

## Community Facilities Section 6

### INTRODUCTION

For the purposes of this plan, the Community Facilities Section will focus on municipal water resources and water, wastewater, and treated effluent utilities in the planning area. City of Carlsbad ground water rights are finite and can only be increased either through the transfer or purchase of additional rights. Through capital improvements planning, the City continuously monitors, maintains, and improves the infrastructure of these utilities.

There has been significant recent resource and infrastructure planning in the areas. A 40-year water plan was completed in 1995, and subsequent water and wastewater plans were written in response to its recommendations in the same time period. A water conservation plan preceded this work in 1993. In 2001, a Regional Water Plan for the Lower Pecos River Valley was completed. Most recently the City has been in the process of implementing a well-head protection program in order to protect the quality of its water supply and to keep it free from possible pollutants. The discussion that follows reflects those recent planning efforts.

### 6.1 EXISTING CONDITIONS

#### WATER RESOURCES

The City of Carlsbad has access to three water resources: sub-surface water located in the Capitan Reef and the Ogallala Aquifer and surface water from the perennial Pecos River.

The great Capitan Reef, a limestone reef formed millions of years ago, forms the major geologic feature of the Carlsbad area and provides a reliable source of water. It is also responsible for the creation of the Carlsbad Caverns. All of Carlsbad's municipal water comes from wells drilled into the Capitan Reef Aquifer. The aquifer is a highly fractured and cavernous limestone formation that curves through Carlsbad and on into Texas. The portion of the aquifer mined by the City for use in the Carlsbad Municipal Water

System is known as the Carlsbad Underground Water Basin. Two rural water cooperatives in the planning area also exploit water rights in the basin: the Otis Water Coop and the Happy Valley Water Coop.

Further to the east, the great Ogallala Aquifer (known as the Lea County Declared Underground Water Basin) provides water to the city-owned Double Eagle Water System. This system, separate from the municipal system that delivers water to residences and businesses in Carlsbad, provides water to stock tanks, oil and gas producers, Brantley State Park and the Waste Isolation Pilot Plant. There is a connection between the Double Eagle Water system and the municipal water system, but it is used only in emergencies and is limited in its capacity to deliver water to the City's Municipal System.

At this time there is no evidence to suggest that the Capitan Reef is declining due to pumping. Water quality has remained constant since 1963, indicating that water withdrawn from the aquifer is coming from recharge rather than from more saline pools of water below the City's pumping level. The water supply remains free of contamination from pollutants.

Carlsbad also holds significant surface water rights from the Pecos River. The flow in the river as it passes through Carlsbad results from springs in the Capitan Reef. Rights are principally authorized for agricultural irrigation, but the city also relies on the river as an important amenity. The City has committed significant resources to creating a linear river park, the Pecos River Park that surrounds and incorporates the Pecos River.

The interstate Pecos River Compact requires New Mexico to deliver water to Texas. Approximately 15% of the water supply in the Lower Pecos Valley is subject to delivery requirements. Because the City's surface rights

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have not yet been fully adjudicated, the City is affected by this requirement.

The status of two endangered species, the Pecos Bluntnose Shiner and the Pecos Pupfish (both species are fish) and the designation of the river as critical habitat may impact the City. Recovery plans include the provision of minimal river flows below the Brantley Dam, currently causing no detriment to the city.

### Water and Wastewater Utilities

Maps 3 and 4 document water and wastewater service areas by utilities operating in the planning area.

Map 3 depicts the service areas (describes as parcels within 100 feet of current utilities) of the Carlsbad Municipal Water System, the Happy Valley Water Coop, and the Otis water Coop. This map also shows the treated effluent system that provides gray water for the irrigation of the municipal golf course. The City uses treated waste water effluent, or gray water, to irrigate the municipal golf course and to return water to the Pecos River.

The map shows that within the developed areas of Carlsbad, municipal water service is nearly universal. It also shows that the City serves areas of adjacent unincorporated Eddy County, specifically the La Huerta Area directly north of the central business district on the opposite side of the Pecos River. Residents outside these service areas depend on domestic wells for potable water as regulated by the Office of the State Engineer.

The greatest potential for growth in the City's water service areas comes from the Happy Valley and Otis Water Coops. If either or both of

these systems experiences difficulty, as the La Huerta Coop did, in continuing to meet the service needs of subscribers, they may seek to be acquired either by the City or to have the City sell them water. The City already sells water to the Otis Water Coop. Both the Otis Water Coop and the Happy Valley Coop are in the position of

needing to secure additional water rights if they are to serve additional subscribers. The State Engineer alleges that the Happy Valley Coop has diverted water in excess of its rights, despite the Coop's having acquired additional rights from Eddy County.

Map 4 depicts the service area for wastewater or sewer utility. Sewer service is limited to areas within Carlsbad's municipal limits and is not universally available. Residents of unincorporated Eddy County and Carlsbad City outside of the service area rely on septic systems regulated by the New Mexico Environment Department, which has established a minimum lot area of 0.75 acres as a requirement for septic system use.

## 6.2 GOALS AND OBJECTIVES

### Community Values

Water remains a highly valued and highly contested commodity in the planning area. Carlsbad's past and its future are linked to the provision of water resources and utilities for agricultural, industrial, and residential uses. While the City of Carlsbad relies ultimately on ground water for its municipal uses, hydraulic connections between the aquifer and the river - a river impacted by both interstate agreements and federal preemption, result in a critical concern around water resources.

Nevertheless, the possibility of acquiring additional sub surface water rights remains a possibility, and the city has effectively managed its utilities and planned for resource conservation. The City has been reluctant to either require the surrendering of domestic water rights or to require annexation as a condition of

municipal water service provision. New Mexico communities commonly use both of these tools as way of managing both the fiscal impacts of service provision and resource allocation.

Because they are located in unincorporated areas of Eddy County, the quality of development

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in areas served by two remaining water coops has been largely unregulated and is generally poor. Both utilities appear to have limited capacity to deal with significant resource shortages and infrastructure failures. The septic systems they rely on for wastewater management are also subject to failure. These systems are designed to have a lifetime of 20 to 30 years, under the best conditions. Eventually, the soil around the absorption field becomes clogged with organic material, making the system unusable. Relocation is not an option on any but the larger lot subdivisions. Saturated fields pose a public health problem and a potential hazard to subsurface water resources.

### 6.3 GOALS AND OBJECTIVES

Community facilities goals and objectives were identified principally through the conversations held with the participants of the community facilities focus group, the steering committee, city and county staff, and through a review of the City's Capital Improvements Program

#### Goal 1

The City of Carlsbad should secure additional water rights as necessary during the planning period to allow for economic development and community growth.

- The City should secure additional subsurface rights in the Carlsbad Underground Water Basin as is necessary to support growth during the planning period and as they become available.

#### Goal 2

The City should continue to implement water conservation measures in order to achieve 10% conservation during the 40-year water planning period.

#### Goal 3

The City should secure financing to expand use of its treated wastewater effluent program.

#### Goal 4

The City should seek to expand wastewater services as finances permit to areas of the community not being served.

#### Goal 5

The City should attempt to mitigate the negative impacts of unregulated development within the planning area, including areas served by rural water coops.

#### Goal 6

The City should consider the cost and benefits of the provision of municipal services to non-city residents, especially to residents of adjacent unincorporated Eddy County who are likely to avail themselves to the full array municipal services.

### 6.4 POLICIES

The City of Carlsbad will periodically update its 40-year Water Plan (1995), its Water Conservation Plan (1993), and its Water and Wastewater Facilities Plan.

The City of Carlsbad will consider developing annexation and water rights acquisition policies in order to make informed decisions about utility service provision.

The City of Carlsbad and Eddy County will cooperate in the regulation of development in areas of unincorporated county adjacent to Carlsbad to ensure that future residential areas are appropriately sited and supplied with adequate infrastructure developed to appropriate standards.

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The City of Carlsbad will secure financing for expanding water, wastewater, and treated effluent services as recommended by its facilities plans.

The City will initiate a comprehensive public education program about water conservation practices and initiate water conservation practices in order to achieve 10% conservation within the 40-year water-planning period.

### 6.5 IMPLEMENTATION

The time is already approaching for the City of Carlsbad's Department of public Works to consider updating its 40 Year Water Plan, its Water Conservation Plan, and its facilities plans. The City already includes water and wastewater facilities capital improvement goals in its capital improvements plans. The Governing Body should refer the development of annexation policies to the City Planning Commission, who should receive technical assistance from the Department of Public Works, the City Attorney, and the Community Development Department in their recommendations to elected officials.