

**Resolution No. 86-21**

**Appendix C to the Otero County  
Subdivision Regulations**

**WATER USE AND CONSERVATION**

Adopted March 27<sup>th</sup>, 2007

**BLACK – EXISTING LANGUAGE**

**BLUE – PROPOSED ADDITIONS BY PLANNING COMMISSION 1/26/2009**

**RED – PROPOSED DELETIONS BY PLANNING COMMISSION**

## APPENDIX C

### WATER USE AND CONSERVATION

#### C.1 DEFINITIONS

Community water system	any existing or proposed water supply system which relies upon surface and/or ground water diversion other than wells permitted by the State Engineer under Section 72-12-1 NMSA, and which consists of a common storage and/or distribution facilities operated for the delivery of water to multiple service connections and that serves 25 or more parcels (lots).
Geohydrologic report	a report on subsurface water availability.
Hydrologic report	a report on surface water availability.
Individual water system	a domestic well authorized pursuant to a permit obtained under NMSA § 78- 72-12-1, serving one to four parcels (lots).
Potable water	water that is safe and palatable for human consumption.
Private water system	a water supply system that serves fewer than 25 parcels (lots).
Shared well	An individual water system serving two to four parcels.
Water availability assessment	an evaluation to demonstrate that sufficient quantities of potable water are available to supply the maximum annual water requirements of the proposed subdivision for all indoor and outdoor domestic uses over a 40-year period. Components of the assessment shall include: (1) a description of the availability and sources of water to meet the subdivision's maximum annual water requirements over 40 years, (2) a description of the means of water conveyance and delivery within the subdivision.
Water supply system	a system to provide water for domestic use and for human consumption

#### C.2 REQUIRED IMPROVEMENTS

- A. A community water system shall be required in any Type-one subdivision.
- B. A community water system shall be required in any Type-two subdivision containing any parcels less than 2.0 acres in size.
- C. A community water system shall be required in any Type-three-A subdivision containing any parcels less than 2.0 acres in size. Individual water systems for Type-three-B or Type-three-A subdivisions in which the parcel size is 2.0 acres or larger, may be approved if such systems meet the requirements of the Environment Department and the Office of the State Engineer.

- D. Individual water system for Type-four and Type-five subdivisions may be approved if such systems meet the requirements of the Environment Department and the State Engineer's Office.

### **C.13 ESTIMATE OF ANNUAL WATER USAGE**

- A. The maximum annual estimated water usage requirement for community water systems for both indoor and outdoor purposes, for each household in a residential subdivision is two (2) acre-feet 1.0 acre-foot per year. The total annual water requirements for the subdivision utilizing individual domestic wells, in acre-feet per year are computed by multiplying the number of households parcels by two (2) 1.0. Subdivisions relying on individual domestic wells or shared domestic well systems shall be limited to a maximum of three (3) acre-feet per year per domestic well. This can be further restricted or modified by state statutes and/or the Office of the NM State Engineer. Any such restrictions or modifications impacting the subdivision need to be detailed in the disclosure statement.
- B. The subdivider may, at his option, prepare a detailed water demand analysis using the step-by-step computational procedure presented in the relevant Office of the State Engineer Technical Report Bulletin to justify different water demand values than those presented in Section A above.
- C. A detailed water demand analysis shall be prepared for all nonresidential subdivisions and all water uses not directly related to residential uses within a mixed development subdivision. Annual water requirements shall be estimated using the relevant Office of the State Engineer Technical Report Bulletin or other acceptable methodology.

### **C.24 PUBLIC COMMUNITY WATER SYSTEM REQUIREMENTS**

- A. A public water system is any existing or proposed water supply system which relies upon surface and/or ground water diversions other than wells permitted by the State Engineer under Section 72-12-1 N.M.S.A., and which consists of a common storage and/or distribution facilities operated for the delivery of water to multiple service connections
- B.A. If water will be supplied from a community water system, the subdivider shall submit a plat of the proposed subdivision, and preliminary plans for the water production, storage, and distribution facilities prepared by or under the supervision of a registered professional engineer. The site plans shall show in the topography, parcel boundaries, streets, wells, and water storage and distribution systems, including hydrants. The size or capacity of the water system components should also be indicated on the site plans. Preliminary well plans shall include casing diameter, total depth, screened interval, and proposed pump setting.
- C.B. Shared well systems, permitted under Section 72-12-1 N.M.S.A. may be allowed, subject to Subsection A above, under the conditions that the maximum number of parcels households served by one well shall not exceed four and the maximum annual water use for all parcels households served by one shared well shall not exceed three (3) acre-feet or less if so restricted by State Statutes and the Office of the NM State Engineer. Shared wells need to be in the lot owners association

name with the association clearly establishing each person's rights and entitlement and written procedures and responsibilities concerning the accounting, expenses, operation and maintenance and reporting of the shared well and distribution system. The Environment Dept requires maintenance and evaluation of water quality and the State Engineer requires reporting of volumes used.

- D.C. Covenants and land use restrictions shall be adopted strictly prohibiting the drilling or use of individual and/or shared domestic wells for any subdivision which requires or utilizes a **public community** water system.

All subdivisions are required to be planned, developed, and constructed so as to provide for the conservation of water and minimization of water uses. Developers are encouraged to provide in their disclosure statements detailed water conservation requirements that will provide for the long-term conservation of water in Otero County.

## C.5 INDIVIDUAL WATER SYSTEM REQUIREMENTS

- A. An individual water system serving no more than one connection shall be limited to 1.0 acre-foot per annum. An individual water system serving more than one connection shall be metered, shall not exceed 1.0 acre-foot per annum per household served. The maximum combined diversion for more than one household from a 72-12-1.1 domestic well shall not exceed 3.0 acre-feet per annum. A maximum of four connections to one well are permitted in Otero County.
- B. There shall be a well sharing and maintenance agreement for two to four connections to a well. This agreement must be filed with the County Clerk. The OSE requirement for a shared well is stipulated in Title 19, Chapter 27, Part 5 of the New Mexico Administrative Code (19.27.5 NMAC), 19.27.5.9.d.2 For a 72-12-1.1 Domestic well serving multiple households, the permit holder shall file documentation with the Office of the State Engineer listing the number of households being served by the well, the owner's contact information for each household being served, and a description of the legal lot of record for each household being served.
- C. If metered, quarterly reports shall be provided to the **NMSEO** Office of the State Engineer.

### C. 3 6 WATER AVAILABILITY ASSESSMENT -- When Individual Private Wells or a Public Water System is proposed. It is not the intent to require the subdivider to guarantee the life expectancy of the water supply. The intent of this section is to provide an assessment of the water availability for the proposed subdivision.

- A. For areas where adequate studies, i.e., the Otero County 40 year water plan, 1990-2030; The Tularosa Basin and Salt Basin Regional Water Plan 2000-2040; Water Conservation and Quantification of Water Demands, by Brian C. Wilson, NMSEO, 1996; and the Sacramento Mountain Hydrogeology Study, by New Mexico Bureau of Geology and Mineral Resources, July 2007, Progress Report, have been performed, these existing studies (and as may be amended) may be referenced and relied upon.

- A B.** A water availability assessment shall be submitted by the subdivider:
1. as a condition of preliminary subdivision plat approval for all type one, type two, and type three subdivisions, and any time a public water system is proposed; and
  2. as a condition of summary subdivision plat approval.
1. as a condition of preliminary subdivision plat approval for all subdivisions with 25 or more lots, any one of which is under 5 acres, and any in which a community water system is proposed;
- B C.** The requirements of the water availability assessment are dependent on the source of water supply such that:
1. For subdivisions where the source of water will be a new ground water diversion **public community** water system pursuant to Section 72-12-3 or 72-12-7 N.M.S.A. 1978 **or when the subdivider proposes that the source of water shall be individual domestic wells or shared wells to be approved by the State Engineer pursuant to section 72-12-1 N.M.S.A. 1978** the subdivider shall demonstrate a **60 40**-year supply and shall submit a geo-hydrologic report in accordance with Subsection **C D** below.
  2. For subdivisions where the source of water will be a new ground water diversion utilizing individual domestic or shared wells to be approved pursuant to Section 72-12-1 N.M.S.A. 1978, the subdivider shall submit a water availability assessment in accordance with **G**. below.
  3. For subdivisions where the source of supply will be a new surface water diversion community system permitted pursuant to Section 72-5-1, 72-5-23, or 72-5-24 N.M.S.A. 1978, the subdivider shall submit a hydrologic report in accordance with Section **D E** below.
  4. For subdivisions where the source of supply will be an existing community or municipal water supply system permitted pursuant to Sections 72-5-1, 72-5-23, 72-5-24, **72-12-1**, or 72-12-3, the subdivider shall submit information in accordance with Section **E F** below.
- C D.** For new **public community water** systems in subdivisions with 25 or more lots, any one of which is less than 5 acres, utilizing wells, **and for subdivisions using individual domestic or shared wells**, the subdivider shall submit a water **supply availability assessment which includes plan and a geo-hydrologic** geohydrologic report which meets the following requirements:
1. **Geo-hydrologic** **Geohydrologic** reports by a qualified licensed NM professional engineer or geologist shall make a reasonable estimate that ground water sufficient to meet the maximum annual water requirement of the subdivision is physically available and can be practically recovered to sustain the development of a continuous period of **forty (40) years sixty (60) years**. These analyses shall take into account the production of existing wells and shall demonstrate that the subdivision wells, as

proposed or as designed, will be capable of producing the full annual demand for at least ~~forty (40) years~~ **sixty (60) years**.

2. The subdivider shall drill sufficient exploratory wells within the boundaries of the proposed subdivision to adequately characterize the aquifer, unless his licensed NM professional engineer or geologist can demonstrate that existing wells in the area are representative of general aquifer conditions within the subdivision. Where existing wells are not adequate to demonstrate aquifer conditions, aquifer parameters required to demonstrate the availability of water should be obtained from aquifer tests, performed on site, which are adequate for predicting long-term water availability. Alternately, tests can be conducted on nearby off-site wells if the licensed NM professional engineer or geologist can demonstrate that these wells are representative of general aquifer conditions within the subdivision.
3. The assessment shall include a calculated schedule of effects on the proposed subdivision's production well(s) which may result from existing demands and from the increase of ground water withdrawals for the subdivision. Analyses shall be performed to assess whether future water level declines will be within the limits of allowable drawdown in the subdivision production wells as provided in the following paragraph (Subsection 4). Predicted draw-downs shall be calculated in a conservative manner (which estimates maximum drawdown).
4. The determination of the lowest practical pumping water level in the proposed subdivision pumping wells by any of the following methods as appropriate, provided there shall be no presumption made as to additional available water below the bottom of the proposed production well, and further provided that the total available drawdown shall be reduced by a factor of twenty percent (20%) as a margin of safety to account for seasonal fluctuations, drought allowance, reduction of well efficiency over time, and peak production requirements:
  - a. By using the results of acceptable on-site aquifer pump tests. The lowest allowable pumping level may be the lowest water level reached during the test;
  - b. By setting the level at the top of the uppermost-screened interval;
  - c. In wells completed in fractured aquifers, the lowest practical pumping water level may be above the top of the fracture zone;
  - d. In wells completed in alluvial aquifers, the lowest practical pumping water level may be defined by a maximum allowable drawdown equal to thirty percent (30%) of the initial water column.
5. The ~~geo-hydrologic~~ **geohydrologic** report should present all hydrologic information pertinent to the study area including that available from past ~~geo-hydrologic~~ **geohydrologic** studies. ~~All consultant who prepared the~~

report. The report shall include the signature, including date, of the consultant responsible for preparing the report. The report shall contain maps and cross-sections showing geology, depth to the water bearing formation, water level contours, and estimated thickness of saturation in the aquifer. Basic data for the immediate area of the subdivision must be current, with the date of collection noted and the location identified on a map. The report on the investigation should be in the format of a technical narrative; spreadsheets, tables, graphs, maps, and cross-sections shall be included.

D E. For new surface water diversion and public community water systems using surface water, the subdivider shall submit a hydrologic report, which meets the following requirements:

1. The hydrologic report shall demonstrate that surface water sufficient to meet the maximum annual water requirement of the subdivision is physically available. These analyses shall include the following:
  - a. Narrative and analytical demonstration that the surface water will be physically available for the proposed use given short-term and long-term fluctuations (base-flow analysis) due to climatic cycles or other factors such as induced recharge due to ground water diversion, analyses of relevant historical runoff records, and projected water supply available for the subdivision requirements. Applicable legal or water rights constraints on water availability shall be considered.
  - b. If the analysis for the historical runoff record indicates possible shortages in the projected water supply available for the subdivision requirements the subdivider shall provide for either storage or a supplemental groundwater supply sufficient to meet the shortage.
  - c. If a supplemental ground water supply is proposed, the subdivider shall prepare a geo-hydrologic assessment in accordance with Section C.D

E F. For public community water systems in which existing utility companies are proposed as the source of water supply, the subdivider shall submit a water supply plan which meets the following requirements:

1. For all water utilities:
  - a. Name of the utility proposed as the source of supply. A letter of intent from the utility that they are ready, willing, and able to provide the maximum annual water requirements for the subdivision for at least forty (40) years. The letter must also state any requirements for the subdivider to provide water rights.
2. For water utilities other than municipal owned water utilities:

- a. documentation showing the quantity of water presently produced annually, quantity of water supply commitments to date, and proof of sufficient water rights to meet both existing commitments and the requirements of the proposed subdivision for a period no less than forty (40) years;
- b. for New Mexico Public Utilities Regulations Commission (PUC) (PRC) certified utilities, a copy of the most recent annual report submitted to the PUC; (PRC)
- c. plans for the existing water system to which the proposed system will tie into. The plans shall show diversion point locations, and water storage and distribution systems. The size or capacity of the water system components should also be indicated on the plans; and
- d. any other information, including any or all of the requirements of Sections C or D, required by the Board of County Commissioners to make a determination that the utility has the capability to meet the water requirements of the proposed subdivision.

G. For individual or private water systems in subdivisions with less than 25 lots, any of which is less than 5 acres, and for other water systems not specifically requiring a water availability assessment which requires a geohydrologic report, the subdivider shall submit a water availability assessment as follows:

1. a minimum of four well logs from the nearest existing wells completed in geologic conditions representative of the conditions within the proposed subdivision, with at least one well log from a well in the proposed subdivision or the owner's adjacent property.
2. A statement of the maximum and minimum depths to water in the subdivision and the basis for these statements;
3. A statement of the estimated yield of the nearest wells in gallons per minute based upon well logs from the nearest existing wells; and
4. Any additional information which is required by the Board of County Commissioners that will enable it to determine whether or not the subdivider can fulfill the proposal contained in the disclosure statement.

## **C.7 WATER CONSERVATION MEASURES**

The following water conservation measures are recommended for housing units in all subdivisions:

- A. All new construction shall conform to the requirements of the administrative Building and Planning Codes of the State of New Mexico.

- B. The use of xeric plant material and low water use landscaping techniques, applying the principles of xeriscaping, and use of recycled or “gray” water for irrigation thereof, is encouraged.
- C. The installation of rainwater catchment devices for outdoor landscaping watering purposes.
- D. No more than 800 square feet of irrigated grass or landscaping per parcel shall be allowed. This limitation shall not apply to gardens planted for the purpose of growing food for human or animal consumption.
- E. Water saving fixtures shall be installed in all new or replacement construction. Water saving fixtures shall include, but not be limited to low flush toilets, low flow fixtures, and insulation of hot water pipes. Toilets shall use no more than 1.6 gallons per flush; showerhead flows shall not exceed 2.5 gallons per minute; and faucet flow shall not exceed 2.5 gallons per minute. Evaporative coolers shall circulate bleed-off water.
- F. Forested property that is not maintained constitutes a fire hazard. The practice of establishing defensible space around structures, tree thinning, and reducing vegetation to benefit the watershed is recommended.

**C. 4 8 FIRE PROTECTION**

- A. Wildfire Hazard Severity Analysis of all Subdivisions will be performed by the **Otero County Fire Services Coordinator Otero County Office of Emergency Management**, who which will also coordinate with the nearest Fire Department to the subdivision to detail what if any fire fighting facilities are available, their capacity, distance and anticipated time of travel to the subdivision at a minimum. His report shall be summarized and included in the Disclosure Statements beginning with the first draft.
- B. Requirements for Provision of Fire Protection:
  - 1. For all subdivisions with more than one hundred (100) lots and with community water systems, the subdivider shall provide water for fire fighting and facilities for storage and distribution.

C. Standards for Fire Protection

The subdivider’s fire protection facilities shall conform **with to** the guidelines provided by the Insurance Services Office (ISO), and to applicable County fire regulations and shall meet the following minimum requirements:

- 1. The required storage for fire protection shall equal 30,000 gallons. Amounts deliverable by tanker, as estimated by the local fire authority, may be included in the fire protection plan, but shall not be credited towards the ISO storage requirement.

2. The fire protection system shall be capable of delivering a minimum of five hundred (500) gallons per minute to the fire at a residual pressure of twenty (20) pounds per square inch or as required by ISO.
3. Fire hydrant spacing shall not exceed a distance of one thousand feet (1,000') measured along the roadway, and individual hydrants shall not be located more than five hundred feet (500') from each parcel.
4. Fire protection requirements may be waived or modified by the Board of County Commissioners subject to review of the subdivider's request by the fire authority having jurisdiction. The subdivider shall provide a letter to the Board of County Commissioners from the fire authority having jurisdiction with their comments on the waiver request.

D. Fire Protection Plan

1. A fire protection plan shall be a condition of preliminary plat approval for subdivisions with more than one hundred (100) lots and with community water systems.
2. For all subdivisions with fire protection, the subdivider shall submit a plat of the proposed subdivision, preliminary plans of the proposed water supply, storage and distribution systems, and calculations demonstrating that the proposed fire protection facilities will meet the requirements of this appendix, prepared by or under the supervision of a registered professional engineer.
3. If fire-fighting services are available, the subdivider shall provide a letter from the local fire authority having jurisdiction, which states:
  - a. rate in gallons per minute that water may be delivered to the fire by tanker service from the fire authority, if applicable; and
  - b. distance and anticipated time of travel to the fire