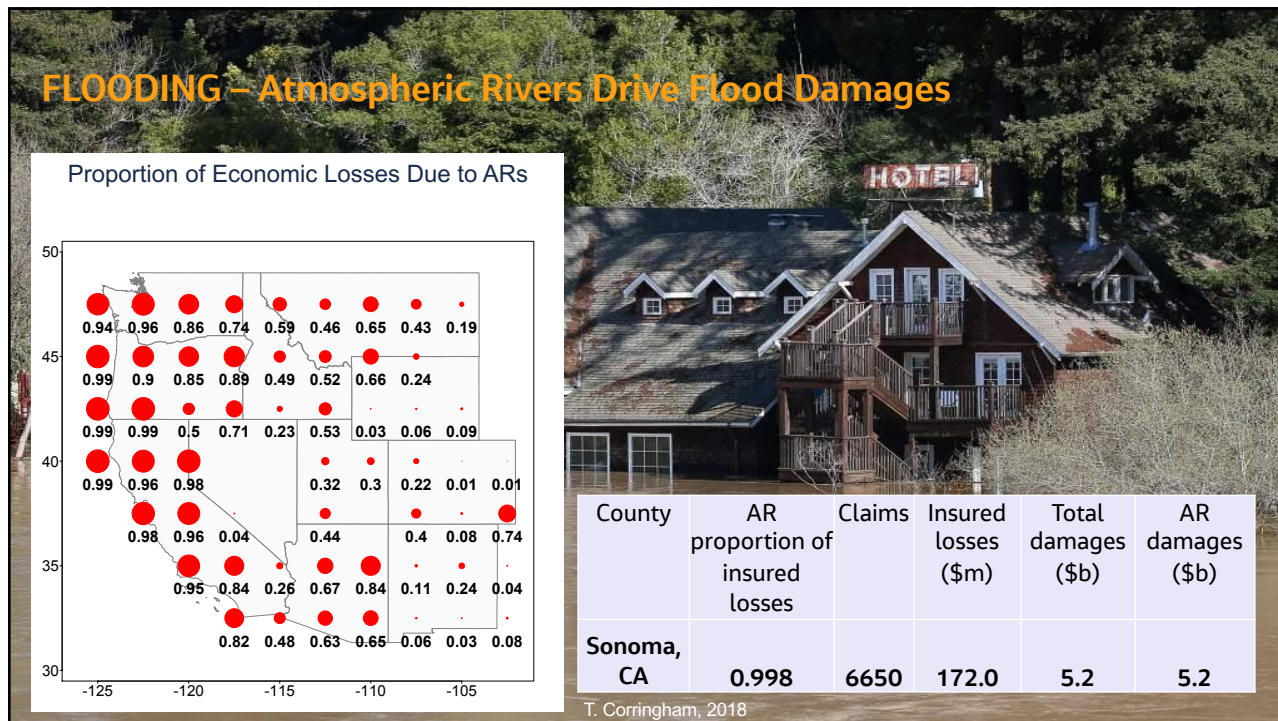




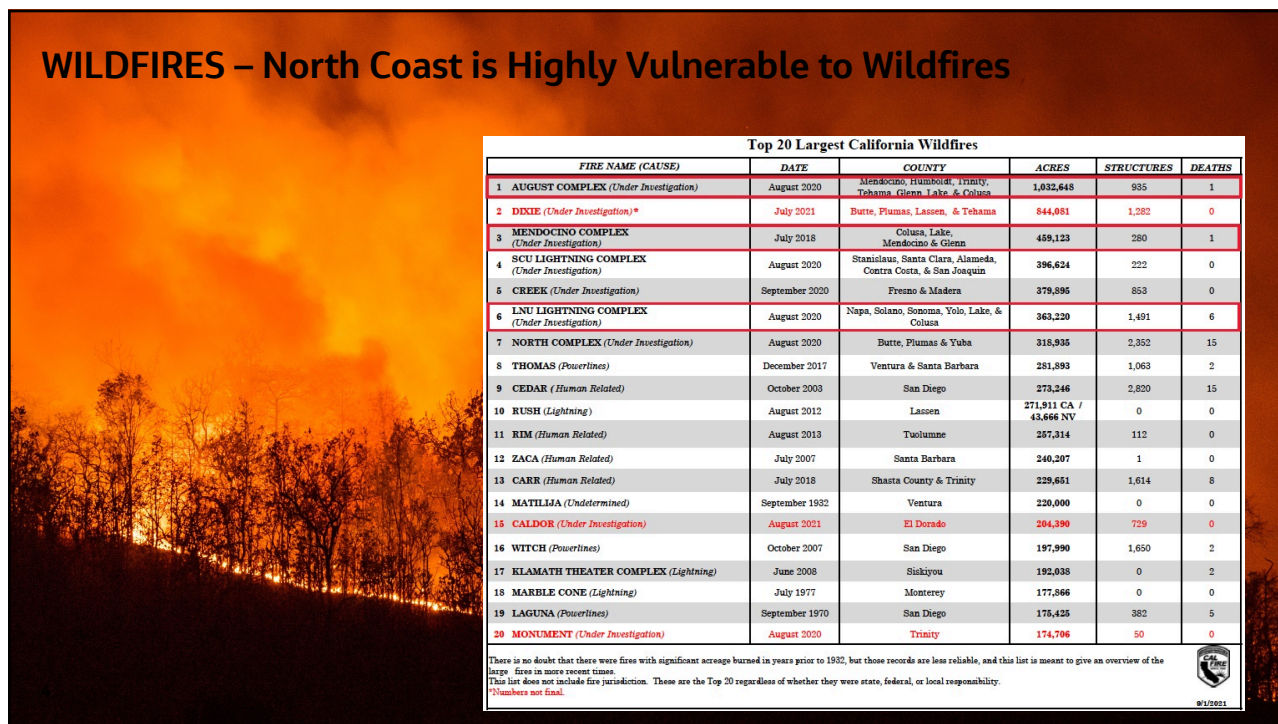
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<h2>Sonoma Water Climate Adaptation Plan</h2> <ul style="list-style-type: none">▪ Sonoma County has experienced more “natural” system impacts than most regions in the past decade▪ Climate variability and climate change will test the resiliency of systems in the region in the future▪ <i>Sonoma Water’s Climate Adaptation Plan is a leading effort to improve understanding of climate change, identify and assess climate-related risks, and develop adaptation strategies to create more resilient systems</i>	<p>COVID-19</p> <p>THE UPCOMING ECONOMIC CRISIS</p> <p>CLIMATE CHANGE</p>
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2



3



4

Examples of Sonoma Water's On-Going Efforts on Adaptation

- Partnering with Center for Western Weather and Water Extremes (CW3E), USGS, and NOAA for Climate Science
- Forecast Informed Reservoir Operations (FIRO)
- Advanced Quantitative Precipitation Information (AQPI)
- Fire Camera Alert System (AlertWildfire)
- NOAA Habitat Blueprint Adaptive Management and Restoration
- Local Hazard Mitigation Plan (LHMP)
- Climate Adaptation Plan (CAP)
- Water Supply Resiliency Study
- Central Sonoma Watershed Project Vulnerability Assessment
- Sonoma OneRain Network

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Sonoma Water's Climate Adaptation Plan

Guide Sonoma Water's assessment of climate risks to water supply, sanitation, and flood control infrastructure and operations, and to serve as a roadmap for developing, evaluating, and implementing adaptation strategies to improve the resilience of the Sonoma Water's systems












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Projected Climatic and Hydrologic Changes for the Region

	Temperature	<ul style="list-style-type: none"> Increases up to 1.3 – 3.1°C by mid-century Increased frequency of temperature extremes (days > 30°C or 86°F)
	Sea Level Rise	<ul style="list-style-type: none"> MSL increases by 0.1-0.6 m (0.3-2 ft) by mid-century Storm surge will cause additional increases
	Precipitation	<ul style="list-style-type: none"> Extreme precipitation increases (ARs) by 15% Increased winter, decreased summer precipitation (more variability)
	Drought	<ul style="list-style-type: none"> Increasing intensity of drought conditions Increasing frequency and duration of dry weather conditions
	Wildfire	<ul style="list-style-type: none"> More frequent and intense wildfires due to warmer temperatures and drier conditions Increase in probability of wildfires by 15-33%
	River Flooding	<ul style="list-style-type: none"> Potential increase in AR-driven floods on Russian River 100-year flood magnitudes could increase by 10-20%

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System-Wide Vulnerability Assessment

Climate Threats		Systems	
	Temperature	Water Supply	
	Sea Level Rise	Flood Control	
	Precipitation	Sanitation	
	Drought		
	Wildfire		
	River Flooding		

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Vulnerability & Risk Assessment

Vulnerability =
 Sensitivity x Adaptive Capacity

Risk =
 Consequence x Likelihood

Consequence

- System Function
- Social
- Governance
- Financial

Likelihood

- Degree of confidence climate projections

		Sensitivity				
		Low = 1	Moderate/Low = 2	Moderate = 3	Moderate/High = 4	High = 5
Adaptive Capacity	Low = 1	L	M/L	H	H	H
	Moderate/Low = 2	L	M	M/H	H	H
	Moderate = 3	L	L	M	M	H
	Moderate/High = 4	L	L	L	M	M
	High = 5	L	L	L	L	M

		Consequence				
		Negligible = 1	Minor = 2	Moderate = 3	Major = 4	Severe = 5
Likelihood	Very Likely = 5	L	M	H	H	H
	Likely = 4	L	M	M	H	H
	Moderate = 3	L	L	M	M	H
	Unlikely = 2	L	L	L	M	M
	Very Unlikely = 1	L	L	L	L	M

Low Risk	Special Case	Moderate Risk	High Risk
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Major Vulnerabilities – Water Supply System

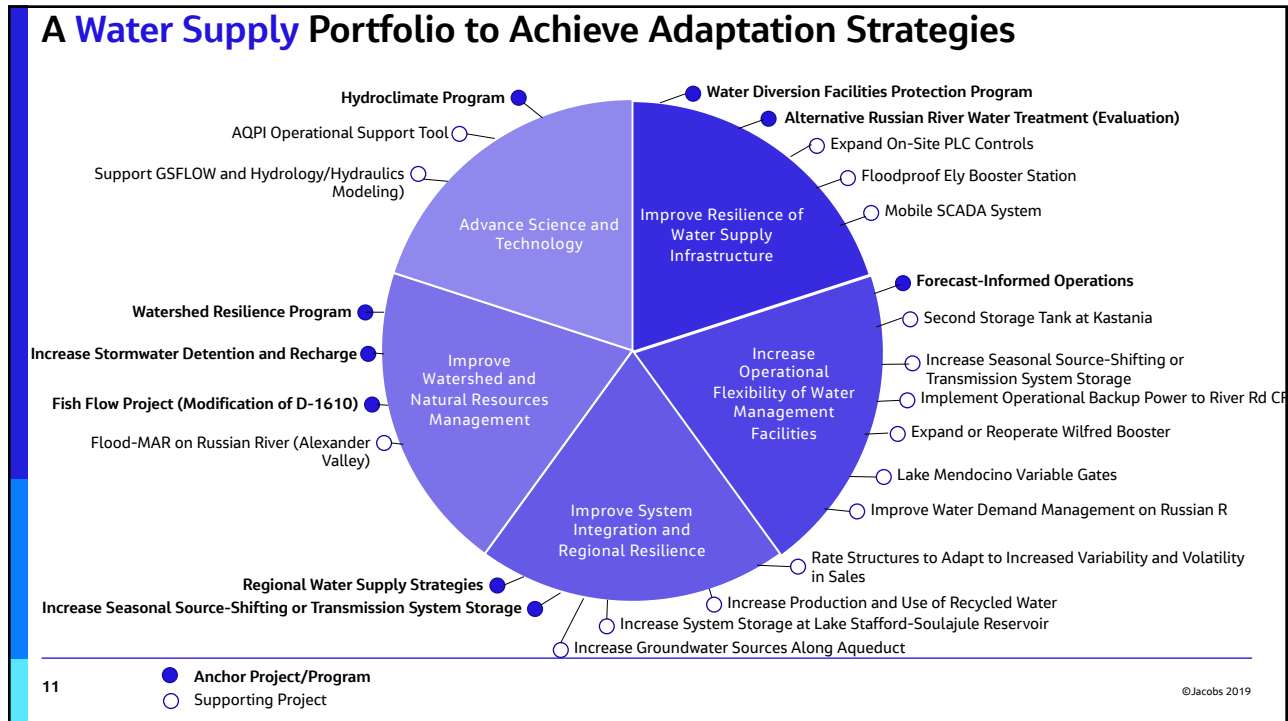
Facility/Asset	Temp	Sea Level Rise	Extreme Precip	River Flooding	Drought	Wildfire
Mirabel Diversion Facilities				H	M	H
Wohler Diversion Facilities				H	M	H
Wohler Chlorination and Corrosion Control			M/H	M/H		M/H
Mirabel Chlorination and Corrosion Control			L	L		L
River Road Chlorination			M/H	H		
Ely Booster			H			
Kawana Booster			M			
Upper Russian River Supply (Watershed and Lake Mendocino)	M				M	M
Lake Sonoma	M				M	M

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H = high M = moderate L = low

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- ## Some Integrated Concepts
- **Watershed Resilience Program**
 - Integrate multiple concepts that focus on healthy headwaters, hydrologic and sediment management, and land and vegetation management for flood attenuation, water quality benefits during extreme hydrologic for wildfire events
 - **Water Diversion Facilities Protection Program**
 - Merge multiple Wohler and Mirabel concepts that seek to protect infrastructure and access during flood and wildfire risks
 - **Regional Water Supply Strategies**
 - Utilize Resiliency Study to develop integrated water supply strategies that develop seasonal, annual, or interannual storage program (gw bank, source-shifting, transmission storage, etc)
 - **Regional Flood Management Strategy**
 - Initiate discussions with appropriate responsible local and regional agencies for coordinated approach to create a regional flood management strategy
 - **Hydroclimate Program**
 - Integrate efforts of climate, weather, and hydrological measurement, data assimilation, prediction and modeling
 - **Dynamic and Resilient SCADA**
 - Link various SCADA concepts together and identify opportunities to continue to build redundancy into master plan
 - **Forecast-Informed Operations**
 - Consolidate Lake Mendocino, Lake Sonoma, and Flood Control structures FIRO efforts into a combined program
 - **Integrated Sanitation Level Planning**
 - Develop holistic multi-district level planning
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Questions?

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