

# Sharing Visions for a Sustainable Water Future

## Grad 592 Fall 2021



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# Course Overview



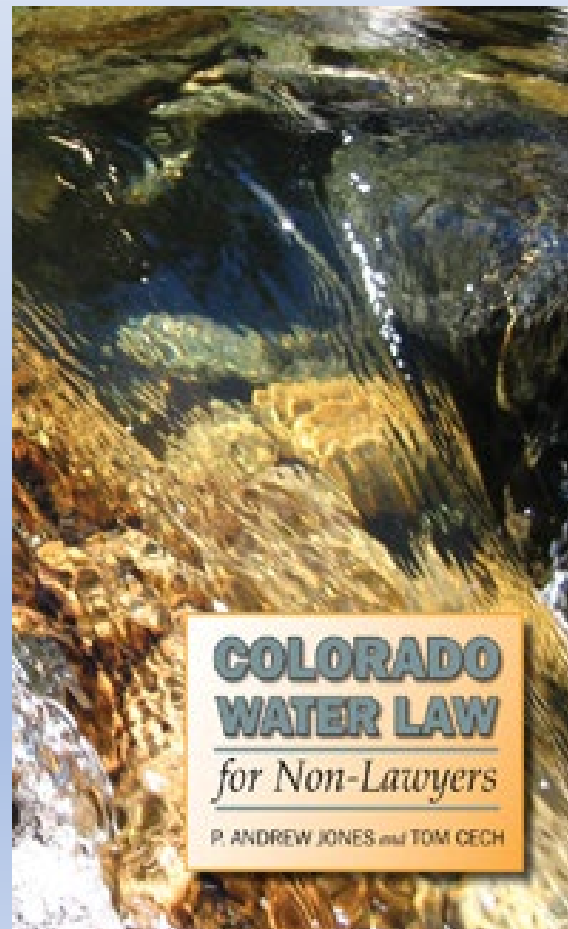
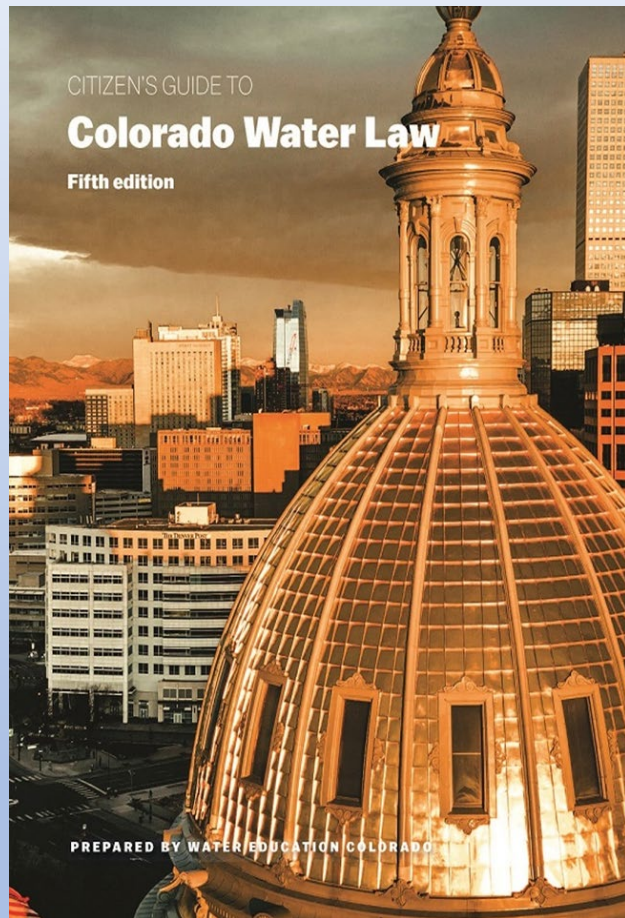
- ✓ Basics: Colorado, Western and Federal Water Law
- ✓ Federal, State, Regional, and Local Water Institutions
- ✓ Water Quality and Ecosystems
- ✓ Agriculture Sustainability
- ✓ Local Water System and Municipal Challenges
- ✓ Privatization and Speculation of Water
- ✓ Wildfire and Climate Challenges
- ✓ Land and Water Planning



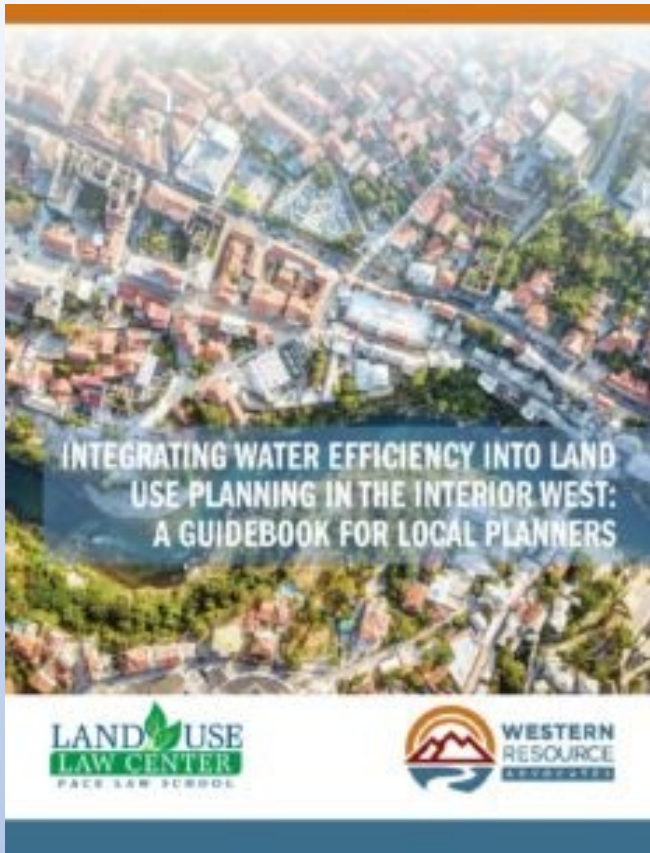
# Course Requirements

- Attend seminar: 60% of grade
- Read the assignments before each class
- Final project: 40% of grade. Paper (2-4 pages) discussing the sustainability on a water issue, local, regional, national or international. The paper should describe two case studies and describe how law and policy effect sustainability of water supplies, with one example a positive influence and the other a negative, or one case study highlighting both. Papers are due December 13 with class presentations.
- Class presentations of papers. Attendance mandatory

# Reading Materials



# Reading Materials



## BRIAN RICHTER The Irrigation Efficiency Paradox



Credit: I AM A PHOTOGRAPHER AND AN ARTIST Getty Images

## Human Evolution Led to an Extreme Thirst for Water

We are more dependent on water than many other mammals and have developed a host of clever strategies for obtaining it

Asher Y. Rosinger

# Riparian Water Rights

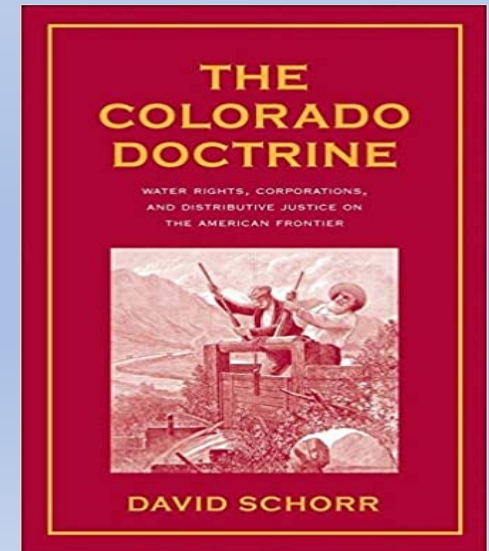
- ❖ “Reasonable use” by owner of land bordering stream or lake
- ❖ Upstream and downstream water users are coequal
- ❖ Share shortages
- ❖ Some states permit its use and require conditions to prevent harm to others.



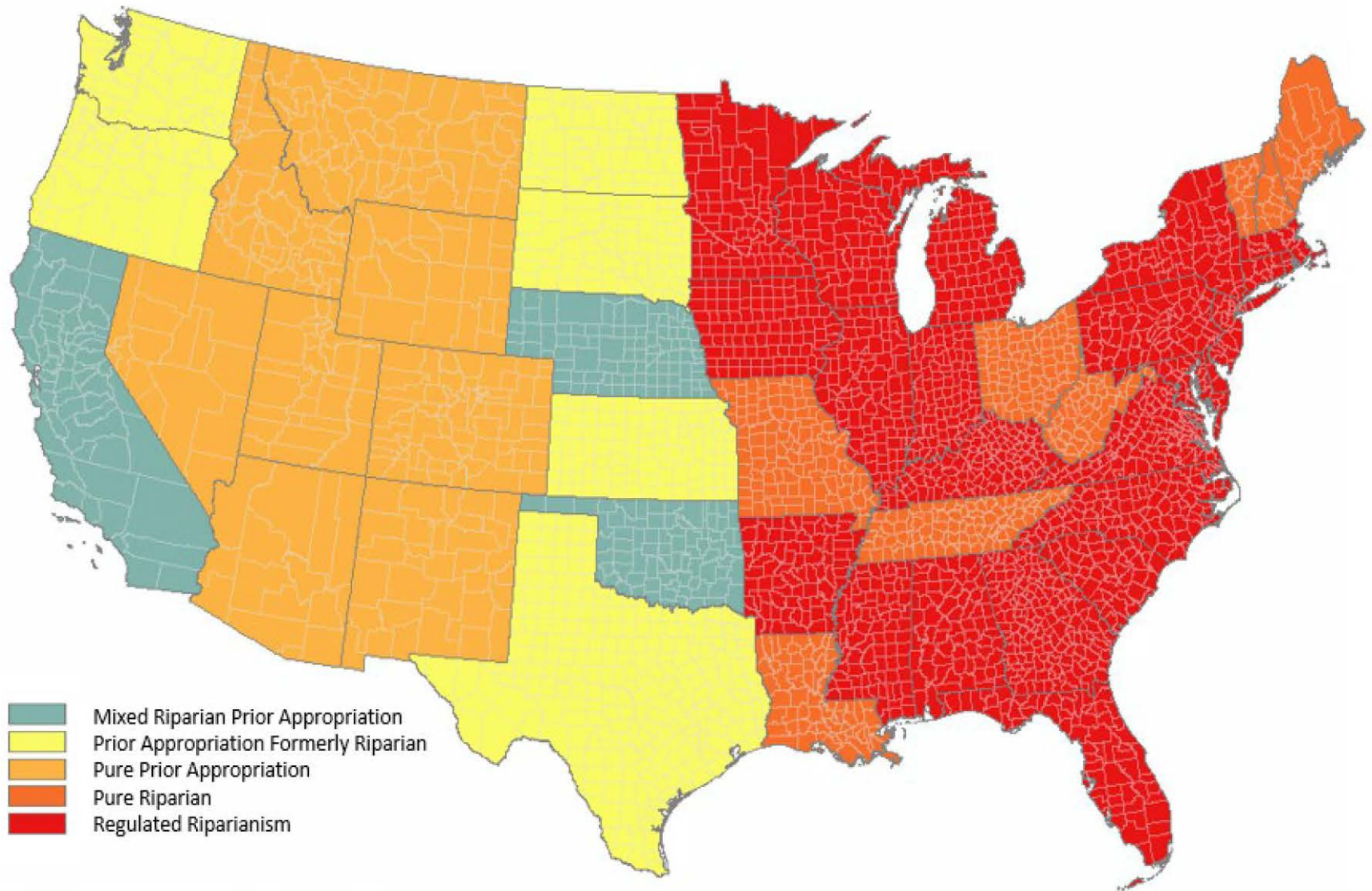


# Development of the Colorado Doctrine

- ❖ 1859 Gold Rush in the Rockies.
- ❖ Claims were based on first possession “first in time, first in right”
- ❖ Any party could use water
- ❖ Shortage- “First in time, first in right”
- ❖ Rights transferable



# Surface Water Appropriation Governance Systems



Data Source: Christian-Smith, Juliet, et al., 2012.

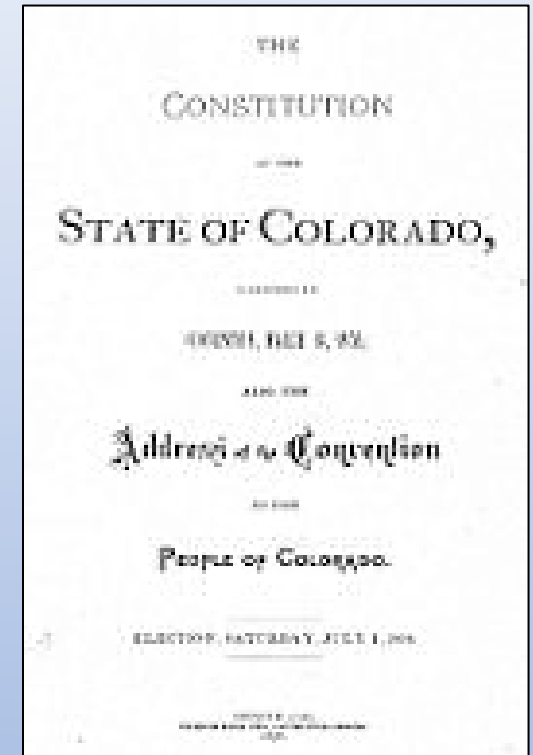
Water Markets LLC (2018)

# 1876 – Colorado becomes a state

A strict Doctrine of Prior Appropriation is adopted in the state constitution.

*"The right to divert the unappropriated waters of any natural stream to beneficial use shall never be denied."*

Colorado Constitution 1876



# Maxim



I'd rather be upstream with a shovel than downstream with a water right.



# Western Water Development



Individual direct diversion ditches

Transbasin diversions

Bureau of Reclamation large project era begins

1860s

1870s

1880s

1890s

1902

1930s



Community and larger scale diversion projects

Reservoir construction

Groundwater development





# Maxim

Money

to

Uphill

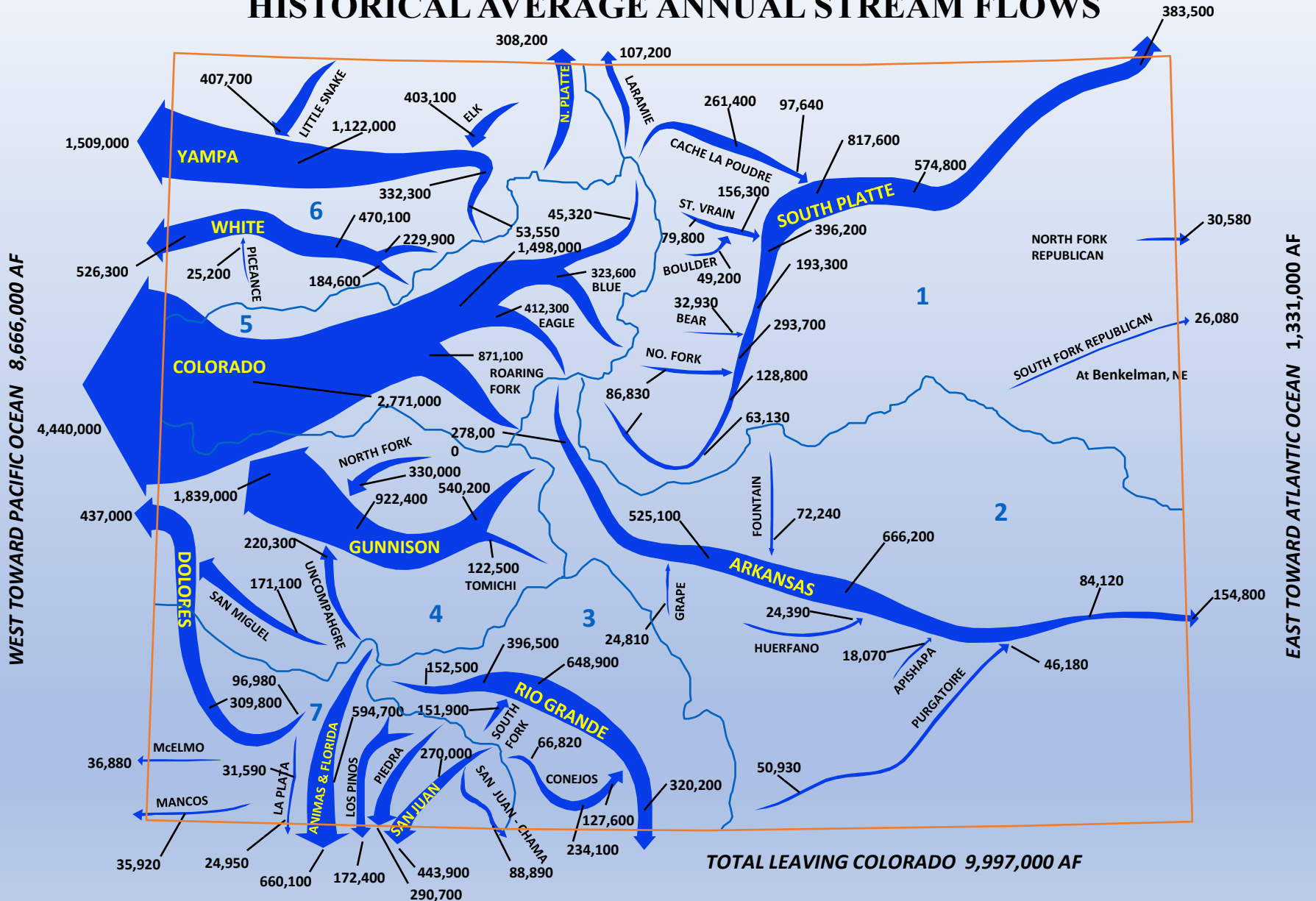
Flows

Water



# COLORADO

## HISTORICAL AVERAGE ANNUAL STREAM FLOWS





# Sustainability

- What does it mean?
- Does context matter?



# Sustainability

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Webster's Dictionary: "of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged." Synonyms include defensible, defensible, justifiable, maintainable, supportable, tenable.

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Harvard Business School: In business, sustainability refers to doing business without negatively impacting the environment, community, or society as a whole.

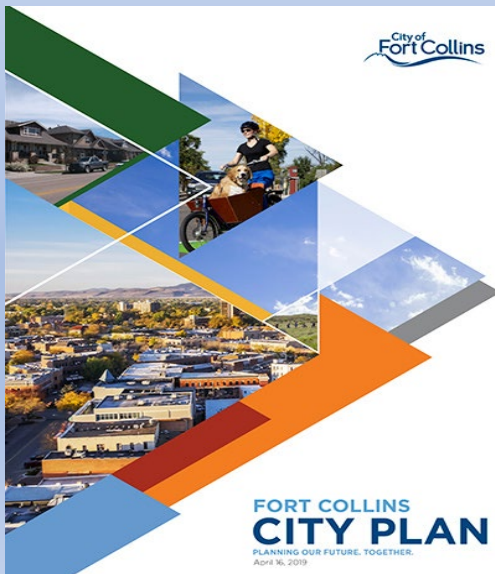
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U.S. Environmental Protection Agency (EPA): "To pursue sustainability is to create and maintain the conditions under which humans and nature can exist in productive harmony to support present and future generations."

# Sustainable Development Plans

## Department of Local Affairs:

“These long-range plans are aimed at guiding the community by balancing social equity, environmental, and economic conditions while tying together the community's goals, strategies, and implementation actions. A sustainability plan may include elements such as energy-efficiency, land use, transportation, public health, renewable energy, economic development, and more.”





# SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



United Nations  
Definition

Meeting the needs of the present without compromising the ability of future generations to meet their own needs.

# Questions?



