

# SERVICE AREA PROFILE

## GEOGRAPHY, HISTORY & CLIMATE

The City of El Paso, the sociopolitical center of El Paso County and of West Texas, has a distinct culture, climate, and supply of resources that makes water consumption unique among similar municipalities in the desert



southwest of the United States. El Paso is located in the northern extreme of the Chihuahuan desert, and lies on the frontier of three states, two countries, and three diverse water supplies. The upper Rio Grande valley forms a natural crossing between the Chihuahuan Mountains to the south and the Franklin Mountains (the southern edge of the Rocky Mountains) to the north. The region, consisting of El Paso, Texas; Ciudad Juárez, Mexico; and Las Cruces, New Mexico, is home to slightly more than two million people.

The City's name can be traced to the Spanish *El Paso Del Norte*, or the "pass of the north." During the 16<sup>th</sup> Century, Conquistadors such as Alvar Nuñez Cabeza de Vaca, Francisco Vásquez de Coronado, and Don Antonio de Espejo passed through the area in the name of the Spanish crown, but typically were met with resistance by the local natives. Most explorers passed right on through, looking for the fabulously rich "Seven Cities of Ciboloa",



and chasing legends of lost gold. In 1998, the City marked the quadricentennial celebration of one who stayed, marking the 400<sup>th</sup> anniversary of Don Juan de Oñate's crossing of the Paso del Norte and forming the first permanent settlement in the area. That year the El Paso settlers marked the first Thanksgiving in North America, some 23 years before the better-known feasts in Massachusetts in 1621. When the feasting ended, Oñate took possession of all lands watered by the Rio Grande. Onate's El Paso would become a major

metropolis in Texas three centuries later. The nickname of “The Sun City” is well earned, as El Paso enjoys an average daily temperature of almost 70° and over 300 days of sunshine each year. It plays host to the annual Sun Bowl college football game second only to the Rose Bowl as the oldest continuous bowl game as well as a college basketball tournament and parade also associated with the Sun Bowl. Low humidity and an average annual rainfall of eight inches help to make the Sun City a twelve-month-a-year attraction. One of only two counties of the 254 in the state of Texas located in the Mountain Time zone, El Paso is actually representative of several topographies. The Rocky Mountains reach their southern end in the area. The City’s average elevation is 3,762 feet above sea level, climbing as high as 7,200 feet. The nearly 250 square miles of incorporated land is part of the junction between Mexico, New Mexico, and Texas and also includes lush farmland along the Rio Grande. The river has actually been tamed from its historical might. Called the Rio Bravo in Mexico, the Rio Grande’s origin is snowmelt from Colorado and New Mexico. It is the natural boundary between the United States and Mexico from El Paso to the Gulf of Mexico. To help settle a dispute over who gets to use its water, the federal government eventually intervened. On December 2, 1905, Secretary of the Interior Ethan A. Hitchcock authorized the Rio Grande Project. In conjunction with the formation of quasi-governmental water districts in southern New Mexico and in El Paso County, ground was broken on the biggest project of its kind to date—to build a series of dams and canals over hundreds of miles.



Running linear to the Rio Grande River in New Mexico and Texas with a maximum width of 4.5 miles, the Project extends 165 miles north and forty miles southeast of El Paso, Texas. The water system for this narrow oasis features the three hundred foot tall Elephant Butte Dam and its smaller companion Caballo Dam, six diversion dams, 141 miles of canals, 462 miles of laterals, 457 miles of drains, and a hydroelectric plant. The Rio Grande flows through narrow gorges requiring diversion and canal systems for three valleys: the Rincón, Mesilla, and El Paso. This necklace of fertility blankets 178,000 acres in Doña Ana, Sierra and Socorro Counties in south central New Mexico and the City and County of El Paso. Sixty percent of Project lands are in New Mexico and the remaining 40 percent are in Texas. Supplemental drainage provides water for 18,000 acres in the Hudspeth County (Texas) Conservation and Reclamation District. Subsequent agreements between the United

States and Mexico solved not only the Mexican allotment but also a disputed piece of territory in central El Paso.<sup>1</sup>

## DEMOGRAPHICS AND SOCIOECONOMIC

El Paso is currently the sixth largest city in Texas and the 19<sup>th</sup> largest city in the United States. El Paso County has an estimated population of over 850,000 people with another 1.4 million in El Paso's sister city of Juarez, Mexico. With a population of over 220,000 in Southern New Mexico, the El Paso region constitutes the largest international border community in the world. With expansion of Ft. Bliss, an additional 200,000 new residents will live in the El Paso region by the year 2025.

The El Paso Tri-State region is the fifth largest manufacturing center in North America. In 2012, *maquiladoras* in Cd. Juarez employed over 250,000 workers, representing over 20 percent of the total maquila jobs in Mexico. With more than 40 industrial parks and over 70 Fortune 500 companies with a presence in Ciudad Juarez, roughly 25 percent of Mexico's total production sharing output is manufactured in our sister city. The success of the maquila program has allowed the El Paso region to gain a globally competitive advantage in the manufacturing industry. The maquiladora industry is highly dependent on the strength

of U.S industrial production, which began to cool down in the latter half of 2008. As a result, the Juarez maquiladora association's payroll expansion slowed for the subsequent years. However, since then, a substantial improvement has emerged and brought maquiladora employment levels close to the peak employment figures seen in summer of 2007.

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***Major Employers (excluding retail & government)***

*T & T Staff Management L.P.*  
*University Medical Center*  
*Dish Network*  
*Alorica*  
*Texas Tech University Health Sciences Center*  
*GC Services*  
*RM Personnel*  
*Del Sol Medical Center*  
*Automatic Data Processing, Inc.*  
*El Paso Electric Company*  
*OSP Group LLC*  
*Las Palmas Medical Center*  
*West Customer Management Group*  
*Union Pacific Railroad Co. Inc.*  
*Datamark*  
*Coca-Cola Enterprises*  
*Western Refining*

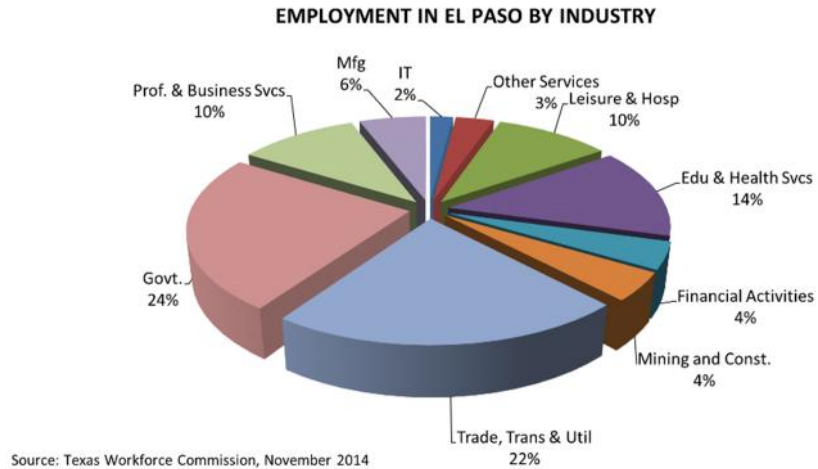
*Source: Hoovers database, verified by City of El Paso,  
Economic & International Development, November 2014*

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<sup>1</sup> Autobee, Robert. "The Rio Grande Project." United States Department of the Interior, Bureau of Reclamation. Denver, CO (1994). p. 2.

The El Paso economy is slowly transitioning into new industries with less dependence on the traditional manufacturing and industrial sectors. According to Forbes Magazine, El Paso ranked among one of the best cities for income growth in the past five



years and in the that time, incomes for college graduates have steadily grown more than any other major metropolitan area. Pay has increased for educated El Pasoans who are taking advantage of increased job opportunities in the higher income earning areas in the public sector. Altogether, the El Paso economy gained over 5,900 jobs during the year, representing an annual growth rate of 2.0% as the local economy continues to grow. El Paso has four international ports-of-entry bordering Cd. Juarez, Chihuahua and one international airport with a Foreign Trade Zone located adjacent to the airport. Twenty-five percent of all trade between Mexico and the U.S. travels through the El Paso ports-of-entry. The future of manufacturing in El Paso will likely arise from the attraction of research and development opportunities created by significant events in military and healthcare that will change the dynamics of the regional economy.

### **BRAC Expansion**

Due to the Base Realignment and Closure (BRAC) decisions made in 2005, El Paso is embarking on a very significant period of growth. In 2013, Fort Bliss realized a net increase of over 37,000 active duty personnel – the largest net gain from any military installation in America. The Army projected approximately 16,000 spouses and 21,000 children will accompany these personnel as they transition to El Paso. An investment of over \$5.0 billion for construction projects will support the 300% base population increase by 2015. The long term economic impact over the next few years is estimated at \$7.4 billion, an increase of nearly 15% in El Paso’s gross regional product for the El Paso area.

Fort Bliss is the first military post in the nation to be designated a Center for Renewable Energy, which means more federal funding and private sector investment which could total to more than \$400 million for the local economy. By 2017, Ft. Bliss will utilize solar power,

geothermal power and a waste-to-energy facility. These renewable sources of energy could provide enough power for the base to operate completely independent of the local power grid.

### **The University of Texas at El Paso**

El Paso is home to the University of Texas at El Paso (UTEP), the second oldest member of the University of Texas System. It was founded in 1913 and became part of the U.T. system in 1919. The UTEP campus is located on the foothills of the southern tip of the Rocky Mountains, and its architecture is derived from the temples in the Himalayan kingdom of Bhutan. UTEP offers 70 bachelors and 76 master degree programs along with 20 doctoral programs. UTEP's enrollment has steadily increased for eight straight years and in the fall of 2014, enrollment surpassed the 23,000 student mark for the first time in its history.



In the latest annual graduate program rankings for Hispanics, Hispanic Business magazine ranked the UTEP graduate business program second and the graduate engineering program third among all U.S. colleges and universities. As the nation's only major research university serving a student population that is predominantly Mexican-American, UTEP has also been named one of the top five Hispanic serving institutions to receive federal research money, according to the National Science Foundation (NSF).

With over \$70 million in annual research spending, UTEP is dedicated to becoming one of Texas' next national research (Tier One) universities. It is a designation that will boost the region's economy and quality of life, while offering a wealth of opportunities for undergraduate and graduate students. To this end, the campus is transforming as UTEP makes unprecedented investments in its research and academic infrastructure.

### **The Paul L. Foster School of Medicine**



The Paul L. Foster School of Medicine is the first four-year medical school on the U.S./Mexico border and is the second new medical school in the country in 25 years. The estimated economic impact of the school is expected to improve the local economy by \$1.31 billion by the end of 2013. The medical school, part of the Texas Tech University system,

received over 2,500 student applications for only 40 positions. The first class of students began classes during the 2009 fall semester. In the coming years, the medical school will be among the catalysts for achieving first-rate medical care in the region, training more physicians and delivering quality health care to El Pasoans.

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In addition to a strong, diverse economic base, in 2014 El Paso was ranked as one of the safest large cities in the United States with a population of over 500,000, according to the Morgan Quitno Corporation. El Paso has been ranked in the 2<sup>nd</sup> or 3<sup>rd</sup> spot of Safest Cities since 1997 and in 2011 ranked as the safest city. The overall crime rate has continued to decrease in recent years, despite the city's consistent growth. El Paso is also one of the most affordable major cities in the U.S. According to the American Chamber of Commerce Research Association (ACCRA), the cost of living in El Paso is approximately 91.6% of the national average in 2014, a favorable ranking compared to most cities in the Southwest region and most cities of similar size and demographics nationally.

In 2010, El Paso was named as a 2010 All-America City. The All-America City Award, given to ten communities each year by the National Civic League, is considered the "Nobel Prize" of city awards. The award recognizes neighborhoods, villages, towns, cities, counties and metro regions for outstanding civic accomplishments. To win, communities have to demonstrate an ability to address serious challenges with innovative, grassroots strategies that promote civic engagement and cooperation between the public, private and nonprofit sectors.



The city of El Paso's redevelopment and revitalization efforts of Downtown El Paso have gained national recognition. In July of 2008 the Wall Street Journal recognized El Paso's redevelopment efforts in an article titled "Success Stories – A look at seven places that took different approaches to economic development and came out ahead." With more than

\$204 million invested in Downtown by the public and private sector, there are over 14 major projects underway. The relocation of the Triple A baseball team from the San Diego Padres farm club to El Paso, called for the building of a downtown baseball stadium completed in the spring of 2014. The Chihuahuas began playing in the spring of 2014.

Growth is evident in all parts of El Paso. The city has experienced healthy growth in the challenging economic environment and this will remain the case during the next year. The university and military base are two examples of multi-billion dollar expansion that have already started and will carry on through 2015.

# UTILITY PROFILE

## HISTORY OF EL PASO WATER UTILITIES

Although the utility has been around in some fashion or another for as long as the City of El Paso has, it was not until 1952, when the **Public Service Board (PSB)** was created, that **El Paso Water Utilities (EPWU)** took its present form. With the leadership and foresight of Mayor Fred Hervey to address El Paso's water demands and make water issues as apolitical as possible, the Public Service Board was created through city ordinance. El Paso City Ordinance No. 752, adopted May 22, 1952, established a five-member board of trustees known as the "Public Service Board" which was given the complete management and control of the city's water system. The ordinance was later amended to increase the size of the board to seven members. The board of trustees consists of the Mayor of the City of El Paso and six residents of El Paso County, Texas. With the exception of the Mayor, all other trustees are appointed by the City Council and serve staggered four-year terms. The PSB meets the second Wednesday of each month, except during holiday seasons, at the Utility's administrative office.

For financial reporting purposes, the El Paso Water Utilities is considered a component unit of the City of El Paso. The PSB operates and manages EPWU on behalf of the City of El Paso. It adopts an annual combined operating, capital, and debt service budget with associated rates and fees for services; and also issues updates to its Rules and Regulations, which have the force of law. The Utility does not issue *ad valorem* property taxes against an assessed valuation (2012) of over \$30 billion. Instead, the PSB recovers the cost of providing water and sewer services primarily through user charges. The Utility endeavors to provide the highest quality water and sewer services to its customers at the most reasonable cost it can. As part of the mission and vision statements of the Board, the Utility strives to balance customer needs with proper resource and financial management as well as regional leadership.

## SOURCE OF SUPPLY

El Paso uses **ground water and surface water for its potable supply**. In 2014 the city produced about 115,500 acre-feet per year of potable water for its customers. The ground water sources—underground aquifers tapped by wells—included the Hueco **Bolson** which supplied 58% of total demand and the Mesilla Bolson 22%. *Bolson* is Spanish for



“pocket.” 20% was supplied by surface water from the Rio Grande. El Paso also uses reclaimed water to supply non-potable demands. Over 8,000 acre-feet per year of reclaimed water is used for non-potable demands including turf irrigation and industrial uses. The groundwater capacity is approximately 164 **million gallons per day (MGD)** including desalinated brackish groundwater, and surface water capacity is 100 MGD. The amount of surface water that is available each year is variable depending drought conditions. In the event of limited surface water, due to drought conditions, the city will pump more groundwater from its wells. Historically, the Utility relied heavily on groundwater because it can be pumped virtually at drinking water quality standards, whereas river water requires treatment to remove sediment, naturally occurring organic matter, and other compounds. But because ground water supplies are invariably finite, the PSB has engaged a multi-pronged solution to address and ensure El Paso’s future water supply. The PSB owns land in the County for the purposes of water rights, and currently leases additional acres, also for the purposes of water rights. In addition, the Utility has third party agreements with the El Paso County Water Improvement District #1 and the Bureau of Reclamation that allows for the purchase of additional surface water to supply the Jonathan Rogers **Water Treatment Plant (WTP)**. In addition, the Utility has built a **desalination** plant in east El Paso. This desalination plant, which is a joint project with Fort Bliss, is designed to treat brackish groundwater. It can produce 27.5 mgd of potable water and is currently treating about 4 mgd.

## **WATER CONSERVATION**

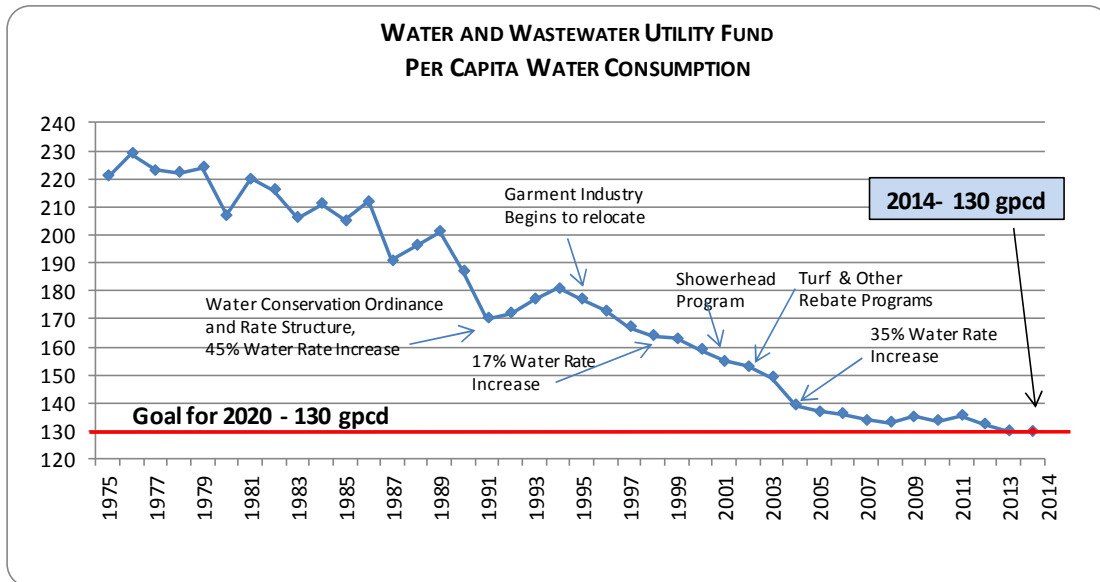
With its sunny days and mild temperatures, El Paso is truly a desert oasis. But because rainfall averages only 8 inches per year, water conservation is essential to the city’s economy, environment and quality of life.

### **Water Use**

El Paso is located in the Chihuahuan Desert and water use fluctuates with the weather; it peaks in the summer when days are typically long, hot and dry. Weather also affects surface water flows, which provided only 20 percent of the municipal water supply in 2014. The surface water treated in El Paso comes primarily from snowmelt runoff in southern Colorado and northern New Mexico. It is stored in the Elephant Butte Reservoir and released during the irrigation season. However, wind, above-average temperatures and below-average precipitation can reduce runoff. This affects the amount of water stored in the reservoir and available to EPWU. In 2014 due to the continued river drought the Utility

was allotted only 24,000 acre feet of river water compared to an average year when over 60,000 acre feet is treated.

Groundwater was El Paso's primary source of supply for many decades, and heavy pumping led to declining groundwater levels in many areas of the Hueco Bolson. With finite water resources and a growing population, EPWU began an aggressive water conservation program in 1991. The objective was to reduce water consumption from 200 gallons per capita per day (gpcd) to 160 gpcd by the end of 2000.



EPWU combined education, enforcement and incentives to teach El Pasoans to conserve water, and consumption had fallen to 159 gpcd by December 2000. The new target, 140 gpcd by 2010, was surpassed in 2004, and the goal now is to achieve overall per capita water consumption of 130 gpcd by 2020 which was achieved in 2013. Per capita consumption for 2014 was also 130 gpcd.

### Water Conservation Ordinance

In 1991, the City Council adopted the Water Conservation Ordinance, which makes wasting water a violation. The plumbing code was also changed to require the installation of low-flow models for all new indoor plumbing fixtures, including showerheads, faucet aerators, and toilets.

The Water Conservation Ordinance states that:

- Landscaped areas can be watered up to three times a week throughout the year based on even/odd addresses. Water flowing into streets or rights-of-way is prohibited.

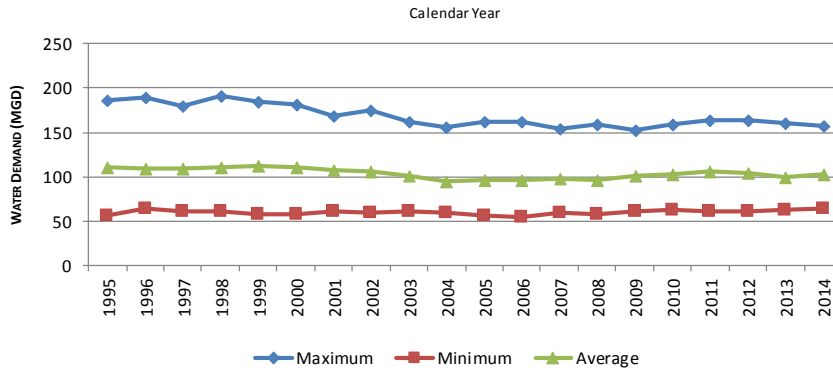
- ❑ From April 1 through September 30, outdoor watering is prohibited from 10 a.m. to 6 p.m.
- ❑ Using a hose to wash sidewalks, driveways, patios, and other non-porous surfaces is prohibited except when eliminating dangerous conditions.
- ❑ Violations are a Class C misdemeanor, and citations are punishable by fines of up to \$500 plus court costs.

In 1995, the city established landscape requirements for commercial properties, including water conservation restrictions and beautification

guidelines. Additional

updates in 2001 prohibited sprinkler-irrigated turf areas in parkways and added tougher enforcement language. Landscape requirements for commercial properties can be found under Title 18 – Building and Construction, Chapter 18.46 Landscape and Chapter 18.47 Irrigation Systems.

**HISTORICAL AVERAGE, MINIMUM, AND MAXIMUM DAY DEMAND**

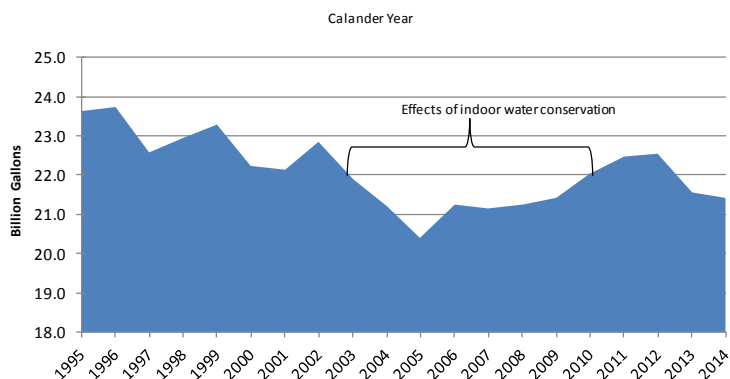


**Incentives**

Every effort has been made to send positive messages and offer meaningful incentives through the Water Conservation Department. EPWU also adopted the recommendations of its Public Working Committee, a group of dedicated individuals who worked closely with staff to evaluate the potential savings of new water conservation programs.

The Cash for Your Commode rebate program offered an incentive to customers who replaced higher-flow toilets with low-flow models. Over 53,700 toilets were replaced. Subsequent programs included distributing free

**ANNUAL WASTEWATER FLOWS**



showerheads and collaborating with El Paso Electric Co. to offer rebates for water-efficient

clothes washing machines and central refrigerated air systems. A popular turf replacement rebate program paid customers for replacing established grass with low-water-use landscaping, and EPWU offered free waterless urinals to nightclubs, restaurants and government offices.

Due to the huge response to the programs and the resulting decrease in consumption, the rebate programs ended in 2007. While the programs were in effect more than 11 million square feet of turf was removed, 14,000 high-water-use washing machines were replaced, 10,300 refrigerated air units replaced evaporative coolers and over 179,000 water-efficient showerheads were distributed.

In 2010, the Utility was approached by the City's Sustainability Department to manage a clothes washing machine rebate funded by a large Federal stimulus grant. The Utility processed a total of 1,110 washing machines rebates under this program, which ended in 2010. In 2012 the utility initiated a second program to distribute free low-flow showerheads to its customers. More than 140,000 showerheads have been distributed in the past two years.

### **Education and Partnerships**

An important part of the conservation program is education. The Carlos M. Ramirez Tech<sub>2</sub>O Water Resources Learning Center offers visitors bilingual information and interactive exhibits that increase awareness of total water management in the Chihuahuan Desert. In addition to being an informal science provider of information, the center hosts conferences, workshops, seminars and school field trips and provides a perfect venue for exchanging information about water resources.

The Water Conservation Department is also proactive in public education campaigns. Staff works with area educators, makes presentations to local schools, and participates in local and regional events and contests. Teachers can request the use of interactive educational kits that have been designed to meet state standards regarding surface and groundwater issues, watershed ecology and many other environmental concepts. The kits include hands-on activities, videos and materials thus enhancing our outreach educational efforts.

Education is also carried out through media campaigns that include billboards, radio and television commercials, and other creative means of encouraging the wise and efficient use of water. For example, a decorated van known as the "Williemobile" promotes water

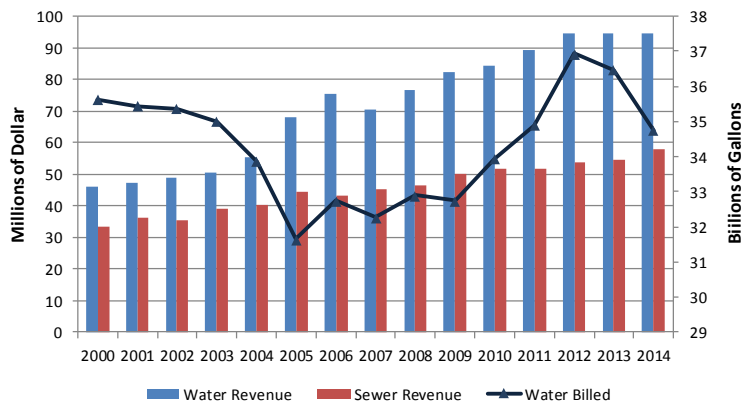
conservation. The van is named after the water conservation mascot, Willie the Water Drop. Staff takes the “show on the road” when participating in city-wide conservation and environmental events or when presenting at area schools.

Ongoing collaborative programs with other agencies have resulted in beneficial and innovative solutions to the continuing education of customers. Examples include monthly public activities and workshops offering information about the environment, practical solutions and tips to conserve water or hands-on STEM related activities for students. Additionally the conservation staff has been successful in obtaining grants from governmental agencies such as the EPA/BECC and the Texas Parks and Wildlife. Such grants have allowed the development and establishment of demonstration sites including fruit trees and a series of keyholes vegetable gardens as well as the pilot program for middle school students to increase awareness of wetlands. EPWU has collaborated with Region 19 Head Start to develop interactive exhibits for the Region 19 Intellizeum, and in cooperation with the Junior League of El Paso, allowed for the development of the Keystone Botanical Garden. Our partnership with the El Paso Zoo culminated with the completion of the El Paso Water Utilities Discovery Education Center which was partly funded by EPWU. Educational programs and events are regularly hosted at the Discovery Center as another venue to deliver our conservation messages.

EPWU’s Conservation Program continues to be recognized and modeled throughout the nation. The Conservation Manager served on the State Water Conservation Implementation Task Force set forth by the 78th Texas Legislature. The final report presented to the Legislature included a state-wide public education campaign proposal and a set of best management practices heavily based on El Paso’s successful program.

**Rate Structure**

In 1991, EPWU implemented an inclining rate structure where the unit price increases as water consumption increases. The graph below illustrates how the Utility uses pricing as both a demand management tool and a way to generate additional revenue.



Municipal water utilities use rate structures and pricing signals as a water management tool in order to decrease non-discretionary uses of water. Many regions facing water shortages have implemented large rate hikes in order to manage water use. The responsiveness to these rate hikes is measured by the price elasticity of water demand. Since water is a precious resource with no close substitutes, the price elasticity of water demand is very low, or price inelastic. This means that as the price of water rises, increases in revenue will more than offset a resulting decrease in consumption, indicating that consumers are relatively unresponsive to small changes in the price of water. In order to send the right price signal to consumers, many water utilities have adopted large rate hikes in order to get the desired response of decreased consumption.

Price elasticity of water also depends on other factors such as precipitation and temperature, household income (the higher the household income, the higher the level of water consumption) and the implementation of conservation outreach programs.

### RECLAIMED WATER



Reclaimed water has also played an increasingly important part in conserving El Paso's potable water supply. Reclaimed water is wastewater that is treated to be suitable for safe use in many beneficial applications, such as industry and irrigation. Although the Haskell Street **Wastewater Treatment Plant (WWTP)** has been providing its effluent to Ascarate Golf Course for irrigation for over forty years, the Utility began making aggressive efforts to expand its reclaimed water treatment and distribution system in 1992. The Utility now provides advanced secondary (98.0% of organic pollution has been removed and it has been 99.99% disinfected) and tertiary (99.9% of organic pollution has been removed

and it has been 99.99% disinfected) reclaimed water to users all over the City, from all four of its wastewater treatment plants. With the expansion of the Haskell Street WWTP reclaimed system the Utility was able to provide service to six parks, three schools, Evergreen cemetery, the City Zoo, the historic Concordia Cemetery complex, and various street medians. The first phase was completed in 2003. Construction of a second phase

was completed in 2006. A third phase was built in 2006 to provide two automated dispensing stations for street sweeping and construction use. In 1999, a golf course was connected to the Northwest Reclaimed Water Project. Two townhome associations, two apartment complexes and one City park were connected to the Northwest Reclaimed Water Project in 2003. In 2005, one townhome association, a medical office building, and two commercial landscapes were connected. The Resler extension medians, one large commercial landscape, an apartment complex, a shopping center, the Northwest Regional Center/Park and Canutillo High School were connected in 2006, followed by the construction of one automated dispensing station. In 2007 and 2008, the Westside Sports Complex and an industrial facility began using reclaimed water for their irrigation and process activities respectively.

The Roberto Bustamante WWTP currently provides reclaimed water to a 10-acre City Tree Farm, which is managed by the Street Department, to Mt. Carmel Cemetery, and to various contractors for construction use. Reclaimed water facilities are in place to serve the Riverside International Industrial Center just east of Loop 375. Mount Carmel Cemetery was connected in 2006 after completion of the pipeline project that extended from the Riverside International Industrial Center to the cemetery. Construction for the expansion of the reclaimed water system in Northeast El Paso to serve the Northeast Regional Park that was completed in 2005. The northeast system (Fred Hervey Water Reclamation Plant) produces tertiary quality reclaimed water for El Paso Electric Company, Painted Dunes Golf Course, Bowen Ranch and the Northeast Regional Park and various contractors for construction use. The remaining reclaimed water is recharged into the Hueco Bolson for aquifer replenishment. These projects are informally called the “purple pipe” projects because of a regulatory requirement to color-coordinate utility lines based on what they transfer. EPWU distributes nearly 2.17 billion gallons of billed reclaimed water per year. Currently there are three golf courses, eighteen parks and ten schools connected to the system as well as six residential and eighteen commercial landscapes; two industries and several roadway medians. The cost-benefit is especially favorable because of millions of dollars in grants from the federal government for these projects and is comparative in costs to other viable new water supply sources.

## WATER AND WASTEWATER SYSTEMS

The Utility owns and operates facilities throughout the City of El Paso, including: water and wastewater treatment plants; water reclamation plants; reservoirs; booster pump stations; wells; lift stations; and thousands of miles of distribution and collection lines. They are outlined below. The water and wastewater map in the Appendix geographically shows the area served by each facility.

### WATER SYSTEM FACILITIES

#### Robertson-Umbenhauer Water Treatment Plants



The Robertson Plant began operations in 1943 with a 20 MGD capacity. The Umbenhauer Plant was later added in 1967, also with a 20 MGD capacity. Together, these two plants are called the Canal Street WTP, and they use conventional treatment technology to purify Rio Grande surface water

(typically March to September, when water is released from Elephant Butte Dam to serve downstream users). The plants can be utilized during the non-irrigation season to blend and treat water pumped from wells. The Canal WTP provides water to central and west El Paso. A major infrastructure renovation was completed in 2004 on these plants that will extend the life of these facilities well into the future. This included the installation of an Ultraviolet Light disinfection system for a portion of the water leaving the plant. Major electrical upgrades were also completed in 2006.

#### Jonathan Rogers Water Treatment Plant



This plant, operational in 1993, was expanded to a total capacity of 60 MGD in 2002. The Utility received a \$14.9 million **Environmental Protection Agency (EPA)** grant through the **Border Environmental Cooperation Commission (BECC)** and NADBank for this

project, which expanded the plant's surface water treatment capacity by 50%. The grant represents approximately 40% of the cost of the total project. The expanded plant, along with a major new distribution line, went online in May 2002.



In addition to the two surface water treatment plants, the Utility's distribution system includes over 74 reservoirs, 215 boosters, 53 booster stations, over 10,000 fire hydrants, and over 2,600 miles of water lines of various sizes, up to 60 inches in diameter. The Utility must operate and maintain the entire system 24 hours a day, seven days a week, and 365 days a year. While infrastructure failures do occur, the Utility ranks among the most reliable in the world. The median number of main breaks as reported by the **American Water Works Association (AWWA)** is one per every 4.2 miles of water line. EPWU averages one per every 14.50 miles of water lines—that's Three times as good! Finally, the Utility has as a part of its system over 169 operational wells.

### **Upper Valley Water Treatment Plant and other Arsenic Facilities**



In 2005 El Paso Water Utilities began operating four treatment plants specifically designed to achieve compliance with EPA's new **maximum contaminant level (MCL)** for arsenic which became effective on January 23, 2006. The four plants have a combined treatment capacity of 41 MGD which results in 96 MGD blended water meeting the MCL. The largest of the four plants is the 30 MGD Upper Valley Water Treatment Plant which uses conventional flocculation/sedimentation/filtration to remove arsenic. The remaining three plants have a combined capacity of 11 MGD and use a granular iron media to absorb arsenic.

### **Kay Bailey Hutchison Desalination Plant**



The Kay Bailey Hutchison Desalination Plant started operations in 2007. A joint project of El Paso Water Utilities and Ft. Bliss, the plant facility is capable of producing 27.5 MGD of fresh water daily. This state-of-the-art facility applies an innovative reverse osmosis technology to convert the brackish groundwater to high quality drinking water. This desalination process not only removes salts, but also is the most comprehensive water treatment technology available, removing other potential pollutants from the water. The water pumped to the desalination plant protects El Paso's and Ft. Bliss' fresh groundwater supplies from brackish water intrusion by capturing the flow of brackish water towards fresh water wells.

## WATER QUALITY

Currently, both surface water and ground water treated by the Utility are monitored and the quality is reported to required public regulatory agencies. Both the EPA and the **Texas Commission on Environmental Quality (TCEQ)** have hundreds of standards for quality and reporting which must be met every day. Other governmental agencies with which the Utility must work closely include the **United States Geological Survey (USGS)**, the **International Boundary and Water Commission (IBWC)**, the Rio Grande Compact Commission, the Department of the Interior's Bureau of Reclamation, and BECC—to name just a few.

El Paso Water Utilities has a long history of awards for compliance in meeting or exceeding standards set forth by the **Safe Drinking Water Act (SDWA)** and other regulatory legislation at the state, federal, and even international level. Since 2004, the Canal and the Jonathan Rogers Water Treatment Plants have been awarded the Partnership for Safe Water Phase III Director's Award. EPWU sends an annual drinking water report to all of its customers in compliance with the EPA's Consumer Confidence Rule. The report describes the Utility's water content with respect to SDWA standards. It is printed in both English and Spanish and mailed to all customers on an annual basis. The Utility must test on a regular basis for many parameters including inorganic compounds, metals, microbiological organisms, synthetic organic chemicals, and volatile organic compounds and report the results to the TCEQ and EPA. Because the Utility, without exception, meets or exceeds all quality requirements and transmits this quality potable water to its customers in a reliable manner, the TCEQ has again recognized the Utility as a "Superior Water System," the highest such designation a Utility can earn in the State of Texas.

## WASTEWATER SYSTEM FACILITIES

### Haskell R. Street Wastewater Treatment Plant



The oldest wastewater facility in El Paso, it was built in 1923. It has since undergone several expansions and upgrades, including a \$22 million upgrade to increase treatment capacity to 27.7 MGD and improve effluent quality and operational efficiencies at the plant, completed in 1999. This plant provides highly treated reclaimed water for

the Central El Paso reclaimed water system, which began in 2003. The plant serves central schools and parks including Ascarate Park and Ascarate Golf Course with irrigation water. This plant has won and continues to win awards for perfect compliance with regulatory permit requirements from the **National Association of Clean Water Agencies (NACWA)**.

Since 1997, the plant has received 11 NACWA Gold Awards for perfect permit compliance. In 2004, the plant received the NACWA Platinum Award for five consecutive years of perfect permit compliance, and in 2007 the plant received the Platinum Eight Award for eight consecutive years of perfect compliance.

In 1994, it was selected as the Texas State and USEPA Region VI winner of the Operations and Maintenance Excellence Award, Large Advanced Plant Category. It has been selling its reclaimed water to the Ascarate Municipal Golf Course for nearly 40 years, and will see its reclaimed water capabilities expanded in phases through the next several years.

### **John T. Hickerson Water Reclamation Facility**



Serving the west side of the Franklin Mountains into the Upper Valley, this plant began operations in 1987 and has since been expanded to its current 17.5 MGD of treatment capacity. Highly treated effluent is either safely discharged into the Rio Grande or transmitted through the Northwest Reclaimed Water Distribution System. With significant Bureau of Reclamation and State of Texas funding assistance, the Northwest Reclaimed System serves Coronado Country Club Golf Course and various parks and schools in west El Paso providing additional, significant savings to the potable water supply. This plant has been nominated for six EPA Operations and Maintenance Excellence Awards, and in 2008 received 1<sup>st</sup> Place in the National Clean Water Act Recognition Awards for Operations and Maintenance Excellence in the Large Advanced Plant category. Since 1997, it has received 6 NACWA Gold Awards for perfect permit compliance. In 2003, the plant received the NACWA Platinum Award for having received five consecutive Gold Awards. In 2013, the plant received the Platinum Fifteen Award for fifteen consecutive years of perfect permit compliance. In 1992, the plant and its personnel were also recognized for their

commitment to safety by being awarded the Water Environment Federation's George W. Burke Award for Safety. In 2008, the plant also received the Texas State, Regional and National winner of the Clean Water Act O&M Awards Program in the Large Advanced Category.

### **Roberto R. Bustamante Wastewater Treatment Plant**



The newest plant in the system, it began operating in 1991 with a 39 MGD capacity. Using traditional technology for treatment, it—along with its neighboring Jonathan Rogers WTP—serves east El Paso. This plant has been honored by NACWA for its perfect compliance as well. Since 1997 the plant has received 12 NACWA Gold Awards. In 2002, the plant was one of 17 Platinum Award recipients in the nation for five consecutive years of perfect permit compliance. In 1994, the plant received second place in the national USEPA Operations and Maintenance Excellence Awards. In 2005, the plant won the Water Environment Association of Texas Plant of the Year Award. Effluent is discharged into either the Riverside Canal or Riverside Intercepting Drain for use downstream. A new large-scale reclaimed water project (online in 1998) with a capacity of two million gallons per day also serves the immediate area. The Utility has begun improvements to the plant's aeration basins that will lead to enhanced treatment to serve continued growth in the area.

### **Fred Hervey Water Reclamation Plant**



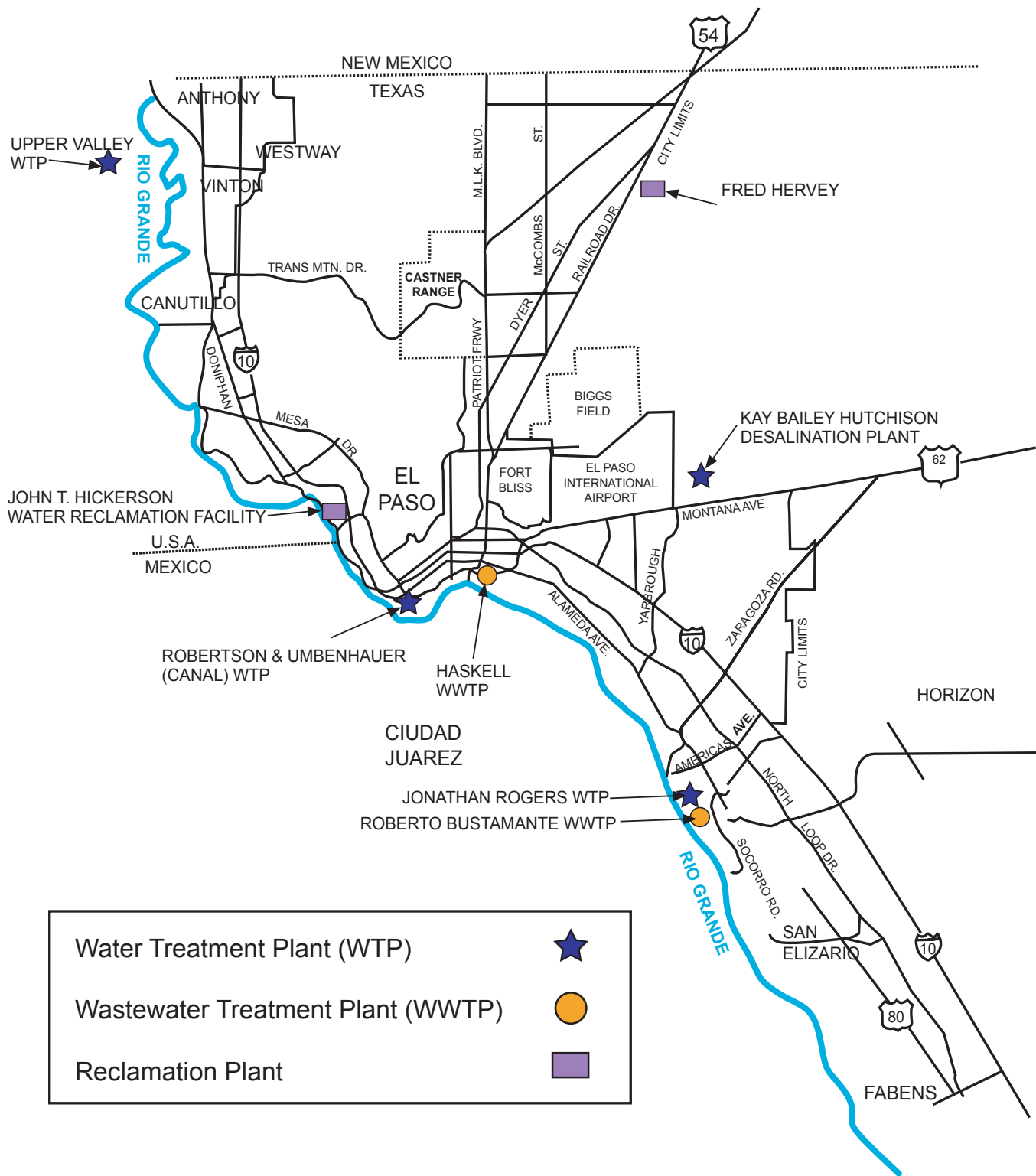
This 12 MGD plant has won not only awards, but also worldwide attention. The plant is essentially a combined water and wastewater treatment plant, which treats wastewater to drinking water quality standards. The treated effluent from this plant is sold to El Paso Electric Company for cooling water, to the nationally renowned Painted Dunes Desert Golf Course for irrigation, to various other customers in the Northeast part of the city, and the remainder replenishes the Hueco Bolson through a series of injection wells and several groundwater recharge infiltration basins. Tours are regularly provided to industry, utility, and academic representatives as one of the model plants of the system. The plant became operational in 1985 and was significantly financed with EPA assistance. The plant is also a crucial part

of the EPWU plan to reduce dependence on groundwater and was featured on the internationally acclaimed PBS series "Water: The Drop of Life". The plant has received numerous awards including: the 1994 AMSA Public Information and Education Award; second place in the 1994 national USEPA Operations and Maintenance Excellence Award, No Discharge category; and the 1998 American Water Works Association's Conservation and Reuse Award. In 1999, the plant received special recognition by the El Paso del Norte Region Mission Possible-Survival Strategies in the category "Protection and Preservation of the Environment." The plant has received 4 NACWA Gold Awards and 2 Platinum Awards for perfect permit compliance under the expanded NACWA Peak Performance Award program since 2006.

The Utility also operates and maintains 75 lift stations and over 2,270 miles of collection lines to keep the sewer system running at peak reliability and meet customer demand. The Water Environment Association of Texas (WEAT) in 2007 awarded the lift stations section with the George W. Burke, Jr. Award for having an effective safety program. In 2007, WEAT awarded the wastewater collection maintenance section with the Medal of Honor for Heroism in recognition for the section's contribution during the flood of 2006.

# El Paso

## Water & Wastewater System



Water Treatment Plant (WTP)	★
Wastewater Treatment Plant (WWTP)	●
Reclamation Plant	■