Roots to Rivers: Enhancing Agriculture and Watershed Resilience

Incentivizing Water Use Efficiency

Napa Water Conservation and Groundwater Pumping Reduction Workplans and Implementation

Napa County Watershed Symposium

Duncan MacEwan,
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Groundwater Sustainability Plan (GSP)

- GSP Water Conservation Workplan
  - Resource for countywide water conservation measures
- GSP Groundwater Pumping Reduction (GPR) Workplan
  - GSP 25-member Advisory Committee approved a reduction of groundwater pumping by 10% of historical average
  - 10% reduction applied to the Subbasin, not individual parcels
- GSP ISW and GDEs Workplan
  - Address data gaps to better understand existing streamflow characteristics and how they relate to Groundwater Dependent Ecosystem health

Guiding Principles for Water Conservation

Expand on voluntary actions that achieve groundwater benefits for the Subbasin

Assess the costs and benefits of actions and focus on those that are most cost-effective

Leverage existing programs and opportunities to generate value from voluntary actions

Consider new water use data and groundwater and surface water conditions and incorporate into an adaptive management framework

GPR Workplan: Overview

Voluntary Approaches to Reduce Pumping

Measurement

Technology & best management practices

Education & training

Certification programs

Benchmarking

Other practices

Subbasin Use Benchmarking and Tracking

Remote sensing, metering

Well permitting

Groundwater trends

Communications and Engagement

Outreach and engagement

Technical Advisory Group

Education and resources

Steps for Implementation

Assess effectiveness

Outline adaptive management

Mandatory program options

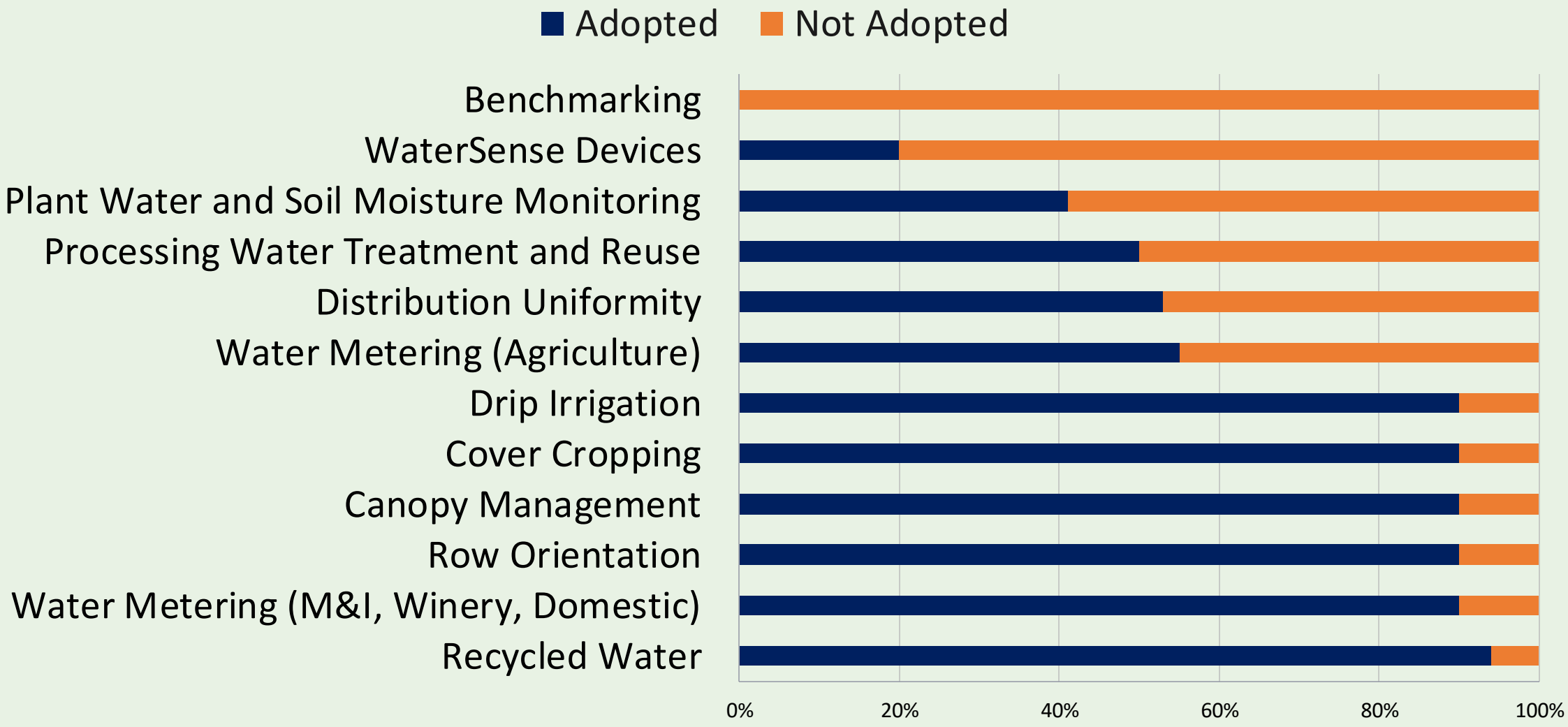
High Priority Water Conservation Practices

- Cost, adoption, water saving potential, and economic analysis of alternatives
- High-priority practices
  - Metering
  - Recycled water
  - Benchmarking
  - Distribution uniformity
  - Plant water and soil moisture monitoring
  - Row orientation
  - WaterSense devices

Example excerpt from table, read more here

Practice	Estimated Annualized Cost per AF Conserved* $/AF	Estimated Potential Subbasin-wide Water Savings AFY	Adoption Timeline** Years	Overall Feasibility Ranking
Water Practices for All Users				
Water Metering	$150 - $2,500	350 - 550	Medium-Term	High
Recycled Water	$362 - $720	200 - 300	Medium-Term	High
Benchmarking	$100 - $350	300 - 1,100	Medium-Term	High
Water Practices for Vineyards (New Plantings)				
Row Orientation	No additional cost	200 - 325	Long-Term	High
Rootstock Selection	No additional cost	Data Gaps	Long-Term	Data Gaps
Water Practices for Wineries				
Waterless Sanitation	$1,900 - $2,800	100 - 165	Near-Term	Low
Process Water Treatment and Reuse	Data Gaps	275 - 450	Long-Term	Medium
Water Practices for Residential, Commercial, and Hospitality				
WaterSense Devices	$775 - $1,200	500 - 575	Near-Term	High
Other Urban Water Conservation	Data Gaps	Data Gaps	Near-Term	Data Gaps

Adoption Rates of Select Practices



Water Conservation Program Components

Component/Activity	Work-in-Progress
Component 1: Education and Outreach; Feasibility Analysis	
Educational Materials	✓
Partnership Building	✓
Messaging System	
Feasibility Analysis	
Component 2: Voluntary Adoption	
Incentivize Adoption	✓
Benchmarking Pilot Program	✓
Meter Data and Reporting Program	✓
Component 3: Voluntary Certification	
Incentivize Certification	✓

- GPR Workplan implementation components are all integrated!
- Education and Outreach

Key Programs for Voluntary Adoption

Pilot Sites

Benchmarking

Certification

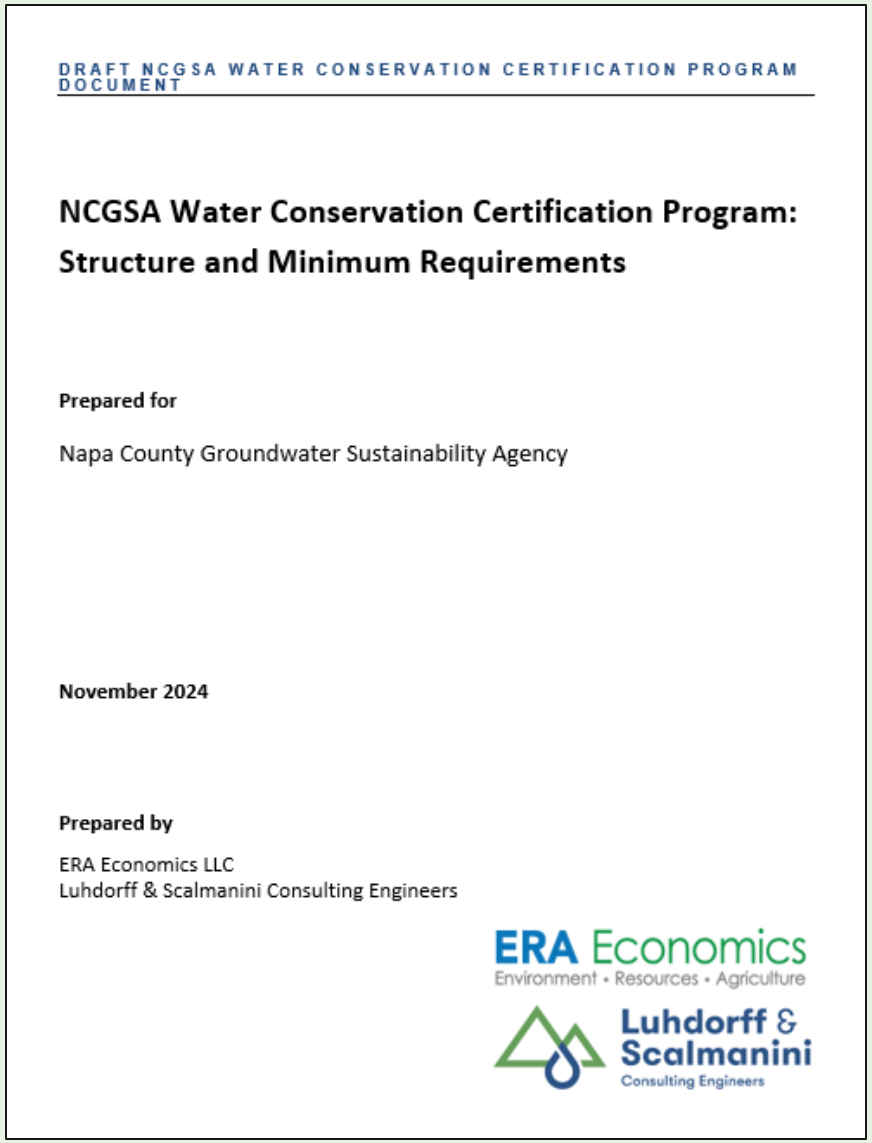
Education

Incentives

Expanded Measurement

Certification Overview

- Voluntary certification program for water conservation practices to support sustainable groundwater conditions in the Napa Valley Subbasin
- Framework defines minimum water conservation practice standards
- Example existing certification programs:



DRAFT NCGSA WATER CONSERVATION CERTIFICATION PROGRAM DOCUMENT

NCGSA Water Conservation Certification Program: Structure and Minimum Requirements

Prepared for

Napa County Groundwater Sustainability Agency

November 2024

Prepared by

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Benchmarking Program Concept

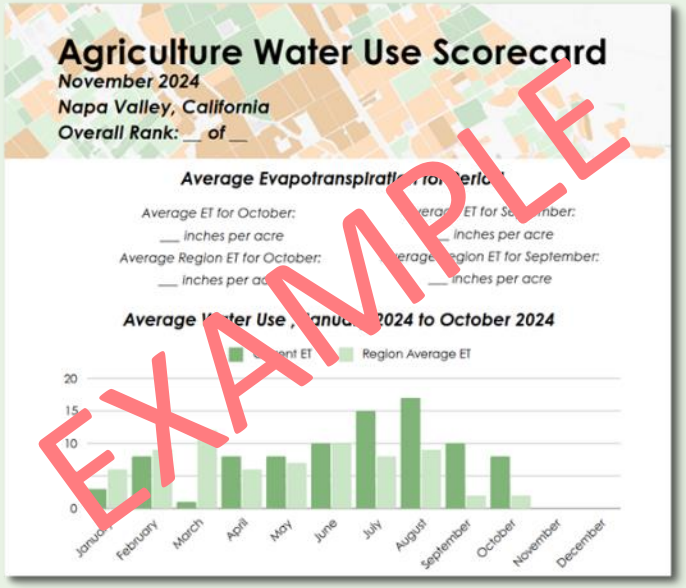
- Automated comparison to anonymous peer group, encouraging voluntary water conservation

Parcel & APN Data

Peer to Peer Comparison

- Field characteristics
- Grape characteristics
- Location
- Other

Monthly Report Card



Incentives to Encourage Adoption of Practices

Other

- Education
- Planning assistance
- Regulatory/compliance relief or assistance
- Funding assistance

Financial

- Certification costs
- Irrigation improvement costs
- Management costs
- Fees

Behavioral

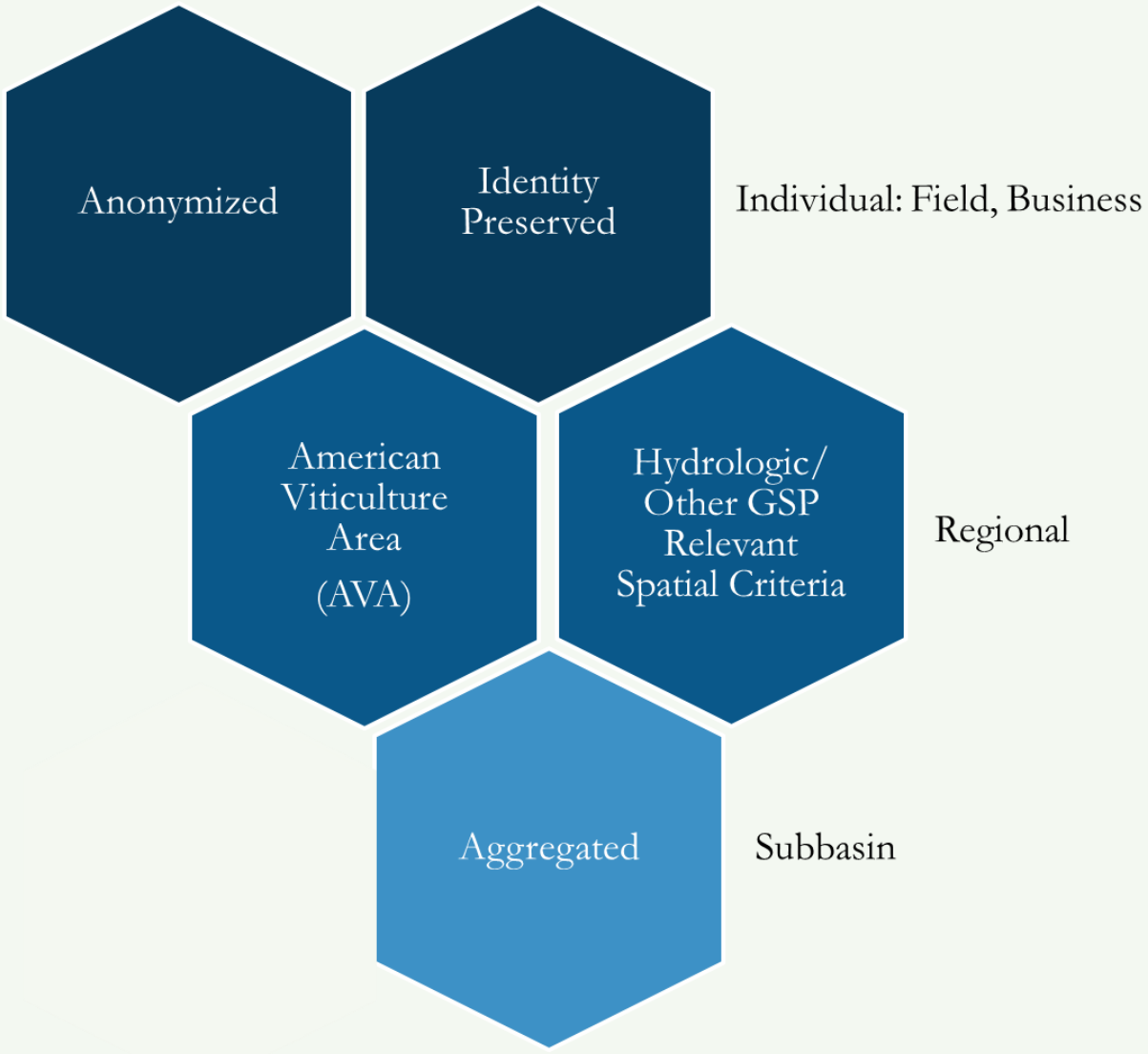
- Benchmarking
- Notifications
- Other nudges

Brand Awareness

- Industry leaders
- Recognition for “water stewardship”
- Similar marketing initiatives

Measuring Water Conservation

- Gross applied water vs. net water consumption
- Data confidentiality



What are next steps?

- Education, outreach, and continue working with partners
- Continue to provide resources
- Certification, benchmarking, incentives
- Pilot sites

- **Stay engaged!**
  - Groundwater Technical Advisory Group (TAG) meetings on the 2nd Thursday of the month at 1:30pm
  - TAG is the scientific advisory body for the GSA
  - Other public/stakeholder input opportunities

https://napa.legistar.com/Calendar.aspx

https://www.countyofnapa.org/3219/County-of-Napa-Plans-Reports-Documents

Thank you

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