

Integrated One Water Framework for Water Master Plan– Unincorporated Solano County

March 22, 2023



Meeting Agenda

1

INTRODUCTIONS AND PURPOSE OF FRAMEWORK

The Team

Desired Outcomes

2

STAKEHOLDER PROCESS & ROLE

Steering Committee

General Stakeholders

3

BACKGROUND

Land Use

Population

Businesses

Water and Wastewater Services

Drainage

4

OPPORTUNITIES AND CHALLENGES DISCUSSION

Water Supply

Wastewater

Water Quality

Flood Control/ Drainage

Future Conditions

Introductions

Solano County
Misty Kaltreider
Dick Tzou
James Bezek
Department of Resource Management

Dixon RCD
City of Dixon
City of Vacaville
City of Vallejo Lakes Water System
Fairfield Suisun Sewer District
Solano County Water Agency
Solano Irrigation District

**Potential
Steering
Committee**



Kennedy Jenks



Sachi Itagaki, Project Manager
Meredith Clement, Deputy Project Manager
Jennifer Larsen, Technical Lead

Nick Watterson, Hydrogeologist/Groundwater
Sustainability Planning

**Kennedy
Jenks
&
LSCE**

Introduction and Purpose

- One Water Framework Objective
 - Focus on water resources in unincorporated County
 - Support and align with implementation of Solano County General Plan
 - Identify water-related challenges and opportunities through a stakeholder process
 - Develop One Water concepts and guiding principles collaboratively with goals, objectives, and strategies
 - Establish a process to develop regional, multi-benefit projects that leverage regional cooperation and coordination
- One Water Framework Outcome:
 - Vision, goals, and strategies as a roadmap to future Solano County Utilities Master Plan

Introduction and Purpose

- What is One Water?
 - A holistic view of a community's multiple water resources, integrating each piece of the water cycle into one system
 - Looks to build a portfolio
 - Integration by design rather than accident
 - Looks to incorporate natural systems

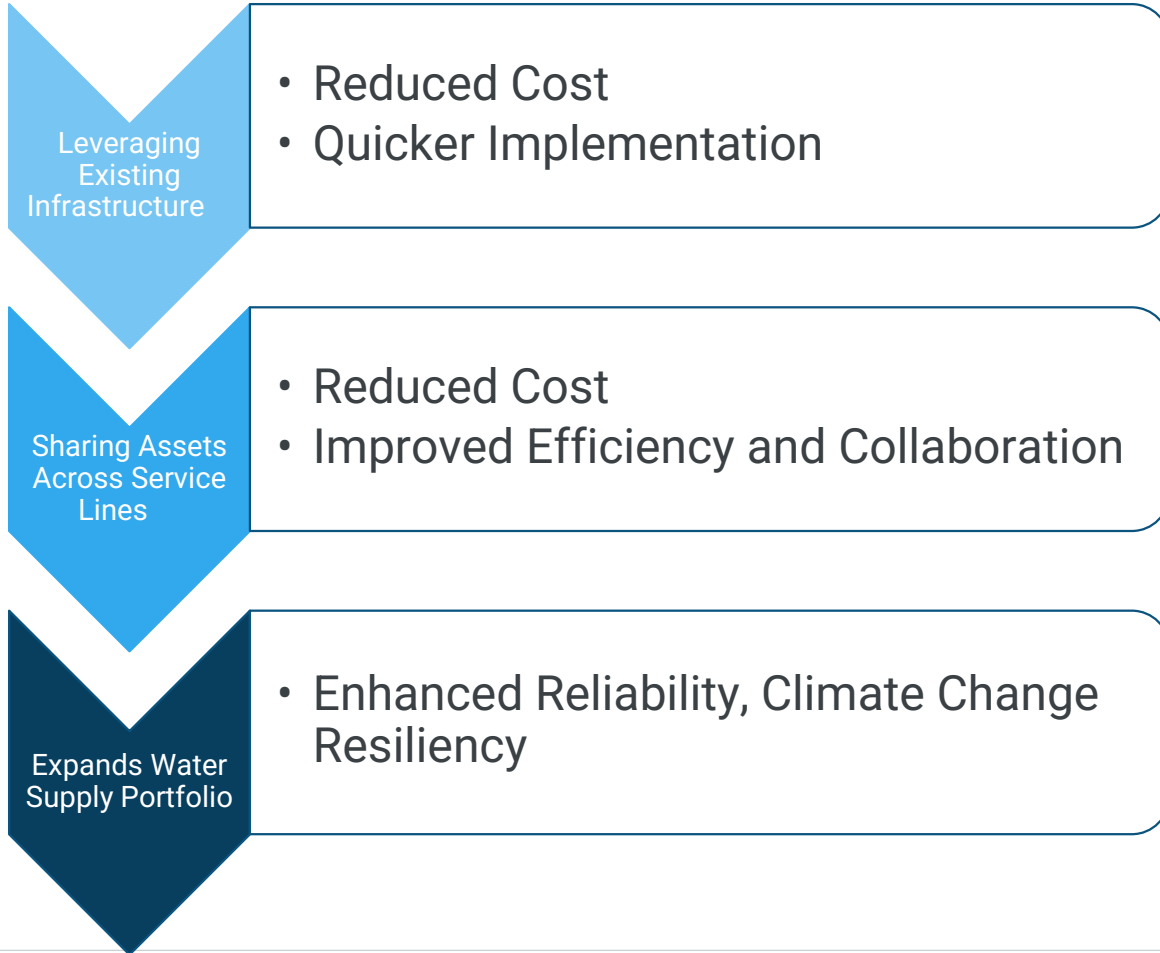


Introduction and Purpose

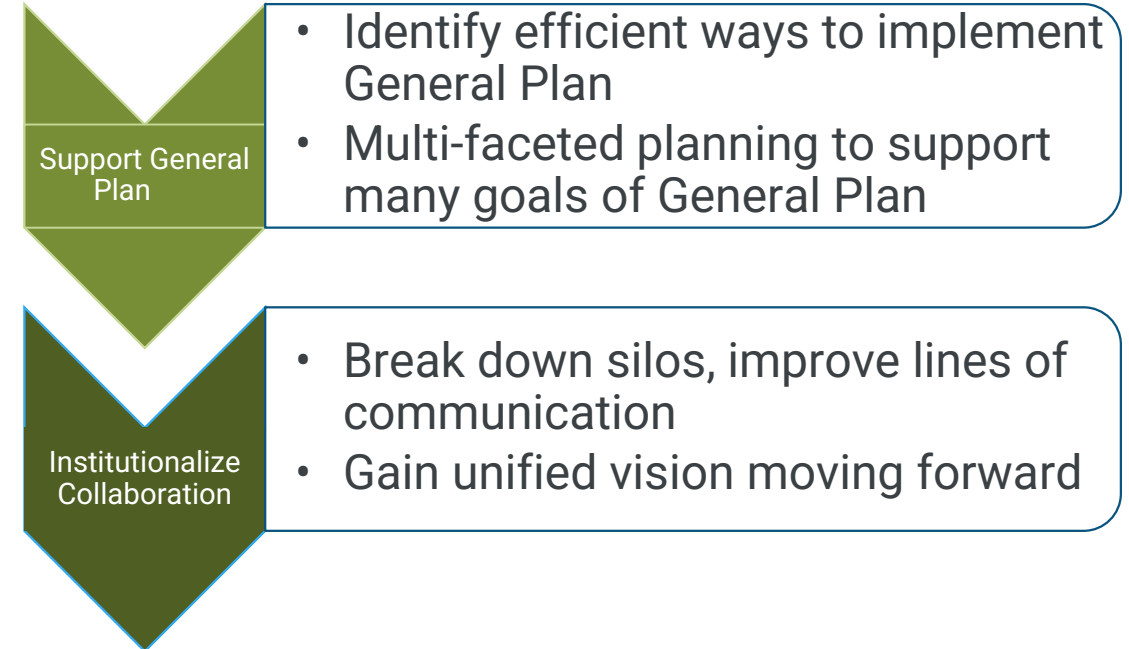
Water Management Aspect	Traditional	One Water
Overall approach	Integration by accident	Integration by design
Collaboration with stakeholders	Public input sought after solution/concept well underway	Agencies and public work together for solutions
Infrastructure choice	Hardscapes, concrete, metal	Use of hardscapes and natural systems
Stormwater management	Stormwater treated as nuisance	Harvested as water supply and to improve habitat
Wastewater management	Collect, disinfect, dispose	Use as source of water supply, irrigation and as source of nutrients and energy
Water demand management	Meet demand through investment in new supply sources	Better utilize existing sources including stormwater, demand management
Solution choices	Standard and limited to individual service line (e.g., wastewater)	Coordinated across multiple service lines

Introduction and Purpose

Benefits of One Water Approach



Benefits in Unincorporated County



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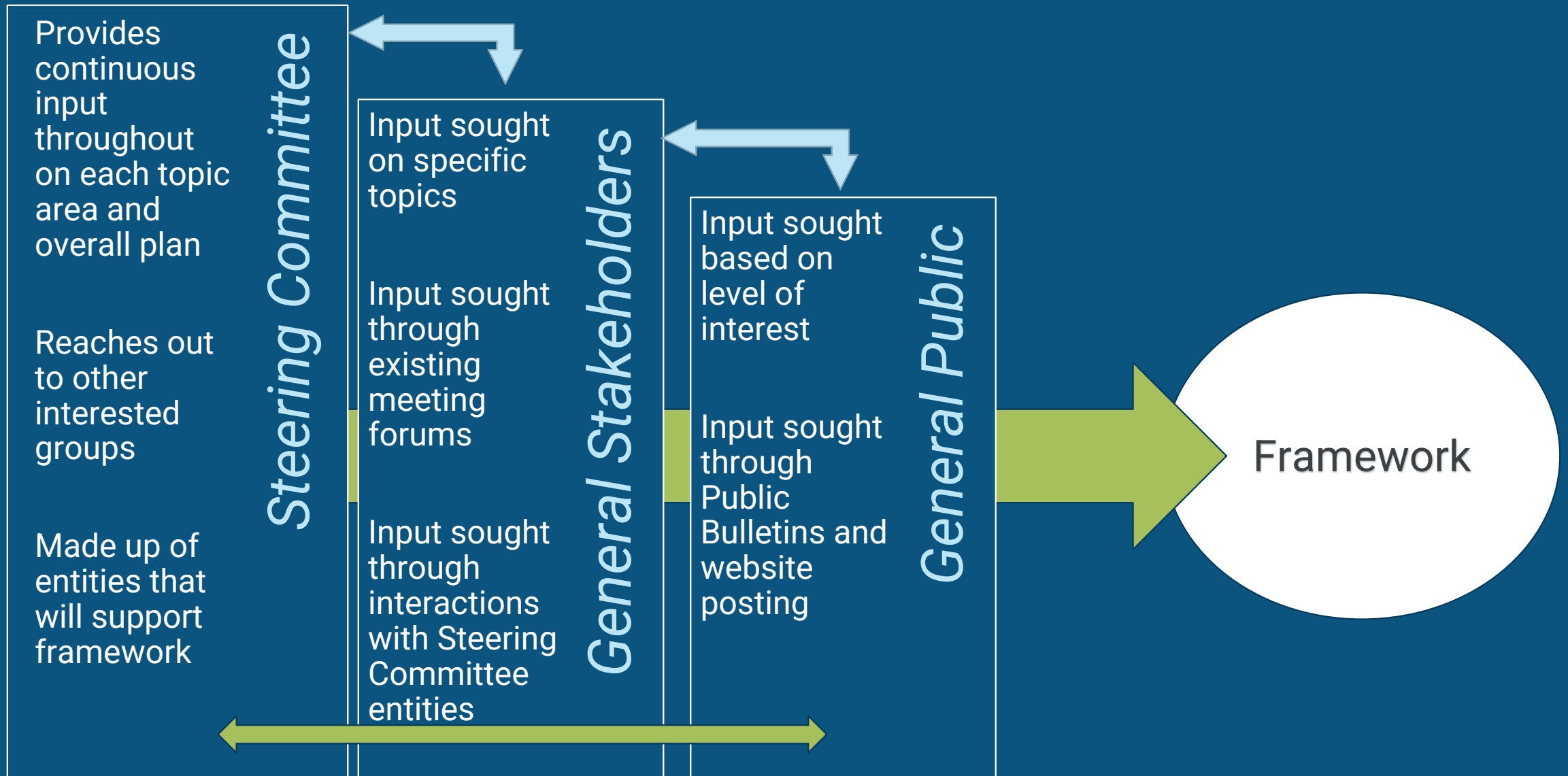
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Stakeholder Process



Stakeholder Process

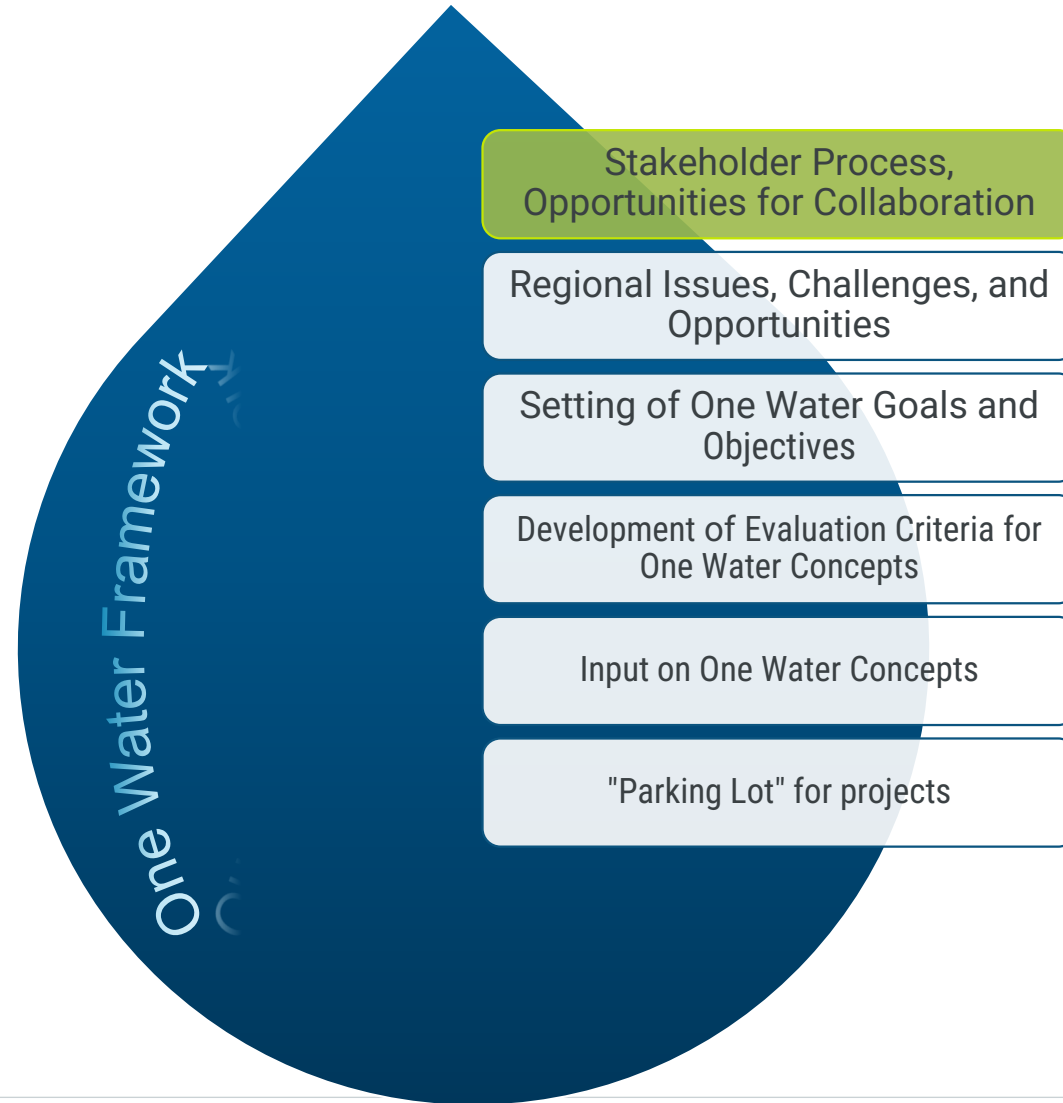
- Steering Committee Formation (this group)
 - Composed of local agencies and individuals that can support the Framework
 - Intent is to have Steering Committee makeup include all the major water management entity groupings
 - water suppliers (including small public and state small water systems), wastewater/recycled water suppliers, irrigation districts
 - flood control and drainage
 - governance responsibilities such as resource management agencies and land use agencies
 - agricultural community
 - Steering Committee provides advisory input in up to 12 meetings

Steering Committee Representation

Entity	Representative of:							
	Municipal Water	Small Water Systems	Ag Water	Wastewater	Drainage	Agriculture	Business	Other
City of Vacaville	X			X	X			
City of Vallejo	X	X		X	X			
Dixon RCD					X	X		
Fairfield – Suisun Sewer District				X	X			
Solano Irrigation District		X	X		X			
Solano County		X			X	X	X	X
Solano County Water Agency	X		X		X			X

Steering Committee Input Topics

Input will be sought from the Steering Committee in up to 12 meetings over 18 months



Potential General Stakeholder List/Groups

Entity	Representative of:							
	Water Suppliers	Irrigation Districts	Wastewater	Flood Control/ Drainage	Agriculture	NGOs	Business	Other
Small Water Systems (including Rural North Vacaville)	X							X
Solano Water Advisory Commission*	X			X				
City County Coordinating Council							X	
Solano Subbasin GSA (limited to eastern County)	X	X	X	X	X	X	X	X
Solano Community Foundation						X		
Solano Land Trust						X		
Solano County Farm Bureau		X			X			
Solano RCD					X			
Yoche Dehe Wintun Nation	X		X		X	X	X	X

*SWAC member agency representatives: SCWA; Cities of Dixon, Vacaville, Vallejo, Rio Vista, Benicia, and Fairfield; Dixon RCD; RD 2068; Solano County)

Communication Process

- General Stakeholder

- Handful of touch points, information disseminated by umbrella groups (SWAC, RCDs, Farm Bureau, GSA etc.)
- Broad public engagement to understand and document the needs of stakeholders and communities, to increase awareness of the Framework, facilitate future implementation
- Draft One Water Framework and document review
- Four stakeholder meetings, held in three forums
 - Use existing forums to minimize meeting fatigue

- General Public

- Public Bulletins
- Project website for information and communication
- Draft One Water Framework and document review

Steering Committee Input

- Stakeholder Groups
 - Especially with regular meetings
- Individual Stakeholders

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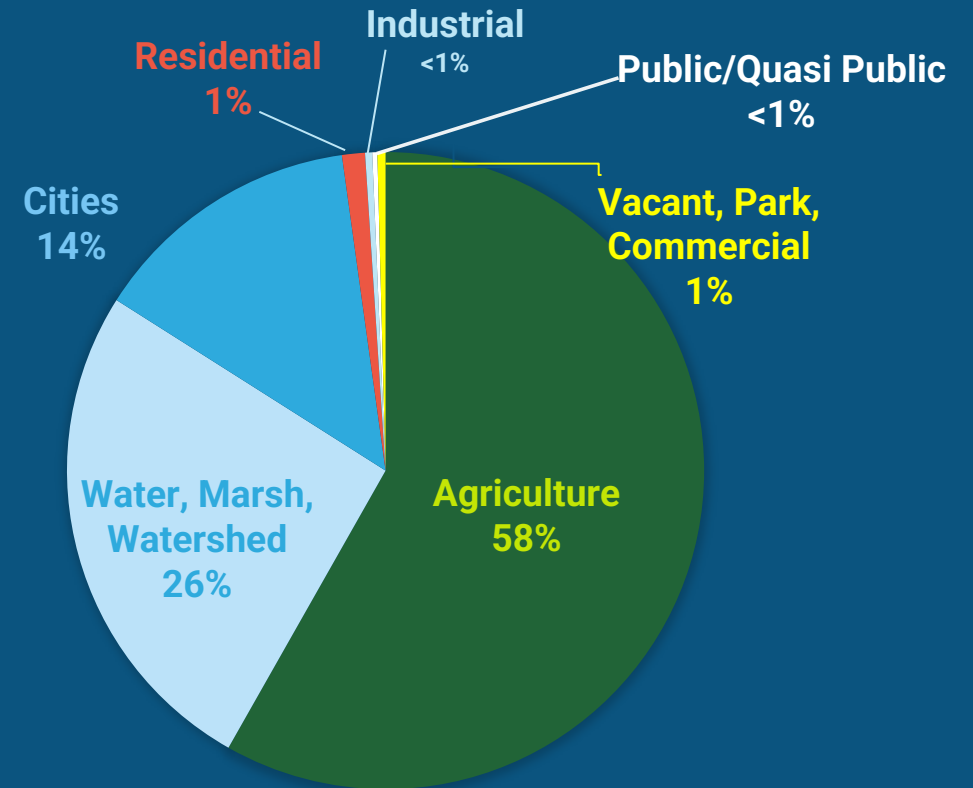
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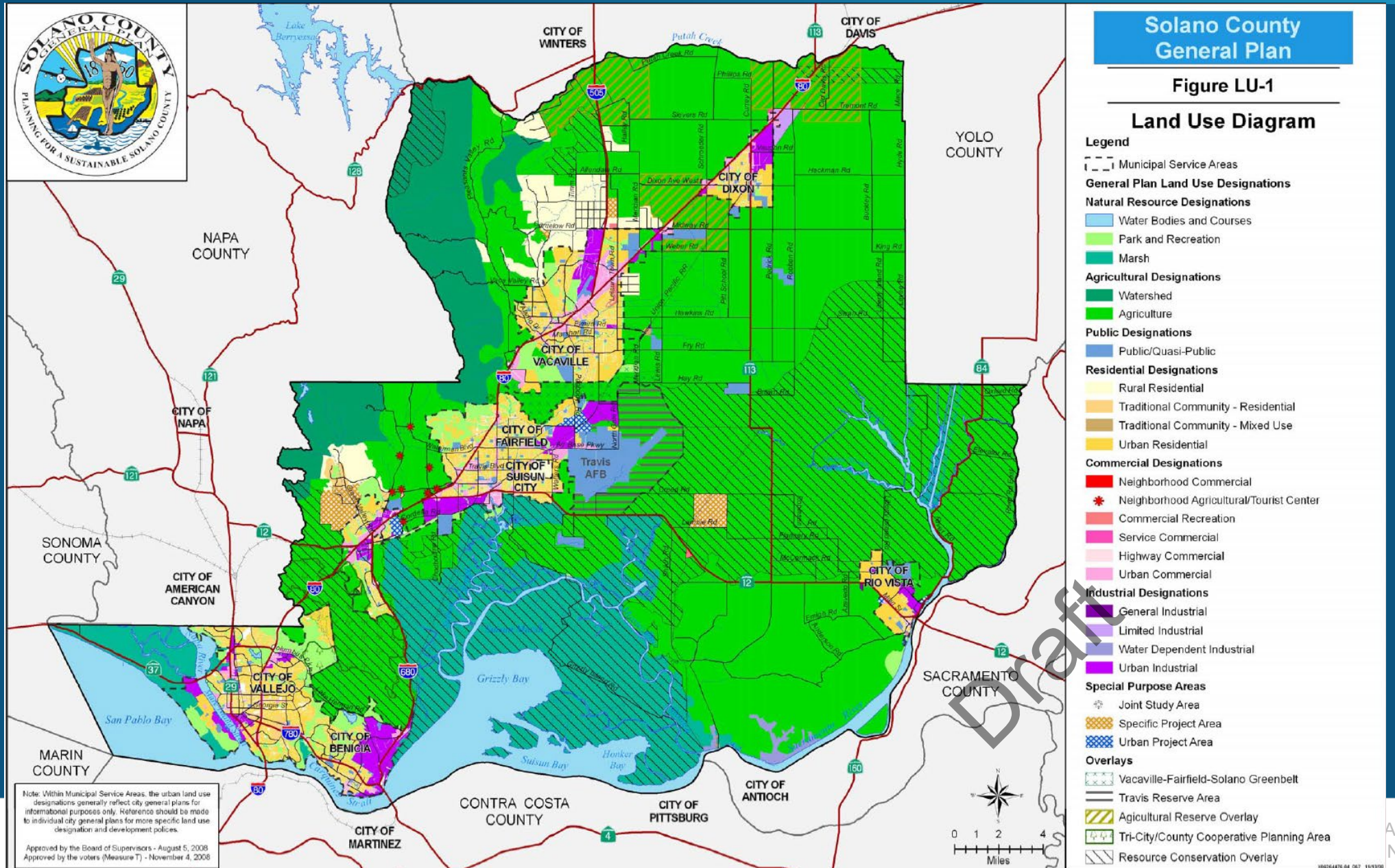
- Unique set of land uses in Solano County
- Orderly Growth Initiative (OGI)/Measure T in effect through December 2028
 - Most urban development focused into existing urban centers
 - Maintain and support agricultural in County



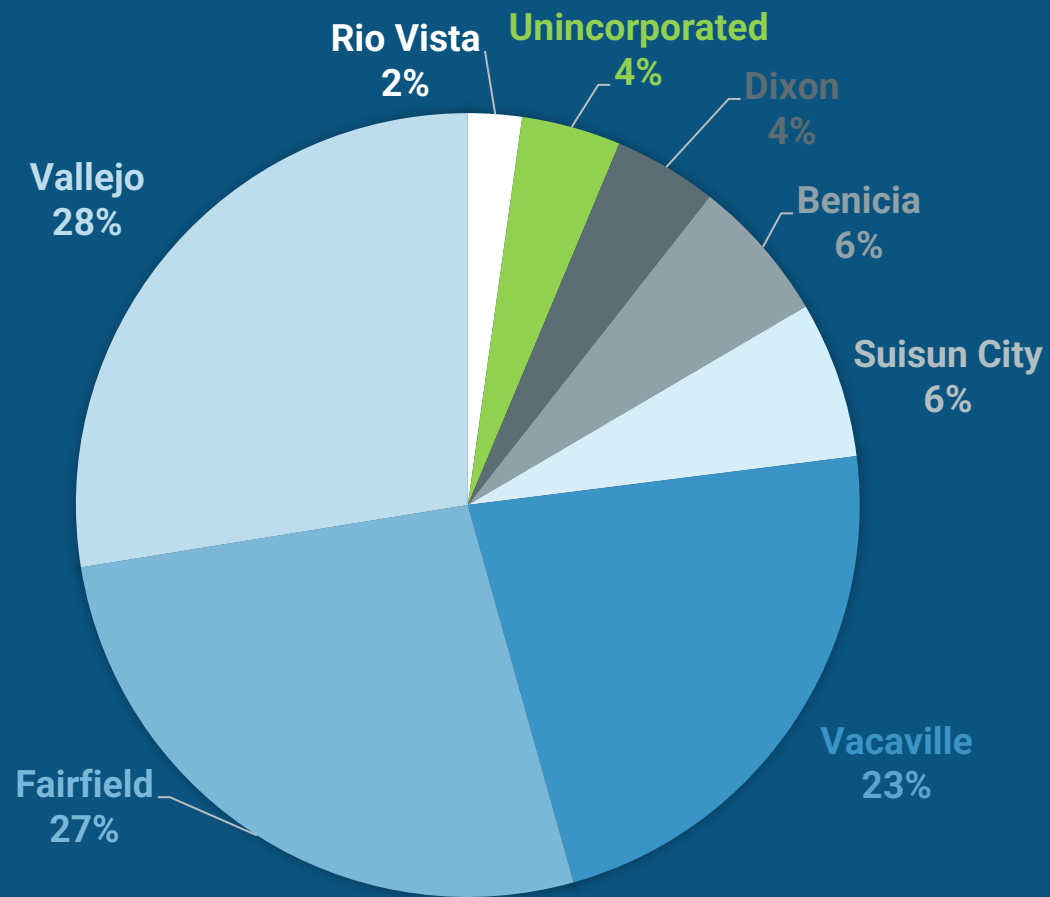
SOLANO COUNTY LAND USES BY AREA

All data from County of Solano

Background



Background

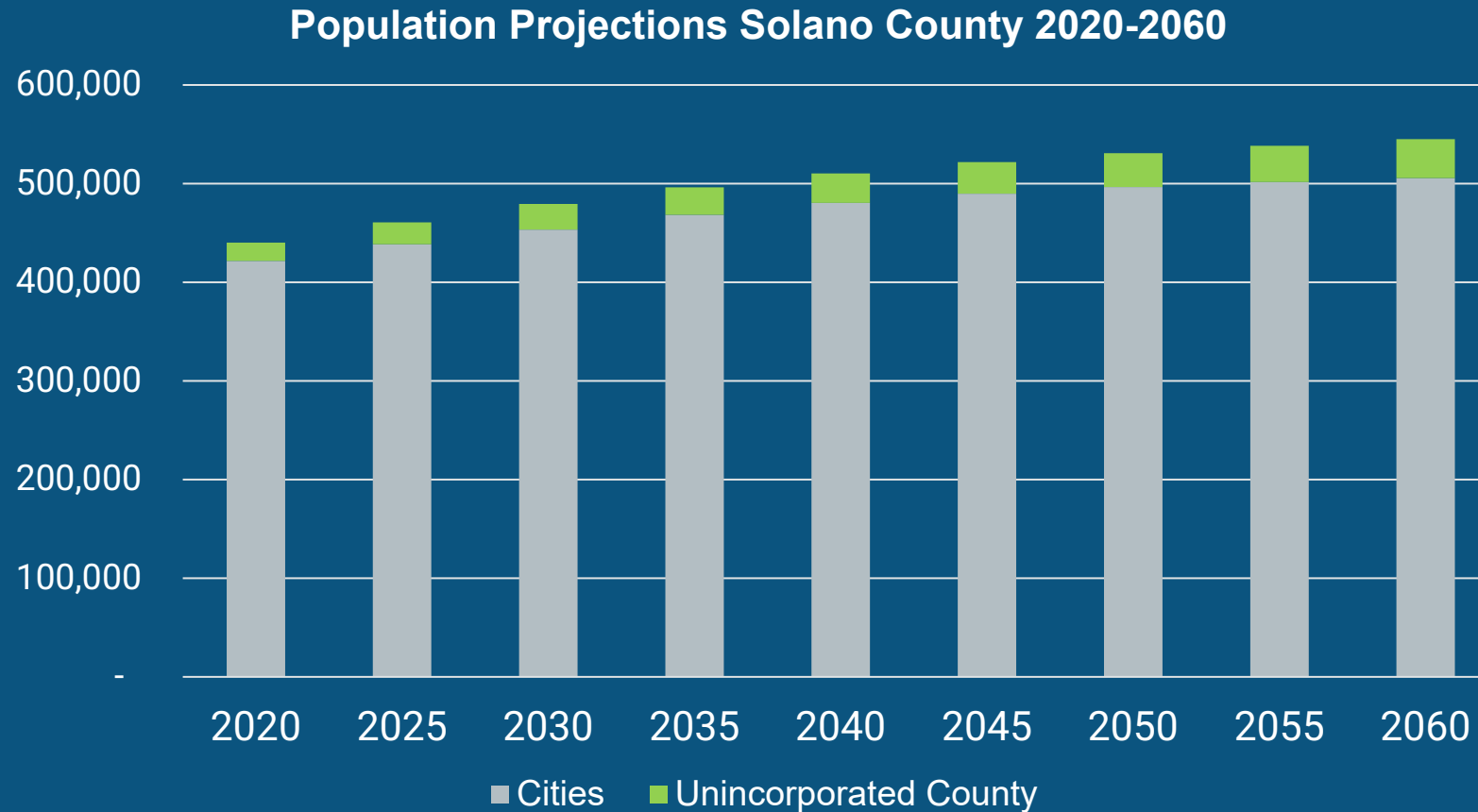


Population Density	Population Per Square Mile
Benicia	2,166
Dixon	2,715
Fairfield	2,882
Rio Vista	1,640
Suisun City	7,372
Vacaville	3,468
Vallejo	1,493
Unincorporated County	33

POPULATION IN CITIES AND UNINCORPORATED COUNTY

All data from County of Solano

Background



While unincorporated County population is projected to double, it will be small relative to growth in city areas

Data from County of Solano and California Department of Finance

Background

- Business Profile

Highest to Lowest by Annual Payroll
Travis AFB
Healthcare
Retail Trade
Manufacturing
Construction
Wholesale Trade
Transportation/Warehousing
Finance and Insurance
Leisure and Hospitality
Professional and Business Services
Information

Notable Businesses in County

Manufacturing

Dunlop Manufacturing
M & G DuraVent
Meyer Cookware
Petrochem Insulation
UTC Aerospace Systems
Valero Refining

Food and Beverage

Anheuser-Busch
Guittard Chocolate
Jelly Belly Candy
Mariani Packing
Superior Farms
Valley Fine Food
Caymus Wines
Gotham Greens

Biotech

Genentech
Bio-Rad Laboratories
HemoStat Lab



All data from County of Solano

Background

- Regional Setting

- Home to largest military base on west coast
- County a linkage between Bay Area, Central Valley, and Wine Country
- More people commute out of County than to the County, ready-labor force
- Proximity to, and good highway connections to Bay Area, seen as area where high-tech can grow
- Considered to have operating cost 15-20% less than San Jose or San Francisco



Figure from Solano Economic Development Corporation

All data from County of Solano

Background

- Water Services

- Incorporated areas within municipal service areas obtain water from Solano Project, State Water Project, and/or groundwater
- Unincorporated area
 - Minor portion served through City water agencies
 - Portion served by irrigation districts
 - Others mostly by groundwater

- Wastewater Services

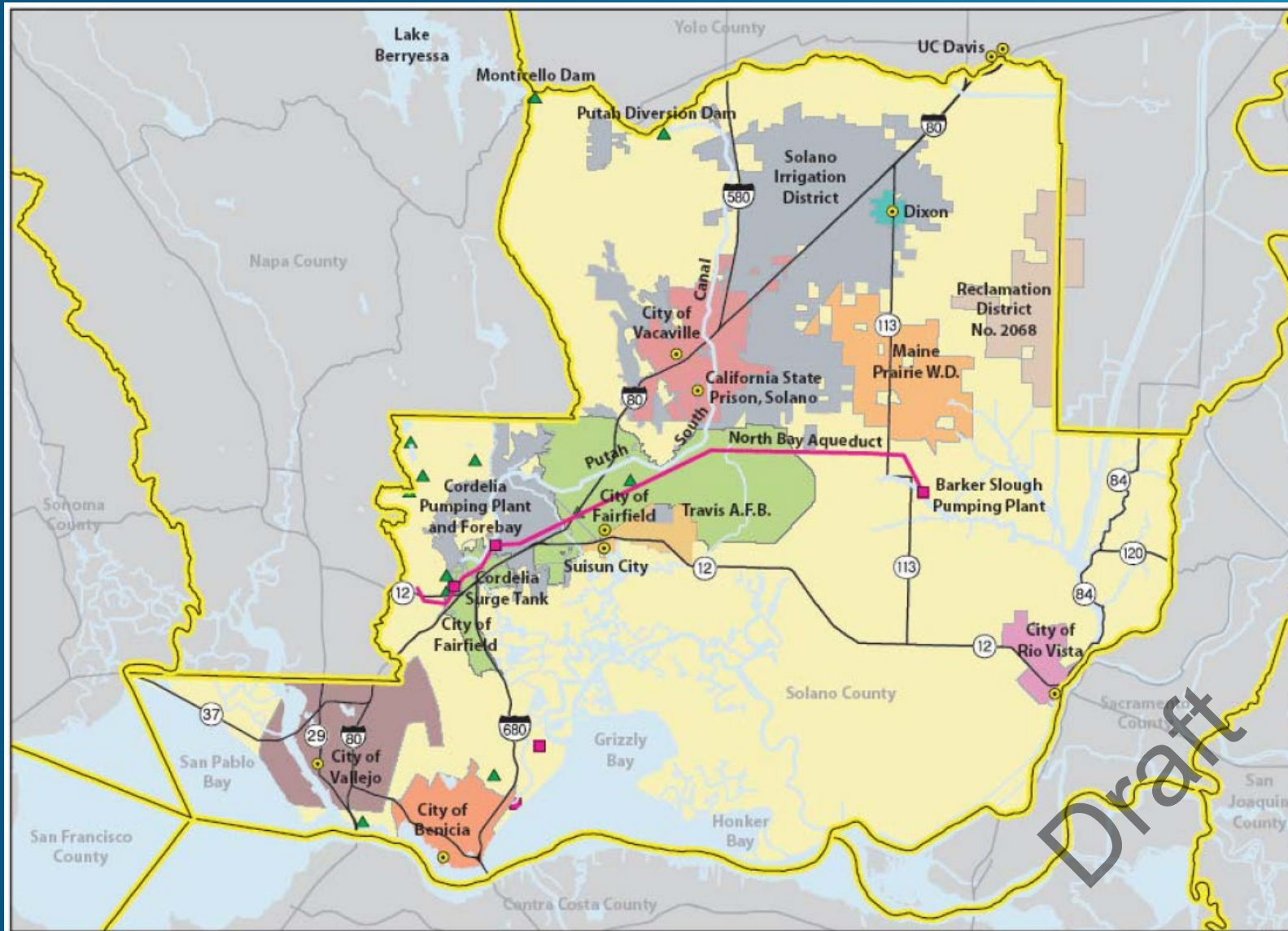
- Incorporated areas served by City/JPA municipal wastewater
- Unincorporated areas typically served by septic
 - Small industrial wastewater treatment ponds

Background

- Summary of Water Sources

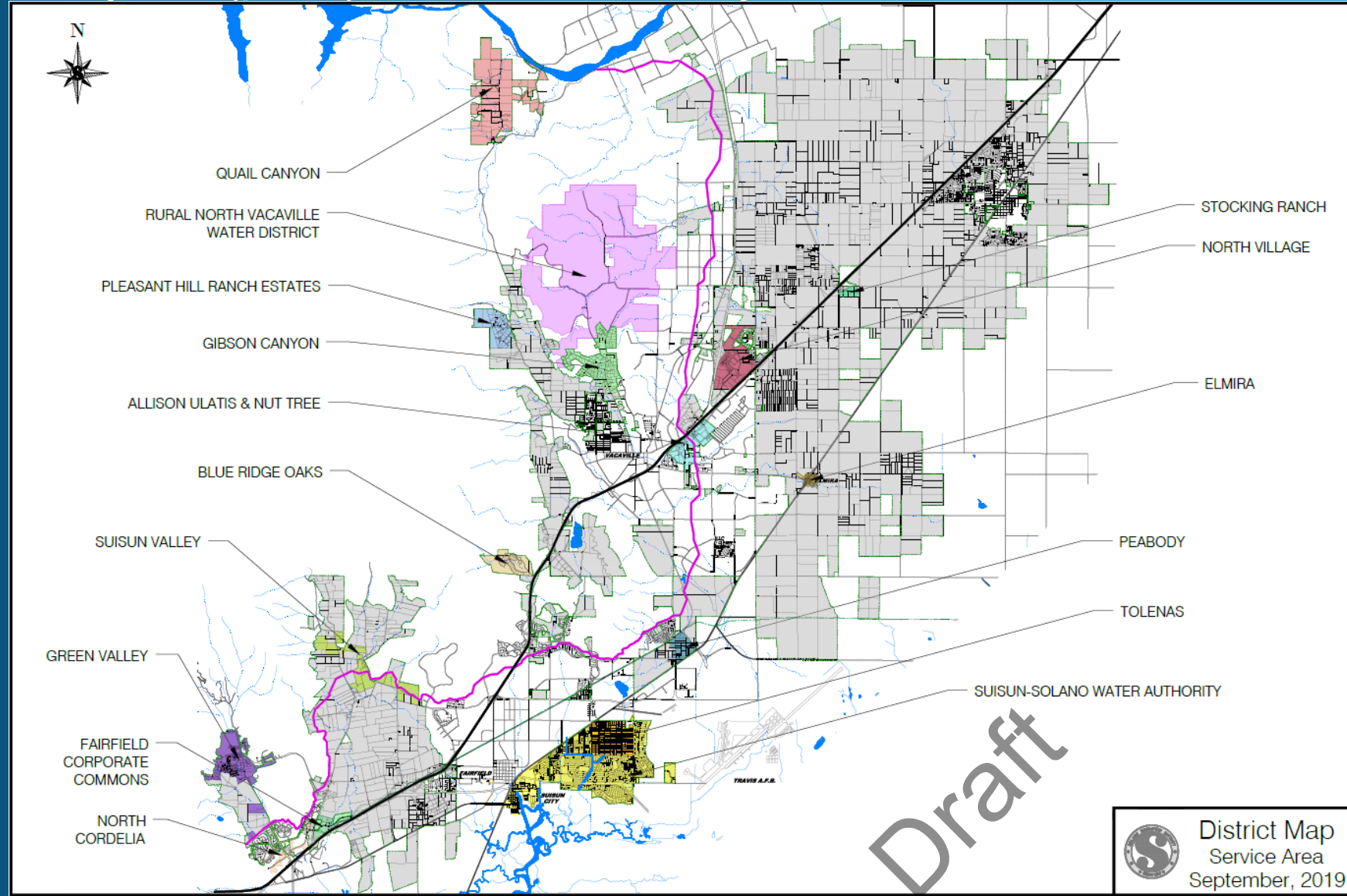
	Solano Project	SWP Water	Surface Water Diversions	Groundwater
Cities	X	X		X
Solano Irrigation District	X			X
Maine Prairie Water District	X		X	
California State Prison Solano	X			
Rural North Vacaville Water District				X
16 Reclamation Districts			X	
Vallejo Lakes System	X		X	
Not in Water Service Areas			X	X

Background – Water Purveyors (pt. 1)

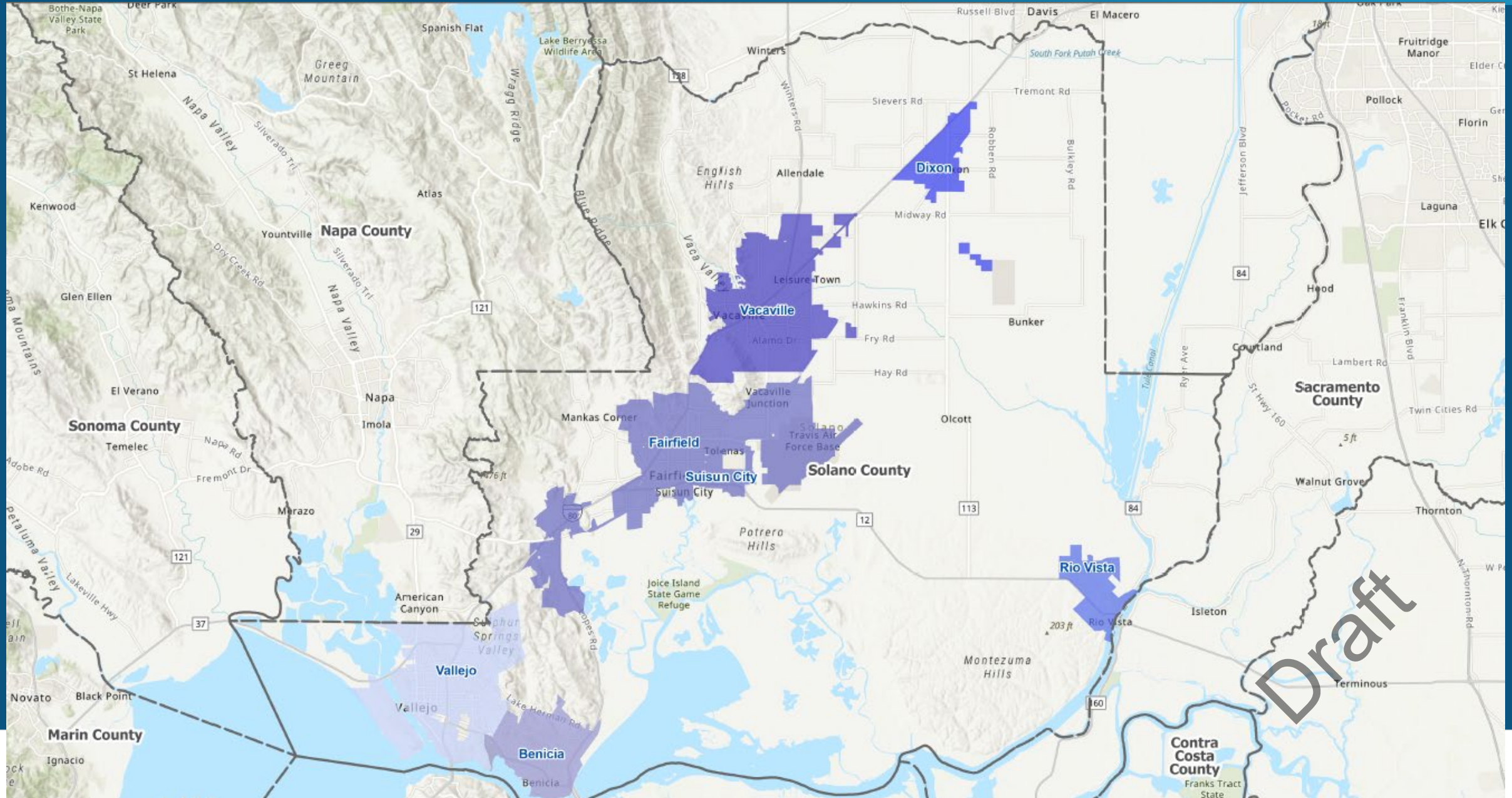


Background – Water Purveyors (pt. 2): Small Water Systems

Plus 10 County Water Systems



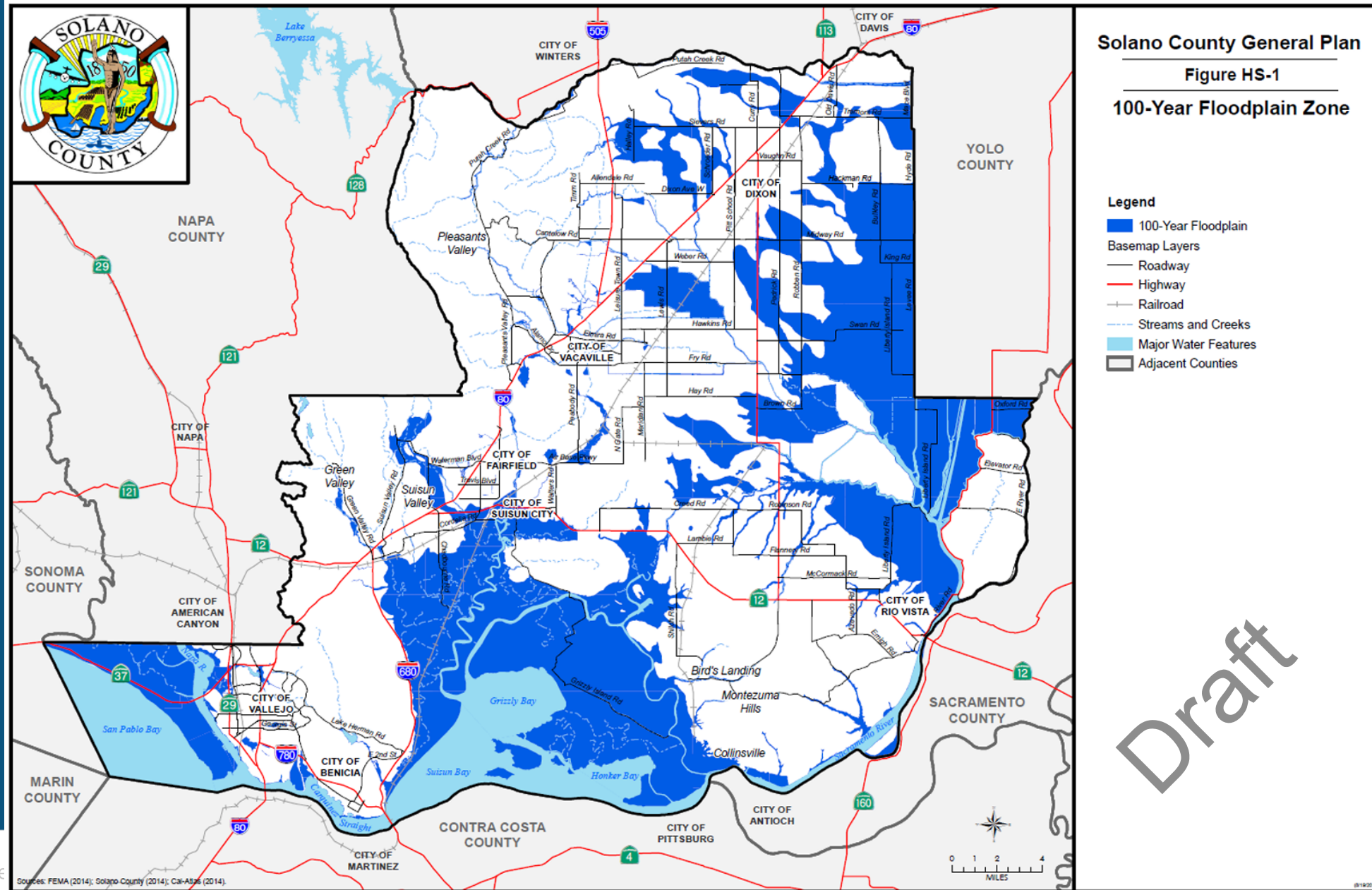
Background – Centralized Wastewater Services



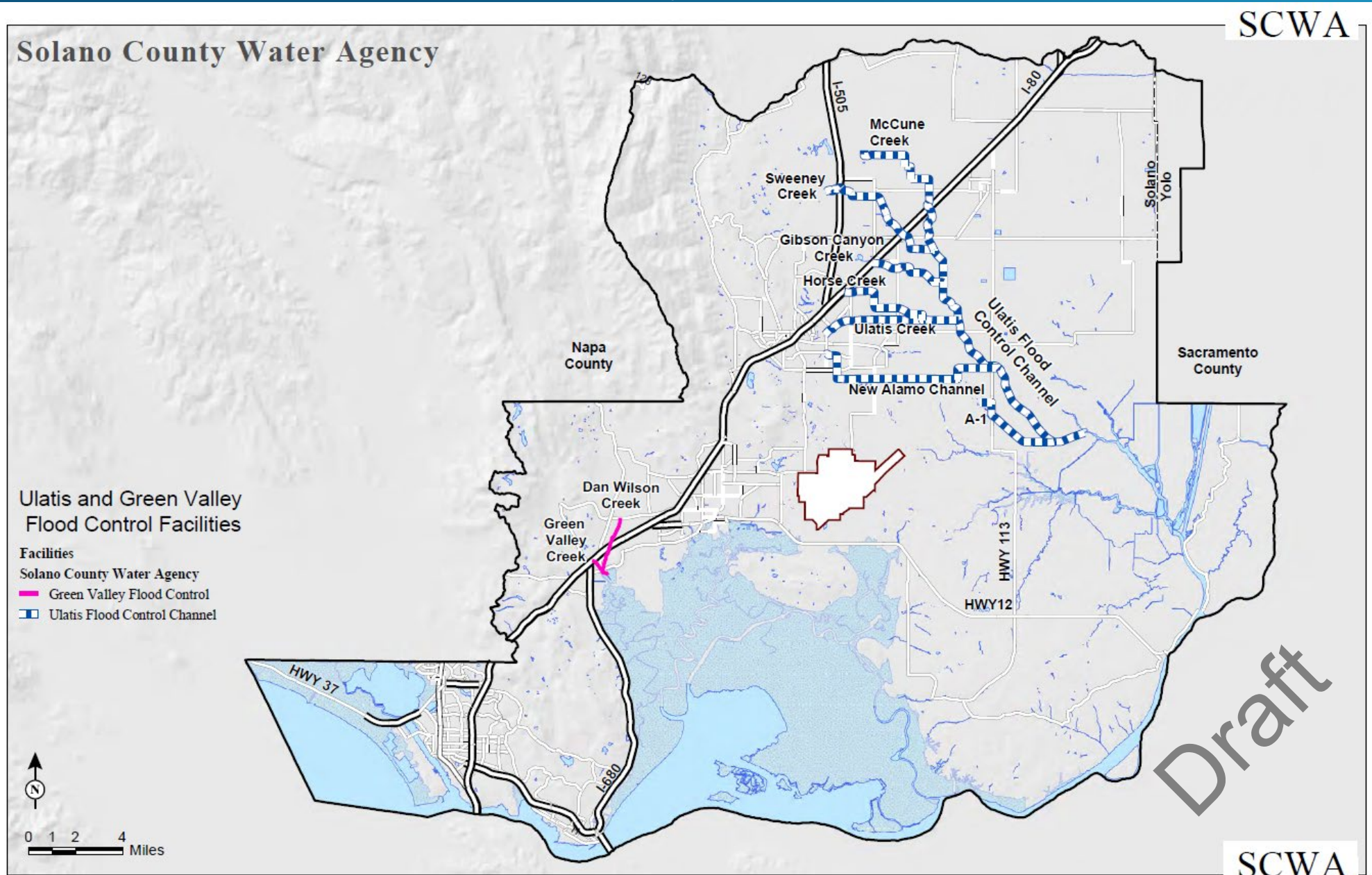
Background

- Drainage Systems
 - Individual city stormwater/flood control facilities
 - SCWA flood control/planning for unincorporated areas
 - Ulatis Flood Control Project
 - Green Valley Flood Control Project
 - Solano IRWM Plan identified that flood control infrastructure in rural areas is inadequate
 - Dixon RCD Drainage Ditch System
 - Goal: Provide winter drainage in 5-year/24-hour storm events
 - Dixon Region Watershed Management Plan
 - MOU between Dixon RCD, RD 2068, Maine Prairie WD, City of Dixon
 - Reclamation District facilities
- Other flood control systems
 - USACE Project and Non-Project Levees
 - Yolo Bypass/Cache Slough: Includes eastern County and Rio Vista

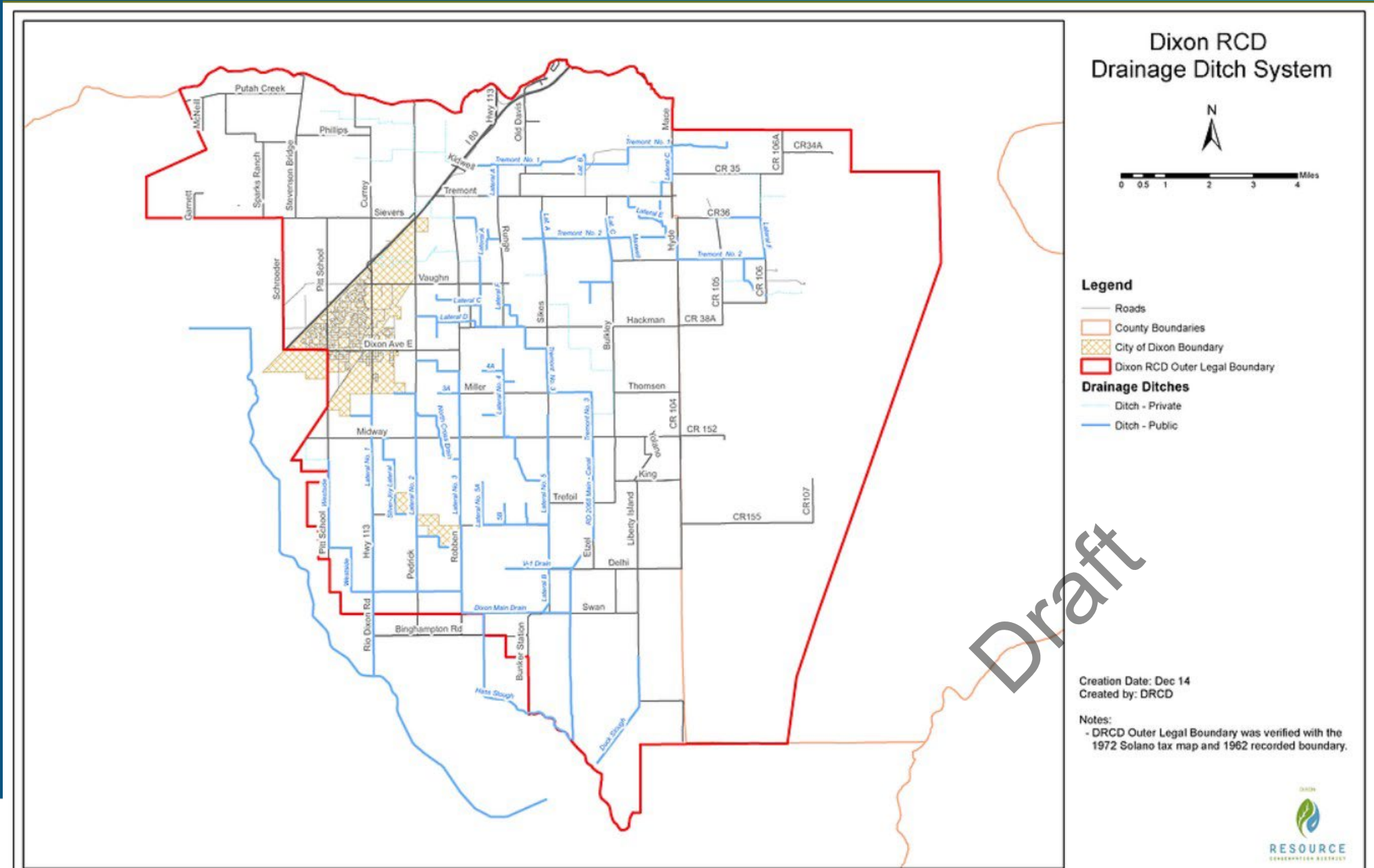
Background – 100-Year Floodplain



Background – Ulatis and Green Valley Flood Control Facilities



Background – Dixon RCD Drainage Ditch System



Steering Committee Request

- Recent reports related to water, wastewater, drainage
- Geographic Information System shapefiles to update mapping
- Other information

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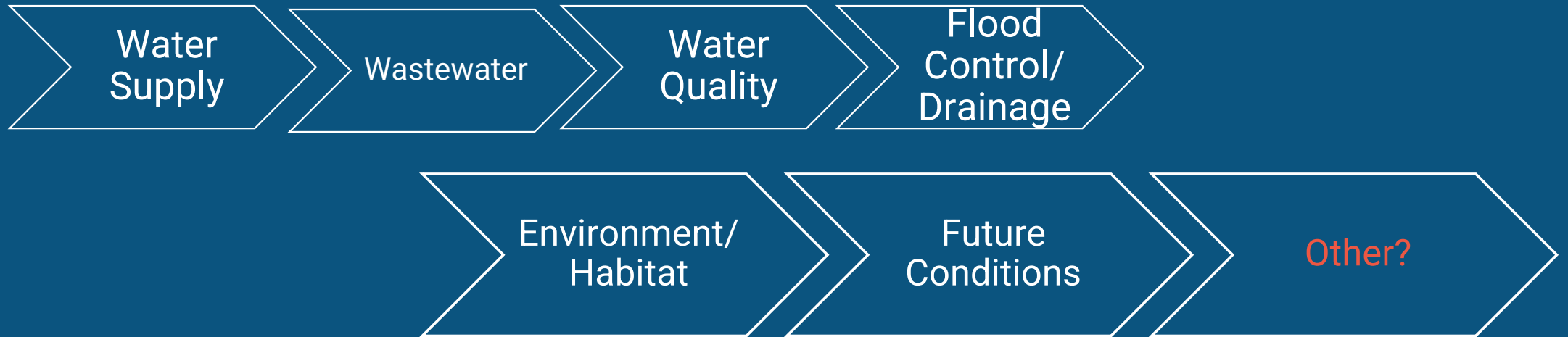
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Future Conditions

Opportunities and Challenges

- Organized around themes:



Opportunities and Challenges - Water Supply

Challenges

- General agreement that water supply adequate within County but,
 - Declining groundwater levels in northwest Solano Subbasin
 - Localized rural areas having issues with lowered groundwater levels
 - Loss of conveyance capacity due to aquatic nuisance vegetation
 - Limitations on surface water storage, inability to store water in wet years

Others?

Opportunities and Challenges - Water Supply

Others?

Opportunities

- Partnering with wastewater agencies for irrigation and groundwater recharge using recycled water
- Rain Managed Aquifer Recharge
- Flood Managed Aquifer Recharge
- Partnership with habitat projects to improve conveyance capacity
- Groundwater markets

Opportunities and Challenges - Wastewater



Challenges

- Limited areas of unincorporated County have sewer service
- Lack of sewer system limiting agricultural serving businesses
- Potential conflict between domestic wells and septic systems
- Septic system maintenance by property owner
- Septic system use in unsuitable areas (higher density, poor soils)



Others?

Opportunities and Challenges - Wastewater

Others?

Opportunities

- Select extension of existing sewer services
- Non-potable reuse of treated wastewater

Opportunities and Challenges – Flood Control/Drainage



Challenges

- Lack of flood control infrastructure in low density rural areas
- Lack of local sponsors for flood control infrastructure and maintenance
- Lack of mapping of areas with flood and drainage issues



Others?

Opportunities and Challenges – Flood Control/Drainage

Others?

Opportunities

- Regional collaboration to do habitat improvements, drainage improvements and conveyance project improvements concurrently

Opportunities and Challenges – Water Quality



Challenges

- Elevated groundwater nitrate and TDS near Dixon
- Localized groundwater Cr6 issues
- Runoff water quality
- Elevated Delta salinity
- Sedimentation in small rivers and creeks



Others?

Opportunities and Challenges – Water Quality



- Impaired water bodies

- Suisan Bay and Sacramento-San Joaquin Delta (chlordanes, DDT, PCBs, mercury, selenium, dioxin compounds, foran compounds)
- Delta waterways (DDT, electroconductivity, toxicity, mercury, PCBs, arsenic, Group A pesticides, invasive species)
- Suisun Marsh (mercury, nutrients, salinity)
- Rindler Creek (trash)
- Lake Chabot (mercury)
- Lake Herman (mercury)

Others?

Opportunities and Challenges – Water Quality



- Regional groundwater treatment
- Regional delta surface water treatment

Opportunities and Challenges – Future Conditions



- Growth Pressures
 - Change in land use, expiration of Measure T
- Climate Change
 - Increased temperatures, increased agricultural irrigation demand
 - Increased sea level rise, increased Delta salinity, increased coastal/tidal flooding
 - More intense rainfall events/flooding
- Future Regulations

Others?

Steering Committee Request

- Provide information to support analysis of challenges/opportunities
- Provide input to challenges/opportunities at future Steering Committee Meeting

Summary and Wrap-Up

Actions and Next Steps

- Summarize key takeaways from discussion
- Consultant Team actions
 - Collect and review additional information
 - Finalize Communication and Engagement Action Plan
 - Schedule next Steering Committee Meeting to discuss Challenges and Opportunities
 - Develop web site content
 - Plan Stakeholder Group outreach
 - Develop One Water Framework Content