

RESOLUTION 2001-486

A RESOLUTION OF THE MAYOR AND COMMON COUNCIL OF THE TOWN OF CAMP VERDE, YAVAPAI COUNTY, ARIZONA, DECLARING *The 2001 Amendments to Section 108 (General District Provisions) of the Planning and Zoning Ordinance (87-A23) dated October 17, 2001*, TO BE A PUBLIC RECORD.

WHEREAS, ARS 9-802 permits the enactment and publication by reference of a code or public record, including a statute, rule, or regulation of the municipality, in the interests of economy, and

WHEREAS, the document entitled *The 2001 Amendments to Section 108 (General District Provisions) of the Planning & Zoning Ordinance (87-A23) dated October 17, 2001*, is a lengthy revision of the ordinance which would qualify for enactment by reference as a matter of law,

NOW, THEREFORE, THE MAYOR AND THE COMMON COUNCIL OF THE TOWN OF CAMP VERDE HEREBY DECLARE *The 2001 Amendments to Section 108 (General District Provisions) of the Planning and Zoning Ordinance (87-A23) dated October 17, 2001*, ATTACHED HERETO AND INCORPORATED HEREIN, TO BE A PUBLIC RECORD PURSUANT TO ARS 9-802, TO BE ENACTED BY ORDINANCE 2001 A188, AND ORDER THAT THREE (3) COPIES OF THE AMENDMENTS BE PERMANENTLY FILED IN THE OFFICE OF THE TOWN CLERK AND COMMUNITY DEVELOPMENT DIRECTOR, AND AVAILABLE FOR PUBLIC USE AND INSPECTION.

PASSED, APPROVED, AND ADOPTED by the Mayor and common Council of the Town of Camp Verde, Yavapai County, Arizona, on the 17th day of October 2001.

Approved:


Mayor

Attest: 
Town Clerk

Approved as to form:


Town Attorney

Q. GOLF COURSE DEVELOPMENT STANDARDS

1. Purpose:

To ensure that every golf course be developed and managed with consideration for the unique conditions of the ecosystem of which it is a part and specifically to ensure that no depletions to the aquifer occur from the irrigation of golf courses and to encourage the use or reuse of effluent.

2. General Requirements:

The following requirements shall apply to the development and processing of golf courses in conjunction with a Planned Area Development proposal or any other golf course development:

- a. Applicant will be required to submit plans that demonstrate that the proposed project meets the standards set by the Arizona Department of Water Resource for golf courses in the Active Management Areas including limiting water usage to no more than 5 irrigated acres per hole times the turf water allotment presented in the water allotment table (Section B).
- b. Applicant to obtain a report of physical availability of water from the Arizona Department of Water Resources demonstrating an adequate water supply for the entire development including the golf course prior to recording the Final Plat/Final Site Plan and prior to construction of the golf course.
- c. Applicant to demonstrate that the proposed development will be of an appropriate size and scale and reasonable or appropriate for a given area to generate sufficient effluent or re-use water to meet the entire irrigation needs of the golf course or demonstrate that an alternative supply of effluent or other renewable source of water will be available.
- d. Applicant will be required to submit a water balance study to demonstrate that sufficient water supply other than groundwater will be available for use on the golf course. The format and standard assumptions and criteria will be used as a guide to complete the water balance study. These format and standard assumptions and criteria are attached in Section B.
- e. Applicant will be required to conduct a monitoring program as it pertains to surface water and groundwater quality and quantity. The monitoring program will be developed in concert with the appropriate approval authorities.
- f. Applicant will be required to conduct monitoring program as it pertains to the performance of the wastewater treatment plant

including effluent discharge quality and quantity for review and approval by the Planning and Building staff or other appropriate agencies.

3. Design and Construction Standards:

Applicant will be required to submit plans demonstrating that the golf course is designed, constructed and maintained in accordance with environmental practices as set out in Environmental Principles for Golf Courses in the United States and which meet the following conditions:

- a. Emphasis shall be placed upon the design of irrigation, drainage and retention systems that provide for the efficient use of water. Drainage and storm water retention systems should be incorporated to help provide for both the short and longterm irrigation needs of the maintained turf and the un-maintained areas of the course. Storm water retention systems may require an appropriate surface water right from the Arizona Department of Water Resources.
- b. The course shall be designed with sustainable maintenance in mind. The design shall incorporate resource conservation strategies that are environmentally responsible, efficient and cost effective.

4. Construction Documents:

Conceptual grading, drainage, irrigation, clearing and landscaping plans will be required as part of the Final Site Plan application and in conjunction with a development plan. Plans must have sufficient detail to demonstrate that the design, construction and maintenance will incorporate environmental principles and meet the intent of the water use standards for golf courses specified in this document.

B. Water Balance Study

The applicant shall conduct a water balance study to demonstrate that the development has a sufficient supply of water other than groundwater to meet the water requirements of the golf course. The water balance demonstration criteria are listed in section B.1, through B.6.

1. Water Allotments:

5 irrigated acres per hole is the maximum acreage allotment, except when considering a previous water right allotment for surface water rights. The allotments presented in the table are for purposes of calculating the water balance for the facility and assume a 75% efficient irrigation system. If the applicant cannot meet the water requirements of a typical golf

4. **Additional Precipitation Allowance:**
If the applicant plans to capture additional runoff or off-site precipitation for use on the golf course, the applicant shall demonstrate adequate storage capacity, probability and volume of the captured water, and legal right to conduct the capture activity.

5. **Effluent Production:**
The standard water requirements of a new housing development shall be computed according to the standard water use rates specified in the Prescott AMA Third Management Plan. Only the interior water use requirements (interior gallons per capita-day) will be considered to be a contribution to the effluent re-use system. Outside water use will be considered lost and non-recoverable. An average value of 2.5 persons per household will be the standard housing unit occupancy level. Consideration will be given if the applicant has good evidence that the development water use and effluent capture rates are different from the values presented.

Type of Residential Unit	Interior Gallons per Capita-day	Average Persons per Housing Unit	Exterior Use (Gallons per Housing Unit per Day)	Total Water Use per Housing Unit (Gallons per Day)
Single Family Homes	57	2.5	75	217.5
Town Homes	57	2.5	58	200.5

6. **Seasonal fluctuations:**
Typical golf course water requirements have a peak water use period during the hot-dry part of the summer that is much greater than the average annual water use. However, effluent production does not typically match this high peak. The applicant must demonstrate that available effluent is sufficient to meet the summer peak water use requirements of the golf course (approximately 1 acre-foot/acre during the one month period from June 15-July 15, or 3 acre-feet/day for a 90 acre golf course).

course with effluent, consideration may be given for a demonstration of reduced water use (for example, reducing the area irrigated).

Water Allotments for Turf Facilities

Type of Use	Water Allotment – Facilities at 4,000 to 5,500 feet above MSL (ac-ft/acre)	Water Allotment – Facilities at 3,000 and up to 4,000 feet above MSL (ac-ft/acre)
Turf	4.9	5.2
New Turf (1 st year)	5.9	6.2
Artificial Lakes	5.5	5.8
Low Water Use Landscaping	1.5	1.5

2. Leaching Requirement:

Turf may require the occasional leaching of salts from the root zone. Although treated effluent may not be as efficient as groundwater, even low quality water can be appropriately used for leaching. If the applicant believes that a leaching allotment is necessary, the applicant will have to demonstrate that a sufficient amount of renewable water supply. The standard equation utilizing electrical conductivity of the water shall be used to compute the leaching requirement.

**Additional
Leaching
Allotment**

$$= (1/(1-(EC_w/(5EC_e-EC_w))))-1)*CU/75$$

Where: EC_w = Electrical Conductivity of the water used
EC_e = Tolerance of the crop to soil salinity in electrical conductivity of the soil saturation extract (millimhos per centimeter)
CU = Consumptive use of the crop

3. Effective Precipitation:

Precipitation that is effective in offsetting the irrigation water demands is included in the water allotments in the table above. Consideration will be given if the applicant can demonstrate an additional amount of precipitation will be effective in offsetting irrigation demands.

EXHIBIT A PROJECT ASSUMPTIONS WORKSHEET

Project Statistics	Units	Project Values
Number of Single Family Units	# Units	
Number of Multiple Family units	# Units	
Clubhouse Water Use	Gallons/Day	
Commercial Water Use	Gallons/Day	
Number of Golf Holes	# Holes	
Total Turf Area	5 acre/hole maximum	
Total Lake Surface Area	Acres	
Occupancy Level	Percent	

Baseline Water Use Statistics	Units	Standards
Persons per Dwelling Unit	# Persons	2.5
Interior Water Use per Residential Dwelling	GPCD	57
Exterior Water Use per Single Family Dwelling	GPHUD	75
Exterior Water Use per Multiple Family Unit	GPHUD	58
Effluent Return - Other Uses	Percent	65.00%
Turf Water Use (Allotment Table)	Acre Feet/Year	6.2
Grow-in Period Turf Water Use (Allotment Table)	Acre Feet/Year	6.2
Evaporation - Lake Surface (Allotment Table)	Acre Feet/Year	5.8
Gallons per Acre Foot	Gals/Acre Foot	325,851

Total Project Water Demands	Units	Standards
Annual Demand - Residential & Commercial	Acre-feet/year	656
Annual Effluent Production	Acre-feet/year	438
Grow-in Period Demand - Golf Course	Acre-feet/year	511
Annual Demand - Golf Course	Acre-feet/year	431

Use this Page to Calculate Total Project Water Demands, Effluent Supplies and Golf Course Water Use Requirements.

EXHIBIT B WATER BALANCE WORKSHEET

Year	Dwelling Units Built Per Year	Cummulative Dwelling Units	Annual Effluent Production AC/FT	Annual Golf Course Water Use AC/FT	Net Water Deficit AC/FT
Year 1					
Year 2					
Year 3					
Year 4					
Year 5					
Year 6					
Year 7					
Year 8					
Year 9					
Year 10					
Year 11					
Year 12					
Year 13					
Year 14					
Year 15					
Year 16					
Year 17					
Year 18					
Year 19					
Year 20					
Total					

Use this worksheet to calculate outside effluent needs during project build-out.