Land-use policy and water in the West

December 2, 2015

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Renewable Natural Resources Foundation
Congress on Sustaining Western Water
Why linking water and land use matters

- Water quantity:
  - Making sure enough water is available to support long-term investments
  - Not putting people and investments in harm’s way from too much water
  - Not blocking recharge areas (storage)

- Water quality:
  - Poor drainage planning = pollution (urban, ag)
Why linkage doesn’t automatically happen

- Separation between land use and water planning responsibilities (even in cities with water departments)
- Short time horizons of some decision makers (private and public)
- Many municipalities do plan ahead
- Biggest challenges where oversight limited:
  - Rural communities
  - Open access groundwater basins
A scan of the big issues

- Water supply adequacy for new development
- Other (re)emerging issues
  - Agricultural land use
  - Groundwater recharge
  - Upper watershed/forest health
  - Floodplain management
Most western states have water supply adequacy laws for some new development.

<table>
<thead>
<tr>
<th>Year</th>
<th>Subdivisions covered</th>
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<tbody>
<tr>
<td>AZ</td>
<td>1973: All housing (disclosure)</td>
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<tr>
<td></td>
<td>1995: Housing in AMAs</td>
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<tr>
<td>CA</td>
<td>1995/2001: Big projects (&gt;500 units or +10% water use)</td>
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<tr>
<td>CO</td>
<td>1972: Unincorporated areas</td>
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<tr>
<td>NV</td>
<td>1973: All housing</td>
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<td>NM</td>
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</tbody>
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Hanak and Browne, *J of Am Planning Assn*, 2006
How can developers comply with state and local rules?

- Within municipal service areas:
  - Buying water rights
  - Paying for water system development
  - Retrofitting older homes
  - Using less water (landscaping)
  - Meter caps (rare)

- In remote well-dependent areas:
  - Housing limits (min. lot sizes)
  - Water rationing (pumping limits)
How is it working?

In California:
- State law doesn’t preempt stricter local action
- Rarely blocking development, sometimes downsizing
- Encouraging more conservation, recycled water use
- Related water planning law is helping

In Colorado, New Mexico:
- State restrictions in unincorporated areas shifting some development to municipal areas
- But domestic well loophole also encouraged some off-grid development

A scan of the big issues

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The Willie Sutton problem: Agriculture is still the predominant western water user

USGS, 2010 urban and agricultural applied water use
Planning may yield better outcomes than a laissez-faire approach to ag land use

- Rotational fallowing vs permanent retirement to deal with water scarcity
- Long-term trading deals to support permanent crops
- Early vs late retirement of saline lands
Pop-up wetlands helped provide waterbird habitat in California during the drought
Groundwater recharge potential should be an urban and ag land use concern

Drought, climate warming are exacerbating wildfire risks in western forests

- Restoring healthy (less dense) forests is a land use issue with many consequences
  - Air quality
  - Infrastructure safety
  - Habitat
  - Water quality and supply

http://www.firelab.org/project/wildfire-hazard-potential
Fed’s role key in upper watershed management

Federally owned western lands

Source: Congressional Research Service

Legend
- Bureau of Land Management
- US Forest Service
- Fish and Wildlife
- National Park Service
Flood risks are high, and rising with climate change

US land use policy on mitigating flood risk is minimalist compared with other flood-prone regions (e.g., Netherlands)

Texas, drought-busting flood, 2015
Thank you!
These slides were created to accompany a presentation. They do not include full documentation of sources, data samples, methods, and interpretations. To avoid misinterpretations, please contact:

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Thank you for your interest in this work.