Water Supply

Water supply was identified as a top priority of the residents of Douglas County throughout the public outreach process for the 2030 Comprehensive Master Plan. Reliance on the use of groundwater and the need for a sustainable water supply were identified as specific concerns. Although Douglas County is not a water provider, elected officials, appointed officials, and County staff are working closely with several groups to seek County-wide solutions.

Historically, neither Douglas County nor the State of Colorado has required new developments to utilize renewable water resources; therefore, a majority of the water providers in the County rely on groundwater (a non-renewable resource) as their primary source of water supply. It is projected that at some time in the future the cost of surface-water supplies will be equal to, or less than, the expense of continued groundwater usage.

The Douglas County Water Resource Authority (DCWRA, www.dcwater.org) was established in 1992 to bring together Douglas County water providers to address long-term water needs. The DCWRA has worked diligently on extending groundwater supplies by promoting water conservation and water use efficiency to the residents of Douglas County.

In 2000, the South Metro Water Supply Study Board was created by the DCWRA. It was from this group that the South Metro Water Supply Authority (SMWSA, www.southmetrowater.org) was created in 2004. The formation of SMWSA has demonstrated a cooperative regional approach in finding sustainable water for both Douglas and Arapahoe Counties.

The Rural Water User Group has been working with Douglas County since 2005 in an effort to bring together individual well users and smaller water districts. The focus of this group has been on extending groundwater supplies and ensuring that their water supply can be sustained.

Sustainable water is imperative to the future of Douglas County. This Plan incorporates stringent water policies, because the County’s future hinges on ensuring its residents a safe, reliable, and sufficient water supply. Unlike other natural resources, such as gas or coal, there is no substitute for water.

THE NEED TO PROVIDE WATER SUPPLY STANDARDS

In 1997 the County Planning Division hired the services of a water consultant to advise staff, the Planning Commission, and Board of County Commissioners on water supply plans for land use applications. The consultant was retained to assist staff in developing water supply standards, based upon geologic and hydrologic conditions.

These standards were integrated within the County’s Zoning and Subdivision Resolutions. A component of these standards, the “Water Supply-Overlay District” Map (Map 8.1) is reproduced within this Plan. It depicts the identified “water supply zones” which represent the four types of geologic and hydrologic conditions within the County. These zones include the Pike/Rampart, Margins A and B, and the Central Basin. Each zone has differing water supply standards in order to appropriately guide land use decisions based upon the available water supply within the specific location within the County.
The Colorado Revised Statutes provide that the Board of County Commissioners shall not approve subdivisions without evidence “that definite provision has been made for a water supply that is sufficient in terms of quantity, dependability, and quality to provide an appropriate supply of water for the type of subdivision proposed” (C.R.S. §30-28-133 (6)(a)). The statute does not define “quantity, dependability, and quality.”

In the past, land-use applicants in Douglas County have submitted water supply plans demonstrating the amount of water permitted to be extracted by well permits issued through the State Division of Water Resources. A discrepancy often exists between the legal evidence and the physical conditions. The written documentation provides evidence that sufficient water rights exist on paper and establishes the written legal right to extract water, but does not provide evidence that the water physically exists in sufficient quantity for the development and that the supply will be dependable over the long term.

The County’s water supply standards help address and evaluate the availability of the water necessary to serve new developments. (Please refer to Section 18A of the Douglas County Zoning Resolution for more information on water supply standards.)

Both the physical realities and the legal framework for development of water supplies are complex. Significant additional resources are now available, including the web site of the Colorado State Engineer’s Office (www.water.state.co.us), which can provide more in-depth information concerning these issues. A brief overview of some of the key concepts of water supply are presented below.

GROUNDWATER HYDROLOGY

Two distinct geologic strata underlie portions of Douglas County, the sedimentary rock of the Denver Basin in the east, and the pre-Cambrian granitic rock of the Pike National Forest and the Rampart Range (Pike/Rampart) in the west.

Beneath the surface of the earth are layers of rock, which are both porous and permeable and which provide a large groundwater storage reservoir, or aquifer, through which water may move relatively easily. The Denver Basin is defined as the area characterized by the presence of four major bedrock aquifers. These are the Dawson aquifer, Denver aquifer, Arapahoe aquifer, and Laramie-Fox Hills aquifer (Map 8.2).

The Denver Basin underlies a 6,700 square-mile area extending from Greeley to the north to Colorado Springs to the south, and from the Front Range in the west to Limon on the east. Approximately 485 square miles of the Denver Basin underlies Douglas County (Map 8.2).

GOAL 8-1: PROLONG THE LIFE OF GROUNDWATER RESOURCES.

OBJECTIVE 8-1A

MINIMIZE WATER CONSUMPTION IN RESIDENTIAL AND NONRESIDENTIAL DEVELOPMENT.

POLICY 8-1A.1
Strongly encourage landscape design that minimizes water consumption, such as xeriscape and using native plant types, in new and existing development.

POLICY 8-1A.2
Limit the size and location of irrigated landscapes, such as turf grass areas.

POLICY 8-1A.3
Encourage compact development patterns that conserve water resources.

POLICY 8-1A.4
Encourage homeowners associations, special districts, developers, and residents to implement standards that promote conservation practices.

**POLICY 8-1A.5**
Support development that conserves water.

**OBJECTIVE 8-1B**
**MAXIMIZE THE EFFICIENT USE OF WATER.**

**POLICY 8-1B.1**
Strongly encourage development to reuse and/or recycle water.

**POLICY 8-1B.2**
Encourage new development to have the capability of using a conjunctive use system.

**POLICY 8-1B.3**
Encourage the use of treated wastewater and recycled water, if available, for intensive industrial uses and on-site landscape irrigation.

**OBJECTIVE 8-1C**
**CONTINUE RESEARCHING GROUNDWATER SUPPLIES.**

**POLICY 8-1C.1**
Douglas County should actively support the US Geological Survey and Colorado Division of Water Resources and other institutions in their programs to monitor groundwater usage, water-level declines, pumping rates, and similar conditions affecting groundwater supply.

**POLICY 8-1C.2**
Endorse efforts to better define and protect aquifer recharge areas.

**OBJECTIVE 8-1D**
**ENCOURAGE DEVELOPMENTS TO HAVE SUSTAINABLE WATER SUPPLIES.**

**POLICY 8-1D.1**
Encourage water providers, developers, residents, and elected officials to support efforts to provide sustainable water supplies and promote groundwater conservation.

**POLICY 8-1D.2**
Promote the acquisition and development of sustainable water supplies.

**POLICY 8-1D.3**
Explore further opportunities to bring renewable water into Douglas County.

**GOAL 8-2: ENSURE NEW DEVELOPMENT CAN PROVIDE A SUFFICIENT WATER SUPPLY.**

**OBJECTIVE 8-2A**
**ENSURE WATER SUPPLIES FOR NEW DEVELOPMENT ARE SUFFICIENT IN TERMS OF QUANTITY, DEPENDABILITY, AND QUALITY.**

**POLICY 8-2A.1**
Ensure that land use applications address water supply standards which include water quantity, dependability, and quality.
POLICY 8-2A.2
Encourage special districts to provide service to adjacent development.

POLICY 8-2A.3
Encourage new districts to implement sustainable water plans.

POLICY 8-2A.4
Discourage high capacity wells which could potentially impact rural wells.

GOAL 8-3: CREATE A COUNTY-WIDE AND REGIONAL LONG-TERM WATER PLAN.

OBJECTIVE 8-3A
DEVELOP AND MAINTAIN PARTNERSHIPS WITH COUNTY-WIDE AND REGIONAL WATER PROVIDERS.

POLICY 8-3A.1
Work with municipalities, other counties, water providers, and user groups in planning for long-term water supplies.

POLICY 8-3A.2
Encourage local leaders to work together to take a pro-active approach in creating a sustainable water supply.

POLICY 8-3A.3
Encourage water providers to work together.

GOAL 8-4: PROMOTE PUBLIC EDUCATION AND PUBLIC AWARENESS ABOUT WATER SUPPLY ISSUES.

OBJECTIVE 8-4A
PROVIDE WATER SUPPLY INFORMATION TO THE PUBLIC.

POLICY 8-4A.1
Initiate public education programs on water issues in concert with appropriate agencies.

POLICY 8-4A.2
Ensure that information about water is readily accessible and available (i.e., on the internet and at Douglas County offices.)