

Implementation of the Ahwahnee Water Principles in the City of Carlsbad
 Summary table May 2006

Principle #	City has considered principle?	Implementing Document(s)	Example
1. Community design should be compact, mixed use, walk able and transit-oriented so that automobile generated urban runoff pollutants are minimized and the open lands that absorb water are preserved to the maximum extent possible.	Yes	City of Carlsbad Livable Neighborhoods Council Policy December-01	Bressi Ranch
2. Natural resources such as wetlands, flood plains, recharge zones, riparian areas, open space, and native habitats should be identified, preserved and restored as valued assets for flood protection, water quality improvement, groundwater recharge, habitat, and overall long-term water resource sustainability	Yes	City of Carlsbad Habitat Management Plan (HMP) 1999	The HPM is an extensive environmental planning document that preserves, enhances, and expands all of the natural resources listed above. The approval of the City's Golf Course project implemented the HMP in it's entirety and also is implementing the HMP throughout the project limits.
3. Water holding areas such as creek beds, recessed athletic fields, ponds, cisterns, and other features that serve to recharge groundwater, reduce runoff, improve water quality and decrease flooding should be incorporated into the urban landscape	Yes	1) City of Carlsbad SUSWMP April 2003 2) City of Carlsbad Engineering Standards 1970 (Grading Ordinance) 3) City of Carlsbad HMP 1999	Aviara residential community built in 1990

<p>4. All aspects of landscaping from the selection of plants to soil preparation and the installation of irrigations systems should be designed to reduce water demand, retain runoff, decrease flooding, and recharge groundwater</p>	<p>Yes</p>	<p>City of Carlsbad Landscape Manual November 1990</p>	<p>slopes over 3ft in height are required to be landscaped, irrigated and 75% vegetated prior to occupancy permits being issued</p>
<p>5. Permeable surfaces should be used for hardscape. Impervious surfaces such as driveways, streets, and parking lots should be minimized so that land is available to absorb storm water, reduce polluted urban runoff, recharge groundwater and reduce flooding.</p>	<p>Yes</p>	<p>City of Carlsbad SUSWMP April 2003</p>	<p>Pine Park and pilot impervious concrete installation</p>
<p>6. Dual plumbing that allows graywater from showers, sinks and washers to be reused for landscape irrigation should be included in the infrastructure of the new development.</p>	<p>Yes</p>	<p>Further research into the application of graywater reuse including public perception, the conclusions of scientific data, and infrastructure retrofitting is needed, by a number of federal and state water, environmental and health agencies. The City of Carlsbad will continue to review data as it becomes available and consider future adoption of this principle.</p>	<p>NA</p>
<p>7. Community design should maximize the use of recycled water for appropriate applications</p>	<p>Yes</p>	<p>City of Carlsbad Reclaimed Water</p>	<p>Recycled water uses for irrigation has been required</p>

<p>including outdoor irrigation, toilet flushing, and commercial and industrial processes. Purple pipe should be installed in all new construction and remodeled buildings in anticipation of the future availability of recycled water</p>		<p>Master Plan 1992</p>	<p>in Carlsbad since 1993. To date, there has been 72.6 miles of main piping already installed in the City. In addition, the City has built a new facility to divert up to 16 million gallons/day of treated wastewater for further treatment, storage, and delivery through new purple pipe system.</p>
<p>8. Urban water conservation technologies such as low-flow toilets, efficient clothes washers, and more efficient water-using industrial equipment should be incorporated in all new construction and retrofitted in remodeled buildings.</p>	<p>Yes</p>	<p>1) Carlsbad Building Code requiring ultra low-flush toilets installed in all new buildings NS 170 September 1991, and CMC 18.16, Title 2 2) City of Carlsbad Water Ethics 1992 3) City of Carlsbad Ordinance No.30 December 1989</p>	<p>water conservation programs including free onsite consultation for residential water use and outside leak detection, vouchers for low-flow toilets and water efficient washers, outreach and education</p>
<p>9. Ground water treatment and brackish water desalination should be pursued when necessary to maximize locally available, drought-proof water supplies</p>	<p>Yes</p>	<p>The City of Carlsbad and other agencies need to conduct further research into the treatment of ground water and brackish water. The City is</p>	<p>Poseidon Desal plant on AH Lagoon</p>

		pursuing desalination to augment local drinking water supplies.	
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City of Carlsbad's Implementation of Ahwahnee Principles

Ahwahnee Q & A Text

Community Principles

1. *Community design should be compact, mixed use, walk able and transit-oriented so that automobile generated urban runoff pollutants are minimized and the open lands that absorb water are preserved to the maximum extent possible. (See the Ahwahnee Principles for Resource-Efficient Communities)*

Implementing Document(s): City of Carlsbad's Livable Neighborhoods Council Policy 12-01

Example: Bressi Ranch

2. *Natural resources such as wetlands, flood plains, recharge zones, riparian areas, open space, and native habitats should be identified, preserved and restored as valued assets for flood protection, water quality improvement, groundwater recharge, habitat, and overall long-term water resource sustainability.*

Implementing Document(s): City of Carlsbad's Habitat Management Plan (HMP) 1999

Example: The HPM is an extensive environmental planning document that preserves, enhances, and expands all of the natural resources listed above. The approval of the City's Golf Course project implemented the HMP in it's entirety and also is implementing the HMP throughout the project limits.

3. *Water holding areas such as creek beds, recessed athletic fields, ponds, cisterns, and other features that serve to recharge groundwater, reduce runoff, improve water quality and decrease flooding should be incorporated into the urban landscape.*

Implementing Document(s): SUSWMP April 2003, Engineering Standards 1970 (Grading Ordinance) , HMP 1999

Example: Aviara residential community built in 1990

4. *All aspects of landscaping from the selection of plants to soil preparation and the installation of irrigations systems should be designed to reduce water demand, retain runoff, decrease flooding, and recharge groundwater.*

Implementing Document(s): City of Carlsbad's Landscape Manual November 1990

Example: slopes over 3ft in height are required to be landscaped, irrigated and 75% vegetated prior to occupancy permits being issued

5. *Permeable surfaces should be used for hardscape. Impervious surfaces such as driveways, streets, and parking lots should be minimized so that land is available to absorb storm water, reduce polluted urban runoff, recharge groundwater and reduce flooding.*

Implementing Document(s): SUSWMP April 2003

Example: Pine Park and pilot impervious concrete installation

6. *Dual plumbing that allows graywater from showers, sinks and washers to be reused for landscape irrigation should be included in the infrastructure of the new development.*

Implementing Document(s): Further research into the application of graywater reuse including public perception, the conclusions of scientific data, and infrastructure retrofitting is needed, by a number of federal and state water, environmental and health agencies. The City of Carlsbad will continue to review data as it becomes available and consider future adoption of this principle.

Example: NA

7. *Community design should maximize the use of recycled water for appropriate applications including outdoor irrigation, toilet flushing, and commercial and industrial processes. Purple pipe should be installed in all new construction and remodeled buildings in anticipation of the future availability of recycled water.*

Implementing Document(s): City of Carlsbad's Reclaimed Water Master Plan March 1992

Example: Recycled water uses for irrigation has been used in Carlsbad since 1993. To date, there has been 72.6 miles of main piping already installed in the City. In addition, the City has built a new facility to divert up to 16 million gallons/day of treated wastewater for further treatment, storage, and delivery through new purple pipe system.

8. *Urban water conservation technologies such as low-flow toilets, efficient clothes washers, and more efficient water-using industrial equipment should be incorporated in all new construction and retrofitted in remodeled buildings.*

Implementing Document(s): City of Carlsbad Building Code requiring ultra low-flush toilets installed in all new buildings, NS 170 September 1991, and CMC 18.16, Title 2

, Carlsbad Water Ethics 1992, Ordinance No.30 December 1989

Example: water conservation programs including free onsite consultation for residential water use and outside leak detection, vouchers for low-flow toilets and water efficient washers, outreach and education

9. *Ground water treatment and brackish water desalination should be pursued when necessary to maximize locally available, drought-proof water supplies.*

Implementing Document(s): The City of Carlsbad, among other agencies, needs to conduct further research into the treatment of ground water and brackish water. The City is pursuing desalination to augment local drinking water supplies.

Example: Poseidon Desalination plant on AH Lagoon