



A Tradition of Stewardship
A Commitment to Service



Committee Members

Michelle Benvenuto
Tucker Catlin
Alan Galbraith
Don Gleason
Dave Graves
Michael Haley
Peter McCrea
Charles Slutzkin
Steve Soper
Marilee Talley
Bill Trautman
Jim Verhey
Susanne von Rosenberg
Duane Wall
Dale Withers

AGENDA

REGULAR COMMITTEE MEETING

Thursday, February 28, 2013, 2:00 p.m.

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

1. CALL TO ORDER & ROLLCALL
2. WELCOME & OPENING REMARKS
(Staff, Consultant, Committee)
3. ORGANIZATIONAL ITEMS (5 min)
(Staff, Consultant, Committee)
 - a. APPROVAL OF ACTION MINUTES & MEETING SUMMARY
 - b. REVIEW WORK PLAN/SCHEDULE
 - c. 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. REPORT ON UPDATED HYDROGEOLOGIC CONCEPTUALIZATION AND CHARACTERIZATION OF CONDITIONS – PART II (85 min)
(Vicki Kretsinger Grabert/LSCE)
 - OVERVIEW & RECAP OF JANUARY PRESENTATION
 - PRESENTATION ON : REGIONAL GEOLOGY, SURFICIAL-STRUCTURAL-SUBSURFACE GEOLOGY, HYDROGEOLOGY AND SURFACE WATER/GROUNDWATER INTERACTIONS
 - Q&A - DISCUSS GRAC QUESTIONS
- COMMITTEE BREAK (CHAIR TO CALL)

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

b. GROUNDWATER (GW) MONITORING DATA MANAGEMENT (20 min)

(Phil Miller, Deputy Director/Public Works)

- UPDATE ON GW DATA MANAGEMENT
- GW DATA MANAGEMENT & DISCLOSURE GUIDANCE DOCUMENT REVIEW/APPROVAL
- Q&A - DISCUSS GRAC QUESTIONS

c. DISCUSSION OF INDUSTRY/PUBLIC OUTREACH & WELL OWNER OUTREACH (20 min)

(Patrick Lowe, Natural Resources Manager/Public Works)

- REVIEW OUTREACH AREAS/MAP/ GRAC MEMBER SIGN-UPS
- UPDATES/OUTREACH FOR INDUSTRY/PUBLIC BY GRAC MEMBERS
- Q&A - DISCUSS GRAC QUESTIONS

d. DISCUSSION OF BOARD OF SUPERVISORS UPDATE/PRESENTATION (10 min)

(Steve Lederer, Director of Public Works; Patrick Lowe, Natural Resources Manager/Public Works)

- UPDATE PRESENTED BY THE CHAIR OF THE GRAC
- ACCOMPLISHMENTS/WORK PLAN-SCHEDULE/OUTREACH/GWMP
- Q&A - DISCUSS GRAC QUESTIONS

6. OTHER BUSINESS

a. UPDATE ON DWR GRANT APPLICATION FOR GROUNDWATER MONITORING WELLS (5 min)

(Patrick Lowe, Natural Resources Manager/Public Works)

7. ANNOUNCEMENTS

a. UPCOMING EVENTS OR ITEMS OF INTEREST FROM THE COMMITTEE AND STAFF (5 min)

8. FUTURE AGENDA ITEMS

a. GROUNDWATER ORDINANCE & PERMIT PROCESS UPDATES (LSCE/JAN 2011) (5 min)

(Patrick Lowe, Natural Resources Manager/Public Works)

9. ADJOURNMENT to the NEXT REGULAR MEETING (Chair)

- Meeting Date: Thursday, April 25, 2013 – 2:00PM

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
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ACTION MINUTES

NAPA COUNTY GROUNDWATER RESOURCES ADVISORY COMMITTEE MEETING

January 31, 2013

1. CALL TO ORDER & ROLL CALL

The Napa County Groundwater Resources Advisory Committee (GRAC) met in special session on Thursday, January 31, 2013 with the following members present:

Michelle Benvenuto; Vice-Chair Tucker Catlin; Alan Galbraith; Don Gleason; Michael Haley; Chair Peter McCrea; Charles Slutzkin; Steve Soper; Marilee Talley; Jim Verhey; Susanne von Rosenberg; Duane Wall; and Dale Withers. Dave Graves arrived during Item 3.a, and Bill Trautman was excused.

2. WELCOME & INTRODUCTIONS

Chair Peter McCrea provided opening comments.

3. ORGANIZATIONAL ITEMS

a. ELECTION OF OFFICERS

Peter McCrea was nominated and re-elected as Chair. Tucker Catlin chose not to be re-elected as Vice-Chair. Michelle Benvenuto was nominated and elected as Vice-Chair.

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

b. ADOPTION OF 2013 REGULAR MEETING CALENDAR

Meeting calendar adopted as presented.

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

c. APPROVAL OF ACTION MINUTES AND MEETING SUMMARY

Action Minutes and Meeting Summary of the October 25, 2012 regular meeting approved.

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

d. REVIEW MEETING AGENDA AND PROCESS

Dorian Fougères, Ph.D., Mediator, Center for Collaborative Policy, CSUS, briefly reviewed the background and purpose of each agenda item.

4. PUBLIC COMMENT

None.

5. PRESENTATIONS AND DISCUSSION ITEMS

- a. CONSIDER ADOPTION OF THE GROUNDWATER MONITORING INFORMATIONAL BROCHURE AND OUTREACH MATERIALS

Michael Haley referred to the summary of the last ad hoc subcommittee meeting of November 29, 2012 and the latest recommended draft of the informational brochure and inserts included in the agenda packet. Alan Galbraith provided editorial comments prior to the meeting that will be incorporated in the final version. Additional comments provided by the GRAC during the meeting were as follows: Under “What we know” on the first page of the brochure, move or repeat the sentence “Based on the studies by the County’s consultant, LSCE and MBK Engineers...” to be at the beginning of the “Groundwater Levels” section to validate the conclusion of the LSCE 2011 report (TC and SV); have back-up information available when discussing disclosure via a Public Records Act request (MT); ask County Counsel to provide a memorandum expressing their opinion on the likelihood of disclosure (SV and MB); request that the Board of Supervisors (BOS) go on record stating it is in the public’s interest not to release this information (DG1); the materials refer to both 17 and 18 areas of interest – this number should be consistent (DW1); under No. 3 of the Data Management and Disclosure insert, the second and third bullet points appear inconsistent in that the second bullet point states everything is available but the third bullet point states everything is available except well completion reports (AG); and suggest reviewing the usage of historic vs. historical (MT). A motion was made and approved to adopt the groundwater monitoring informational brochure and outreach materials with the inclusion of the suggested grammatical/proofreading comments.

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

A motion was made and approved to have Chair Peter McCrea provide an update to the BOS and convey the GRAC’s request that the BOS support keeping groundwater monitoring data confidential to help encourage participation in the program.

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

- b. CONSIDER ACCEPTANCE OF THE NAPA COUNTY GROUNDWATER MONITORING PLAN AND RECOMMEND PRESENTATION TO THE BOARD OF SUPERVISORS

Vicki Kretsinger Grabert, Principal Hydrologist, LSCE, went over the latest edits to the Groundwater Monitoring Plan. Additional information was added on page 45 under Section 6 – Reporting that explains the purposes and differences of the annual groundwater monitoring progress and data report and the triennial Countywide reporting on groundwater conditions. The annual groundwater monitoring progress and data report is more streamlined to annually revisit what the objectives are and if they are being met, which includes a summary of the information. It is recommended that the triennial Countywide reporting on groundwater conditions has a more exhaustive evaluation of the data which looks at trends and conditions around the county, as well as to constantly check in on the coordination of other programs and entities and to see how monitoring is meeting objectives. Marilee Talley suggested the following sentence be added to

Item 5.b...Continued

this section to ensure the public has access to the reports and that they remain living documents and aren't filed away in a document library: To facilitate community understanding of Napa County groundwater/surface water systems, the reports described in this section will be published in a manner that gives full and easy access to the public. Appendix C was revised to add a paragraph titled "Pumping Water Level on Arrival" under the Special Circumstances section that describes the approach to measuring water levels without it being tied to a specific amount of time within well pumping and so that there is a process to ensure there is a static water level that is represented by the measurement. There were also minor editorial revisions that were made to the plan. Ms. Kretsinger Grabert reported that LSCE and County staff discussed what it would cost for a quality sample. It was estimated that a baseline sample containing samples of general minerals and drinking water metals would cost approximately \$330.00 per sample. The sample would occur initially to be followed by a confirmation sample and would then spread out over a several-year period. It was recommended in the interim for consistency, and partly because of what is coming up with the long-term irrigated lands regulatory program and the State Water Resources Control Board's salt and nutrient management plan, that a sample collected for salt (total dissolved solids [TDS]), nitrate, and chloride analyses be used for quality sampling, which would cost about \$35.00 per sample. A motion was made and approved to accept the Groundwater Monitoring Plan and to include the suggested edit by Marilee Talley.

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

c. REPORT ON UPDATED HYDROGEOLOGIC CONCEPTUALIZATION AND CHARACTERIZATION OF CONDITIONS

Vicki Kretsinger Grabert, Principal Hydrologist, LSCE, and Lee Bergfeld and Patrick Ho, MBK Engineers, presented Part 1 of a PowerPoint presentation on the Updated Hydrogeologic Conceptualization and Characterization of Conditions report. Ms. Kretsinger Grabert went over the following information: The County's water resources goals of collecting information about the status of surface water and groundwater resources, implementing a Countywide watershed program, and the monitoring of groundwater/surface water interrelationships; the tasks outlined in the County's comprehensive Groundwater Monitoring Program; study recommendations and data gaps; groundwater level and quality priority subareas; the project overview/work by LSCE and MBK Engineers on updated hydrogeologic conceptualization and characterization; and groundwater balance. Mr. Bergfeld and Mr. Ho presented an overview on groundwater recharge that touched on an analytical approach; a root-zone water balance model and inputs; precipitation gages and PRISM; flow gages and records; evapotranspiration; deep percolation; results by gaged watershed for Dry Creek, Tulucay Creek, and the Napa River near Napa; water budget summary for available periods; precipitation and recharge depth for common periods; geologic units and areas of greatest recharge potential; recharge observations; sensitivity analysis; and future considerations. The remainder of the presentation will be presented with Part 2 at the GRAC February meeting.

6. OTHER BUSINESS

a. UPDATE ON GROUNDWATER DATA MANAGEMENT & DISCLOSURE GUIDANCE DOCUMENT
Dorian Fougères, Ph.D., Mediator, Center for Collaborative Policy, CSUS distributed the draft Groundwater Data Management and Disclosure guidance document on behalf of Phil Miller,

Item 6.a – Continued

Deputy Director-Flood Control and Water Resources, Public Works. Patrick Lowe, Natural Resources Conservation Program Manager, Public Works, requested the GRAC take the document with them to review before the February meeting, at which time Mr. Miller will present the item and will entertain questions and feedback. Mr. Lowe added that a digital version of the document would be provided to the GRAC as well.

b. UPDATE ON DWR GRANT APPLICATION FOR GROUNDWATER MONITORING WELLS

No decision by DWR at this time.

7. ANNOUNCEMENTS

None.

8. FUTURE AGENDA ITEMS

- **Part 2 of the presentation on Updated Hydrogeologic Conceptualization and Characterization of Conditions report**
- **Review draft Groundwater Data Management and Disclosure guidance document**
- **Discussion of the GRAC update and presentation for the April 2 BOS meeting**
- **Discussion of beginning outreach efforts to the respective industry groups/public – April-July)**

9. ADJOURNMENT to the NEXT MEETING

Adjourned to the next regular meeting of the Napa County Groundwater Resources Advisory Committee on Thursday, February 28, 2013 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 = Don 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

January 31, 2013

Produced by the Center for Collaborative Policy, CSUS

Meeting Synopsis

The Napa County Groundwater Resources Advisory Committee (GRAC) held its ninth meeting on January 31, 2013. Mr. Peter McCrea was nominated and reelected as Chair. Mr. Tucker Catlin stepped down as Vice-Chair of the Committee; Ms. Michelle Benvenuto was nominated and elected to Vice-Chair. Mr. Michael Haley, Ad Hoc Communication Committee, presented the updated groundwater monitoring informational brochure and outreach materials. After discussion about whether the materials struck a good balance between informing landowners of potential risks and encouraging participation, the Committee made final edits and adopted the materials. Ms. Vicki Kretsinger Grabert, Luhdorff and Scalmanini Consulting Engineers (LSCE), presented the updated Napa County Groundwater Monitoring Plan. After final questions for clarification, and agreement to include additional language on the public accessibility of reports, the Committee accepted the Plan and recommended its presentation to the Board of Supervisors.

Starting a new Committee work effort, Ms. Vicki Kretsinger Grabert, LSCE, and Mr. Lee Bergfeld and Mr. Patrick Ho, MBK Engineers, presented the Updated Hydrogeological Conceptualization and Characterization of Conditions (Report). This presentation was Part I of information on the Report; Part II of the presentation will occur at the Committee's next meeting. Mr. Bergfeld and Mr. Ho described the groundwater recharge analysis that was carried out, explaining the overall approach, data sources, modeling assumptions, and results, including areas of greatest potential recharge. The outcomes will be used in further analysis of the watershed area and the interactions between groundwater and surface water in the county. The Committee's next meeting will present more on the Report, focused on the county's surficial, structural and subsurface geology, hydrogeology, and surface water/groundwater interaction. The Committee was provided with a copy of the draft Groundwater Data Management & Disclosure Guidance Document for review prior to its presentation at the next meeting. The Committee's next regular bi-monthly meeting will be held on February 28, 2013.

Please see the GRAC's webpage (www.countyofnapa.org/bos/grac) for copies of the presentations and handouts from the January 31, 2013 meeting.

Table of Contents

Meeting Synopsis	1
Action Items	2
1. Call to Order & Roll Call	2
2. Welcome & Opening Remarks.....	2
3. Organizational Items.....	3
4. Public Comment.....	3
5. Presentations and Discussion Items	3
6. Other Business	11
7. Announcements.....	12
8. Future Agenda Items.....	12
9. Adjournment to the Next Meeting.....	12
Attendees.....	12

Action Items

1. **STAFF** to make final edits to the Groundwater Monitoring Informational Brochure and Outreach Materials and include additional language on the public accessibility of monitoring reports.
2. **STAFF** to request that County Counsel provide the Committee with a written memorandum concerning which information will and will not be shared when a Public Records Act request is filed with the County.
3. **LEE BERGFELD, MBK**, to follow up with David Graves on the known gauge that has not been mapped in the Hydrogeologic Conceptualization and Characterization of Conditions study.
4. **LEE BERGFELD, MBK**, to provide an estimate of the recharge per acre for the different watersheds.

1. Call to Order & Roll Call

All members of the Napa County Groundwater Resources Advisory Committee (GRAC) were in attendance, except for William Trautman, who was excused.

2. Welcome & Opening Remarks

Chair Peter McCrea opened the session.

3. Organizational Items

a. Election of Officers

Mr. Peter McCrea was nominated and reelected as Chair. Mr. Tucker Catlin stepped down as Vice-Chair of the Committee; Ms. Michelle Benvenuto was nominated and elected to Vice-Chair.

b. Adoption of 2013 Regular Meeting Calendar

No adjustments were suggested to the 2013 Regular Meeting Calendar.

AGREEMENT: The 2013 Regular Meeting Calendar was unanimously adopted.

c. Approval of Action Minutes & Meeting Summary

No corrections were suggested to the January 31, 2013 meeting minutes and meeting summary.

AGREEMENT: The January 31, 2013 meeting minutes and meeting summary were unanimously approved

d. Review Meeting Agenda and Process

Facilitator Dorian Fougères reviewed the agenda.

4. Public Comment

Chair Peter McCrea invited public comments. None were provided.

5. Presentations and Discussion Items

a. Consider Adoption of the Groundwater Monitoring Informational Brochure and Outreach Materials

Mr. Michael Haley, Ad Hoc Communication Committee, presented the updated groundwater monitoring informational brochure and outreach materials. He noted that the brochure was reorganized for clarity and relevance and acknowledgment of risk. The Committee commended the Ad Hoc Committee on the improvements to make the documents clearer and more concise.

QUESTIONS AND DISCUSSION:

- **Suggestions for changes in the Brochure and Outreach Material:**
 - It was felt that the materials do not strongly show that the statements were validated by the study done by LSCE in 2011. Request to connect the text on the

first page of the brochure that starts with “Based on studies by the County’s ...” to the text after sub-point “Groundwater Levels.”

- In the Outreach Material labeled “Data Management and Disclosure” the second and third bullet points under point 3 (CASGEM) are inconsistent concerning the availability and publication of data. This should be checked.
- Review grammar, inconsistencies in numbering in the text and maps, the use of “historic” versus “historical”, and general editing.
- **Landowner risks and *EDEN v. Dunphy*.** One member raised the concern that the brochure did not sufficiently address the possible risks for landowners. It was noted that in January 2011, EDEN (Earth Defense for the Environment Now) appealed to the Board of Supervisors that Dunphy’s plans for a vineyard should require them to produce an Environmental Impact Report (EIR) due to the potential for significant environmental impacts from additional groundwater usage and other issues. Down the road, the information obtained through the voluntary groundwater monitoring program might be used in litigation to push for additional requirements.
 - The facilitator asked each Committee member to briefly share with the group whether they felt the materials struck the appropriate balance between encouraging participation and acknowledging potential risks for landowners.
 - Members commented that the materials struck the right balance. Members agreed that ultimately each landowner should review all the information, consider the risks, and make their own decisions; those that feel there is too much will not participate. At the same time, one member requested that County Counsel provide a written response clarifying the process for obtaining such information and whether it would be considered exempt from the normal process. Others suggested making a formal request to the Board of Supervisors to go on record to state that the information should be protected however possible.
 - Ms. Vicki Kretsinger Grabert, LSCE, noted that compared with 2011, more data now exist to demonstrate where a groundwater/surface water connection does – and does not – exist. The 2011 claims were generally applied to the county, and not entirely accurate.
 - Ms. Hillary Gitelman, Napa County, suggested the Committee could further discuss *EDEN v. Dunphy* at a future meeting if desired.
- **Release of information.** Question: In *Frequently Asked Questions for Well Owners*

the last sentence reads: “If information is requested through a Public Records Act request, the County will notify the well owner.” Does this mean the landowner will be informed prior to the release of information? Answer: Yes, there is a window of time between request and release of information that allows the County to inform the landowner. The request will only concern the water levels/quality measured, not other data such as the details of the well construction.

- **Before going to landowners.** Comment: Each Committee member needs to clearly know and be able to explain which information will be assessed in the program, and which information is protected and which information is not.
- **Adjustments to the Brochure and Materials at a later date (e.g., June 2013).** The Committee should check in once outreach is underway to determine whether materials need to be adjusted.
- **ACTION ITEM: STAFF** to make final edits to the Groundwater Monitoring Informational Brochure and Outreach Materials and include additional language on the public accessibility of monitoring reports.
- **ACTION ITEM: STAFF** to request the County Counsel to provide the Committee members with a written memorandum explaining the likelihood of disclosure and under what conditions information would be released when a Public Records Act request is filed.
- **AGREEMENT:** Chair Peter McCrea to relay the Committee’s request to the Board of Supervisors that they go on record to support that the information collected through the Groundwater Monitoring Program should be protected however possible and not be released due to the sensitive site-specific nature of that information.
- **AGREEMENT:** The Committee adopted the Groundwater Monitoring Informational brochure and Outreach Materials.

b. Consider Acceptance of the Napa County Groundwater Monitoring Plan and Recommend Presentation to the Board of Supervisors

Ms. Vicki Kretsinger Grabert, LSCE, presented the updated Napa County Groundwater Monitoring Plan (Plan) which included the revisions made based on the Committee comments and questions from the October 2012 meeting. Four points were presented relating to modifications to the Plan and follow-up to GRAC members’

questions/comments at the last meeting:

1. Additions to the Plan
2. Edits to Appendix C.
3. Minor Editorial adjustments
4. Water Quality Sampling Costs

Ms. Kretsinger Grabert responded to the question that was raised during the October 2012 meeting concerning the cost of water quality sampling. Testing a base-line sample (for general minerals such as sodium, calcium, bicarbonate, etc.) and testing a more extensive suite of drinking water metals (such as arsenic, chromium, iron-manganese, etc.) would cost approximately \$330 a sample. For consistency it was recommended to examine a subset of constituents, i.e., salt (total dissolved solids [TDS]), nitrate, and chloride concentrations, which would cost \$35 per sample. Such testing would also help comply with the upcoming Long-Term Irrigated Lands Regulatory Program and the State Water Resources Control Board requirements for Salt and Nutrient Management Plans.

QUESTIONS AND DISCUSSION:

- **Facilitating Community Understanding.** Suggestion: To ensure the public receives the documents and understands the information, it would be beneficial to make sure the figures are understandable and to consider adding a paragraph that reads: *To facilitate community understanding of Napa County groundwater/surface water systems the reports described in this section will be made public in a manner that gives full and easy access to the public.*
- **Taking a sample.**
 - Question: How would a sample be taken? Answer: It is of interest to ensure the representativeness of the sample, therefore it should NOT be taken after a pressure tank, directly after a pumping event, or from a stagnant source.
 - Concern: How long does the water have to “sit” before a sample and the water level can be taken? How can this work if the private well runs all the time? Response: Measuring static water levels and collecting samples would require coordination between the well owner and the monitoring person to determine the best time to take a sample and to monitor the levels. Static water levels are measured prior to collection of water samples.
- **AGREEMENT:** With the clarifying statement about the provision of public access, the Committee accepted the Napa County Groundwater Monitoring Plan and recommended presenting it to the Board of Supervisors.

- **AGREEMENT:** Chair Peter McCrea will present the Napa County Groundwater Monitoring Plan to the County Board of Supervisors.

c. Report on Updated Hydrogeologic Conceptualization and Characterization of Conditions

Starting a new Committee work effort, Ms. Vicki Kretsinger Grabert, LSCE, and Mr. Lee Bergfeld and Mr. Patrick Ho, MBK Engineers, presented the Updated Hydrogeological Conceptualization and Characterization of Conditions (Report).

Ms. Vicki Kretsinger Grabert, LSCE, started the presentation with a review of the Napa County water resources goals, the Comprehensive Groundwater Monitoring Program and the data obtained thus far. Ms. Kretsinger Grabert also reviewed the observed data gap which led to the suggestion for improving understanding of surface water/groundwater interaction, and priority areas for groundwater levels and groundwater quality. The project has completed three of its four tasks. The final task includes guidance for CEQA-related issues and analysis of surface water/groundwater interactions.

QUESTIONS AND DISCUSSION:

- **Understanding effect of water use.** Question: Will the report help the Committee understand the magnitude of the water use and its effect on the water system?
Answer: To some extent. That magnitude can only be directly derived in those areas where pumping measurements have been taken. Through extrapolation and simulation an indication of the water use values over the entire valley can be given.
- **Priority Subareas.** Question from the Public: The slides in the presentation show that there are six priority subareas for the groundwater level and only three priority sublevels for water quality (which are all in the lower area of the watershed). Does this mean there is less priority for groundwater quality in the upper watershed?
Answer: No. In previous presentations the distribution of current monitoring sites has been discussed. The indicated priority sub-areas were identified because there is a scarcity of information and thus there is a relative priority and particular interest in expanding the monitoring in those areas first. This does not, however, mean the other areas will be ignored.

COMMITTEE BREAK

c. (continued) Report on Updated Hydrogeologic Conceptualization and Characterization of Conditions

Mr. Bergfeld and Mr. Ho described the groundwater recharge analysis that was carried out, explaining the overall approach, data sources, modeling assumptions, and results, including areas of greatest potential recharge. MBK Engineers' study covered an attempt to quantify and better understand the groundwater recharge by examining the precipitation, the surface run-off (outflows), the infiltration into the root-zone and the evapotranspiration out of the root-zone over nine watersheds in the county. The study examined the variations in recharge and aimed to identify whether the variations were spatial and/or varied through time. The outcomes will be used in further analysis of the watershed area and the interactions between groundwater and surface water in the county.

QUESTIONS AND DISCUSSION:

- **Monthly time-step.** Question: The analysis was done at a monthly time-step, yet run-off varies greatly per season based on the saturation in the soil. Was this also done on an annual basis to determine what happens over a longer period of time? Answer: The precipitation time series includes the monthly estimated amount of water that is still in the soil (in the root-zone) at the start of the time series.
- **Valley as closed system.** Question: The valley floor is considered a closed system where only water flows in from precipitation. Is it possible that water flows in from an underground source, perhaps from Lake Berryessa? Answer: This analysis was to look at inflows from surface water and not to examine subsurface inflows into the system. That would be part of a broader analysis. However, an underground subsurface inflow that emerged as a surface run-off would be measured in this study as an outflow.
- **Gauge Information.** Comment: There is a stream flow gauge that is not on the map. It was installed by the Resource Conservation District (RCD).
 - **ACTION ITEM:** LEE BERGFELD, MBK, to follow up with David Graves on the known gauge that has not been mapped in the Hydrogeologic Conceptualization.
- **Drain tile.** Question: How is the effect of drain tile taken into account? Drain tile helps remove the water from the root-zone, which then may get pumped to the river. Answer: If the water returns to the river up-stream of the gauge it would be

accounted for. Concern: The affect the drain tile would have on infiltration/deep percolation, however, is then not taken into account.

- **Flow Gauges.** Question: Does the table on slide 17 on flow gauge records imply that only two of the gauges are working at the moment? It would appear that most of the gauges were operational 30 to 40 years ago. Answer: An analysis was done for all of these gauges, which does not require that the gauges are still operational. The analysis examined how much recharge would have occurred during the gauges' operational periods.
- **Change in rainfall patterns.** Question: How confident is the project team that rainfall patterns have not significantly changed over the last 30-40 years that it would not have affected the recharge? Answer: In the study the recharge was viewed as a function of precipitation and would therefore change according to the precipitation pattern. Results also include average annual recharge as a percentage of precipitation (see Table 8-9 of the report). These percentages are based on the period of analysis for each watershed. Recharge could be estimated using these percentages and a different period of historical precipitation records, though significant differences in the volume and timing of precipitation from the period of analysis for each watershed would increase the uncertainty in recharge estimates.
- **Deficit Irrigation.** Question: what is meant by “deficit irrigation” (slide 19)? Answer: It means that in practice less water is given to the vine than according to the Irrigation Training and Research Center (ITRC) value for evapotranspiration of a grape. The value used in determining the evapotranspiration for this study was therefore adjusted.
- **Root-zone depth.** Question: What is the depth used for the root-zone? Answer: It varied by the land-use types; trees have deeper roots than grasslands so they would extract water from a greater depth. Question: Is it being determined how much water is going through the root-zone and recharging? Answer: Yes. Water in the root-zone becomes available for evapotranspiration. If it is not used, it can percolate into the aquifer.
- **Scenario for climate change.** Question: The model is based on historical data and trends and what is known about evapotranspiration. Is there a scenario component in the model that would make it possible to examine the effect that known changes in the climate have on recharge to understand what may happen in the future? Answer: The model has relied on the historical data from the outflow gauge. It is an estimate of recharge that has likely occurred (under different climatic situations) and does not look at the affect of trends in changes in the climate.

- **Uncertainty.** Question: Will more information be given about confidence intervals or other parameters to help the Committee understand the uncertainty of the model? Answer. Yes, more information will be provided later in the presentation and in the report (note: uncertainty in estimated recharge is approximately +/- 20 percent).
- **Soil storage.** Question: How is the soil storage determined? Answer: It is dependent on the soil properties and soil moisture holding capacities in the root-zones.
- **Precipitation data.** Question: How far back do the precipitation data go? Answer: The precipitation data go back to 1909 at the rainfall gauge at Napa State Hospital. The analysis, however, was limited by the flow gauge data (see slide 17) which did not go back that far.
- **Changes in rainfall pattern.** Comment: It has been wetter in Napa County than in earlier times. Response: It could be possible to look at those precipitation patterns. Response: Sufficient analysis has been done to model the behavior of the watershed under a large range of precipitation. This information could be used to project what changes may occur in the future.
- **Effect of irrigation and pumping.** Question: How does the model take into account irrigation and thus pumping out of the aquifer? Answer: Pumping out of the aquifer is not in the water balance equation. However, surface water diverted from the stream and used for irrigation would not show up in the outflow gauge data. Instead, it would become part of the root-zone water balance model and helps meet the evapotranspiration. The same physical process holds true for water pumped out of the aquifer, it is inflow to the root-zone and helps meet evapotranspiration.
 - Comment: So it is unknown what the net recharge (recharge minus pumping) into the aquifer is. Nor is it known how the pumping correlates with the recharge. Response: That is correct. The study looked at the recharge to the aquifer, but not at the possible outflows such as pumping for irrigation. The pumped water (as an inflow to the root-zone) was not directly accounted for.
 - Comment: It should be possible to make assumptions about the net recharge that include pumping out of the aquifer for irrigation. This would mean looking at the acreage of vineyard and the average irrigation volume. Response: A very rough indication could be given. However, this was not part of the study.
- **“Zone of recharge.”** Comment: In this study it appears that the recharge zone is any point in the soil below ten feet depth. Wells, however, are farther down (up to 400 feet in the Milliken-Sarco-Tuluca y area). Therefore, the water that is below ten feet does not necessarily mean it is near the aquifer or will recharge into it. Response:

This is correct, there are a lot of variables. The water below those ten feet may not reach the aquifer, but it is also not available to the vegetation, which is the outflow this study examined.

- **Drip Irrigation.** Comment: After 1977 drip-irrigation was used widely in the county. This may also have affect on the recharge.
- **Available Periods.** Question: What are the “available periods” referred to in the table “Water budget summary for available periods” (slide 28)? Answer: These are the periods for which the flow gauge records (as shown in slide 17) were available.
- **Recharge percentages.** Question: How do the recharge figures as percentages of the precipitation (in slide 28) in this study line up with percentages determined for other basins? Answer: That depends, because the situations (rainfall, soils, vegetation types, slopes, etc.) are quite different per basin. The numbers were comparable to local and somewhat similar basins, such as in the Sonoma Valley.
 - A member requested an estimate of the recharge per acre for the different watersheds. Mr. Bergfeld noted that this is not difficult to estimate, given the existing information (note: see Figure 8-13 of the report).
 - **ACTION ITEM:** LEE BERGFELD, MBK, to provide an estimate of the recharge per acre for the different watersheds.

The Committee’s next meeting will present more on the Report, focused on the county’s surficial, structural and subsurface geology, hydrogeology, and surface water/groundwater interaction.

6. Other Business

a. Update on Groundwater Data Management & Disclosure Guidance Document

- The Committee was provided with a copy of the draft Groundwater Data Management & Disclosure Guidance Document for review prior to its presentation at the next meeting.

b. Update on DWR Grant Application for Groundwater Monitoring

- No decision by DWR at this time.

7. Announcements

a. Upcoming Events or Items of Interest from the Committee and Staff

- Chair Peter McCrea will provide an update to the Napa County Board of Supervisors at their meeting on April 2, 2013 (see Future Agenda items below).

8. Future Agenda Items

a. Discuss the Board of Supervisors Update/Presentation

- At the Committee's next meeting more details will be discussed about the update on the Committee's progress, which Chair Peter McCrea will present to the County Board of Supervisors at their April 2, 2013 meeting.
- After the update to the Board of Supervisors, the Committee will start the outreach program, reaching out to the respective industry groups to gain public support. At the next Committee meeting more details on how to carry this out will be discussed.

9. Adjournment to the Next Meeting

The Committee's next regular bi-monthly meeting will be held on February 28, 2013 – 2:00 p.m. to 5:00 p.m. All meetings will be held at the Agricultural Commissioner's Office/UCCE Conference Room, 1710 Soscol Avenue, in Napa.

Attendees

Groundwater Advisory Committee Members

- | | |
|-----------------------|---------------------------|
| 1. Michelle Benvenuto | 8. Charles Slutzkin |
| 2. Tucker Catlin | 9. Steve Soper |
| 3. Alan Galbraith | 10. Marilee Talley |
| 4. Donald Gleason | 11. James Verhey |
| 5. David Graves | 12. Susanne von Rosenberg |
| 6. Michael Haley | 13. Duane Wall |
| 7. Peter McCrea | 14. Dale Withers |

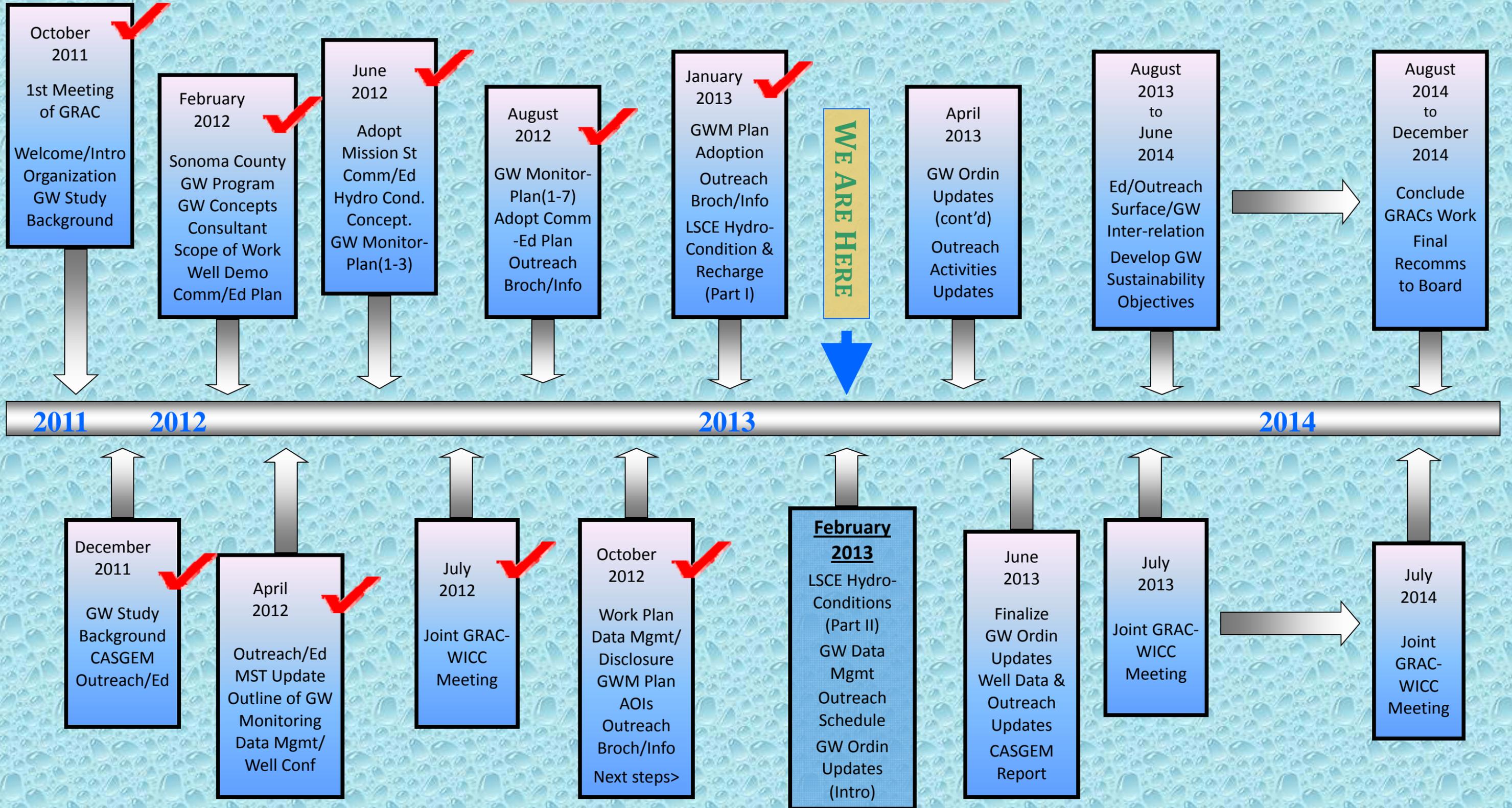
Public Attendees

- | | |
|-----------------|------------------------|
| 15. John Ferons | 17. Mark Nordberg, DWR |
| 16. Wes Lutz | |

County Staff/Facilitator/Consultant Attendees

- | | |
|------------------------------------|----------------------------------|
| 18. Lee Bergfeld, MBK Engineers | 23. Patrick Ho, MBK Engineers |
| 19. Deborah Elliott | 24. Patrick Lowe |
| 20. Dorian Fougères, CCP | 25. Greg Morgan |
| 21. Hillary Gitelman | 26. Martine Schmidt-Poolman, CCP |
| 22. Vicki Kretsinger Grabert, LSCE | 27. Jeff Sharp |

GRA Committee Work Plan



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Napa County
Updated Hydrogeologic Conceptualization
and Characterization of Conditions (Part 2)

presentation for



by
Vicki Kretsinger Grabert,
Ken Utley, and Reid Bryson
Luhdorff & Scalmanini,
Consulting Engineers

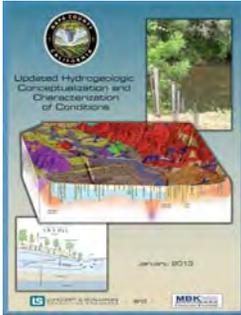
February 28, 2013

Agenda Item 5A



Updated Hydrogeologic Conceptualization

- Part 1
 - Overview of Report
 - Groundwater Recharge
- Part 2
 - Regional Geology
 - Surficial, Structural, & Subsurface Geology
 - Hydrogeology
 - SW/GW Interactions



2

Updated Conceptualization & Characterization of Hydrogeologic Conditions in Napa County

Project Overview/Work by LSCE & MBK

Task 1: Updated hydrogeologic conceptualization and characterization for priority areas

Task 2: ID supplemental GW monitoring wells for high priority areas

Task 3: Refine and further characterize areas with greatest recharge potential

Task 4: Guidance for CEQA-related issues and analysis of SW/GW interactions

Task 1 – Updated Hydrogeologic Characterization and Conceptualization

- Update with decades of more recent geologic data
- Linkage to SW/GW issue
 - Physical system
 - Mechanisms

C. Detail of the southern part of Ridge Valley

Sweetkind and Taylor (pre-1960 data digitized) USGS Geologic Cross Section Locations

Earlier Geologic Cross Section

Figure 5-1a Cross Section B-B' From Kunkel and Upson (1960)

Note: 3 Wells with depths to 240' TD

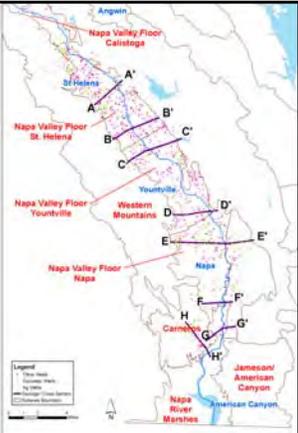
Hydrogeologic Conceptualization

Assess Log Quality

- Evaluate decades of data since 1960
- >6,400 drillers' reports
- Review subset of logs by Twnshp/Rng/Sec and driller
- Gauge data density and log quality
- No shallow MWs, no shallow heat exchange wells (typically shallow with poor lithologic records)

Geologic Data and Cross Sections

- Update with decades of geologic data
- 1332 drillers' reports reviewed
 - 770 Domestic
 - 501 Irrigation wells
 - Other (undesignated well type and/or testholes)
- 191 drillers' reports used for cross sections

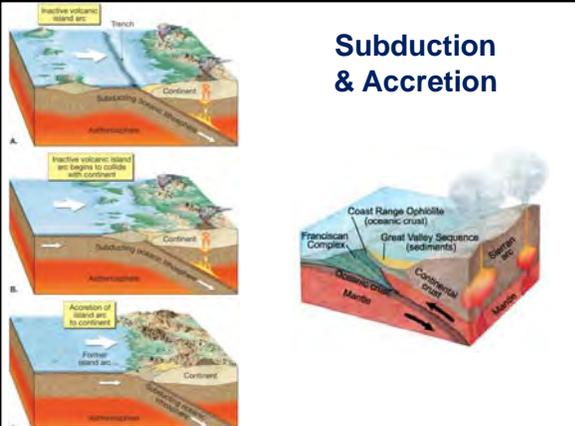


Surficial Geology

Overview

- Mesozoic Rocks
- Late Tertiary Rocks
- Quaternary Deposits

Subduction & Accretion



Surficial Geology

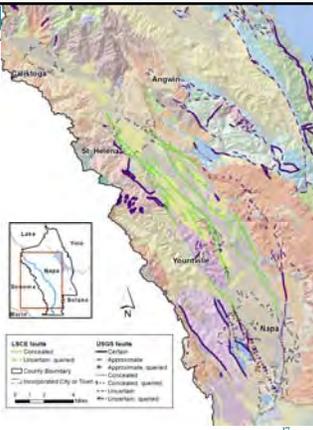
- Quaternary Deposits




16

Structural Geology

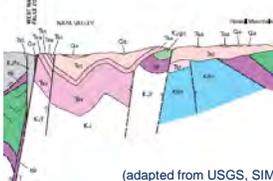
- Napa Valley Graben
- West Valley Fault Zone
- East Valley Fault Zone
- Strike and Dip of Bedding



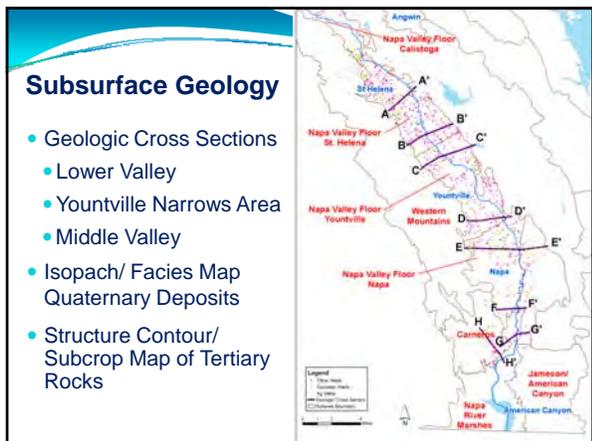
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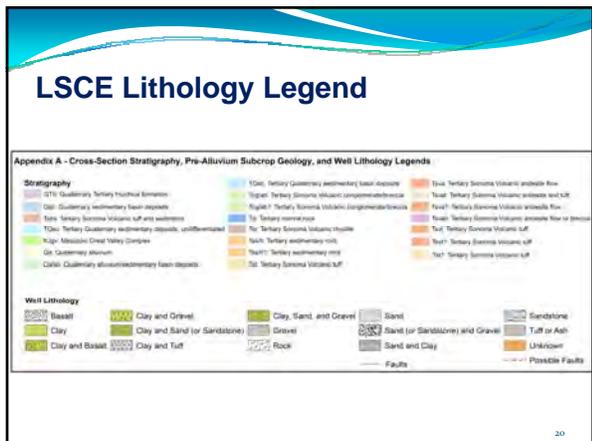
2007 USGS Broad Scale Cross Section

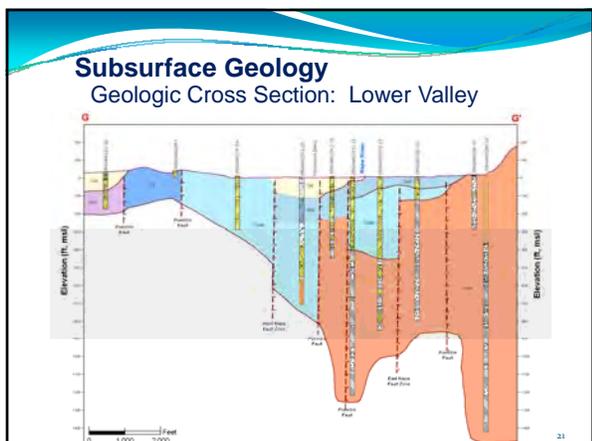
Great Valley/ Franciscan Basement	Sonoma Volcanics
Kfm Metagraywacke	Tsv Sonoma Volcanics, undivided (Pliocene and late Miocene)
Kjgv Sandstone, shale, cong.	Tst Pumiceous ash-flow tuff
Kjvt Sandstone and shale	Tsa Volcanic sand and gravel
ss Serpentinite	Tba Andesite to basalt lava flows

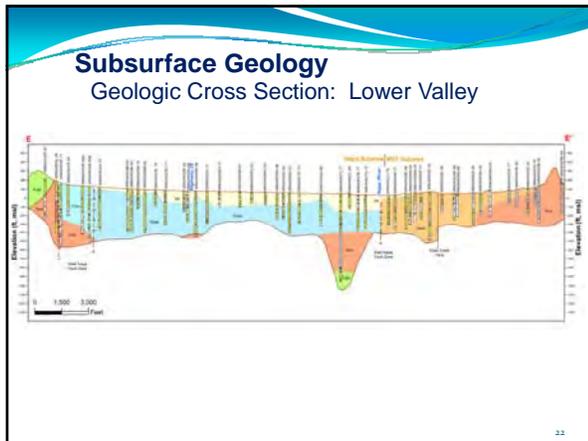


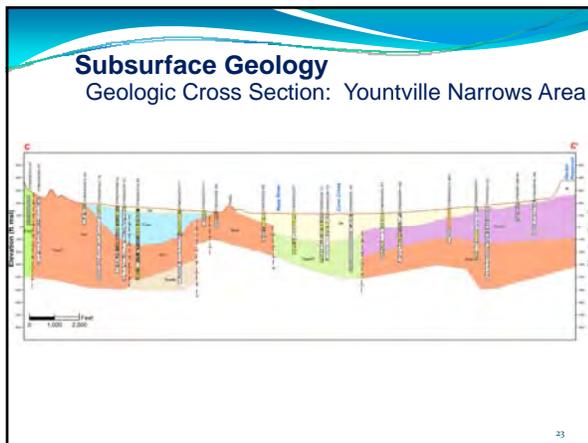
(adapted from USGS, SIM 2956, 2007)

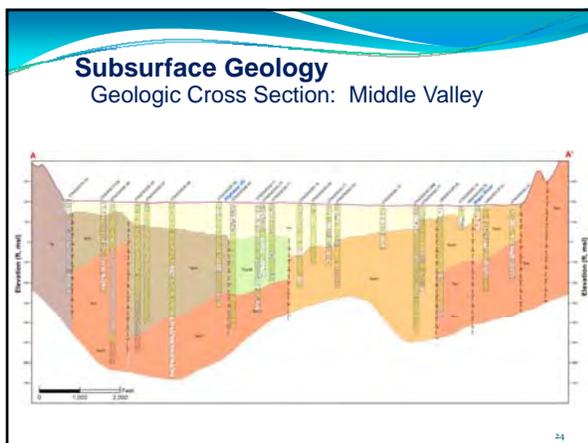


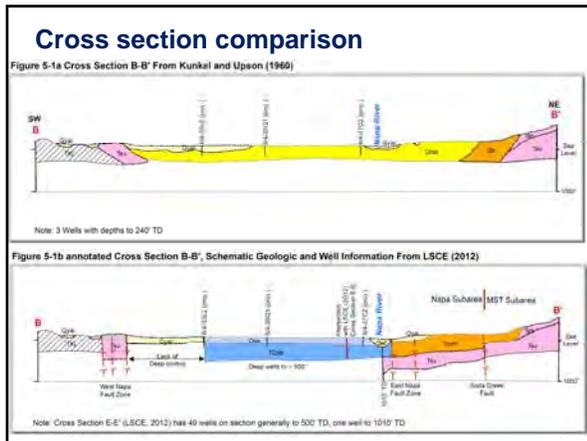


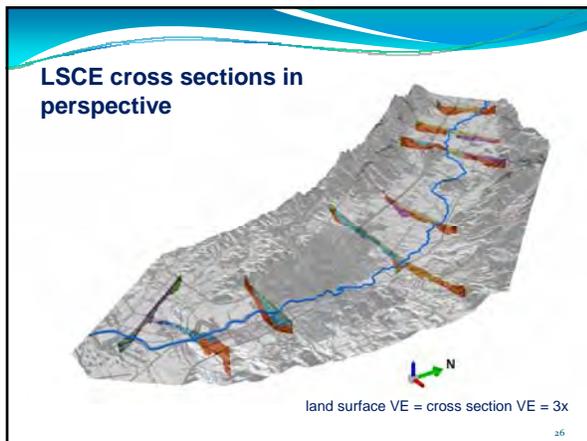


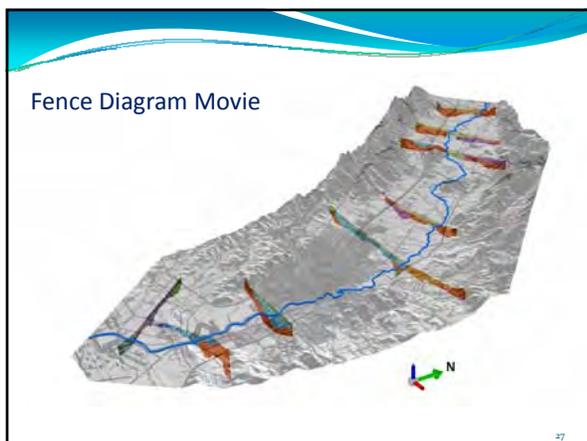












Subsurface Geology

- Isopach/ Facies Map Quaternary Deposits
 - Sources of alluvial deposits
 - Thickness of deposits
- Faults
 - USGS
 - LSCE

Subsurface Geology

- Structure Contour/ Subcrop Map of Tertiary Rocks
 - Tertiary rocks beneath alluvium
 - Elevation of rocks beneath alluvium

Hydrogeology

- Alluvium
 - Lower yield, lower and middle valley (50 – 200 gpm)
 - Higher yield (~200 – 2,000 gpm)
- Sonoma Volcanics/ Tertiary Sediments
 - Generally lower yield (<16 – <50 gpm)
 - A few wells >100 gpm

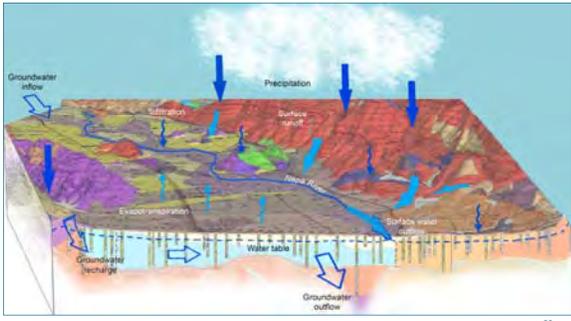
Hydrogeology

- Hydraulic properties
 - Most often reported based on airlift testing
 - Few pump tests



31

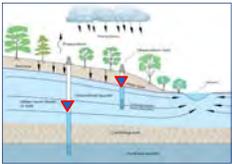
Updated Hydrogeologic Conceptualization and Evaluation of SW/GW Interactions



32

GW Monitoring in High Priority Subareas

Key GW Level Objective
Further evaluate SW-GW interaction



Direct Connection
Maintains/Recharges Stream

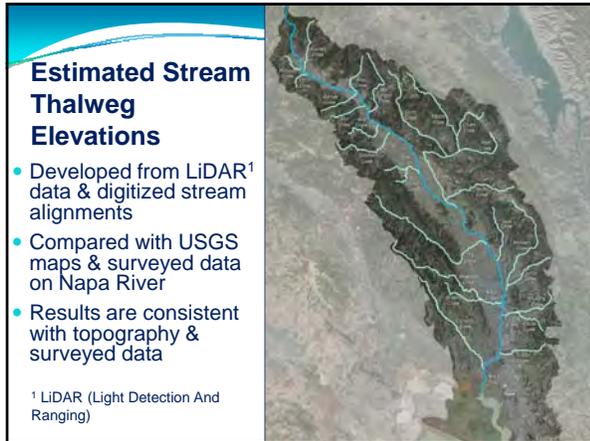


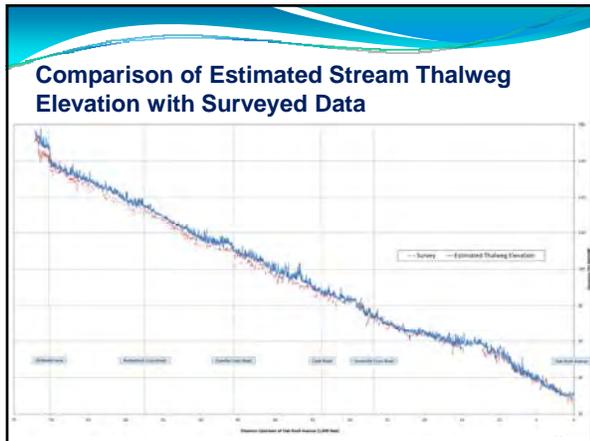
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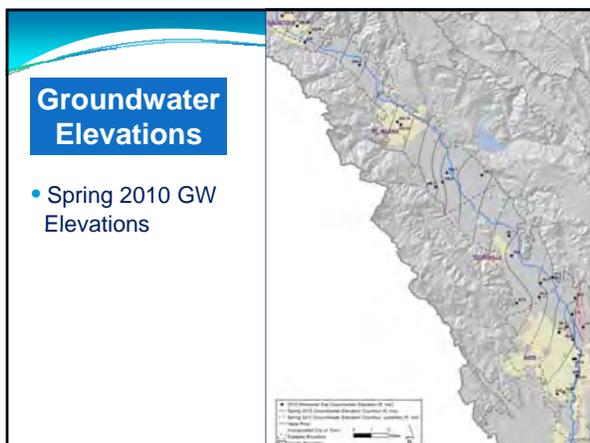
Indirect Connection
Stream Seepage Independent of GW Levels

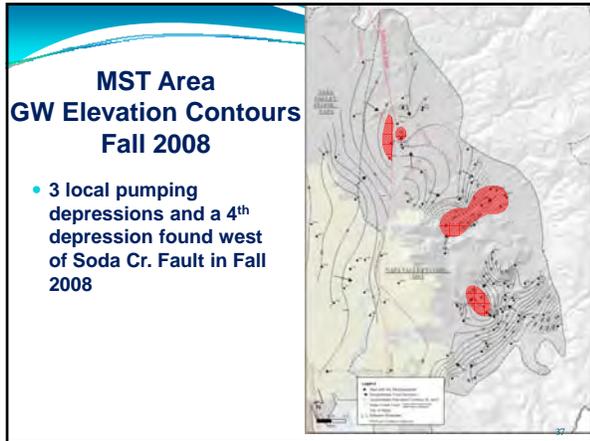


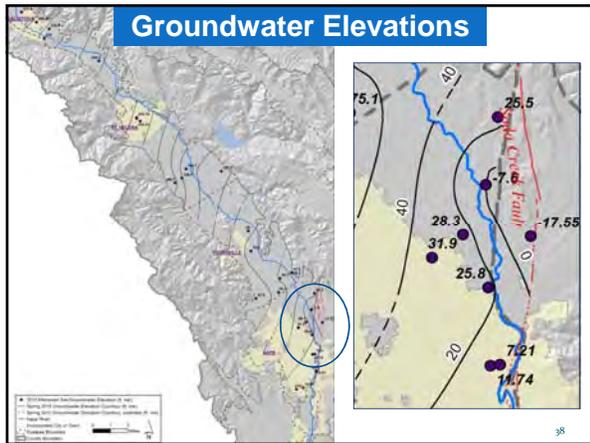
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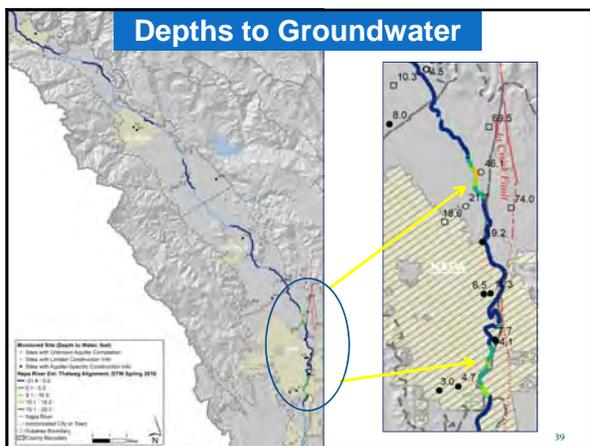


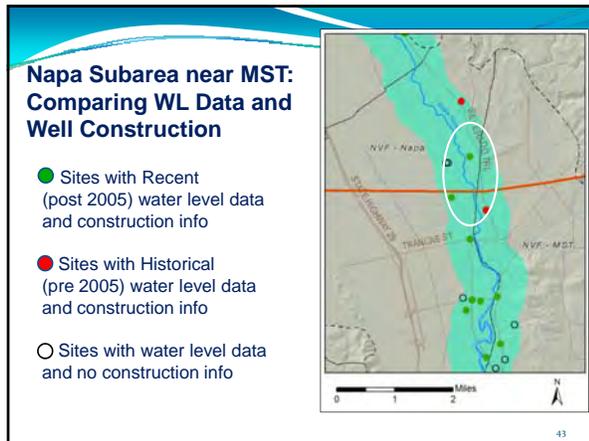


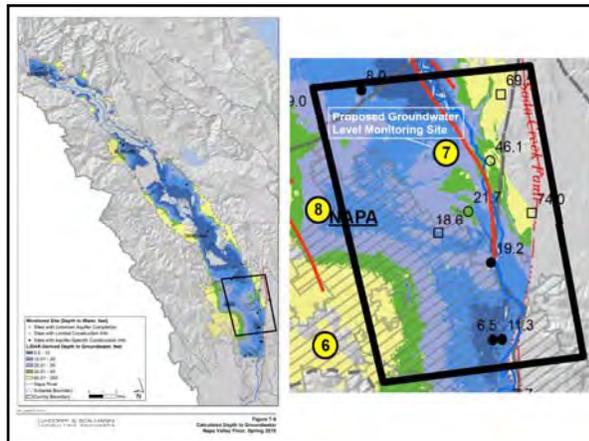


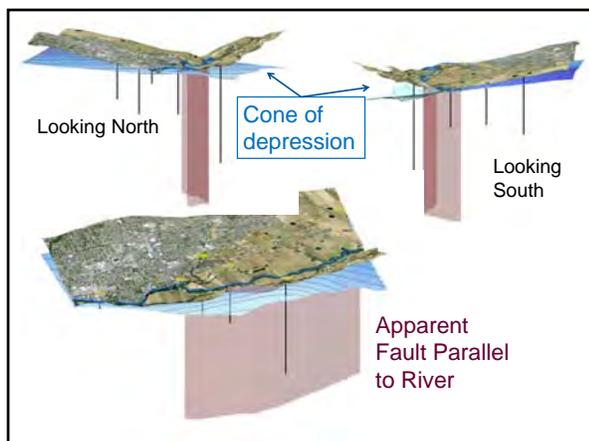




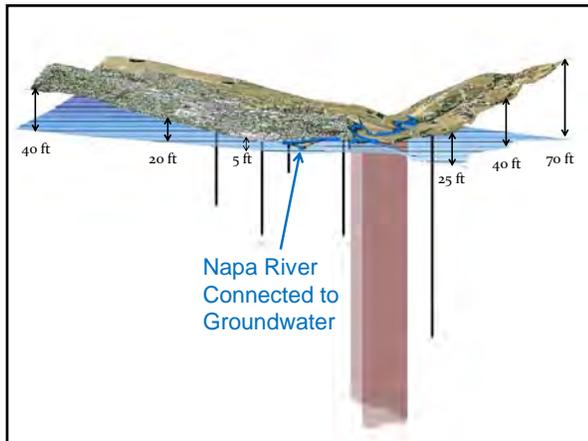


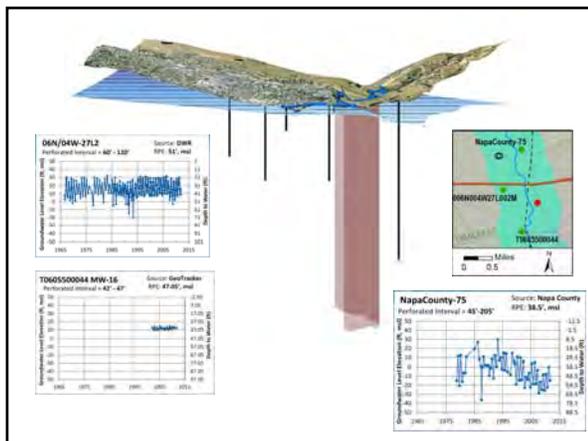




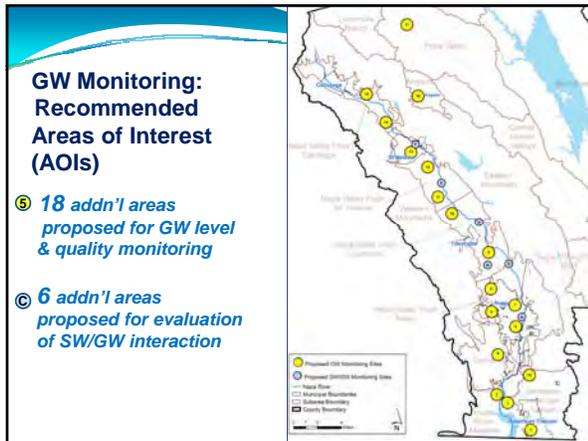














Thank You

**Discussion
&
Questions**

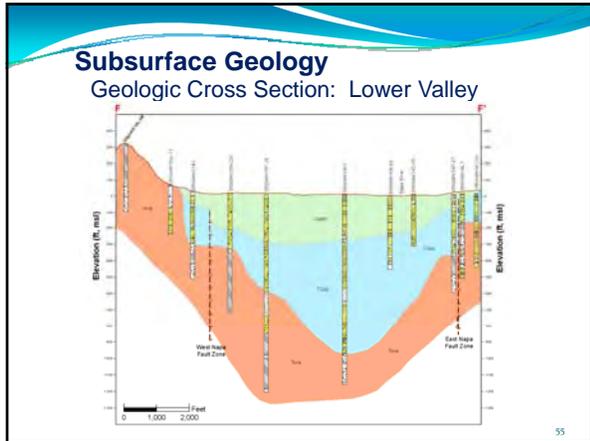
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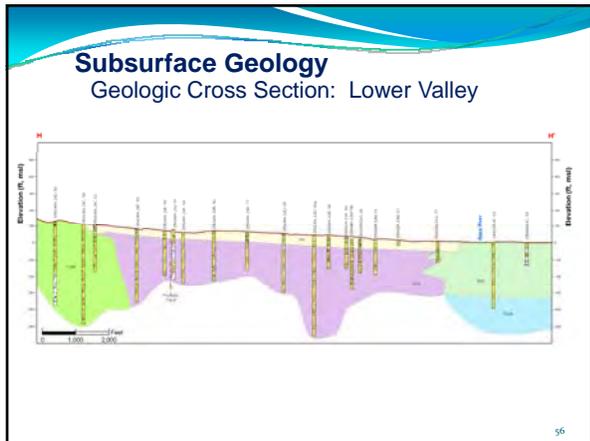
Subsurface Geology
Geologic Cross Section: Middle Valley

53

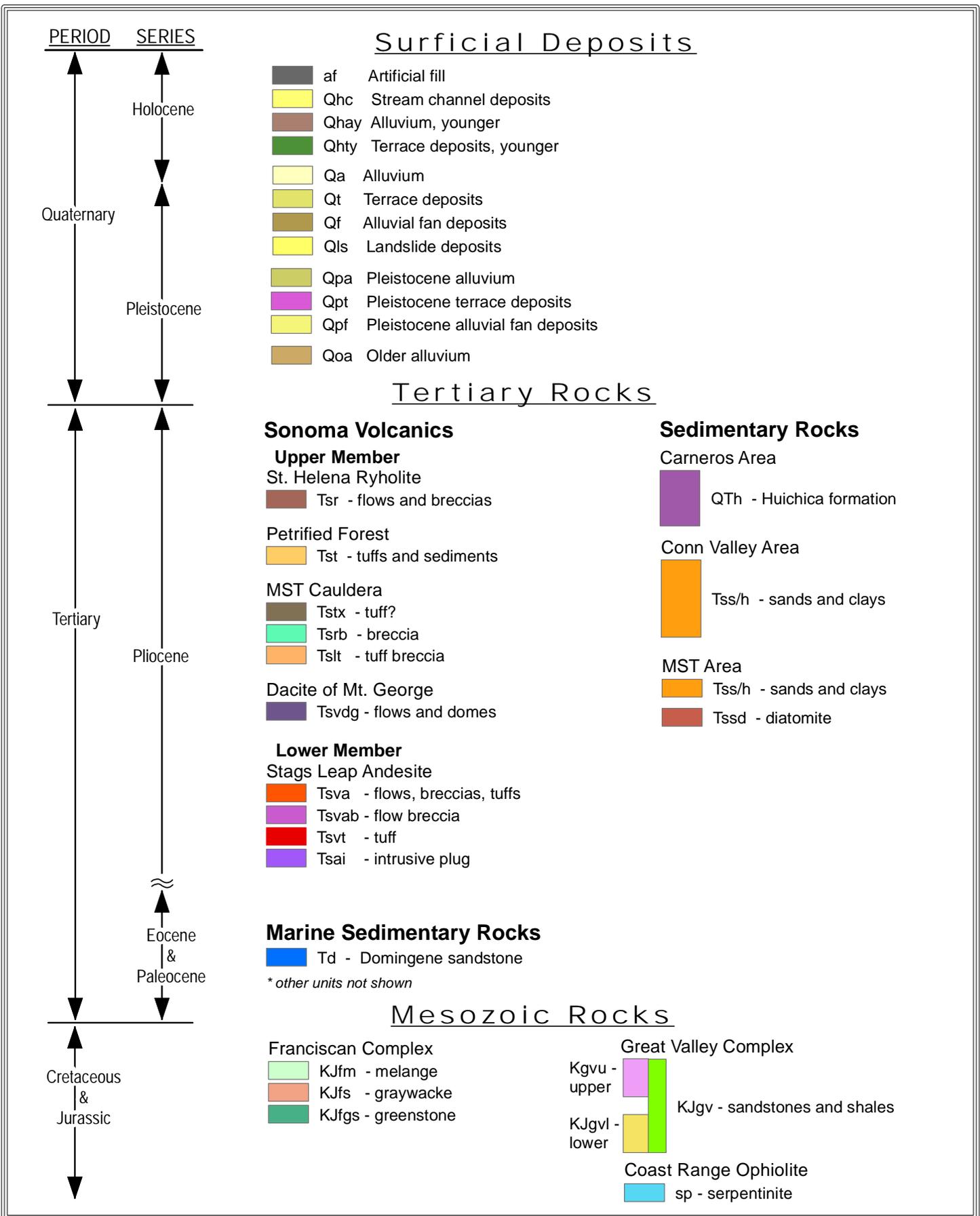
Subsurface Geology
Geologic Cross Section: Yountville Narrows Area

54

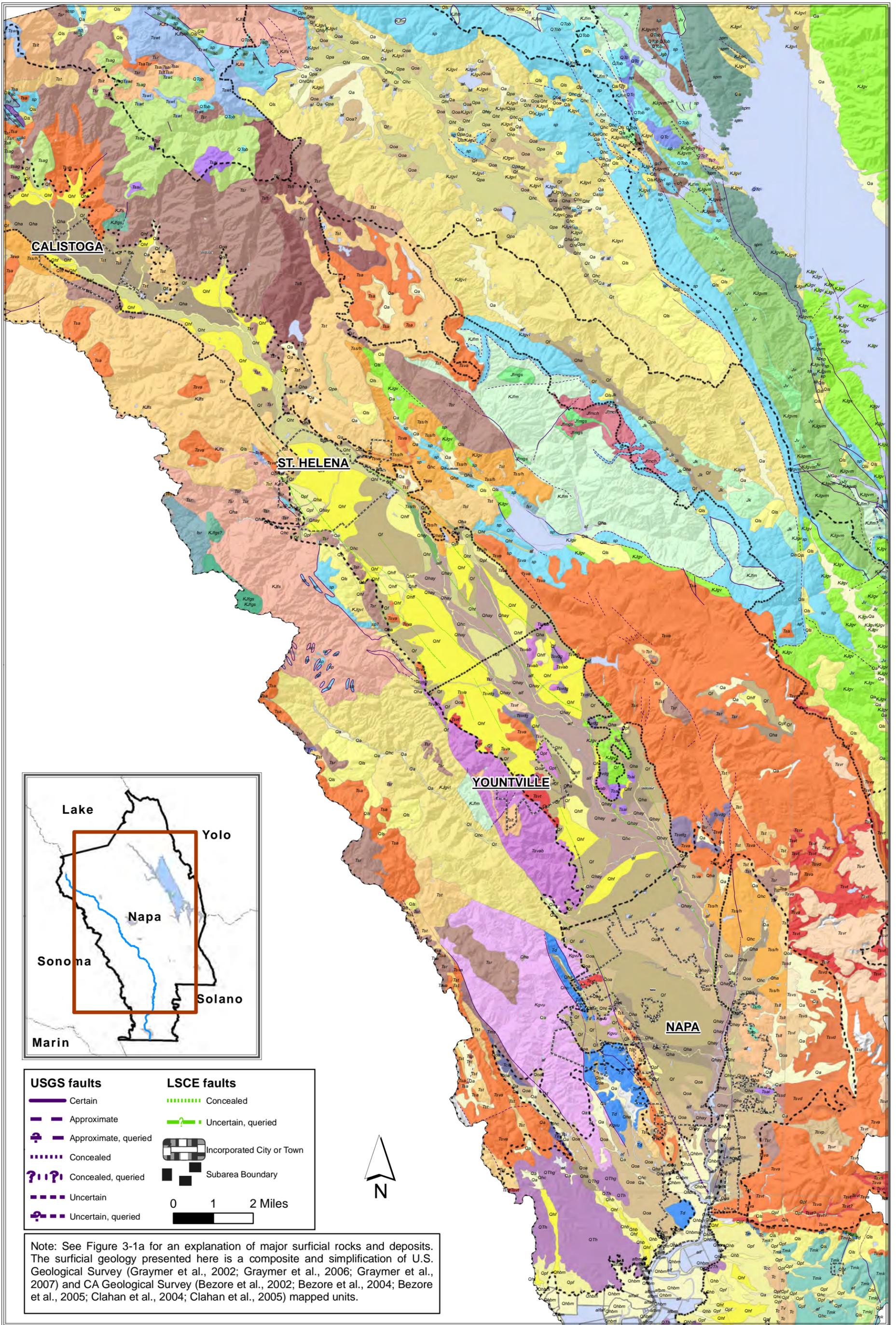




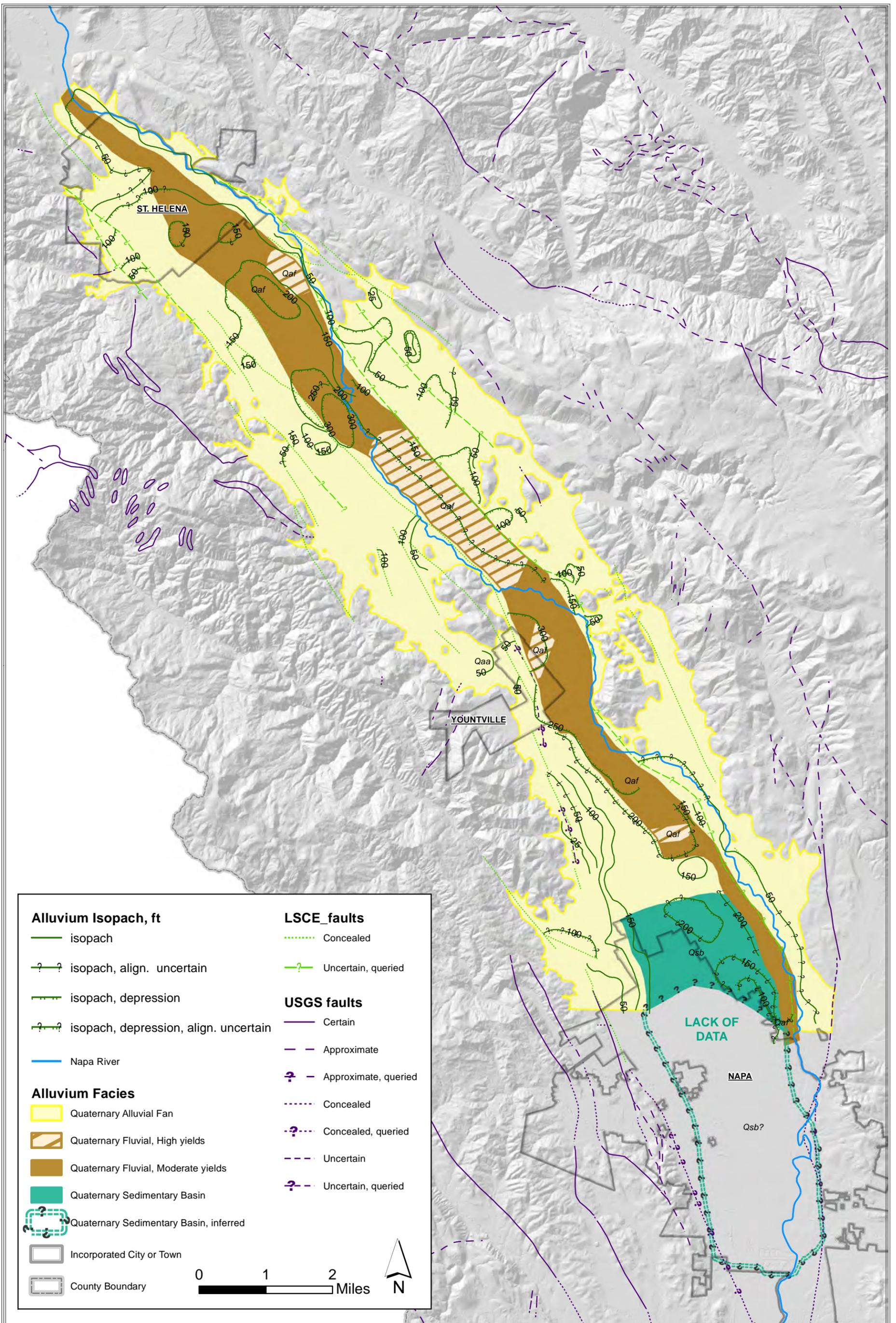
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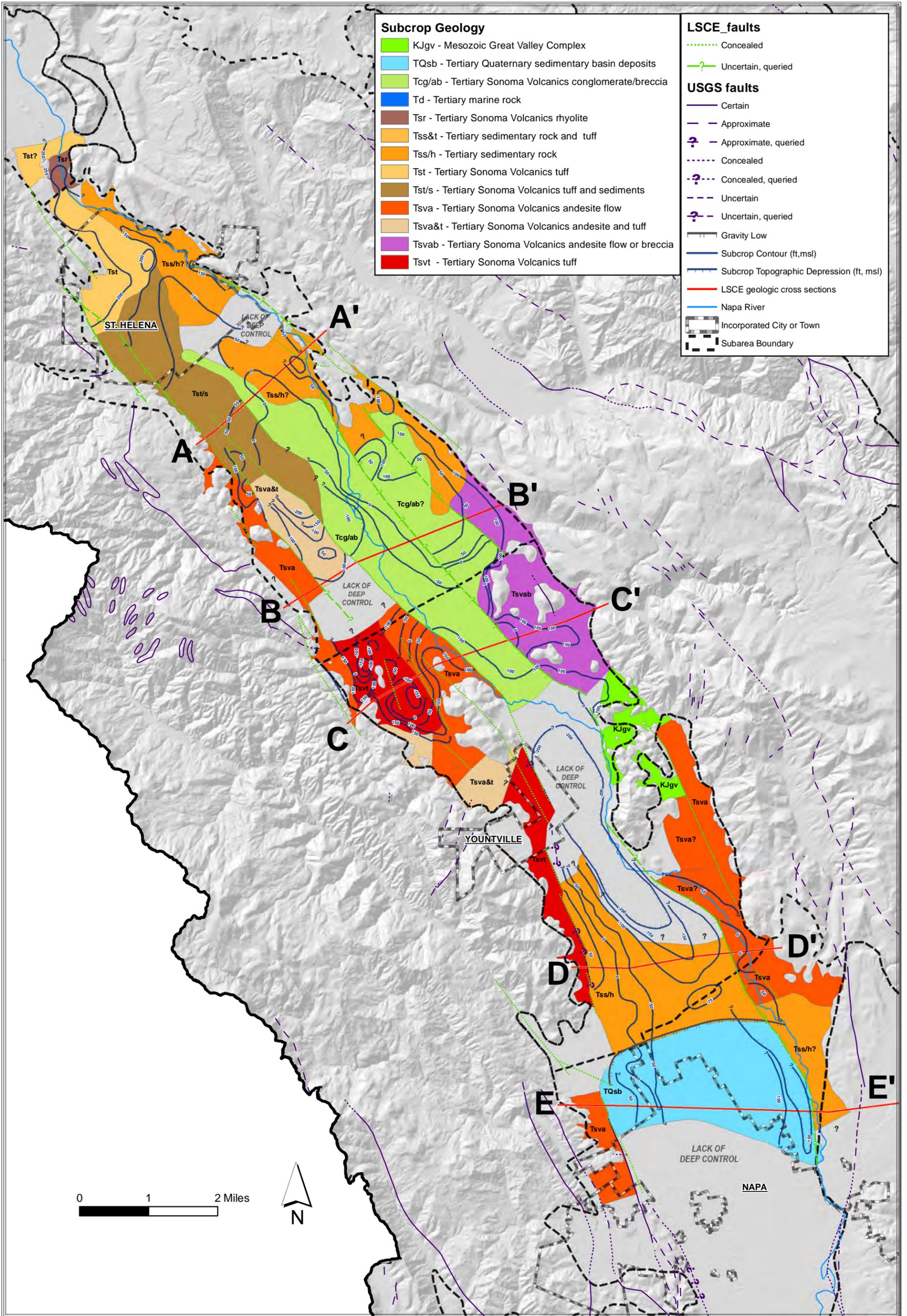
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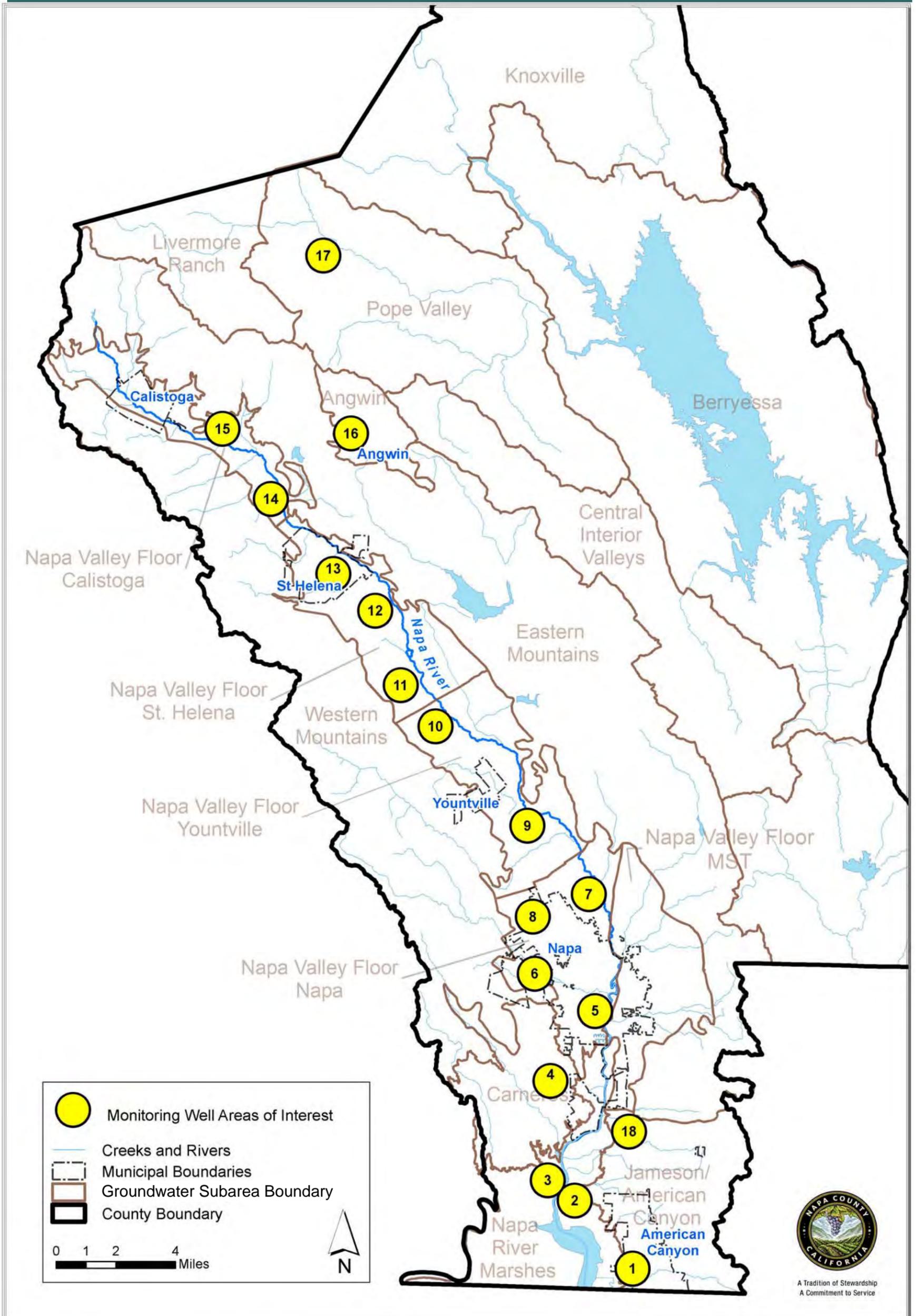


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Proposed Monitoring Well Areas of Interest



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