Water Quality Management Plan

August 2003

PREPARED IN COOPERATION WITH THE
TEXAS COMMISION ON ENVIRONMENTAL QUALITY
AND U.S. ENVIRONMENTAL PROTECTION AGENCY AND THE
LOWER RIO GRANDE VALLEY DEVELOPMENT COUNCIL
Contract #582-3-60206 - 604 (b)

EPA

TCEQ
FORMERLY THE TNRCC

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I. HISTORY, POPULATION AND ECONOMIC CONDITION OUTLOOK

HISTORY

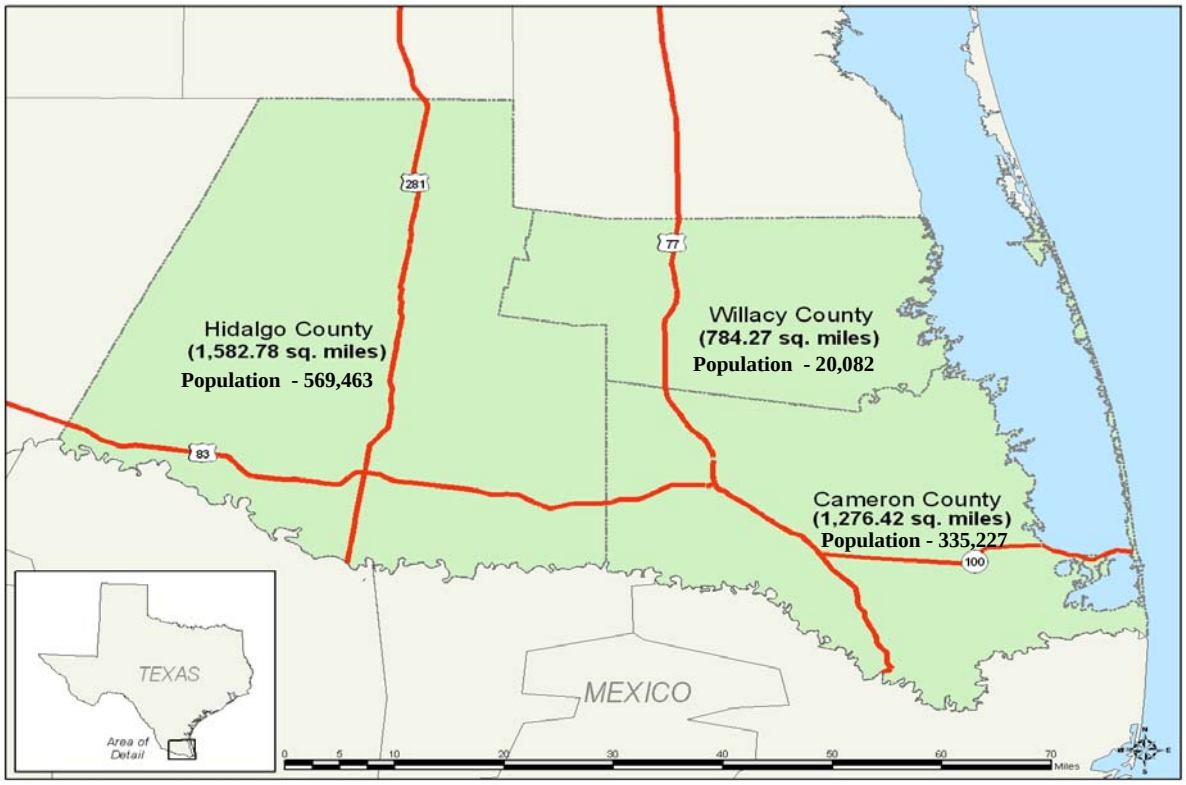
The Lower Rio Grande Valley Development Council (LRGVDC) as part of contract #582-3-60206 with the Texas Commission on Environmental Quality (TCEQ) has prepared the Water Quality Management Plan (WQMP). Preparation of this Plan was funded through grants from the U. S. Environmental Protection Agency (EPA), through the Texas Commission on Environmental Quality (TCEQ). The WQMP will be an important part of the State's Plan because it will identify priority water quality problems and direct implementation measures to prevent water quality problems. It will be submitted to TCEQ for their review and approval. Once TCEQ Staff approves the WQMP, the Final Plan will then be submitted to EPA to get certified and adopted as part of the State Plan. The LRGVDC's WQMP was certified by EPA August 31, 1997. Certification of FY2003 WQMP is still pending and will be updated on an as needed basis.

The Plan will provide the review and analysis of existing and projected population growth trends and industrial and economic development in the Lower Rio Grande Valley, using the most current data available. The WQMP will be used to update wastewater facility needs, provide support for waste load evaluation flow projections and data for permit by TCEQ and EPA staff.

POPULATION

The Lower Rio Grande Valley is a tri-county region that is located in the southernmost tip of Texas, comprised of Cameron, Hidalgo and Willacy Counties. Population for the tri-county region is at 927,772 and continues to grow at a tremendous pace. According to US Census Bureau figures the Valley's population has grown about 38% in ten years from 1990 to 2000. The population in the Lower Rio Grande Valley is expected to continue growing at an estimated rate of approximately 4% per year. The County of Hidalgo currently has a population of 569,463 and stretches to about 1,583 square miles. Cameron County's population is 335,227 with 1,276 square miles and Willacy County's population is 20,082 with 784 square miles. A particular problem for the Lower Rio Grande Valley has been that most of the population growth

has occurred in rural areas of the Valley where property was subdivided and homes were built on small lots with no water, sanitary sewer service or adequate roads and drainage facilities exist. The subdivisions are commonly referred to as "colonias" and are scattered throughout the three counties. There are about 1,000 colonias in the Lower Rio Grande Valley region.



Lower Rio Grande Valley Region

ECONOMIC

The economic well being of the region does not compare favorable to that of the State because the Valley has a higher unemployment rate and a high poverty rate. The unemployment rate for the region is 11% compared to the State's 5%. The poverty rate is more than double that of the State (32.1% vs. 15.4%). Approximately 25-30% of the region's work force is employed in manufacturing, retail or wholesale trade. Over 30% if the dollars spent in retail trade in the Valley originate in Mexico. The LRGV benefits from its

geographical and cultural ties to Mexico and poised for explosive growth due to the continuous influx of people and business to the region. NAFTA's positive impact can be noticed by the regions employment profile. Agricultural is still an important element of the Valley's economy. Another favorable element of the Valley's economy is the Winter Visitors.

LOCATION / CLIMATE

The Region's major public ports and the intercostals can provide ocean-going shipping access to Lower Rio Grande Valley. This transportation network facilitates the movement of raw and finished products and is therefore important to heavy border industry. The warm, temperate climate of Lower Rio Grande Valley is alluring to business and industry because of the low operating costs. With the majority of the general population of the United States growing older, and more people taking early retirements, there is good potential in attracting retirees to the warm, coastal climate of Lower Rio Grande Valley.

METHODOLOGY

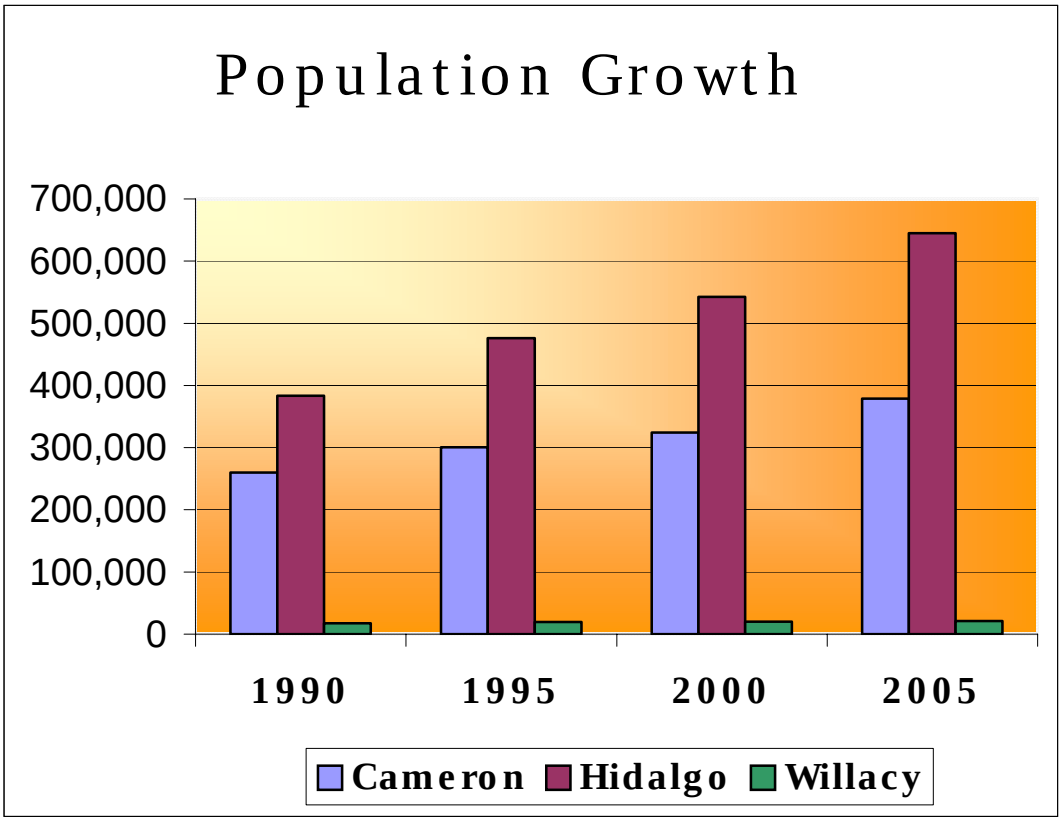
In arriving at the population projections for this region, the following expectations were taken into consideration:

- A more diversified economy considering the region's proximity to the Mexican border;
- The geographical location of our region will continue to attract service and transportation industry;
- The jobs related to Maquiladora industry assist in providing stability as a base industry for the three-county region;
- Texas will continue to be one of the leading growth states in the United States;
- Texas will receive between 5 - 7% of the total growth rate of the United States.

LOWER RIO GRANDE VALLEY REGION

(Cameron, Hidalgo, and Willacy Counties)

The County of Cameron currently has a population of approximately **335,227** people followed by Hidalgo County with a population of **569,463** and Willacy with a complete population of **20,082** as provided by the United States Census 2000.



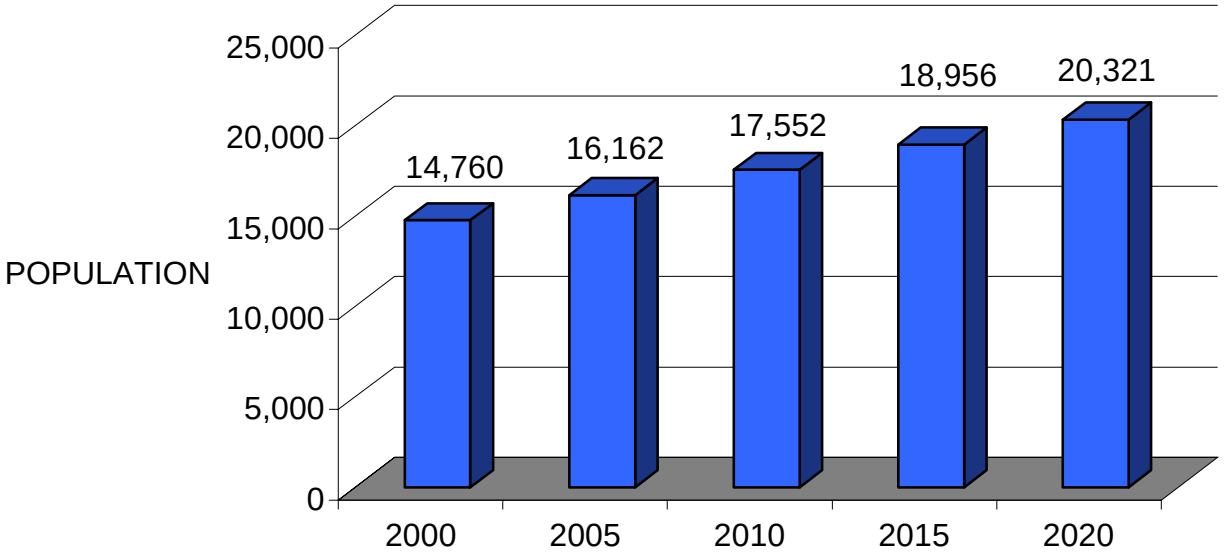
Population listed displays the growth with increments of five years as recommended by TCEQ.

II. HIDALGO COUNTY

CITY OF ALAMO

YEAR	POPULATION	PERCENT INCREASE
2000	14,760	*
2005	16,162	9.5%
2010	17,552	8.6%

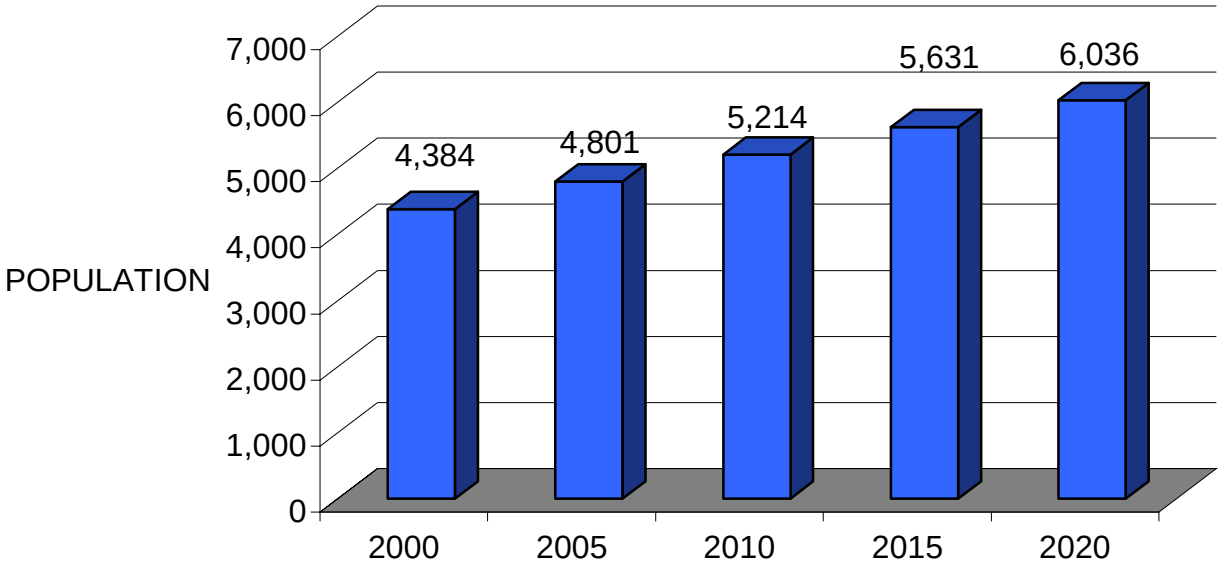
2015	18,956	8.0%
2020	20,321	7.2%



(The population listed on pages 6-48 displays each city listed by each county of the region with population growth listed by increments of five years up to 2020 along with the percentage increases as the task requirements specify for the 604(b) Water Quality grant as directed by TCEQ/EPA.

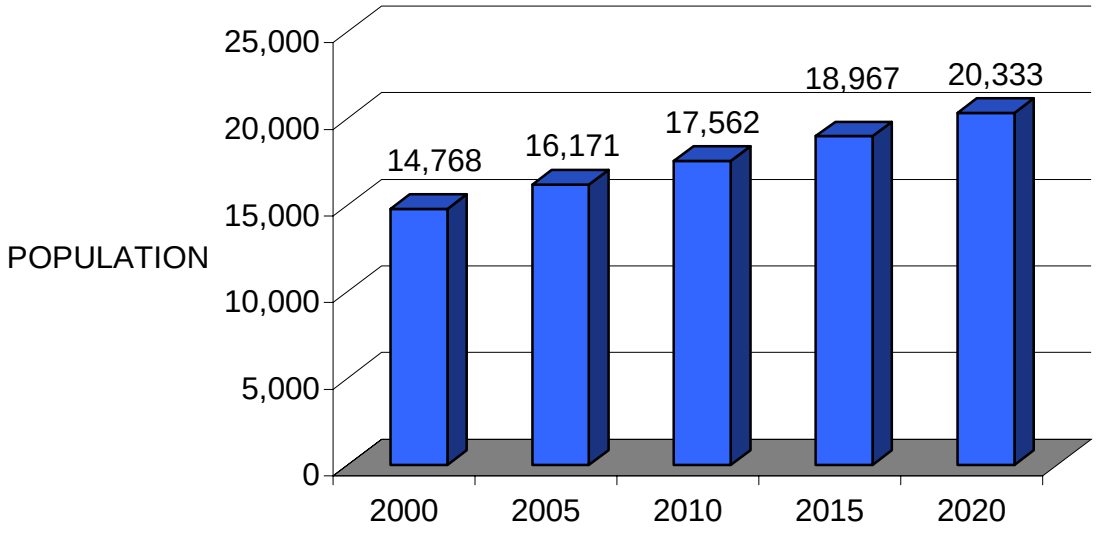
CITY OF ALTON

YEAR	POPULATION	PERCENT INCREASE
2000	4,384	*
2005	4,801	9.5%
2010	5,214	8.6%
2015	5,631	8.0%
2020	6,036	7.2%



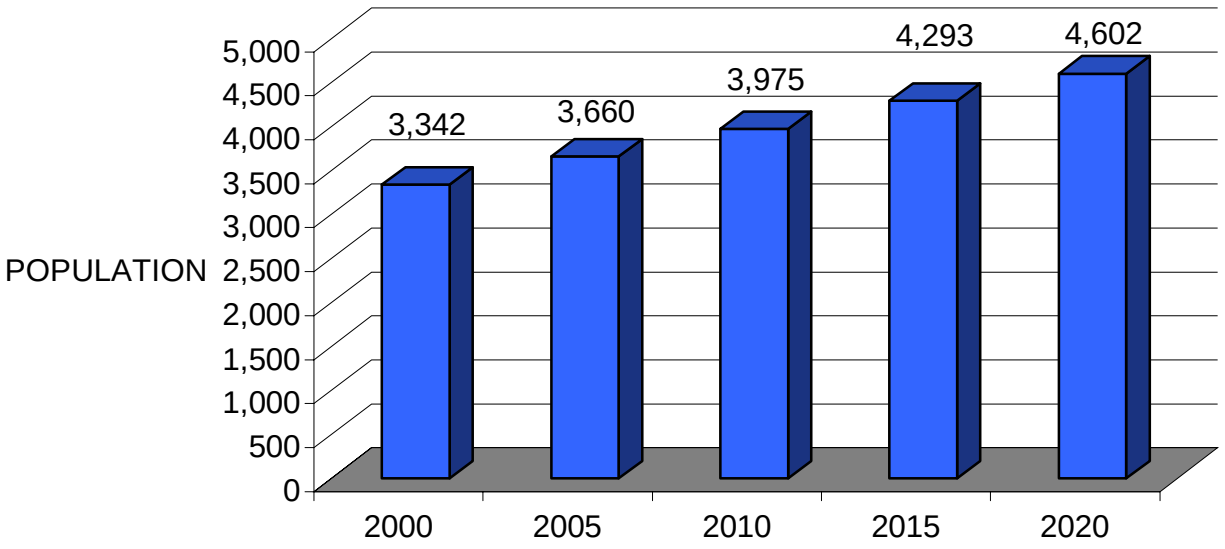
CITY OF DONNA

YEAR	POPULATION	PERCENT INCREASE
2000	14,768	*
2005	16,171	9.5%
2010	17,562	8.6%
2015	18,967	8.0%
2020	20,333	7.2%



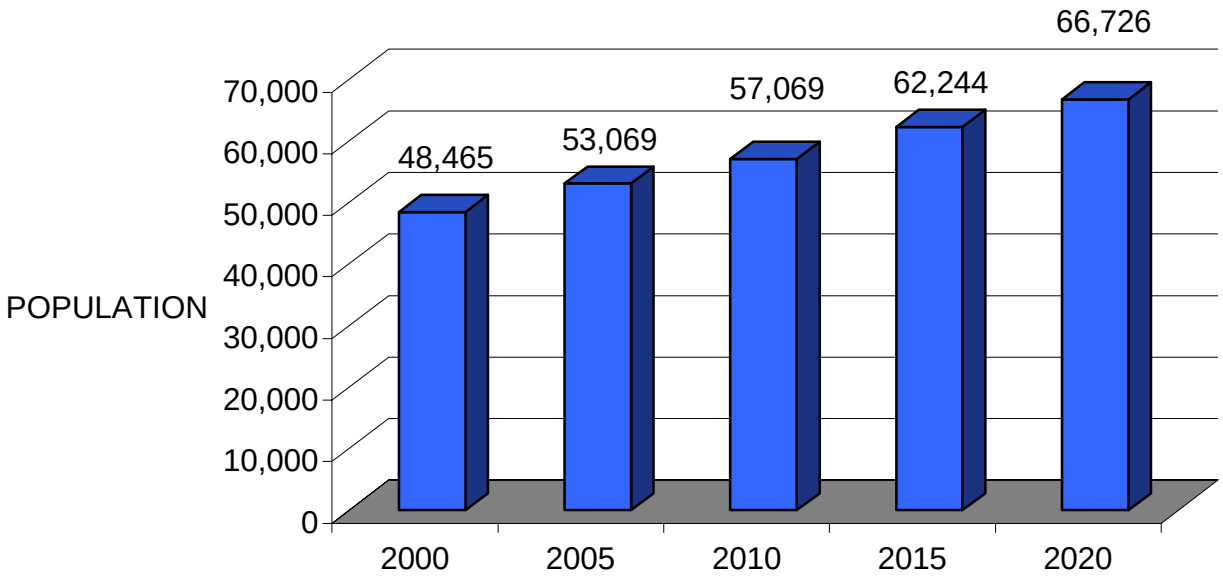
CITY OF EDCOUCH

YEAR	POPULATION	PERCENT INCREASE
2000	3,342	*
2005	3,660	9.5%
2010	3,975	8.5%
2015	4,293	8.0%
2020	4,602	7.2%



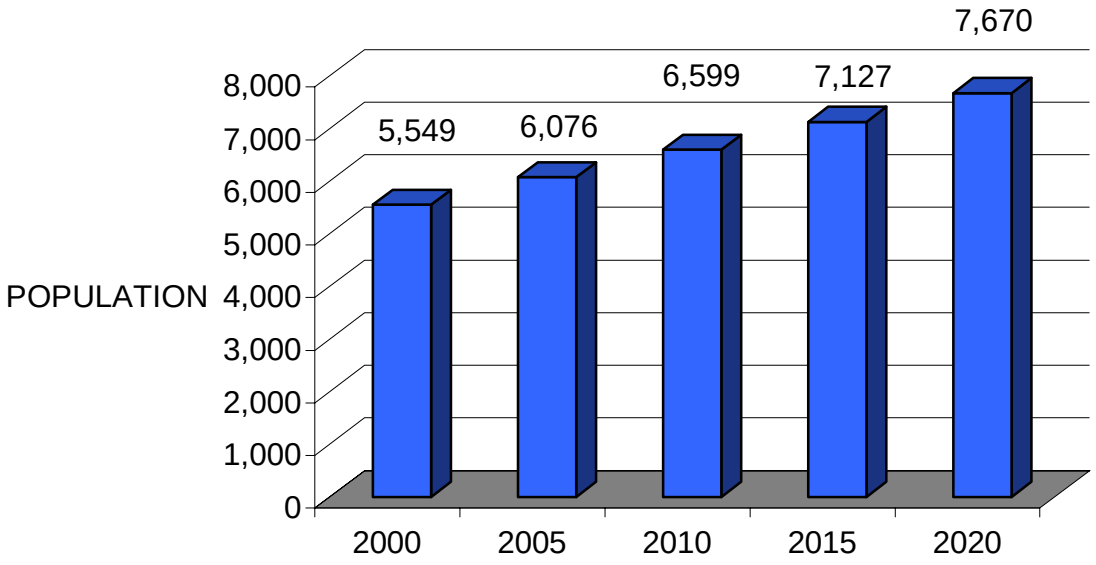
CITY OF EDINBURG

YEAR	POPULATION	PERCENT INCREASE
2000	48,465	*
2005	53,069	9.5%
2010	57,633	8.5%
2015	62,244	8.0%
2020	66,726	7.2%



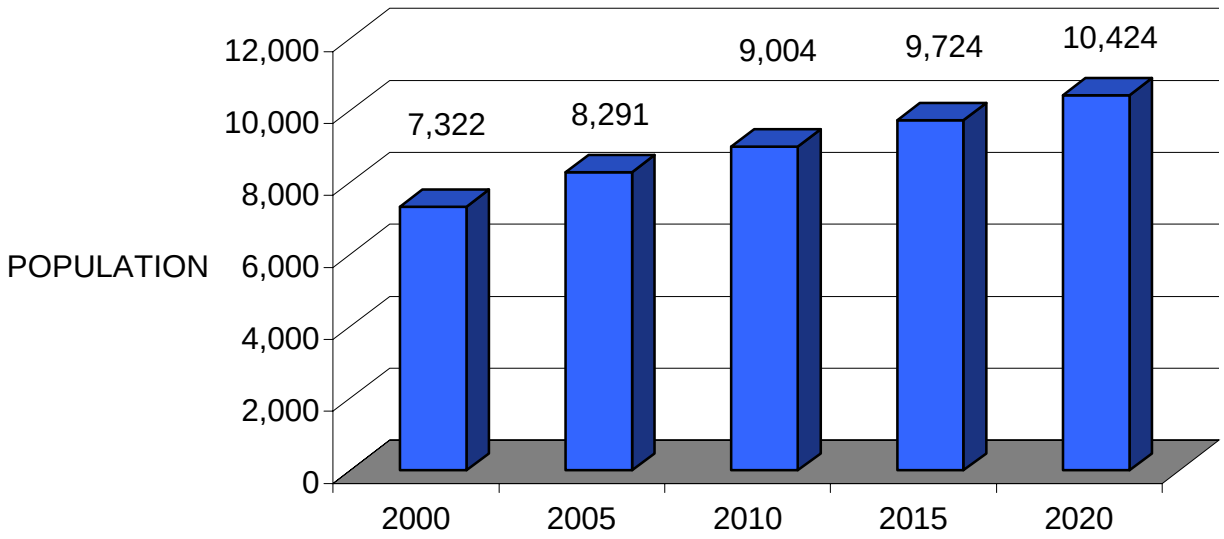
CITY OF ELSA

YEAR	POPULATION	PERCENT INCREASE
2000	5,549	*
2005	6,076	9.5%
2010	6,599	8.6%
2015	7,127	8.0%
2020	7,670	7.2%



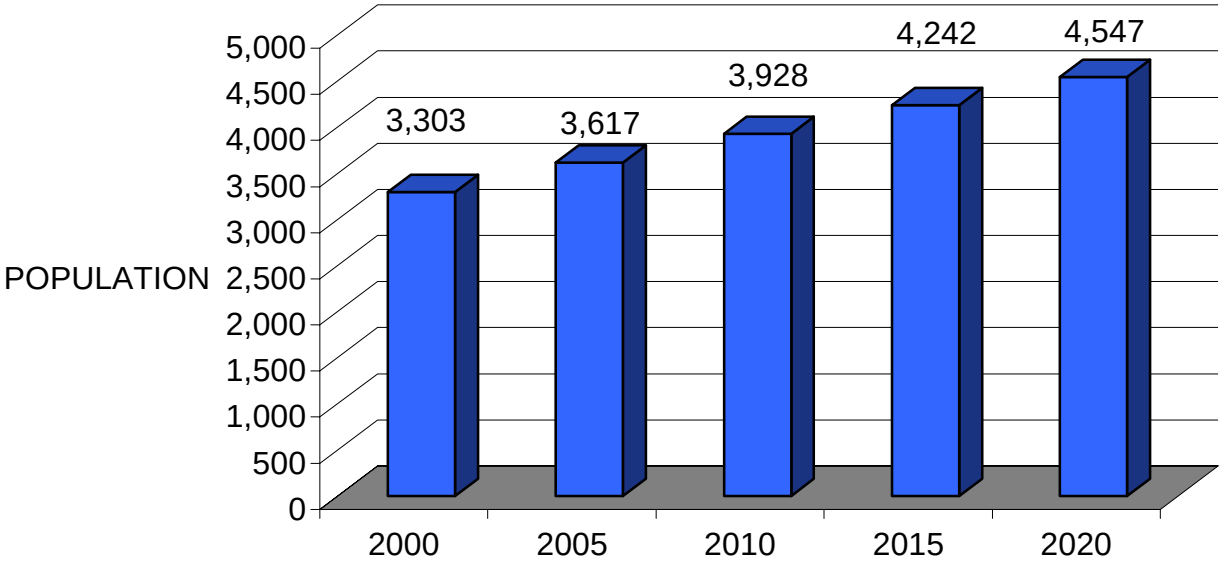
CITY OF HIDALGO

YEAR	POPULATION	PERCENT INCREASE
2000	7,322	*
2005	8,291	9.5%
2010	9,004	8.6%
2015	9,724	8.0%
2020	10,424	7.2%



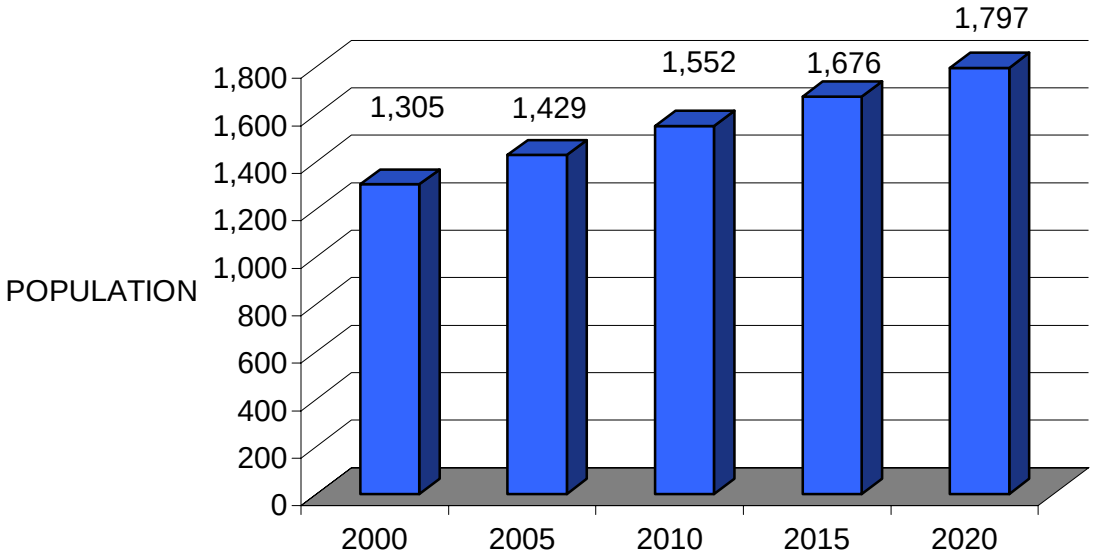
CITY OF LA JOYA

YEAR	POPULATION	PERCENT INCREASE
2000	3,303	*
2005	3,617	9.5%
2010	3,928	8.6%
2015	4,242	8.0%
2020	4,547	7.2%



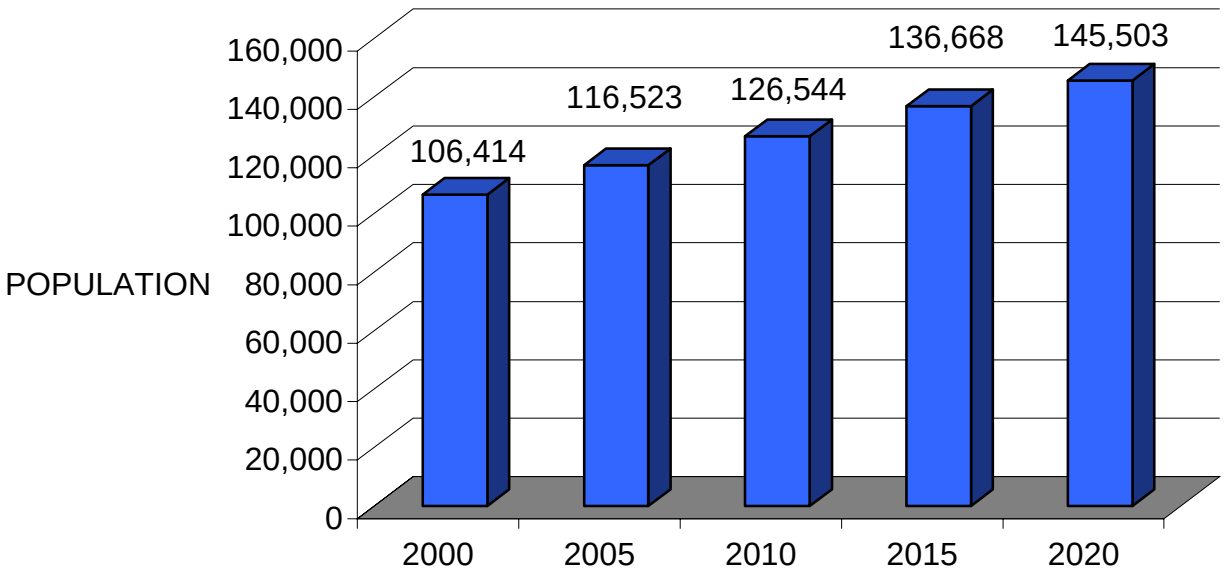
CITY OF LA VILLA

YEAR	POPULATION	PERCENT INCREASE
2000	1,305	*
2005	1,429	9.5%
2010	1,552	8.6%
2015	1,676	8.0%
2020	1,767	7.2%



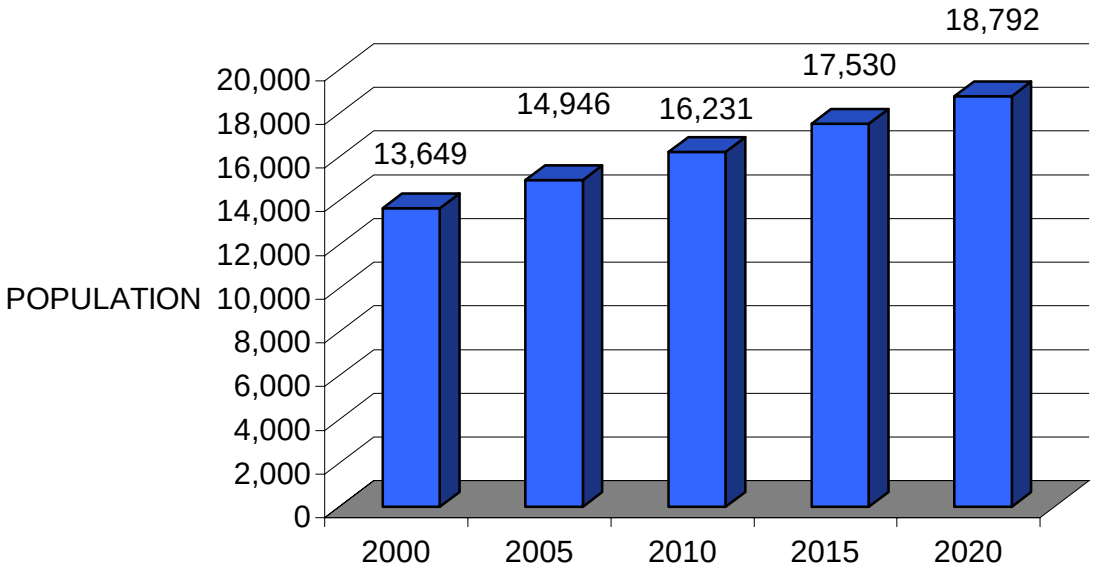
CITY OF MCALLEN

YEAR	POPULATION	PERCENT INCREASE
2000	106,414	*
2005	116,523	9.5%
2010	126,544	8.6%
2015	136,668	8.0%
2020	145,503	7.2%



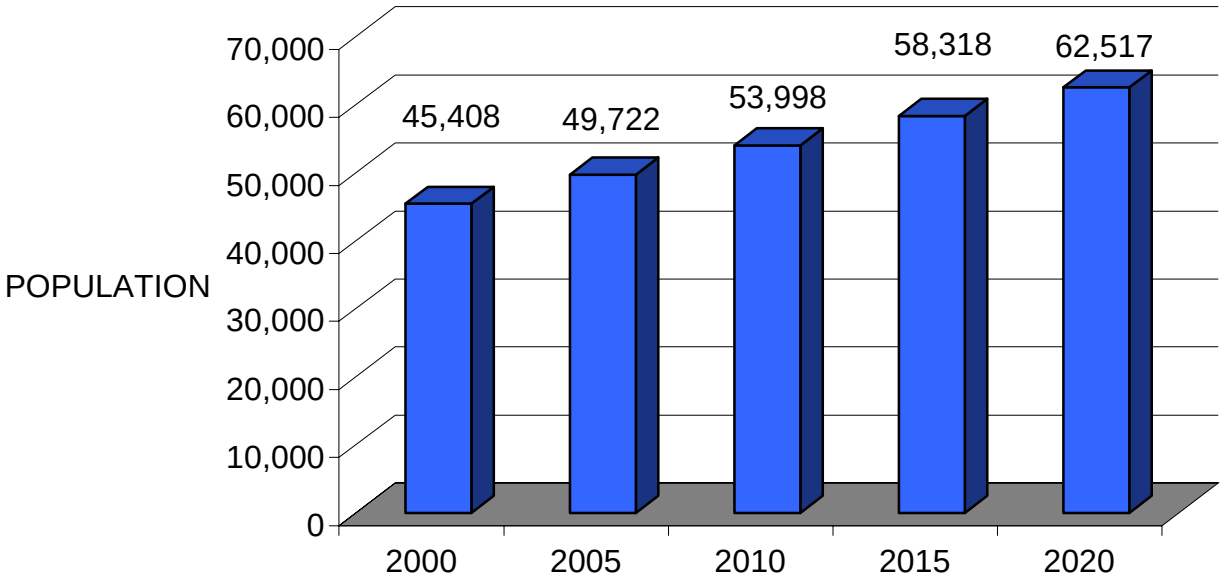
CITY OF MERCEDES

YEAR	POPULATION	PERCENT INCREASE
2000	13,649	*
2005	14,946	9.5%
2010	16,231	8.6%
2015	17,530	8.0%
2020	18,792	7.2%



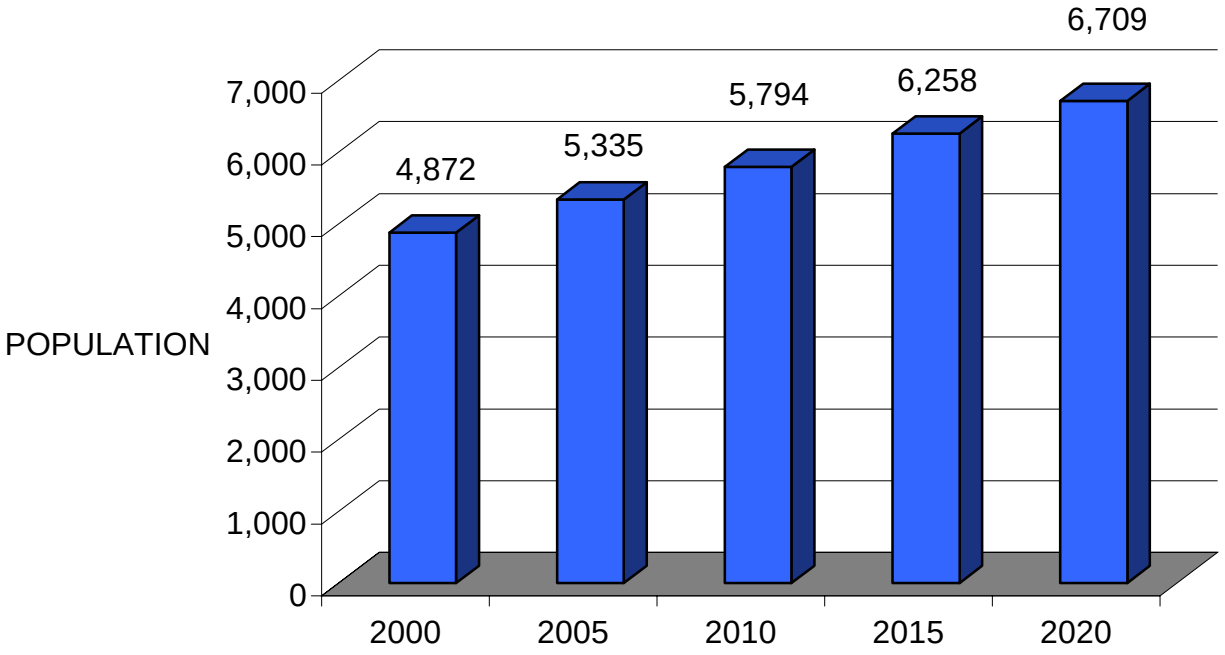
CITY OF MISSION

YEAR	POPULATION	PERCENT INCREASE
2000	45,408	*
2005	49,722	9.5%
2010	53,998	8.5%
2015	58,318	8.0%
2020	62,517	7.2%



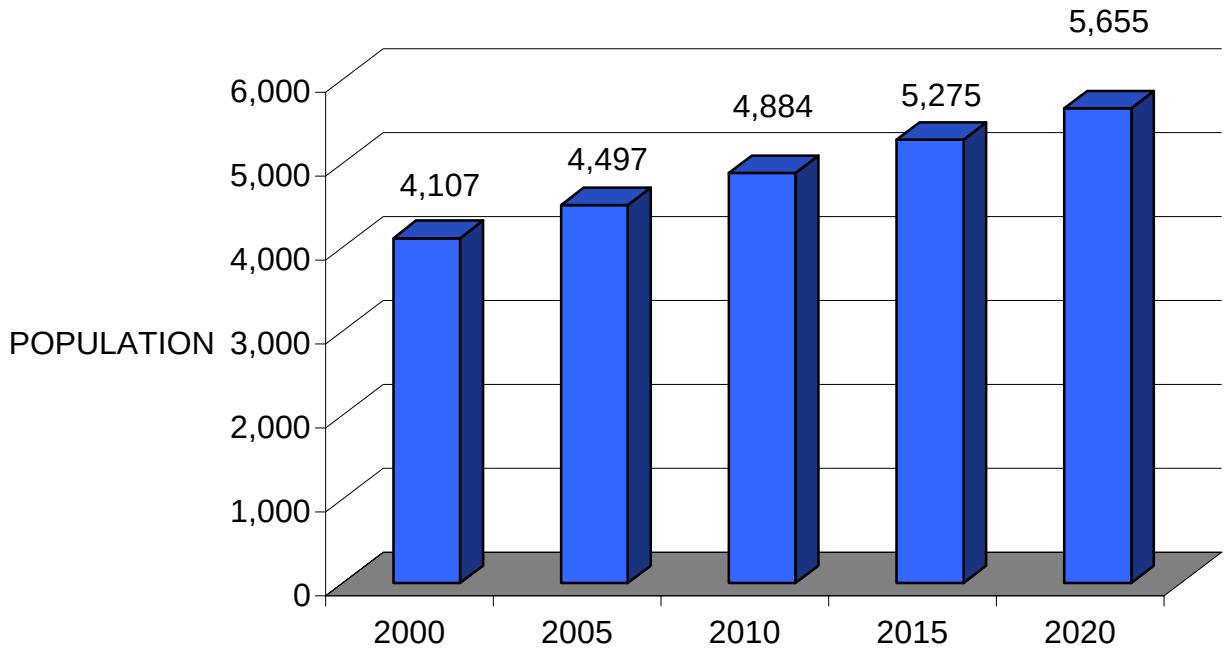
CITY OF PALM HURST

YEAR	POPULATION	PERCENT INCREASE
2000	4,872	*
2005	5,335	9.5%
2010	5,794	8.5%
2015	6,258	8.0%
2020	6,709	7.2%



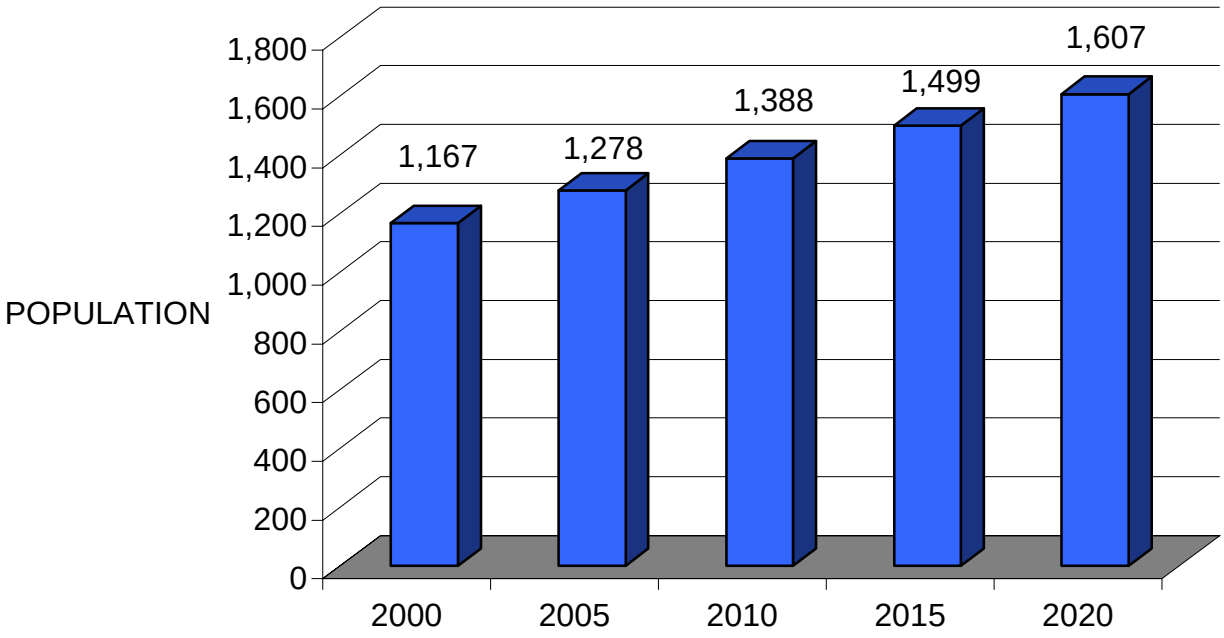
CITY OF PALMVIEW

YEAR	POPULATION	PERCENT INCREASE
2000	4,107	*
2005	4,497	9.5%
2010	4,884	8.6%
2015	5,275	8.0%
2020	5,655	7.2%



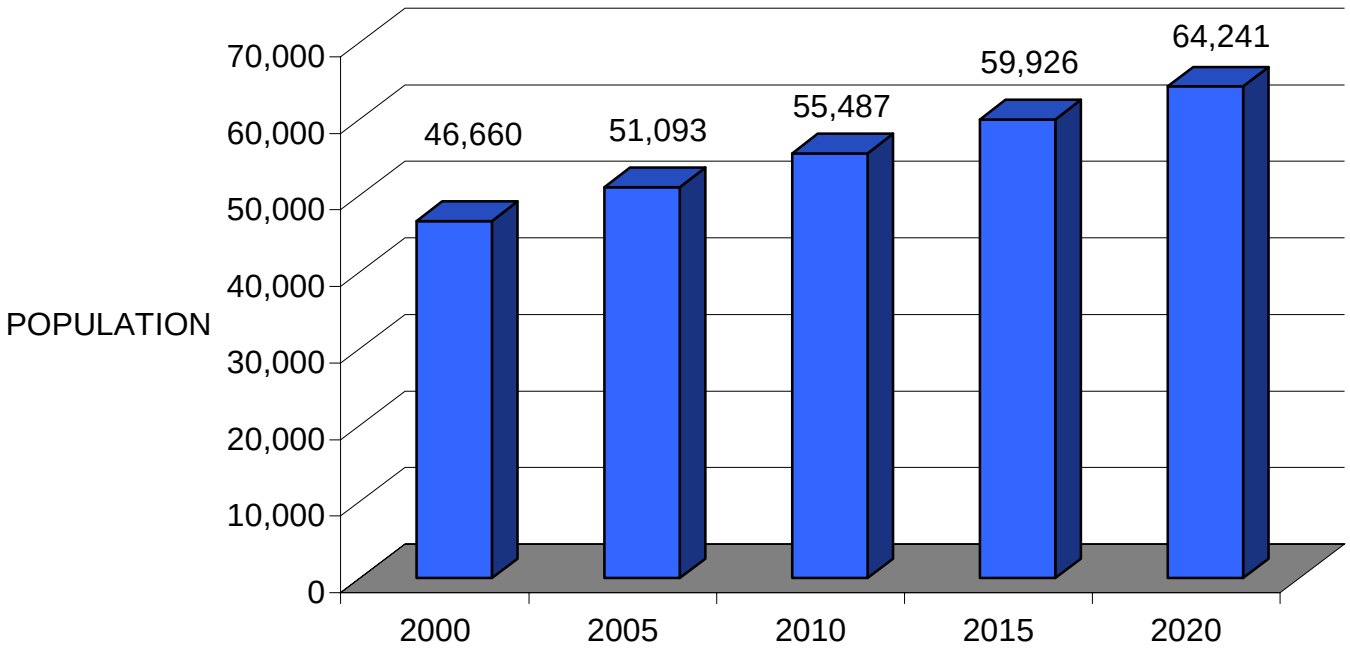
CITY OF PENITAS

YEAR	POPULATION	PERCENT INCREASE
2000	1,167	*
2005	1,278	9.5%
2010	1,388	8.6%
2015	1,499	8.0%
2020	1,607	7.2%



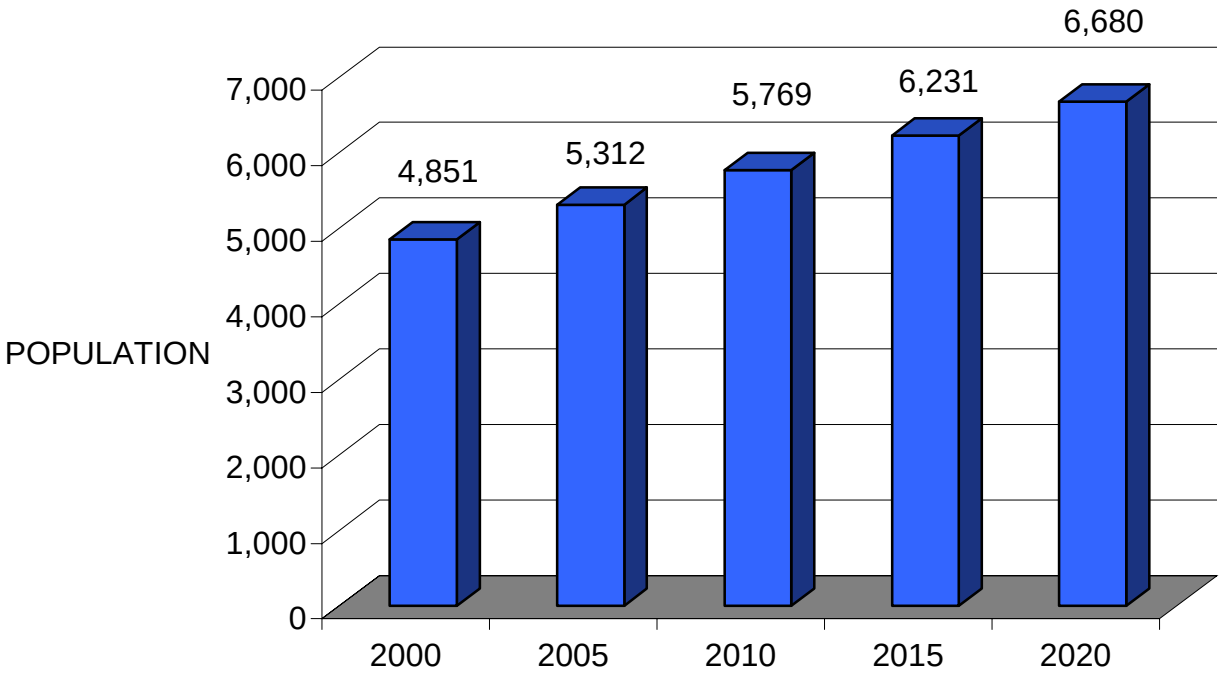
CITY OF PHARR

YEAR	POPULATION	PERCENT INCREASE
2000	46,660	*
2005	51,093	9.5%
2010	55,487	8.6%
2015	59,926	8.0%
2020	64,241	7.2%



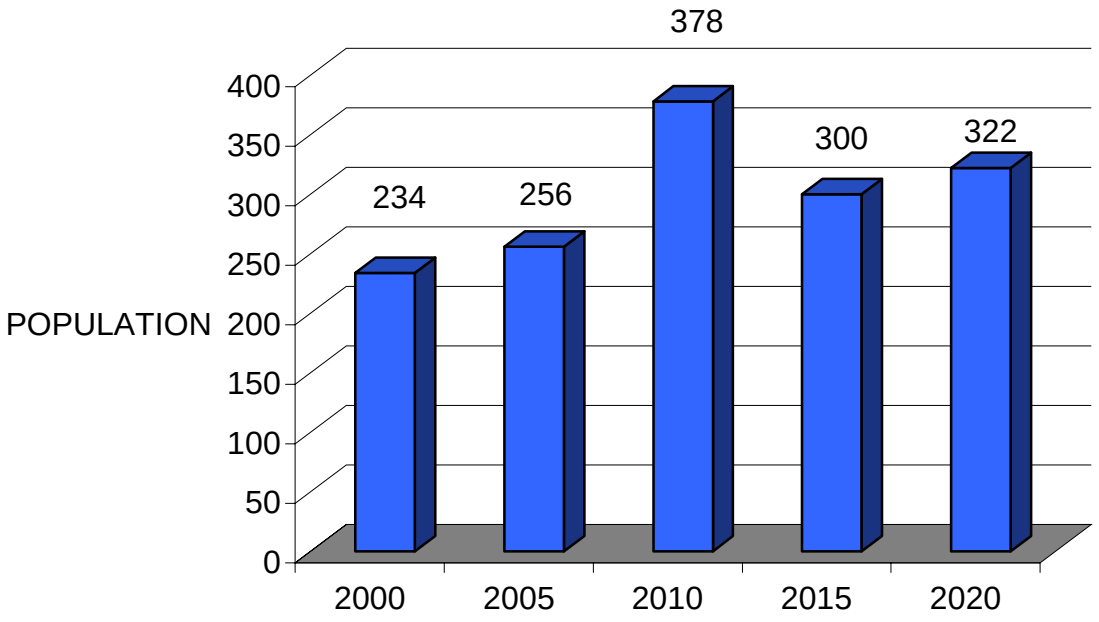
CITY OF PROGRESO

YEAR	POPULATION	PERCENT INCREASE
2000	4,851	*
2005	5,312	9.5%
2010	5,769	8.6%
2015	6,231	8.0%
2020	6,680	7.2%



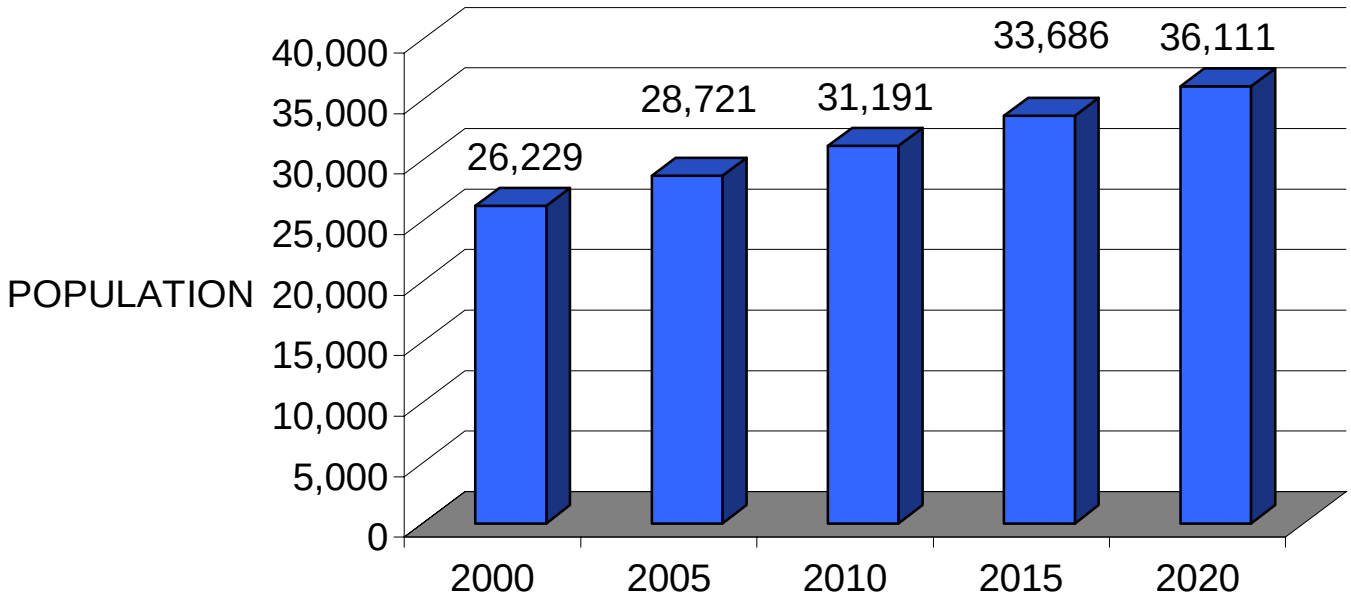
CITY OF PROGRESO LAKES

YEAR	POPULATION	PERCENT INCREASE
2000	234	*
2005	256	9.5%
2010	278	8.5%
2015	300	8.0%
2020	322	7.2%



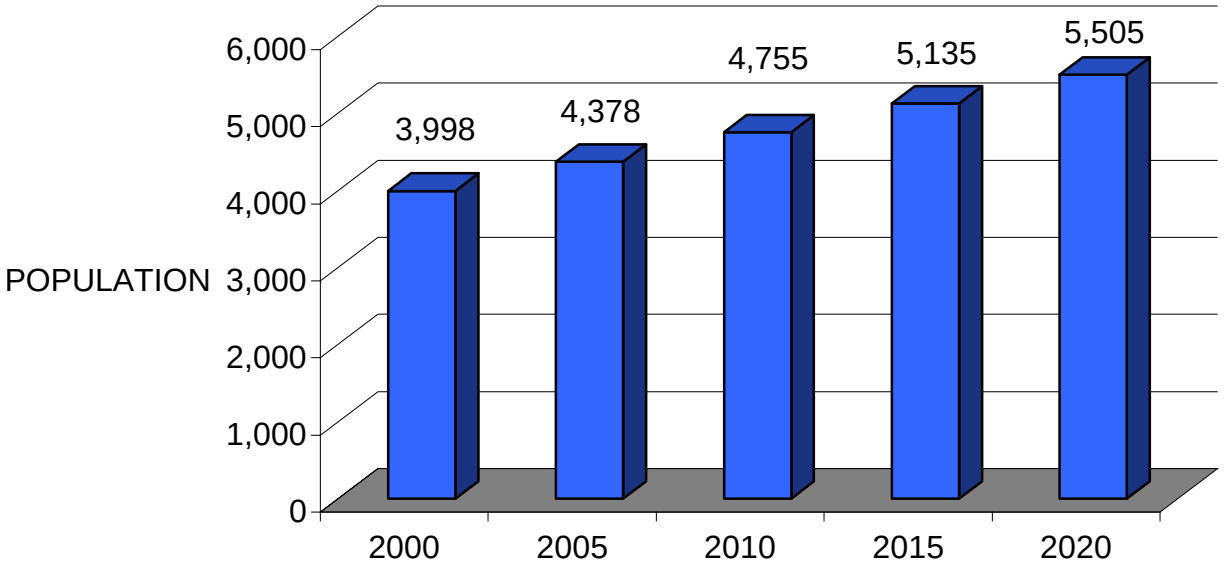
CITY OF SAN JUAN

YEAR	POPULATION	PERCENT INCREASE
2000	26,229	*
2005	28,721	9.5%
2010	31,191	8.6%
2015	33,686	8.0%
2020	36,111	7.2%



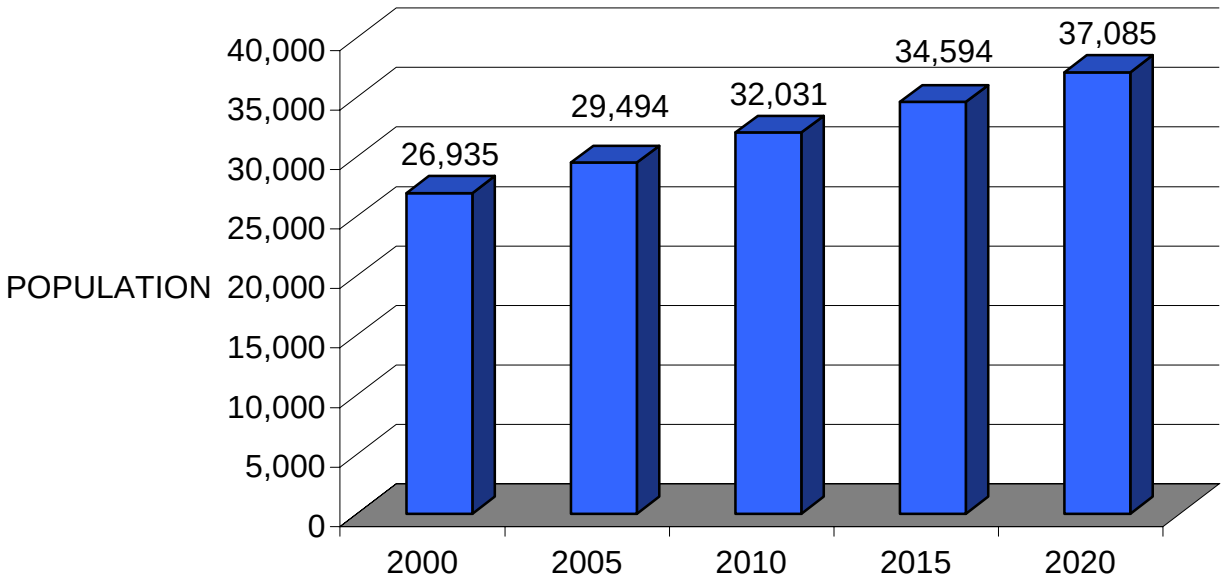
CITY OF SULLIVAN CITY

YEAR	POPULATION	PERCENT INCREASE
2000	3,998	*
2005	4,378	9.5%
2010	4,755	8.6%
2015	5,135	8.0%
2020	5,505	7.2%



CITY OF WESLACO

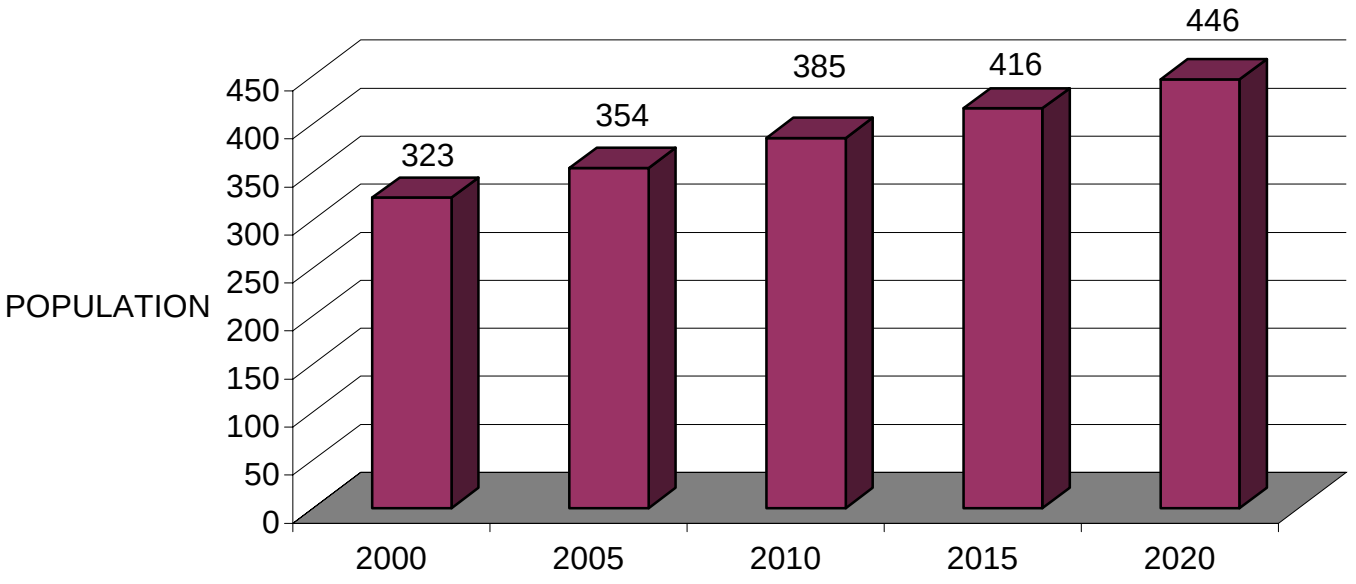
YEAR	POPULATION	PERCENT INCREASE
2000	26,935	*
2005	29,494	9.5%
2010	32,031	8.5%
2015	34,594	8.0%
2020	37,085	7.2%



III. CAMERON COUNTY

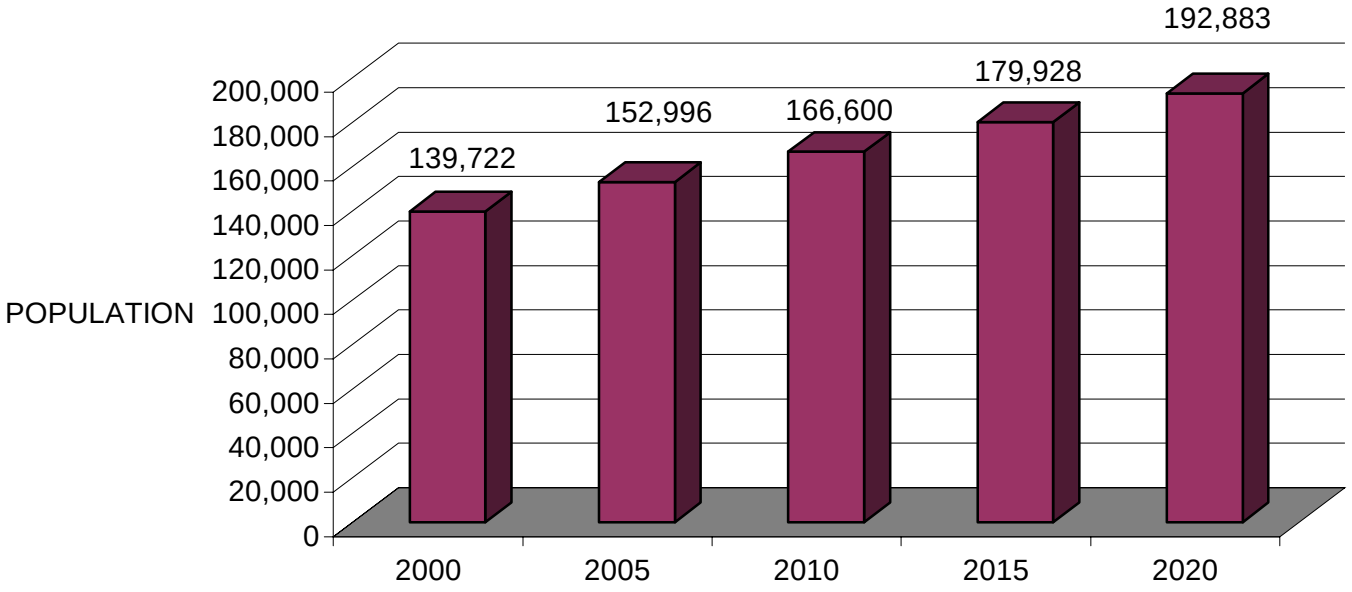
CITY OF BAYVIEW

YEAR	POPULATION	PERCENT INCREASE
2000	323	*
2005	354	9.5%
2010	385	8.6%
2015	416	8.0%
2020	446	7.2%



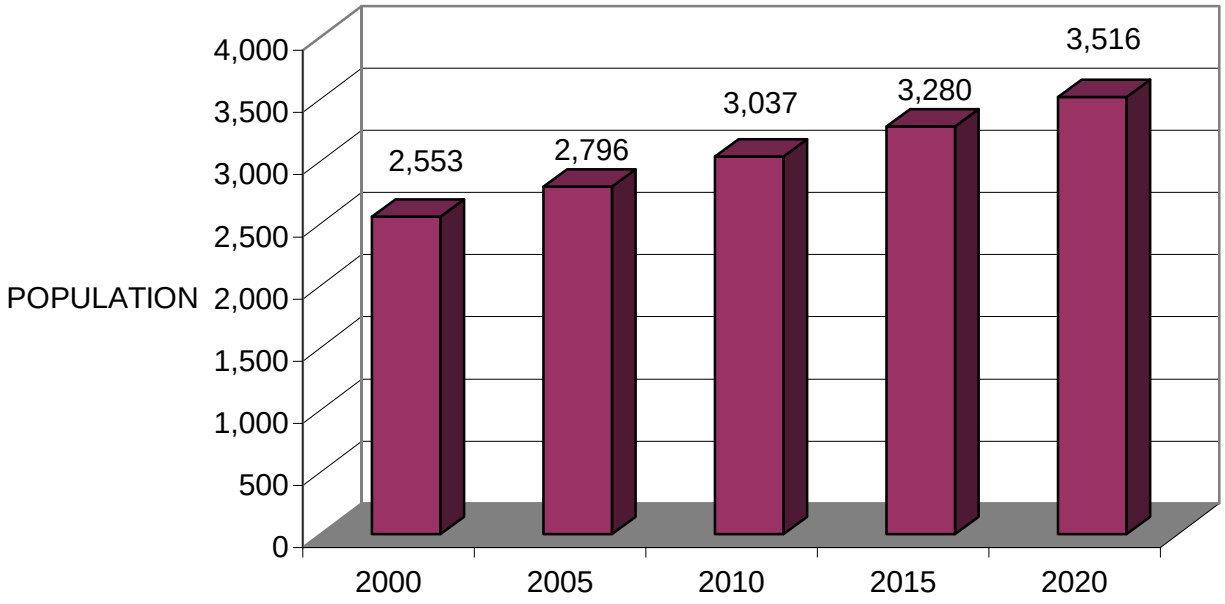
CITY OF BROWNSVILLE

YEAR	POPULATION	PERCENT INCREASE
2000	139,722	*
2005	152,996	9.5%
2010	166,600	8.6%
2015	179,928	8.0%
2020	192,883	7.2%



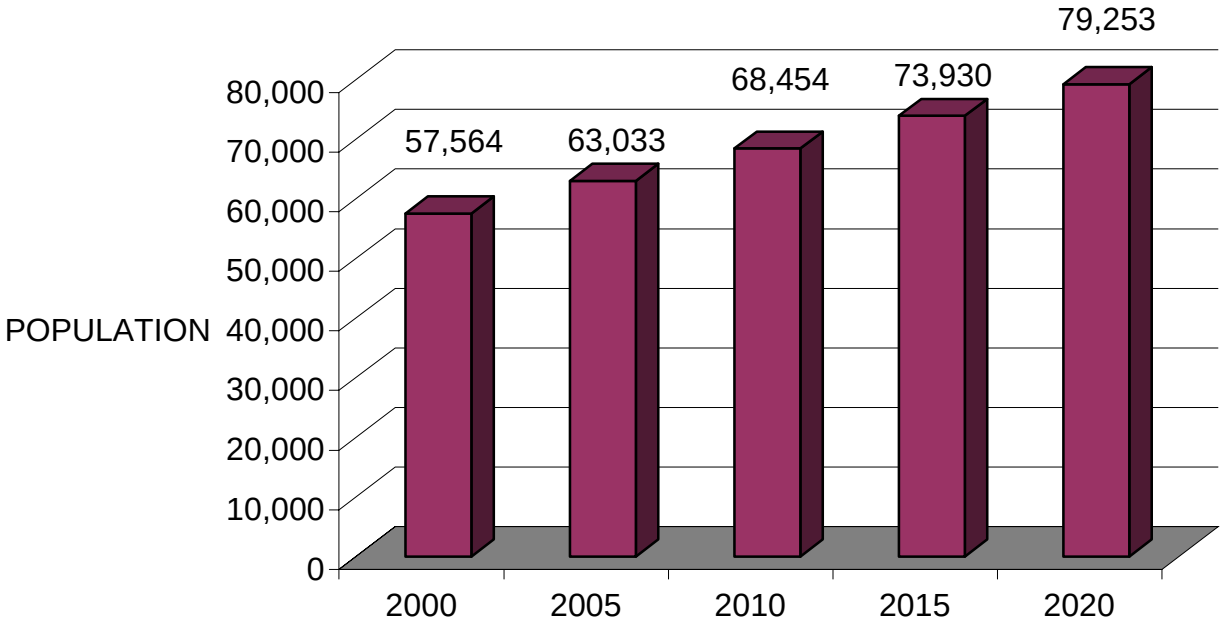
CITY OF COMBES

YEAR	POPULATION	PERCENT INCREASE
2000	2,553	*
2005	2,796	9.5%
2010	3,037	8.6%
2015	3,280	8.0%
2020	3,516	7.2%



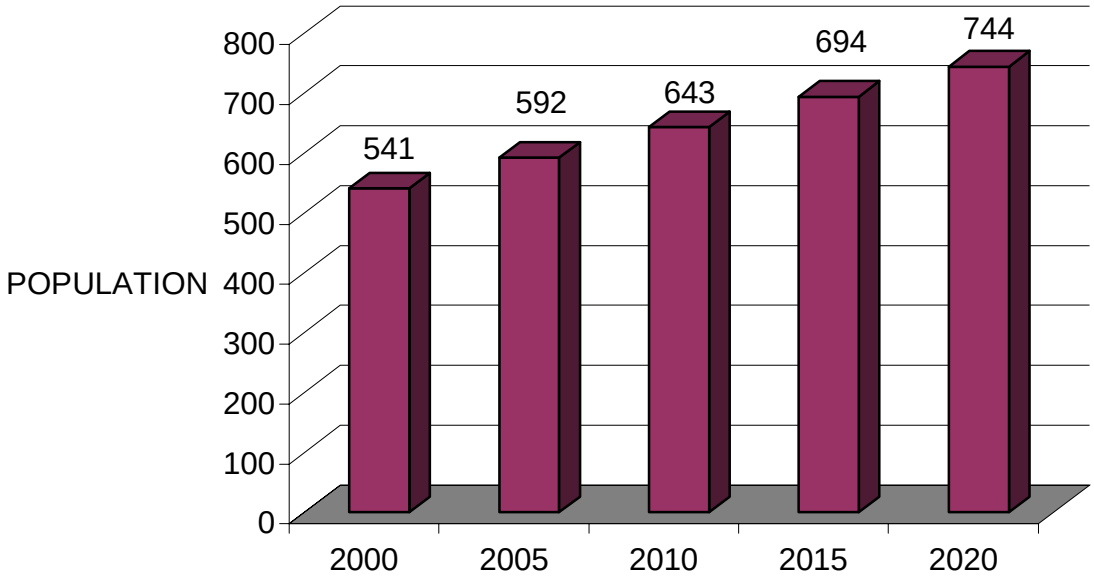
CITY OF HARLINGEN

YEAR	POPULATION	PERCENT INCREASE
2000	57,564	*
2005	63,033	9.5%
2010	68,454	8.6%
2015	73,930	8.0%
2020	79,253	7.2%



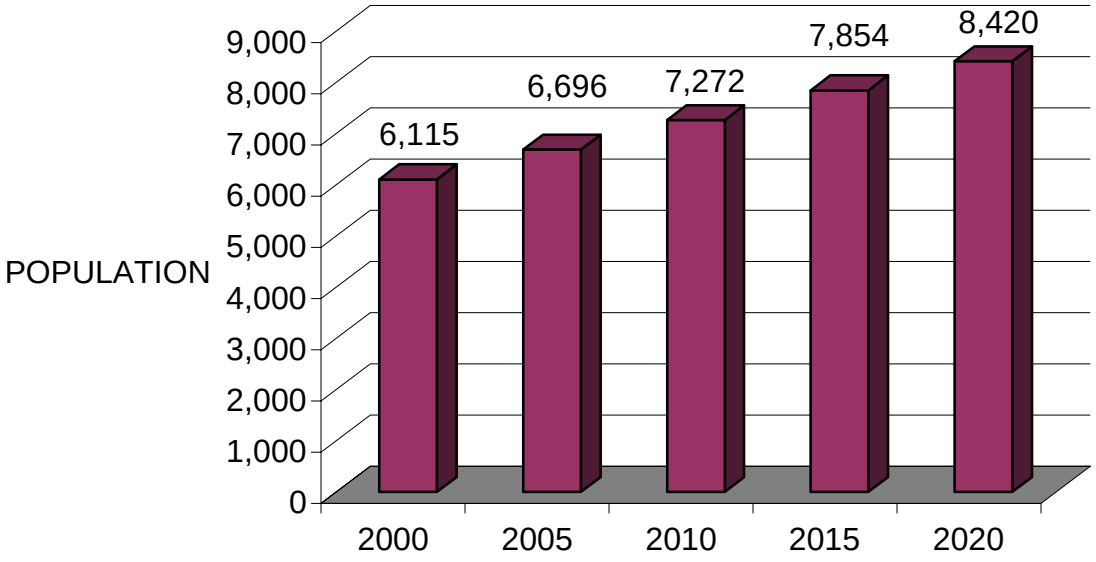
CITY OF INDIAN LAKE

YEAR	POPULATION	PERCENT INCREASE
2000	541	*
2005	592	9.5%
2010	643	8.6%
2015	694	8.0%
2020	744	7.2%



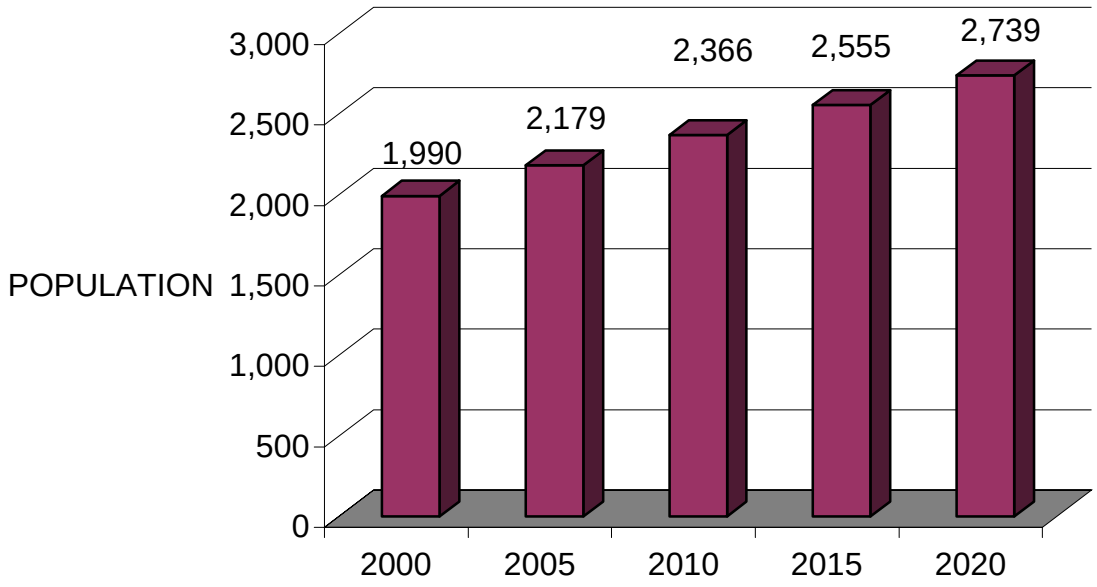
CITY OF LA FERIA

YEAR	POPULATION	PERCENT INCREASE
2000	6,115	*
2005	6,696	9.5%
2010	7,272	8.6%
2015	7,854	8.0%
2020	8,420	7.2%



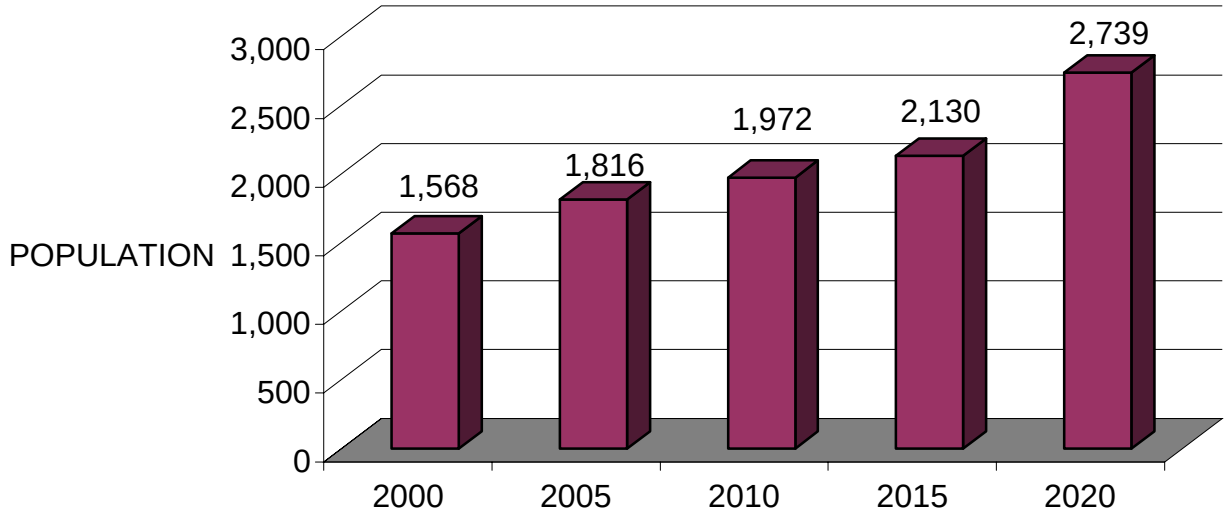
CITY OF LAGUNA HEIGHTS

YEAR	POPULATION	PERCENT INCREASE
2000	1,990	*
2005	2,179	9.5%
2010	2,366	8.6%
2015	2,555	8.0%
2020	2,739	7.2%



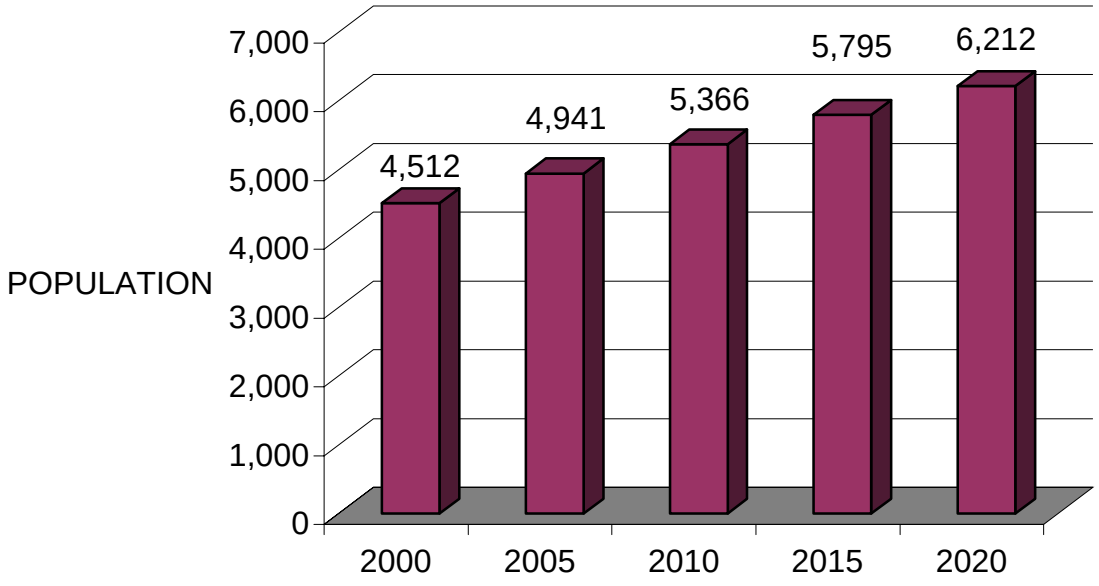
CITY OF LAGUNA VISTA

YEAR	POPULATION	PERCENT INCREASE
2000	1,568	*
2005	1,816	9.5%
2010	1,972	8.6%
2015	2,130	8.0%
2020	2,739	7.2%



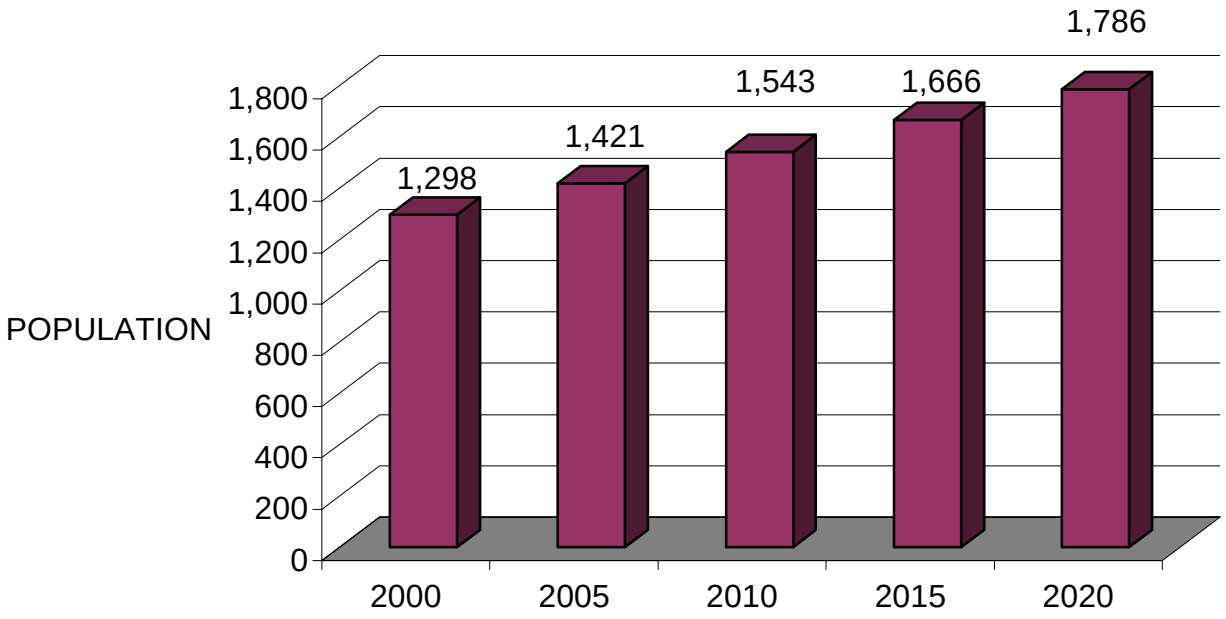
CITY OF LOS FRESNOS

YEAR	POPULATION	PERCENT INCREASE
2000	4,512	*
2005	4,941	9.5%
2010	5,366	8.6%
2015	5,795	8.0%
2020	6,212	7.2%



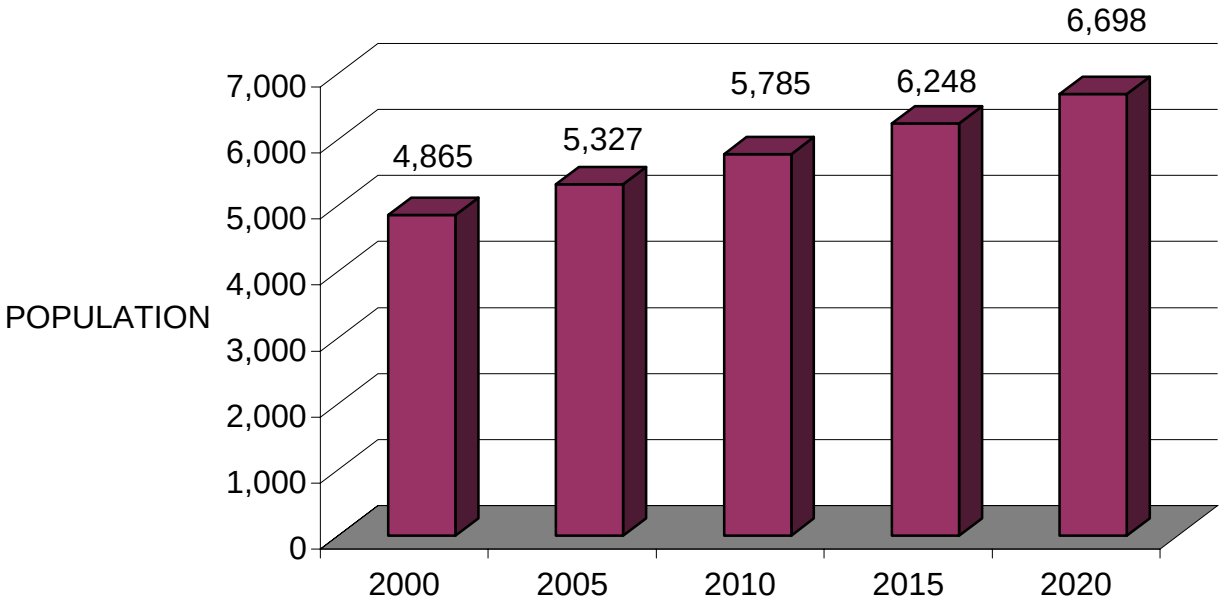
CITY OF PALM VALLEY

YEAR	POPULATION	PERCENT INCREASE
2000	1,298	*
2005	1,421	9.5%
2010	1,543	8.6%
2015	1,666	8.0%
2020	1,786	7.2%



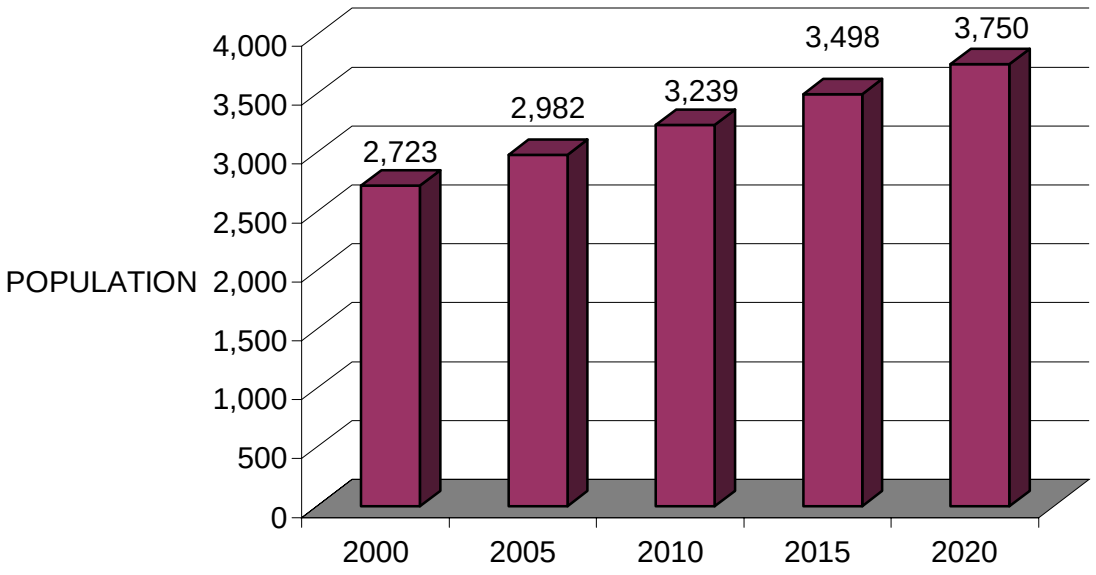
CITY OF PORT ISABEL

YEAR	POPULATION	PERCENT INCREASE
2000	4,865	*
2005	5,327	9.5%
2010	5,785	8.6%
2015	6,248	8.0%
2020	6,698	7.2%



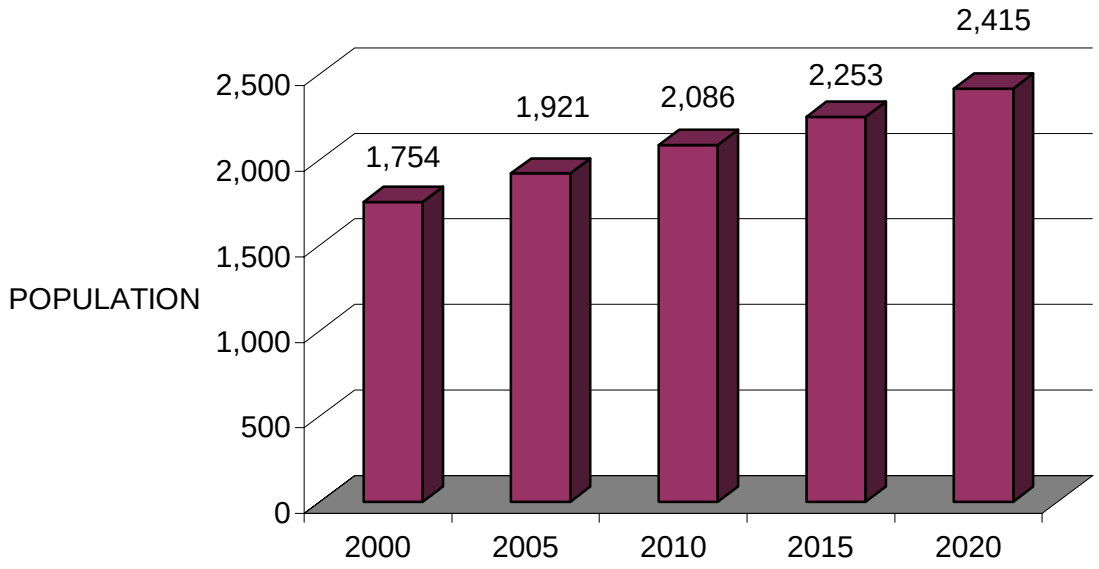
CITY OF PRIMERA

YEAR	POPULATION	PERCENT INCREASE
2000	2,723	*
2005	2,982	9.5%
2010	3,239	8.6%
2015	3,498	8.0%
2020	3,750	7.2%



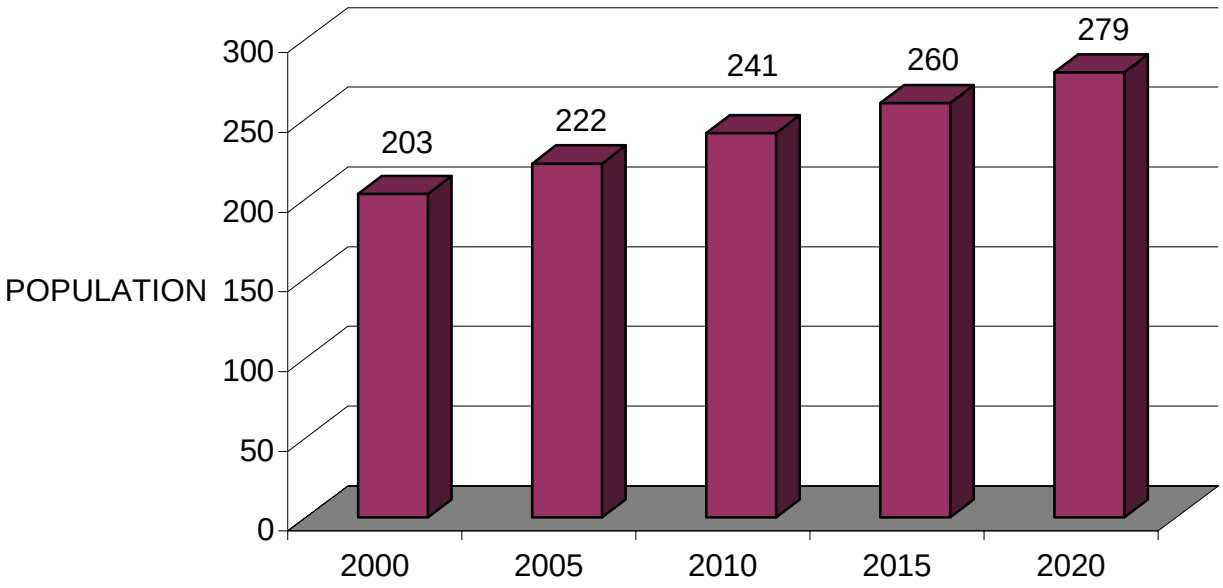
CITY OF RANCHO VIEJO

YEAR	POPULATION	PERCENT INCREASE
2000	1,754	*
2005	1,921	9.5%
2010	2,086	8.6%
2015	2,253	8.0%
2020	2,415	7.2%

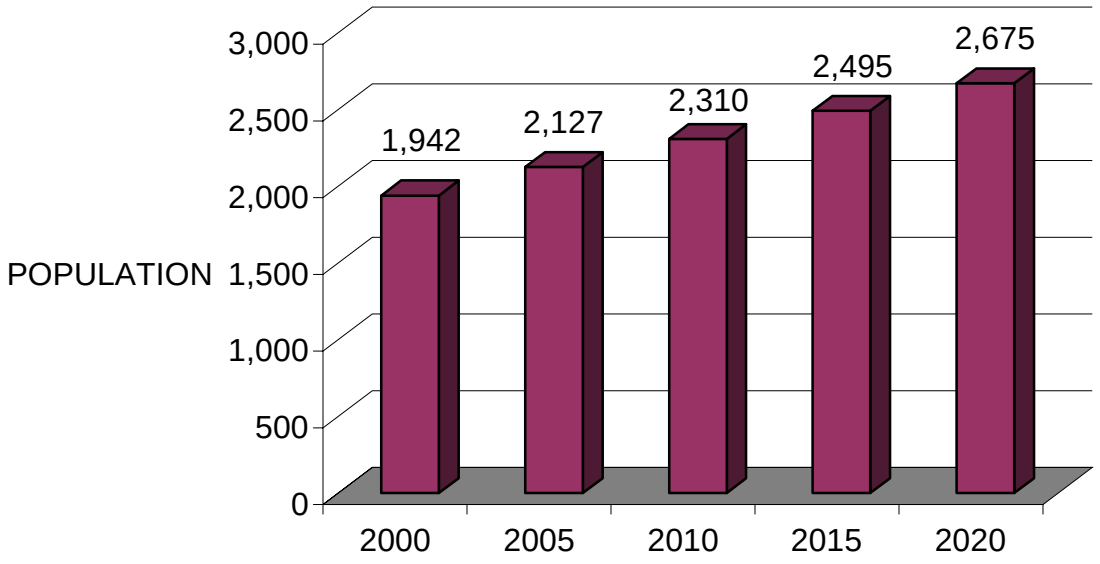


CITY OF RANGERVILLE

YEAR	POPULATION	PERCENT INCREASE
2000	203	*
2005	222	9.5%
2010	241	8.6%
2015	260	8.0%
2020	279	7.2%

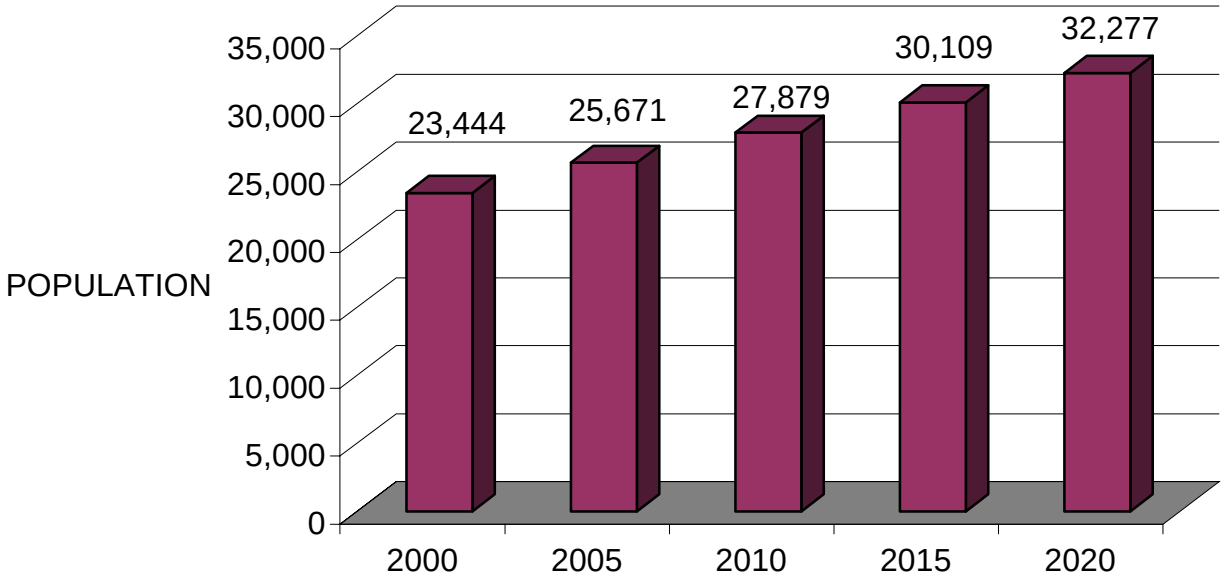


YEAR	POPULATION	PERCENT INCREASE
2000	1,942	*
2005	2,127	9.5%
2010	2,310	8.6%
2015	2,495	8.0%
2020	2,675	7.2%



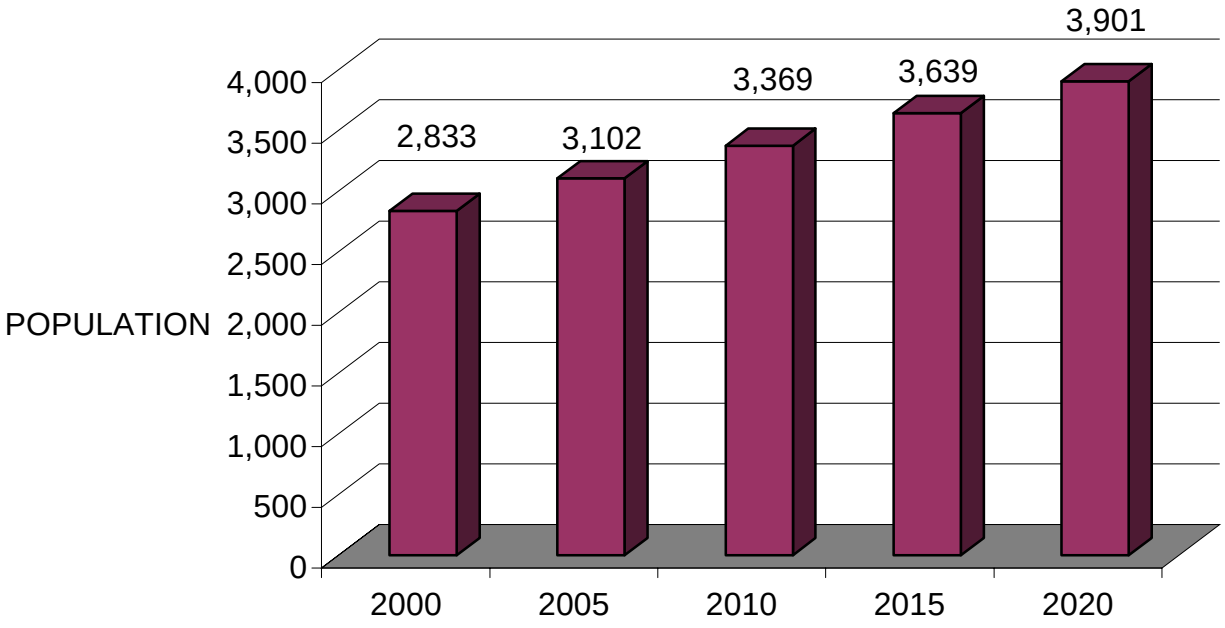
CITY OF SAN BENITO

YEAR	POPULATION	PERCENT INCREASE
2000	23,444	*
2005	25,671	9.5%
2010	27,879	8.6%
2015	30,109	8.0%
2020	32,277	7.2%

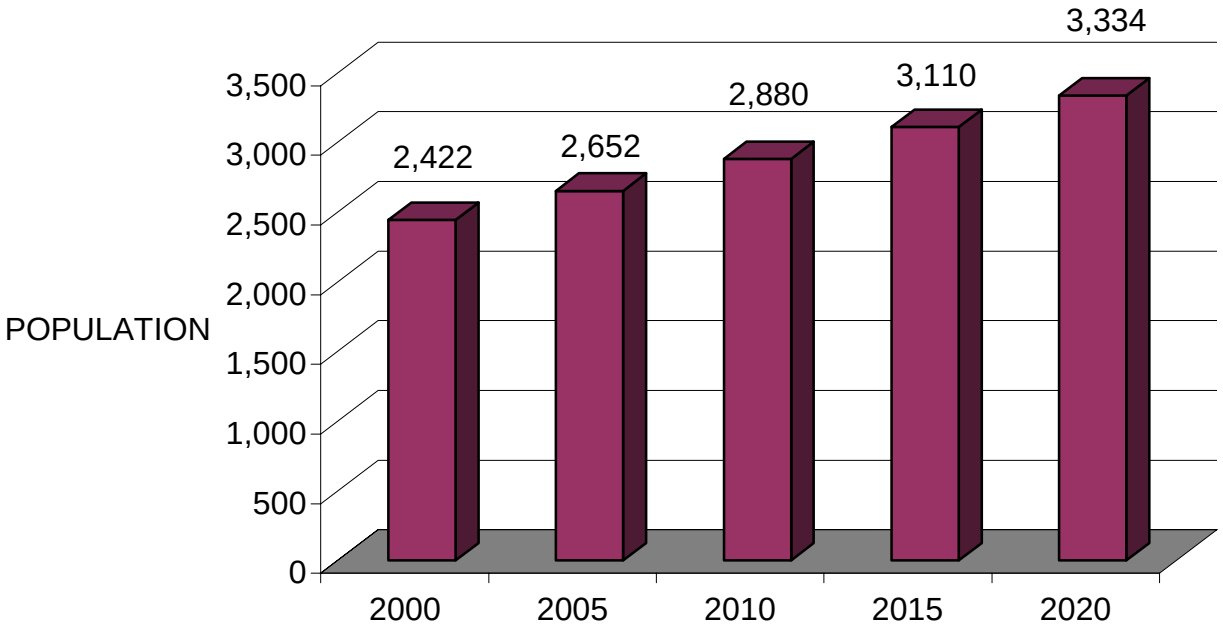


CITY OF SANTA ROSA

YEAR	POPULATION	PERCENT INCREASE
2000	2,833	*
2005	3,102	9.5%
2010	3,369	8.6%
2015	3,639	8.0%
2020	3,901	7.2%



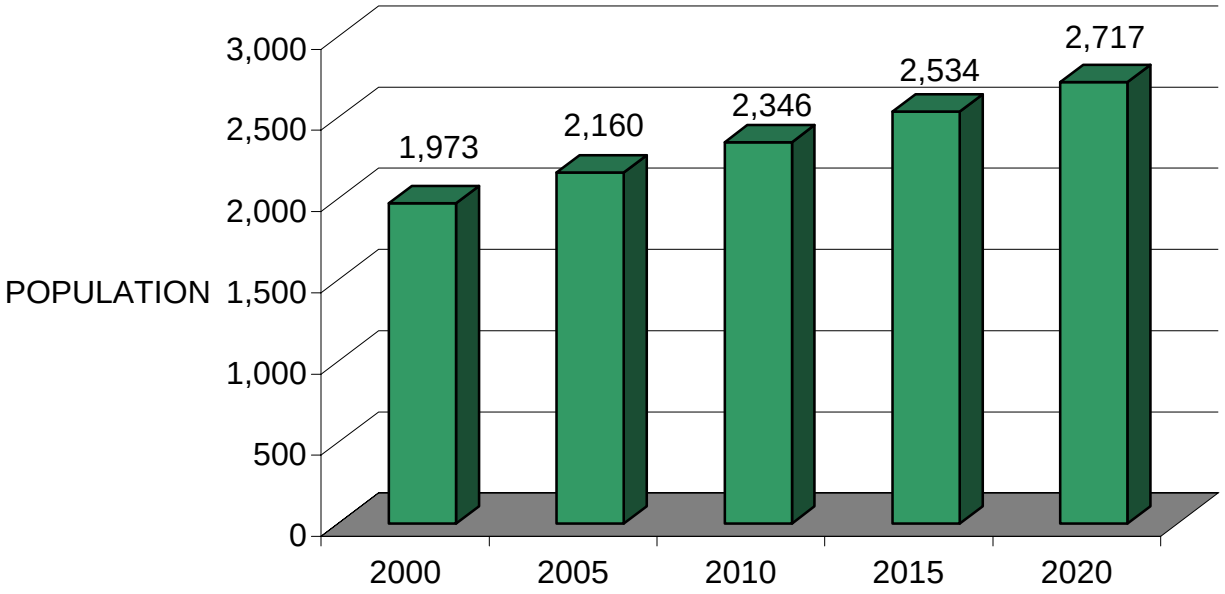
YEAR	POPULATION	PERCENT INCREASE
2000	2,422	*
2005	2,652	9.5%
2010	2,880	8.6%
2015	3,110	8.0%
2020	3,334	7.2%



IV. WILLACY COUNTY

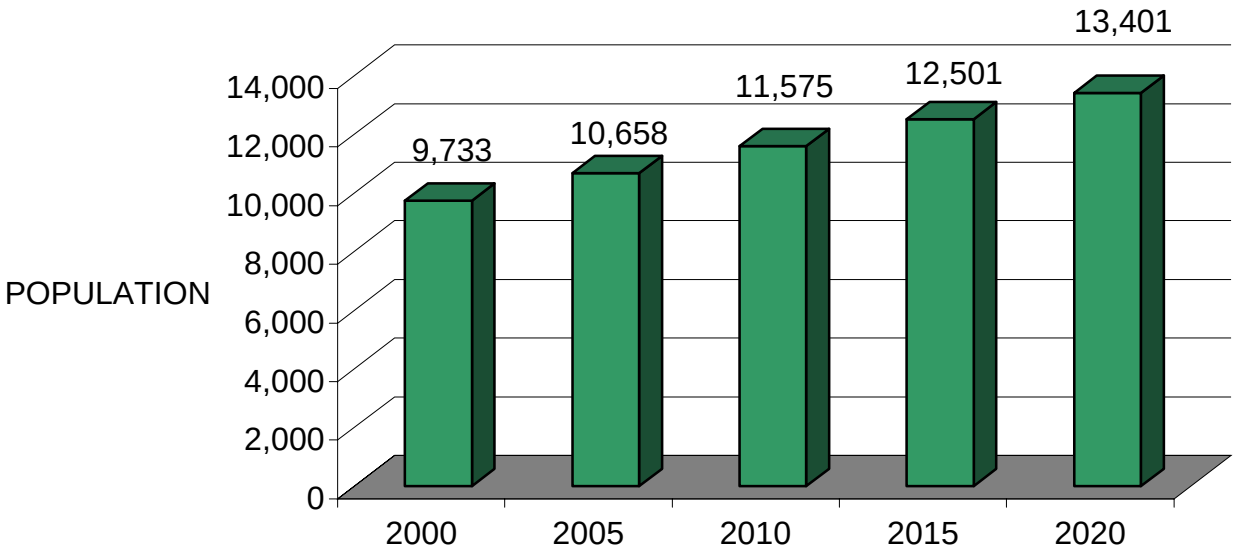
CITY OF LYFORD

YEAR	POPULATION	PERCENT INCREASE
2000	1,973	*
2005	2,160	9.5%
2010	2,346	8.6%
2015	2,534	8.0%
2020	2,717	7.2%



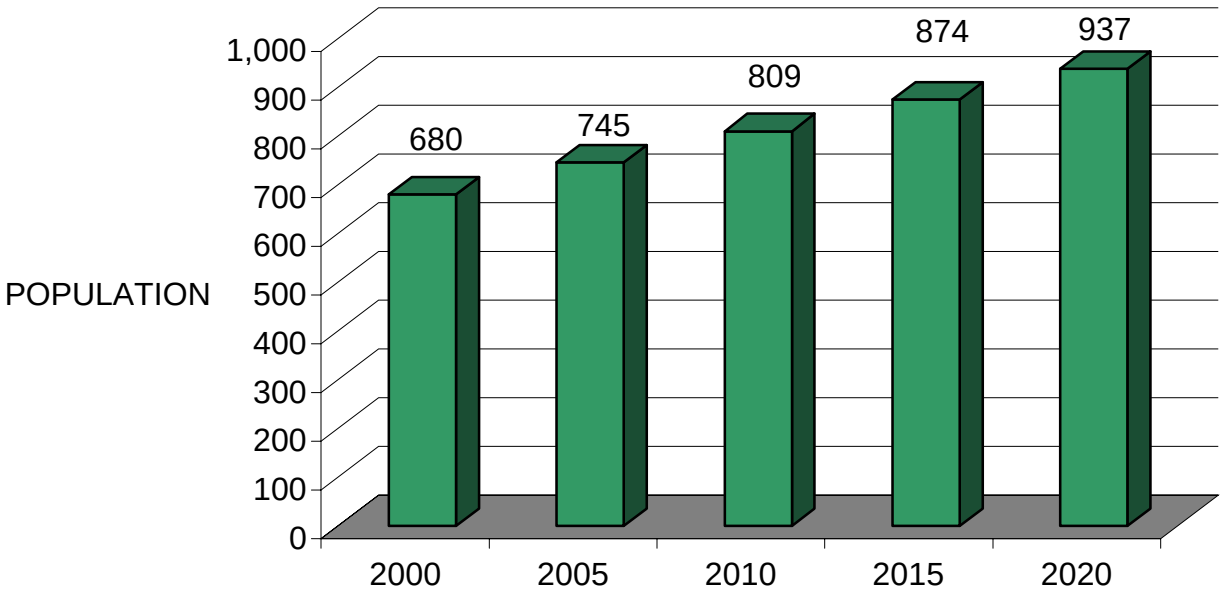
CITY OF RAYMONDVILLE

YEAR	POPULATION	PERCENT INCREASE
2000	9,733	*
2005	10,658	9.5%
2010	11,575	8.6%
2015	12,501	8.0%
2020	13,401	7.2%



CITY OF SAN PERLITA

YEAR	POPULATION	PERCENT INCREASE
2000	680	*
2005	745	9.5%
2010	809	8.6%
2015	874	8.0%
2020	937	7.2%



V. WATER QUALITY MANAGEMENT PLAN

The LRGVDC region includes approximately 3 counties including Cameron, Hidalgo and Willacy. Stream segments within the planning region, classified by the Texas Commission on Environmental Quality (TCEQ) and subject to water quality standards, are: The Rio Grande Colorado River, The Arroyo Colorado, Brownsville Ship Channel and The Laguna Madre.

The LRGVDC planning region includes all cities and CDP's listed below with their respective actual population (2000):

City/CDP Name	2000
HIDALGO COUNTY	569,463
Abram-Perezville CDP	5,444
Alamo	14,760
Alton	4,384
Alton North CDP	5,051
Cesar Chavez CDP	1,469
Citrus City CDP	941
Cuevitas CDP	37
Doffing CDP	4,256
Donna	14,768
Doolittle CDP	2,358
Edcouch	3,342
Edinburg	48,465
Elsa	5,549
Faysville CDP	348
Granjeno	313
Havana CDP	452
Heidelberg CDP	1,586
Hidalgo	7,322
Indian Hills CDP	2,036
La Blanca CDP	2,351
Laguna Seca CDP	251
La Homa CDP	10,433
La Joya	3,303
La Villa	1,305
Llano Grande CDP	3,333
Lopezville CDP	4,476
Los Ebanos CDP	403
McAllen	106,414
Mercedes	13,649
Midway North CDP	3,946
Midway South CDP	1,711
Mila Doce CDP	4,907
Mission	45,408
Monte Alto CDP	1,611
Muniz CDP	1,106

City/CDP Name	2000
CAMERON COUNTY	335,227
Arroyo Alto CDP	320
Arroyo Colorado Estates CDP	755
Arroyo Gardens-La Tina Ranch CDP	732
Bayview	323
Bixby CDP	356
Bluetown-Iglesia Antigua CDP	692
Brownsville	139,722
Cameron Park CDP	5,961
Chula Vista-Orason CDP	394
Combes	2,553
Del Mar Heights CDP	259
El Camino Angosto CDP	254
Encantada-Ranchito El Calaboz CDP	2,100
Grand Acres CDP	203
Green Valley Farms CDP	720
Harlingen	57,564
Indian Lake	541
La Feria	6,115
La Feria North CDP	168
Lago CDP	246
Laguna Heights CDP	1,990
Laguna Vista	1,658
La Paloma CDP	354
Lasana CDP	135
Las Palmas-Juarez CDP	1,666
Laureless CDP	3,285
Los Fresnos	4,512
Los Indios	1,149
Lozano CDP	324
Olmito CDP	1,198
Palm Valley	1,298
Port Isabel	4,865
Primera	2,723
Rancho Viejo	1,754
Rangerville	203

City/CDP Name	2000
WILLACY COUNTY	20,082
Bausell and Ellis CDP	112
Lasara CDP	1,024
Los Angeles Subdivision CDP	86
Lyford	1,973
Lyford South CDP	172
Port Mansfield CDP	415
Ranchette Estates CDP	133
Raymondville	9,733
San Perlita	680
Santa Monica CDP	78
Sebastian CDP	1,864
Willamar CDP	15
Zapata Ranch CDP	88
Other areas not listed above	3,709

North Alamo CDP	2,061
Nurillo CDP	5,056
Olivarez CDP	2,445
Palmhurst	4,872
Palmview	4,107
Palmview South CDP	6,219
Penitas	1,167
Pharr	46,660
Progreso	4,851
Progreso Lakes	234
Relampago CDP	104
San Carlos CDP	2,650
San Juan	26,229
San Manuel-Linn CDP	958
Scissors CDP	2,805
South Alamo CDP	3,101
Sullivan	3,998
Villa Verde CDP	891
Weslaco	26,935
West Sharyland CDP	2,947
Other areas not listed above	93,685

Ratamosa CDP	218
Reid Hope King CDP	802
Rio Hondo	1,942
San Beinto	23,444
San Pedro CDP	668
Santa Maria CDP	486
Santa Rosa	2,833
Solis CDP	545
South Padre Island	2,422
South Point CDP	1,118
Tierra Bonita CDP	160
Villa Del Sol CDP	132
Villa Pancho CDP	386
Yznaga CDP	103
Other areas not listed above	52,516

FEDERAL REGULATORY UPDATE ON STORM WATER MANAGEMENT

During the early 1970's, little or no information was available regarding the impacts of storm water runoff related to water quality, often referred to as Non-point sources.

The sources of water pollution fall into two main categories, called point and non-point sources. Pollution from point sources can be traced to a specific location, such as industrial operation or a wastewater treatment plant. Pollution from most point sources is controlled through regulations that require treatment of a facilities wastewater before it is discharged into a nearby lake or stream. Non-point source pollution comes in small amounts from multiple locations, carried by rainfall runoff. Non-point source pollution may also originate from natural sources due to the effects of winds and storms. The majority of the attention of the impacts of storm water runoff was focused on wastewater treatment plants and other point sources in response to federal directives to improve water quality. The states were required to develop specific water quality standards with designated uses and related water quality criteria for major water bodies. Texas adopted criteria applicable to **low flow** stream conditions, as did other states, since these were considered to be the most stressful periods for aquatic life.

In 1972, Congress passed the Clean Water Act (CWA). This law represents a comprehensive recodification and revision of federal water pollution control law. The primary mechanism of the act served to impose limitations on pollutant discharges through a nationwide permit program established under Section 402 of the Act and referred to as the National Pollutant Discharge Elimination System (NPDES). Under this program, any person(s) responsible for the discharge of a pollutant, or combination of pollutants, into any waters or the United States from any point source must apply for and obtain a permit.

Since the passage of the Clean Water Act in 1972, states have focused on controlling point sources of pollution, the most serious causes of water pollution. As a result, the quality of surface waters across the country has improved significantly over the last 30 years. Where the problems remain, the chances that they are caused by Non-point sources have increased over time as treatment technologies have improved and as most point sources dischargers have compiled with regulatory discharge limits. In addition, human populations have increased in many watersheds, multiplying the impacts from their many activities that lead to non-point source pollution. As of 2000, 92% of the impaired waters in Texas were affected, at least in part, by Non-point sources. In spite of the successes in improving surface water quality by controlling point sources of pollution, 46 percent of the assessed water bodies in Texas were still impaired as of 2000. The Clean Water Act anticipated this possibility. It requires that where point source controls are not sufficient to attain water quality standards, then a total daily maximum must be established to solve remaining water quality problems.

Since 1972, the EPA has issued several rounds of 'final rules " of considering storm water discharges as point source and managing them in a fashion similar to more classic NPDES permits. In its first set of draft rules in 1973, EPA exempted certain sources from obtaining an NPDES permit - among them were storm water runoff discharges uncontaminated by industrial and commercial activity. This process was repeated from 1980 to 1985 when another set of final rules was published and generally left untreated. EPA was challenged in court by environmental interest groups, however, and again issued final rules in 1986 requiring NPDES permit

discharges. Again, EPA did not actively pursue implementation and again, local governments across the nation generally chose not to implement the storm water permit requirements. The Clean Water Act of 1977 established the Nationwide Urban Runoff Program (NURP) to assess the nature and cause of urban runoff and its effects on surface and ground water.

CLEAN WATER ACT (CWA)

Under the federal Clean Water Act (CWA) states must define how water bodies will be used (for example, drinking water, contact recreation, (swimming and fishing), or aquatic life support (habitat for fish and other water dwelling species) and establish standards that serve as goals for water quality. The state must also have a regular monitoring program in place to determine whether water bodies meet their standards. Monitoring enables the state to prepare a required inventory of the status of all classified water bodies. The inventory provides the basis for the CWA §303(d) List, which identifies and prioritizes water bodies that do not meet their designated uses.

WATER QUALITY IMPAIRMENTS

The TCEQ is required, under Section 303(d) of the Clean Water Act, to identify water bodies for which effluent limitations are not stringent enough to implement water quality standards. The sources and types of impairments identified in the 2000 CWA §303(d) List are summarized in Table 1. The problems identified in these priority watersheds clearly indicate a complex array of water quality issues that need to be addressed throughout Texas. TCEQ was designated as the lead agency for water quality management but the responsibility for restoring these polluted segments falls to multiple agencies. The Clean Water Act requires the state to address all problems identified on the 303(d) List. This makes the list a primary decisions tool for determining priorities for TCEQ water quality management program activities. The list will, in turn have an impact on local and regional activities aimed at protecting and restoring local water bodies. It will be used to recommend priorities for future water quality monitoring, development of watershed action plans, intergovernmental

coordination, and Non-point source pollution management.

Water pollution comes from point sources, which can be traced to a specific location such as a pipe or disposal site, and from Non-point sources, which are pollutants carried by rainfall runoff sites including lawns, construction areas, farms, or highways. Point sources of pollution are controlled by such means as water treatment and regulatory permits. Non-point sources are more difficult to control because they often come from every day activities such as lawn fertilization, pesticide use, new construction, or crop irrigation. Understanding the specific sources of the problems is the first step toward protecting the quality of each watershed.

TABLE 1

Water Body	Segment #	Water Body Type	Water Body Use	Contaminants
Arroyo Colorado Above Tidal	2202	Freshwater Stream	Aquatic Life Use Contact Recreation Use General Use Fish Consumption Use	Bacteria, DDE in fish tissue, other organic compounds in fish tissue
Gulf of Mexico	2501	Ocean	Aquatic Life Use Contact Recreation Use General Use Fish Consumption Use Oyster Waters Use	Mercury
Laguna Madre	2491	Estuary	Aquatic Life Use Contact Recreation Use General Use Fish Consumption Use Oyster Waters Use	Depressed dissolved oxygen
Rio Grande Below Falcon Reservoir	2302	Freshwater Stream	Aquatic Life Use Contact Recreation Use General Use Fish Consumption Use Public Water Supply Use	Bacteria

PHASE I - LARGE CITIES AND SELECTED INDUSTRIAL ACTIVITIES

In 1987, Congress amended the Clean Water Act to require EPA to develop a phased regulatory program

focusing on controlling contaminated discharges associated with storm water runoff. [1] In 1987 Water Quality amendments, Congress established a tiered approach to address certain industrial, municipal, and other storm water discharges. In the first phase of the program, Congress directed the EPA and authorized States to control discharges of industrial storm water and storm water from municipal separate storm sewer systems (MS4) serving populations over 100,000 with the intent of identifying second tier sources following two Congressionally mandated studies. To implement these requirements, EPA published the initial permit application requirements (Phase I) for the priority categories of storm water discharges identified by Congress.[2] Generally, Phase I sources include storm water discharges of industrial storm water associated with certain industrial activities, medium and large municipalities, and large construction sites. Staggered deadlines were established for permit applications for these sources, with the last of the applications scheduled for submission by May 1993. To control municipal discharges, the Phase I rule requires NPDES permits for discharges into municipal separate storm sewer systems serving populations greater than 100,000. This universe of regulated municipalities includes 173 cities and 47 counties having large unincorporated, urbanized areas. EPA regulations require that NPDES permits for municipal storm water programs regulated in Phase I include requirements to effectively prohibit non-storm water discharges into the storm sewers and controls to reduce the discharge of pollutants to the maximum extent practicable (including management practices, control techniques, and system design and engineering methods, and other provisions appropriate for the control of such pollutants.

In March of 1995, EPA completed and submitted to Congress a study entitled, *Storm Water Discharged Potentially Addressed by Phase II* of the National Pollution Discharge Elimination System Storm Water Program: Report to Congress. As required under CWA §402 (p)(5), this report identified the remaining unregulated storm water discharges, which by this time were known as Phase II. The report also characterized the nature and extent of pollutants in such discharges. The Phase II storm water report identified two major classes of potential Phase II storm water discharges: discharges from municipal separate storm sewers systems not subject to Phase I regulations and discharges from individual facilities not subject to Phase I. In a document entitled, "President Clinton's Clean Water Initiative" (February 1994), EPA summarized procedures and methods to control Phase II storm water discharges sufficient to mitigate impacts on water quality. This document responded to the requirement for an additional report under CWA §402 (p)(5). This document recommended that the second phase of the storm water program focused on urbanized areas because EPA

[1] CWA,§ 402(p).
[2] 55 FR 47900 (November 16, 1990)

concluded that the urbanized areas that were not regulated under the Phase I requirements contributed 60 percent of the pollutant loads in storm water discharged from urban areas.[3]

MUNICIPAL AND INDUSTRIAL STORM WATER PERMITS

The federal law requires EPA to issue permits to operators of storm water discharges associated with industrial activity. The general permit rules in the September 9, 1992 Federal Register seek to accomplish this in three ways, through 1) individual permits, 2) permits based on group applications, and 3) coverage under a General Permit through submittal of a Notice of Intent. Cities and public entities were also required to submit applications for industrial activities such as vehicle maintenance facilities, landfills, airports, and other facilities covered under the regulations. The extension of deadlines and the moratorium on permitting for cities fewer than 100,000 initially provided some relief from this requirement. Cities that are now applying for permits are still required to obtain for those types of facilities, and management programs provided with MS4 applications will require information as to how an applying city will manage industrial storm water dischargers. Currently, MS4 applicants are required to provide an inventory of industries and submit a description of programs to monitor and control industrial storm water discharges for all facilities, including those that are required to secure individual NPDES storm water permits.

PHASE II - ADDITIONAL STORM WATER DISCHARGES

EPA's current draft of the proposed Phase II storm water regulation would address storm water discharges associated with two categories of sources: small municipal separate storm sewer systems (small MS4s) and construction activities at small construction sites. Under the draft proposed rule, many of these Phase II sources would be required to obtain NPDES permit coverage under an individual or general NPDES permit to address their storm water discharges. The small MS4s that would be covered include those located within incorporated places, counties, or other places under the jurisdiction of a governmental entity (including Tribal or Territorial governments) that are located in an urbanized area but not to be included in Phase I. [4][5] Also covered would be MS4s that are connected to and contribute substantially to pollutant

[3] Phase I of the NPDES storm water program addresses 81.7 million people in portions of 136 urbanized areas. EPA estimated that 28 percent of pollutant loads in storm water discharged from urbanized areas come from those portions of these 136 urbanized areas not subject to Phase I regulations. In addition, EPA estimated that 32 percent of the pollutant loads in storm water discharged from urbanized areas come from the 269 urbanized areas not regulated under Phase I. Storm Water Phase II Report to Congress, ES-7

[4] 60 FR 40229 (August 7, 1995)

[5] The existing storm water regulations ("PhaseI") addresses large and medium MS4s, Generally, a large MS4 includes incorporated places with

loadings in another covered MS4. Finally, the rule would cover small MS4s in any incorporated place, county, or other place under the jurisdiction of a governmental entity that is designated by the NPDES permitting authority as requiring a permit based on the system's potential for impacting water quality. The permitting authority would be required to evaluate places outside urbanized areas that have a population density of greater than 1,000 per square mile and a population of greater than 10,000 people against specific water quality related criteria.[6] Under the draft proposed rule, small MS4s would develop and implement a storm water management program designed to reduce pollutants to the maximum extent practicable and protect water quality. Such programs would include, at a minimum, measures to address requirements concerning public education and outreach, public involvement, illicit discharge detection and elimination, construction site storm water runoff control, post-construction storm water management in new development and redevelopment, and pollution prevention and good housekeeping of municipal operations. The draft proposed Phase II storm water regulation would also address storm water discharges associated with construction activities resulting in the land disturbance of greater or equal to one acre and less than five acres. In addition, sites disturbing less than one acre would be subject to regulation if they were a part of a larger common plan of development or sale. Similar to MS4s, the NPDES permitting authority may also waive storm water discharges from construction activities that disturb less than five acres where specified conditions are satisfied.

VI. STATE MUNICIPAL WATER POLLUTION CONTROL PROGRAMS

In 1989, the State of Texas undertook its own review of water quality concerns related to Non-point sources and urban storm water impacts. The State Legislature strengthened the law during its 1989 session by directing the Texas Water Commission to implement requirements for local water pollution control and abatement programs originally called for under Senate Bill 835 and now part of Section 26.177 of the Texas Water Code. TWC, now TCEQ, was charged with developing rules for municipalities to follow with regard to these programs, which, when adopted, would require all cities of more than 5,000 in population to submit local programs for its approval. The initial draft rules met with strong opposition from the Texas Municipal League and many municipalities from across the state. During the summer of 1991, TCEQ appointed Texas Clean Water Council to advise TCEQ on various matters including these provisions.

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populations of 250,000 or more, while a medium MS4 includes incorporated places with a population of 100,000 or more, but less than 250,000.

[6] Under the proposed Phase II regulation, the NPDES permitting authority must develop and apply criteria to evaluate whether a storm water discharge results or has the potential to result in significant water quality impacts (including habitat and biological impacts).

Non-point source pollution, the LRGVDC recommended that TCEQ continue to refine administrative plans for addressing requirements under Water Code 26.177 to maximize coordination with local governments and other state agencies. The recommendations also highlighted the need for the state agency to comply with the requirements under Section 39 of the Clean Water Act, which address Non-point sources. The extent to which Section 319 requirements apply to storm water permits is not clear.

The LRGVDC is continuing to examine the 26.177 rules and explore options for developing the final rules so that they match up well with emerging federal storm water permit requirements. There is also a desire at the state level to meld requirements with basin assessment requirements under the Texas Clean Rivers Act. In addition, TCEQ and EPA Region 6 are continuing negotiations on transferring delegation authority of the NPDES program to the State of Texas (to be phased in over a 5 - year period), which would include the federal NPDES storm water, permit program.

DOMESTIC WASTELOAD PROJECTIONS

Domestic wastewater is wastewater generated by humans and treated at wastewater treatment plants. The TCEQ regulates these treatment plants by issuing wastewater discharge permits. The main parameters by which the permits regulate are:

Flow - the amount of effluent discharged from the treatment plant

Biochemical Oxygen Demand (BOD) - a measure of matter that uses up oxygen in the process of degradation

Total Suspended Solids (TSS) - the concentration of suspended, non-dissolved particulate found within a body of water

NH_3-N (Ammonia Nitrogen) - a common toxic compound produced (as an end product of decomposition of organic matter) within the food chain. Assimilation of NH_3-N by a water body utilizes dissolved oxygen and contributes to low in stream-dissolved oxygen.

Table 2 below lists the number of wastewater treatment facilities and the approximate number of persons currently being served within the SETRPC three-county area. A map of the LRGVDC region with the wastewater treatment plants and service areas is attached.

TABLE 2

ENTITY	# OF FACILITIES	DESIGN RATE (MGD)	AVE. DAILY FLOW (MGD)	LOCATION
ALAMO	1	2.40	2.00	
ALTON	0 (1)	-	-	
BAYVIEW	0 (1)	-	-	
BROWNSVILLE	2	6.30	6.00	NORTH
		5.80	5.40	SOUTH
COMBES	0 (1)	-	-	
DONNA	1	3.90	3.50	
EDCOUCH	1	0.53	0.48	
EDINBURG	1	10.90	10.00	
ELSA	1	0.04	0.01	
GRANJENO	0 (1)	-	-	
HARLINGEN	2	0.30	2.80	NORTH
		2.20	2.00	SOUTH
HIDALGO	1	0.43	0.40	
INDIAN LAKE	0 (1)	-	-	
LA FERIA	1	0.39	0.35	
LAGUNA MADRE	2	1.50	0.04	NORTH
		2.60	1.10	SOUTH
LA JOYA	1	1.40	0.20	
LA VILLA	1	0.06	0.02	
LOS FRESNOS	1	0.59	0.316	
LYFORD	1	0.08	0.05	
MCALLEN	2	2.70	2.00	NORTH
		10.00	7.20	SOUTH
MERCEDES	1	1.60	1.20	
MILITARY HWY	6	0.51	0.017	PROGRESO
		0.05	0.01	SANTA MARIA
		0.02	0.012	RANGERVILLE
		0.50	0.018	LA PALOMA
		0.02	0.01	SAN PEDRO
		0.01	0.005	ALAMO

MISSION	1	4.20	3.780	
NORTH ALAMO	4	0.124	0.124	SAN CARLOS
		0.122	0.100	HARGILL
		0.39	0.30	MONTE ALTO
		0.13	0.123	LA SARA
OLMITO	1	0.13	0.125	
PALMHURST	0 (1)	-	-	
PALM VALLEY EST	1	0.15	0.10	
PLAMVIEW	0 (1)	-	-	
PENITAS	0 (1)	-	-	
PHARR	1	7.60	7.00	
PORT MANSFIELD	1	0.05	0.039	
PRIMERA	0 (1)	-	-	
RAYMONDVILLE	1	2.80	2.50	
RIO HONDO	1	0.02	0.016	
SAN BENITO	1	2.90	1.40	
SAN JUAN	1	1.70	1.269	
SANTA ROSA	1	0.28	0.263	
SHARYLAND	0 (1) (2)	-	-	
SOUTH PADRE ISLAND	1	0.65	0.60	
SULLIVAN	0 (1)	-	-	
WESLACO	2	5.10	5.00	NORTH
		5.10	5.00	SOUTH

(1) Septic Tanks (2) Served by City

METHODOLOGY **(as provided by TCEQ)**

The method used to project future waste loads is to multiply future expected population by existing use rates. Existing use rates are calculated by dividing existing flows by existing populations. The flows are reported as part of the TCEQ Self-Reporting System data.

$$\text{Projected Flow (MGD)} = \frac{\text{Unit Flow (GPCD)} \times \text{Projected Population}}{1{,}000{,}000}$$

Since future service area expansions or creations are not accounted for in waste load projections, the number of those served by septic or systems should be expected to increase. It also does not take into consideration those populations within service areas allowed but not yet permitted. Even though these unknowns

are difficult to approximate, these figures should be useful in determining the need to create future sewage treatment plants.

TABLE 3

WASTEWATER TREATMENT PLANT FLOW PROJECTIONS

ENTITY	GPCD	2000	2005	2010	2015	2020	LOCATION
ALAMO	136	2.00	2.19	2.38	2.57	2.76	~
ALTON	(ST)	-	-	-	-	-	~
BAYVIEW	(ST)	-	-	-	-	-	~
BROWNSVILLE	41	5.72	6.27	6.83	7.37	7.90	NORTH
BROWNSVILLE	41	5.72	6.27	6.83	7.37	7.90	SOUTH
COMBES	(ST)	-	-	-	-	-	~
DONNA	231	3.41	3.73	4.05	4.38	4.69	~
EDCOUCH	144	0.48	0.52	0.57	0.61	0.66	~
EDINBURG	206	9.98	10.93	11.87	12.82	13.74	~
ELSA	(-)	-	-	-	-	-	~
HARLINGEN	41	2.36	2.58	2.80	3.03	3.24	NORTH
HARLINGEN	42	2.41	2.64	2.87	3.10	3.32	SOUTH
HIDALGO	55	0.40	0.45	0.49	0.53	0.57	~
INDIAN LAKE	(ST)	-	-	-	-	-	~
LA FERIA	57	0.34	0.38	0.41	0.44	0.47	~
LAGUNA MADRE	(-)	-	-	-	-	-	NORTH
LAGUNA MADRE	553	1.10	1.20	1.30	1.41	1.51	SOUTH
LAGUNA VISTA	(-)	-	-	-	-	-	~
LA JOYA	61	0.20	0.22	0.23	0.25	0.27	~
LA VILLA	(-)	-	-	-	-	-	~
LOS FRESNOS	70	0.31	0.34	0.37	0.40	0.43	~
LYFORD	(-)	-	-	-	-	-	~
MCALLEN	43	4.57	5.01	5.44	5.87	6.29	NORTH
MCALLEN	44	4.68	5.12	5.56	6.01	6.40	SOUTH
MERCEDES	88	1.20	1.31	1.42	1.54	1.65	~
MISSION	83	3.76	4.12	4.48	4.84	5.18	
PALMHURST	(ST)	-	-	-	-	-	~
PALM VALLEY	(-)	-	-	-	-	-	~
PALMVIEW	(ST)	-	-	-	-	-	~
PENITAS	(ST)	-	-	-	-	-	~
PHARR	150	6.99	7.65	8.32	8.98	9.63	~
PORT ISABEL	226	1.09	1.20	1.30	1.41	1.51	~
PRIMERA	(ST)	-	-	-	-	-	~
PROGRESO	(-),(1)	-	-	-	-	-	~

PROGRESO LAKES	(1)	-	-	-	-	-	~
RANCHO VIEJO	(1)	-	-	-	-	-	~
RANGERVILLE	(1)	-	-	-	-	-	~
RAYMONDVILLE	257	2.50	2.73	2.97	3.21	3.44	~
RIO HONDO	(-)	-	-	-	-	-	~
SAN BENITO	60	1.40	1.54	1.67	1.80	1.93	~
SAH JUAN	44	1.15	1.26	1.37	1.48	1.58	~
SAN PERLITA	(1)	-	-	-	-	-	~
SANTA ROSA	93	0.26	0.28	0.31	0.33	0.36	~
SOUTH PADRE ISLAND	248	0.60	0.65	0.71	0.77	0.82	~
SULLIVAN CITY	(ST)	-	-	-	-	-	~
WESALCO	185	4.98	5.45	5.92	6.39	6.86	NORTH
WESALCO	186	5.00	5.48	5.95	6.43	6.89	SOUTH

(1) - SERVED BY MILITARY HIGHWAY (ST) - SEPTIC TANK (-) UNDER 125,000 gal.