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NEW HOUSE NEW PARADIGM

A Model for How to Plan, Build, and Live Water-Smart

This report was prepared by Drew Beckwith, WRA's Water Policy Analyst. Preparation of the report benefited from the comments and advice of Bart Miller, WRA's Water Programs Director. It was funded by grants from the Winslow Foundation and the Aveda Corporation.

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2260 Baseline Road, Suite 200
Boulder, CO 80302
Tel: (303) 444-1188

www.westernresourceadvocates.org

The Interior West is simultaneously the driest and fastest growing region of the United States. With an expected influx of millions of new residents to this region in the coming decades, it is imperative that a new style of development be implemented now — one that recognizes and embraces the distinct lack of water in this region. This report shows what this new style of development can look like and how it can succeed through the integration of smart planning, green building practices, and programs aimed at encouraging residents to live a water-smart lifestyle.

In the "New House, New Paradigm" report, Western Resource Advocates (WRA) describes the nexus between land use and water demands and offers a model for how water-smart growth can meet both the housing needs of our new residents and preserve our natural rivers and watersheds. The model addresses water conservation and efficiency in the planning, building, and living phases of new residential development. WRA highlights existing water-smart developments throughout the region as case studies to demonstrate the feasibility of this new growth style and to highlight water conservation successes.

THE PROBLEMS

Population growth in the Interior West has outpaced the rest of the nation, placing an increasing strain on already limited water resources (Table ES-1). This reality makes efficient use of our limited water resources imperative for the future sustainability of this area.

Table ES-1. Population growth and precipitation in the Interior West.[1]

STATE	POPULATION (JULY 2008)	POPULATION GROWTH (2000-2008)	RANK	PRECIPITATION (INCHES)	RANK
Nevada	2,600,167	30%	1	9.5	50
Arizona	6,500,180	27%	2	13.1	48
Utah	2,736,424	23%	3	11.9	49
Colorado	4,939,456	15%	7	15.5	45
New Mexico	1,984,356	9%	17	13.9	46
U.S. Average		8%		34.3	

Traditionally, water supplies were acquired by damming rivers and building pipelines — complete with the environmental degradation that accompanied these practices. With the "easy" water projects already built, some communities are now proposing to build fantastically expensive pipelines to capture ever more distant sources of supply. However, over the past decade there has been an increased recognition that conservation, efficiency, and supply-side alternatives can play just as prominent a role as big water projects in meeting future water demands.

1 Population data from: U.S. Department of Commerce, Bureau of the Census. 2008. Table 2: Cumulative Estimates of Resident Population Change for the United States, Regions, States, and Puerto Rico and Region and State Rankings: April 1, 2000 to July 1, 2008 (NST-EST2008-02). December 22, 2008. Precipitation data from: U.S. Department of the Interior, National Atlas. 2009. Precipitation of the Individual States and of the Conterminous States. http://www.nationalatlas.gov/printable/precipitation.html#list.

Much work is being done to advance sustainable development — several groups look at ways to plan for future development in a responsible manner, many reports describe the benefits of green building, and environmental organizations across the West advocate for improved water conservation practices. While each of these efforts has contributed to water savings and a reduction in per capita demands, truly sustainable development will not be achieved until these three areas of conservation potential are brought together and implemented as a whole.

BUILDING THE SOLUTION

Planning for water-smart development requires the efforts of dedicated people from across multiple fields and organizations. Even though the vast majority of planning decisions are made at the local level, states can still play a role by promoting policies and enforcing laws that require a proof of water supply before new developments can move forward. Visioning processes that take a regional approach to planning and identify a preferred future can also play a role in defining and promoting water-smart development.

Planning future development according to the principles of Smart Growth has the potential to drastically reduce water use, infrastructure costs, and water loss when compared to the status quo of western suburban sprawl. Local planning agencies and utilities can incentivize this style of development by offering density bonuses, discounting tap fees, and prioritizing funding for water-smart projects. Local agencies are also on the front lines of integrating land use and water supply planning and should communicate more thoroughly about how each group's decisions impact one another. Master-planned communities that incorporate water-efficient practices, like aggressive conservation, can provide excellent examples of water-smart development.

Building water-smart development requires the use of high-efficiency indoor appliances and fixtures and the planting of water-wise landscapes. Several builders across the Interior West are pursuing green building practices in new homes and are using measures such as high-efficiency toilets, ENERGY STAR® appliances, and WaterSense® faucets to differentiate their water-conserving homes in the market place. Homes landscaped according to the principles of Xeriscape™ and that utilize smart irrigation controllers and alternative sources of water supply — like rainwater harvesting — can drastically reduce outdoor water needs. These water-smart building techniques lock water savings into the home and do not require behavioral changes from homeowners, ensuring reduced water use into the future.

Living water-smart requires common-sense approaches to using water wisely, and can be employed by any resident, whether or not they live in a community that was planned and built water-smart. Education plays a vital role in bringing knowledge to homeowners. Whether this education is presented in the form of "bill stuffers" — promotional pieces inserted into mailing envelopes along with the bill — or web-based marketing, simply knowing how much water a resident is using — and should be using — can be an effective conservation tool. Rebates and other incentives can be used by utilities to encourage water-smart living, and a properly designed rate structure that rewards conservation, discourages waste, and provides revenue stability is a necessity for any water-smart development. Finally, homeowner association rules and conservation-oriented city ordinances add the extra enforcement necessary to ensure efficient water use at every household.

Figure ES-1. Highlighted water-smart developments in the Interior West.

DEMONSTRATING SUCCESS

Water use data collected by the communities highlighted in this report — Stapleton in Denver, CO; Sterling Ranch near Denver, CO; Daybreak in South Jordan, UT; Civano in Tucson, AZ; and Rancho Viejo and Oshara Village near Santa Fe, NM (Figure ES-1) — clearly shows that water-smart developments use significantly less water than conventional development. For example, the community of Civano in

Tucson, AZ, has demonstrated a consistent reduction in water use of 35-45% compared to the greater Tucson area (Figure ES-2).

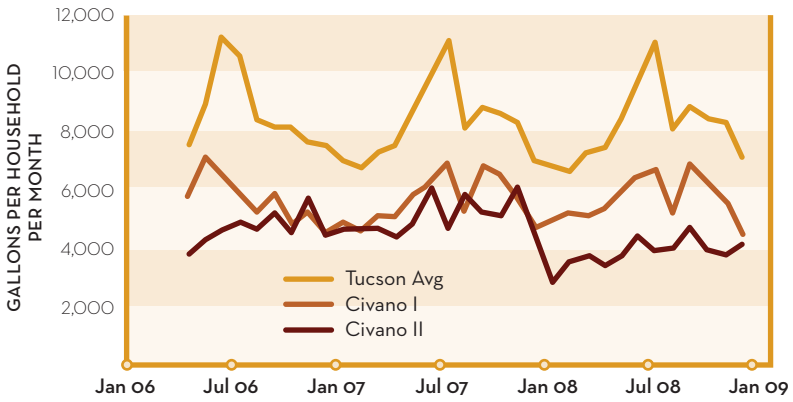

Figure ES-2. Water use at Civano I, Civano II, and the Tucson average.[2]

These communities demonstrate that a widespread and holistic adoption of water-smart techniques can stretch our existing sources of water supply into the future. On average, the developments in this report are currently achieving water use reductions of 13-50% compared to existing homes in their area, and many have demonstrated a consistent reduction in water use over several years.

This report can be used by land use decision-makers, planners, home developers, building contractors, water utilities, homeowner associations, and responsible citizens who are interested in achieving a sustainable future for their communities. Because the report draws together examples from across the Interior West, it is well-positioned to serve as both a resource and point of encouragement for others interested in water-smart growth. As more people move to the West and water becomes even scarcer, smart development that is consistent with the region's natural environment needs to become the norm rather than the exception.

RECOMMENDATIONS

Planning Water-Smart

- Encourage decision-makers to recognize that sound land use planning can be a source of water supply.
- Integrate land use planning with water planning and, vice versa, by fostering greater communication and cooperation between planners and utilities.
- Provide density bonuses, streamline the approval processes, offer discounted tap fees, and extend utility rebate programs to homebuilders engaged in water-smart development.
- Holistically plan new developments from the ground up to be water-smart by including such measures as recycled water distribution systems, water-wise landscaping, and efficient fixtures and appliances.
- Encourage government and local agencies to lead by example, partner with other groups and organizations, and educate the community on the benefits of water-smart development.
- Update general plans to support more compact forms of development, encouraging infill and revitalization over sprawl.
- Pass legislation that requires new developments to demonstrate an adequate supply of water before approval is granted.
- Implement and enforce ordinances that encourage efficient water use, such as time-of-day watering and banning the waste of water.

2 Water use data for Civano is compiled from the annual Energy and Water Use reports completed by Al Nichols Engineering. http://www.civanoneighbors.com/civano/environment.htm#reports.

Building Water-Smart

- Utilize performance-based third-party certification systems to select water-efficient indoor fixtures and appliances.
- Reduce outdoor use by limiting irrigable areas, restricting turf, or using a conservative water budget.
- Landscape areas with native, water-wise plants and adhere to the practices of Xeriscape.
- Irrigate with an efficient system that uses appropriate emitters and is run by a smart controller.
- Utilize alternative sources of water supply for indoor and outdoor uses where legal and appropriate, including recycled water, greywater, and rainwater.

Living Water-Smart

- Offer continual education about the myriad ways to conserve water at home.
- Provide and pay attention to frequent, easy-to-read, and graphically based billing statements.
- Utilize a progressive rate structure that provides equity and revenue stability, plus encourages conservation.
- Incentivize water-smart living by offering and taking advantage of rebate programs for water-efficient technologies.
- Adopt and follow responsible ordinances and covenants, conditions, and restrictions that promote water-efficient behavior and discourage water waste.

The full report is available online at www.westernresourceadvocates.org/water/newparadigm/report.php. For additional information contact Peter Roessman, Communications Coordinator, at 303.444.1188 x 221 or peter@westernresources.org.

Western Resource Advocates' mission is to protect the West's land, air, and water.

Our lawyers, scientists, and economists:

1) advance clean energy to reduce pollution and global climate change;
2) promote urban water conservation and river restoration; and
3) defend special public lands from energy development and unauthorized off-road vehicle travel.

We collaborate with other conservation groups, hunters and fishermen, ranchers, American Indians, and others to ensure a sustainable future for the West.

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