previously posed by GRAC.

QUESTIONS and DISCUSSION:

- **Stable Levels.** Question: Section 4 of LSCE report included water levels. Is it an accurate interpretation to say that in all cases, except for MST and Carneros, water levels are stable? Answer: Yes, but there are some exceptions we will discuss.
- **Dr. Harter's presentation to GRAC on 2/23.** Question: Am I correct that Dr. Harter has not completed studies in Napa and that his talk on February 23 was theoretical and not specific to Napa? Answer: Dr. Harter's presentation, founded on scientific principles, was intended as basic education on how groundwater moves. LSCE will provide specifics on Napa groundwater and surface water interactions.
- **Defining Controls.** Question: Can you define how you use the word "control" in this sense? Answer: It refers to the stratigraphy of the geologic system. Wells are going to deeper depths of exploration today. Drillers' reports (as reviewed and qualified by one of LSCE's senior geologists) provide information on how sediments are deposited and the stratification in the vicinity of the well.
- **Cross-section data availability.** Question: Has LSCE developed the cross-sections based on existing data? Answer: Yes, work has been completed but is not yet available in electronic format. It will be made available in the future.
- **Scope.** Question: Is the work associated with developing the cross-sections part of the work requested by the board? Answer: Yes, it is part of the next steps approved by the board and was started in mid-January.
- **Quality of data from commercial wells.** Question: Most commercial wells have multiple zones perforated to increase production. How common is it that a commercial well taps into only one aquifer? Answer: It is not common. Commercial and municipal wells generally have multiple perforations that tap into multiple zones and aquifers or one long continuous zone. We considered this in looking at data quality.
- **Selecting data.** County staff noted: LSCE is looking through over 6,300 driller reports to determine completion information and select quality data. This is how the 180 points were selected for the cross-sections. It is a cumbersome process to match wells data points, well drilling reports, location, etc.
- **Data points near Napa River.** Question: In regards to the 56 Geotracker sites located within a half mile of the Napa River, where do the Geotracker data come from?

Answer: They are regulated facilities, community water supply wells, and groundwater data from other entities. The State Water Control Board has made this available electronically. It offers important information on water levels.

- **Total Number of data points near Napa River.** Question: Does the total number of 56 sites include the 26 sites listed a quarter-mile from the river? Answer: Yes.
- **Inclusion of St. Helena city well data.** Question: Do the numbers of wells for task 2 near Napa River include St. Helena city wells? Data from these wells go back to 1992 and have accurate elevation data. Answer: I don't know off hand, but will check.

  ACTION ITEM: Ms. Kretsinger Grabert will confirm that the data set and slide representation for "Task 2 – Wells with at least 5 years of water level data near Napa River" incudes St. Helena city wells by the June 28th meeting.
- **Historic site.** Question: In regards to the historic well monitored from 1930 to 1972, is it possible to recover and monitor that well? Answer: No, it was destroyed.
- **Cross-Sections and Stratus.** Question: Can a cross-section, such as the proposed Northern Napa County to MST cross-section, cross multiple strata? Answer: Yes.
  - **Selection of the MST cross-section.** County staff provided background on the selection of the Northern Napa County and into MST cross-section. The first LSCE study indicated MST was the only area with demonstrated groundwater deficiency. However, the report also suggested a concern and need for monitoring the northwest boundary of the Napa Subarea near the MST. This cross-section will help the County better understand this issue.
  - **Background on cross-section selections.** Question: Will LSCE provide GRAC the background and logic for the selection of other cross-sections for the study? Answer: Yes and in general, selection was to provide more information about the main Napa Valley floor and of the southern part of Napa County.

    ACTION ITEM: LSCE will provide GRAC with the logic behind cross-section selection in presentation materials provided for GRAC members by the June 28th meeting.
  - **Data on Cross-sections. Question:** Slide 11 highlights eight geologic cross-sections. Do we have access to those cross-sections and geology? Answer: Not yet, but we are working to make that data electronic and will have that in the future.
- **Geotracker well ownership.** Question: Who owns a Geotracker well? Answer: The owner of the regulated site.

- **Timing on Water level sampling.** Question: In looking at the data provided with task 2, what time year are the measurements taken? Answer: Typically twice a year in spring and fall. Other measurements, for example DWR wells, are monitored monthly.
    - **Seasonal indicators.** Question: Are fall water measurements less stable than spring due to impact of weather, harvest time for cropping, amount of irrigation, etc.? Answer: Yes, spring to spring water levels are better indicators of the response of the overall aquifer system.
    - **Fall water levels and irrigation.** Comment: These wells have one characteristic in common. In the 1970's the amount of irrigation that went on compared to today is much less. What we see with fall numbers may be a result of increased irrigation. Response: Yes, however we need more data to confirm or negate this theory. We lack the definition and distinctions between portions of the aquifer system with this data alone. It could be a hydraulic head difference representing a localized condition due to pumping.
        - **Isolated strata.** Question: Could it be a defined pool, not connected to the other systems? Answer: It could be isolated strata. Here the more likely condition is that is the well is located nearer the edge of the valley and closer to consolidated deposits. There is more of a boundary effect. However, the data indicate spring to spring water level recovery.
    - **Variability between spring months.** Question: Do we see the variance in monthly spring water levels due to timing of the rains? Answer: It could be due to timing of the rains, recharge, pumping or other stresses, etc. Depending on the objective, sometimes monthly measurements are or a transducer would be more appropriate than one spring measurement.
- **Example wells and locations near MST.** Question: How do these measurements relate to the boundaries of MST? Answer: The dashed line in slide 17 represents the boundary for MST. We see a cone of depression where the water levels are depressed. From two other hydrographs LSCE has analyzed, it shows a similar response, likely a result of connectivity. We are still analyzing well logs with these measurements and see a recent uptick with some recovery of water levels. Measurements may be indicative of local geologic conditions, i.e., slower recharge in response to pumping stresses.
    - **Stable areas around MST.** Question: Am I correct that this cross-section was selected because of a concern with the northwest area contiguous with MST but that other areas marginal to MST had more stable levels? Answer: Yes, other

areas, while they may prompt other interest, show stable spring to spring measurements. However we see an interesting trend for fall deepening measurements with wells constructed near the periphery of the Valley Floor. There may be other things related to that.

- **Connectivity across the Soda Creek Fault.** Question: Are you saying that there is connectivity across the Soda Creek Fault? Answer: Yes, there appears to be connectivity. The two wells inside MST Subarea and the third well on the other side of Soda Creek Fault show a correlation in their responses. Additional data will add strength to this theory or raise more questions.
    - **Other possibilities for theory of connectivity across Soda CreekFault.** Question: Are there other interpretations for levels observed at the number 75 well other than assuming that there is connectivity across the fault? Answer: There could be. Generally water levels in other areas are stable with some instances of decline.
- **Water chemistry.** Question: Could water chemistry offer clues to what is occurring in MST and this cross-section? Answer: It may be another thing to look at. However, this data also has related complications. For example, different parts of the aquifer system have different chemistries which may confuse things.
    - **Historic water chemistry data.** Question: Would data on water chemistry changes over time be useful and what does it mean for the system? Answer: Yes and a lot is going on in this area. For example, the State Water Resources Control Board is evaluating the impact of recycled water and land use to assess what may contribute to salt and nitrogen changes and impact groundwater and surface water quality.
    - **Water Quality and Confined versus unconfined wells.** Question: Is there a significant enough difference in water chemistry and quality between unconfined and semi-confined deeper aquifers that tracking water quality over time would help identify specific aquifers that a multi-perforated well is drawing from? Answer: Yes, but that would require a lot of information and specifics. The baseline data collected showed some area-specific type of water quality due to naturally occurring and land-use contaminants. However this is much less defined than water level conditions.
- **Reference point.** Question: Can you clarify the second bullet in slide 19 as it pertains to “encouraging accurate locations.” Answer: A reference point with an accurate location is needed to ensure we have identified the right well, understand its location and reference point elevations.

- **Missing location data.** Question: Is the lack of location data due to confidentiality concerns? Answer: In part. Today's technology now makes it easier to map data point locations, which is ideal.
- **Plans to initiate future monitoring.** Question: Can you review the plans to initiate monitoring in Pope Valley and Berryessa Valley? Response: LSCE recommended securing additional monitoring sites to better understand groundwater conditions in these regions. This may be through resuming monitoring with a formerly monitored well. Another option may be to find a landowner who volunteers their well (e.g., a well with construction information) and permits monitoring. Education outreach is needed for this. However, this information, location, etc., should be assessed to ensure it fulfills a data need.
- **Drilling logs.** Question: Are not most wells drilled in last 20 years required to provide drilling data to the County and have sophisticated well logs? Answer: Yes, however drilling data do not always accurately reflect the data needed.
- **Current County Process for Evaluation.** Question: What does the county do now in the absence of data? Answer: Currently the County does not have a sophisticated way to analyze surface and groundwater. When an issue surfaces, the County hires geologists/hydrologist to give their opinion in an environmental impact report. As an outcome of this current work, the County wants to map areas in order to anticipate impact and identify potential interactions that require further evaluation.
- **Identifying droughts in hydrographs.** A GRAC member inquired if drought years were highlighted in the hydrographs, and several members commented that drought years were easy to spot in fall measurements. Fall declines are notable in the late 1970s. Members also remarked that spring levels showed significant recovery.
- **Hydrograph and well location.** Question: For the well 129 hydrograph, how close is the well to the river? Answer: Likely closer to the valley. LSCE will be evaluating multiple points of data such as proximity of monitored wells to surface water. Such things are helpful to define the current network of wells and what additional points would complement this data, supplement the network and help us to answer questions.
- **St. Helena wells.** Question: What is the location of 138? Answer: South of St. Helena.

- **Visualizing the issues.** Question: Can you send a camera down a well to observe what is happening? Answer: Yes, but it is expensive and priorities and costs should be assessed before taking this step.
- **Monitoring network density**. Question: How might the density calculation used in Sonoma County relate to our work? Answer: In Napa, including MST, there are 161 wells over more than 57,000 acres or roughly one well per 359 acres. Yet, the density is not important in and of itself; rather we need to know questions we want to answer in a particular area or subarea. That will determine the number and location of wells needed.
    - **Listing rainfall levels on hydrographs.** Comment: It would be interesting to see inches per rainfall season at the top of the hydrograph readings. Response: It is possible to present a cumulative departure curve along with water level trends. It is noteworthy that factors impact the rainfall to recharge relationship. For example, depending on the completion of the monitored well with the aquifer system, there may be some lag effects. Plus, distance to recharge source will have impact.
    - **Evaporation.** Comment: Evaporation may also be important item to consider along with rainfall. Response: Yes, it could be included in future reports.
    - **Recharge source:** Question: How do we locate a recharge source? Answer: A combination of factors is considered to predict the source such as observations of soil types nearer to the land surface, geology below, slope, stream gauging, etc. LSCE with MBK Engineers are compiling, cross-checking and utilizing this type of information to estimate recharge. After an improved physical conceptualization of Napa Valley is developed, the County may use a surface to groundwater flow model for this evaluation.
    - **Recommendations on needed well locations.** Question: Given all the variability, lack of data and questions, and given GRAC is to come up with recommendations, will LSCE be able to provide an assessment of where and what type of data are needed? Will LSCE provide direction? Answer: Yes, one of LSCE's tasks is to develop recommendations. This will be a dynamic process.
    - **Conceptual versus Factual.** Question: The variability worries me, and that we can't see underground and thus rely on theoretical scenarios. The question arises to how many data points are needed to have confidence with our interpretations and at what cost? Answer: What is most important is to evaluate and select data sources that limit the number of variables and factors. This reduces risk of interpretation error. Using existing wells makes most economical

sense if the data are available, well construction information is available to know what the measurements represent, and the well is in the right location. Three suitable wells may be better than 10.

- **LSCE efforts to focus on wells and the quality of the data.** Question: Is part of LSCE's current work to vet the data and limit the analysis to wells with clear information and/or identify informational limitations to reduce uncertainty? Answer: Yes.

A revised table with additional questions from GRAC members was provided as a handout. Moving forward, the committee will discuss questions as a group during meetings.

b. History and Update on the Milliken-Sarco-Tulocay (MST) Basin

Steve Lederer, Interim Director, Public Works presented on the history of water deficiencies in MST and the groundwater ordinance. MST water problems developed over many decades. Studies in the late 50's indicated concerns. The problems came to a head in the 90s. In 1999 an ordinance was passed to begin managing this problem. Significant public input was incorporated into the ordinance development. The ordinance slows the problem. It does not fix it. The ordinance established a fair-share process based on data and calculations and applied this to new development. However, given any new project would increase groundwater use and have a cumulative impact, the California Environmental Quality Act requires an environmental impact report. This halted new development requiring water. Projects that would not increase water use could move forward. Exemptions include fixing a well, replacing a failed well, expanding the size of an existing dwelling (i.e. number of bedrooms), a residence in the event no other development exists (with water limits) and replants.

In summary, Mr. Lederer engaged GRAC in a True or False exercise including:

- *The 1999 groundwater ordinance was designed to "fix the problem."* FALSE, it was intended to slow the problem, not fix it.
- *The county just keeps approving new vineyards in MST.* TRUE if the vineyards are replants or if vineyards replace an existing water use. FALSE if otherwise.
- *You can't get a permit to do anything in the MST.* TRUE if it requires additional water use. FALSE if it meets the requirements under the exemptions.
- *People who are required to report their usage never do.* FALSE. There are a few people who do not provide information regularly, with but we look at this information every six months and follow up with those who did not submit information.

- *The vineyards are the real problem.* FALSE
- *The golf courses are the real problem.* FALSE
- *The residences are the real problem.* FALSE
- *The MST pipeline for recycled water will fix everything.* FALSE, if the pipeline extends out to MST, it will make the problem a bit better but will not fix it.

QUESTIONS and DISCUSSION:

- **Replants and vine distance.** Question: Distance between vines impact water use. Did the County consider distance between vines with the exception for replants? Answer: Over time, replants tend to require less water than old vines. As such, the County did not perceive spacing as an issue.
- **Transducers.** Question: How many wells have transducers? Answer: Not sure.
- **Analysis of MST data.** Question: Are the data points for monitoring the MST area sufficient to effectively monitor and understand the situation? Answer: LSCE is looking at that. Some monitoring sites have been discontinued and there may be opportunity for monitoring improvement.
- **Number of metered sites.** Question: What would you estimate as the number of permits pulled since the 1999 ordinance requiring metering? Answer: It is closer to 100, but imposed conditions varied over time. If use was far below their fair share, then likely it was not metered. If they were close to the fair share or on it, they were metered. Roughly half or more are metered.
- **Distribution on water use.** A GRAC member relayed ball park figures on the distribution of water use as 3,500 acre feet for vineyards, 200 acre feet for golf courses and 1,500 hundred feet for residences.

6c. Update on Actions by St. Helena City Council Regarding Wells (item addressed out of order)

Mr. Lederer provided an update on the well ordinance which took effect in St. Helena at 5 p.m. on April 25. This ordinance was intended to address a noted increase in well drilling. In the past month, likely as a result of the pending ordinance, the County received 25 requests for well permits. This is a significant increase from the five requested last year.

The ordinance prohibits new well drilling except for agricultural purposes. Well owners must also report well elevation data twice annually from metered wells.

QUESTIONS and DISCUSSION:

- **Recycled water program status.** Question: Who is the contact for and what is the status with the recycled water program? Answer: This is managed by the Public Works department. Mr. Phil Miller serves as the project manager for the County's recycled water program. The County is in Phase 1 and is providing recycled water to the country club and roughly 20 other users. The County has received requests from 25 other potential users. The County will also redesign the current site for the pump station to be on 3/10 of an acre and to eliminate the truck station. A meeting will be hosted on May 3rd at the Country Club to discuss range of costs for users. Construction funding is planned to be obtained through a loan. Recycled water users will not pay for the pipe construction, simply the recycled water use.
- **Motivation to use recycled water.** Question: What is the motivation to use recycled water? Answer: The County wants to reduce use of water. Recycled water users want a reliable water source that may be available during periods of drought. Currently there is interest for 500 acre feet of recycled water with the potential to provide up to 2,000 acre feet.

c. Review of the Draft Napa County Groundwater Monitoring Plan Update Annotated Outline

Mr. Rick Thomasser, Manager for the Flood District, presented the outline for the proposed Napa County groundwater monitoring plan update. The plan's purpose is for groundwater data collection only. It is essential to first understand more about Napa County groundwater and this plan contributes to that end. Plus, the plan would make the County more eligible for public funds administered by the State. The plan is an outgrowth of past studies and follows recommendations provided by LSCE. It will be completed in parallel and iteratively with LSCE's work. It is intended not to be a static document, but rather to be updated annually and as needed to help the County understand its groundwater resources.

QUESTIONS and DISCUSSION:

- **Sufficient data.** Question: What amount of data would be sufficient to meet data quality and quantity objectives? Answer: It varies according to the area. A large homogeneous basin will require fewer data points than an area with complicated geology such as with the MST. Once monitoring priorities are identified, additional guidance can be provided on the amount of data points recommended.
- **Approach to prioritizing.** Question: Given limited funding, would it be better to first identify the number of data points required to get a clearer picture with

groundwater and then use cost as a consideration for prioritization? Answer: Yes, however our aim is not to simply collect data, but understand issues at stake (i.e. risk for overdraft, surface water and groundwater interactions, salt water intrusion, etc.).

- **Monitoring to avoid overdraft.** Question: How does monitoring avoid overdraft? Answer: Having an understanding of water level trends and aquifer recharge capacity will help the County communicate and respond to the potential for overdraft.
    - **Slide language on objectives with overdraft.** Comment: Wording in the slides should be changed in the plan to reflect "anticipate" rather than "avoid" overdraft. Answer: The slides have abbreviated text. The outline states "monitoring to avoid conditions of overdraft." Comment: Per the earlier explanation, "anticipate" would be more accurate than "avoid."
- **Awareness for prevention.** Comment: A GRAC member added the purpose of the GRAC is to quantify and characterize groundwater in efforts to avoid a situation such as MST. Current data suggests most areas in Napa County will not have a problem. If there is potential for a problem, it would be best to identify it in advance.
- **Monitoring program goals.** Comment: Objectives and conservation elements for the plan are provided. In addition, GRAC should draft goals. Goals would help GRAC understand and guide the plan and help ensure the plan remains a living document. Response: Yes, objectives and goals differ and defining goals would provide the big picture to what GRAC is doing.
- **Connecting the plan to earlier work and next steps.** Question: The plan will provide for a clearer picture on groundwater, but where does this information go from there? How do we connect this work to next steps, which may guide GRAC's work? Answer: The immediate need is for data to develop a conceptual model. We don't know what we will find and do not want to presume next steps. However, to connect the plan to earlier work, a section should be added in advance of the objectives to summarize LSCE's work. This connects the plan to former work. The plan will then guide the County for many years.
- **Slide language on objectives with water balance.** Question: The slide states "refine" water balance, but do you mean "understand" water balance? Answer: Yes.
- **Plan language on "emerging contaminants."** Question: Should we also include contaminants that aren't classified as "emerging" or "natural" in the monitoring program? Answer: The goal is to narrow our focus to monitor trends and implications and to identify geographic regions of concern. We do not want to be a

regulatory agency. Comment: However, a wordsmith to that section may broaden and enable the County to monitor what it sees necessary and not be limited to emerging or natural contaminants. Answer: Good point, but there are a lot of things we could monitor and given our resource constraints, we should identify focus areas.

- **Confidentiality.** Comment: At the last meeting, GRAC agreed to postpone defining terms of confidentiality until the plan was further defined and additional recommendations from LSCE were provided. GRAC suggestions, concerns and comments were documented in the February 23rd meeting summary. County staff members understand issues identified and confidentiality considerations will be discussed when more specifics are available.
- **Sequential or parallel work between GRAC and LSCE.** Question: Should LSCE recommendations precede the development of the plan? Otherwise there seems a limit to how far GRAC can design the plan. Answer: There are some elements not driven by LSCE's recommendations (i.e. securing data points for Pope Valley) and other parts of the plan that can be developed in parallel to LSCE's work. It is important to note a monitoring plan is a routine document, a data collection effort. This is not a management plan that would require more data. Also, goals developed by GRAC may help set context for LSCE's work.
- **Section on stream gauging.** Question: The plan addresses the surface water and groundwater interactions, but seems to be missing a section on stream flow data. Is there an organized process to evaluate tributary flows relative to recharge? Answer: Yes, task item 3 of the work currently being conducted by LSCE and MBK includes this in the recharge analysis. It is a piece of what LSCE previously assessed in their scope for Task 3.3 (i.e., Tech Memo in February 2010); LSCE made recommendations for stream gauging at some new locations.
    - **Access to stream gauging locations.** Question: Where can I find stream gauging data? Answer: This is included on the groundwater reference materials CD, and maps are available on www.Napaa.1rain.com The Tech Memo on the CD showed stream gauging locations and recommendations for additional locations, which has been completed. Rainfall is also being monitored and the rain level monitoring system will be expanded.

      ACTION ITEM: Mr. Lowe will send an email to GRAC members highlighting where they may find stream flow information on the CD.

- **Need for annual updates.** Question: What is driver for annual update of the plan, a state requirement? Updates require a lot of staff time and commitment. Answer: There is no requirement. Updates should be done according to data needs.
    - **Trigger for updates.** Comment: GRAC may make recommendations on triggers that require an update to the plan and a request for resources to the Board. Triggers may include data discrepancies, change in needs, etc. Response: The annual review would not necessarily be exhaustive, rather cross-checking to ensure the plan continues to be functional and fulfill the intended purpose. Priorities and needs may change over time.
- **Discretionary projects.** Question: Under the LSCE scope of work, task 4, there is a reference to "discretionary projects." Will this be defined in the monitoring plan? Answer: We do not see defining discretionary project in the plan. This reference in LSCE's scope pertains to the County's use of data for CEQA analysis, for example. However, we may include a plan objective to make determinations for what constitutes a discretionary project.
- **Discussing priorities.** Question: Could we add "priorities" for our next agenda? Setting priorities is fundamental to our work. It would be good to better understand priorities that LSCE recommended, how those relate to GRAC's work and have GRAC help narrow and order priorities. Answer: We will add this to our next agenda.
- **MST as a priority.** Question: We have been told MST is a key area and yet they are listed half-way down in the order of priorities. Isn't that a top priority? Answer: The list of priorities provided is not ordered according to importance.

It was suggested that GRAC have time on the next agenda to discuss objectives, goals and priorities for the monitoring program.

6. Other Business

a. Update on Draft Plan for Public Outreach/Education

Mr. Michael Haley, on behalf of the ad-hoc Public Outreach and Education sub-committee, provided an update on their work. The sub-committee has met on general parameters and will discuss more details in a few weeks.

c. Discussion of Reporting Out via Meeting Summary

Hillary Gitelman, Director CDPD, provided an overview on the intent of the meeting summaries provided to GRAC members after each meeting. This includes a one-paragraph meeting description which GRAC members can forward to keep constituents

informed. The main meeting summary provides detailed notes on the discussions, including agreements and action items. The "action minutes" provides a less-detailed summary of meeting agenda items.

DISCUSSION:

- **Appropriate time to communicate.** Comment: The Education and Outreach sub-committee suggested that the GRAC needs to know more about what the monitoring plan will entail. The sub-committee does not want to present information today that may not be true tomorrow. Response: Accurate information is important. This summary is general and keeps our constituents apprised of the work GRAC is doing.
- **Mission statement.** Comment: A clear mission statement will be helpful in communicating with others about GRAC's activities. Response: GRAC will discuss proposed language at the next meeting.

7. Announcements

No announcements were presented.

8. Future Agenda Items

Future agenda items were not formally discussed during the meeting. Proposed items provided in GRAC materials and during the course of the meeting include:

- Draft Napa County Groundwater Monitoring Plan Update (Including Confidentiality Policy)
- Draft communication and education plan
- Preparation for Joint Meeting with WICC for July 26
- Goals, objectives and priorities for the groundwater monitoring program

9. Adjournment to the Next Meeting

Thursday, June 28, 2012 – 2:00pm
Agricultural Commissioner's Office/UCCE Conference Room
1710 Soscol Avenue, Napa CA

Attendees

Groundwater Advisory Committee Members:

1. Michelle Benvenuto
2. Tucker Catlin
3. Alan Galbraith
4. Donald Gleason

5. David Graves
6. Michael Haley
7. Peter McCrea
8. Steve Soper
9. Marilee Talley
10. William Trautman
11. James Verhey
12. Suzanne Von Rosenberg
13. Duane Wall
14. Dale Withers

Public Attendees:

14. Lavern Mack (via telephone)

County Staff Members and Consultant Attendees:

19. Taralyn Atkins-Brown, CCP
20. Deborah Elliott
21. Elena Cosimi
22. Dorian Fougères, CCP
23. Hillary Gitelman
24. Vicki Kretsinger Grabert, LSCE
25. Steve Lederer
26. Daisy Lee
27. Patrick Lowe
28. Phil Miller
29. Greg Morgan
30. Mark Nordberg, DWR
31. Christine Secheli
32. Rick Thomasser

A Tradition of Stewardship
A Commitment to Service

Napa County
Groundwater Resources
Advisory Committee

Committee Members

Michelle Benvenuto
Franklin Tucker Catlin
John Alan Galbraith
Donald Gleason
David Graves
Michael Haley
Peter McCrea
Charles Slutzkin
Steve Soper
Marilee Talley
William Trautman
James Frederick Verhey
Susanne von Rosenberg
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Mission Statement

(June 28, 2012 - Draft)

The Napa County Board of Supervisors has undertaken a major project to better understand the structure and behavior of the "ground water system" in ~~the~~ Napa ~~Valley~~ County with the goal of being able to respond in a timely and appropriate manner to any significant future changes to this system.

The two major components of this project are:

- Develop and implement a robust, non-regulatory basin monitoring program that will allow the County and its residents to track ground water levels and groundwater quality on an ongoing basis.
- Develop a better understanding of the hydrogeologic conditions of Napa County's ground water basins over time, including the systems that recharge the basins and the interaction between surface-~~to-~~ and groundwater ~~interactions.~~

The basic role of the GRAC is to act as an advisor and to make recommendations to the County staffs and their consultants in the development of this program with particular emphasis on structuring the program in a way that will encourage the comprehension, acceptance and support of the program by a broad number of Napa County landowners, as well as the public at large.

RESOLUTION NO. 2011-79

(Adopted June 28, 2011)

NOW, THEREFORE, BE IT RESOLVED, that the Board of Supervisors hereby creates the GRAC as follows:

Section 1.Purpose.

The GRAC is hereby created to assist County staff and technical consultants with recommendations regarding (a) the synthesis of existing information and identification of critical data needs; (b) the development and implementation of an ongoing groundwater monitoring program; (c) the development of revised well pump test protocols and related revisions to the County's groundwater ordinance; (d) the conceptualization of hydrogeologic conditions in various areas of the County and an assessment of groundwater resources as data becomes available; (e) the development of groundwater sustainability objectives that can be achieved through voluntary means and incentives; and (f) building community support for these activities and next steps.

The GRAC shall cease to exist upon completion of these purposes or on December 31, 2014, whichever occurs first, unless the GRAC is affirmatively perpetuated by resolution of the Board of Supervisors.

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Napa County

Groundwater Monitoring Plan 2012

Draft June 18, 2012

LUHDORFF & SCALMANINI
CONSULTING ENGINEERS

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Executive Summary will be prepared later upon completion of the entire Draft Plan.

1 INTRODUCTION

1.1 Purpose

Groundwater and surface water are highly important natural resources in Napa County. Collectively, the County and other municipalities, water districts, commercial and industrial operations, the agricultural community, and the general public, are stewards of the available water resources. Currently, municipal and private stakeholders are actively engaged in assessing the reliability of current and future demand and supplies. Important sources of water include both groundwater and surface water of good quality and quantity, to meet future urban, rural, and agricultural water demands. Similar to other areas in California, businesses and residents of Napa County face many water-related challenges including:

- Increased competition for current and future available supplies,
- Preserving the quality and availability of local and imported water supplies,
- Sustaining groundwater recharge capacity and supplies,
- Meeting challenges arising during drought conditions,
- Avoiding environmental effects due to water use; and
- Changes in long-term availability due to global warming and/or climate change.

To address these challenges, long-term, systematic monitoring programs are essential to provide data that allow for improved evaluation of water resources conditions and to facilitate effective water resources planning. Establishment of a groundwater and surface water monitoring network results in the collection of data necessary to distinguish long-term trends from short-term fluctuations, anticipate unintended consequences due to current and historical land uses, identify emerging issues, and design appropriate water resources planning and management strategies. In 2009, Napa County embarked on a countywide project referred to as the "Comprehensive Groundwater Monitoring Program, Data Review, and Policy Recommendations for Napa County's Groundwater Resources" (Comprehensive Groundwater Monitoring Program), to meet identified action items in the 2008 General Plan update. The program emphasizes developing a sound understanding of groundwater conditions and implementing an expanded groundwater monitoring and data management program as a foundation for future coordinated, integrated water resources planning and dissemination of water resources information.

The purpose of this *Napa County Groundwater Monitoring Plan* (Plan) is to formalize and augment current groundwater monitoring efforts [levels and quality] to better understand the groundwater resources of Napa County and to aid in making the County eligible for public funds administered by the California Department of Water Resources (DWR). The Plan is considered a living document that will be updated based upon the data collected and County/Community

needs. It is envisioned that groundwater conditions and recommended modifications to the countywide groundwater monitoring program would be reported triennially or as needed.

1.2 Organization of the Plan

This Plan formalizes recommendations provided in the County's Comprehensive Groundwater Monitoring Program by outlining steps to augment countywide groundwater level and quality monitoring. Recent studies by Napa County have found that there are many areas in the county where further efforts to establish groundwater monitoring, using existing or new monitoring facilities, will improve the understanding of groundwater resource conditions and availability. This Plan summarizes groundwater monitoring priorities and recommendations for addressing these priorities. This Plan also summarizes the overarching groundwater level and quality monitoring objectives defined by the County and the GRAC. These objectives provide the framework necessary to ensure that the data collected from the countywide monitoring facilities can address these objectives.

On June 28, 2011, the County Board of Supervisors adopted a resolution establishing a Groundwater Resources Advisory Committee (GRAC). Two of the tasks assigned to the GRAC include: 1) assisting with the synthesis of the existing groundwater information and identifying critical data needs; and 2) providing input on the furtherance of the ongoing countywide groundwater monitoring program. During preparation of this Plan, input from this committee is being coordinated to optimize additional groundwater monitoring locations that serve to meet the objectives of the County's Comprehensive Groundwater Monitoring Program and the California Statewide Groundwater Elevation Monitoring (CASGEM) program. As explained in the next section, the CASGEM program is a subset of the countywide groundwater monitoring program.

This Plan includes the following sections:

Section 2: Hydrogeology of Napa County

- DWR Basins/Subbasins and County Subareas
- Summary of Geology and Groundwater Resources
- Overview of Recent Groundwater Studies and Programs
- Presentation of Developed Groundwater Monitoring Priorities
    - Groundwater Level Monitoring
    - Groundwater Quality Monitoring
- Summary of Recommendations from Recent County Studies

Section 3: Groundwater Resources Goals and Monitoring Objectives

- Napa County Water Resources Goals and Policies
- Groundwater Level Monitoring Objectives
- Groundwater Quality Monitoring Objectives
- Funding and Collaboration for Groundwater Monitoring

Section 4: Groundwater Monitoring Network Design and Development

- **Groundwater Level Monitoring** - Monitoring Network (including existing groundwater level monitoring wells, recommendations to expand the monitoring well network, frequency of monitoring, and field methods)

- **Groundwater Quality Monitoring** - Monitoring Network (including existing groundwater quality monitoring wells, recommendations to expand the monitoring well network, frequency of monitoring, field methods, and parameters of interest)

Section 5: Groundwater Data Management

- Data Management Procedures
    - Types of Data (including well construction and location data, groundwater level and quality data)
    - Confidentiality Policy and Procedures (including confidential data, release of data, reporting of data)
- Data Management System (DMS)
    - County Collected Data Entry and QA/QC
    - Data from Other Sources

Section 6: Reporting and Assessment

- Annual Update and Review of Monitoring Plan and Well Network
- Annual CASGEM Reporting
- Triennial Countywide Reporting

2 HYDROGEOLOGY OF NAPA COUNTY

This section summarizes the countywide geologic and hydrologic setting, and includes information about DWR groundwater basin/sub-basin delineations and a description of the Napa County groundwater monitoring subareas. The studies that form the basis of the understanding of County hydrogeology are referenced, including the work for the Updated Conceptualization and Characterization of Hydrogeologic Conditions (LSCE, 2012).

2.1 DWR Basins/Subbasins and County Subareas

DWR has identified the major groundwater basins and subbasins in and around Napa County; these include the Napa-Sonoma Valley (which in Napa County includes the Napa Valley and Napa-Sonoma Lowlands Subbasins), Berryessa Valley, Pope Valley, and a small part of the Suisun-Fairfield Valley Groundwater Basins (**Figure 1**). These basins and subbasins are generally defined based on boundaries to groundwater flow and the presence of water-bearing geologic units. These groundwater basins defined by DWR are not confined within county boundaries, and DWR-designated "basin" or "subbasin" designations do not cover all of Napa County.

Groundwater conditions outside of the DWR-designated areas are also very important in Napa County. An example of such an area is the Milliken-Sarco-Tulucay (MST) area, a locally identified groundwater deficient area. For purposes of local planning, understanding, and studies, the County has been subdivided into a series of groundwater subareas (**Figure 2**). These subareas were delineated based on the main watersheds, groundwater basins, and the County's environmental resource planning areas. These subareas include the Knoxville, Livermore Ranch, Pope Valley, Berryessa, Angwin, Central Interior Valleys, Eastern Mountains, Southern Interior Valleys, Jameson/American Canyon, Napa River Marshes, Carneros, Western Mountains Subareas and five Napa Valley Floor Subareas (Calistoga, St. Helena, Yountville, Napa, and MST).

2.2 Summary of Geology and Groundwater Resources

2.2.1 Previous Studies

Previous hydrogeologic studies of Napa County are divisible into geologic studies and groundwater studies. The more significant studies are mentioned in this section. Weaver (1949) presented geologic maps which covered the southern portion of the county and provided a listing of older geologic studies. Kunkel and Upson (1960) examined the groundwater and geology of the northern portion of the Napa Valley. California Department of Water Resources (DWR) (Bulletin 99, 1962) presented a reconnaissance report on the geology and water resources of the eastern area of the County; Koenig (1963) compiled a regional geologic map which encompasses Napa County. Fox and others (1973) and Sims and others (1973) presented more detailed geologic mapping of Napa County. Faye (1973) reported on the groundwater of the northern Napa Valley. Johnson (1977) examined the groundwater hydrology of the Milliken-Sacro-Tulucay (MST) Creeks area.

Helley and others (1979) summarized the flatland deposits of the San Francisco Bay Region, including those in Napa County. Fox (1983) examined the tectonic setting of Cenozoic rocks, including Napa County. Farrar and Metzger (2003) continued the study of groundwater conditions in the MST area.

Wagner and Bortugno (1982) compiled and revised the regional geologic map of Koenig (1963). Graymer and others (2002) presented detailed geologic mapping of the southern and portions of the eastern areas of the County, while Graymer and others (2007) compiled geologic mapping of the rest of Napa County.

Additional geologic maps, groundwater studies, and reports are listed in the references of the Groundwater Report (LSCE, 2011a).

2.2.2 Summary of Geology and Water Resources

The geology of Napa County can be divided into three broad geologic units based on their ages and geologic nature. These units are: 1) Mesozoic Basement Rocks (pre-65 million years (my)), which underlie all of Napa County, but are primarily exposed in the Eastern County area and the Western Mountains Subarea, 2) Older Cenozoic Volcanic and Sedimentary Deposits (65 my to 2.5 my), including Tertiary Sonoma Volcanics (Miocene and Pliocene; 10 my to 2.5 my) which are found throughout the county, especially in the mountains surrounding Napa Valley, and 3) Younger Cenozoic Volcanic and Sedimentary Deposits (post 2.6 my to present), including the Quaternary alluvium of the Valley Floor. The two primary water-bearing units in the county are the tuffaceous member of the Sonoma Volcanics and the Quaternary alluvium.

Outside of the Napa Valley Floor, percolation of surface water appears to be the primary source of recharge. The rate of recharge within areas such as the MST Subarea has been shown to be significantly higher where streams and tributaries cross highly permeable outcrops (e.g., the tuffaceous member of the Sonoma Volcanics or shallow alluvium). Direct infiltration of precipitation is a major component of recharge in the main Napa Valley. Recharge throughout much of the county is generally limited by underlying shallow bedrock of low permeability. An additional component of groundwater recharge that is less understood is deep percolation through fractured rock and fault zones. This type of recharge can be very difficult to quantify due to the highly variable size and distribution of faults, fractures, and joints in a given area.

2.2.2.1 Groundwater Occurrence and Quality in the Sonoma Volcanics

Groundwater occurs in the Sonoma Volcanics in Napa County and yields water to wells. Well yields are highly variable from less than 10 to several hundred gallons per minute (gpm). The most common yields are between 10 to 100 gpm. Faye (1973) reported well-test information which showed an average yield of 32 gpm and an average specific capacity of 0.6 gallons per minute per foot of drawdown. From the available well log data, the Tertiary marine sedimentary rocks are poor groundwater producers either for a lack of water or poor water quality (high salinity). At great depths, groundwater quality in the Tertiary marine sedimentary rocks is generally poor due to elevated chloride concentrations.

According to Kunkel and Upson (1960), groundwater in the Sonoma Volcanics is generally of good quality except in three areas. The first area with poor groundwater quality, the Tulucay Creek drainage basin, east of the City of Napa, contains groundwater with elevated iron, sulfate, and boron. The Suscol area, south of the City of Napa, is the second area where some wells suffer from poor quality groundwater due to elevated chloride concentrations, possibly from leakage from salty water in the Napa River, alluvial material above, or the existence of zones of unusually saline connate water deep within the Sonoma Volcanics. The third area of poor groundwater quality, the Calistoga area in the northern end of the Napa Valley, contains isolated wells with elevated chloride, boron, and some trace metal concentrations.

Kunkel and Upson (1960) reported that the principal water yielding units of the Sonoma Volcanics are the tuffs, ash-type beds, and agglomerates. The lava flows were reported to be generally non-water bearing. However, it may be possible that fractured, fragmental, or weathered lava flows could yield water to wells. The hydrogeologic properties of the volcanic-sourced sedimentary deposits of the Sonoma Volcanics are poorly understood.

2.2.2.2 Groundwater Occurrence in Other Units and in the Quaternary Sedimentary Deposits

Several hundred wells and test holes on record have been drilled into the exposed Huichica Formation. Well yields tend to be low to modest (< 10 gpm to tens of gpm). Only a few known wells on record are completed in the Clear Lake Volcanics near the northern County line. Three wells report high yields of 400 to 600 gpm. Much of the Clear Lake Volcanics to the south appear to be thinner, limited in extent, and in ridge-top locations where possible groundwater production appears to be less likely.

Groundwater production from Quaternary alluvium is variable, with yields ranging from <10 gpm in the East and West mountainous areas to a high of 3,000 gpm along the Napa Valley floor where the alluvium is thickest (>200 feet). According to Faye (1973), average yield of wells completed in the alluvium is 220 gpm. Many wells drilled in the alluvium within the last 30 years extend beyond the alluvium and into the underlying Cenozoic units. Kunkel and Upson (1960) report that groundwater in the alluvium is generally of good quality. The groundwater is somewhat hard and of the bicarbonate type, with small concentrations of sulfate, chloride, and total dissolved solids. A few isolated areas have increased chloride and boron concentrations.

2.2.3 Characterization and Conceptualization of Hydrogeologic Conditions

The ongoing characterization work by LSCE will be summarized.

2.3 Recent Groundwater Studies and Programs

This section summarizes the recently completed studies by Napa County and the recommendations relevant to groundwater monitoring that were developed.

2.3.1 Napa County's Comprehensive Groundwater Monitoring Program

In 2009, Napa County implemented a Comprehensive Groundwater Monitoring Program to meet identified action items in Napa County's 2008 General Plan Update (Napa County, 2008). The program emphasizes developing a sound understanding of groundwater conditions and implementing an expanded groundwater monitoring and data management program as a foundation for future coordinated, integrated water resources planning and dissemination of water resources information. The program (and elements of this Plan) covers the continuation and refinement of countywide groundwater level monitoring efforts (including many basins, subbasins and/or subareas throughout the county) for the purpose of understanding groundwater conditions (i.e., seasonal and long-term groundwater level trends and also quality trends) and availability. This information is critical to enable integrated water resources planning and the dissemination of water resources information to the public and state and local decision-makers. Napa County's combined efforts through the Comprehensive Groundwater Monitoring Program along with the related AB 303 Public Outreach Project on groundwater (CCP, 2010) and the efforts of the Watershed Information Center & Conservancy (WICC) of Napa County create a foundation for the County's continued efforts to increase public outreach and participation in water resources understanding, planning, and management. An informed and engaged public enables support of planned water resources projects and programs proposed by the County and others to meet the goals and objectives discussed in Section 3.

Napa County's Comprehensive Groundwater Monitoring Program involved many tasks that led to the preparation of five technical memorandums and a report on Napa County Groundwater Conditions and Groundwater Monitoring Recommendations (Groundwater Report) (LSCE, 2011a). This report and the other related documents can be found at: http://www.countyofnapa.org/planning/groundwater/.
The report documents existing knowledge of countywide groundwater conditions and establishes a framework for the monitoring and reporting of groundwater levels and groundwater quality on a periodic basis. The report also summarizes priorities for groundwater level and quality monitoring for each of the county subareas.

2.3.2 Napa County Statewide Groundwater Elevation Monitoring (CASGEM)

This section describes the new DWR California Statewide Groundwater Elevation Monitoring (CASGEM) program. The wells included by the County in the CASGEM program are a *subset* of the overall network of wells monitored in Napa County.

In November 2009, Senate Bill SBX7-6 mandated that the groundwater elevations in all basins and subbasins in California be regularly and systematically monitored with the goal of demonstrating seasonal and long-term trends in groundwater elevations. In accordance with the mandate, DWR developed the CASGEM program. DWR is facilitating the statewide program which began with the opportunity for local entities to apply to DWR to assume the function of regularly and systematically collecting and reporting groundwater level data for the above purpose. These entities are referred to as Monitoring Entities. The legislature added a key aspect to SBX7 – 6 which was to make certain elements of the groundwater level information available to the public.

Wells designated for inclusion in the CASGEM program are for purposes of measuring groundwater levels on a semi-annual or more frequent basis that are representative of groundwater conditions in the state's groundwater basins and subbasins.

On December 29, 2010, the County applied to DWR to become the local countywide Monitoring Entity responsible for designating wells as appropriate for monitoring and reporting groundwater elevations for purposes of the CASGEM program.

The wells selected by the County for this program may be a *subset* of the overall wells monitored and need not be inclusive of the County's entire monitoring network. Thus, the County's participation in the CASGEM program complements other pre-existing groundwater monitoring that has been ongoing in Napa County for sometime (the overall historical monitoring record began in 1918). The end goals of the CASGEM program from the state's perspective it to support the understanding, managing, and sustaining of groundwater resources throughout California.

Following confirmation the County, as the Monitoring Entity, proceeded to identify a *subset* of monitored wells to be included in the CASGEM network and to prepare a CASGEM Network Plan as required by DWR (LSCE, 2011b). At the time the County's CASGEM Network Plan was submitted to DWR, fourteen wells were included in the program. Currently (as of June 2012), the number of CASGEM wells has increased to 19.

2.3.3 Groundwater Monitoring Priorities

Priorities for addressing groundwater level and quality monitoring are presented below. These are based on the analysis of existing groundwater data and conditions described in the Groundwater Report (LSCE, 2011a).

2.3.3.1 Groundwater Level Monitoring

Currently, groundwater level measurements have been recorded at a total of 76 sites (measurements began in 1920 for one Napa County monitoring well that is still being monitored). **Table 2-1** and **Figure 2-1** summarize the currently conducted monitoring in each subarea. Also shown in **Table 2-1** are the preliminary ranking and priorities for improving or expanding groundwater level monitoring in each of the designated subareas. Seven subareas (including the NVF-Calistoga, NVF-MST, NVF-Napa, NVF-St. Helena, NVF-Yountville, Carneros, and Pope Valley Subareas) are given a higher priority based on factors of current and/or projected land and water use (WYA, 2005). In mountainous areas where less groundwater development has occurred, where geologic conditions are complicated by basement rocks that are complexly deformed by folding and faulting and are well lithified, and overall there is considerable variability (LSCE, 2011a), future monitoring needs would be subject to potential or planned development in localized areas. Groundwater level monitoring needs include improved spatial distribution of groundwater level monitoring, additional characterization of subsurface geologic conditions in each subarea to identify aquifer characteristics, further examination of well construction information to define which portion of the aquifer system is represented by water levels measured in the currently monitored wells, and improve the understanding of surface water – groundwater relationships.

Table 2-1
Groundwater Level Monitoring Sites, Napa County
(Current[1] and Future)

Subarea	No. Wells with Current Groundwater Level Data	Future Groundwater Level Monitoring		Monitoring Needs
		Relative Priority	Action (Expand/ Refine)	
Napa Valley Floor-Calistoga	**6**	**H**	E	**SP, SW**
Napa Valley Floor-MST	**28**	**H**	R	**SP, SW**
Napa Valley Floor-Napa	**18**	**H**	R	**SP, SW**
Napa Valley Floor-St. Helena	**7**	**H**	E	**SP, SW**
Napa Valley Floor-Yountville	**7**	**H**	E	**SP, SW**
Carneros	**2**	**H**	E	**B**
Jameson/American Canyon	1	M	E	B
Napa River Marshes	1	M	E	SP, SW
Angwin	0	M	E	B
Berryessa	3	M	E	B
Central Interior Valleys	1	M	E	B
Eastern Mountains	0	M	E	B
Knoxville	1	M	E	B
Livermore Ranch	0	L	E	B
Pope Valley	1	H	E	B
Southern Interior Valleys	0	L	E	B
Western Mountains	0	L	E	B
Total	**76**			

[1] "Current" refers to monitored sites with wells measured for levels and/or any water quality parameter with a period of record extending to 2011 or later."Future" refers to recommended monitoring locations.

L = Low Priority; add groundwater level monitoring based on areas of planned future groundwater development

M = Medium Priority; add groundwater level monitoring

H = High Priority; add groundwater level monitoring

E = Expand current monitoring network; possible alternatives for additional monitoring wells include 1) wells historically monitored by DWR/USGS/Others, preferably with well construction information; 2) existing water supply wells (e.g., private/commercial) with well construction information; 3) new dedicated monitoring wells coordinated with recent geologic investigations that are or will be conducted)

R = Refine current monitoring network (link well construction information to all monitored wells, as possible)

Monitoring Needs:
SP = Improve horizontal and/or vertical spatial distribution of data;

SW =identify appropriate monitoring site to evaluate surface water -groundwater recharge/discharge mechanisms;
B = Basic data needed to accomplish groundwater level monitoring objectives

2.3.3.2 Groundwater Quality Monitoring

The current groundwater quality monitoring network consists of 185 monitoring sites (**Table 2-2 and Figure 2-2**). Of these sites, some of the wells, but not all, have well construction information. Current groundwater quality monitoring sites are fairly well distributed throughout the Napa Valley Floor Subarea but are generally sparse elsewhere in the county. Recommended improvements to the groundwater quality monitoring program, and priority timelines for improvements, are summarized in **Table 2-2** and discussed further in the Groundwater Report (LSCE, 2011a).

Table 2-2 includes a ranking and prioritization for improving or expanding groundwater quality monitoring in each of the designated subareas. Four subareas (including NVF-MST, Carneros, Jameson/American Canyon, and Pope Valley Subareas) are given a higher priority based on factors of current and/or projected land uses and also the lack of spatially distributed groundwater quality monitoring wells. Three subareas, including Livermore Ranch, Southern Interior Valleys, and Western Mountains, are assigned lower priorities for groundwater quality monitoring due to the likely lower levels of projected land and groundwater use. The eleven remaining subareas are designated as medium priorities for groundwater quality monitoring. Many of these areas have current monitoring programs, so the emphasis in these areas is to further examine land use with respect to monitoring locations and the units(s) of the aquifer system represented by this monitoring.

Table 2-2 also includes key factors related to monitoring needs. Many subareas outside the Napa Valley Floor have limited spatial distribution of the current groundwater quality monitoring wells/sites. Basic data are described as a key need to accomplish the Plan's groundwater quality monitoring objectives. Importantly, expansion and/or refinement of groundwater quality monitoring conducted in all subareas should be coordinated with efforts to expand or refine groundwater level monitoring to be able to relate water quality trends to constituent transport within the aquifer system.

Table 2-2
Groundwater Quality Monitoring Sites, Napa County
(Current[1] and Future)

Subarea	No. Sites with Current Groundwater Quality Data	Future Groundwater Quality Monitoring		Monitoring Needs
		Relative Priority	Action (Expand/ Refine)	
Napa Valley Floor-Calistoga	21	M	R	SP,C
Napa Valley Floor-MST	**18**	**H**	R	**SP,C**
Napa Valley Floor-Napa	22	M	R	SP,C
Napa Valley Floor-St. Helena	31	M	R	SP,C
Napa Valley Floor-Yountville	14	M	R	SP,C
Carneros	**9**	**H**	R	**SP,C**
Jameson/American Canyon	**3**	**H**	E	**B,SP,C**
Napa River Marshes	6	M	E	B,SP,C
Angwin	4	M	E	B,C
Berryessa	8	M	E	B,C
Central Interior Valleys	6	M	R	B,SP,C
Eastern Mountains	23	M	E	B,C
Knoxville	5	M	E	B,C
Livermore Ranch	0	L	E	B,C
Pope Valley	**5**	**H**	E	**B,C**
Southern Interior Valleys	1	L	E	B,C
Western Mountains	9	L	R	B,C
Total:	**185**			

[1] "Current" refers to monitored sites with wells measured for levels and/or any water quality parameter with a period of record extending to 2008 or later."Future" refers to recommended monitoring locations.

L = Low Priority; add groundwater quality and also level monitoring based on areas of planned future groundwater development

M = Medium Priority; add groundwater quality and also level monitoring

H = High Priority; add groundwater quality and also level monitoring

E = Expand current monitoring network; possible alternatives for additional monitoring wells include 1) wells historically monitored by DWR/USGS/Others, preferably with well construction information and as the well may be available for monitoring; 2) existing water supply wells (e.g., private/commercial) with well construction information; 3) new dedicated monitoring wells (coordinate with potential geologic investigations that may be conducted in selected areas)

R = Refine current monitoring network (link well construction information to all monitored wells, as possible)

Monitoring Needs: SP = Improve horizontal and/or vertical spatial distribution of data; B = Basic data needed to accomplish groundwater level monitoring objectives; C = Coordinate with groundwater level monitoring

Note: Some sites with current groundwater quality data are approximately located and currently may not be counted in the correct subarea. Also, additional sites with current groundwater quality beyond this tabulation exist but the locations are currently unavailable and unable to be counted at this time.

2.3.4 Recommendations from Recent County Studies

2.3.4.1 Groundwater Level Monitoring Recommendations from the Groundwater Report

Below are recommendations from the 2011 Groundwater Report (LSCE, 2011a) in order to implement the expansion and improvement of countywide groundwater level monitoring activities by the County and others.

1. Replace water level monitoring wells that are completed in more than one aquifer with wells completed in (or representative of) a single aquifer (a phased approach is recommended for this effort that considers the historical record for existing wells in the network).

2. Continue groundwater level monitoring on at least a semi-annual basis; increase the spatial and vertical distribution of wells for monthly water level measurements (e.g., in key areas) to allow more comprehensive evaluation of groundwater conditions and stream-aquifer relationships.

3. Perform GPS surveys with higher accuracy instrumentation, as may be needed, to establish updated reference point elevation data.

4. Communicate County groundwater level monitoring objectives to private and commercial landowners and invite participation in the ongoing program (i.e., access to suitable wells with construction information located in areas of interest to meet subarea-specific monitoring objectives).

2.3.4.2 Groundwater Quality Monitoring Recommendations from the Groundwater Report

Below are recommendations from the 2011 Groundwater Report (LSCE, 2011a) in order to implement the expansion and improvement of countywide groundwater quality monitoring activities.

1. Implement efforts to expand and/or refine the groundwater quality monitoring program such that more wells can be “qualified” with well construction information.

2. Review the historically monitored wells to determine whether some of these may be suited to the objectives of gathering basic data and/or expanding groundwater quality monitoring in the various county subareas.

3. Coordinate expansion of the groundwater quality monitoring program with the expansion/refinement of subarea groundwater level monitoring.

4. Communicate County groundwater quality monitoring objectives to private and commercial landowners and invite participation in the ongoing program (i.e., access to suitable wells with construction information located in areas of interest to meet subarea-specific monitoring objectives).

5. As feasible, replace monitoring wells that are completed in more than one zone or aquifer with wells completed in a single unit that meets regional and subarea-specific groundwater quality monitoring objectives.

2.3.4.3 Summary of Overall Groundwater Monitoring Program Recommendations from the 2011 Groundwater Report

1. County establish its role as lead agency for ongoing groundwater monitoring program coordination and database oversight and management.

2. Establish plan for pertinent County departments to coordinate data collection, storage, and analysis efforts.

3. Identify potential collaborators (including local, federal, and state agency representatives) and interested stakeholders for the ongoing program.

4. Annually update the DMS (e.g., groundwater levels and quality and other water-related data), assess network and findings, and make changes to the program where necessary.

5. Discuss monitoring parameters of special interest with collaborators.

6. Review groundwater data annually and revise or make recommendations to revise data collection accordingly, pending changes to network wells and/or specific program objectives.

7. Identify locations for construction of dedicated monitoring wells for water level and quality monitoring (e.g., county subareas where more subsurface information is required to better quantify groundwater availability and quality, recharge areas where aquifer-specific monitoring is lacking, surface water-groundwater interaction, etc.).

8. Replace (over time) wells in the monitoring network that have no well construction information (or are perforated in more than one zone) to improve the understanding of aquifer-specific conditions.

9. Coordinate efforts being conducted for water supply investigation work (e.g., test hole construction) with opportunities for constructing zone-specific dedicated monitoring facilities for countywide water level and/or water quality monitoring.

10. Communicate program results to cooperating entities.

11. Provide an overview of program objectives, benefits and results to general public via web information and other communication vehicles.

12. Seek funding to support program continuation, including DMS, data evaluation, and implementation of priority recommendations.

13. Explore the need to develop guidelines for testing private wells to evaluate potential water quality issues.

2.3.4.4 Napa County CASGEM Plan Recommendations

The County's 2011 CASGEM program (LSCE, 2011b) reported that the County plans to include at least one additional monitoring well in the Pope Valley and Berryessa Valley Groundwater Basins as well as additional wells in seven subareas (including the NVF-Calistoga, NVF-MST, NVF-Napa, NVF-St. Helena, NVF-Yountville, Carneros, and Pope Valley Subareas) over the coming years. These subareas are given a higher priority based on factors of current and/or projected land and water use. Additional wells in these subareas are of interest for (LSCE, 2011a):

- Improving horizontal and/or vertical spatial distribution of data;
- Identifying appropriate monitoring sites to evaluate surface water-groundwater recharge/discharge mechanisms; and
- Establishing additional basic data needed to accomplish groundwater level monitoring objectives.

2.3.4.5 Summary of Recommendations

Groundwater Level Monitoring

Per the priorities discussed in this section, additional groundwater level monitoring wells are recommended in the following subareas:

- NVF-MST
- NVF-Napa
- NVF-St. Helena
- NVF-Yountville
- NVF-Calistoga
- Carneros
- Pope Valley

Additional monitoring in the subareas in the Napa Valley Floor would be especially to improve the horizontal and spatial distribution of groundwater level data. Also, additional groundwater level monitoring is needed to further evaluate surface water-groundwater interaction and recharge/discharge mechanisms. It is especially recommended that dedicated shallow

monitoring wells be constructed at appropriate locations, particularly along the main stem of the Napa River, for this purpose.
Currently, groundwater level monitoring is sparse in the Carneros and Pope Valley Subareas. Additional monitoring in these areas is needed to establish baseline groundwater levels and gradients.

Groundwater Quality Monitoring

Per the priorities discussed in this section, additional groundwater quality monitoring wells are recommended in the following subareas:

- NVF-MST
- Carneros
- Pope Valley
- Jameson/American Canyon

Additional wells in these subareas are to improve horizontal and/or vertical spatial distribution of data and also to establish baseline groundwater quality conditions. Groundwater level monitoring would also occur at any wells added for groundwater quality monitoring in order to evaluate trends in and/or movement of the monitored constituents.

Further examination of the suitability of existing wells for groundwater monitoring (including their location and construction and relevance to meet County and/or CASGEM monitoring objectives) is necessary to determine if any existing wells would be suitable for ongoing evaluation of groundwater conditions. If existing private wells are considered, approval from the property owners to participate in the County's groundwater monitoring program would be sought. Additional wells may be added to provide better spatial and/or vertical distribution of monitored locations within the subareas and to enhance the understanding of localized groundwater conditions and availability.

Section 4 outlines steps to optimize additional groundwater monitoring locations that serve to meet the objectives of the County's Comprehensive Groundwater Monitoring Program and the CASGEM monitoring program.

3 GROUNDWATER RESOURCES GOALS AND MONITORING OBJECTIVES

3.1 Napa County Water Resources Goals and Policies

The County's General Plan (2008, amended June 23, 2009) recognizes, "water is one of the most complex issues related to land use planning, development, and conservation; it is governed and affected by hundreds of federal, state, regional, and local mandates pertaining to pollution, land use, mineral resources, flood protection, soil erosion, reclamation, etc. Every year, the state legislature considers hundreds of bills relating to water issues, and in Napa County, more than two dozen agencies have some say in decisions and regulations affecting water quality and water use."

As part of the General Plan update in 2008, and within the Conservation Element, six goals are set forth relating to the County's water resources, including surface water and groundwater. Complementing these goals are twenty-eight policies and ten water resources action items (one of which is "reserved" for later description). The County's six water resources goals are included below (the entire group of water resources goals, policies, and action items is included in LSCE, 2011a).

> **Goal CON-8:** Reduce or eliminate groundwater and surface water contamination from known sources (e.g., underground tanks, chemical spills, landfills, livestock grazing, and other dispersed sources such as septic systems).
>
> **Goal CON-9:** Control urban and rural storm water runoff and related non-point source pollutants, reducing to acceptable levels pollutant discharges from land-based activities throughout the county.
>
> **Goal CON-10:** Conserve, enhance and manage water resources on a sustainable basis to attempt to ensure that sufficient amounts of water will be available for the uses allowed by this General Plan, for the natural environment, and for future generations.
>
> **Goal CON-11:** Prioritize the use of available groundwater for agricultural and rural residential uses rather than for urbanized areas and ensure that land use decisions recognize the long-term availability and value of water resources in Napa County.
>
> **Goal CON-12:** Proactively collect information about the status of the County's surface and groundwater resources to provide for improved forecasting of future supplies and effective management of the resources in each of the County's watersheds.
>
> **Goal CON-13:** Promote the development of additional water resources to improve water supply reliability and sustainability in Napa County, including imported water supplies and recycled water projects.

Addressing the six water resources goals above, the County has produced specific General Plan Action Items related to the focus and objective of this Plan. Those action items include:

> **Action Item CON WR-1:** Develop basin-level watershed management plans for each of the three major watersheds in Napa County (Napa River, Putah Creek, and Suisun Creek). Support each basin-level plan with focused sub-basin (drainage-level) or evaluation area-level implementation strategies, specifically adapted and scaled to address identified water resource problems and restoration opportunities. Plan development and implementation shall utilize a flexible watershed approach to manage surface water and groundwater quality and quantity. The watershed planning process should be an iterative, holistic, and collaborative approach, identifying specific drainage areas or watersheds, eliciting stakeholder involvement, and developing management actions supported by sound science that can be effectively implemented. [Implements Policies 42 and 44]

Action Item CON WR-4: 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. Information from the monitoring program should be used to inform the development of basin-level watershed management plans as well as focused sub-basin (drainage-level) implementation strategies intended to address targeted water resource problems and facilitate restoration opportunities. Over time, the monitoring data will be used to develop overall watershed health indicators and as a basis of employing adaptive watershed management planning. [Implements Policies 42, 44, 47, 49, 63, and 64]

Action Item CON WR-6: 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. [Implements Policy 52 and 55]

Action Item CON WR-7: The County, in cooperation with local municipalities and districts, shall perform surface water and groundwater resources studies and analyses and work toward the development and implementation of an integrated water resources management plan (IRWMP) that covers the entirety of Napa County and addresses local and state water resource goals, including the identification of surface water protection and restoration projects, establishment of countywide groundwater management objectives and programs for the purpose of meeting those objectives, funding, and implementation. [Implements Policy 42, 44, 61 and 63]

Action Item CON WR-8: 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. [Implements Policy 57, 63 and 64]

Action Item CON WR-9.5: The County shall work with the SWRCB, DWR, DPH, CalEPA, and applicable County and City agencies to seek and secure funding sources for the County to develop and expand its groundwater monitoring and assessment and undertake community-based planning efforts aimed at developing necessary management programs and enhancements.

The following Plan subsections describe a number of water level and quality objectives to be accomplished with the current and refined countywide groundwater level and quality monitoring program. The monitoring objectives are linked to the County's General Plan goals and action

items presented above and also to hydrogeologic conditions and issues of interest, including (but not limited to):

- Monitoring change in groundwater levels and storage to assess and ensure long-term groundwater availability and reliability;
- Monitoring of groundwater-surface water interactions to ensure sufficient amounts of water are available to the natural environment and for future generations;
- Monitoring in significant recharge areas to assess the effect of factors (natural and human-influenced) that enhance groundwater recharge;
- Monitoring to establish baseline conditions in areas of potential saline water intrusion; and
- Monitoring of general water quality conditions to establish baseline conditions and protect and preserve water quality.

3.2 Groundwater Level Monitoring Objectives

The focus of the countywide groundwater level monitoring program includes the following objectives:

- Expand groundwater level monitoring in priority County subareas to improve the understanding of the occurrence and movement of groundwater, identification of vertical hydraulic head differences in the aquifer system and aquifer-specific groundwater conditions, especially in areas where short- and long-term development of groundwater resources are planned (this includes additional monitoring in the area between the NVF-MST Subarea and the northeastern part of the NVF-Napa Subarea to determine whether groundwater water conditions in the NVF-MST are affecting other areas);
- Detect the occurrence of, and factors attributable to, natural (e.g., direct infiltration of precipitation, surface water seepage to groundwater, groundwater discharge to streams) or induced factors (e.g., pumping, purposeful recharge operations) that affect groundwater levels and trends;
- Identify where data gaps occur in the key subareas and provide infill, replacement, and/or project-specific monitoring (e.g., such as may occur for planned projects or expansion of existing projects) as needed;
- Establish a monitoring network to refine estimates of groundwater inflows (subsurface groundwater inflow, recharge from rainfall, streamflow, and irrigation, etc.), groundwater outflows (groundwater pumping, evapotranspiration, subsurface groundwater outflow, etc.) and change in groundwater storage (groundwater budget) for key subareas;

- Identify appropriate monitoring sites to further evaluate surface water-groundwater interaction and recharge/discharge mechanisms, including whether groundwater utilization is affecting surface water flows;

- Generate data to better estimate groundwater basin conditions and assess local current and future water supply availability and reliability; update analyses as additional data become available; and

- Coordinate with other entities on the collection, utilization, and incorporation of groundwater level data in the countywide Data Management System (DMS).

3.3 Groundwater Quality Monitoring Objectives

The primary objectives of the countywide groundwater quality monitoring program include:

- Evaluate groundwater quality conditions in the various county subareas and identify differences in water quality spatially between areas and vertically in the aquifer system within a subarea;

- Identify where data gaps occur and provide infill, replacement, and/or project-specific monitoring (e.g., such as may occur for planned projects or expansion of existing projects) as needed;

- Detect the occurrence of and factors attributable to natural (e.g., general minerals and trace metals) or other constituents of concern;

- Establish baseline conditions in areas of potential salt water intrusion, including the extent and natural occurrence and/or causes of saltwater beneath the Carneros, Jameson/American Canyon and Napa River Marshes Subareas;

- Assess the changes and trends in groundwater quality;

- Identify the natural and human factors that affect changes in water quality; and

- Coordinate with other entities on the collection, utilization, and incorporation of groundwater quality data in the countywide DMS.

3.4 Collaboration and Funding for Groundwater Monitoring

As described above, the County wishes to promote interagency collaboration and coordination on the collection, utilization, and incorporation of groundwater monitoring data into the DMS and to achieve countywide groundwater resources goals and monitoring objectives. As also noted above, the County has an existing Action Item (CON WR-9.5) that sets forth its interest in working with the SWRCB, DWR, DPH, CalEPA, and applicable County and City agencies to

seek and secure funding sources for the County to develop and expand its groundwater monitoring and assessment, and undertake community-based planning efforts aimed at developing necessary management programs and enhancements.

The Groundwater Management Act adopted in 2002 (SB 1938) amended and expanded AB 3030 groundwater management plans. As discussed in the technical memorandum prepared for the County on *Groundwater Planning Considerations and Review of Napa County Groundwater Ordinance and Permit Process* (LSCE, 2011), the California Water Code requires public agencies seeking priority for state funds administered through DWR (e.g., Local Groundwater Assistance (LGA) grant program) for the construction of groundwater projects or groundwater quality projects to prepare and implement a groundwater management plan with certain required components (Water Code Section 10753.7). Previously, all plans were voluntary, and there were no required plan components. The requirements now include establishing basin management objectives, preparing a plan to involve other local agencies in the basin in a cooperative planning effort, and more comprehensive monitoring programs (including groundwater levels and quality; surface water flows and quality; and inelastic land surface subsidence for basins where it is identified as a potential concern) to assess changes in basin conditions and "generate information that promotes efficient and effective groundwater management" (Water Code Section 10753.7).

As described above, on November 6, 2009, SBx7-6 (e.g., the CASGEM program) was enacted. This revised Water Code Section 10920 et seq. and established a groundwater monitoring program designed to monitor and report groundwater elevations in all or part of a basin or subbasin. These new requirements also limit counties and various entities' (Water Code Section 10927.(a)-(d), inclusive) ability to receive state grants or loans in the event that DWR is required to perform groundwater monitoring functions pursuant to Water Code 10933.7 (DWR, 2012). The goal of the LGA grant program is to improve groundwater resource management and the knowledge of various groundwater basins throughout the state by funding projects that will provide long-term benefit to the management of groundwater (DWR, 2012). A comprehensive groundwater monitoring program is an integral part of this goal. As such, this Plan would greatly improve the County's ability to apply for state and possibly federal funds in the future.

A Tradition of Stewardship
A Commitment to Service

Napa County Groundwater Resources Advisory Committee

DRAFT COMMUNICATION AND EDUCATION PLAN

Draft Version 4 - June 28, 2012

I. Purpose and Overview

The purpose of this plan is to serve as a strategic guide for the public communication and education activities of the Napa County Groundwater Resources Advisory Committee (GRAC). The **communication goal** of the plan is to ensure that interested parties, and Napa County residents as a whole, are well-informed of the deliberations and activities of the GRAC. The **education goal** of the plan is to increase the understanding of groundwater resources so that interested parties and Napa County residents as a whole have a factual basis for discussion and decision making. Key elements of this plan include a set of objectives and guiding principles, a list of potential audiences and partners, and fundamental messages. A series of communication and education strategies are also provided. The last element of the plan includes a recommendation for periodic evaluation of the plan's implementation and effectiveness.

II. Objectives

A. Ensure that interested parties and residents as a whole are aware of the GRAC's work, schedule, progress, and deliberations, and have opportunities to provide input.
B. Expand participation in the County's voluntary groundwater level monitoring efforts and potential optional groundwater quality monitoring.
C. Establish a common understanding of groundwater resources in the County, including conditions and trends evidenced by monitoring data and scientific analyses.
D. Support informed public dialogue and policy decision-making regarding groundwater resources in Napa County.
E. Establish consensus from the GRAC members on the Communication and Education Plan and its purpose.

III. Guiding Principles

A. Be proactive and utilize GRAC member's existing networks to help locate appropriate well owners.
B. Partner with interested groups and individuals to leverage existing communication networks and programs.
C. Provide information and materials in a timely manner, allow interested parties to provide input and participate.
D. Consistently characterize messages and activities, so that interested parties in different areas hear the same messages.

E. Tailor messages and materials to different audiences to increase their effectiveness.

IV. Priorities

The following is a prioritized list of communication and education actions:

1) Develop a GRAC brochure (folded 11x17 tabloid) and informative slip-sheets (8.5x11 maps, current activities, report summaries, staff contacts and GRAC membership…).
2) Actively reach out to well owners to participate in voluntary groundwater level monitoring in high priority sub-areas.
3) Utilize outreach and education to attract well owners to participate in the voluntary groundwater level monitoring program.
4) Identify education and communication partners and partnerships (particularly those identified in the 2010 Groundwater Stakeholder Assessment).
5) Maintain and promote use of GRAC website (http://www.countyofnapa.org/bos/grac/).

V. Audiences and Partners

Groundwater resource issues involve a broad range of geographical and interest-based audiences and partners. Below is a partial list of likely audiences:

1) Well owners who voluntarily participate in groundwater level monitoring and optional water quality monitoring;
2) Landowners and other interested parties in under represented groundwater basins identified by the CA Dept. of Water Resources (Pope Valley, Clearlake Pleistocene Volcanic Area, and Berryessa Valley groundwater basins);
3) Landowners and other interested parties in the Napa-Sonoma Valley groundwater basin, including the Milliken-Sarco-Tulocay, Angwin, Carneros, Calistoga, St. Helena, Yountville, and Napa sub-areas;
4) County residents (incorporated and unincorporated);
5) Agricultural and wine industry groups;
6) Environmental and park/open-space groups;
7) Residential and commercial developers;
8) Community groups interested in water resources;
9) Landowner/Homeowner groups and associations;
10) Public agencies (local, regional, state, federal); and
11) Elected officials.

In general, messages and materials will need to be addressed to County residents as a whole. However, in many cases information should be tailored to specific audiences. Additional special audiences will need identification; for example the elderly, minorities, non-English speakers and disadvantaged communities[1].

Some members of the audiences listed above may choose to support the GRAC's communication and education efforts, thereby becoming GRAC partners in outreach. In the 2010 Stakeholder Assessment (see GRAC website), several organizations volunteered to use their existing networks to help share information and news with their constituencies. Creating partnerships with these organizations and use of their networks will be critical to maximizing the efficiency and effectiveness of GRAC outreach efforts. Additional partners will be solicited as GRAC activities are developed.

VI. Partners

Various partners in groundwater education and communication may include:

Napa Valley Grape Growers Association	California Department of Water Resources
Napa Valley Vintners	State legislative representatives
Wine Growers of Napa County	Regional Water Quality Control Board
Napa Sustainable Winegrowing Group	City of American Canyon
Napa Valley Vineyard Technical Group	City of Calistoga
Napa Valley Wine Technical Group	City of Napa
Napa Valley Land Stewards Alliance	City of St. Helena
Napa Sanitation District	Town of Yountville
Napa County Watershed Information Center & Conservancy	USDA Natural Resource Conservation Service
Napa County Farm Bureau	EcoVines
Los Carneros Water District	Fire Safe Councils

1 CAL. PRC 75005(g) "Disadvantaged community" means a community with a median household income less than 80% of the statewide average. "Severely disadvantaged community" means a community with a median household income less than 60% of the statewide average.

Living Rivers Council	Friends of the Napa River
Homeowner associations	Get a Grip on Growth
Napa County Resource Conservation District	Groundwater Under Local Protection
Sierra Club, Napa County Chapter	Trout Unlimited
Local Food Council	Ducks Unlimited
	Others

Partners may also include specific press and media outlets:

Napa Valley Register	Weekly Calistogan
Lake Berryessa News	Calistoga Tribune
Marketplace Magazine	American Canyon Echo
Angwin Reporter	American Canyon Eagle
Yountville Sun	Lake Berryessa News
St. Helena Star	Vallejo Times Herald
Santa Rosa Press Democrat	San Francisco Chronicle
Cronicas (Spanish)	La Voz (Spanish)
Napa Valley Life Magazine	Napa Valley Marketplace
North Bay Business Journal	Napa Valley TV (Ch. 27 & 28)
Radio (KVON AM 1440, KVYN FM 99.3)	Others

VII. Messages

The GRAC will identify several key messages to be used for outreach and education. Examples of global messages regarding groundwater are:

a. Groundwater is a vital water source for residential, commercial and agricultural users in Napa County.

b. Napa County has a number of unique and hydrologically distinctive groundwater subareas.

c. The Napa Valley Floor (St. Helena, Yountville, and Napa areas), except for the Milliken-Sarco-Tulocay (MST) Subarea, generally has stable long term trends and a shallow depth to groundwater level (10-30 feet below ground surface).

d. High priority subareas and monitoring needs will be determined as part of the GRAC's work plan.

e. A common fact-based understanding of groundwater resources in the County supports more informed public dialogue and public-policy decision-making. While observation helps to identify concerns, factual information and thoughtful technical analyses provides the foundation for informed decision-making.

Examples of messages that will need to be tailored to match the objectives and purpose of the GRAC may include:

f. The importance of better understanding of county-wide hydrogeologic conditions in order to better understand groundwater priority areas within Napa County.

g. How to participate in voluntary groundwater level monitoring and optional water quality monitoring.

h. How groundwater information will be used and refined as resources and monitoring information becomes available.

i. What kind of groundwater data will be gathered, when and by whom, and how will it be used?

j. What is the confidentiality of the data collected?

k. What are the benefits to and incentives for, participants in the voluntary monitoring program?

l. The importance of voluntary groundwater level data is to help anticipate future groundwater issues.

m. Groundwater level data is primarily collected within the Napa Valley Floor Subareas, leaving the rest of the County unaccounted for.

n. Groundwater quality monitoring data is more spatially distributed than groundwater level data.

Additional messages will be developed as needed for specific areas, special audiences, specific groundwater topics and actions undertaken by the GRAC.

VIII. Communication and Education Strategies

This section identifies seven primary communication and education strategies that provide a framework for more specific activities. Each strategy includes information on supporting

materials, audiences that would benefit, next step timelines, potential constraints and potential partners.

1. Develop a standardized series of general promotional and educational brochures (press materials), as well as activity/topic-specific materials as needed.

Materials: GRAC brochure (folded 11x17 tabloid) and informative slip-sheets (8.5x11 maps, current activities, report summaries, staff contacts and GRAC membership…), informational letters to current and potential groundwater level monitoring volunteers, newsletter articles to targeted groups, answers to frequently asked questions (all in electronic and hard copy)
Special Target Audiences: county residents and others as appropriate
Next Steps & Timelines: general promotional materials during 3rd quarter of 2012, activity and topic-specific materials in coordination with the GRAC's work plan
Constraints: need for subject matter expertise, graphic design and printing
Potential partners: none, GRAC members will work with County staff to develop materials (staff may enlist graphical support, outside printing)

2. GRAC members periodic briefing of the geographical or interest-based groups they represent, participate in, or serve as appointed members on the GRAC.

Materials: standard promotional materials mentioned above; PowerPoint presentations with talking points about work plan, progress, and milestones
Special Target Audiences: constituencies represented on the GRAC, regional and sub-regional groups, community-based groups, groups listed as potential partners
Next Steps & Timelines: identify initial dates for briefings, prepare materials, assign appropriate GRAC members
Constraints: need for consistent messaging and characterization of the GRAC's activities
Potential partners: organizations that GRAC members participate in, potential partners listed above, the GRAC members themselves

3. GRAC members and County staff conduct an annual round of briefings for elected officials and agency executive officers, including but not limited to members of the Watershed Information Center and Conservancy (WICC) Board of Napa County.

Materials: standard promotional materials mentioned above
Special Target Audiences: state legislative representatives, county supervisors, mayors and council members, federal and state agency executive officers and staff
Next Steps & Timelines: identify appropriate period for briefings and schedule well in advance (e.g., Joint GRAC-WICC meeting-July 26, 2012), identify appropriate briefing format and appropriate group (staff/GRAC members) to conduct briefings, develop key messages and supporting materials
Constraints: limited availability of elected officials and agency executive officers

Potential partners: none (GRAC members will work with County staff)

4. GRAC hosting of public workshops or other public events. Including events that may coincide with the rollout of key deliverables, such as the County's monitoring program, revised pump test protocols and related revisions to the groundwater ordinance, and groundwater sustainability objectives.

Materials: special announcements; materials to support the event activities
Special Target Audiences: Napa County residents as a whole, perhaps with identical workshops in the northern and southern parts of the County. Collaborate with industry groups to develop workshop topics. Potential topics may include best sustainable practices and water use efficiency. Showcase examples of better sustainable practices.
Next Steps & Timelines: agree upon deliverables that will need a public rollout component, the type of public input desired (e.g., comment on draft, comment on final), and a corresponding timeframe (See GRAC Work Plan)
Constraints: advance scheduling and publicity required to ensure turnout, significant logistical and administrative work, and associated costs.
Potential partners: WICC, other local organizations or educational groups listed above as potential partners

5. Use the GRAC's website (http://www.countyofnapa.org/bos/grac/) as an informational clearinghouse for materials associated with the GRAC meetings and general communication and education efforts.

Materials: standard promotional materials mentioned above, special meeting/workshop materials developed, and posting of existing materials developed for regular GRAC meetings and activities
Special Target Audiences: all audiences
Next Steps & Timelines: continual, the website has been official and functioning since June, 2011, redesign of the site as needed to accommodate the assimilation of information over time
Constraints: organization and accessibility as documents accumulate, staffing resources and expertise for upkeep and maintenance
Potential partners: none (County staff will maintain the website)

6. Development and maintenance of an interested-parties email and address distribution list, including denotation of parties that express an interest in partnering with the GRAC.

Materials: email and address data management software, and existing news, promotional and educational materials
Special Target Audiences: individual interested parties

Next Steps & Timelines: develop and solicit initial list during 3rd quarter of 2012, with ongoing expansion and maintenance
Constraints: staffing resources needed to maintain up-to-date entries
Potential partners: none (County staff will develop and maintain the list)

7. Proactively develop and regularly utilize relationships with key public relations, press and media outlets for the purpose of sharing news and information.

Materials: meeting synopses, statements developed by the GRAC, telephone calls, talking points, frequently asked questions
Special Target Audiences: Napa County residents as a whole
Next Steps & Timelines: County staff to identify and contact major press and media outlets as needed
Constraints: inability to control final product, need to adhere to GRAC Media Protocol
Potential partners: See potential list above

IX. Evaluation

As part of its normal business, the GRAC will periodically evaluate the effectiveness of its communication and education efforts, and revise this plan accordingly.

A Tradition of Stewardship
A Commitment to Service

Napa County
Groundwater Resources
Advisory Committee

Frequently Asked Questions
Draft Version 2 – June 28, 2012

What is groundwater?

- Groundwater is water below the ground surface contained in formations know as aquifers. An aquifer consists of permeable materials such as sand and gravel and yields economically significant quantities of water to wells and springs.

Why is groundwater important to Napa County?

- Groundwater is a vital part of the water supply in Napa County. Many residents, businesses and crops in Napa County rely at least partially on groundwater as their water supply.

What are the benefits of monitoring groundwater levels?

- Track and assess seasonal and long-term trends in groundwater storage;
- Estimate recharge rates and where recharge occurs;
- Determine direction of groundwater flows; and
- Improve the understanding of aquifers throughout the County.

Where is additional groundwater level data needed?

- Priority water level monitoring areas are currently being determined. Please see the Groundwater Monitoring Plan on the GRAC website. Visit www.countyofnapa.org/bos/grac for additional information.

Who collects the well measurements?

- Groundwater measurements are taken by Napa County Department of Public Works or its contractor.

How many wells are monitored in Napa County?

- Groundwater levels are currently monitored at 120 sites by Napa County or other entities and groundwater quality is currently monitored 185 sites by Napa County or other entities. Additional wells are being added to the monitoring program.

How often are groundwater levels monitored?

- Groundwater level monitoring generally takes place twice per year in April and October.

How long has voluntary groundwater level monitoring occurred in Napa County?

- Some wells in Napa County have been measured for more than 40 years.

What is the GRAC?

- On June 28, 2011 the Board of Supervisors approved creation of a Groundwater Resources Advisory Committee (GRAC). The GRAC assists County staff and technical consultants with recommendations regarding groundwater, including data collection, monitoring, well pump test protocols, management objectives, and community support. A 15 member committee was appointed on September 20, 2011. Please visit www.countyofnapa.org/bos/grac to find more information.

What is CASGEM?

- CASGEM stands for California Statewide Groundwater Elevation Monitoring Program [www.water.ca.gov/groundwater/casgem/], which was developed in November 2009 as required by SBX7-6, mandating that the groundwater elevations in all basins and sub-basins in California be monitored for seasonal and long-term trends. Napa County volunteered to be the monitoring entity for the County in December 2010 and has been designated as the Countywide Monitoring entity by DWR. There are currently 18 property owners who volunteered to participate in the CASGEM program.

What is the Voluntary Groundwater Level Monitoring Program and why is it important?

- The Voluntary Groundwater Level Monitoring Program allows landowners to have the depth to groundwater level measured in their wells twice per year to improve understanding of groundwater in Napa County. Privately owned volunteer wells augment the network of currently monitored wells tracking the groundwater elevation. It is important to track the groundwater elevation as that will help the County assess the overall status of the aquifer and identify locations for future recharge.

Will the County be measuring how much water I use?

- No. The amount of groundwater used will not be measured. The measurement will only document the depth to groundwater in the well (water level).

Will someone try and curtail my groundwater use if I participate in the program?

- No. The Voluntary Groundwater Level Monitoring Program is a non-regulatory, volunteer program that only measures the groundwater elevation/level in volunteer wells. Groundwater use is not being measured or monitored as part of this program.

How long is the voluntary groundwater level monitoring program anticipated to last?

- The monitoring program will last indefinitely into the future as long as funding for the program is available. As priority sub-basins are identified, the voluntary monitoring program may change to focus on specific areas.

Who is eligible to participate?

- Priority sub-basins in Napa are currently being identified. If your well is within the priority sub-basins and a well completion report is available for your well, you may be eligible to participate. For more information about the volunteer program, visit: www.countyofnapa.org/bos/grac.

Where are priority monitoring areas located?

- Priority monitoring areas are currently being developed. More information will be available on the website at: www.countyofnapa.org/bos/grac.

What is required from me if I want to participate?

- Participating well owners must sign an agreement allowing the release of depth to groundwater data and a permit to enter.
- Participating volunteers must be willing to allow Napa County Department of Public Works or its contractor to access the well and measure the groundwater elevations twice per year (in the spring and fall).

How will the collected information be used?

- To monitor and track groundwater level elevations;
- Understand the relationship and interact between surface water and groundwater;
- Maintain a central data management system of monitoring; and
- Improve the accuracy and reliability of relevant water resource models.

Will my privacy be protected?

- Napa County will not publish your personal information as part of the monitoring program. Data collected will be used to create maps indicating groundwater levels and trends. These maps will be publically available, but specific well locations will not be shown. If a volunteer decides to participate in the California Department of Water Resources California Statewide Groundwater Elevation Monitoring (CASGEM) program, then well location and well construction details will be public.

What if a well owner participating in the voluntary groundwater level monitoring program withdraws from the program?

- Gathering depth to groundwater data for a long period of time is critical to understanding groundwater level trends. Volunteers are encouraged to participate in the program for the duration but may choose to leave the program at any time.

What are the benefits of participating in the voluntary groundwater level monitoring program?

- Volunteers will receive accurate groundwater level readings twice per year (late spring and late fall);
- Volunteers will be able to see seasonal and long-term groundwater level trends of their well;
- Volunteers will receive water quality data if testing agreed to and if it is conducted;
- Data will improve the understanding of our groundwater resources community-wide; and
- There is no cost to the landowner to participate in the program.

How Can I find additional information about the program?

- Please visit www.countyofnapa.org/bos/grac.