



Connecting world class research with real-world water challenges

Colorado State University

A Partnership to Enable Integrated Urban Planning & Water Management

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The contents of this presentation reflect the view of the presenter, not of CML.



Water Challenges to Local Governments

Management of water systems is increasingly complex:

- Population growth, land use change
- Economic development
- Extreme events: floods, droughts
- Financial constraints while managing a growing and aging infrastructure
- Changing regulations for management of water
- Increased community expectations



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A Partnership to Empower Local Governments

The One Water Solutions Institute (OWSI) strives to empower local governments:

- Local control of water resources;
- Demonstrate their stewardship towards water resources;
- Communication across levels of government;
- Help water managers determine the highest value programs to manage water resources for their communities.

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The world's most vital resource

Water is arguably the most critical sustainability issue in the 21st century.



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Societal call for action

Americans express greatest concerns about water, more than any other environmental concern.

Source: Gallup Poll of Environmental Concerns, 2014



Angelica Gallegos of Porterville, Calif., did not have running water for more than five months in 2013.

Journal: Media: With Dry Taps and Trains California Through Turb Disasters. The New York Times, Oct 2013. <http://www.nytimes.com/2014/10/03/us/california-drought-kills-a-county.html>

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Colorado Issues: Forest Fires



Increased chance of wildfires could substantially impact the quantity and quality of water along streams and rivers in Colorado.

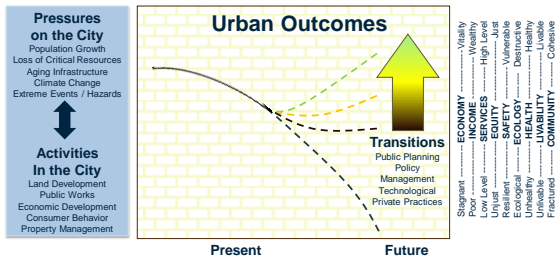
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Colorado Issues: 2013 Floods

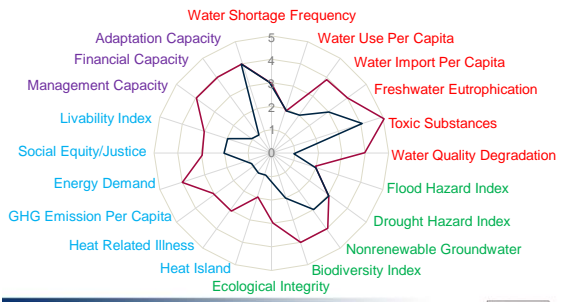


Urban Sustainability Framework

Pivo and Arabi, 2016



Water Sustainability Indicators



eRAMS Integration Platform

environmental **R**esource
Assessment and
Management **S**ystem

Web-based cloud
computing analytics for
land, water, and energy

Assist with strategic and
tactical decision-making at
multiple scales



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The eRAMS Assessment Platform

- Integrate data and information → Insight
- Point decisions toward best practices
- Share experiences → Peer learning
- Stay agile in responding to future needs

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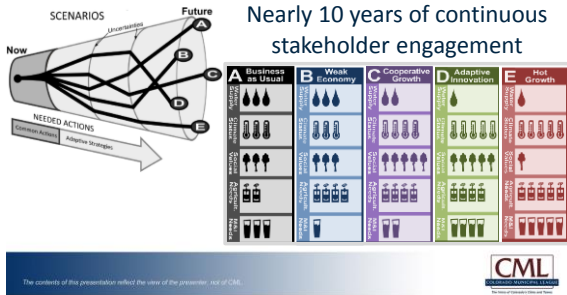
Integrated Urban Water Systems



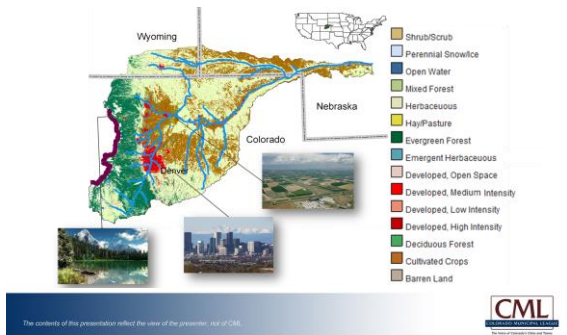
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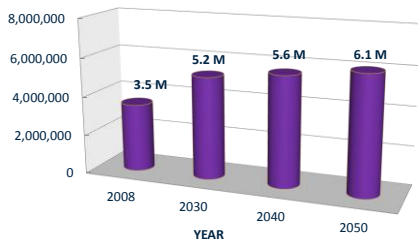
Colorado's Water Plan



South Platte River Basin



SPRB Population

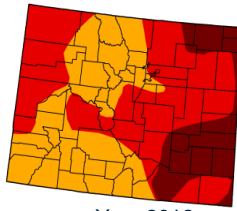


Colorado's Water Problem(s)

Forecasted
Growth in M&I
Demands: 710,000 (ac-ft)

Currently
Planned
Projects: 320,000 (ac-ft)

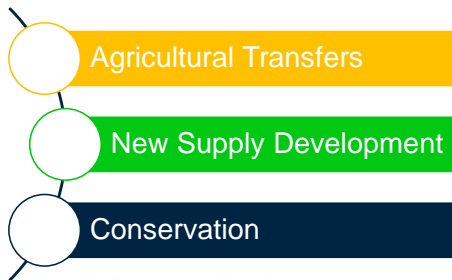
Projected
"GAP": 390,000 (ac-ft)



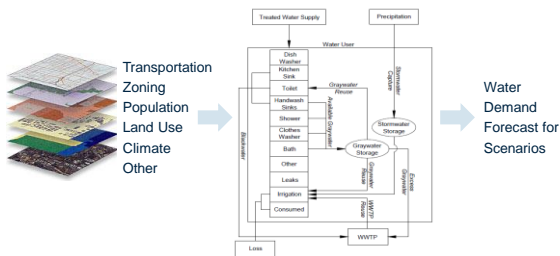
Intensity:
Yellow: D0 Abnormally Dry
Orange: D1 Drought - Moderate
Red-Orange: D2 Drought - Severe
Red: D3 Drought - Extreme
Dark Red: D4 Drought - Exceptional

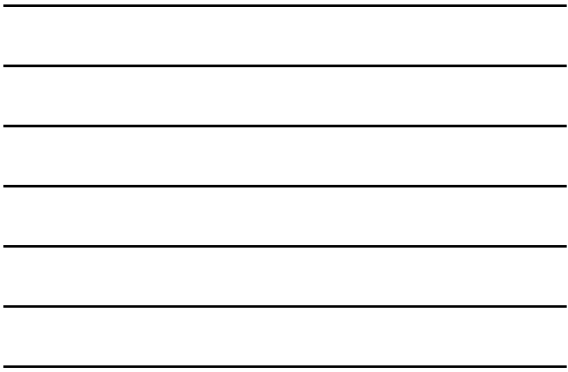
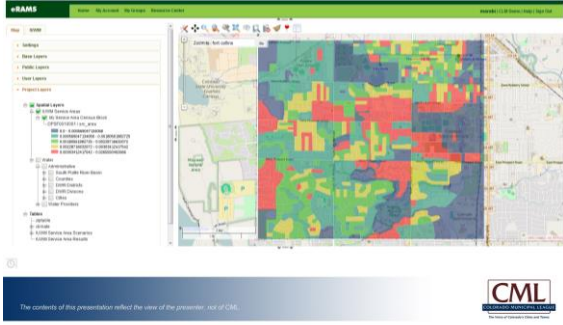
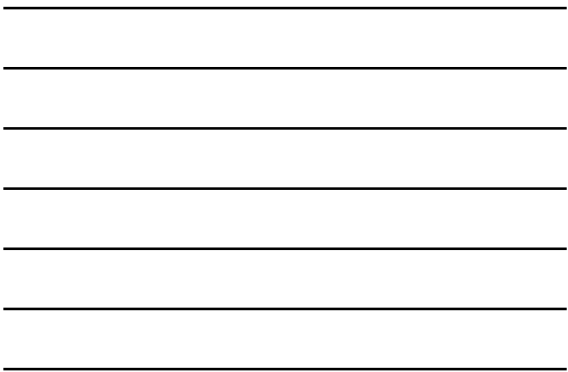
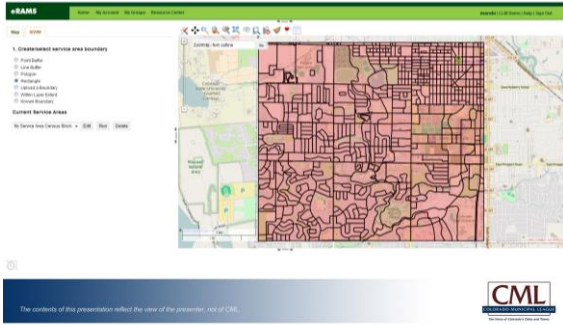
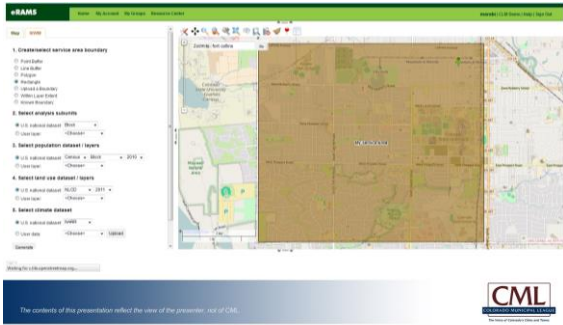


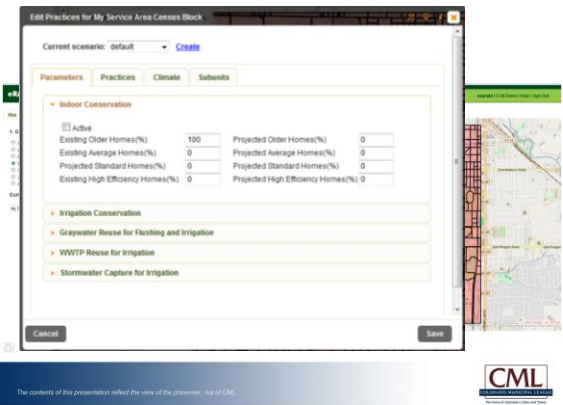
Strategies to Address the Gap

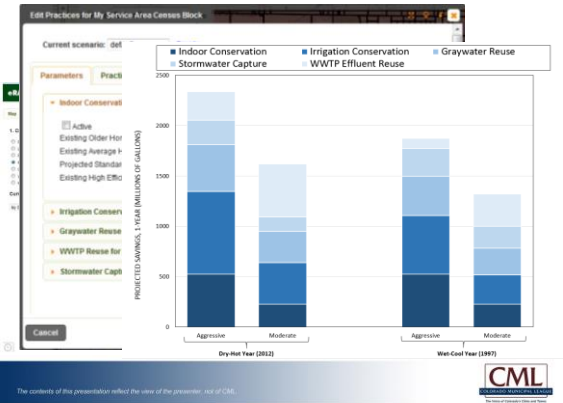


IUWM Schematic

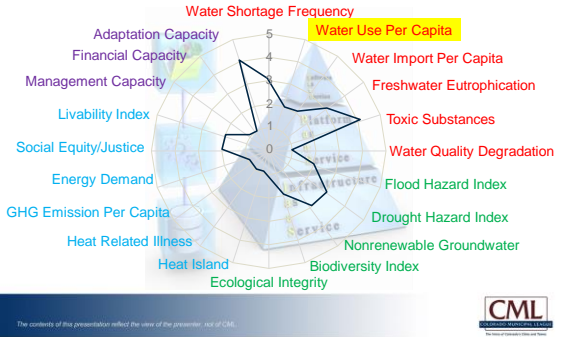








Water Sustainability Indicators



Thank you.

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