Show Me the Water

Integrating Water Planning into Development Approvals
Show Me the Water!

Moderator:
• Peter Pollock, FAICP, Manager of Western Programs, Lincoln Institute of Land Policy

Panelists:
• Anne Castle, CU Getches-Wilkinson Center for Natural Resources
• Jim Holway, FAICP, Lincoln Institute of Land Policy
• Julio Iturreria, Arapahoe County, Colorado
SHOW ME THE WATER!

Assured Water Supply Laws in the West

Anne Castle
Getches-Wilkinson Center
University of Colorado
Development Approvals and Water Availability

• Development approval processes create new water demand
• More effort being made to ensure consideration of water availability and conservation
Policy Recommendations on Better Integration of Land Use and Water

• Western Governor’s Association Sustainable Water reports
• Colorado State Water Plan
• California Sustainable Groundwater Management Act
Rationale for Assured Water Supply Laws

• Consumer protection for homebuyers
• Pressure on water supplies requires stronger connection between land use approval and water planning
Laws Requiring Examination of Adequacy of Water Supply

• Some old, some new
• Some nonexistent
• Some exist on the books, but enforcement is weak
Distinguishing Characteristics

- **Universal** application
- **Uniform expert review**
- **Minimum size** of development covered
- **Integration** with regional and future water availability determinations
- **Water Conservation** requirements
## State Law Comparison

<table>
<thead>
<tr>
<th>State</th>
<th>Universal</th>
<th>Uniform Expert Review</th>
<th>Minimum Size</th>
<th>Integration</th>
<th>Conservation</th>
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<td>500</td>
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<td>County-2 Local Gov’t-50</td>
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<td>No</td>
<td>6</td>
<td>No</td>
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Overall Observations

• Statewide applicability
• Local officials not well suited to review complex water supply plans
• Water conservation increasingly needed
  – Will look different in different areas
  – State could supply menu of potential options
Caveat

• Local control is jealously guarded
• Balancing with wise water planning is tricky
• May require different strategies in different locations
Resources

Assured Water Supply Laws in the Western States: The Current State of Play

By Monica Green and Anne Castle

Colorado Natural Resources, Energy and Environmental Law Review, March 2017
Show Me The Water: Arizona’s Lessons Learned on Closing the Water – Land Disconnect

Jim Holway, FAICP, Ph.D.

Rocky Mountain Land Use Institute
2017 Annual Conference
March 16, 2017
Show Me The Water: AZ Lessons

Why A Disconnect
Arizona’s Programs
Lessons & Policy Approaches
Growing Smarter / General Plans
Water Provider Plans
Assured Water Supply Rules
Central AZ Groundwater Replenishment District
Adequate Water Supply Rules
Why Historically a Disconnect

Water & Land Use – The Missing Link

Water Use – regulated at state & federal levels
- Reacting to crisis, facilitating econ development
- Water & Land – separate commodities, separate property rights
  - e.g. Groundwater a public (not private) resource
**WATER & LAND USE**  
**THE MISSING LINK**

**WHY HISTORICALLY A DISCONNECT**

**Land Use** – regulated by local government
- Avoid nuisance, grow & increase tax base

- Water historically not examined in comp. plans
  - Planners & water managers don’t interact

- Comprehensive plans typically not followed
  - Too general, different elements conflict
  - Investment decisions – incremental & disconnected

- State & Local interests may be inconsistent
WATER & LAND USE THE MISSING LINK

WHY HISTORICALLY A DISCONNECT

• Significant growth on urban fringe and rural areas
  – with little planning capacity and limited water data
• The regional and local water related impacts of development do not line up
  – Local areas receive benefit of development, but may not bear impact on water resources
• Inadequate willingness/ability to invest in water resources planning or management – at state & local level
• Assumption water will move uphill towards development
  – Just buy the rights and build infrastructure
• Leave it to the experts – water is complicated
  …trust us!
Water Resources Element

- Growing Smarter/Plus requires a water resources element from municipalities over 2,500 unless under 10,000 and with a growth rate of less than 2%, and counties with pops greater than 125,000
- 4 counties and 23 communities outside of AMAs qualify
- Over 50,000 pop, originally due at end of 2002 (2); under 50,000, end of 2003 (21)
WATER & LAND USE
What Role For AZ General Plans

Water Resources Element Requirements

• Identify known legally and physically available supplies
• Identify demand resulting from growth projected in general plan
• Identify how demand will be served by currently available supplies or a plan to obtain additional necessary water supplies - (all from existing data):

Conclusions:

• Outside of AMAs, water elements have limited impact
WATER PLANNING
Provider Plans

Water Providers; Community System Plans
Arizona HB 2277 - 2005

- Water Supply Plan — sources, service area, historic & projected demands. Due 1/07 year later for small
- Drought Preparedness Plan — response actions & public information
- Water Conservation Plan — measures to reduce loss, increase efficiency, consider rate structure
Implementing the Plan
SHOW ME THE WATER
Arizona’s Assured Water Supply Rules

Apply only within AZ’s 5 Active Management Areas

- **Must** demonstrate AWS to subdivide land
- Requires 100 year supply
- Must be consistent with AMA Goal
  - e.g. safe yield – so can not deplete aquifer
- Meet water quality standards
- Prove financial capability
Water Management Areas

Prescott AMA goal: safe-yield by 2025

Joseph City INA: No new irrigated lands

Phoenix AMA goal: safe-yield by 2025

Tucson AMA goal: safe-yield by 2025

Pinal AMA goals:
- allow development of non-irrigation uses
- preserve agriculture as long as feasible

Harquahala INA: No new irrigated lands

Santa Cruz AMA goal:
- maintain safe-yield
- prevent decline of water table

Douglas INA: No new irrigated lands
Subdivision Requirements and Assured Water Supply

- **Subdivision**: land divided into six or more parcels where at least one parcel is less than 36 acres, which is offered for sale or lease for more than one year.

- An assured water supply is required:
  - to gain approval of a subdivision plat by local governments (Titles 9 and 11)
  - to obtain authorization to sell lots from the Department of Real Estate (Title 32) through issuance of Public Report
Assured Water Supply Criteria

- Physical Availability for 100 Years
- Legal Availability for 100 Years
- Continuous Availability for 100 Years
- Adequate Quality
- Financial Capability
- Consistent with Conservation Targets
- Consistent with AMA Goals
  - Safe-yield in Phoenix, Tucson, Prescott AMAs
Methods of Meeting Goal Requirement

- Use of renewable supplies (either directly or via underground storage and recovery):
  - Surface water
  - Effluent
- Membership in the Central Arizona Groundwater Replenishment District
- Groundwater imported from certain basins
- Dry lot subdivisions of less than 20 lots are exempt
Two means of establishing an Assured Water Supply:

Certificate of Assured Water Supply
(individual subdivision)

Designation of Assured Water Supply
(blanket for water provider)
Certificates of Assured Water Supply
Lots Approved
Central Arizona Groundwater Replenishment District (CAGRD)

• Acquires supplies to replace groundwater pumped by its members

• Replacement water is recharged into aquifers in the AMA within 3 years

• Net effect: no new groundwater pumping
Example #2
CAGRD Member Land

Subdivision developer applies to ADWR for Certificate of Assured Water Supply

Provider pumps groundwater and serves it to homeowner.

Provider reports total water use to ADWR, and individual homeowner water use to CAGRD.

CAGRD reports homeowner’s replenishment assessment to County Assessor.

Assessor collects assessment on property tax bill and sends money to CAGRD.

CAGRD arranges with CAWCD to deliver CAP or other eligible water to recharge facility permitted by ADWR.

Recharge Facility Operator reports deliveries to ADWR, which calculates recharge credits.

ADWR reports credits to CAGRD, which uses credits to meet homeowner’s replenishment.
Figure 22: Member Land Lots, by 2010 Construction Status

- Not Constructed: 62%
- Constructed: 37%
- Not Constructed: No Water Use: 1%
## 2015 Plan: Replenishment Obligation

**Estimated 100-Year Replenishment Obligation for Current and Future Members**

<table>
<thead>
<tr>
<th>Active Management Area</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2034</th>
<th>2114</th>
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<tbody>
<tr>
<td>Phoenix AMA</td>
<td>34,300</td>
<td>37,700</td>
<td>53,300</td>
<td>62,500</td>
<td>68,600</td>
<td>84,200</td>
</tr>
<tr>
<td>Pinal AMA</td>
<td>400</td>
<td>1,500</td>
<td>3,500</td>
<td>4,900</td>
<td>5,600</td>
<td>15,500</td>
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<tr>
<td>Tucson AMA</td>
<td>3,300</td>
<td>5,600</td>
<td>9,900</td>
<td>12,000</td>
<td>12,700</td>
<td>13,300</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>38,000</strong></td>
<td><strong>44,800</strong></td>
<td><strong>66,700</strong></td>
<td><strong>79,400</strong></td>
<td><strong>86,900</strong></td>
<td><strong>113,000</strong></td>
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</tbody>
</table>
Figure 23: Tri-County Construction Based On Parameters in Table 1
WATER ADEQUACY
Outside AZ Active Mgmt Areas

Arizona HB 2693 / SB 1575 - 2007

• Outside AMA County Supervisors may, by unanimous vote adopt an ordinance prohibiting final plat approval if adequacy not demonstrated to ADWR, city must follow

• Potential exemptions:
  – County may allow water hauling – indication on deed
  – ADWR Director may allow 20 years for water supply development
  – ADWR Director can exempt if significant capital investment

• City can adopt own ordinance if County does not

• Water Providers in jurisdiction eligible for water supply development fund if jurisdictions adopt ordinance

• Counties: Cochise & Yuma; Towns: Clarkdale and Patagonia
DRINK AS MUCH AS YOU CAN. METRO PHOENIX WANTS IT.
Show me the Water Approaches

Hierarchy of Approaches

- Do Nothing – Buyer Beware
- Buyer Informed – Subsequent Buyers?
- Public Notice – Comment/Protest Right?
- Require Demonstration of ____ Year Supply
- Require Renewable Supply & Replacement of Mined Groundwater (Safe-Yield?)
- Local Area Sustainability for ____ Years
- Recovery from Previous Aquifer Depletion
WATER & LAND USE
MAKING THE LINKAGE

SUSTAINABLE WATER SUPPLIES &
IMPLICATIONS FOR LOCAL GOVERNMENT

• Incorporate Assured/Adequate Supply Considerations & Drought Vulnerability into Long Range Planning
• Utilize Adequate Public Facilities Ordinances
• Recharge & Recovery Planning / Aquifer Mgmt Linked to Long Range Land Use Planning
• Anticipate Sites for Recharge & Recovery
• Protection for Existing Users/Rightholders
• Regional Coordination & Cooperation
Colorado’s Adequate Water Requirements
Current State Law

• Master/Comprehensive Plans
  – Water supply element discretionary
  – Water supply entities must be consulted

• Zoning Plans – water not addressed

• Activities of State Interest – 1041 Regulations
  – New domestic water systems or extensions
  – Development of new communities
  – Efficient utilization of municipal water projects
Current Law

• HB 1141 (2008)
  – Water supplies for land development have regional impact, both within and between river basins
  – Land use decisions are local, but ensuring adequacy of water for new development is a matter of statewide concern
Current Law
Local Governments

• All local governments (cities, towns, counties) must determine that proposed water supply is adequate
• Applies to developments of 50 units or more
• May request opinion from State Engineer, but not required
• Timing of determination is flexible
Current Law – Counties

- Applies to subdivisions of 2 units or more
- State Engineer opinion required
- Water adequacy determination required for approval of preliminary plan or final plat
Water Conservation

• No requirement for water conservation as part of land use approval process
• Other statutes address conservation
  – Only WaterSense indoor fixtures can now be sold
  – Rain barrel legislation
  – Restrictive covenants can’t prohibit xeriscape landscaping or rain barrels
2015 Legislation on Land Use and Water

- Water conservations plans evaluate *best management practices* for demand management through land use planning
- Training programs for local government officials
- Recommendations from CWCB & Dept. of Local Affairs on better integration of conservation into land use approvals
## Discrepancies – Cities/Counties

<table>
<thead>
<tr>
<th>Counties:</th>
<th>Cities (and Counties):</th>
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<tbody>
<tr>
<td>Adequacy determination required for development of 2 or more lots</td>
<td>Adequacy determination required for development of 50 or more lots</td>
</tr>
<tr>
<td>State Engineer opinion required</td>
<td>State Engineer opinion <strong>not</strong> required</td>
</tr>
<tr>
<td><strong>Specific times</strong> for making determination (<strong>preliminary plan, final plat</strong>)</td>
<td>Complete flexibility in timing for making determination</td>
</tr>
</tbody>
</table>
Timing Flexibility - Benefits and Concerns

• Welcomed by developers and land use authorities
• Unrealistic to expect developers to have all water rights and decrees in hand initially for multi-year development
• But delaying decision to late stage creates problems if water supplies don’t pan out
Integrated Land and Water Planning

By Anne Castle, John Sherman and Larry MacDonnell

http://www.colorado.edu/law/research/gwc
“SHOW ME THE WATER” (A PLANNERS PERSPECTIVE)

Julio G Iturreria
Long Range Planning Manager
Arapahoe County, Colorado
SO WHERE IS THE WATER GOING?

• Colorado the Headwaters State with rivers flowing out to adjacent states:
  • Colorado River (Utah)
  • South Platte (Nebraska)
  • Rio Grande (New Mexico)
  • Arkansas (Kansas)
  • Republic (Nebraska)
  • Laramie (Wyoming)
  • Animas and Florida
  • Dolores (Utah)
  • White (Utah)
  • Yampa (Utah)
  • North Platte (Wyoming)
  • San Juan and Piedra (New Mexico)
SO WHAT IS A PLANNER TO DO ABOUT THE STATES WATER ISSUES?

- CLIMATE CHANGE
- DROUGHT
- POPULATION INCREASES
- LACK OF WATER AND WATER QUALITY
- LEGISLATION
- GOVERNOR
- STATE ENGINEER
- ELECTED OFFICIALS
- COLORADO WATER CONSERVATION BOARD
- COLORADO ROUNDTABLES
- COLORADO WATER PLAN
- COLORADO AMERICAN PLANNING ASSOCIATION
WHAT TOOLS DO PLANNERS HAVE?

• EXISTING LEGISLATION AS PRESENTED AND COLORADO WATER PLAN-DECEMBER 2015

• 6.3.3 – Land Use: Subset of the Water Conservation and Reuse Chapter 6.3

Goals:
• Cost effective water efficiency;
• Integrate water efficiency planning and projects into overall water resource management;
• Promote efficiency ethic throughout Colorado;
• Explore additional water reuse options;
• Further integrate land use & water planning;
• Seek creative options for improving agricultural irrigation conservation and efficiency

Objective:
• By 2025 75 percent of Coloradans will live in communities that have incorporated water-saving actions into land-use planning.
A PLANNER’S PERSPECTIVE

• Addressing the goals within the Colorado Water Plan Water, Conservation and Reuse Chapter shows a need for collaboration between water providers and land use planners.

• Since population is increasing by double and water is finite for any given year. This issue needs to be taken very seriously with ACTION soon to follow.

• Today: We have less water and more population within the State of Colorado, this statistic will continue to grow.
SO WHAT IS A PLANNER WITHIN STATE OF COLORADO TO DO?

• GET INVOLVED AND GO BEYOND YOUR COMFORT AREA:
  • With your local Water Roundtable.
  • American Planning Association Legislative Committee
  • With Colorado Counties Inc.-CCI
  • With Colorado Municipal League – CML
  • Learn about the water district capabilities where you pay your bills
• **SB 15-008**, Under this bill, the Division of Local Governments is required to develop a training program which will (a) including introductory programs, refresher programs, and advanced programs, for local governments water use, water demand, water consumption, and land use planners regarding Best Management Practices for water demand management and water conservation...
DID YOU KNOW?

- In 2016 the American Planning Association of Colorado introduced HB 16-1313 authorizing local government master plans (Advisory Only) to include policies to implement State Water Plan goals as a condition of development approvals.

- This Bill was not approved because of the following statement:

  “THE MASTER PLAN MAY INCORPORATE WATER CONSERVATION AND WATER MANAGEMENT GOALS, INCLUDING THE GOALS SPECIFIED IN THE STATE WATER PLAN ADOPTED TO SECTION 37-60-106 (1) (u) C.R.S., AND MAY CONSIDER INCLUDING RECOMMENDED POLICIES TO IMPLEMENT THE GOALS AS A CONDITION OF APPROVALS, INCLUDING SUBDIVISIONS, PLAN UNIT DEVELOPMENT, SPECIAL USE PERMITS, AND ZONING CHANGES. NOTHING IN THIS SUB-SUBPARAGRAPH (C) SHALL BE CONSTRUED TO CREATE A MANDATE OR AFFECTING THE POLICY REGARDING WATER.”
UNRESOLVED ISSUES FOR PLANNERS

• Annexations impact Special Districts, Master Plans, Conservation Plans, and Comprehensive Plans for unincorporated Counties.

• Need for clarification of current legislation making Water a predominate issue for Comprehensive Plan, Zoning and Subdivisions.

• Need for a Statewide water use per capita per person

• Best Management Practices for the entire State of Colorado as mandatory legislation

• Simpler method to approve water storage with the aid of Land Use
PROACTIVE OR REACTIVE?

• Depends upon what agency you work for the following is true:

• Planners are typically proactive, until there is a lack of "political will" by their bosses the elected officials and/or managers to deal with the issues at hand.
• QUESTIONS?
Program Design Considerations

• What are the Goals & Objectives
• Who is the Decision Maker & What Actions Do We Want To Affect
  – Location & type of residential or non-residential development, Landscape Choices, Infrastructure Choices & Fixtures, Water Features
• How Can Those Actions Be Influenced
  – Investments of Individuals, Design Professionals, Providers, Developers, Corporations, Government;
  – Knowledge – Perceptions - Behaviors – to- Actions
• What Tools Do We Have Available
  – AZ Approach – Show me the water & planning regulations
  – Performance Based Allocations vs. Prescriptive BMP Programs
  – What is most effective at impacting individual behavior – education vs. regulation vs. financial incentives (like water price) ?????
Do We Have Enough Water

For ....

What ?
When ?
Who ?
Where ?

............we have choices
Infrastructure – Programs - Institutions
Adequate for the next 50 years

Of course not…we should ask..

- Can they evolve to what is needed?
- What timeframes must we deal with?
- Is their sufficient management capacity?
- Do we have sufficient wealth & willingness to pay?
- How can we contribute?
Water Sustainability
Thresholds & Big Questions

• Are we approaching / exceeding limits
  – Conservation – Reallocation – Reuse – Optimizing System – New Supplies
• Does the Future differ from Past
• How can we build resiliency & management capacity into legal frameworks & institutions
• Are we willing to invest in our future
• Do we have the right balance between private rights and public welfare
• What is the right mix of market & non-market mechanisms
• How to best incorporate the environment, ecosystem health and 3rd party impacts
• Role of “government” … at what level(s)?
• How can we decide .. move forward … do we need more democracy, more collaboration …… or less