

NEVADA DIVISION OF  
**WATER RESOURCES**



Nevada Department of  
**CONSERVATION &  
NATURAL RESOURCES**

# Summary of Draft Climate Section

Stakeholder Advisory Group Meeting  
January 16, 2024

Nevada Division of Water Resources (NDWR)  
Water Planning and Drought Resiliency  
Section (WP&DR)

# GOALS OF CLIMATE SECTION

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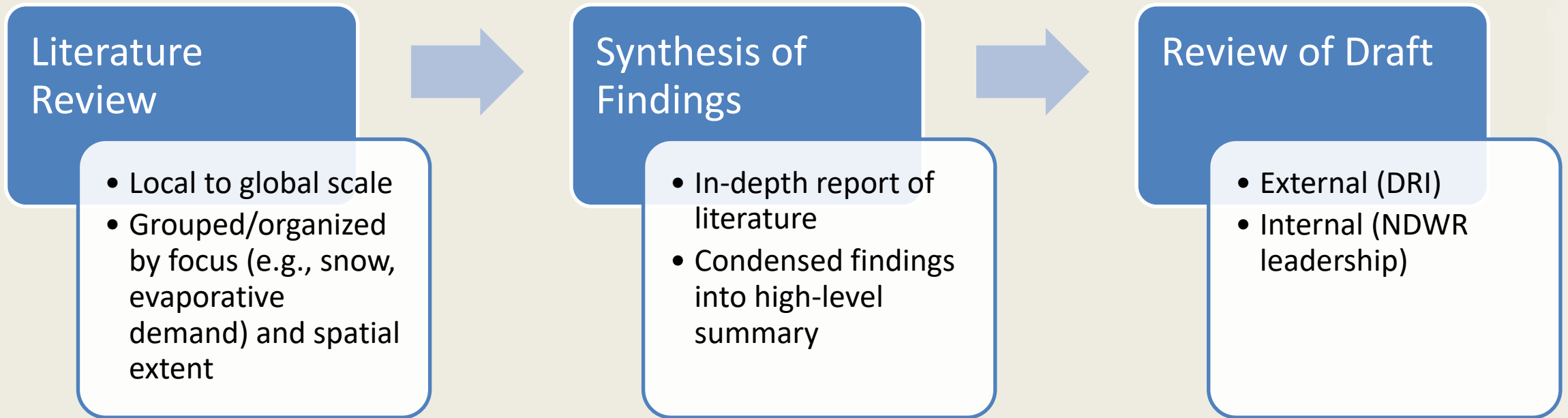
Describe Nevada's "average" climate (temperature, precipitation, extreme events)

Discuss model projections for statewide temperature and precipitation

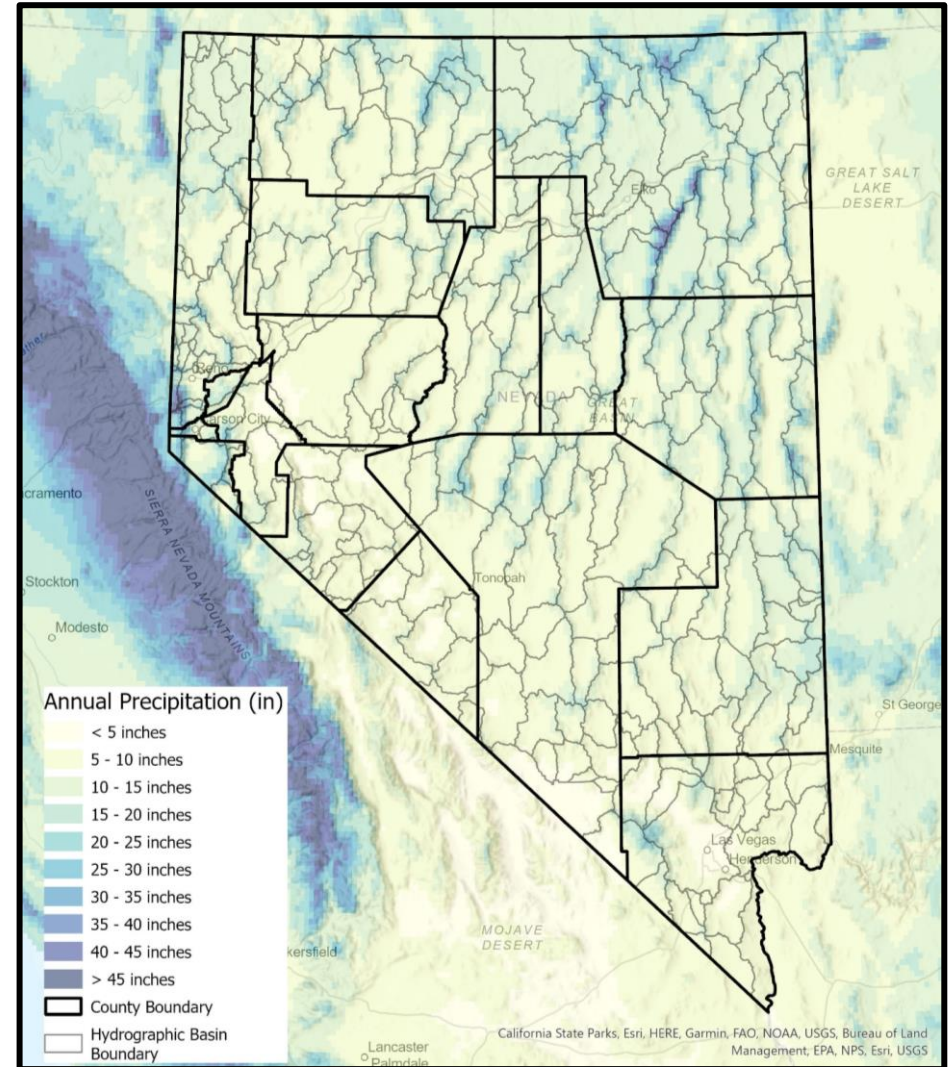
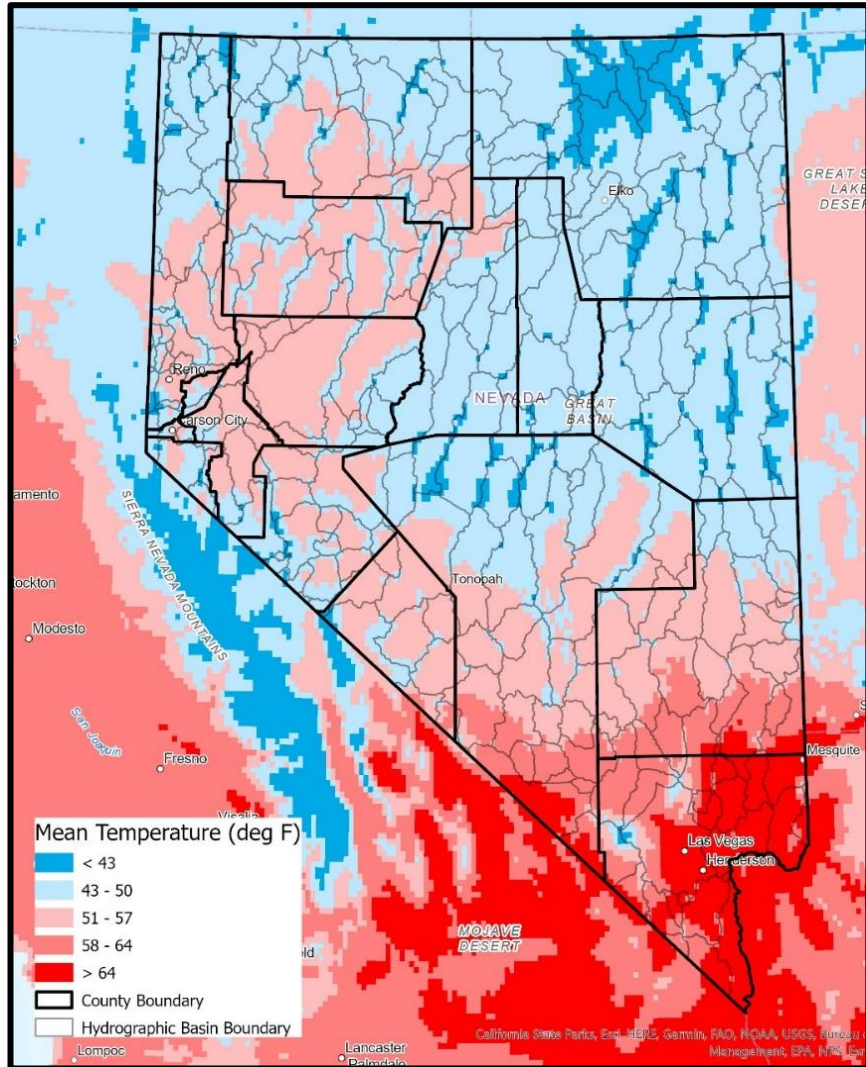
Summarize how the potential changes in climate could impact water resources

Provide links to additional resources for entities to obtain more localized data

# OVERVIEW OF PROCESS

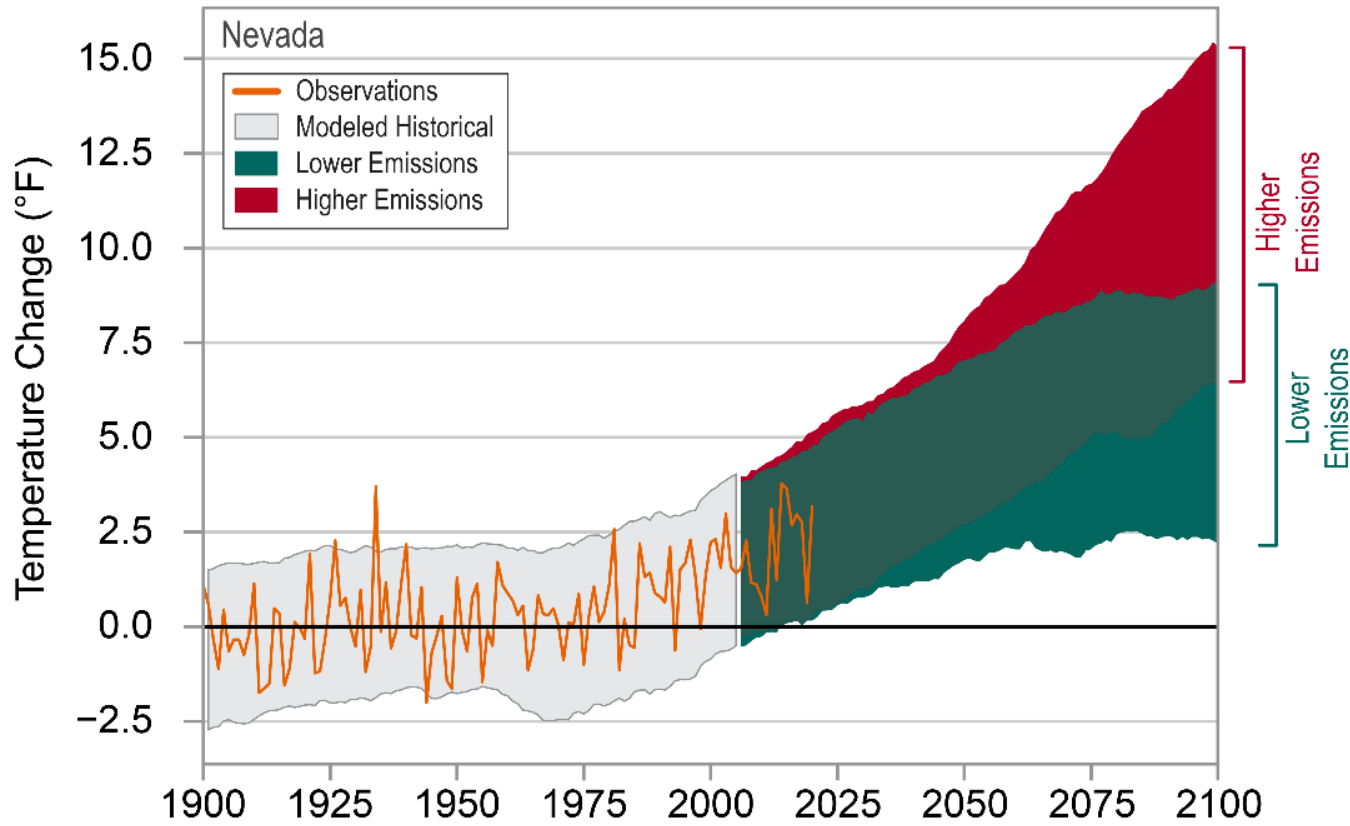


# PREVIEW OF CONTENTS



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Observed and Projected Temperature Change






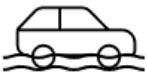

**Temperatures in Nevada have risen almost 2.4°F since the beginning of the 20th century.**

**Unlike temperatures, no trends in precipitation have been detected, largely due to the high year-to-year variability in Nevada.**

# PREVIEW OF CONTENTS

## Climate Impacts to Water Resources

The potential changes in climate described in the preceding sections could have major implications for water resources in Nevada. Below is a general summary of some of the climate-related impacts to water resources. Specific impacts will vary geographically at both the regional and local scales.

Hydrologic Indicator	Climate Impacts
Drought 	<ul style="list-style-type: none"> <li>Increasing temperatures will increase evaporative demand and wildfire risk.</li> <li>Droughts are likely to become more frequent and intense, potentially causing water shortages from decreasing supplies and increasing demands.</li> <li>Aridification, or the transition of the climate and hydrology to drier conditions, is occurring in southern Nevada.</li> </ul>
Snowpack 	<ul style="list-style-type: none"> <li>In the western U.S., snowpacks have been decreasing, the elevation of the snow line has been increasing, and more precipitation has been falling as rain rather than snow.</li> <li>There will likely continue to be a shift from snow to rain during the winter and earlier snowmelt during the winter and spring.</li> <li>Maximum snow water equivalent (SWE), or the amount of water available in the snow, in the Sierra Nevada and Great Basin is likely to decrease, while the date of maximum SWE becomes more variable.</li> </ul>
Runoff & Streamflow 	<ul style="list-style-type: none"> <li>Reduced spring snowpack and earlier melt onset are affecting streamflow volume and timing.</li> <li>Projected streamflow losses are greatest in high elevation subbasins, where sensitivity to changes in climate is heightened.</li> <li>Reduced snowpacks and slower melt rates may result in less streamflow, but individual model results are highly variable and project both increases and decreases in streamflows.</li> </ul>
Floods 	<ul style="list-style-type: none"> <li>Year-to-year precipitation variability is projected to increase.</li> <li>Atmospheric rivers are projected to become more intense; there is also the potential for expansion of the season when atmospheric rivers occur.</li> <li>Research suggests a large potential for continued regional warming to increase flood risk.</li> </ul>
Groundwater 	<ul style="list-style-type: none"> <li>The current understanding of climate impacts on groundwater is extremely limited.</li> <li>Changes in the amount and timing of snowmelt, and/or increases in evapotranspiration, may lead to decreases in groundwater recharge.</li> </ul>

## Climate Resources

The Plan assesses potential future climates at a high level to inform statewide decisions. Given the variability in climate and associated hazards and risks across the state, local and regional entities are encouraged to perform location-specific assessments to better inform mitigation and adaptation decisions. Below is a list of resources that communities can use to better understand the potential future climate of their region. Additional information is provided by the [Nevada State Climate Office](#); [Western Regional Climate Center](#); [California-Nevada Climate Applications Program](#); and [NOAA Climate Prediction Center](#).



### CLIMATE ASSESSMENTS

- [Fifth National Climate Assessment](#)
- [Climate Change Impacts in Nevada](#)
- [NOAA NCEI State Climate Summaries 2022: Nevada](#)



### HISTORICAL CLIMATE DATA

- [NOAA NCEI: Climate at a Glance](#)
- [Climate Toolbox](#)
- [Climate Engine](#)



### FUTURE CLIMATE PROJECTIONS

- [Climate Toolbox](#)
- [Climate Explorer](#)
- [Cal-Adapt](#)



### EXTREME EVENTS

- [U.S. Drought Monitor](#)
- [Living with Drought](#)
- [Nevada Floods](#)

# NEXT STEPS

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## SAG Review

- Is the material relevant?
- Is the material useful?
- Are any key topics missing?
- Were any flags raised?
- What, if any, additional climate data, information, resources, etc. would you want to see?



## Timing

- To SAG members: January
- Back to NDWR staff: February

# QUESTIONS?

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