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FOR LAND AND WATER POLICY

A Center of Lincoln Institute of Land Policy

Evaluating the Integration of Water and Comprehensive Planning in Colorado

Jim Holway
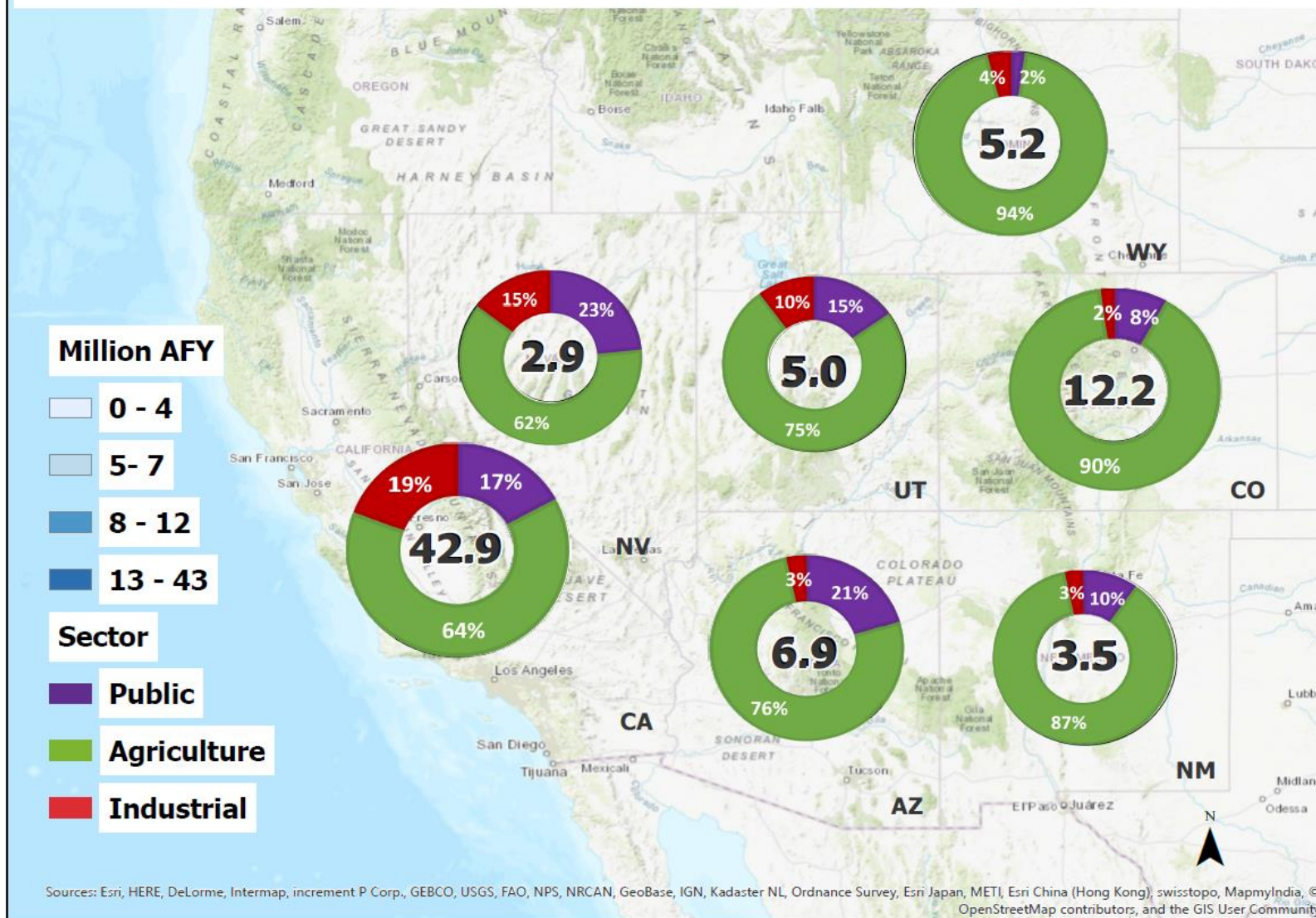Erin Rugland

Colorado River System

The Colorado River provides water to cities, farms, industries, and ecosystems across seven US States and Mexico. Although not the largest river in the US, the Colorado is the hardest working.

- 1,450 mainstem river miles
- 246,000 sq mile watershed
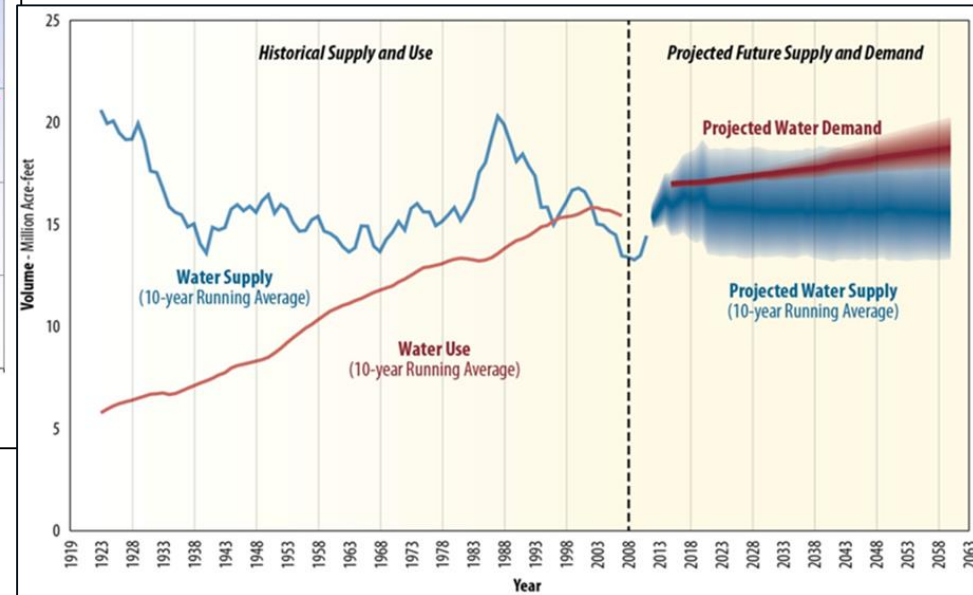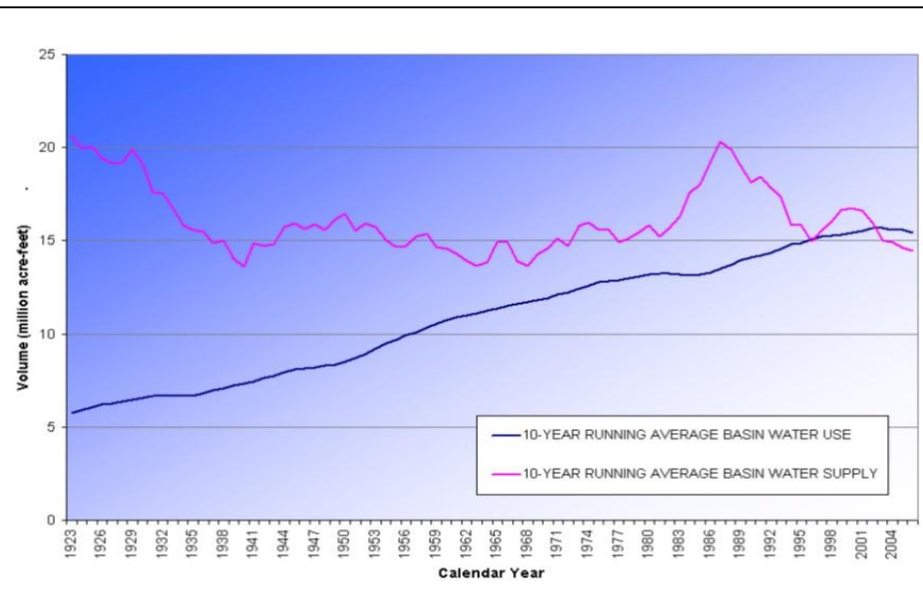- 14 MAF/year runoff
- 10 major reservoirs

Colorado River Basin States | Water Demand by Sector 2010

Million AFY
- 0 - 4
- 5- 7
- 8 - 12
- 13 - 43

Sector
- Public
- Agriculture
- Industrial

WY — 5.2 (4%, 2%, 94%)

2.9 (15%, 23%, 62%)

5.0 (10%, 15%, 75%)

CO — 12.2 (2%, 8%, 90%)

42.9 (19%, 17%, 64%)

6.9 (3%, 21%, 76%)

3.5 (3%, 10%, 87%)

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Growing Competition for Colorado River Water Resources

Water Supply and Demand in the Colorado River Basin

Where Land Meets Water:

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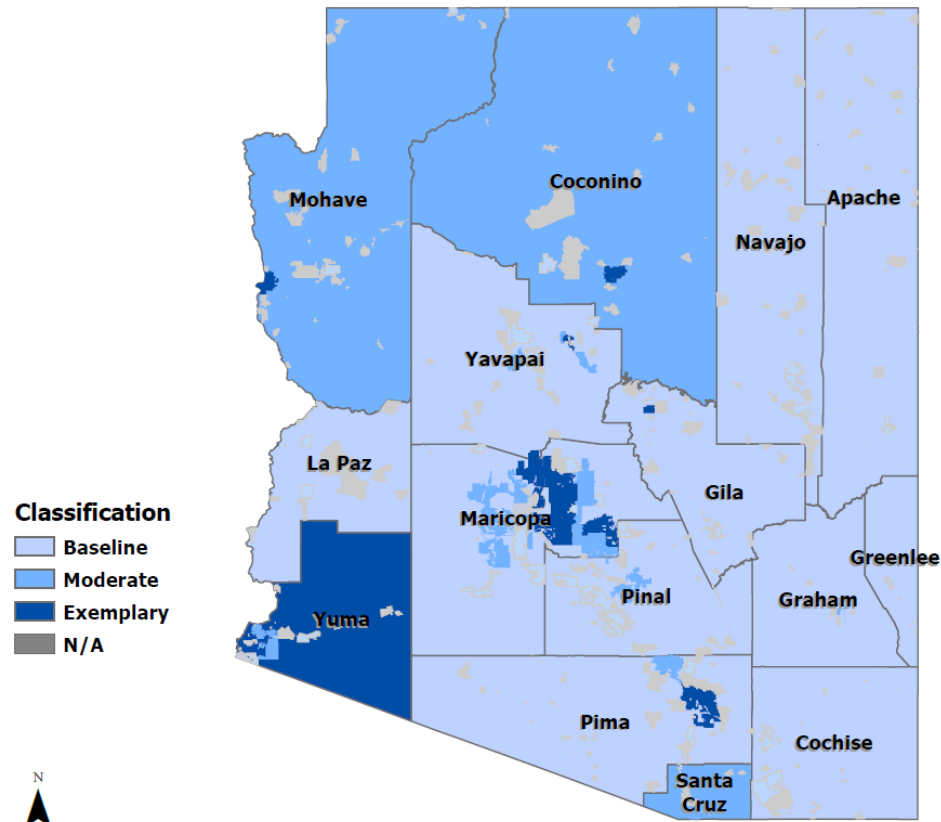
About the Babbitt Center for Land and Water Policy

- **Research**
  - Development of indicators for tracking conditions
  - Establishment and evaluation of best practices
- **Innovation**
  - Mapping and decision support systems
  - Scenario planning/adaptive management approaches

- **Partnerships**
  - Technical assistance and demonstrating best practices
  - Babbitt dialogues and convenings
- **Education & Training**
  - State of Basin reports
  - Professional workshops and disseminating best practices
  - Decision maker outreach
  - Fellowships

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Comprehensive Plan Evaluation

- **Land use** and **water planning** integration in the **Colorado River Basin**
  - **Development** influences **water** demand
  - **Separate silos** of land and water planning
  - 75% of **planners** indicated that they were **not involved enough** in **water** planning and decisions. (APA Water Working Group, Water Survey 2016).
  - Need to **plan for development with water constraints in mind**

- **Review to date:**
  - Every Arizona town, city, and county (106)
  - **51 Colorado** towns, cities, and counties
  - At least one town, city, and county in other Basin States

Criteria

Thorough Water Resources Overview	Future Resiliency Considerations	Land Use/Water Planning Tools
• Ownership of Water System • Description of Water Supplies • Water System Capacity • Water Infrastructure • Stormwater Management • Water Use Measurement • Water Use by Sector • Water Challenges and Goals • Non-Revenue Water • Water Efficiency and Conservation Programs • Water Reuse • Water Quality • Water Infrastructure Financing	• Population Growth • City Build Out & Expectations • Projected Water Demand • Water Demand Scenarios • Future Water Supplies • Drought Planning • Recharge/Recovery/Storage Program(s) • Transferable/Acquirable Water Rights	• Low Water Use Development Strategies • Preservation of Natural Watersheds • Innovative Zoning Techniques • Green Infrastructure/LID • Requirements for Interior Fixtures • Requirements for Exterior Irrigation Equipment • Regional Watershed Planning Coordination

Methodology

Baseline ⟶ **Moderate** ⟶ **Exemplary**

- Examples:
  - Expand use of reclaimed water.
  - Develop infrastructure necessary to treat and deliver reclaimed water and encourage its use for non-potable purposes.
  - We will continue to analyze and implement recharge/recovery opps, exchanges with water providers, and opps for direct deliveries to reach 30% of total water supply made up of reclaimed water.
- Note that:
  - Some components have a set formula/structure
  - Some components won't apply to every community

Snapshot of Results from Colorado

Snapshot of Results from Colorado — table of jurisdictions (Aurora, Thornton, Westminster, Arapahoe County, Englewood, Archuleta County, Pagosa Springs, Boulder County, Boulder, Louisville, Superior, City and County of Broomfield, Crowley County, City and County of Denver, Douglas County, Castle Rock, Eagle County, Basalt, Gypsum, El Paso County, Colorado Springs, Fountain, Garfield County, Carbondale, Glenwood Springs, New Castle, Silt, Jackson County, Durango, Latimer County, Ft. Collins, Trinidad, Mesa County, Grand Junction, Cortez, Brush, Berthoud, La Junta, Park County, Aspen, Lamar, Pueblo County, Rico, Rio Grande County, Routt County, Silverthorne, Woodland Park, Weld County, Evans, Firestone, Greeley) scored across Structure and Water/Land Use Planning Best Practices indicators.

| **Baseline:** 33 | **Moderate:** 11 | **Exemplary:** 5 |

3 plans were not found

Exemplary Communities

- **Arapahoe County**
  - Expedite approvals for water-conserving developments
  - Tax incentives for water-efficient development or redevelopment
- **City/County of Broomfield**
  - Updates to water plans must incorporate the goals, policies, and final Land Use Map of its Comprehensive Plan
- **Glenwood Springs**
  - Regional collaborations: the Colorado Basin Roundtable, the Roaring Fork/Colorado Watershed Collaborative, and the Middle Colorado River Watershed Partnership
- **New Castle**
  - Any development activity that occurs within the New Castle Watershed shall include a water quality management plan
- **Woodland Park**
  - Water supply connected to # of dwelling units, used to determine build-out population

	Arapahoe County	Broomfield	Glenwood Springs	New Castle	Woodland Park
Structure					
Components Filled	20	18	13	12	21
Water Element in General/Comprehensive Plan		2014		2009	2010
Ownership of Water System (City, Private, Utility/District)	P/R	C	C	C	C
Water/Land Use Planning Best Practices					
Comprehensive					
Description of Water Supplies	+	+	+	+	o
Water Use Per Capita	-			o	-
Water Use by Sector					
Water Challenges and Goals	o	+	o	o	+
Water Conservation Programs	-	+	o		o
Non-Revenue/Lost & Unaccounted for Water					
Stormwater Management	+	+			o
Water Reuse	o	+			+
Water Quality	o	+	+	+	o
Prevalence of Water in General Plan	+	-	-		o
Future Resiliency					
Population Growth	o	o	o	-	o
City Build Out & Expectations	o		-	+	+
Water Demand Scenarios		-		+	+
Considerations for Future Water Supplies	o	o		o	o
Drought Planning	o				?
Recharge/Recovery/Storage Program		o	+		o
Designation of Adequate Water Supply	?				
Transferrable/Aquirable Water Rights		-		o	-
Land Use/Water Planning					
Low Water Use Development Strategies	+	-	-		+
Preservation of Natural Watersheds	o		o	o	
Innovative Zoning Techniques	+				
Green Infrastructure/LID	o	o			o
Requirements for Interior Fixtures	o	+			-
Requirements for Exterior Fixtures	o	o	o	o	-
Water Infrastructure Financing		+	o		o
Regional Considerations	o	-	+	o	o

Next Steps

- Guidelines for Integrating Water into Comprehensive Plans
    - Soliciting community feedback
    - 3 products: short, long, checklist
- Review of more Colorado communities
- Water Efficiency Plan evaluation and guidelines

Thank you!

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