



# **WATER CONSERVATION: LAND USE ELEMENT**

Riverside County General Plan Advisory Committee

June 18, 2009



- c. Coordinate color schemes for all developments; avoid mixing colors within a particular array unless to subordinate a particular turbine type or to provide safety markings; limit use of color patterns as accent for key clusters or individual turbines; consider aviation safety coloration and lighting as may be required by the FAA.

## ***Water Resources\****

*The County's supply of water is limited by its arid climate, agricultural practices, projected population growth, and dependence on imported water. Despite an ever-increasing water demand, the availability of imported water has been reduced due to environmental regulations and drought. In some areas within Riverside County, contamination from natural or manufactured sources has reduced groundwater quality such that its use requires treatment. Management of the amount of water available (local and imported) and its quality, is an important response to the gap between supply and demand in Riverside County.*

*The most effective approach to conserving water resources must begin with implementing effective new water-efficient landscaping practices. Approximately 60%-70% of a residential site's water consumption is spent irrigating landscape ill suited to the Riverside County region. Similarly, approximately 50% of water used at commercial sites is spent on landscaping.*

*There is wide-spread consensus that the use of certain plant materials and landscaping practices can significantly reduce water consumption. New, efficient irrigation components are available through smaller irrigation establishments but they have not replaced their inefficient predecessors within the larger home improvement centers. Similarly, few nurseries carry a wide variety or quantity of drought tolerant plants.*

*On December 17, 2006, the Riverside County Board of Supervisors adopted Ordinance No. 859. This ordinance required that new development reduce its water demand for landscape by at least 20%. Desert water districts require that landscape plans demonstrate a 50% reduction. County Ordinance No. 859 requires the use of state-of-the-art water-efficient irrigation components, landscaping practices, and plant types designed to better suit the climatic and environmental conditions of the Inland Empire.*

*The County has joined with local water agencies and other interest groups to form the Riverside County Water Task Force. The mission of the Task Force is to "ensure reliability, sustainability, and quality of the water resources within Riverside County through stakeholder communication and collaboration." The Task Force tracks and responds to legislation concerning water supply issues and is involved in seeking solutions to the endangered species concerns that limit the pumping of State Water Project water to Southern California. Additionally, the Water Task Force is developing a Local Model Water-Efficient Landscape Ordinance that will enhance the County's Ordinance No. 859 and bring it into compliance with the State's standards as reflected in AB1881.*

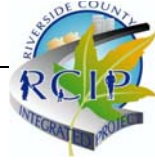
*Local water agencies such as Western Municipal Water District, Eastern Municipal Water District, Coachella Valley Water District, Desert Water Agency, Rancho California Water District and others are changing their core business*



*models to reflect water efficient practices. Similarly, public agencies such as the County must take similar action and incorporate water-efficiency measures into its land use actions.*

### **Policies**

- LU 16.1**      ***Ensure compliance with the County's water-efficient landscape policies.*** *Ensure that entitlement projects or projects seeking County approval develop and implement landscaping plans (conceptual or final working drawings) prepared in accordance with the County's Water-Efficient Landscape Ordinance (Ordinance No. 859), the County of Riverside Guide to California Friendly Landscaping and Riverside County's California Friendly Plant List. Ensure that irrigation plans for all new development incorporate weather based controllers and utilize state-of-the-art water-efficient irrigation components.*
- LU 16.2**      ***Minimize use of turf.***
- A. Minimize the use of turf on landscape medians, parkways, and other common areas. Limit the use of turf to those areas that serve a functional recreational element. Encourage the use of drought tolerant groundcover(s), mulch, or a combination thereof as a substitute for turf. Incorporate other aesthetic design elements such as boulders, stamped concrete, pavers, flagstone, decomposed granite, manufactured rock products, etc. to enhance visual interest and impact.*
  - B. Minimize turf areas in front-yard typical designs. Instead, emphasize California Friendly planting options. Incorporate other aesthetic design elements such as boulders, stamped concrete, pavers, flagstone, decomposed granite, manufactured rock products, etc to enhance visual interest.*
- LU 16.3**      ***Design and field check irrigation plans to reduce run-off.*** *Emphasize the use of subsurface irrigation techniques for landscape areas adjoining non-permeable hardscape. Utilize subsurface irrigation or other low volume irrigation technology in association with long, narrow, or irregularly shaped turf areas. Minimize use of irregularly shaped turf areas.*
- LU 16.4**      ***Coordinate County water-efficiency efforts with those of local water agencies.*** *Support local water agencies' water conservation efforts.*
- LU 16.5**      ***Emphasize and expand the use of recycled water in conjunction with local water agencies.*** *Recycled water determined to be available pursuant to Section 13550 of the California State Water Code shall be used for appropriate non-potable uses whenever it: a) provides a beneficial use to the customer, b) is economically and technically feasible, c) is consistent with applicable regulatory requirements, and d) is in the best interests of public health, safety, and welfare. With the*



*exception of non-common areas of single-family home residential developments, all other irrigation systems must be designed and installed to accommodate the current or future use of recycled water for irrigation. If no recycled water facilities are imminent in the surrounding vicinity of a project (as determined by prevailing water agency), all subsurface piping shall be installed as recycled water ready to reduce future retrofit costs. Such irrigation plans shall be developed in accordance with standards and policies of the applicable recycled water purveyor. Recycled water systems shall be designed to meet regulatory requirements of the California Department of Public Health and the local recycled water purveyor.*

**LU 16.6** ***Achieve water conservation by changing the public perception paradigm.** More outreach is needed to change the public perception of water-efficient landscaping and the design/care of such landscapes as they are a departure from that “green” paradigm with which many County residents are familiar. To achieve this objective the County will:*

- A. Develop tools designed to assist landowners with converting to attractive, drought tolerant landscapes.*
- B. Participate in outreach efforts designed to educate the developers, landscape personnel, nurseries, retail establishments, and the public on water-efficient landscaping and wise water-use programs.*
- C. Promote the use of drought tolerant plants and irrigation components.*

[\*GPA 960, BOS RSLN #, dd/mm/yy]

## **Density Transfers**

Density transfers for residential dwelling units are an important tool for implementing several goals of the County’s General Plan, including open space preservation, *cultural or historic resource preservation*, the provision of community separators, and rural lands preservation. Additionally, if the Western Riverside County Multiple Species Habitat Conservation Plan (WRC MSHCP) is adopted, density transfers will be an important tool in helping to assemble the Plan’s reserve system. The County is working with community stakeholders to develop policies to implement a program to enable and encourage transfers of density that implement the goals described above. The policies will also be designed to be implemented in conjunction with the Incentives System (Administration Element: Page A-18). When completed, the density transfer policies will be considered for incorporation into the General Plan.



# **WATER CONSERVATION: OPEN SPACE ELEMENT**

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and its quality, is an important response to the gap between supply and demand in Riverside County.

Policies in this section seek to protect and enhance the water resources in the county. These policies address broad water planning issues, and the relationship of land use decisions to water issues.



*The Metropolitan Water District, which serves water agencies in the western part of the County, projects at least a doubling of water demand between 2000 and 2020. This agrees with the Department of Water Resources projections for the same period.*

### Water Supply *and Conveyance*

The economy of the developed portions of western Riverside County—the inland valley—is sustained primarily by water imported from northern California *via the State Water Project* and the *allocations from the Colorado River*, ~~and secondarily by production of local groundwater.~~ *Local groundwater production provides a secondary water supply.* The eastern portion of the County—the majority of which is desert—also relies on water from the Colorado River, northern California, and local groundwater. This portion of the County is largely undeveloped, with uncertain increases in the water resource available to meet increases in water demand being a major factor that might constrain future development.

Riverside County's water supply is uncertain for ~~two~~ *five key* reasons: ~~recent water apportionments from northern California have been reduced as part of the CALFED Bay-Delta Program, as well as decreased supplies to California from the Colorado River. Additionally, most of the County's sources of water are currently at capacity.~~

- 1) A 2007 U.S. District Court Judge's decision to uphold pumping restrictions for the purpose of protecting the Delta smelt, an endangered fish species that inhabits the ecosystem surrounding the State Water Project's facilities that pump water from northern California to southern California. No alternative conveyance solution has been initiated.*
- 2) Water apportionments from northern California were reduced as part of the CALFED Bay-Delta Program,*
- 3) Over allocation and drought conditions resulting in decreased water supplies to California from the Colorado River.*
- 4) Most of the County's sources of water are currently at capacity.*
- 5) Water reserves are being drawn down in record amounts to compensate for the Bay-Delta water pumping/conveyance limitations and conditions on the Colorado River.*



*An acre-foot of water is the volume of water represented by a 1-foot depth of water over a one-acre area (43,560 cubic feet of water or approximately 326,000 gallons), and is enough to supply the water needs of 2 families for 1 year.*

Water storage to meet peak demand, or a two-day to one-day supply, is provided by many local water agencies within Riverside County. However, long-term storage of large quantities of water is provided only in the Metropolitan Water District (MWD) and California Department of Water Resources (DWR) facilities. Total storage capacity in the existing reservoir system is 871,000 acre-feet (a.f.). Three of these storage facilities are located in Riverside County: Lake Mathews, Lake Skinner, and Lake Perris. Together, these storage facilities have a total of 342,300 a.f. of storage capacity. Diamond Valley Lake triples this capacity with an additional 800,000 a.f. of storage, bringing the total storage capacity available within Riverside County to 1,142,300 a.f. Even though the creation of Diamond Valley Lake has allowed for three times the current storage of water, there is no increase in the total amount of water available to the County that can be identified. This increase in water storage will benefit the whole South Coast region, which includes other significant jurisdictional water users such as



San Diego County, as well as Riverside County. Currently, approximately 3/8ths of existing storage capacity may be used to meet seasonal demand. The remaining 5/8ths is reserved for emergency need such as severe droughts and/or use when a natural disaster, such as an earthquake, makes it impossible to meet demand through usual supply facilities.

Projected 2020 water use and population levels indicate an expected water shortage for the two hydrologic regions that comprise Riverside County: the South Coast and Colorado River regions. Though these regions include most of southern California, and not just Riverside County, they are each representative of the types of supply and demand within the County. The two regions are defined as follows:

- South Coast: Basins draining into the Pacific Ocean from the southeastern boundary of Rincon Creek Basin in western Ventura County to the Mexican border.
- Colorado River: Basins south and east of the South Coast and South Lahontan regions; areas that drain into the Colorado River, the Salton Sea, and other closed basins north of the Mexican border.

The DWR produces a California Water Plan every five years that not only includes a statewide water budget but also regional watershed water budgets. These water budgets are based on California Department of Finance population projections, and indicate clearly that demand for water will exceed supply in 2020 whether or not a drought condition exists at that time. Most of the State's regions, except for the North Coast and San Francisco Bay Regions, experience average-year and drought-year shortages now, and are forecasted to experience increased shortages in 2020. The largest average-year shortages are forecasted for the South Coast Region, which heavily relies on imported water. Future average-year shortages in the South Coast Region reflect forecasted population growth plus lower Colorado River supplies as California reduces its use of Colorado River water to the State's basic apportionment. Following are the descriptions of the two hydrologic regions as well as regional water budgets (Tables OS-1 & OS-2):

***NOTE: 2009 Water Plan Currently Not Available. Tables OS-1 & OS-2 to be updated at a later date.***

***DWR Schedule:***

*Dec. 31, 2008: Release of public review draft*

*Sept. 2, 2009: Preview of Final Update*

*Dec. 31, 2009: Public Distribution/post on-line*

**Table OS-1**



**County of Riverside General Plan**  
*DRAFT-Multipurpose Open Space Element-June 3, 2009*

**South Coast Region Water Budget with Existing Facilities and Programs**

Water Use	1995		2020	
	Average	Drought	Average	Drought
Urban	4,340	4,382	5,519	5,612
Agricultural	784	820	462	484
Environmental	100	82	104	86
<b>Total</b>	<b>5,224</b>	<b>5,283</b>	<b>6,084</b>	<b>6,181</b>
<b>Supplies</b>				
Surface Water	3,839	3,196	3,625	3,130
Groundwater	1,177	1,371	1,243	1,462
Recycled and Desalted	207	207	273	273
<b>Total</b>	<b>5,224</b>	<b>4,775</b>	<b>5,141</b>	<b>4,865</b>
<i>Shortage</i>	<i>0</i>	<i>508</i>	<i>944</i>	<i>1,317</i>

Note: Figures in thousands of acre-feet of water.

**Table OS-2**  
**Colorado River Region Water Budget with Existing Facilities and Programs**

Water Use	1995		2020	
	Average	Drought	Average	Drought
Urban	418	418	740	740
Agricultural	4,118	4,118	3,583	3,583
Environmental	39	38	44	43
<b>Total</b>	<b>4,575</b>	<b>4,574</b>	<b>4,367</b>	<b>4,366</b>
<b>Supplies</b>				
Surface Water	4,154	4,128	3,920	3,909
Groundwater	337	337	285	284
Recycled and Desalted	15	15	15	15
<b>Total</b>	<b>4,506</b>	<b>4,479</b>	<b>4,221</b>	<b>4,208</b>
<i>Shortage</i>	<i>69</i>	<i>95</i>	<i>147</i>	<i>158</i>

Note: Figures in thousands of acre-feet of water.

Of the two Hydrologic Units of the State, the Colorado River Region is of particular concern because it encompasses the Coachella Valley in the West Basin and the desert in the East Basin (Refer to Figure OS-1, Water Resources). Irrigation needs in the Coachella Valley are met almost exclusively by water imported from the Colorado River. Historical extraction of groundwater in the Coachella Valley has caused overdraft. ~~Currently, a~~ An extensive groundwater recharge project is being undertaken by the Coachella Valley Water District that recharges Colorado River Water into spreading basins. Within the East Basin,



The General Plan policy and implementation item reference system:

Identifies which element contains the Policy, in this case the Land Use Element, and the sequential number.

### LU 1.3:

Neighborhood Commercial uses should be located near residential uses.

### (AI 1 and AI 4):

Reference to the relevant Action Items contained in the implementation Program

irrigation and domestic water is provided by the Colorado River with only approximately 1% groundwater use and little direct reclamation. Agricultural runoff and some domestic wastewater do get returned to the Colorado River. Therefore, the water source at the southern end of the watershed is actually a mixture of Colorado River water, agricultural runoff, and reclaimed water.

*In an effort to reduce local reliance on Colorado River and the State Water Project, Western Municipal Water District and numerous other water agencies have embarked on a conjunctive use project that will collect and store local runoff in wet years for the purpose of delivering it to local consumers. When completed, the Riverside-Corona Feeder will include 20 wells and 28 miles of pipeline capable of moving 40,000 acre feet of water annually—enough to meet the water needs of nearly 80,000 families. This project is thought to be the most important regional water supply project in western Riverside County.*

The following policies are intended to address the County's water supply issues:

### **Policies:**

- OS 1.1 Balance consideration of water supply requirements between urban, agricultural, and environmental needs so that sufficient supply is available to meet each of these different demands. (AI 3)
- OS 1.2 Develop a repository for the collection of County water resource information. (AI 11, 55)
- OS 1.3 Provide active leadership in the regional coordination of water resource management and sustainability efforts affecting Riverside County and continue to monitor and participate in, as appropriate, regional activities, addressing water resources, groundwater, and water quality, such as a Groundwater Management Plan, to prevent overdraft caused by population growth. (AI 4, 55, 58)
- OS 1.4 Promote the use of recycled water in landscape irrigation. (AI 3, 4, 57, 57B, 57C)*

### **[Add following Action Items to Matrix in Appendix K as follows**

*AI 57B Establish a Landscape Review Division within the Planning Department to review development proposals and ensure the implementation of the County's Water Efficient Landscape Ordinance No. 859.*

*AI 57C Work with water districts to develop data base that identifies current and future recycled water facilities and develop policies that ensure that requisite purple pipe components are installed as part of the landscape review process. Coordinate County's water-efficiency policies and programs with water service providers.]*

### **Water Conservation**

In order to ~~help~~ bridge the projected gap between water supply and demand in Riverside County in 2020, water conservation must be a priority. *Historical landscaping practices, incongruous with the dry California environment, account for the majority of the region's daily water consumption regimen.*



*Approximately 60% of a residential site's water consumption is used to irrigate outdoor landscaping while approximately 50% of commercial water use is similarly utilized. Inefficient landscape practices account for the majority of the region's water-waste.* Following are water conservation policies that seek to manage existing supplies, by promoting the efficient use of water to the maximum extent possible, ~~so that they can be maintained for future use.~~

### Policies:

*OS 2.1 Implement a water-efficient landscape ordinance and corresponding policies that promote the use of water-efficient plants and irrigation technologies, minimizes the use of turf, and reduces water-waste without sacrificing landscape quality. (AI 3, 57, 57B, 58, 62)*

OS ~~2.1~~ 2.2 Encourage the installation of water-conserving systems such as dry wells and graywater systems, where feasible, especially in new developments. The installation of cisterns or infiltrators shall also be encouraged to capture rainwater from roofs for irrigation in the dry season and flood control during heavy storms. (AI 57, 62)

OS ~~2.2~~ 2.3 Where feasible, decrease stormwater runoff by reducing pavement in development areas, and by design practices such as permeable parking bays and porous parking lots with bermed storage areas for rainwater detention. (AI 57, 62)

OS ~~2.3~~ 2.4 *Seek opportunities to coordinate water-efficiency policies and programs with water service providers. (AI 4, 57C, 58) Encourage native, drought-resistant landscape planting. (AI 3, 57, 62)*

OS ~~2.4~~ 2.5 Support and engage in educational outreach programs with other agencies, *the public, homebuilders, landscape installers, and nurseries* that promote water conservation and wide-spread use of water-efficient ~~saving~~ technologies. (AI 58)

OS ~~2.5~~ 2.6 Encourage continued agricultural water conservation and recommend the following practices where appropriate and feasible: lining canals, recovering tail water at the end of irrigated fields, and appropriate scheduling of water deliveries. (AI 57)



*A watershed is the entire region drained by a waterway that drains into a lake or reservoir. It is the total area above a given point on a stream that contributes water to the flow at that point, and the topographic dividing line from which surface streams flow in two different directions. Clearly, watersheds are not just water. A single watershed may include combinations of forests, glaciers, deserts, and/or grasslands.*

## Watershed Management

Four distinct watershed areas are incorporated in Riverside County and are mapped in Figure OS-1. These are the Santa Ana River Basin, which drains into the Pacific Ocean; San Diego Basin, the West Basin of the Colorado River, and the East Basin of the Colorado River. The East Basin of the Colorado River drains into the Colorado River and the West Basin of the Colorado River drains primarily into the Salton Sea Trough. The Santa Ana River Basin drains into the Pacific Ocean in Orange County while the San Diego Basin drains into the Pacific Ocean in San Diego County. These large watersheds are further divided into smaller sections by internal surface water drainage areas and groundwater basins.

Watershed management relates to sustaining watersheds at an acceptable level of quality, contributing to resource quality, and maintaining groundwater supplies.