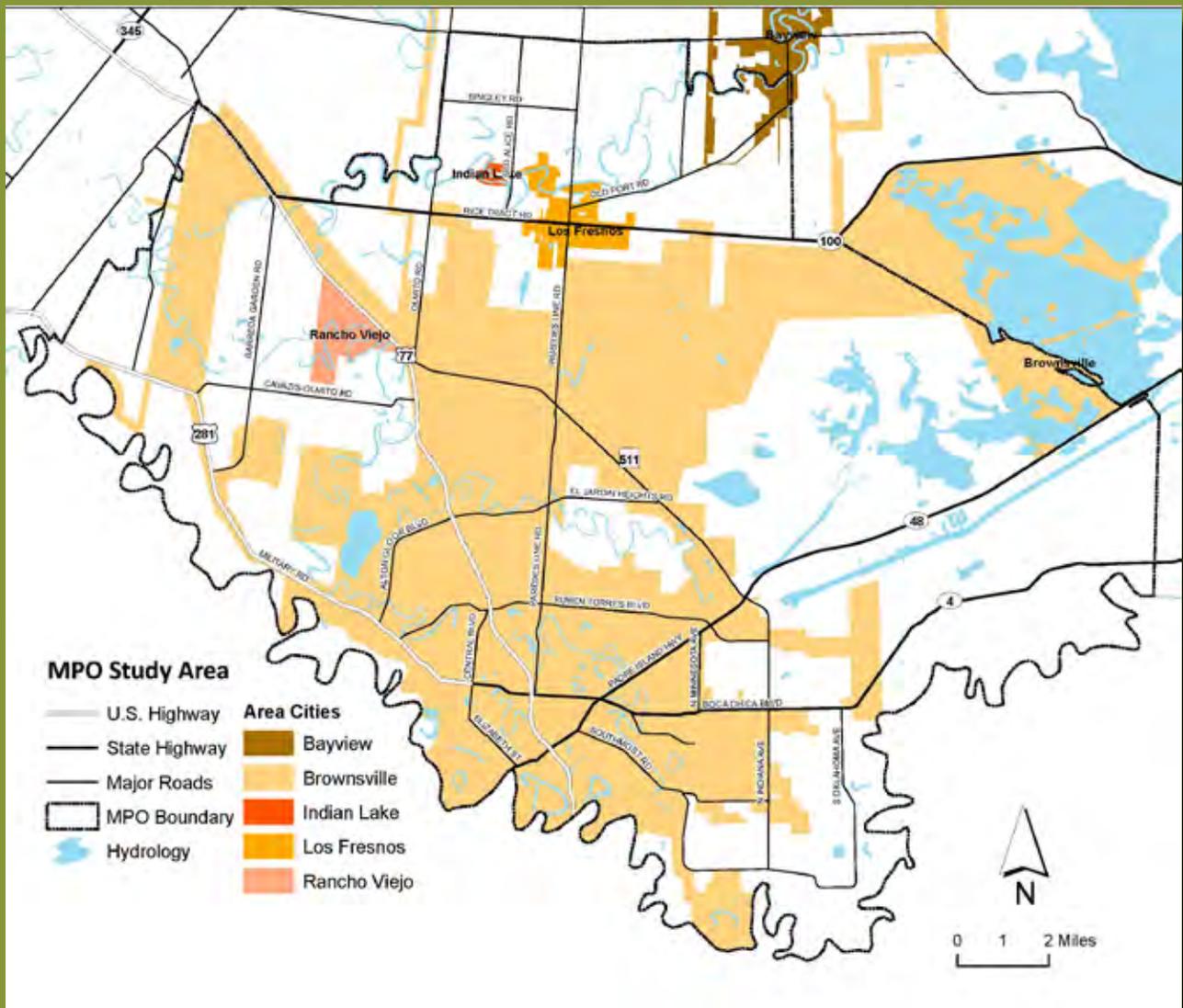


# REGIONAL SCAN



## Political Jurisdictions in the Region

The Brownsville MPO's planning area extends across Cameron County and includes the municipalities of Brownsville, Los Fresnos, and Rancho Viejo. The planning area covers approximately 280 square miles and borders with Matamoros, Mexico, as well as the Harlingen-San Benito MPO area.



## Growth Projections (2035)

The MPO develops growth projections for the region using static data sets (commonly referred to as *socioeconomic data*). The data is generated from independent studies commissioned during major updates to the travel demand model (TDM). Collectively, this information represents the assumed development potential for the Brownsville MPO planning area. Demand on the transportation system (i.e., trip generation) is calculated directly from the socioeconomic data. The last major update to regional control totals for socioeconomic data using the TDM was completed in 2005 and included MPO projections for the 2030 forecast year. Population, housing, and employment estimates included in the socioeconomic data set were used as direct inputs to the CommunityViz® growth allocation model. It was also used as a basis for establishing the chip sets used in the public workshops. The planning horizon for the land use allocation model is 2035.



## Natural Environment

### Topography

The study area is located in the southeastern tip of Texas and shares more environmental similarities with its Mexican neighbors than its northwestern counterparts in the State. The topography is characterized primarily as low-lying coastal prairie, common in areas of this latitude and low elevation. Like most areas along the Gulf of Mexico, elevations do not exceed 60 feet above sea level. The low elevations, combined with proximity to the water, contribute to flooding and limit development in the region. Portions of the study area have been designated by FEMA or the City (through their floodplain management ordinance) as areas of special flood hazard. Development can be prohibited in these areas, or uses can be severely restricted. Additionally, stringent building requirements have been established to maintain public safety and minimize structural damage which can make development cost prohibitive.

Infill and redevelopment in these areas is also unlikely. Development in flood prone areas took place prior to the adoption of floodplain management regulations, and these existing structures are inadequately elevated and flood-proofed. The Bureau of Land Management is slowly acquiring flood-prone land to reduce the threat of damages to persons and property in the future.

### Protected Lands

#### National Historic Sites

Palo Alto Battlefield National Historic Site was established in 1978 and expanded in 1992 to commemorate the first major battle of the Mexican-American War, which took place here in 1846. The site is approximately 3,400 acres, but is not entirely protected from development. The National Park Service has acquired a little more than a third of the land within the site boundary, but private landowners still control approximately 2,000 acres of the battlefield. Development within the boundary of the site (and in proximity to the site) can adversely impact the site's historical integrity. National Park Service staff, based in Brownsville, are charged with protecting the resources of the historic site and to interpret the battle and the war from the perspective of both nations. The National Park Service also presents interpretative materials that help visitors understand the causes, events, and aftermath of the 1846-1848 conflict between the United States and Mexico.

In addition, a 34-acre site associated with the Resaca de la Palma Battlefield (located east of FM 1847 and slightly north of Price Road) has been permanently protected from commercial development. The National Park Service can enter into cooperative agreements to protect sites such as Resaca de la Palma and Fort Brown.

#### State Parks

Resaca de la Palma State Park (Northwest area) is a unit of the World Birding Center. The park is 1,200 acres and is the largest habitat in the World Birding Center network. The park contains over 8 miles of trails, 6 miles of resacas, and numerous decks for bird watching. This site is permanently protected by the World Birding Center.

#### Wildlife Refuges/Bird Sanctuaries

Several wildlife refuges and bird sanctuaries are located along the Rio Grande River and the Mexican border. One in particular, Sabal Palm Grove, is a 527-acre site created and managed by the Texas Audubon.

## Parks and Recreation Areas

The City of Brownsville owns and operates approximately 25 parks and recreation areas/facilities. Amenities at these facilities include pools, athletic fields, playgrounds, walking trails, gyms/community centers, and picnic areas. The City offers recreation opportunities for all age groups, including after school programs, special events, and senior programs. The protected lands in the study area are shown in the Environmental Features Map found on page 10.

## Floodplain

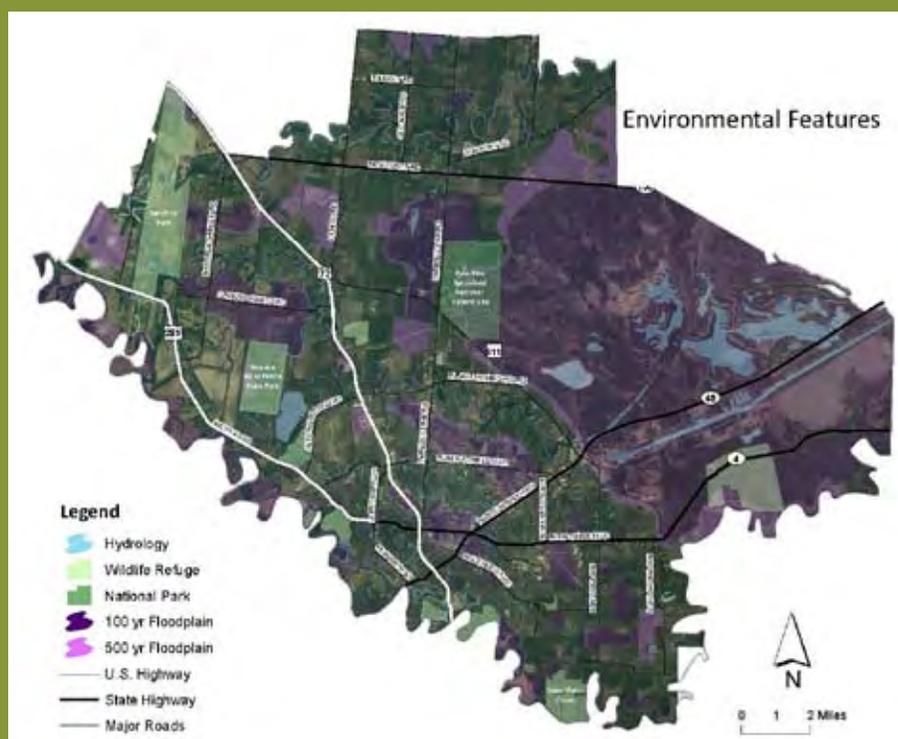
Floodplains exist throughout the study area. In particular, the eastern portion of the study area is entirely within the 100-year or 500-year floodplain. Large pockets of floodplain are found throughout the remaining portion of the study area, predominantly in areas adjacent or in proximity to rivers and resacas.

## Water Bodies

All water bodies flow in a southeasterly direction toward the Gulf of Mexico. The largest body of water in the study area is the Rio Grande. The Rio Grande, located along the southern portion of the study area, is the fourth longest river system in the U.S. and serves as a natural boundary between Texas and Mexico. The arid and semiarid conditions in the study area often result in the Rio Grande turning into little more than a trickle in the study area for several months during the year. On rare occasions, flood waters do rise and threaten to spill over the banks of the Rio Grande.

## Resacas

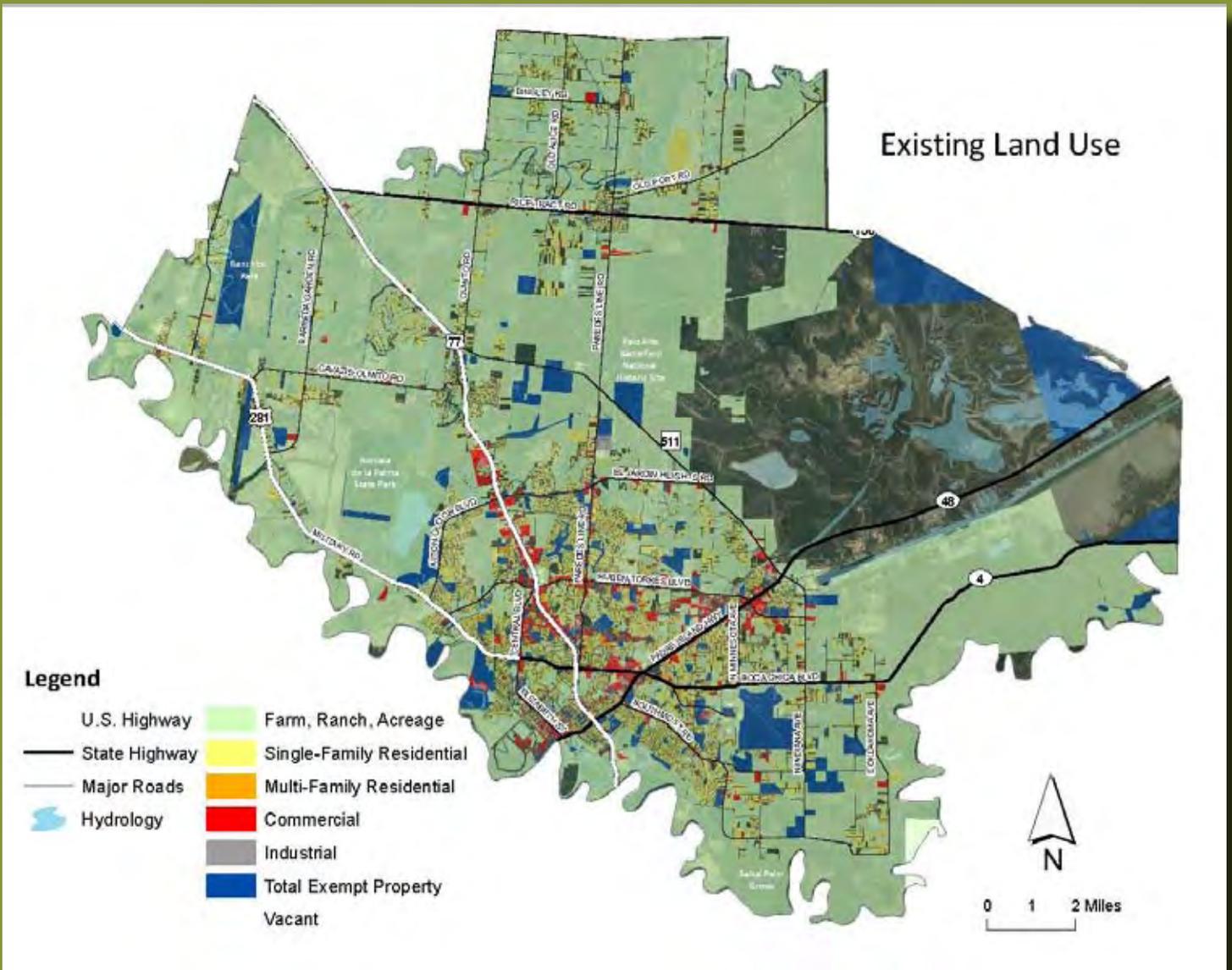
Resacas — dry riverbeds formed over time by the flooding of the Rio Grande — are native to the area. Resacas aid in flood control and water storage. The City of Brownsville can control the release of water into some of the resacas, creating lush marsh and forest habitats that attract an array of fish and wildlife species as well as add aesthetic character to the city. As shown in the Environmental Features Map, resacas are an interconnected network of shallow riverbeds throughout the study area.



# Built Environment

## Land Use Profile

Land development activities in the majority of the study area are challenged by a lack of available infrastructure (i.e., access to water and sewer service) and natural site constraints (such as floodplains). Residential homes, farms, churches, schools, and businesses are all present in the 155,626-acre study area. Development patterns are generally reflective of a rural community, with farms and single family residential homes on large lots found throughout unincorporated portions of the study area. Commercial uses are found in the downtowns of cities such as Los Fresnos and along major corridors such as US 77/83 and Padre Island Highway. Tourist attractions include beaches, Gladys Porter Zoo, museums, and the Palo Alto Battlefield National Historic Site. Institutional uses and parks are scattered throughout the study area. Existing land use in the study area is detailed in the map below .





## Urban Form

Urban form is the land use vision as it becomes reality in the physical world. It is commonly measured by street patterns, block lengths, building heights, building setbacks, average residential density, and average non-residential intensity. Areas within municipalities can be characterized as single family focused. Although major employment areas include a vibrant downtown, a major port, and large commercial uses along corridors, many are dominated by large parking lots and low densities.

The majority of the study area lies outside of the municipalities. It can be characterized as rural, with isolated uses on large lots. Most structures are a maximum of two stories and are rarely served by water and sewer. The street pattern is curvilinear, following the natural contours of the land. Street connectivity is low, encouraging the use of the automobile.

## Transportation System

Regional mobility through the study area is provided by US 83/77 and US 281. These north-south routes connect the City to the northern portion of the State as well as neighboring cities in Mexico. Major east-west routes in the study area include Padre Island Highway (SH 48), Boca Chica Highway (SH 4), and Ruben Torres Boulevard (FM 802). Also connecting major east-west movements is SH 100, connecting Los Fresnos to points west and north via US 77/83 Expressway; and Port Isabel and South Padre Island to the east. SH 4 and SH 48 are critical because both connect the City of Brownsville to the Gulf of Mexico.

A review of the current transportation infrastructure conditions reveals that the region has planned and implemented a versatile network of local streets, regional arterials, and interregional highways. Within this system are pockets of congestion that can be characterized as “management-related” issues. These issues include improper signal timing, poor pavement conditions, and intersections that are experiencing peak-hour congestion that could be aided by additional turning lanes. These issues are not new and have been identified by the multiple agencies and citizens.

The region is well below national averages for vehicle miles traveled (VMT), vehicle hours traveled (VHT), and total delay. Nationally, VHT is 24 minutes per capita. This means travelers in Brownsville are driving less than national averages. An examination of the level-of-service of major roadway facilities indicates a system that is experiencing periods of delay and moderate congestion. The chart below illustrates that the region is currently experiencing congestion from both regional and local sources. This is a product of the transportation network and its relationship with the prevailing suburban land use pattern. In general, the regional highway system is being used to serve local trips (commuting, shopping, and routines). This is limiting its ability to serve through traffic generated by trade, commerce, and visitors. The spillover of this congestion negatively affects the local street system by placing regional trips on it.

INDICATOR *	2004	2035 BASE SCENARIO	NATIONAL BENCHMARK
VMT per Day	2,503,000	4,400,000	--
per Capita (miles)	12.6	10.6	24
Street Maintenance	20 Lane Miles	125 Target Goal	125**
Delay per Day	11,600	34,000	19,000
per Person (min)	3.5	5	5

\* Values are calculated for the entire MPO study area

\*\* Lane miles based on 25% maintenance of 500 total lane miles

- 2035 base scenario reflects demographic distribution prior to the scenario/allocation process.

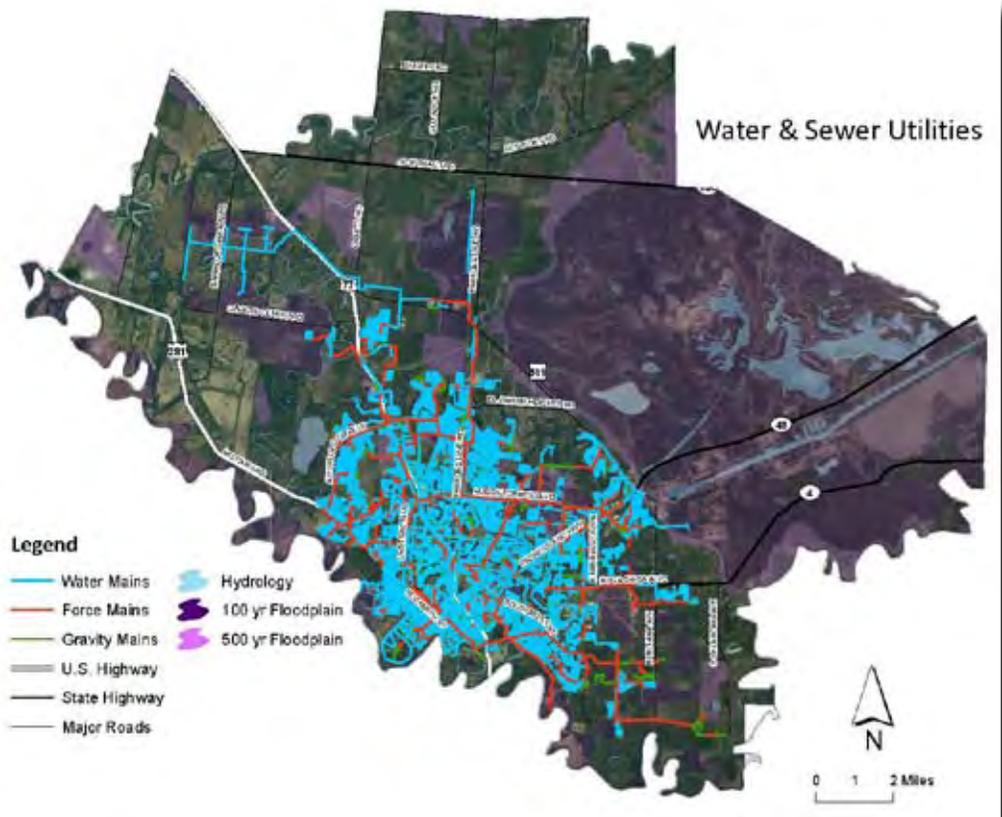
## Utilities

The Brownsville Public Utilities Board (BPUB) is the primary provider of water, sewer, and electric service in the study area, serving over 50,000 customers in the Brownsville area. The utilities are municipally owned and operated by an independent board of directors. Decisions about electric, water, or wastewater services are made at the local level. BPUB is continuously executing plans to ensure that public facilities are available and current with the timing of new development.

## Water and Sewer Service

BPUB operates two water treatment plants. Combined plant capacity is 40 million gallons per day (MGD), well above the City's current peak demand. Additionally, BPUB operates two wastewater plants — the South Wastewater Treatment Plant and the Robindale Wastewater Treatment Plant. The plants have a combined average demand of 11 MGD and a capacity of 22.8 MGD.

The adjacent Utilities map displays the portions of the study area served by water and sewer. The City of Brownsville is almost entirely served. There are very limited areas outside the City receiving water or sewer service.



## Resaca Restoration Project

BPUB, in conjunction with the U.S. Army Corps of Engineers and the City of Brownsville, is undertaking a restoration project to increase the storage capacity of the local resacas. The project is currently in the feasibility phase. Successful restoration of the resacas could increase water storage capacity, improve flood control, and restore habitat for wildlife common to the area.

## Electric Service

BPUB owns and operates three power plants in Brownsville and distributes power through more than 1,200 miles of wires and 13 substations. Even during peak demand, these plants have additional capacity.