Napa County Groundwater Sustainability Agency

GSP Implementation: The First Five Years

May 11, 2023

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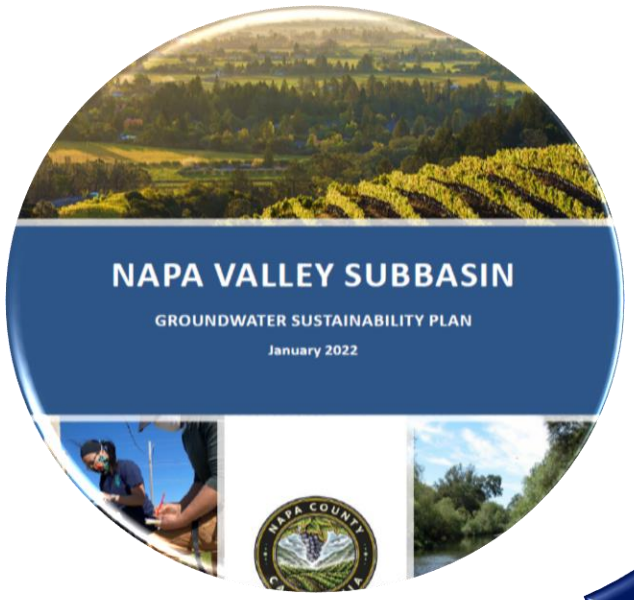
Consulting Engineers

Outline

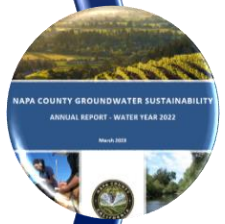
- GSP Implementation: First Five Years
- Adaptive Management
- GSP Implementation: Yearly View
- Sustainability Indicators & Metrics
- Response Actions & PMAs
- Other GSP Implementation Efforts
- Water Management Approaches

GSP Implementation: The First Five Years

2022



Monitoring & Well Recruitment



Annual Report WY 2021; TAG Formation & Meetings

Workplans' Outlines for Projects & Management Actions (PMAs)

Achieve Sustainability Goal Before 2042

We Are Here

2023

- Monitoring
- AR WY 2022
- Workplans' Development
- Meetings/ Outreach

2024

- Monitoring
- AR WY 2023
- Workplans' Implementation
- Model Update
- Meetings/ Outreach

2025

- Monitoring
- AR WY 2024
- Workplans/ Model Update
- PMAs
- Meetings/ Outreach

2026

- Monitoring
- AR WY 2025
- Model Scenarios/ Draft GSP Update
- PMAs
- Meetings / Outreach

2027

- **GSP Update to DWR**
- Monitoring
- AR WY 2026
- PMAs
- Meetings/ Outreach

To achieve the Napa Valley Subbasin Sustainability Goal, GSP Implementation is:

- > *Interrelated*
- > *Iterative*
- > *Collaborative*
- > *Innovative*
- > *Communicative*
- > *Dynamic*

Iterative GSP Implementation:
Plan—> Do—> Check—> Act

Yearly

GW, SW & Other Monitoring/ Reporting

Evaluate GW Conditions; Assess SMCs; Response to PMAs

Triggers or MT Exceedances?

Yes

ID and Address Data Gaps

Update/Refine Modeling Tools

TAG, GSA, Stakeholder General Public

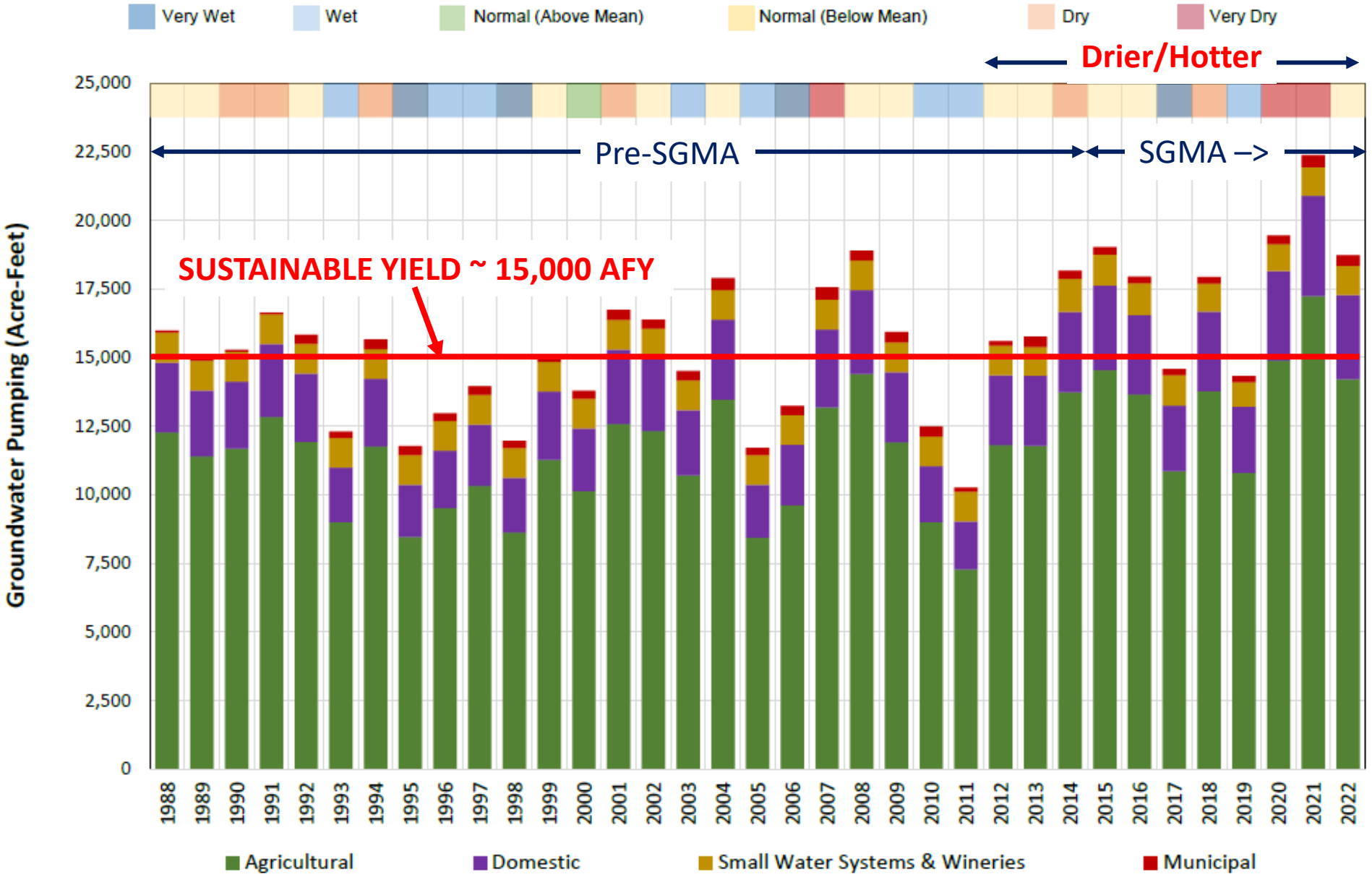
Response Actions: Near-Term and Later Identify and Implement Projects and Management Actions (PMAs)

Achieving Sustainability involves ongoing adaptive management – including monitoring, consideration and refinement of GSP criteria, and implementation of prompt response actions and PMAs to address triggers, minimum threshold exceedances, or mitigate undesirable results.

Four Workplans:

- ✓ Stormwater Resource Plan
- Vineyard and Winery Water Conservation
- Groundwater Pumping Reduction – 10%, Subbasin wide, voluntary
- Interconnected Surface Water & GDEs

Groundwater Pumping WY 1988-2022



Groundwater Pumping

Avg. 1988-2014 = 14,890 AFY
(within Sustainable Yield)

Avg. 2015-2022 = 18,150 AFY
(Exceeds Sustainable Yield)

Avg. 1988-2022 = 15,640 AFY
(Slightly exceeds Sustainable Yield)

Note: Municipal pumping includes pumping for St Helena which occurs directly adjacent to Bulletin 118 Subbasin Boundary

RMS Groundwater Levels: Response Action Required

- 1 RMS/ISW well (Yountville site) has 3 consecutive Fall MT exceedances
  - **UR has occurred for depletion of ISW; applies to any water year type**
- Avg. GW pumping over 7-year period exceeds Sustainable Yield
  - **UR occurred for Reduction in Groundwater Storage (WYs 2021 and 2022)**
- Subbasin must be sustainable at least by 2042
  - **Strive for resiliency long before**

Sustainability Indicator	WY 2021	WY 2022
	UR: Yes or No	UR: Yes or No
Chronic GWL Lowering (CGWL)	No	No
Depletion of Interconnected Surface Water (ISW)	No	Yes
GW Quality Degradation	No	No
Reduction of GW Storage	Yes	Yes
Land Subsidence	No	No
Seawater Intrusion	No	Future evaluation

Early Response Action as of January 2023

WAA Tier 1: Previous (2015) Compared to Now (2022)

New County Regulations: Standards as of January 6, 2023 per CEQA, the County's WAA dated May 12, 2015, Napa Valley Subbasin GSP implementation, County's own drought emergency, Governor's Executive Order N-7-22, recent court decisions, and public trust considerations

Well Type	Groundwater Use	Inside Napa Valley Subbasin		Outside Napa Valley Subbasin	
		Previous	New Regulation	Previous	New Regulation
NEW WELL	Domestic - Individual User	NA	**0.3 ac-ft/ac** [3,6]	NA	**NA**[1]
	Commercial, Industrial, or Agricultural	1 ac-ft/ac[2]	**0.3 ac-ft/ac** [3]	Parcel Specific Recharge [2]	**Parcel Specific Recharge** [4]
	Public Water System	1 ac-ft/ac[2]	**0.3 ac-ft/ac** [3]	Parcel Specific Recharge [2]	**Parcel Specific Recharge** [4]
REPLACEMENT WELL	Domestic - Individual User	NA	**0.3 ac-ft/ac** [3]	NA	**Parcel Specific Recharge** [1,4]
	Commercial, Industrial, or Agricultural	NA	**0.3 ac-ft/ac** [3]	NA	**Parcel Specific Recharge** [4]
	Public Water System	NA	**0.3 ac-ft/ac** [3]	NA	**Parcel Specific Recharge** [4]
EXISTING WELL	New or Increased Water Use for Discretionary Project	1 ac-ft/ac	**0.3 ac-ft/ac** [3]	Parcel Specific Recharge	**Parcel Specific Recharge** [4]

[1] Assumes less than 2-acre-feet per year of groundwater for individual domestic users.

[2] Previous practice was to apply Tier 1 requirements to only Discretionary Project. No water use limits were imposed on a Ministerial Project.

[3] Existing GW use exceeds 0.3 ac-ft/ac, then No Net Increase in GW use is required (Subject to Change by the GSA).

[4] Existing GW use exceeds the Parcel Specific Recharge, then No Net Increase in GW use is required.

[5] Analysis is not required when the replacement well is located further away from neighboring well, natural spring or Significant Stream, and no increase in GW use.

[6] Requirement can be met by submitting a "Water Use Declaration" that reflects the allowed water usage.

Response Actions: Near-Term and Later

Very Near-Term

- GSA: Subbasin
- County: Stakeholders/Public
- Local: Cities/Communities
- Agricultural/Wineries

Short-Term

- ✓ Stormwater Resource (4/23)
- Water Conservation (Summer 2023)
- Groundwater Pumping Reduction (Summer 2023)
- Interconnected Surface Water & GDEs (Fall 2023)

Mid-Term

- ID Recharge Areas of Interest
- Explore Recharge Opportunities
- Implement Workplans
- GW Pumping Reduction Options

Other GSP Implementation Efforts, 2022-2023

DONE

- ✓ **NCGSA Technical Advisory Group (Kick-Off August 2022)**
- ✓ **Annual Reports WY 2021 (April 2022) and WY 2022 (March 2023)**
- ✓ **MW Installation (4 Sites/8 MWs; May 2023)**

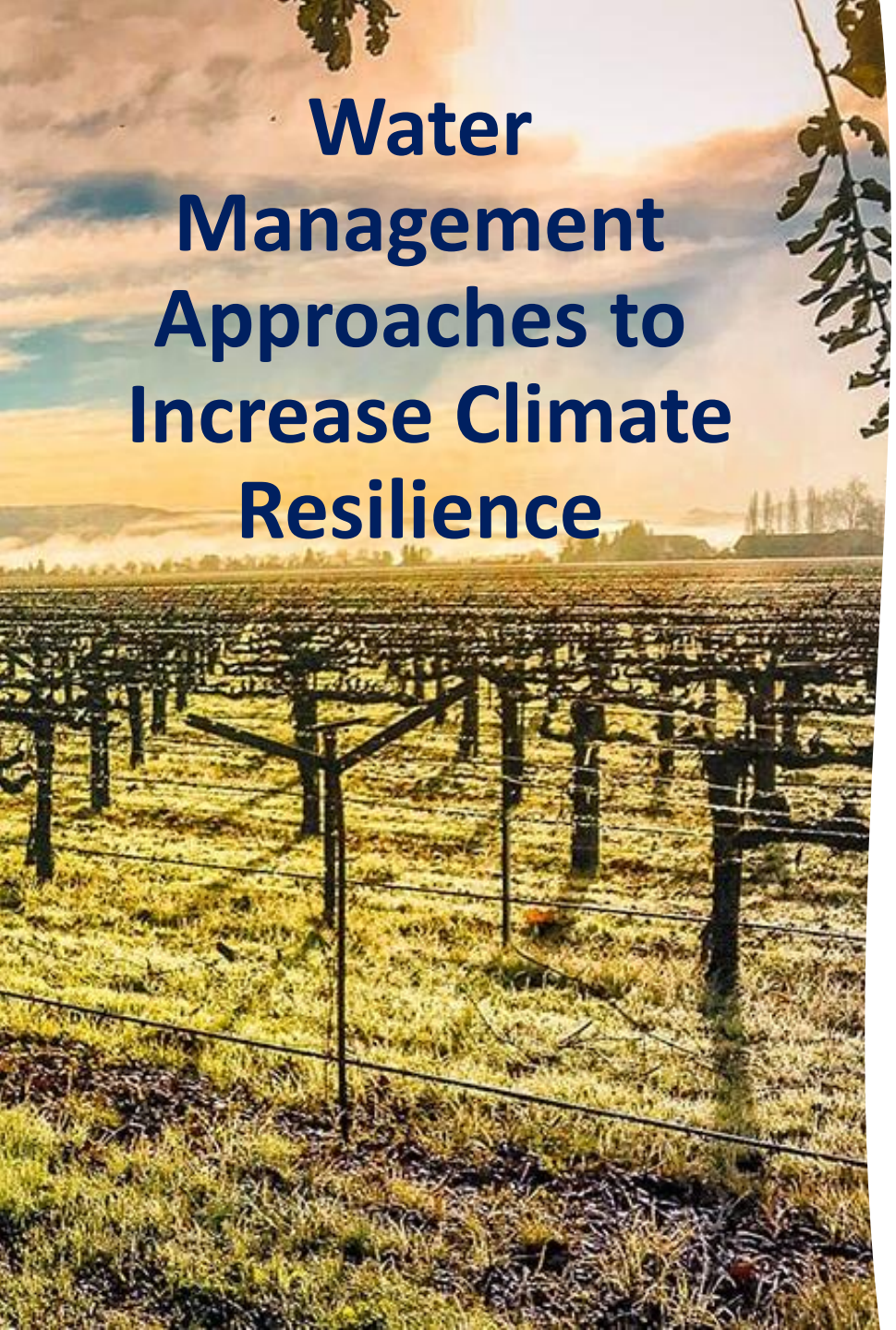
IN PROGRESS

- Refining Water Use Data (ET: OpenET and Local Land-Based Sensors)
- Evaluate Potential Recharge Areas and Feasibility
- Other Potential MW Sites
- Coordination with Napa County Drought and Water Shortage Efforts (SB 552)

ONGOING

- RCD and Stream Watch Monitoring
- Stakeholder Coordination and Outreach

DWR Approved Napa Valley Subbasin GSP January 26, 2023

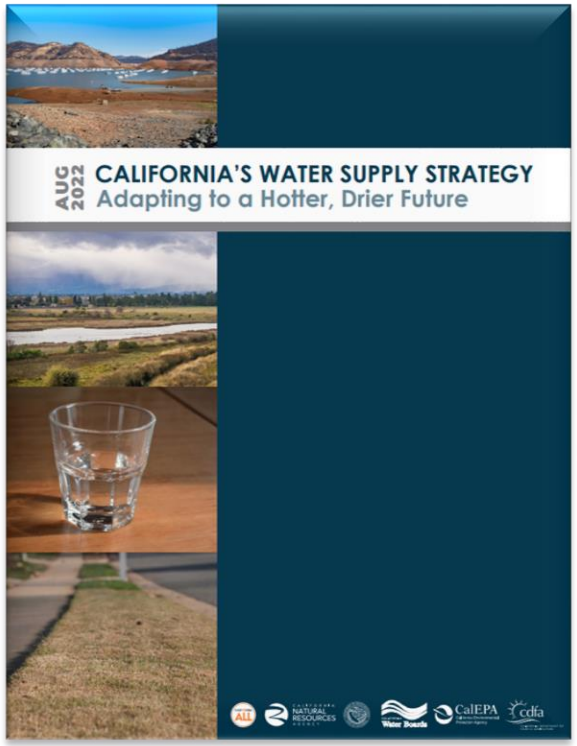


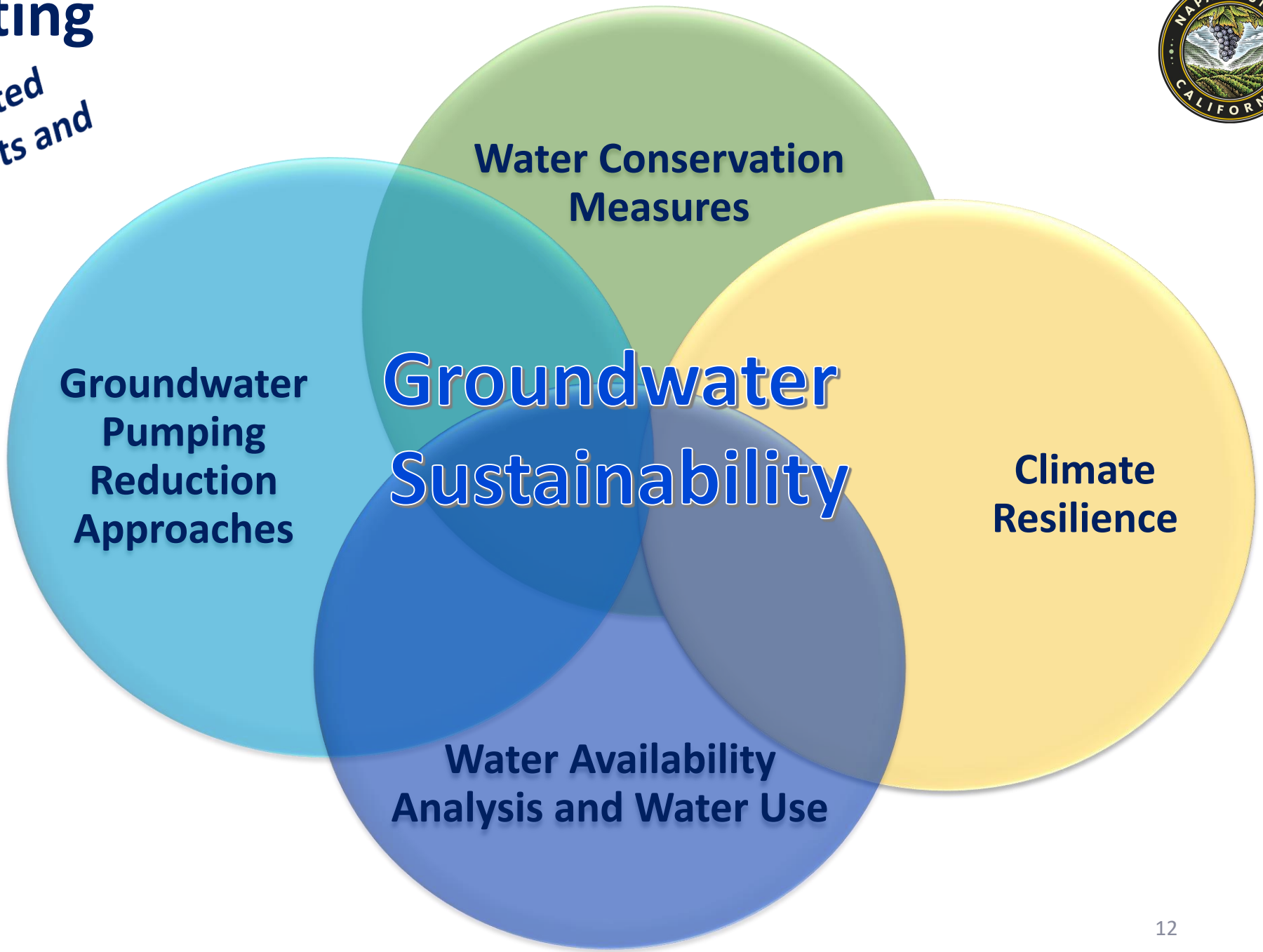
Water Management Approaches to Increase Climate Resilience

- **Climate change and hotter/drier conditions**
  - In recent years, 2 Wet/Very Wet and 8 Dry/Very Dry water years
  - Evaporative drought demand increases ("thirstier" atmosphere) observed in the Subbasin in 8 of 10 recent years
  - Pumping average pre-SGMA (1988-2014) 14,890 AFY (within sustainable yield estimate of 15,000 AFY); post-SGMA (2015-2022) 18,150 AFY (exceeds sustainable yield)
  - Subbasin responds to extremes (drier or wetter; recent back-to-back very dry years had pronounced effects not previously observed)
- **Water management approaches to increase climate resilience and mitigate weather pattern effects and uncertainties (examples)**
  - Capture and retain stormwater runoff "on farm"
  - BMPs to increase infiltration (cover crops, organic matter, compost, biochar, soil health practices)
  - BMPs to utilize stored stormwater for earlier season moisture needs (reduce pumping)
  - Utilize surplus winter river flows when available (obtain GSA water right permit and coordinate with growers)
  - Water conservation measures, even during wetter water years, reduce groundwater removed from storage

July Meeting

TAG discussion of interrelated GSP implementation efforts and considerations





Thank You

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