Napa County Groundwater Sustainability
Annual Report - Water Year 2019

Napa County GSA

June 9, 2020

Luhdorff & Scalmanini
Consulting Engineers

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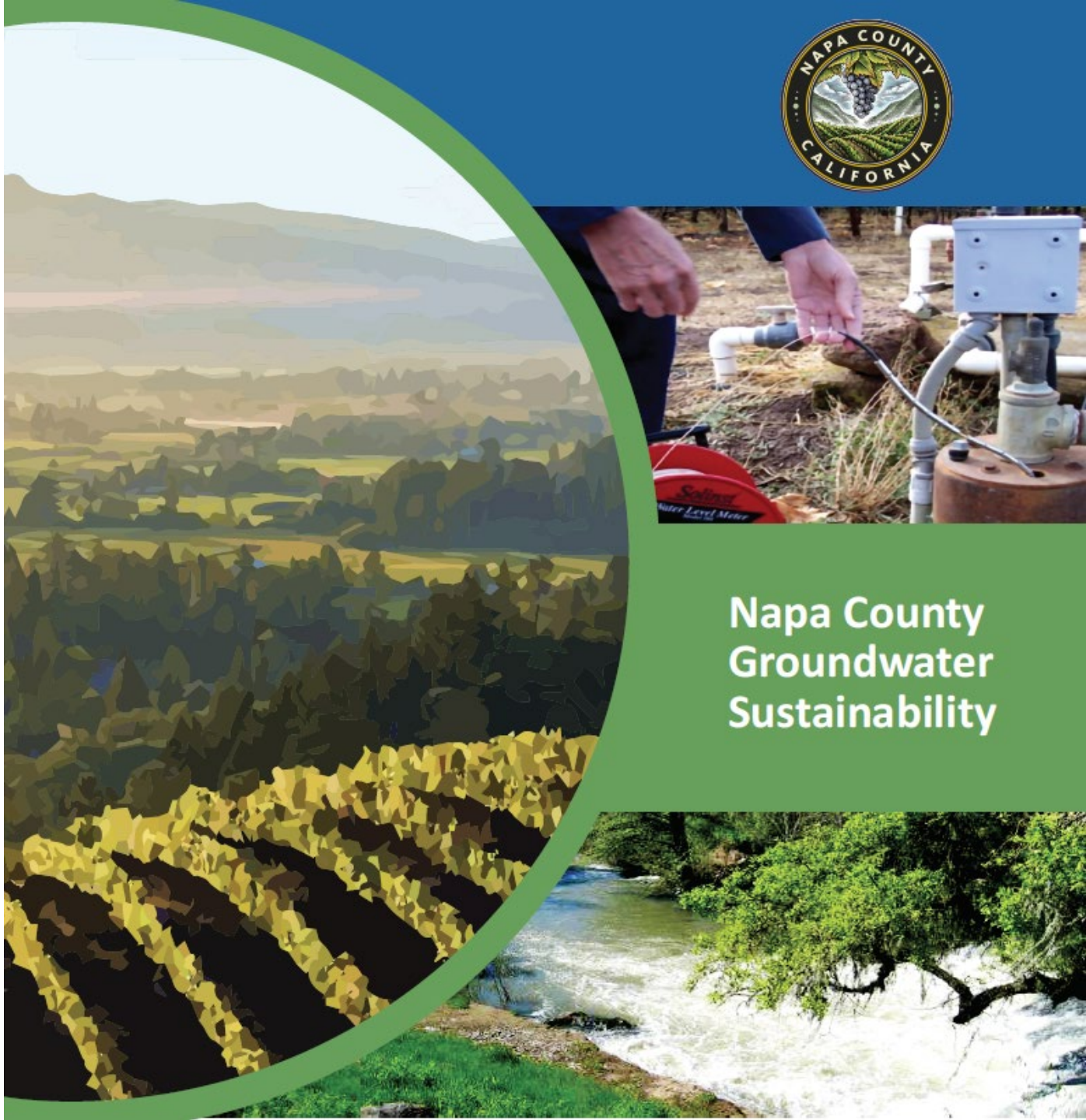
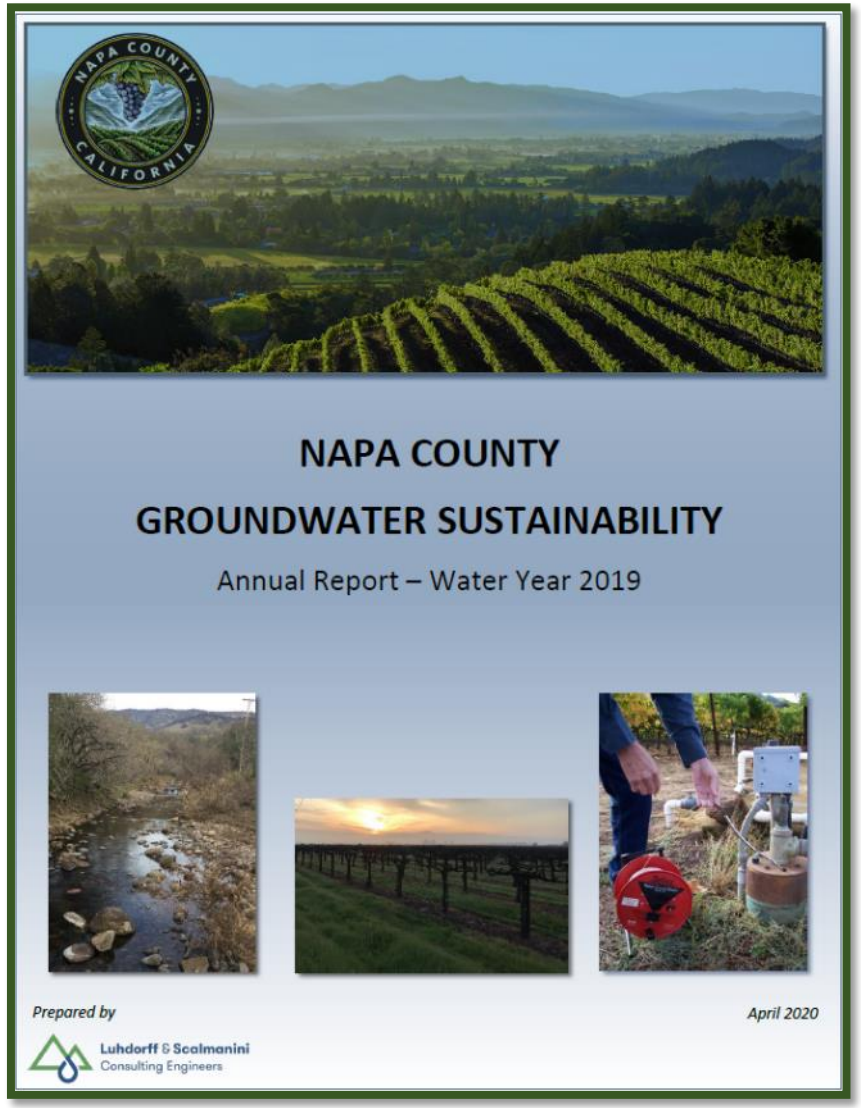


OVERVIEW

- 2019 Annual Report Highlights
- SGMA Sustainability Metrics
- SGMA Implementation Progress



NAPA COUNTY

GROUNDWATER SUSTAINABILITY

Annual Report – Water Year 2019

Prepared by

Luhdorff & Scalmanini Consulting Engineers

April 2020

GROUNDWATER LEVEL MONITORING, 2019

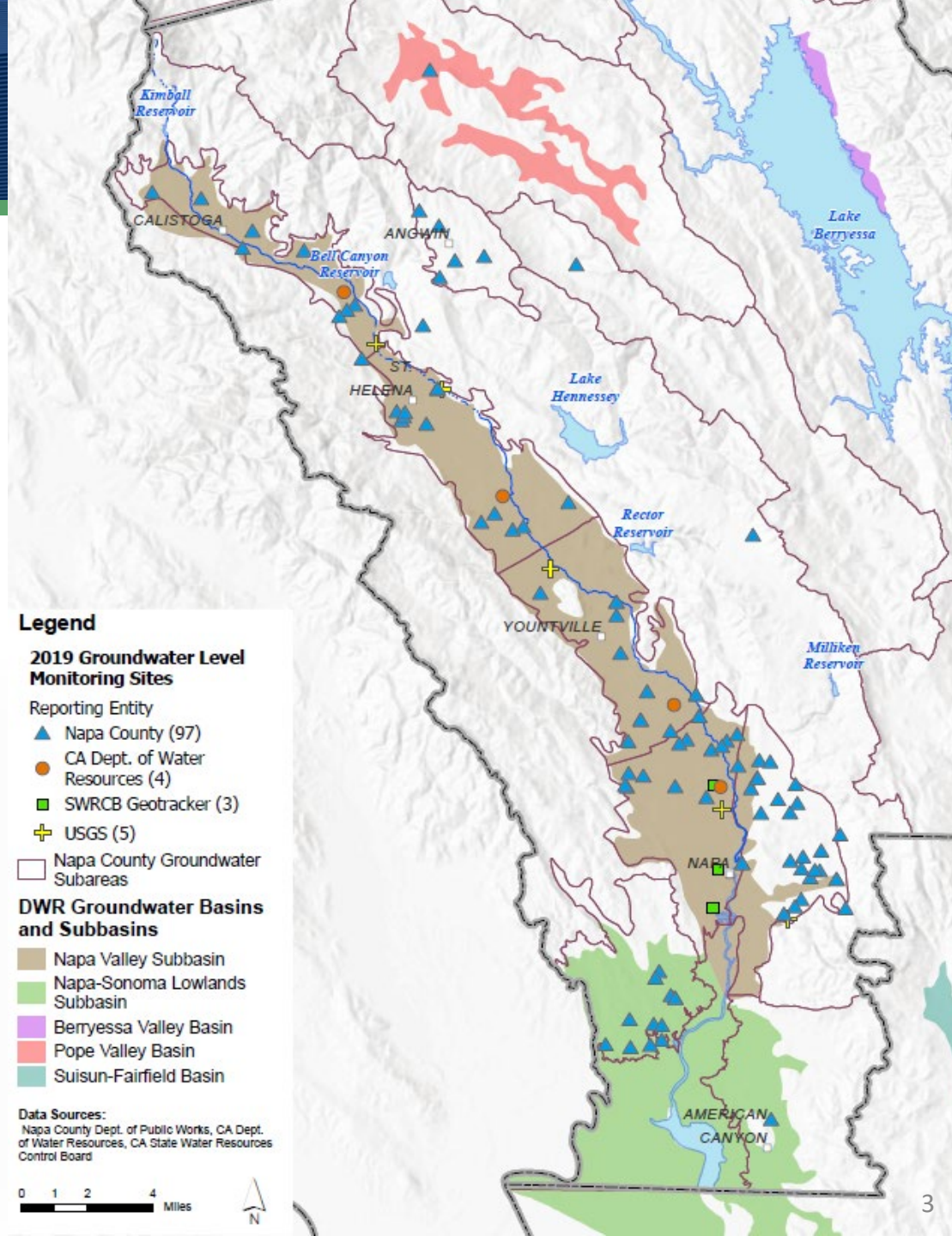
Napa Co., 97 (including 10 SW/GW)

DWR, 4

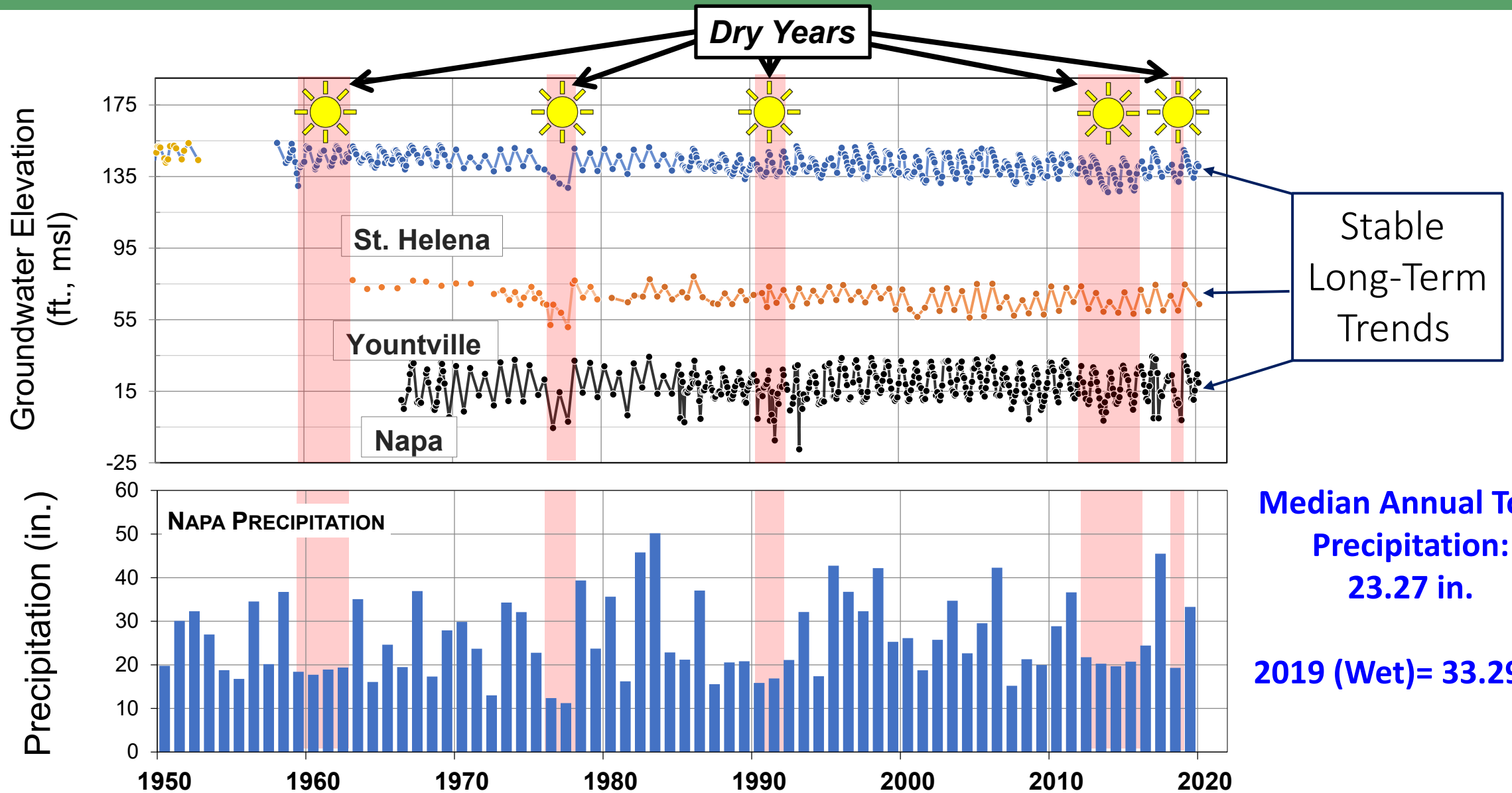
SWRCB GeoTracker, 3

USGS, 5

Total = 109



GROUNDWATER CONDITIONS: NAPA VALLEY SUBBASIN

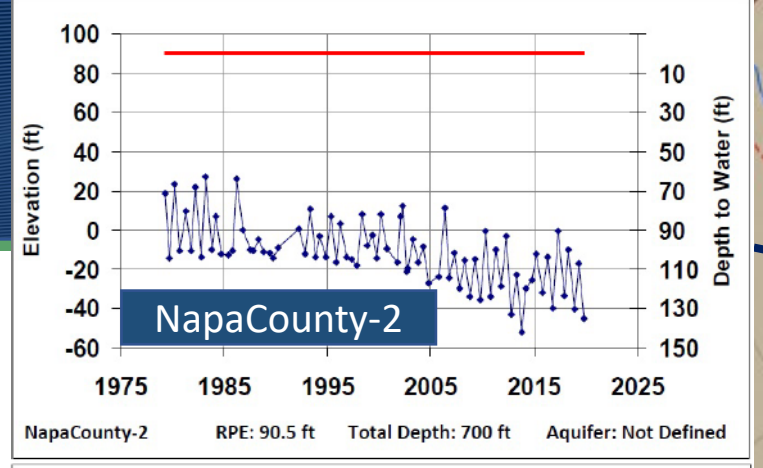


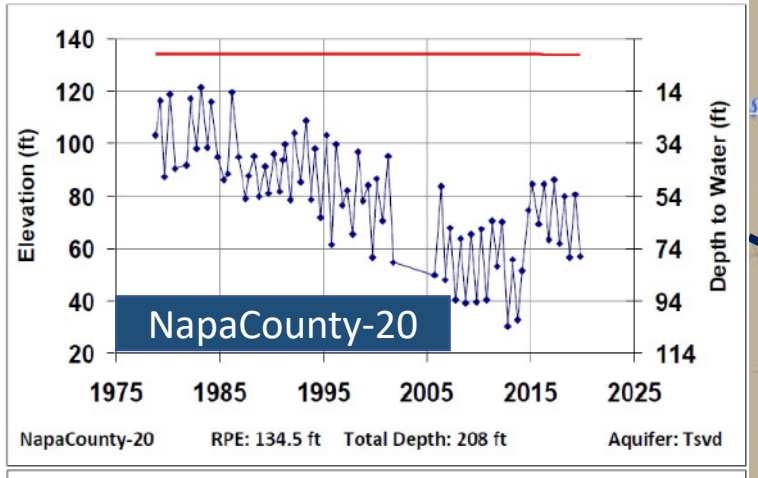
Median Annual Total Precipitation: 23.27 in.

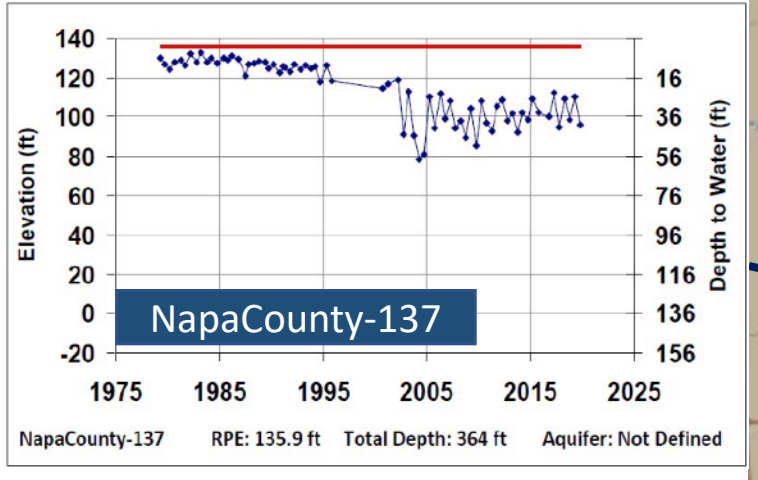
2019 (Wet)= 33.29 in.

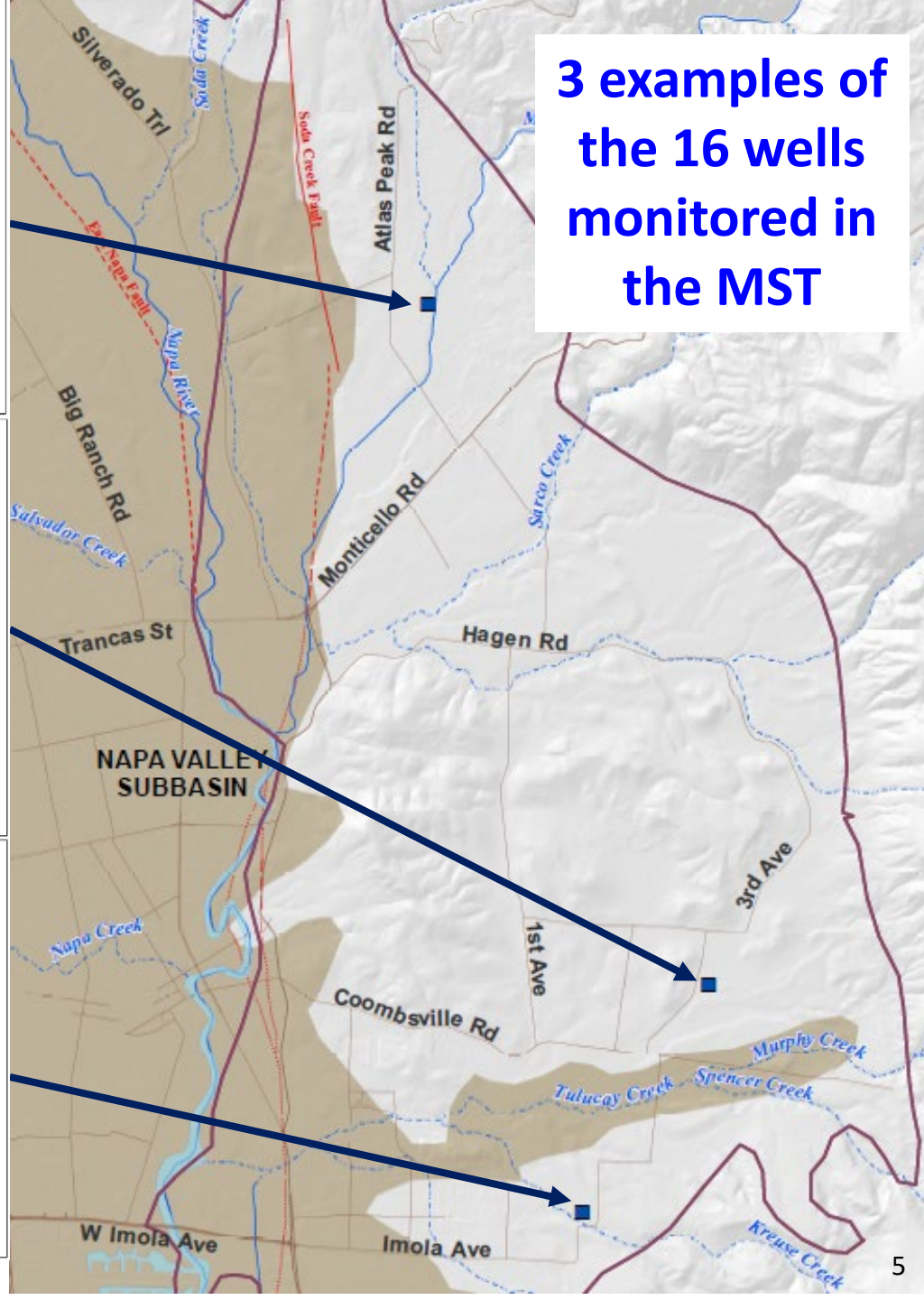
MST Hydrographs

- Monitoring data available for about four decades
- Recognized historical declines
- Stable groundwater levels since about 2009
- Some monitoring wells show recent increase in groundwater levels





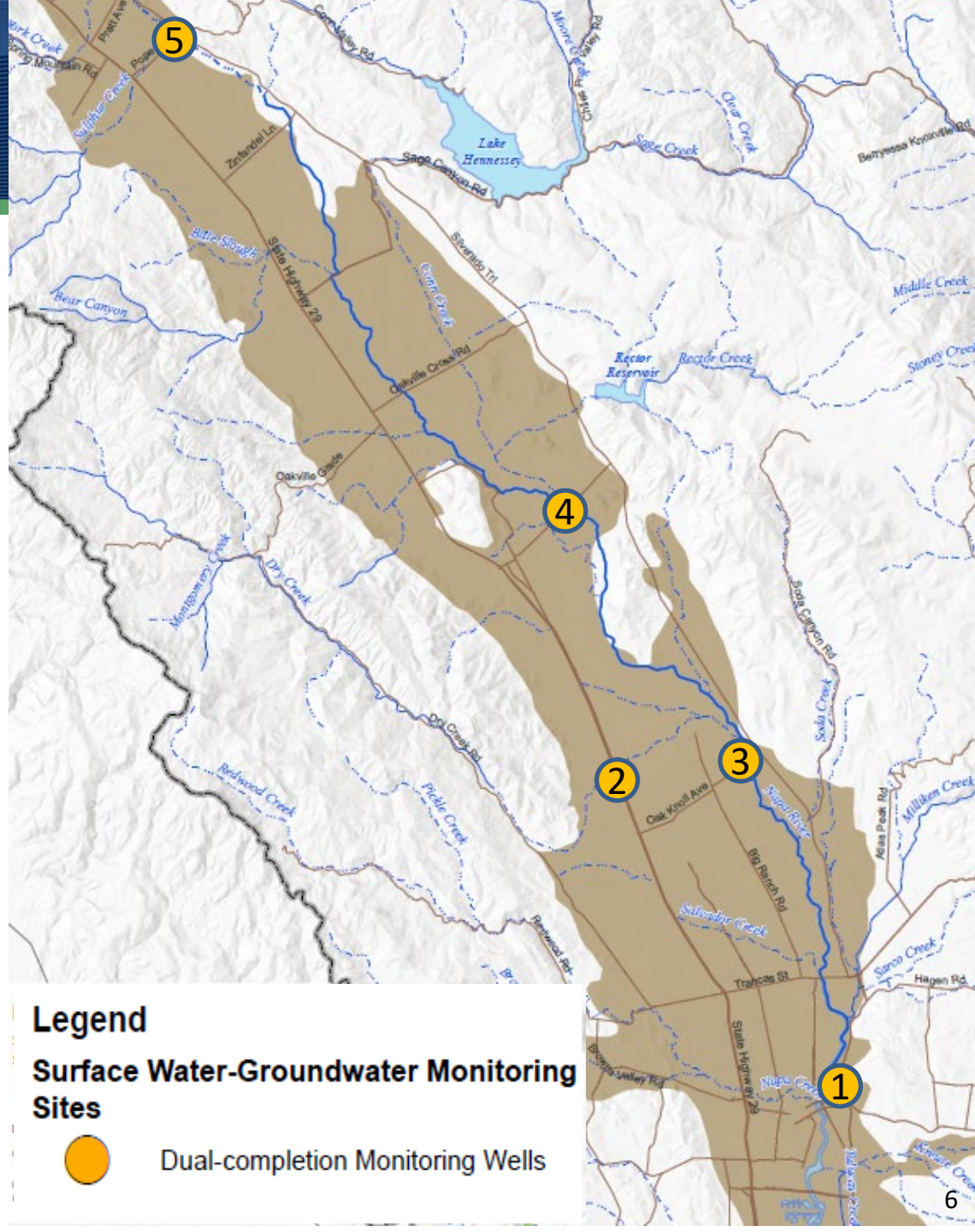




SURFACE WATER/GROUNDWATER INTERACTION

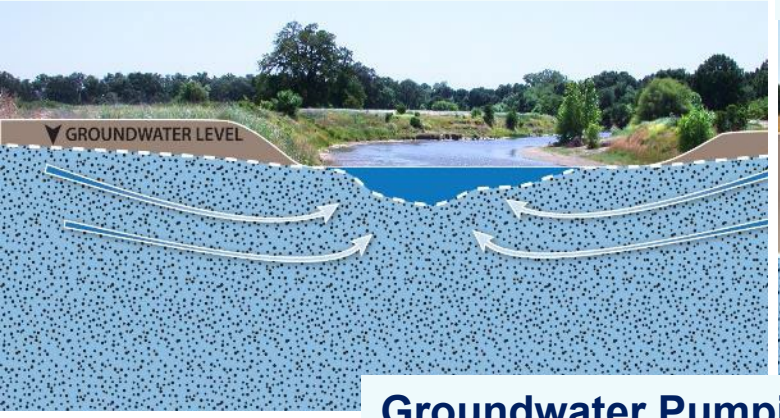
Dedicated Monitoring Facilities at 5 Sites

- DWR grant support
- Paired Shallow Monitoring Wells (MWs) each site
  - Levels & quality
- Stream Gauge each site
  - Streamflow & quality
- > 5 years of data

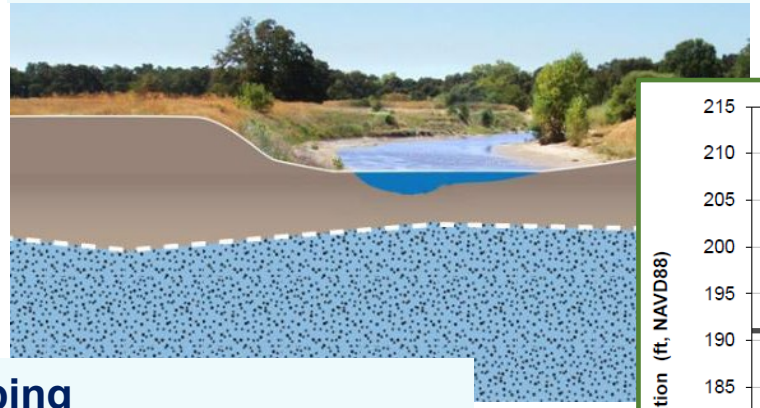


SURFACE WATER/GROUNDWATER INTERACTIONS

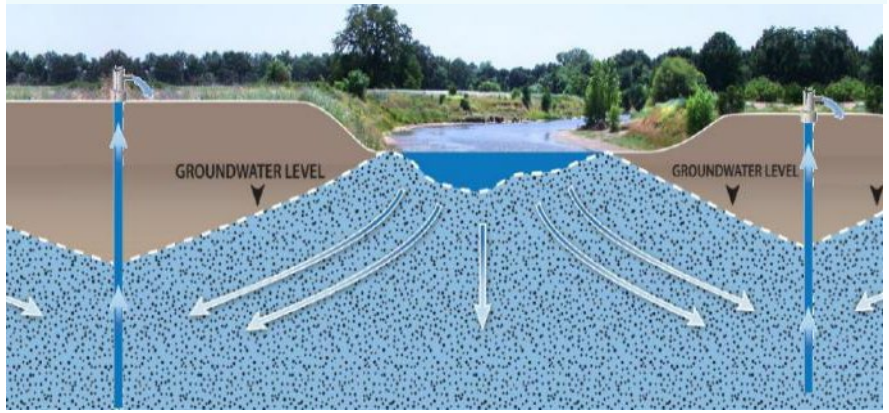
Direct Connection
Maintains/Discharges to Stream
(Groundwater Baseflow)



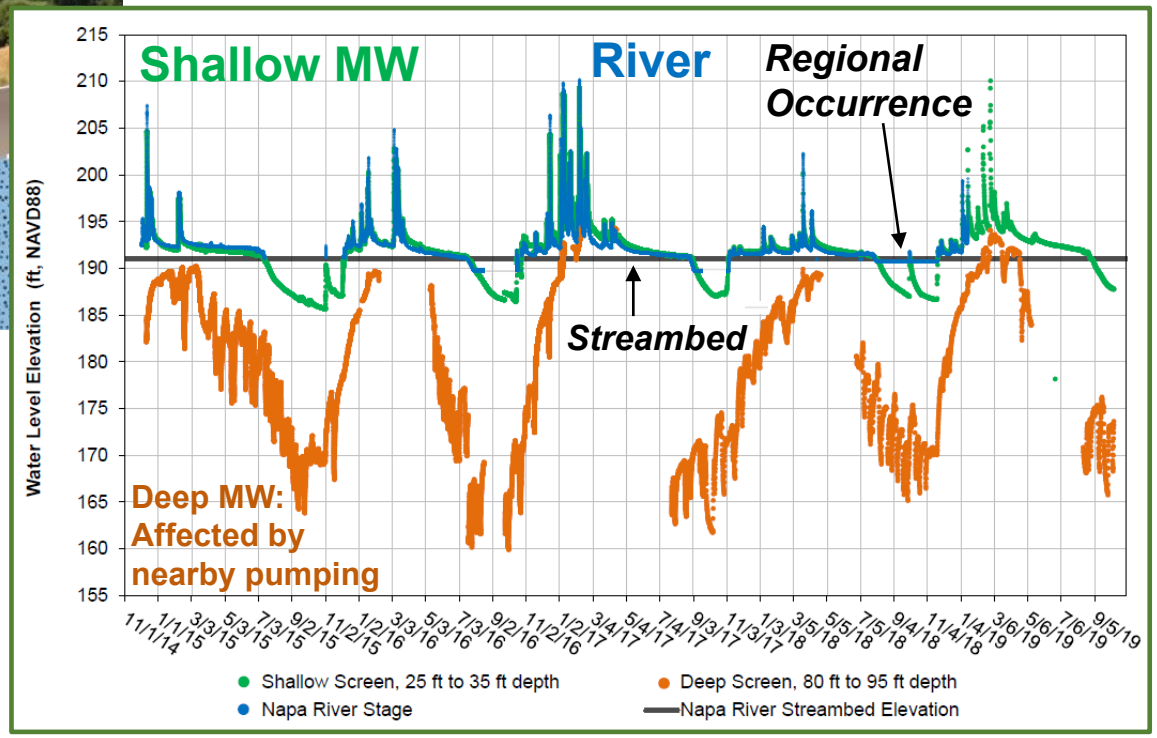
Indirect Connection
Stream Seepage Independent of GW Levels



Groundwater Pumping
Stream Loses Water/
Recharge to GW

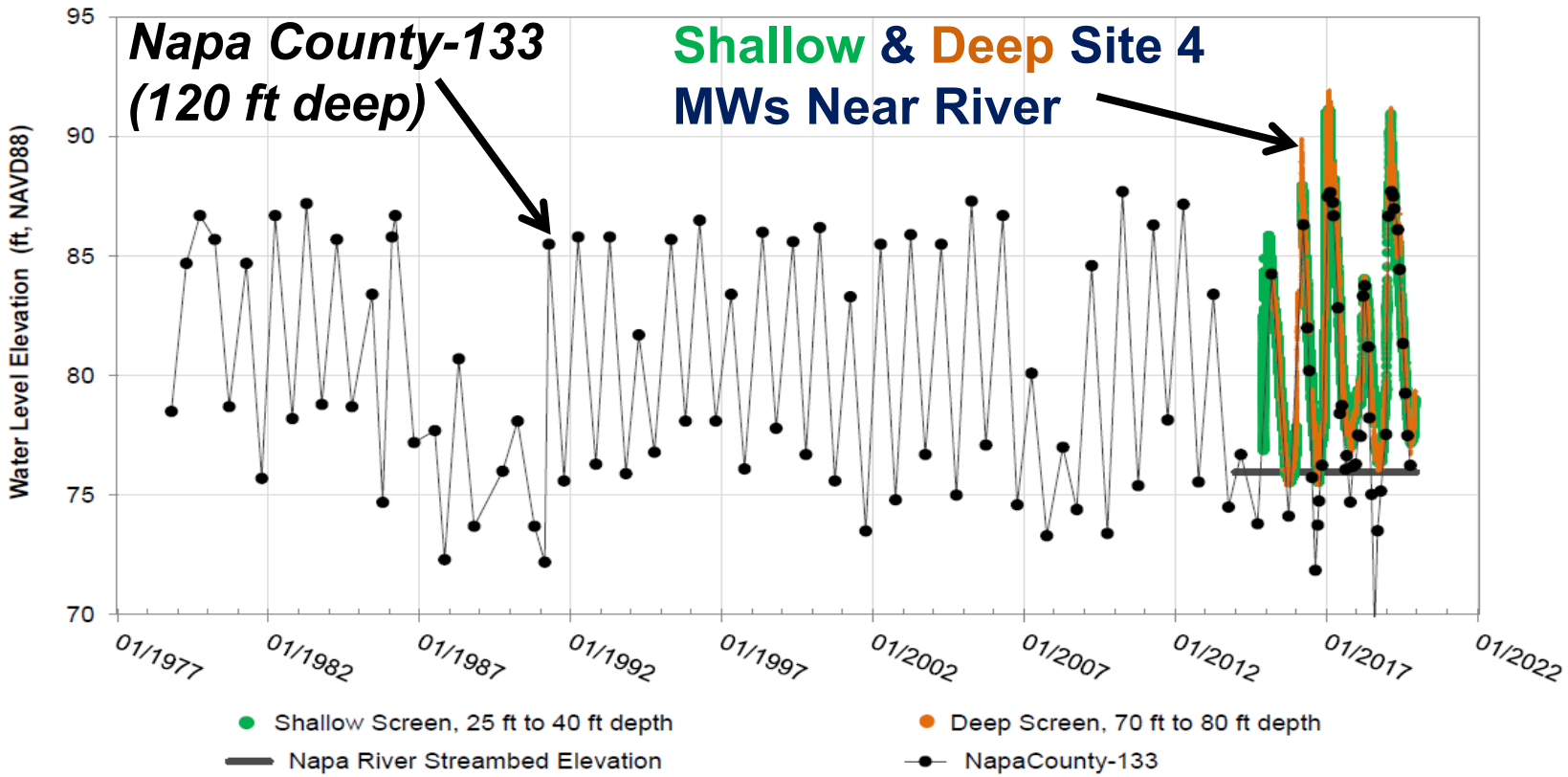


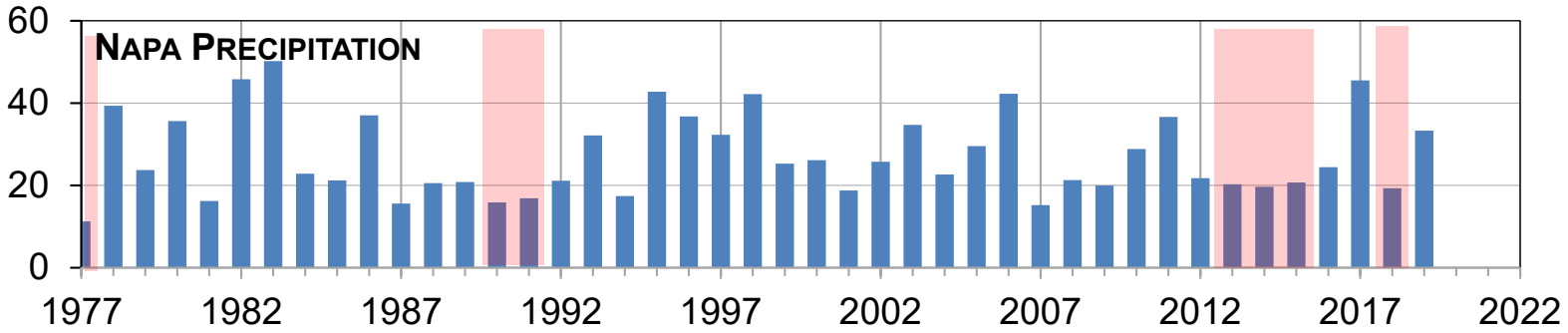
St. Helena SW/GW Site 5



River and Shallow MW not exhibiting short-term pumping effects

SW/GW Site 4 Compared to Historical GW Levels

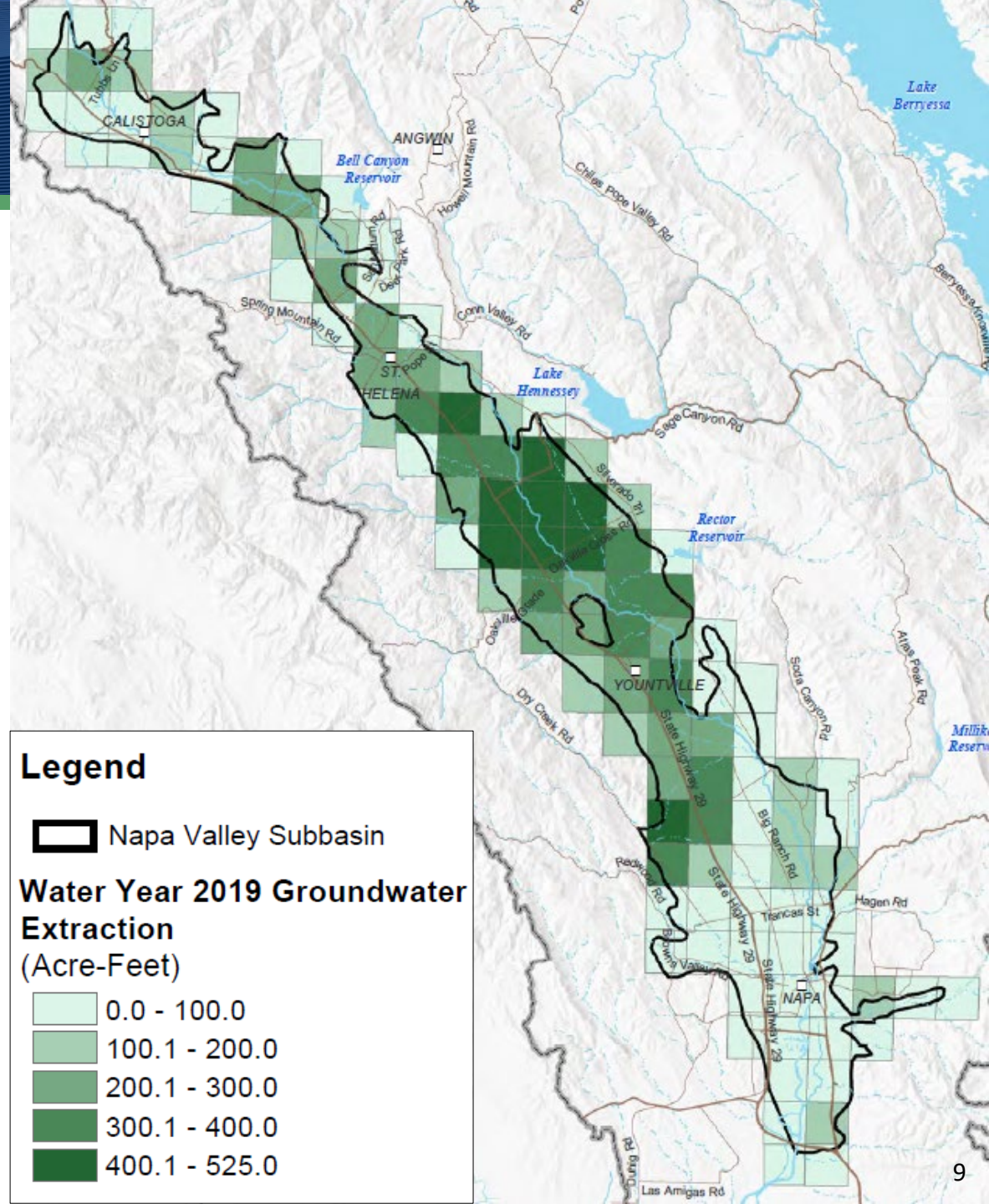




Groundwater Pumping, 2019 (Acre-feet)

	Acre-feet
Ag (vines and other)	12,656
Municipal	317
Unincorporated Domestic	357
Unincorporated Landscaping	3,442
Unincorporated Wineries	1,233

TOTAL = 18,005 Acre-feet



Summary of Groundwater Pumping and Change in Groundwater Storage

Description	(Acre Feet)
2019 Groundwater Pumping	18,005
Avg. Annual Recharge (1988-2015)	69,000
Sustainable Yield (Estimated Range)	17,000 to 20,000
2019: Annual Storage Change	+11,374
1988-2019: Cumulative Annual Storage Change	**+15,762**

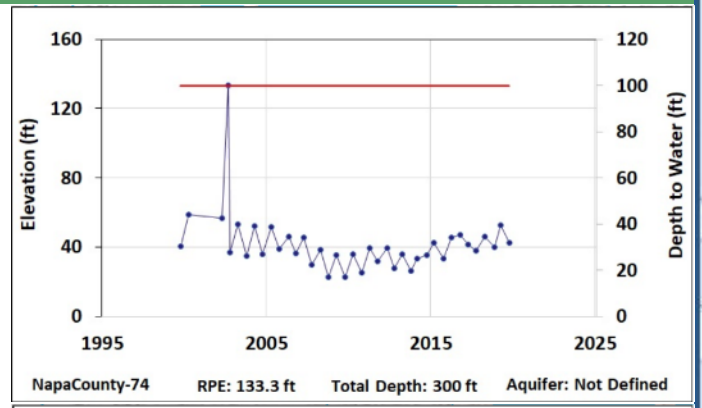
Excerpt Napa SGMA Sustainability Goal:

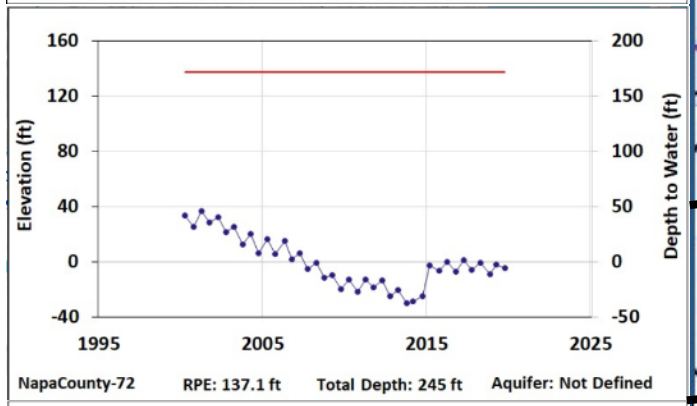
……[Everyone] in the county will integrate stewardship principles and measures in groundwater development, use, and management to protect economic, environmental, and social benefits and ***maintain groundwater sustainability indefinitely without causing undesirable results****, including unacceptable economic, environmental, or social consequences.*

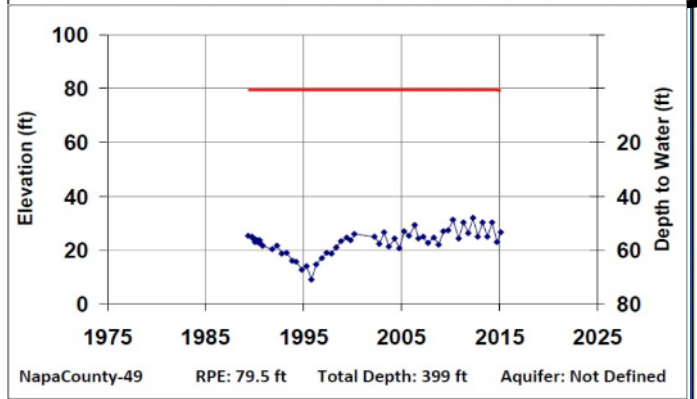
Recycled Water Use, 2019 (Acre-feet)

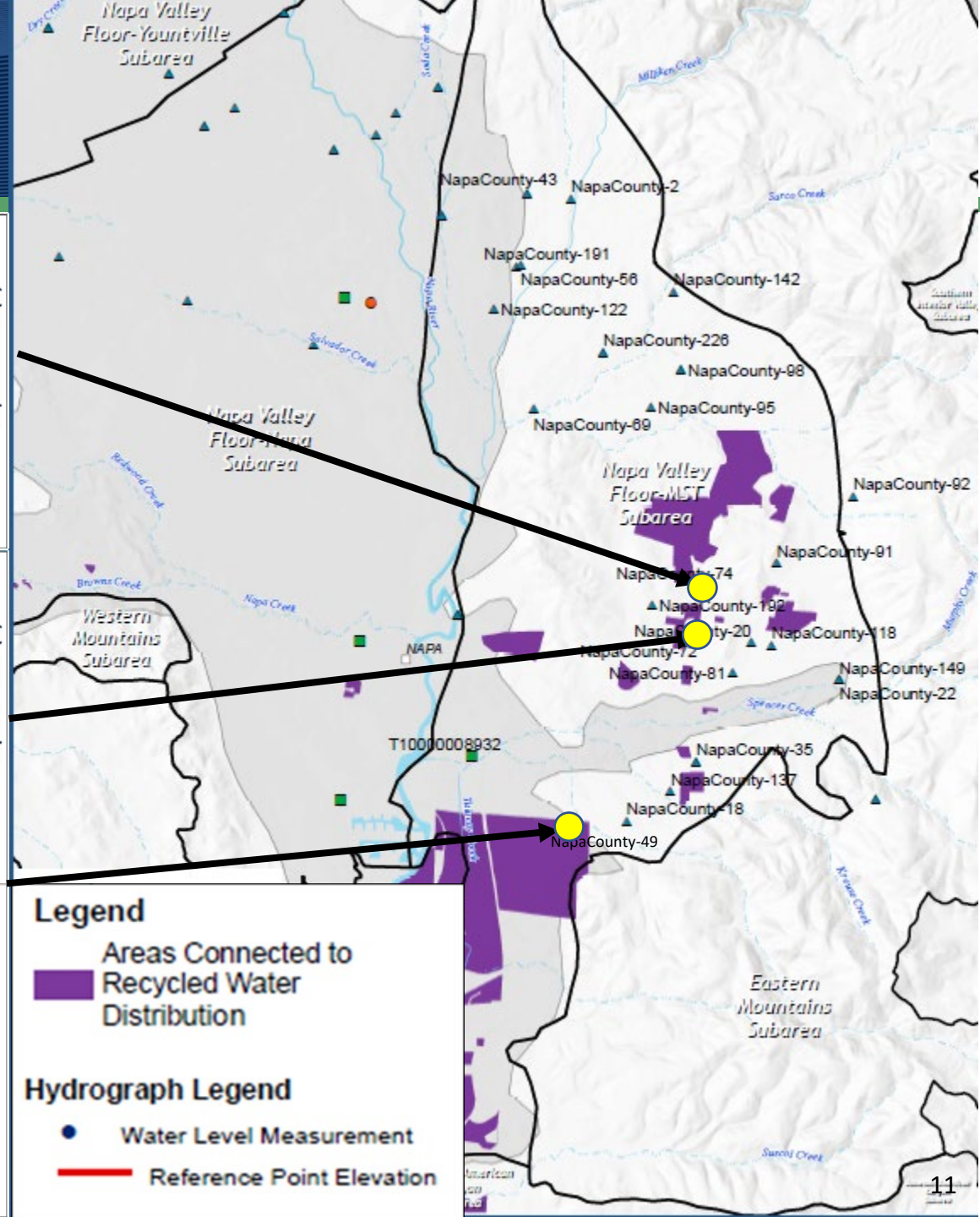
	Acre-feet
Ag (vines and other)	440
Municipal	946

TOTAL=
1,386 Acre-feet





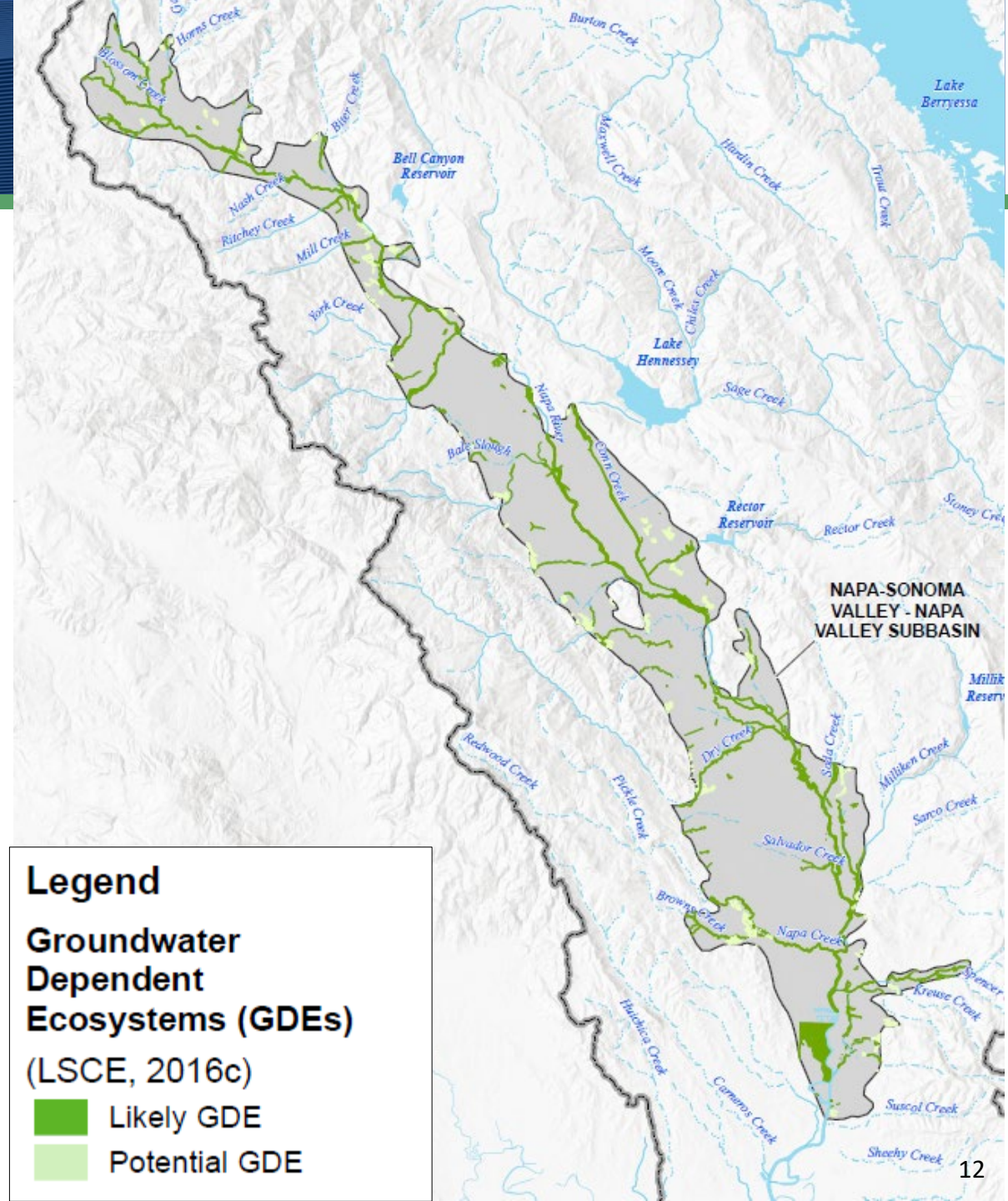


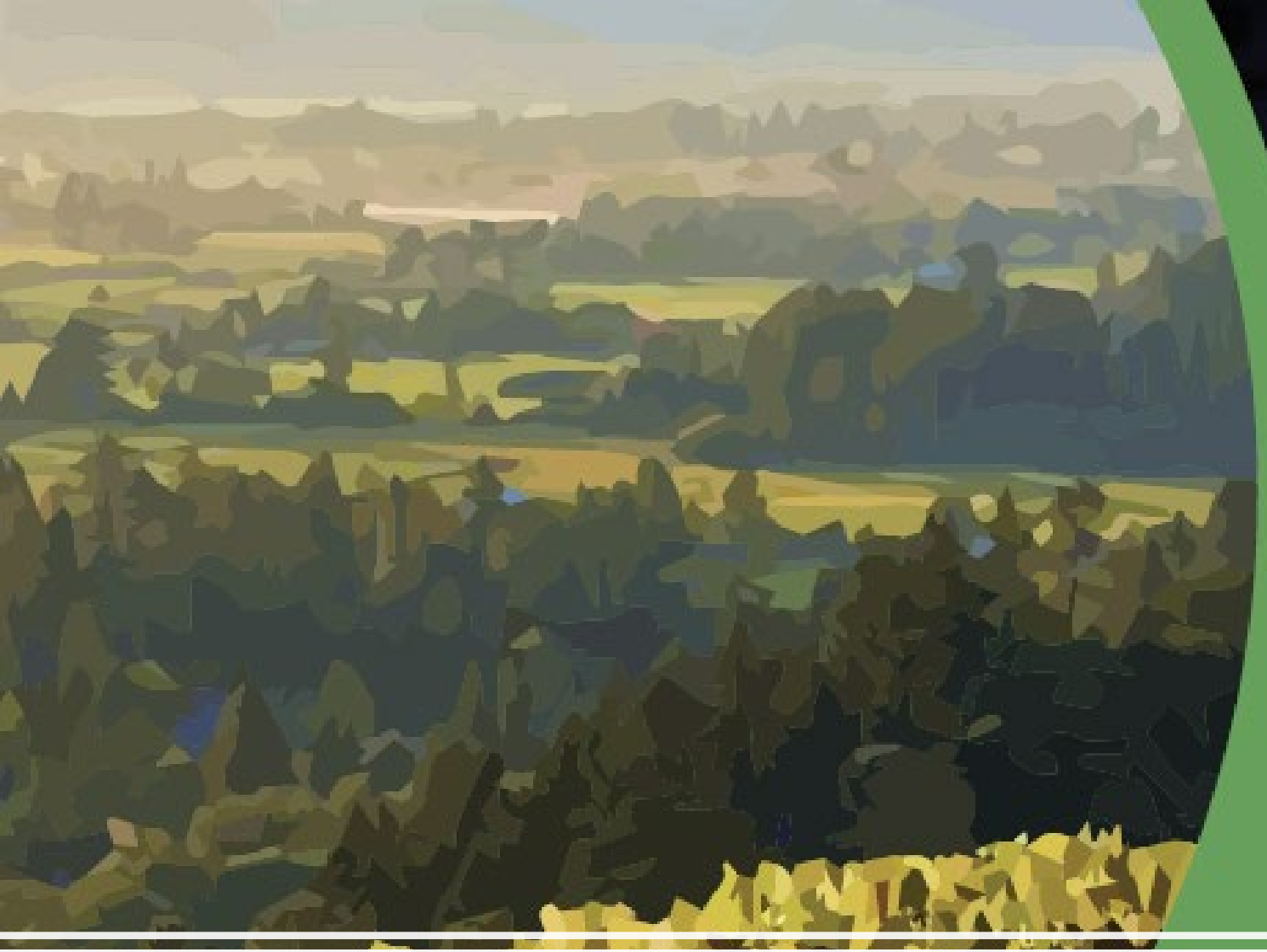


Groundwater Dependent Ecosystems Water use, 2019 (Acre-feet)

- GDEs are an important groundwater user and component of the water budget
- GDE Acreage: 2,663 acres

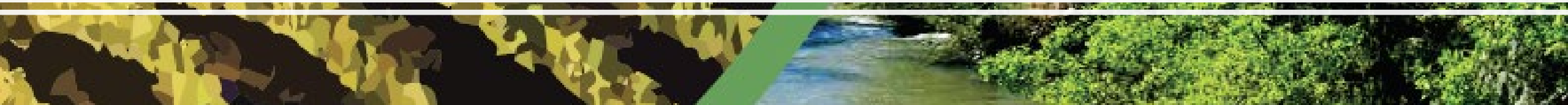
TOTAL= 4,924 Acre-feet





Napa County Groundwater Sustainability

METRICS & TRACKING: SUSTAINABILITY INDICATORS



Groundwater Sustainability Indicators

Not Causing Undesirable Results:
Means Avoiding Significant and Unreasonable …

- Lowering of GW Levels
- Reduction of GW Storage
- Seawater Intrusion
- Water Quality Degradation
- Land Subsidence
- Depletion of Surface Water

Napa Valley Hydrogeologically Sensitive to this Indicator

SGMA Representative Monitoring Sites

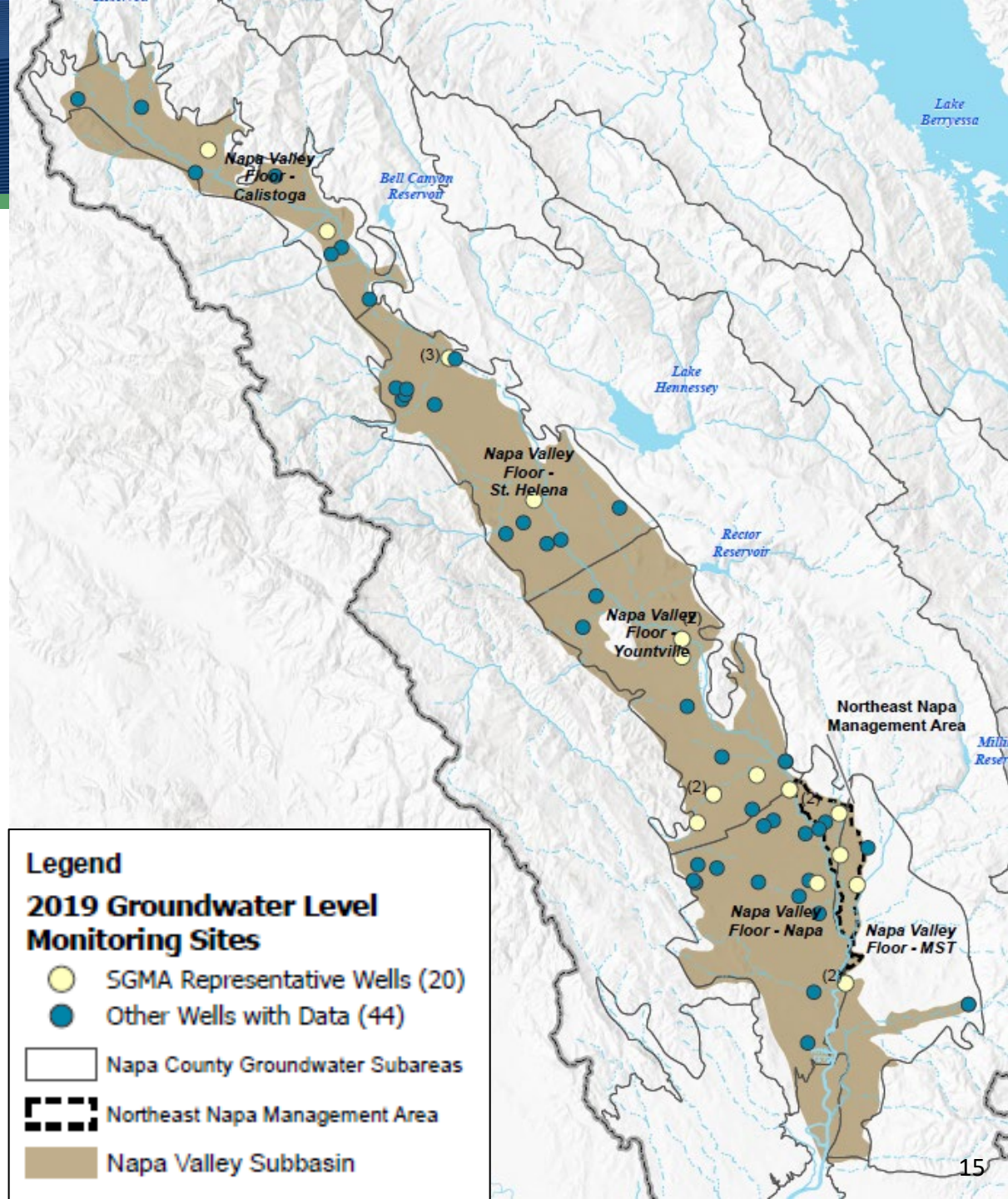
Representative monitoring wells to ensure sustainability

- 21 locations total (20 GWLs, 1 GWQ)
- Metrics for each sustainability indicator, as applicable

Ongoing:

- *Other Countywide GW Data to be Analyzed, Updated, & Reported*
- *Expanding MW network*

Currently 109 wells (total)



Sustainability Indicators: Streamflow

One well below Minimum Threshold

- **Recovered by >10 feet by November 2019**

Representative Monitoring Sites Well ID	Date Monitored	Measured Minimum 2019 Fall Groundwater Elevation (GWE) (Feet)	Streamflow Depletion	
			Minimum Threshold (Fall GWE, Feet)	Measurable Objective (Fall GWE, Feet)
06N04W17A001M	11/12/2019	42	37	50
06N04W27L002M	10/25/2019	10	-2	12
07N05W09Q002M	11/12/2019	134	127	135
08N06W10Q001M	9/19/2019	267	269	281
NapaCounty-76	10/22/2019	-6	-	-
NapaCounty-122	10/18/2019	-39	-	-
NapaCounty-128	11/25/2019	331	320	331
NapaCounty-133	11/25/2019	76	72	76
NapaCounty-135	11/26/2019	38	-	-
NapaCounty-214s-swgw1	10/10/2019	3	2	4
NapaCounty-215d-swgw1	10/10/2019	2	2	4
NapaCounty-216s-swgw2	10/10/2019	80	61	76
NapaCounty-217d-swgw2	10/10/2019	66	61	76
NapaCounty-218s-swgw3	10/10/2019	33	29	32
NapaCounty-219d-swgw3	10/10/2019	33	29	32
NapaCounty-220s-swgw4	10/10/2019	78	75	77
NapaCounty-221d-swgw4	10/10/2019	77	75	77
NapaCounty-222s-swgw5	10/10/2019	188	185	190
NapaCounty-223d-swgw5	10/10/2019	174	164	175
NapaCounty-229	10/18/2019	-65	-	-

SGMA Implementation Progress

- SGMA Annual Reports (continuing)
- Napa County GSA Formation
- SGMA Stakeholder Outreach Survey
- Developing Best Available Water Use Data
- Revised Conditions of Approval for Discretionary Permits
- Evaluating Groundwater Use by GDEs
- Napa Valley Subbasin Integrated Hydrologic Model Development
- Received DWR Prop 68 for GSP Development and MW Installation
- GSP Development

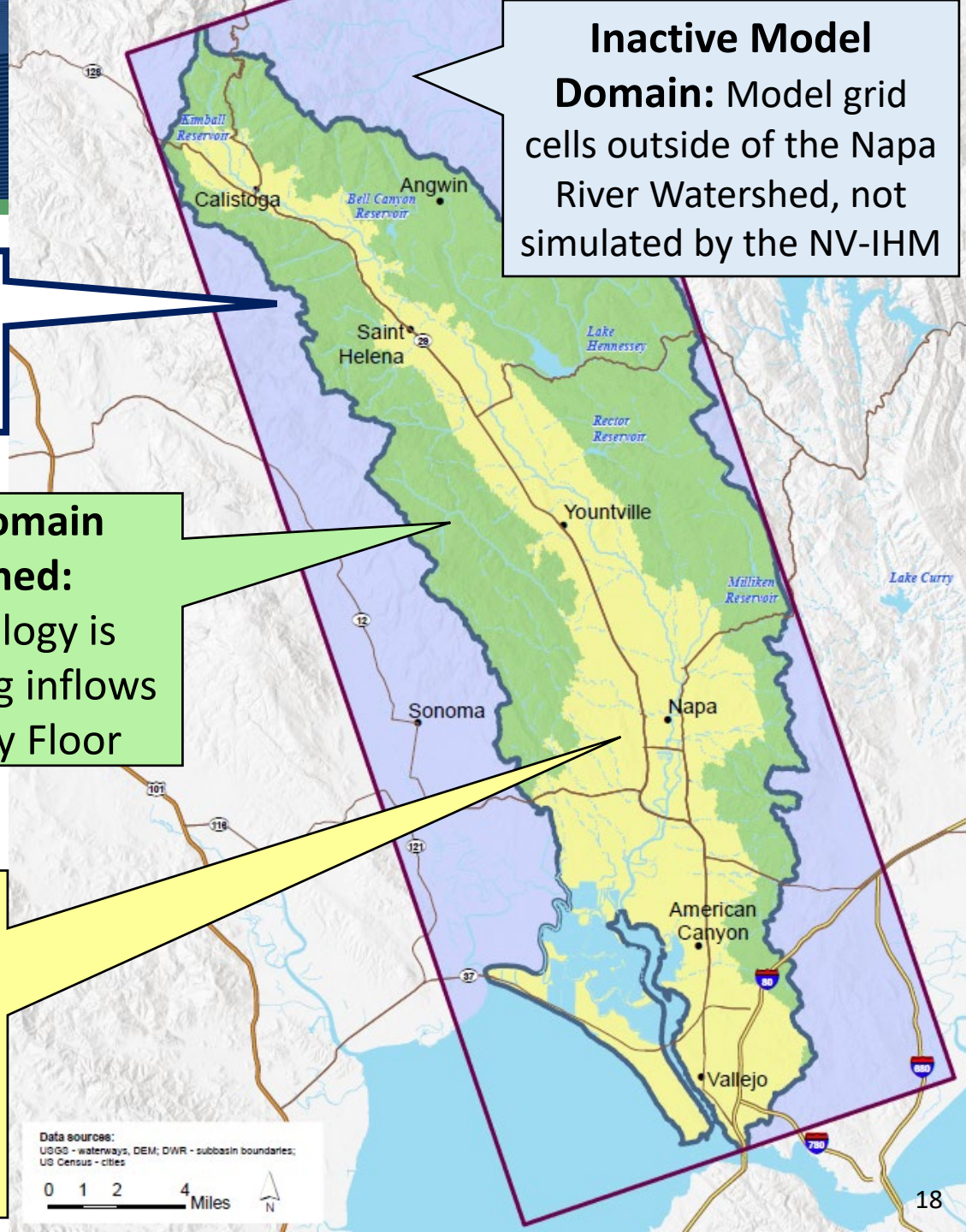
Napa Valley Integrated Hydrologic Flow Model (NV-IHM) Development

- Develop water budgets: historical, current and projected (50-Year)
- Simulate response to climate change and future land use
- Evaluate projects and management actions to maintain sustainability

Napa River Watershed

Active Model Domain Upper Watershed: Watershed hydrology is simulated, including inflows to the Napa Valley Floor

Active Model Domain Napa Valley Floor: Hydrology is simulated by the MODFLOW One-Water platform, includes the Napa Valley Subbasin

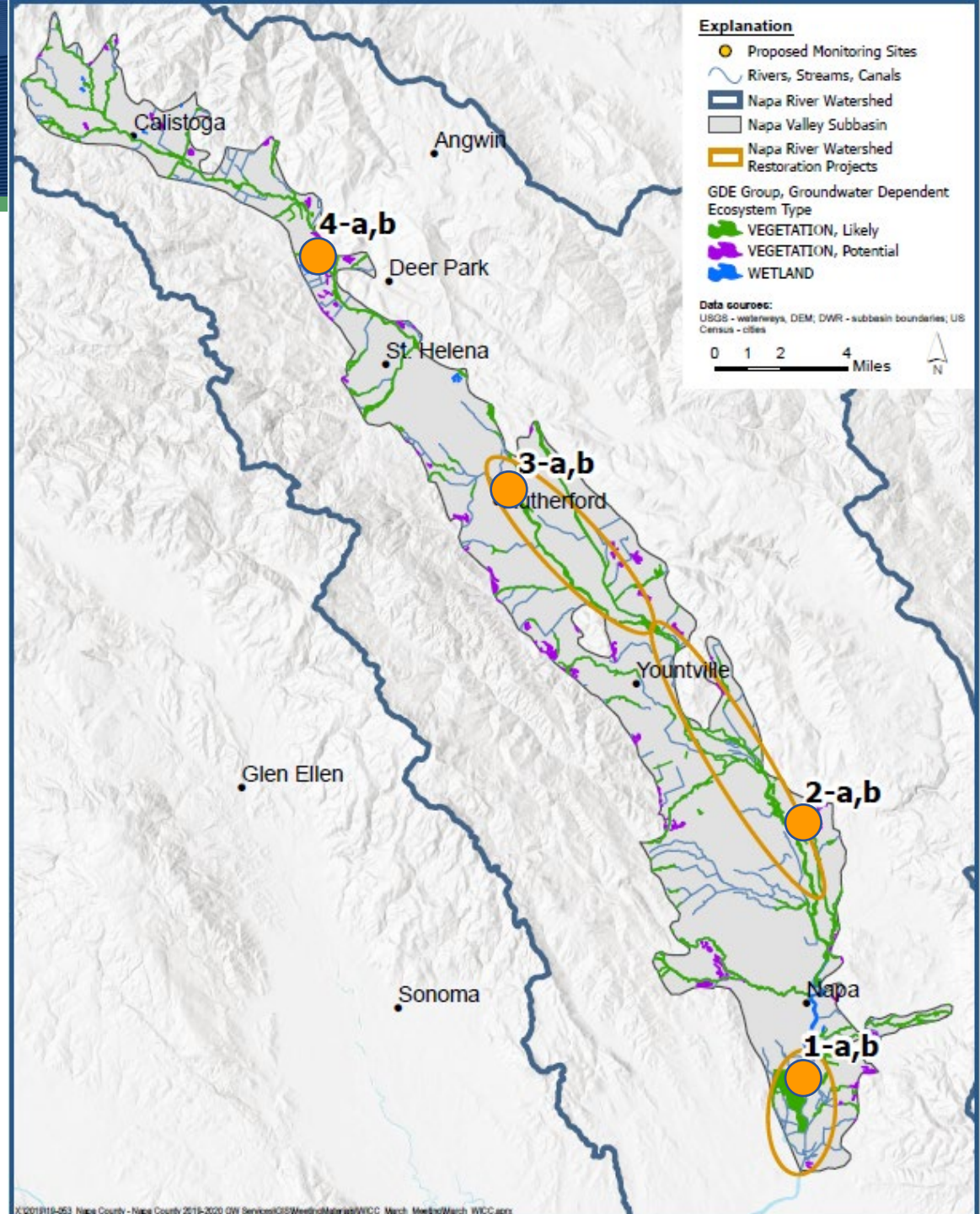


2019 Annual Report: Summary

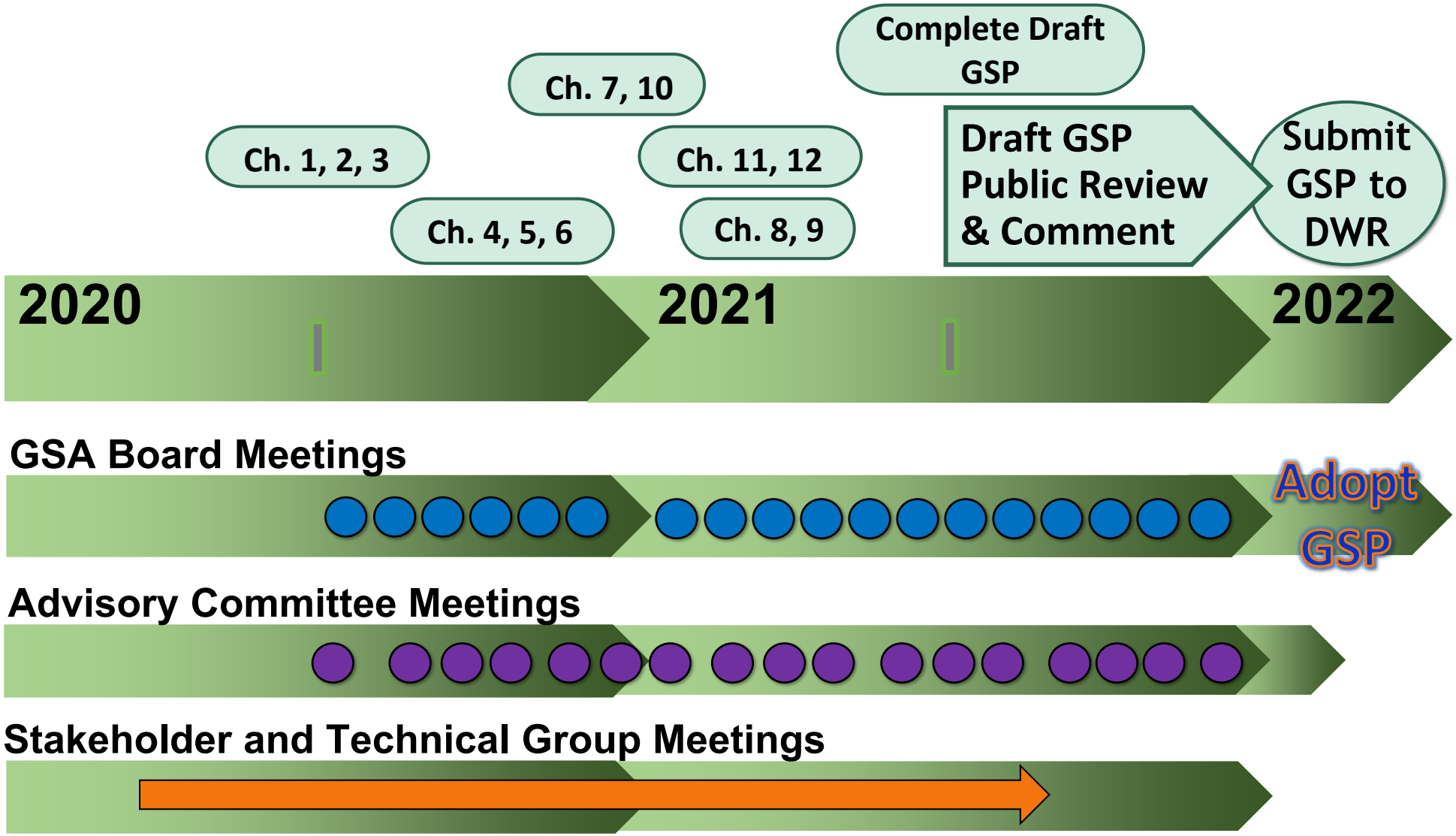
- GW levels stable in majority of wells Napa Valley Subbasin
  - Groundwater levels are generally higher in 2019 (Wet year) compared to 2018 (Dry year)
  - 2019 groundwater in storage resembles 2017 levels (Very Wet year).
- GW level declines in MST moderated
  - Some wells stabilized since 2008/2009
  - Some wells stabilized in more recent years; some wells show recent increases

2019 Annual Report: Recommendations

- Addition of 4 New SW/GW sites in the Subbasin
- Continue to add wells for GW level monitoring/fill data gap areas
- Improve Data Collection from Discretionary Permittees
- Evaluate Strategic Recharge and Water Conservation Opportunities
- Increase Outreach
- Continue Development of Flow Model and GSP



SGMA Implementation Progress



Thank You

Napa County Groundwater Sustainability