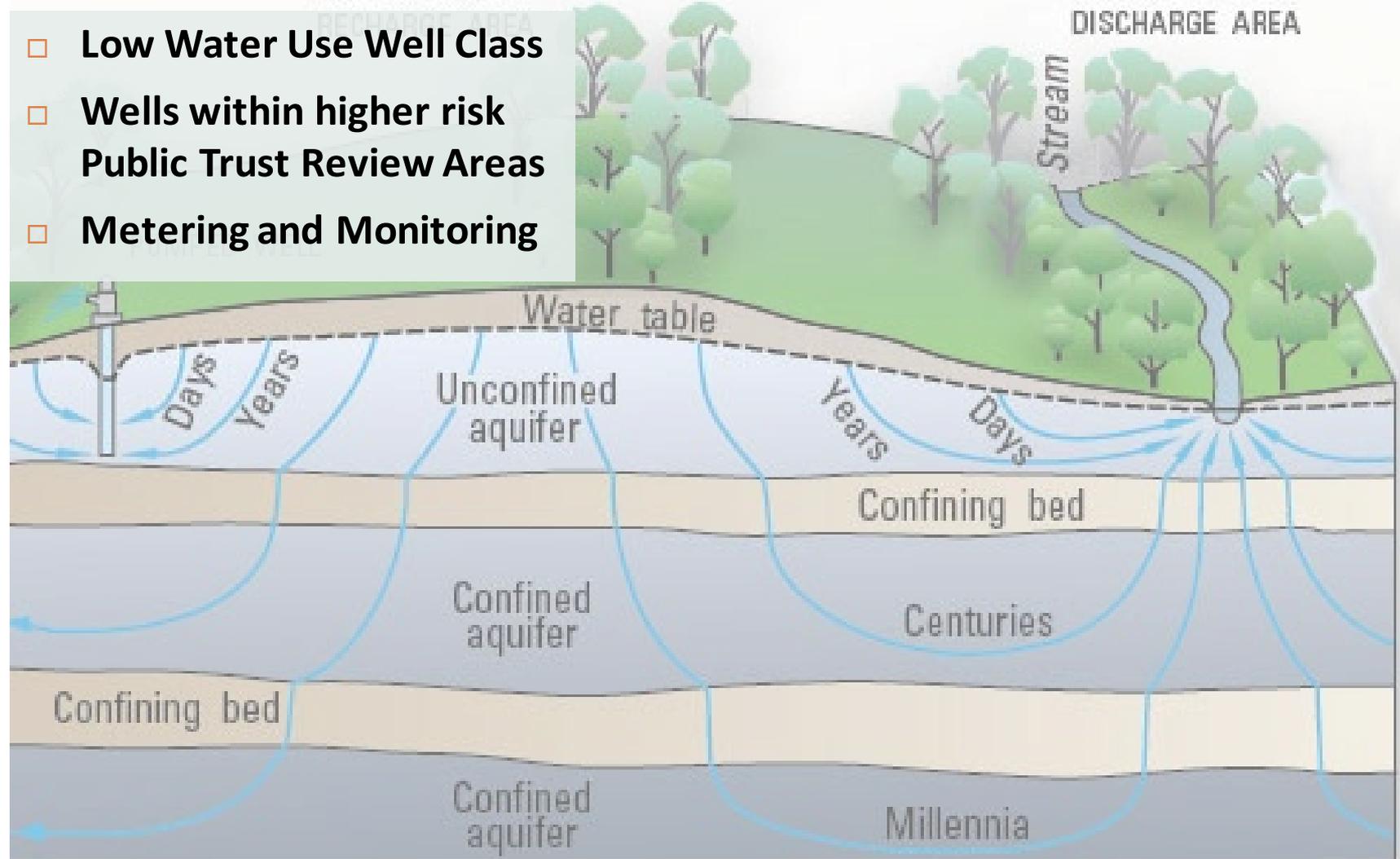


WELL ORDINANCE POLICY WORKING GROUP MEETING

Robert Pennington, Professional Geologist, Permit Sonoma
January 25, 2023

Presentation Topics

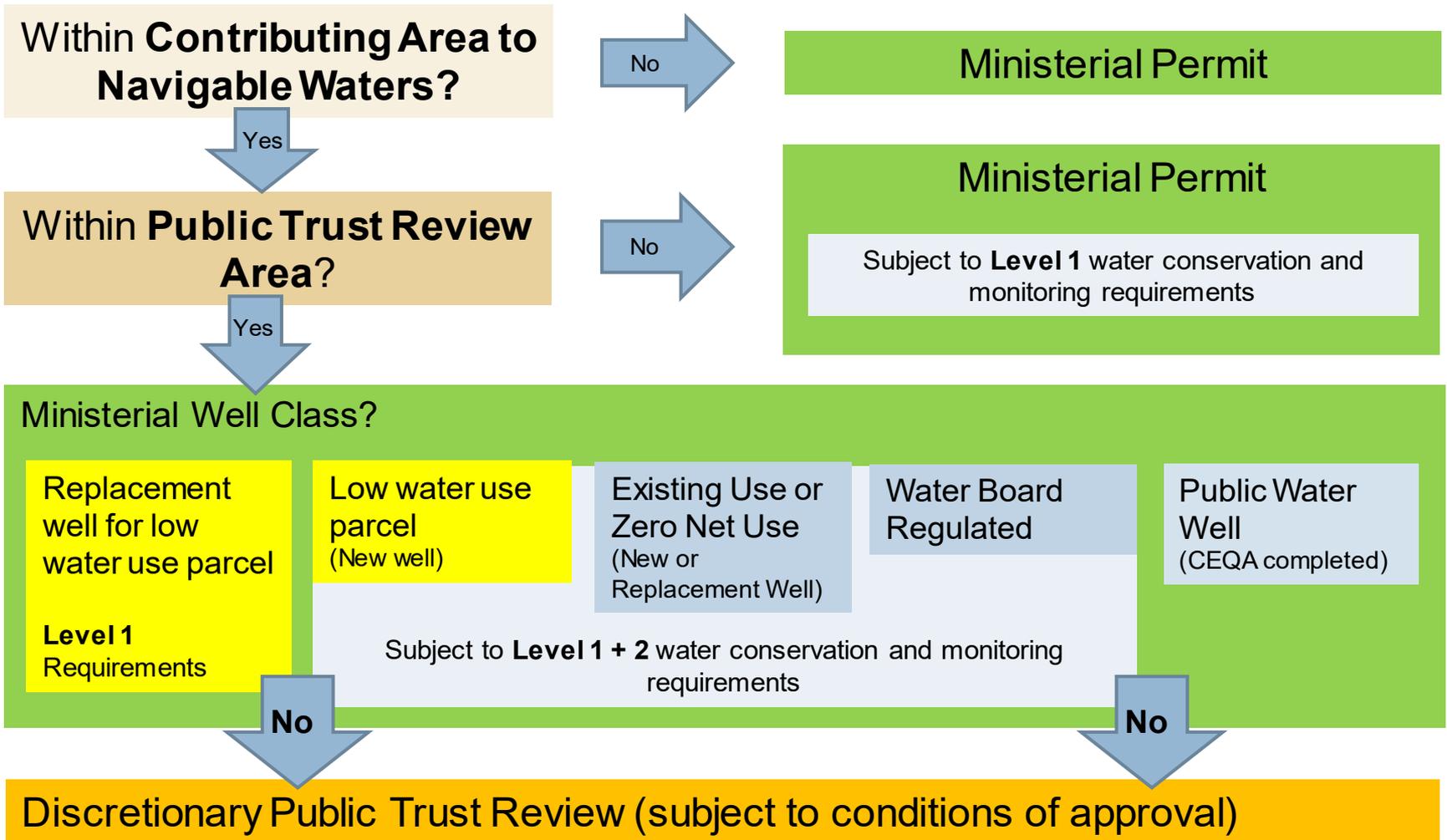
- Low Water Use Well Class
- Wells within higher risk Public Trust Review Areas
- Metering and Monitoring



Revised Permit Screening Flow Chart

(Working Proposal)

3



Ministerial Well Classifications – Working Proposal

Ministerial Well Classifications	Conservation and Monitoring Requirements
Water wells located outside the Public Trust Review Area	Level 1 Requirements
<p>Public Water Well, inside Public Trust Review Area A public water well for which environmental review under the California Environmental Quality Act is complete.</p>	None
<p>Water Board Regulated Well, inside Public Trust Review Area Water wells, for any land use, that will serve as a point of diversion associated with an appropriative water right regulated by the CA State Water Resources Control Board, Division of Water Rights</p>	Level 1 Requirements
<p>Replacement Low Water Use Well, inside Public Trust Review Area Replacement wells, for any land use, where total groundwater use of the parcel is limited to 2.0 acre feet per year. New well must be no closer to any nearby stream than the well being replaced.</p>	Level 1 Requirements
<p>Low Water Use Well, inside Public Trust Review Area Water wells, for any land use, where total groundwater use of the parcel is limited to 2.0-acre feet per year</p>	Level 1 + 2 Requirements
<p>Well for Existing Land Use, inside Public Trust Review Area Water wells, for any land use, where total groundwater use of the parcel is limited to and does not exceed the amount of groundwater used as of the date of ordinance adoption for legally established land uses. Existing use will be based off average use from a 3 to 5 year period.</p>	Level 1 + 2 Requirements
<p>Zero Net Use Well, inside Public Trust Review Area Water well, for any land use, where the proposed use would not result in a net increase in groundwater use on site through implementation of water conservation measures, rainwater catchment or recycled water reuse system, water recharge project, local groundwater management project, or participation in a streamflow augmentation project authorized by the California Department of Fish and Wildlife or National Marine Fisheries Service. Adapted from Cannabis Ordinance</p>	Level 1 + 2 Requirements

Water Conservation and Monitoring – Working Proposal

Category	Level 1	Level 2
Indoor Water Use	<ul style="list-style-type: none"> • Efficient faucets and showerheads • Leak and Water Conservation Audit 	<ul style="list-style-type: none"> • Efficient toilets
Outdoor Water Use	<ul style="list-style-type: none"> • Prohibit non-functional turf • Leak and Water Conservation Audit 	<ul style="list-style-type: none"> • Water Efficient Landscape Regulations. Existing landscapes with less than 600 square feet of irrigated turf are exempt. • Disconnected downspouts from all new or existing structure.
GSA Basins	<ul style="list-style-type: none"> • Compliance with applicable water conservation requirements adopted by Groundwater Sustainability Agency 	
Commercial and Industrial Sites		<ul style="list-style-type: none"> • Water Conservation Plan. Includes: Facility water budget, water conservation practices, water efficient appliances and features (e.g. high pressure sprayers), process water reuse, employee training, etc.
Agriculture		<ul style="list-style-type: none"> • Agricultural Water Conservation Practices Plan (Farm Plan). Includes: Use of drip or micro sprayers, monitoring of soil moisture and shoot tips, irrigation scheduling, irrigation system maintenance, etc. • Vineyard and Orchard irrigation limits (excludes frost protection) 0.6 AFY per acre, or existing use supported by data or study • Frost protection, enrollment in frost protection program or frost protection plan
Well Metering and Monitoring	<ul style="list-style-type: none"> • Totalizing water meter installation • Water meter reporting (low water use residential wells exempt) 	<ul style="list-style-type: none"> • Water Level Reporting for parcels using greater than 5 AFY • Annual reporting of implementation of water conservation practices for agricultural, commercial, and industrial (low water use parcels exempt)

Low Water Use Classification – 0.5 versus 2.0 AFY

6

- SGMA– “de minimis extractor”: a person who extracts, for domestic purposes, 2.0 acre-feet or less per year
- [Executive Order N-7-22](#): shall not apply to permits for wells that will provide less than 2.0 acre-feet per year of groundwater for individual domestic users

Example	Estimated Use
Rural residence with accessory dwelling unit (unspecified landscaping)	$0.5 + 0.25 = 0.75$ AFY
Rural residence with accessory dwelling unit (no irrigated landscaping)	$0.2 + 0.1 = 0.3$ AFY
Rural residence with 2 acre vineyard	$0.5 + 2 \times 0.6 = 1.7$ AFY
Rural residence with 0.5 acres of strawberries	$0.5 + 0.5 \times 1.8 = 1.4$ AFY

Estimates from: [8-2-1 Water Supply, Use and Conservation Assessment Guidelines](#)

Generally consistent with the GSA fee study methodologies.

Parcel Based Groundwater Use Summary

Water Use Group (AFY)	Water Use of Group (AFY)	% of Total Use	Parcel Count	% of Parcels
0.1 - 0.5	3845	16%	8820	69%
0.5 - 2.0	2815	12%	2415	19%
0.1 - 2.0	6660	29%	11235	88%
> 2.0	16677	71%	1486	12%
Total	23337	100%	12721	100%

Estimates of groundwater from private wells using GSA fee study methodologies for parcels in County Sonoma.

Low Water Use Classification Options

Classification Option	Description	Conservation	Monitoring
Option 1	Replacement Low Water Use Well - Groundwater use of the parcel less than 2.0 acre feet per year . New well must be no closer to any nearby stream than the well being replaced.	Level 1	<ul style="list-style-type: none"> • Meter installation and reporting • No water use reporting for residential wells
Option 1	Low Water Use Well - Groundwater use of the parcel less than 2.0-acre feet per year	Level 1 + 2	<ul style="list-style-type: none"> • Meter installation and reporting • No water use reporting for residential wells
Option 2	Low Water Use Well - Groundwater use of the parcel less than 0.5 acre feet per year .	Level 1	<ul style="list-style-type: none"> • Meter installation and reporting • No water use reporting for residential wells
Option 2	Moderate Water Use Well - Groundwater use of the parcel between 0.5 and 2.0-acre feet per year	Level 1 + 2	<ul style="list-style-type: none"> • Meter installation and reporting
Option 3	Low Water Use Well - Groundwater use of the parcel less than 0.5 acre feet per year	Level 1	<ul style="list-style-type: none"> • Meter installation and reporting • No water use reporting for residential wells

Adverse Impacts - Working Proposal

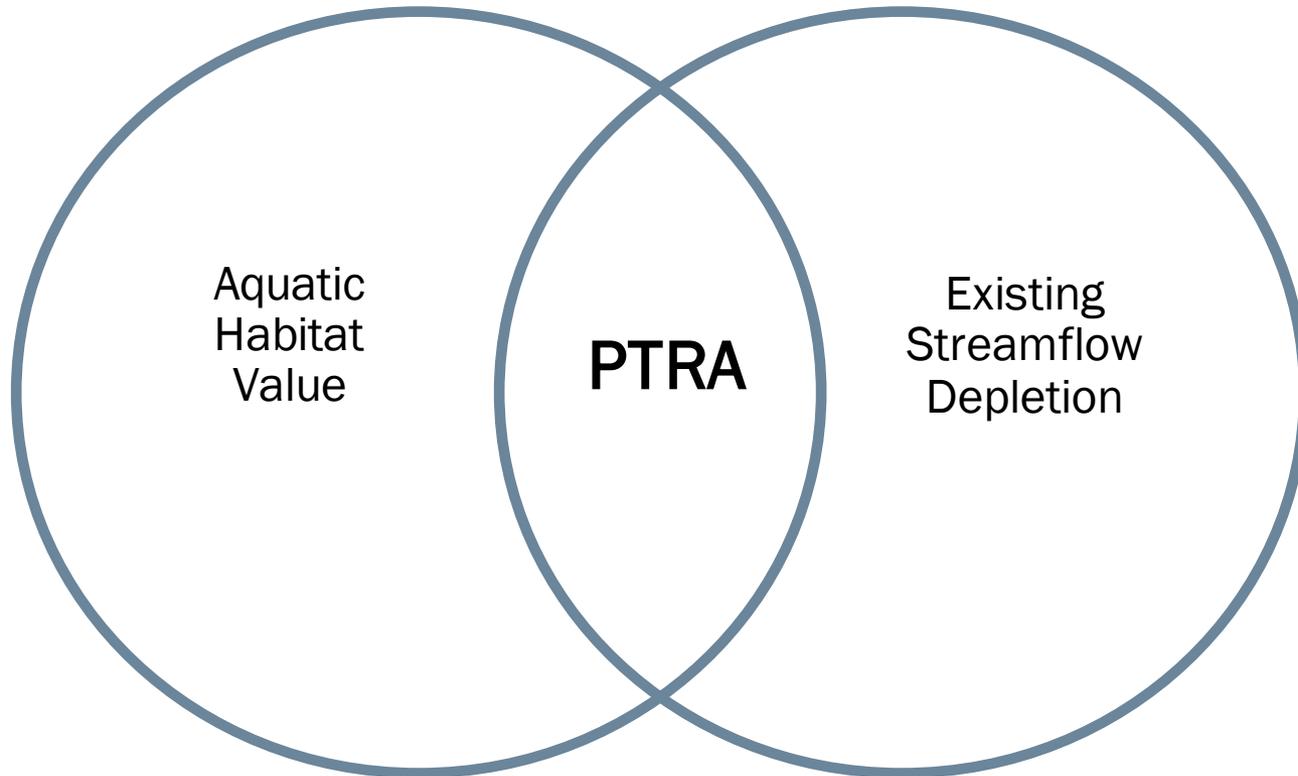
9

Habitat/Stream/Area	Stream Flow Depletion Percent of Flow
Coho Summer Rearing Streams	>10% reduction - during periods of spawning, rearing, and migration
Steelhead Streams	>20% reduction - during periods of spawning, rearing, and migration
GSA Basin	Sustainable Management Criteria for Interconnected Surface Waters in adopted groundwater sustainability plan
Russian River and Dry Creek	Ability for water managers to maintain adopted minimum instream flows

Thresholds informed by Richter, Davis, M. M., Apse, C., & Konrad, C. (2012). A PRESUMPTIVE STANDARD FOR ENVIRONMENTAL FLOW PROTECTION. *River Research and Applications*, 28(8), 1312–1321.

<https://doi.org/10.1002/rra.1511>

Approach to Defining the Public Trust Review Area (PTRA)



How Sensitive is the Resource?

How Much Stress is Acting on the Resource?

Public Trust Review Area Matrix

(Informs areas included in the Public Trust Review Area)

11

	Low SFD (0 – 10%)	Medium SFD (10 – 20%)	High SFD (>20%)
Low Habitat Value (non-navigable waters not included below)	Low Risk Area Not included in PTR	Low Risk Area Not included in PTR	Low Risk Area Not included in PTR
Moderate Habitat Value (Steelhead streams)	Low Risk Area Not included in PTR	Moderate Risk Area Stream buffers included in PTR	High Risk Area Sub-watershed
High Habitat Value (Coho summer rearing)	Moderate Risk Area Stream buffers included in PTR	High Risk Area Sub-watershed included in PTR	High Risk Area Sub-watershed included in PTR

Low Habitat Value means stream reaches that are non-navigable and do not provide habitat for salmonids

Moderate Habitat Value means stream reaches identified by NMFS as critical habitat for Steelhead

High Habitat Value means stream reaches identified by CDFW or NMFS as existing summer rearing habitat for Coho

Stream Flow Depletion (SFD) means reduction in flow relative natural flow conditions during the dry season (July – Sept, estimated from from best available information and models

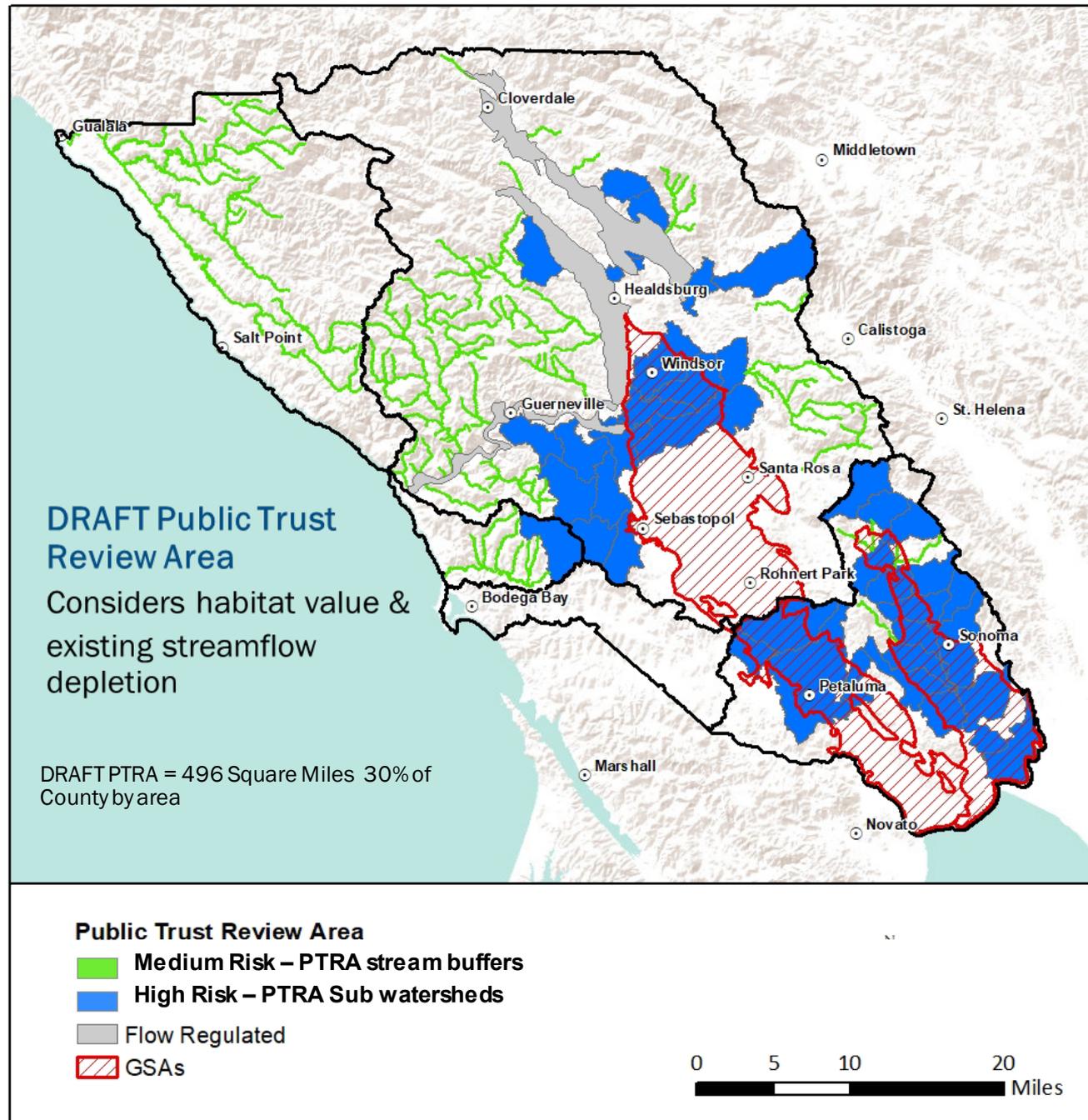
Low / medium / high SFD from Richter, Davis, M. M., Apse, C., & Konrad, C. (2012). A PRESUMPTIVE STANDARD FOR ENVIRONMENTAL FLOW PROTECTION. River Research and Applications, 28(8), 1312–1321. <https://doi.org/10.1002/rra.1511>

Stream Buffers: Under discussion with Technical Working Group

Public Trust Review Area (Working Proposal)

Explore using [Well Ordinance GIS Viewer](#)

Email for link to download layers:
Robert.Pennington@sonoma-county.org



Well Applications in High Risk Area



- Are Ministerial Wells Classes and Water Conservation Requirements Appropriate?
- Any other proposals for Ministerial Well Classes?

Well Applications in High Risk Area

- For discretionary applications, **how to analyze adverse impacts?**

- County maintained models of cumulative streamflow depletion
- Individual hydrogeologic reports from applicants

- For discretionary applications, **how to mitigate adverse impacts?**

Implementation of water conservation measures, rainwater catchment or recycled water reuse system, water recharge project, local groundwater management project, or participation in a streamflow augmentation project authorized by the California Department of Fish and Wildlife or National Marine Fisheries Service.
(from Zero Net Use well class)

Metering and Monitoring – Working Proposal

Meter Installation - \$300 - \$1000 per meter

Reporting program costs

- \$150 - \$450 per year

Level 1	Level 2	Notes
Totalizing Water Meter Installation		Meter on each service connection required (service connection is separate parcel served)
Water Meter Reporting		Monthly data collected, reported annually. Low water use residential wells exempt.
	Water Level Monitoring	Monthly data collected, reported annually Parcels using less than 5 AFY are exempt.
	Conservation Practices Reporting for Agricultural, Commercial, and Industrial sites	Annual reporting of implementation of agricultural, commercial, and industrial water conservation practices <ol style="list-style-type: none"> 1. Through enrollment in agricultural conservation program 2. Through self reporting form submitted with water meter readings Parcels using less than 5 AFY be exempt

Extra Slides



Working Groups Outcome: Consensus Recommendations on Topics

Public Trust / GW Review Area	<p>What waterways require impacts analysis under the public trust doctrine?</p> <p>What public trust resources and uses are sensitive to streamflow depletion due to groundwater extraction?</p> <p>What aquifers are interconnected with public trust waterways and groundwater extraction from these areas is likely to have an adverse impact on public trust resources?</p>
Well Classification: Ministerial and Discretionary	<p>What classes or categories of wells receive a ministerial (routine) permit?</p> <p>What well classes receive a discretionary (more tailored review)?</p> <p>Replacement domestic wells, public water wells, zero net use, etc.</p>
Well Implementation Requirements – Conservation and other Measures	<p>What water conservation measures should be required of each class of wells?</p> <p>Water efficient landscape regulations, maximum allowed use, etc.</p> <p>Other measures: groundwater recharge, farm practices, etc.</p>
Impact Definitions	<p>What is a substantial adverse impact? (watershed, waterway, basins)</p> <p>What methods should be employed to evaluate adverse impacts?</p>
Discretionary Review Process	<p>What is the nature of that review? (CEQA, other)</p> <p>What requirements are defined by what anticipated impacts?</p>
Monitoring Requirements	<p>What groundwater monitoring conditions (water meter readings, depth to water measurements, etc.) should be required of specific classes of wells?</p>
Adaptation	<p>What information or discovery will trigger the need to revisit these policies or approaches?</p>