



SUSTAINABLE WATER SYSTEMS



VIRTUAL FORUM SERIES
ALL-IN CLARK COUNTY

WED, MARCH 2, 2022



Forum Objectives

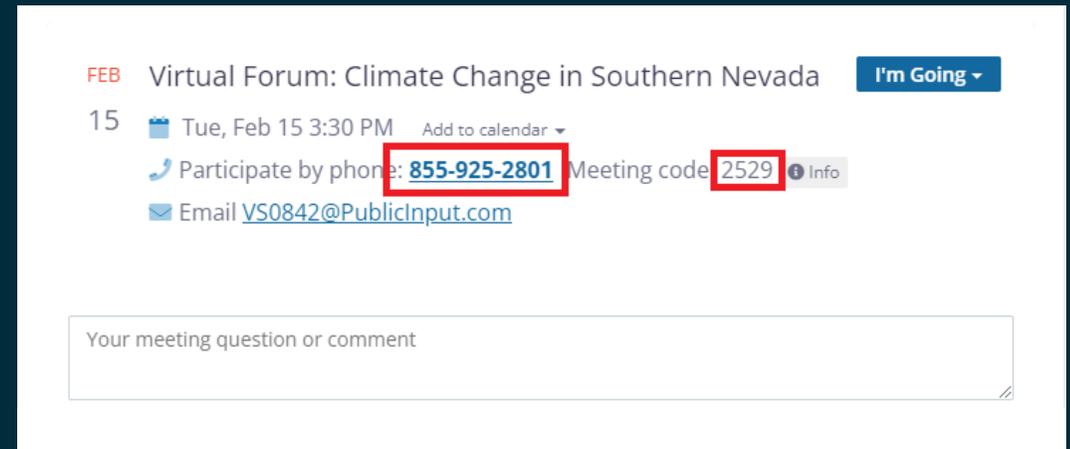
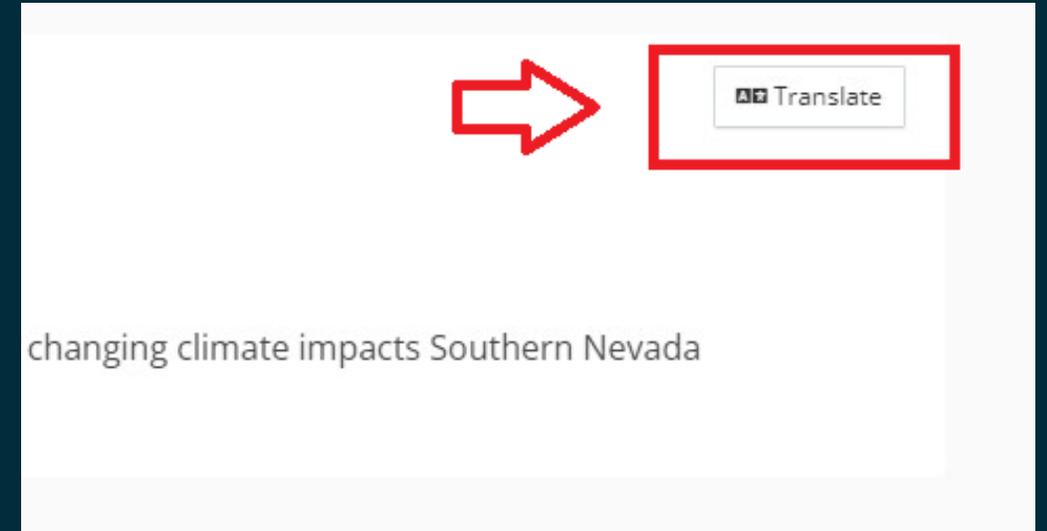
- **Review** how climate change affects water systems in Clark County
- **Describe** how our actions can contribute to water sustainability and resilience
- **Discuss** ideas and considerations to achieve solutions in this focus area





How to Use Public Input

- **Call in** to hear audio and leave voicemail comments
- **Type** comments into the chat
- **Translate** the page and meeting audio





All-In Clark County

Address climate change and create a more sustainable future.

A smart, bold, inclusive approach to ensuring the well-being and prosperity of all, today and for future generations.

Led by **Department of Environment and Sustainability**

Samantha Baker

Sustainability Program Administrator





Quick Poll



CLIMATE CHANGE & WATER SYSTEMS





**CHANGING
CLIMATE
CONDITIONS:**



**WHICH LEAD
TO CLIMATE
HAZARDS:**



**RESULT IN THE
FOLLOWING DIRECT
AND INDIRECT IMPACTS:**



Temperature



Heat Waves



Precipitation



**Intense Storms
Flooding
Drought**

- Heat related illness
- Poor air quality
- Higher energy demands
- Pavement buckling

- Wildfires
- Smoke

- Infrastructure damage
- Blocked roadways
- Power outages
- Water shortages
- Crop/habitat damage

Climate Hazards in Clark County



EXTREME HEAT

30 DAYS
A YEAR

above 106°F expected by mid-century

#1

fastest warming city in the country is Las Vegas



FLOODING



increase in extreme precipitation events and flash floods by mid-century

200%



increase in flash flood runoff expected in Las Vegas metro area by mid-century



DROUGHT

100%

of Clark County in extreme drought conditions, as of summer 2021



Lake Mead is at 36% capacity, the lowest in history



WILDFIRES



increase in smoke events and poor air quality days due to regional wildfires

9.5
MILLION

acres burned in Nevada from 2000-2019, more than double the acres burned from 1980-1999

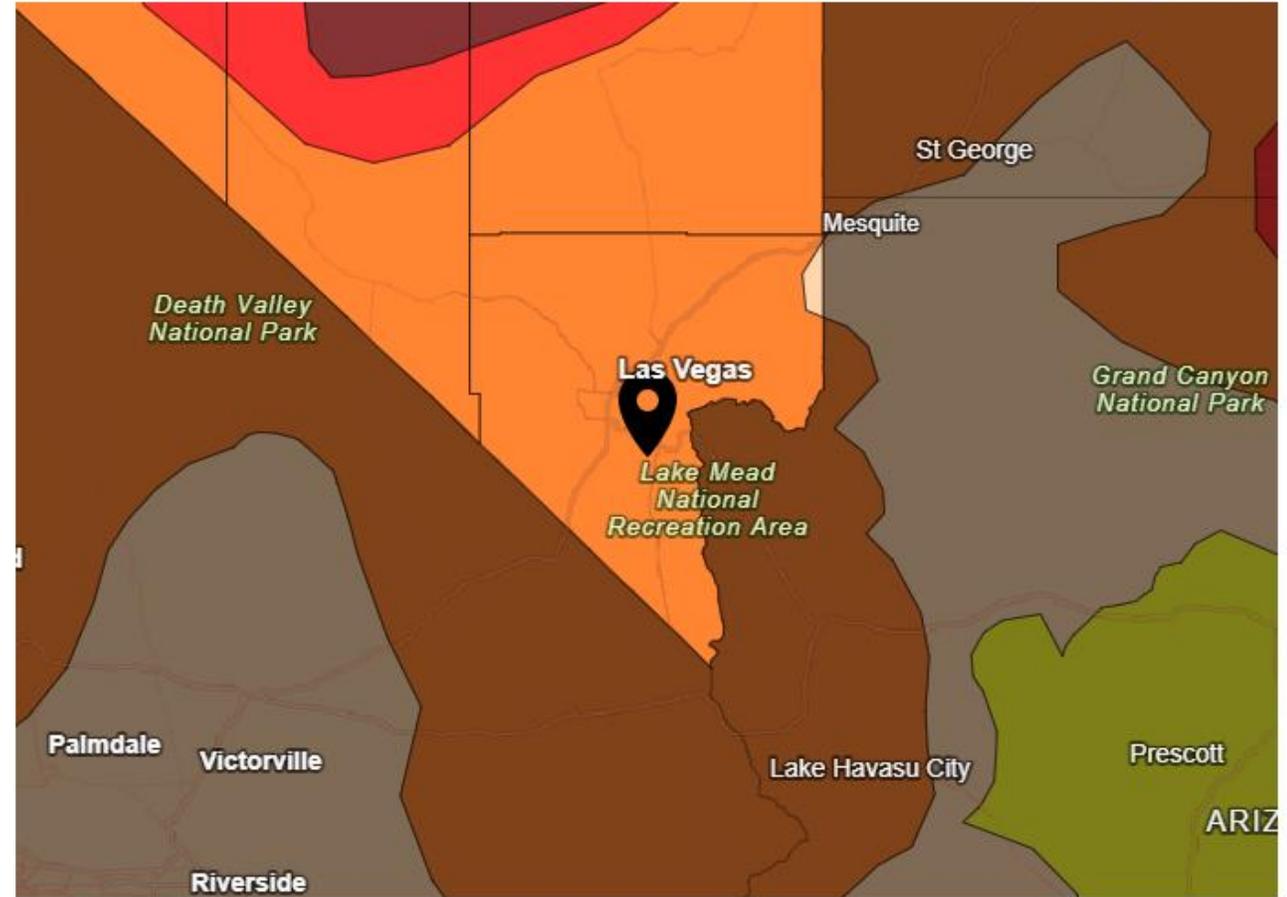
We are all working together to address these hazards and solve the climate crisis.



100%

Of Clark County is experiencing a severe or moderate drought conditions

U.S. Drought Monitor



U.S. Drought Monitor for Clark County



Source(s): NDMC, NOAA, USDA
Updates Weekly - 02/22/22

[Drought.gov](https://www.drought.gov)



Drought: Trends & Projections

TRENDS

- Almost a decade of drought
- Extreme low water levels in Clark County's primary water source, Lake Mead.
- Decreasing snowpack

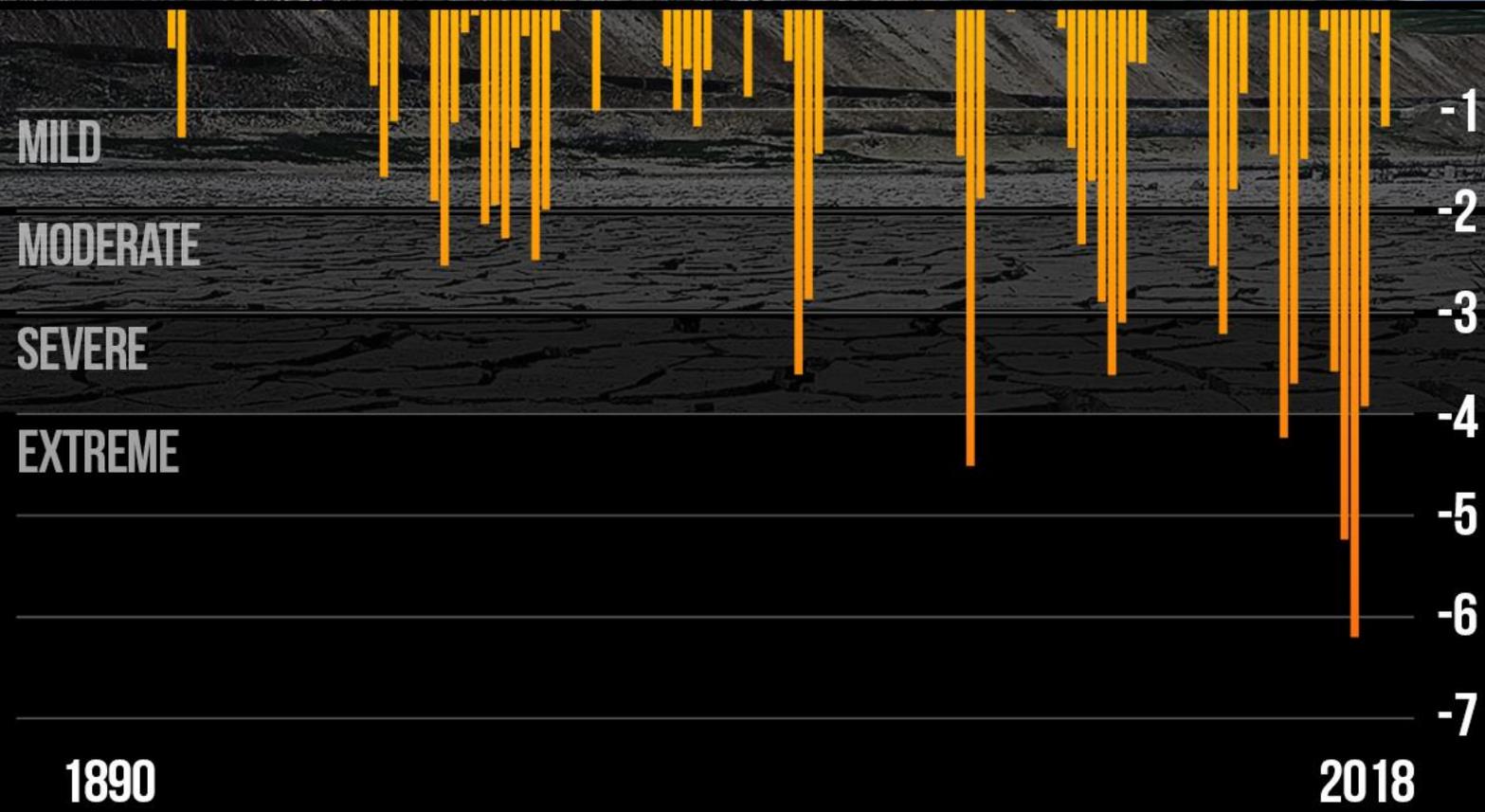
PROJECTIONS

- "Extreme" drought conditions becoming normal
- 30-40 year "megadroughts" becoming realistic



WESTERN DROUGHT

Palmer Hydrological Drought Index

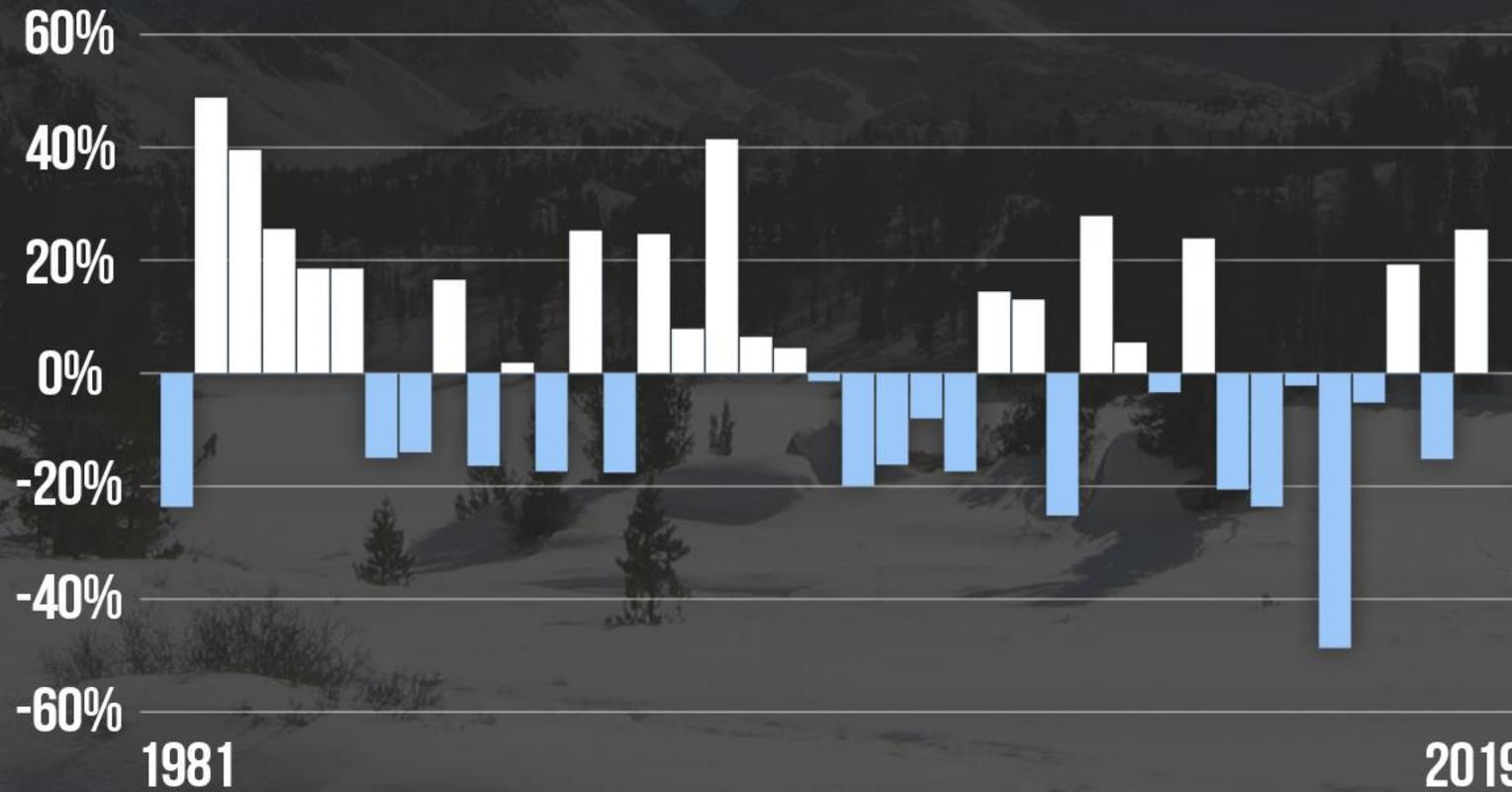


Palmer Hydrological Drought Index 24-month scale
Source: NCEI Climate at a Glance. Produced 4/3/2019

WESTERN SNOWPACK

Annual Snow Water Equivalent

% Median normal



Median normal based on the period from 1981-2010. Data through 4/1/2019
Source: USDA/NRCS SNOTEL network. Produced 4/3/2019



DROUGHT: IMPACTS

- Continued water shortages on Colorado River and Lake Mead
- Impacts to local drinking water, energy systems, infrastructure, natural ecosystems, cultural/spiritual well-being and ways of life for Tribes
- Impaired water quality
- Increasing costs for potable water
- Exacerbating wildfire risk

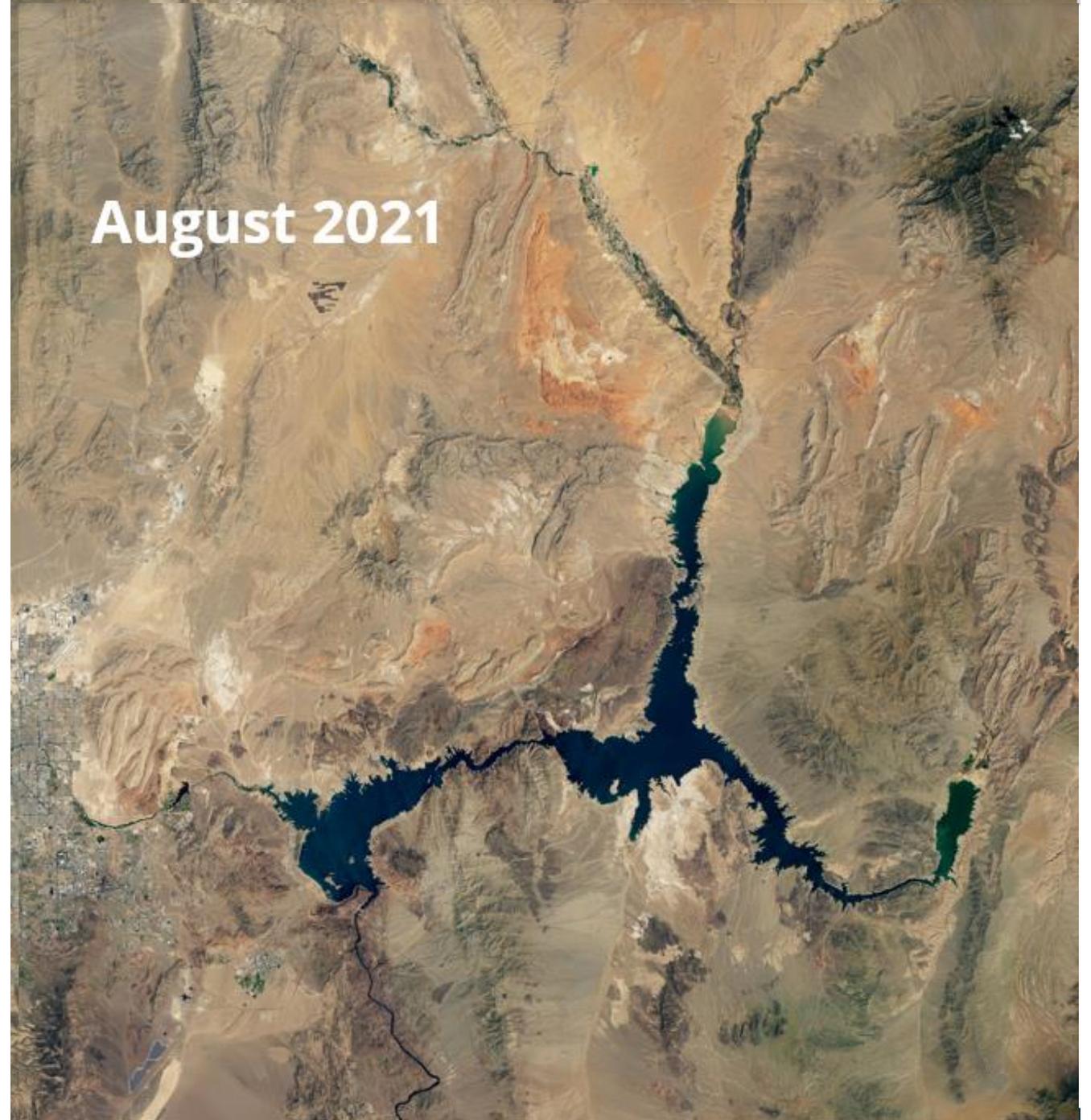




35%

Water level capacity of
Lake Mead

Image Source: NASA Earth Observatory





90%

of Clark County population is
in the Special Flood Hazard
Area

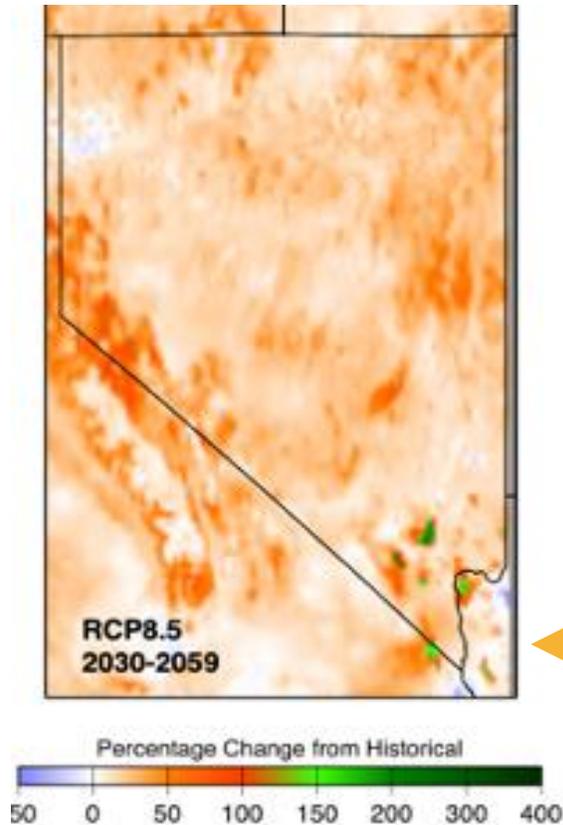


Image Source: Roadsidepictures on [Flickr](#)



FLOODING: TRENDS & PROJECTIONS

Projected Changes in Annual Peak Daily Runoff



TRENDS

- Less frequent, heavier rain events
- 90% of Clark County population is in the Special Flood Hazard Area.

PROJECTIONS

- Increasing number and severity of extreme precipitation events.
- More precipitation expected to fall as rain than snow in mountains.
- 150-200% increase in peak daily runoff for Las Vegas
- Urban expansion in the Las Vegas Wash Watershed is increasing the region's flood exposure and risk.



FLOODING: IMPACTS



- Damage to buildings, property, infrastructure, roadways
- Disruption to tourist and hospitality facilities
- May lead to injury, death, or other health risks
- Runoff may increase pollution or erosion



FLOODING: Water Quality

- Water quality is affected by stormwater runoff.

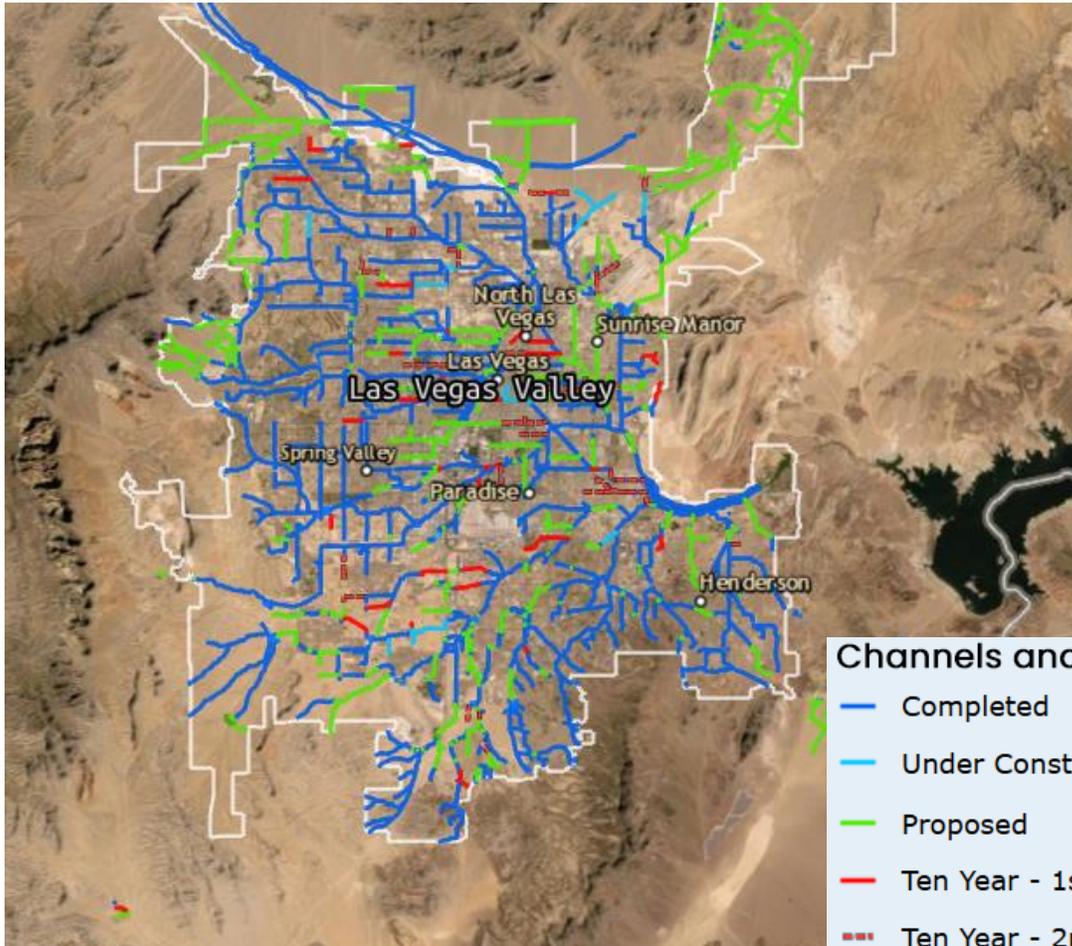
2,000 → **200** acres of wetlands

- Improvements to stabilize and enhance the Las Vegas wash





FLOODING: Actions



Channels and Basins	
— (Blue)	Completed
— (Light Blue)	Under Construction
— (Green)	Proposed
— (Red)	Ten Year - 1st Five
— (Dashed Red)	Ten Year - 2nd Five

- Completing the District's Master Plan - 75% complete
- Proposed infrastructure projects: 30 more detention basins and 200 miles of conveyance





Increasing population

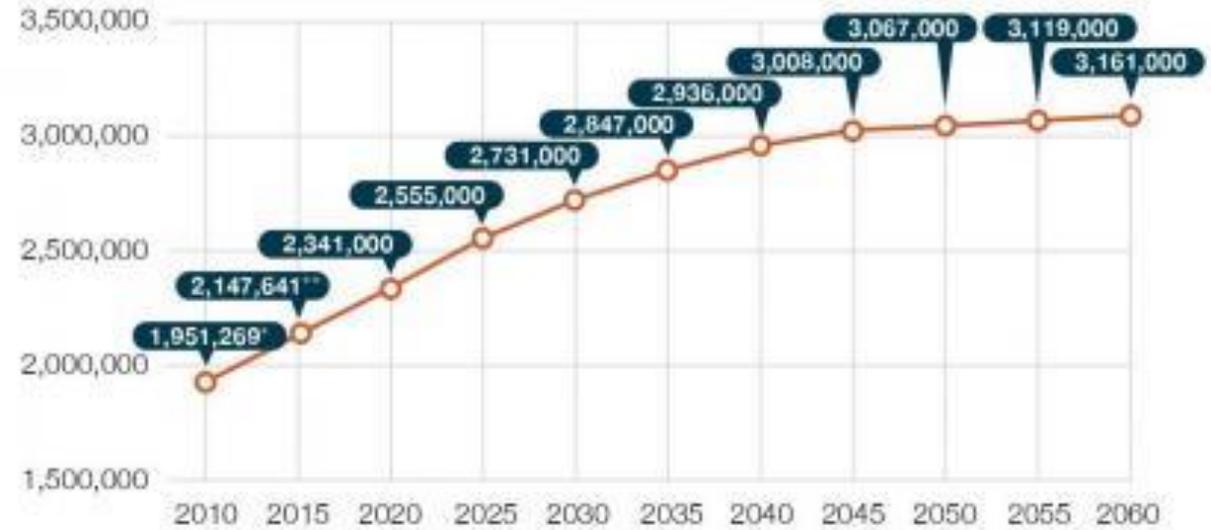
More than

860,000

New residents
expected by

2060

Clark County Population Forecast (2010-2050)



*2010 U.S. Census.
**SNRPC consensus population estimate.

SOURCE: UNLV Center for Business and Economic Research (CBER), June 2016.



Sustainable Water Planning

- Assesses water supply and demand
- Coordinates with regional and state agencies to provide enough safe water for our community
- Promotes action to sustain progress towards conservation goals



SOUTHERN NEVADA
WATER AUTHORITY™





Water Conservation

- Implementing conservation measures will achieve conservation goal of 86 GPCD

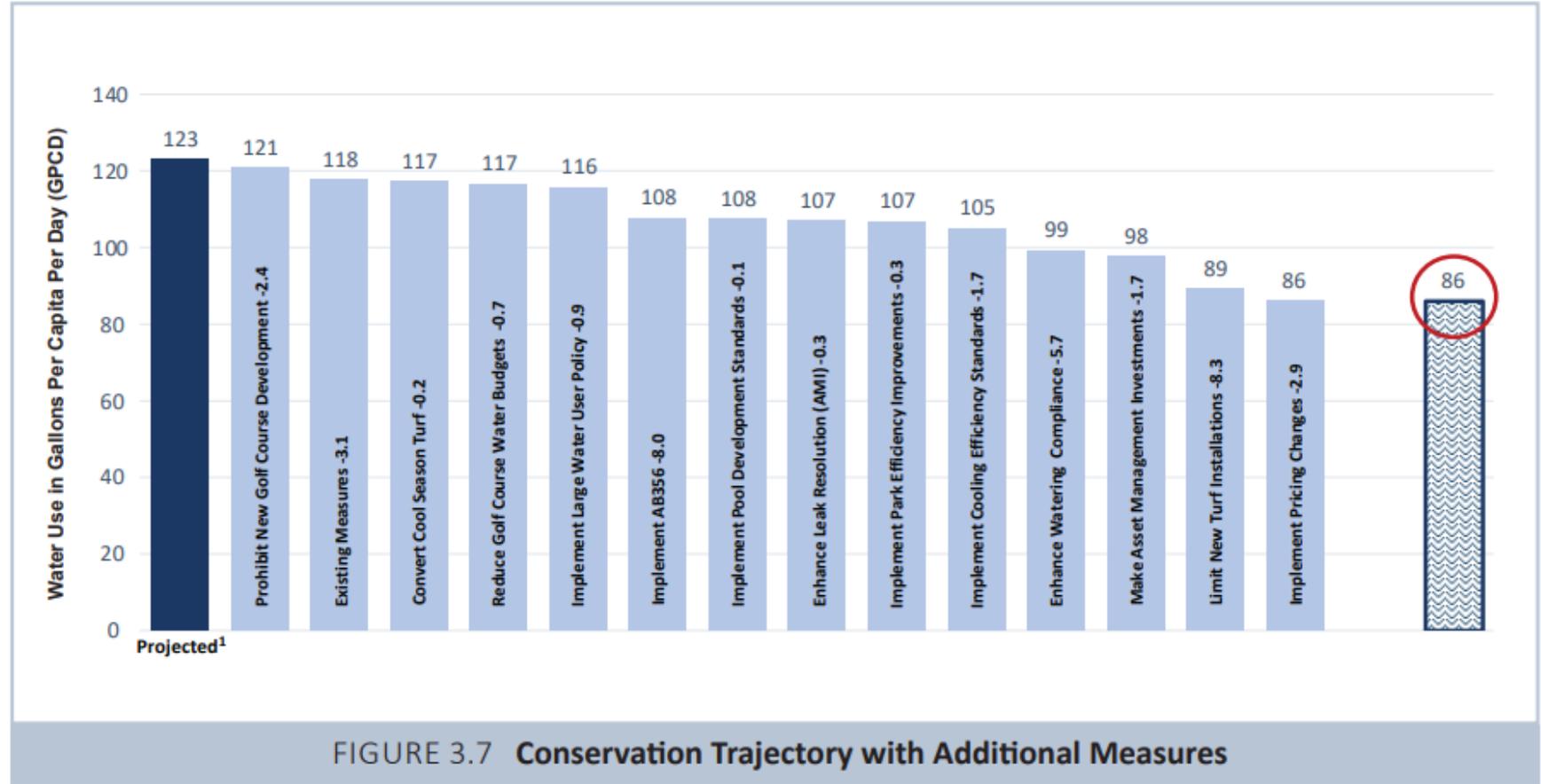


Image Source: SNWA 2021 Water Resources Plan



Conservation & Efficiency Achievements



100%

Of wastewater is recycled



52%

Decrease in water use per person, even while population has grown by **48%**



197 million
square feet of lawn

Converted to water-efficient landscaping with SNWA



Water Infrastructure

- Water banking and Drought Contingency Plans
- Collaborative drought response actions reduced Lake Mead's water level decline by 65 feet in 2021.
- New Low-level Lake Pumping Station completed in 2020.





Opportunities

60%

Of all water delivered by SNWA is consumed, mainly for landscape irrigation and building cooling

- Encourage water efficiency in new businesses and industries





WHAT IS *ALL-IN*?





Regional Greenhouse Gas Emissions Inventory

To assess regional sources of greenhouse gas (GHG) emissions contributing to climate change.



Climate Vulnerability Assessment

To confirm climate hazards and the areas and systems most vulnerable to these hazards and identify solutions to enhance our community's overall resilience.



Community Sustainability & Climate Action Plan

To grow climate literacy in the community and work together to develop a plan of action to ensure a sustainable and resilient future for all.



Definitions

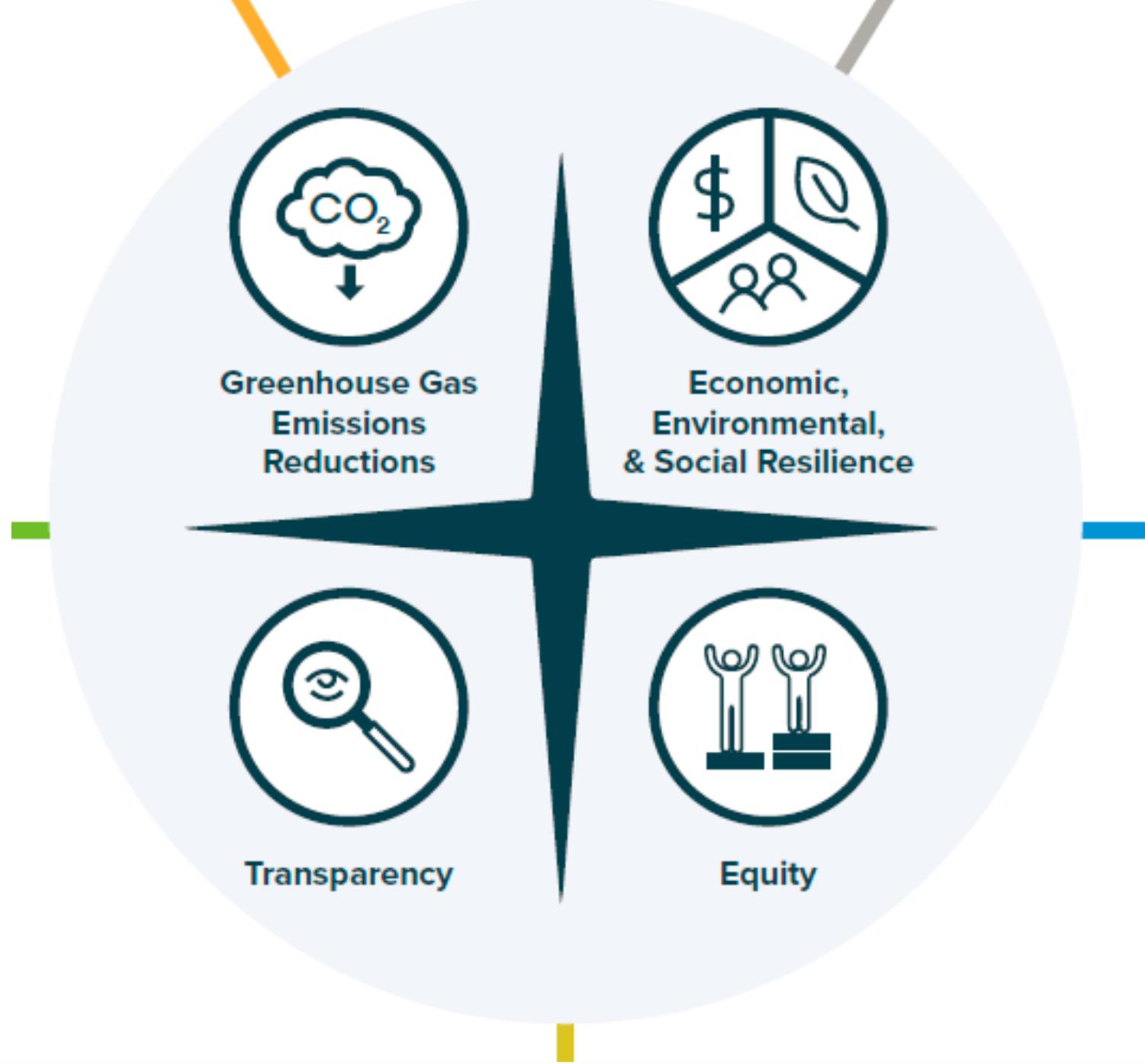
A ***sustainable*** Clark County balances resource efficiency, social well-being, and environmental stewardship while equitably meeting the needs of a growing community and thriving economy.

A ***resilient*** Clark County supports residents, businesses, and visitors to be healthy, successful, and adaptable to changing climate conditions.



Guiding Principles

Foundation for evaluating goals and actions across the *All-In Initiative*





Six Key Areas



**Clean & Reliable
Energy**



**Connected &
Equitable Mobility**



**Diverse &
Circular Economy**



**Sustainable
Water Systems**



**Resilient & Healthy
Community**



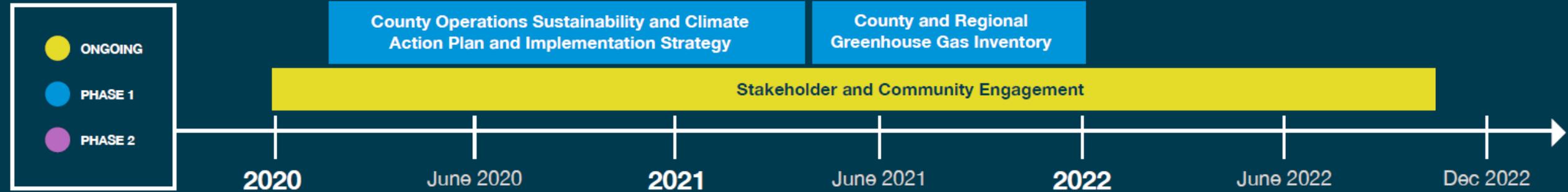
**Smart Buildings
& Development**

Learn more about each of these areas at allinclarkcounty.com

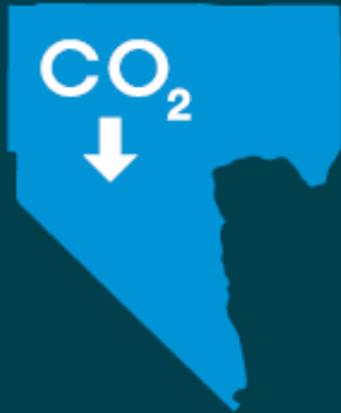


All-In Timeline

All-In Clark County Planning Process Timeline



2 WAYS CLARK COUNTY CAN ADDRESS CLIMATE CHANGE



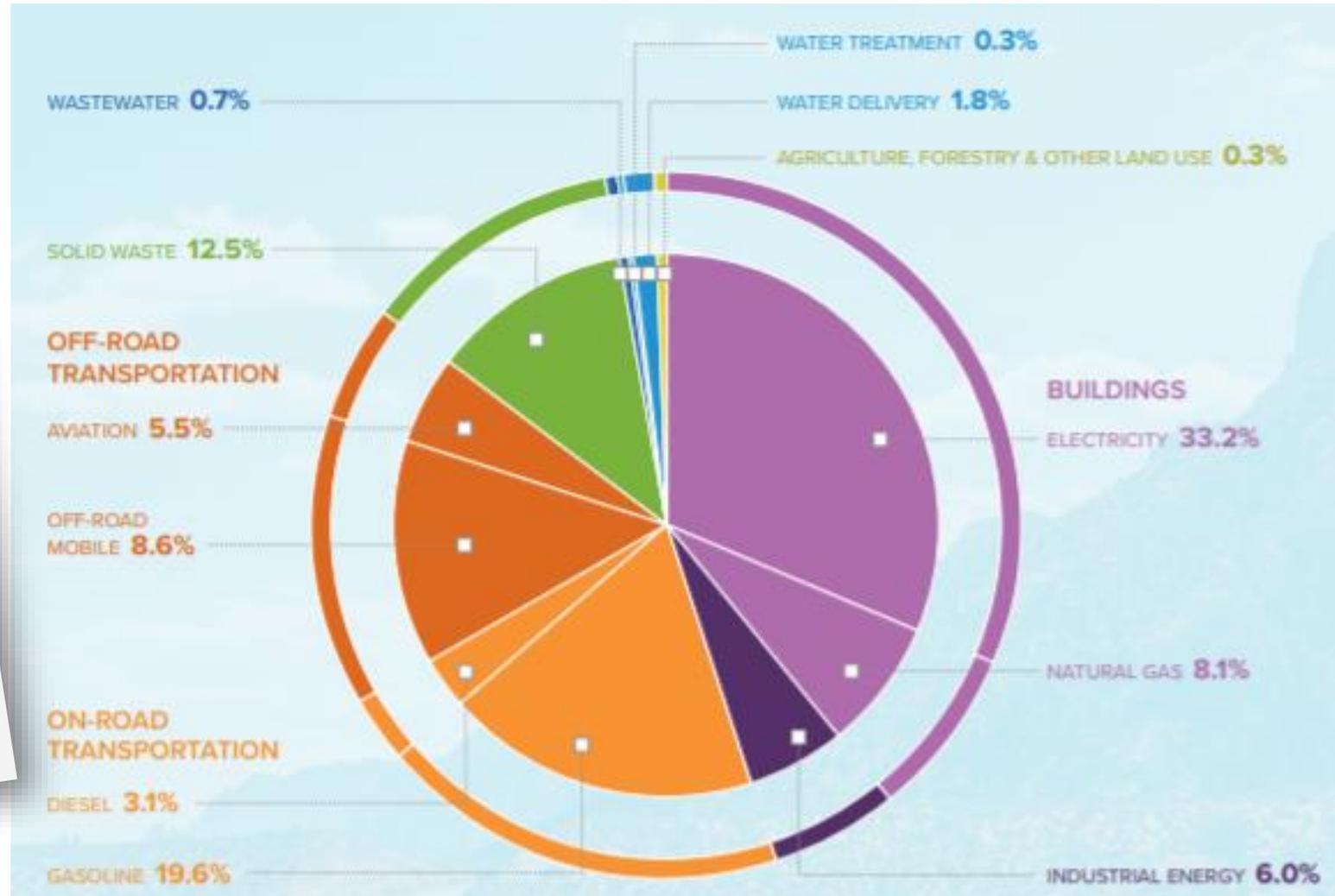
1 Reduce greenhouse gas emissions



2 Prepare for impacts of climate change



Greenhouse Gas Emissions Inventory - 2019



LEADING BY EXAMPLE





Leading By Example

McCarran International Airport used the **least amount of water per passenger** compared to any other airport in the country in 2018.



Our Vision

Conserving and protecting our water resources while developing sustainable systems for water delivery, stormwater management, and wastewater treatment.



What is a 'Sustainable Water System'?



- **Protecting the quantity and quality** of water throughout our watershed
- Programs and education to **reduce water consumption and increase efficiency**
- Infrastructure for treating and distributing water, wastewater, and stormwater that is **well-maintained, efficient, and prepared for changing climate conditions**



Examples from Other Communities

- Minimize pollution to water resources.
- Improve drought resilience.
- Enhance and actively promote water conservation programs.
- Enhanced Regional collaboration around resiliency planning.
- Support conservation practices to protect and enhance water quality and ecosystems.

**PARTICIPATE IN
THE PROCESS**





Your Thoughts





Stay Involved!

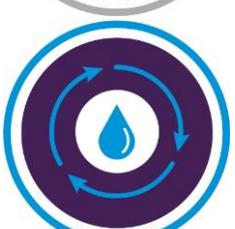
- Share your thoughts on Public Input and share with friends!
- Visit *allinclarkcounty.com*
- Follow *Sustain Clark County* on [Facebook](#), [Twitter](#), and [Instagram](#)
- Stay tuned for the second Community Survey in the spring.





Upcoming Forums

Topic Area	Date & Time
Climate Change in Southern NV	4pm, Tuesday February 15th
Resilient & Healthy Community	12pm, Thursday February 24th
Sustainable Water Systems	9am, Wednesday March 2nd
Clean & Reliable Energy	10am, Monday March 7th
Connected & Equitable Mobility	4pm, Wednesday March 16th
Smart Buildings & Development	7pm, Thursday March 24th
Diverse & Circular Economy	12pm, Monday March 28 th



Thank You!

