Linking Land Use and Water

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Why Does Linking Land Use and Water Matter?

GOVERNING

THE STATES AND LOCALITIES

FINANCE | HEALTH | INFRASTRUCTURE | MGMT | WORKFORCE | POLITICS | PUBLIC SAFETY | URBAN | EDUCATION | DATA

MAGAZINE | NEWSLETTERS | PODCASTS | EVENTS | PAPERS

INFRASTRUCTURE & ENVIRONMENT

Utilities Worry Water's Becoming Unaffordable

Water bills have increased faster than any other and show no signs of slowing down, hitting low-income Americans the hardest.

BY DANIEL C. VOCK | DECEMBER 4, 2014

Water utilities – many of them government agencies – increasingly are worried that their services will become unaffordable to low-income customers.

THE DENVER POST

NEWS · COLORADO NEWS

High water system costs a drain on housing affordability along northern Front Range

Upfront fees local utilities charge to connect water and sewer lines to homes and other buildings contribute to rising prices

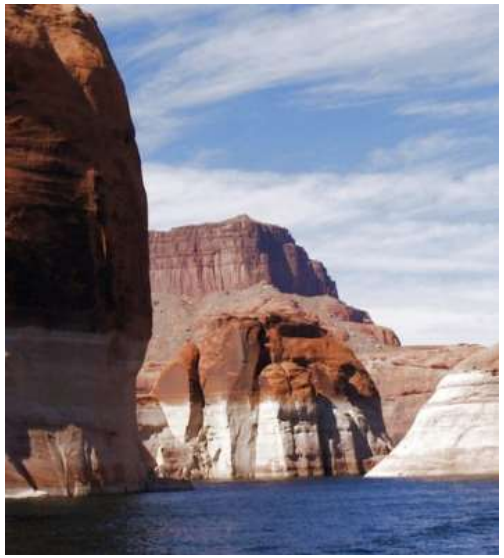
WATER DEEPLY

Topics · Executive Summaries · Articles · Community & Insight · Talks · Background · Search · About

Its Population Booming, Colorado Ponders New Water Diversions and Dams

Paradigm Shift From…

Supply Side



Acquisition

Buying new
water rights

Treatment

Improving
treatment systems

Infrastructure

Investments
in water storage &
distribution projects

To…

Demand Side

Conservation

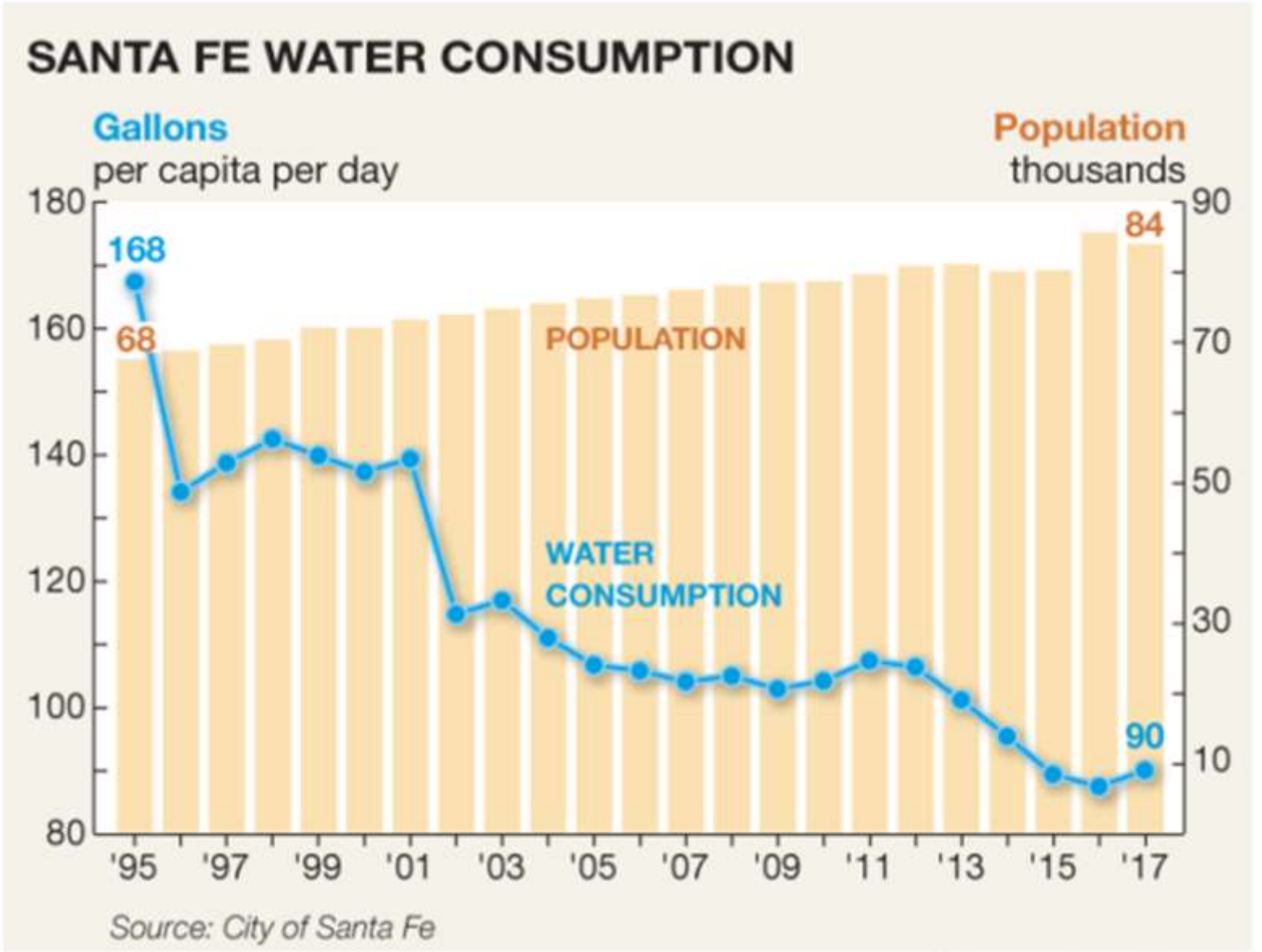
Encouraging water users to reduce how much they use by modifying behavior.

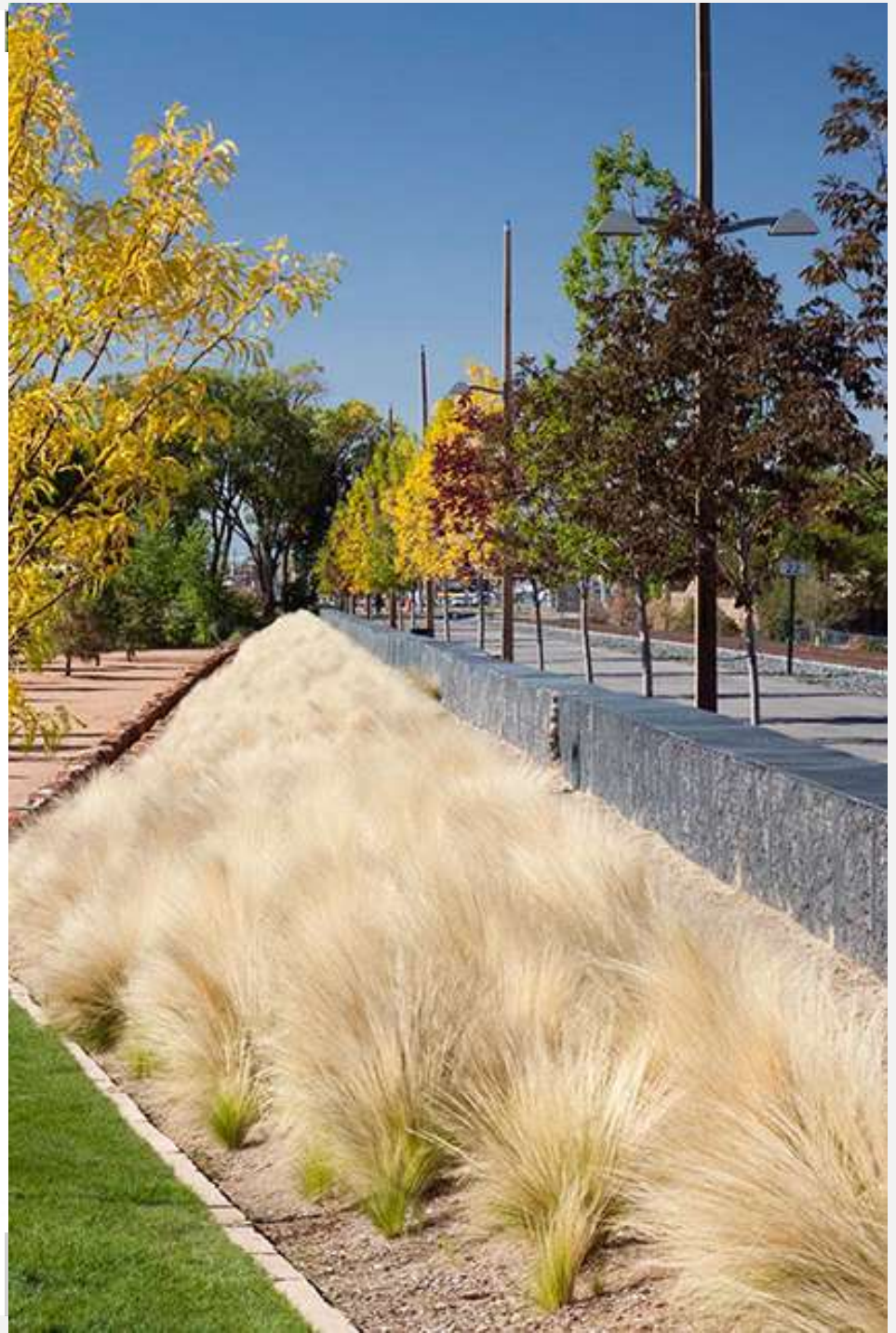
Efficiency

Encouraging or requiring the use of technology and designs that use less water.

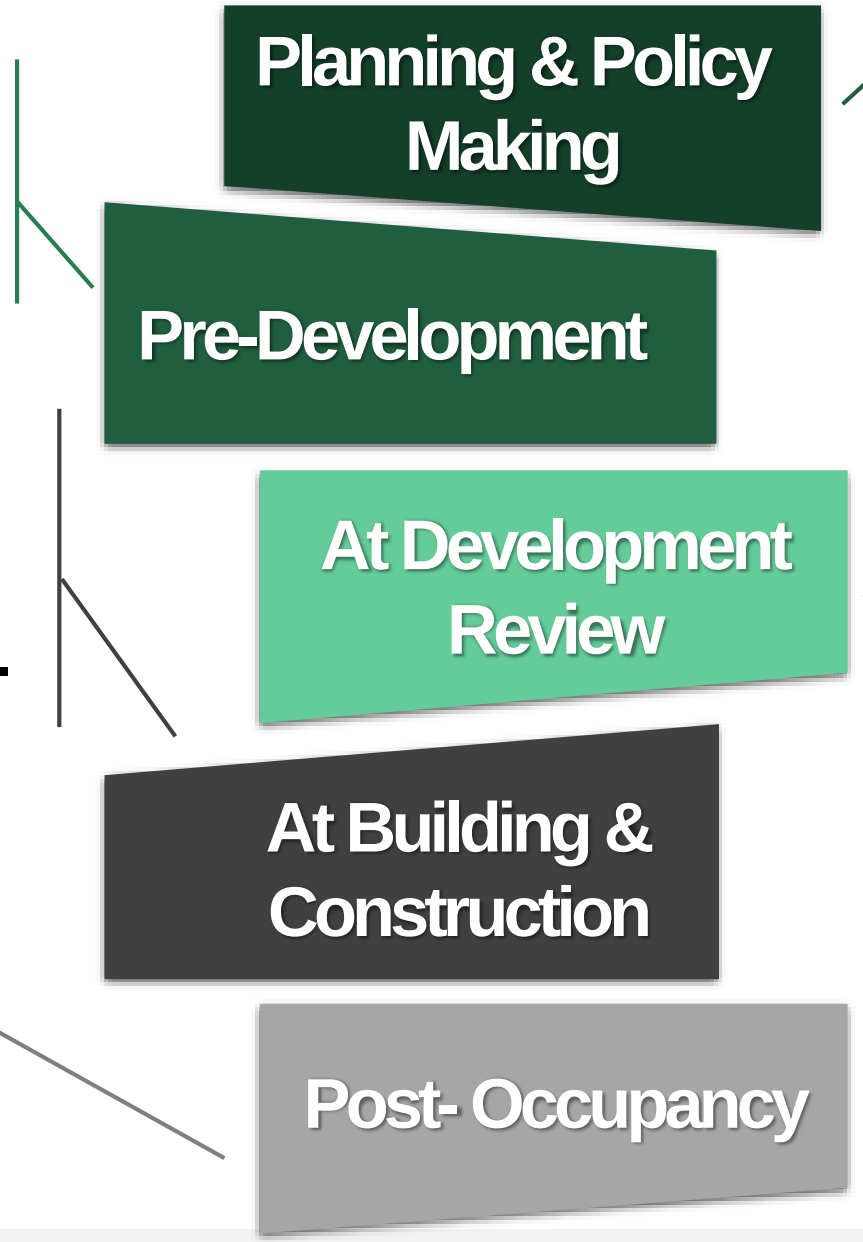
Reuse

Treating or converting grey and black water to replace or augment water supply.


SANTA FE WATER CONSUMPTION
Gallons
per capita per day
Population
thousands
180
160
140
120
100
80
90
70
50
30
10
168
68
84
90
POPULATION
WATER
CONSUMPTION
'95
'97
'99
'01
'03
'05
'07
'09
'11
'13
'15
'17
Source: City of Santa Fe
C. CUNNINGHAM/JOURNAL



Intervention Points.



Establish goals and objectives linking water and land use.

- Water Plans
- Comprehensive Plans
- CIP

Link new development to water supply plans.

- Water Supply Adequacy Rule

Determines what water conservation & efficiency requirements are applied to site design.

- Zoning & Subdivision Regulations
- Annexation Policies
- Planned Developments
- Development Agreements

Determines what water conservation & efficiency requirements are applied to buildings.

- Building & Plumbing Codes

Incentivizes property owner & renters to reduce water consumption.

- Education
- Rate Structuring

The Five Toolboxes

Planning & Policy Making

Adequate & Sustainable Water Supply

Water Smart Land Use Policy

Healthy and Resilient Watershed

Water Conservation Rate Structuring

Toolbox 1.

PLANNING & POLICY MAKING

The sustainability of a community is dependent upon the availability of water; considerations of future water needs must be integral to decision making.

BEST PRACTICES

1. Projections for future population and drivers of growth.
2. Adequacy, sustainability, and vulnerability of the water supply.
3. The type of development occurring in the community and where it should occur.
4. The source, capacity, and conditions of a community's water supply, distribution systems, and water related infrastructure.
5. Health conditions of the watershed.
6. Uniform application to all developments.
7. Current programs and projects.

Toolbox 2.

ADEQUATE AND SUSTAINABLE WATER SUPPLY REQUIREMENT

Since water is a limited and constrained resource, prior to approving new development, the water supply should be demonstrated as adequate and sustainable.

BEST PRACTICES

1. Clear definition of adequate and sustainable supply including demonstration of water availability and time period.
2. Water demand projections for new development.
3. Water right inventory and legal demonstration.
4. Maps of water resource areas.
5. Expert review process.
6. Uniform application to all developments.

City of Santa Fe Water Supply Standards

A

Larger Developments

- Water rights transfer
- Fee in lieu based on standard fee per af

B

Smaller Developments

- Water demand offset requirement for developments of certain size with a
- Water conservation credit program for deposition into water bank

Toolbox 3.

WATER SMART LAND USE POLICY

As a population increases, the demands on water supply and water related infrastructure including water treatment plants, delivery systems, wastewater and watersheds will also increase.

BEST PRACTICES

1. Promote higher density and **compact development**, especially where there is adequate infrastructure.

2. Promote **water saving landscaping** standards.

3. Promote the use of new **water efficient plumbing and building** standards.

Land Use Methods to Save Water.

1 SMALLER LOT SINGLE FAMILY DEVELOPMENT

Studies found 10 to 60% with water savings with increased density of single family residences, mostly due to less irrigated lot area. Savings increase as lot size decreases. **Sweet spot is 7 to 10 DU/A.**

2 MULTI FAMILY DEVELOPMENT

Multifamily units consume 35 to 50% less water than SF detached homes. If a high-density development requires cooling towns, the saving may decrease.

3 LANDSCAPING AND IRRIGATION RESTRICTIONS

Turf area restrictions and xeric landscape requirements can reduce water by 35-50%.

Toolbox 4.

HEALTHY & RESILIENT WATERSHEDS

The effects of increasing development, climate change, and natural hazards can all degrade the quality of the watershed impacting both water yield and water quality.

BEST PRACTICES

1. Minimize pollution from urban and agricultural runoff.

2. Minimize sedimentation due to soil disturbances, vegetation loss, and erosion from new roads and development.

3. Minimize destruction of riparian areas resulting from development and change in climate.

4. Reduce impervious surfaces and rapid runoff to increase infiltration from natural precipitation.

5. Plan for inconsistencies and vulnerabilities in the watershed due to drought and natural disaster.

Strategies.

01 **Map sensitive areas:** *watersheds, wetlands, riparian corridors, infiltratio zones, groundwater basins, and disaster prone areas.*

02 **Adopt plans for disaster mitigation, stormwater management, and watershed management**

03 **Adopt development standards for soil erosion mitigation.**

04 **Adopt stormwater management and site development standards that utilize low impact design best practices.**

05 **Adopt surface and groundwater districts with standards to protect water bodies and aquifers.**

06 **Create zoning districts with lower densities and/or cluster development to protect surface and ground water sensitive areas.**

07 **Adopt vegetation protection standards to protect riparian corridors.**

08 **Adopt stream buffers and setbacks to protect water quality.**

Toolbox 5.

WATER CONSERVATION RATE STRUCTURING

Utility pricing, or rate structuring, can incentivize consumers to use less water, maximizing conservation benefits.

BEST PRACTICES

- Drought Demand Pricing
- Excess Use
- Inclining Block Rates
- Indoor Outdoor Meters
- Penalties
- Scarcity Pricing
- Seasonal Pricing
- Sliding Scale
- Spatial Pricing
- Time of Use Rates
- Water Budgets

Framework for Community Action

1. Conduct an Inventory.
2. Build Commitment for a Collaborative Process.
3. Build Shared Understanding of Issues and Explore Options.
4. Prepare a Plan.
5. Build Commitment to Action.
6. Take Action.

Growing Water Smart

www.resilientwest.org

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RESOURCES

- Growing Water Smart www.resilientwest.org
- DOLA and CWCB https://www.colorado.gov/pacific/cowaterplan/integrating-water-land-use-planning
- WRA https://westernresourceadvocates.org/healthy-rivers/land-use-planning-for-water-efficiency/