

Table of Contents

INTRODUCTION	2
1. PHYSICAL AND NATURAL FEATURES	3
1.1. WATERSHED BOUNDARIES.....	3
1.2. HYDROLOGY	4
1.3. FLOODPLAINS	6
1.4. TOPOGRAPHY	7
1.5. SOILS	8
1.6. HABITAT & WILDLIFE.....	10
2. LAND USE AND POPULATION CHARACTERISTICS.....	13
2.1. LAND USE AND LAND COVER	13
2.2. DEMOGRAPHICS.....	16
3. WATERBODY AND WATERSHED CONDITIONS	20
3.1. SOURCE WATER ASSESSMENTS	20
4. POLLUTANT SOURCES	21
4.1. POINT SOURCES	21
4.2. NON-POINT SOURCES.....	23
APPENDIX 1: UPDATED GIS LAYERS IN REON CYBERINFRASTRUCTURE NETWORK	25

Introduction

The objective of the Existing Data and Information Report is to compile and summarize the available data from different sources to enable the identification of water quality impairments, and sources of pollutants within the North and Central watersheds. The existing data and information included in this report cover three (3) watersheds International Boundary and Water Commission (IBWC) North Floodway, Hidalgo/Willacy Main Drain, and Raymondville Drain. The data were gathered from different sources and compiled within a single cyberinfrastructure database to facilitate watershed characterizations that provide a basis for developing effective management strategies that can meet watershed goals. Identifying existing information at the local level is critical to support the development of a watershed plan that is based on local current or future planning efforts. The report was developed based on the guidelines of Chapter 5 in the [EPA Handbook for Developing Watershed Plans to Restore Our Waters](#).

Table 1. Summary of the data sources used in the report

	Type of Layer	Source	Website Link
1	Watershed boundaries	Watersheds developed using Hydrology Tools in ArcMap GIS Software	
2	Hydrology	General Land Office (GLO), Texas Commission on Environmental Quality (TCEQ) Wells, and National Hydrography Dataset (NHD)	www.glo.texas.gov www.tceq.texas.gov
3	Floodplains	Federal Emergency Management Administration (FEMA) Flood Hazard Interactive Map	hazards-fema.maps.arcgis.com
4	Topography	LIDAR elevation data from Texas Natural Resources Information System (TNRIS)	data.tnris.org
5	Soils	Natural Resources Conservation Service (NRCS) SSURGO databases	websoilsurvey.sc.egov.usda.gov
6	Habitat and wildlife	Texas Park and Wildlife Department (TPWD)	tpwd.texas.gov
7	Land use and land cover	Texas Natural Resources Information System (TNRIS)	data.tnris.org
8	Demographics	U.S. Census, and Hidalgo County Interactive map	www.census.gov
9	Source Water Assessments	International Boundary & Water Commission (IBWC) gauges, U.S. Geological Survey (USGS), and Hidalgo County Drainage District #1	
10	Pollutant Sources	TCEQ GIS layers, Roadways, Land Cover from TNRIS, and local entities	www.tceq.texas.gov

1. Physical and Natural Features

1.1. Watershed boundaries

The North and Central Watersheds include the IBWC North Floodway, Raymondville Drain, and the Hidalgo and Willacy Main watersheds. Geographic boundaries of each watershed were obtained by using the Hydrology tools in ArcGIS using LIDAR data from the Texas Natural Resources Information System (TNRIS) database. All the layers were uploaded to the River and Estuary Observation Network (REON) website as a part of the cyberinfrastructure network to facilitate the development of interactive maps (Figure 1). Watershed topographies are generally flat with boundaries that may be poorly defined and sometimes overlapping (e.g. the IBWC North Floodway and Arroyo Colorado watersheds) and may cross jurisdictional boundaries (e.g. Raymondville Drain watershed spans Willacy and Hidalgo counties). Additional data will be introduced to the database to validate the accuracy of watershed boundary delineations. Using the ArcGIS software, the areas of IBWC North Floodway, Hidalgo/Willacy, and Raymondville Drain watersheds were determined to be 537 mi², 599 mi², and 605 mi²; respectively.

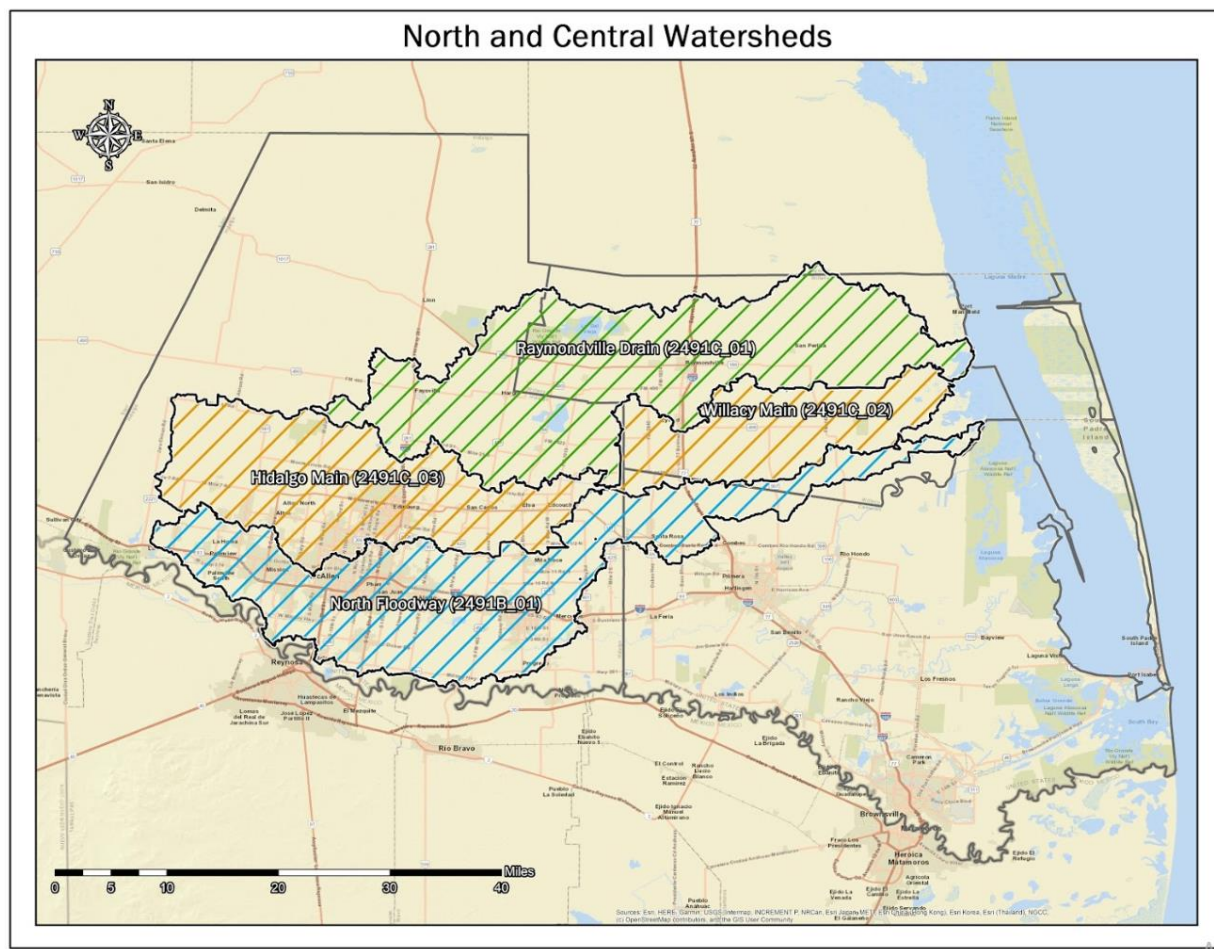


Figure 1: North and Central Watersheds

1.2. Hydrology

The hydrology for the North and Central Watersheds consists of several waterways, which are considered major waterways in the Lower Rio Grande Valley (LRGV) region. The IBWC North Floodway, Raymondville Drain, and the Hidalgo/Willacy Main flowlines were extracted from the USGS National Hydrography Dataset (NHD) Flowline. Groundwater well location data were extracted from the TCEQ GIS database and shows four (4) in the IBWC North Floodway, three (3) in the Raymondville watershed, and one (1) in the Hidalgo/Willacy Main watershed. The Coastal Boundary Zone (CBZ) was obtained from the General Land Office (GLO) illustrating the coastal areas of each watershed as shown in Figure 2. Portions of all three watersheds extend into the CBZ.

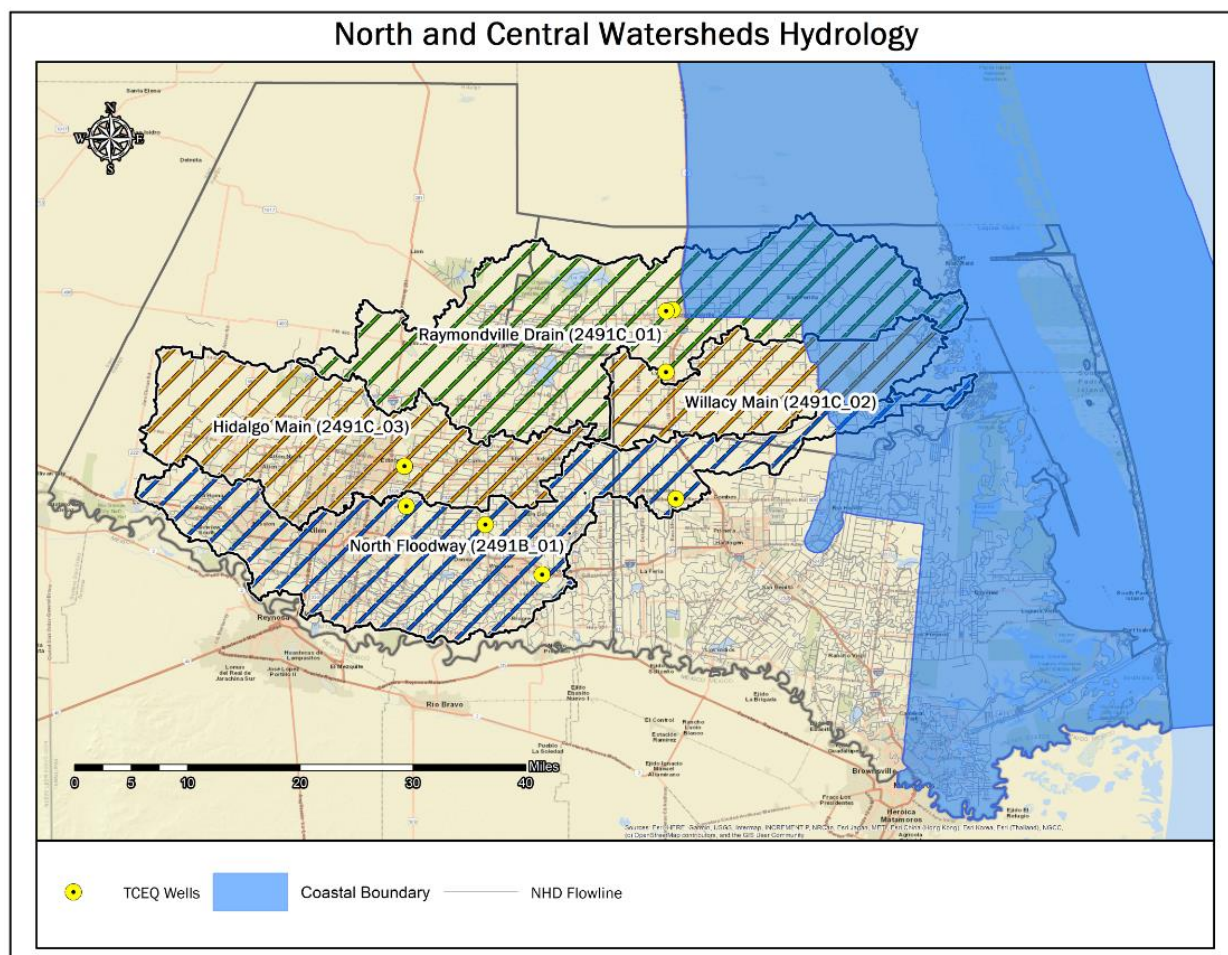


Figure 2: North and Central Watersheds Hydrology

Data defining local drainage and irrigation ditches are essential for characterizing and understanding the hydrology of the region's watersheds. The Raymondville and Hidalgo/Willacy Main drains are both located within Hidalgo and Willacy Counties. The IBWC North Floodway passes through Hidalgo, Cameron, and Willacy counties. Figure 3 shows the watershed districts, drainage districts, and MS4 permits for each watershed.

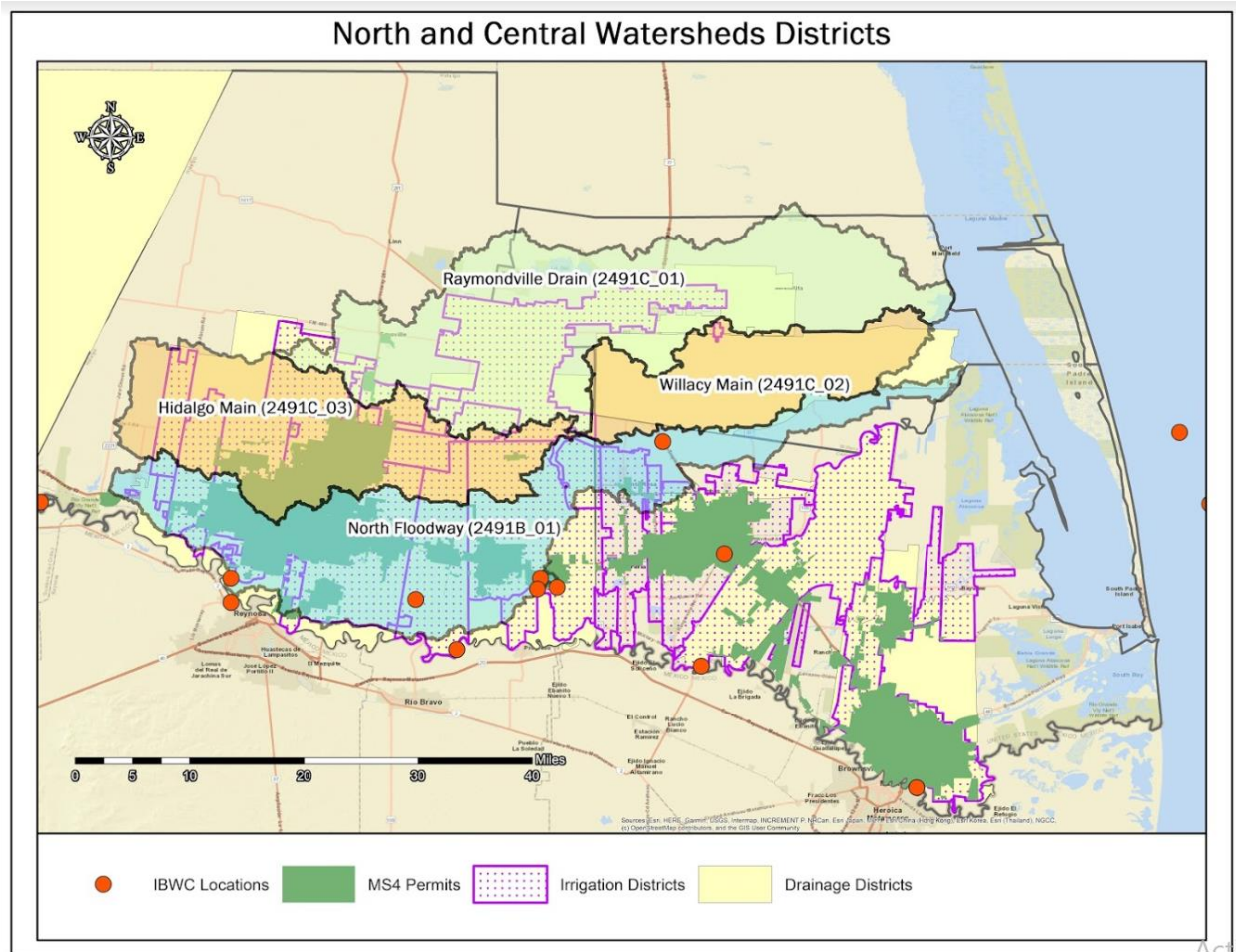


Figure 3: North and Central Watersheds Districts

Table 2: North and Central Watersheds Drainage Districts (DD)

Drainage District (DD)		
Raymondville Drain	Hidalgo Willacy Main	IBWC North Floodway
Willacy County DD 1	Willacy County DD 1	Willacy County DD 1
Willacy County DD 2	Willacy County DD 2	Willacy County DD 2
Hidalgo County DD 1	Hidalgo County DD 1	Cameron County DD 5

Table 3: North and Central Watersheds Irrigation Districts (ID)

Irrigation District (ID)		
Raymondville Drain	Hidalgo Willacy Main	IBWC North Floodway
Santa Cruz ID #15	Delta Lake ID	Delta Lake ID
Hidalgo County ID #13	Hidalgo County ID #16	Hidalgo County ID #16
Engleman ID	Hidalgo County ID #13	Hidalgo County ID #6
Hidalgo County ID #1	Santa Cruz ID #15	Hidalgo County ID #18
	Engleman ID	Hidalgo County ID #14
	Hidalgo County ID #6	Hidalgo County ID #5
	Valley Acres	Hidalgo County ID #2
	Donna ID	La Feria ID
	Hidalgo County ID #2	Adams Gardens ID
	Hidalgo County ID #1	United ID
	United ID	

1.3. Floodplains

The floodplains areas are essential for this study since they contribute to the hydrology for the North and Central watersheds. The Hidalgo County Drainage District #1 (HCDD#1) map shows the direction of the streamflow to these watersheds (Figure 4). The Raymondville Drain, IBWC North Floodway, and the Hidalgo and Willacy Main are the major waterways to carry stormwater run-off from Hidalgo County. Moreover, flood zones were obtained from FEMA to identify the areas that are prone to hazard flooding. The three watersheds have certain areas that are considered high risk flooding zones, especially in the coastal areas (Figure 5).

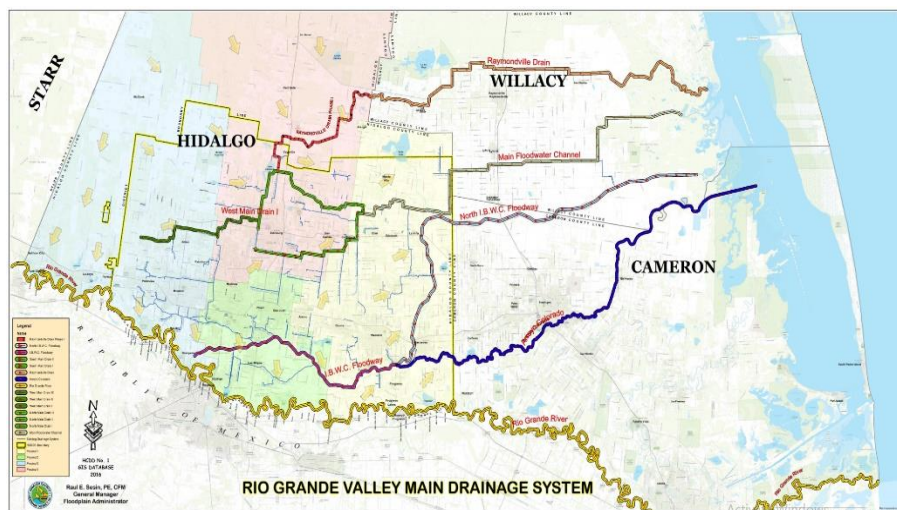


Figure 4: North and Central Watersheds Drainage System

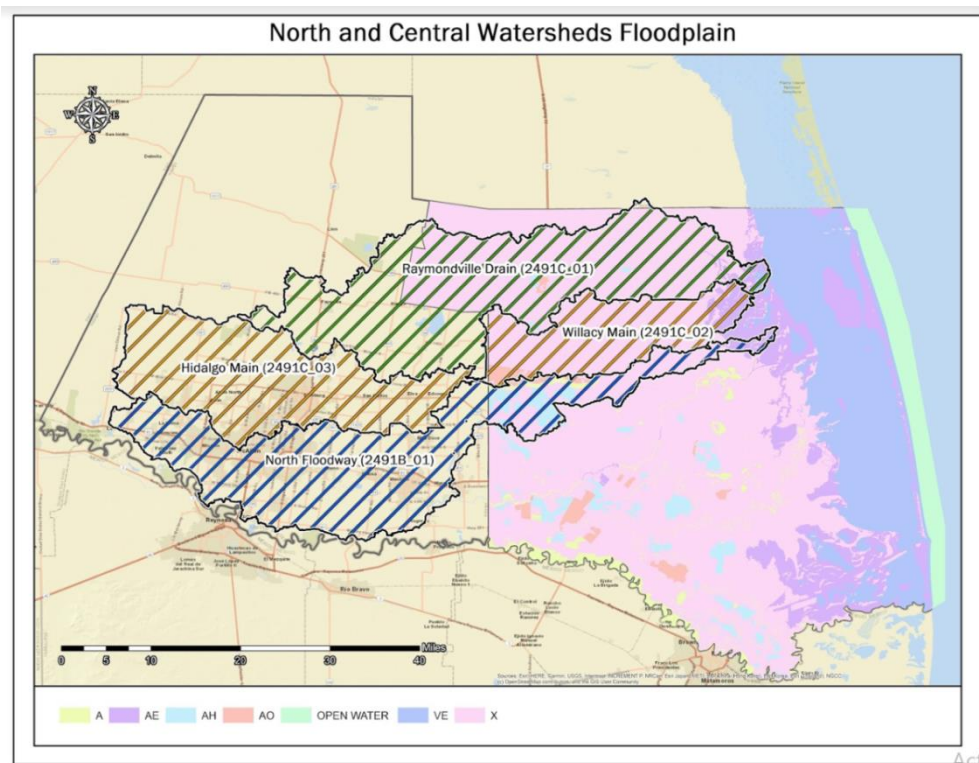


Figure 5: North and Central Watersheds Flood Zones

Table 4: North and Central Watershed FEMA Flood Zones

FEMA Flooding Zones	
Zone A	Special Flood Hazard Area, within 100 yr floodplain, BFE not determined by FEMA.
Zone AE	Special Flood Hazard Area, within 100 yr floodplain, Detailed study by FEMA, BFE determined by FEMA
Zone AH	Special Flood Hazard Area, within 100 yr floodplain, Areas of ponding, BFE determined by FEMA.
Zone AO	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet
Zone X	Areas not in a Special Flood Hazard Area, outside the 500 yr floodplain.

1.4. Topography

The topographic data for the North and Central Watersheds was retrieved from the Texas Natural Resources Information Systems (TNRIS). Due to the flat nature of the LRGV area, elevation data were modified from a 10-meter cell size resolution to a 50-meter resolution to facilitate the development of the topographic map and watershed simulation. The map shows how the elevation of each area gradually decreases from west to east towards the Laguna Madre showing that the highest elevations for each watershed are mainly located within Hidalgo County (Figure 6).

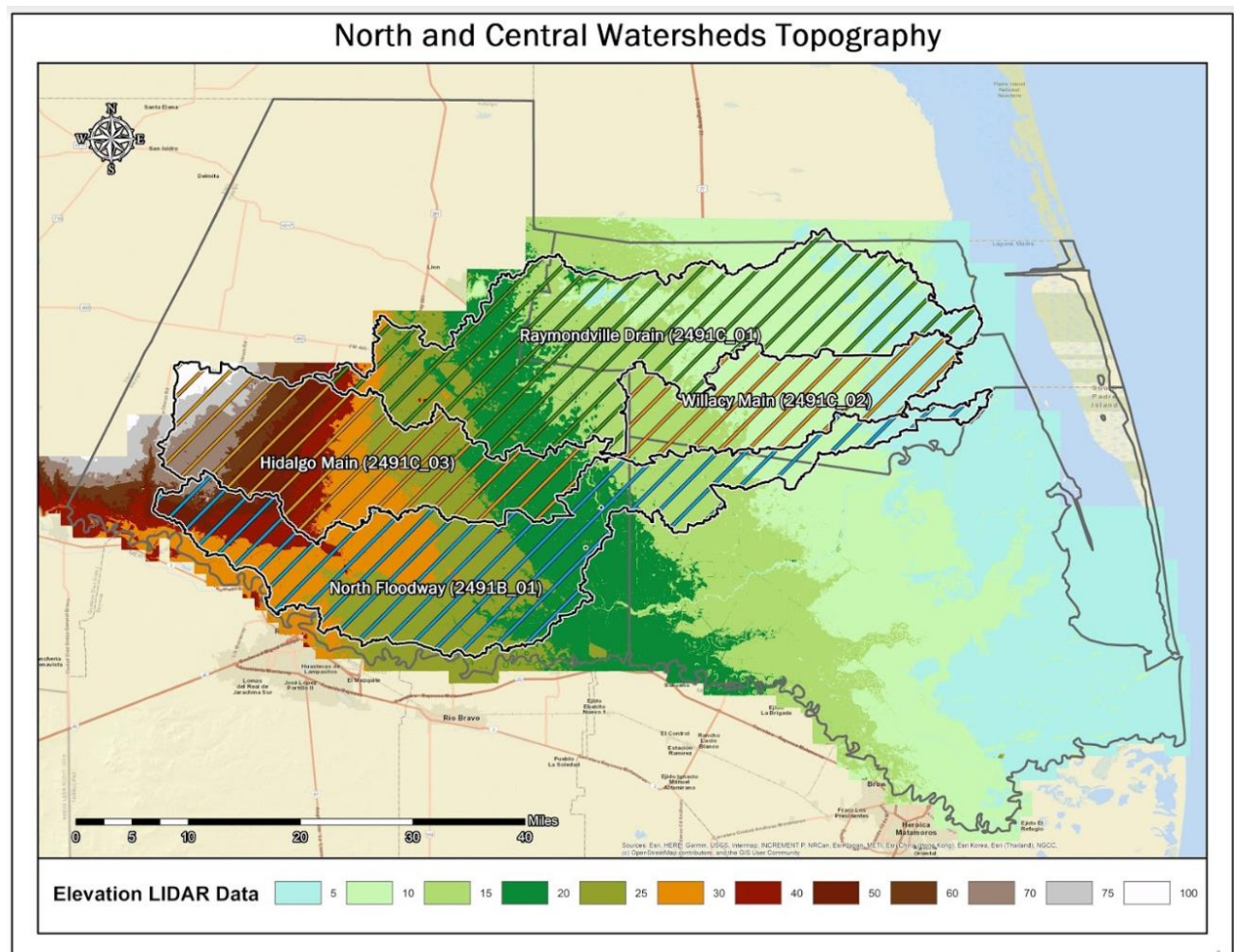


Figure 6: North and Central Watersheds Topography

1.5. Soils

The North and Central Watershed soils consist of different types of soil which are displayed through figures 7-9. The GIS layers were extracted from the United States Department of Agricultural (USDA) SSURGO soil website from each county. The main type of soil for the Hidalgo and Willacy Main watershed is sandy clay loam with a slopes ranging from 0 to 1%.

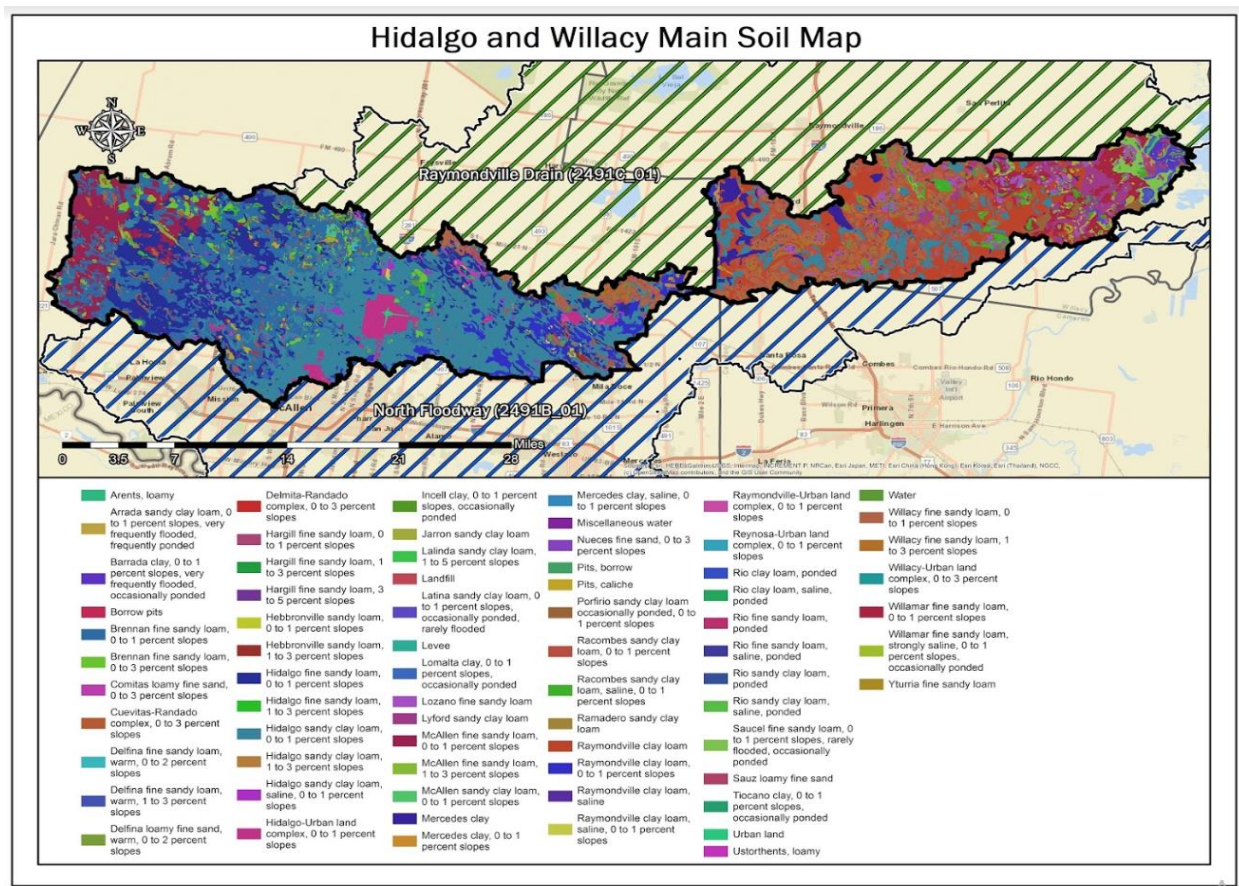
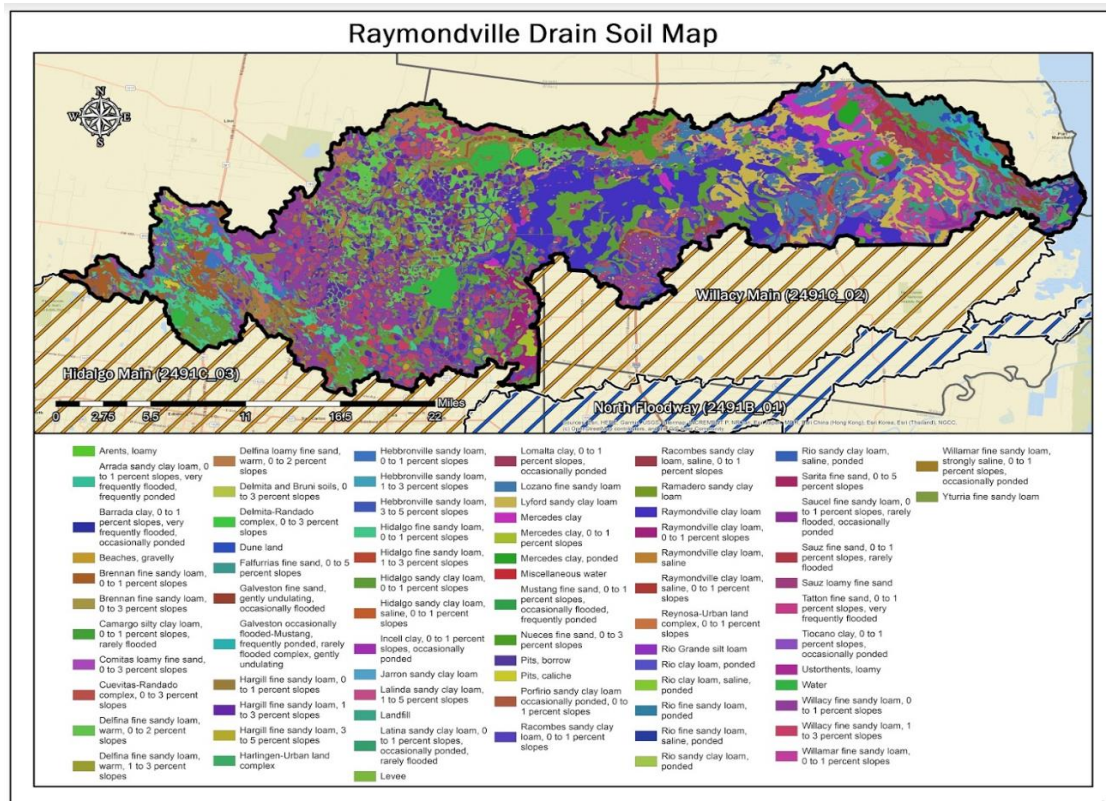
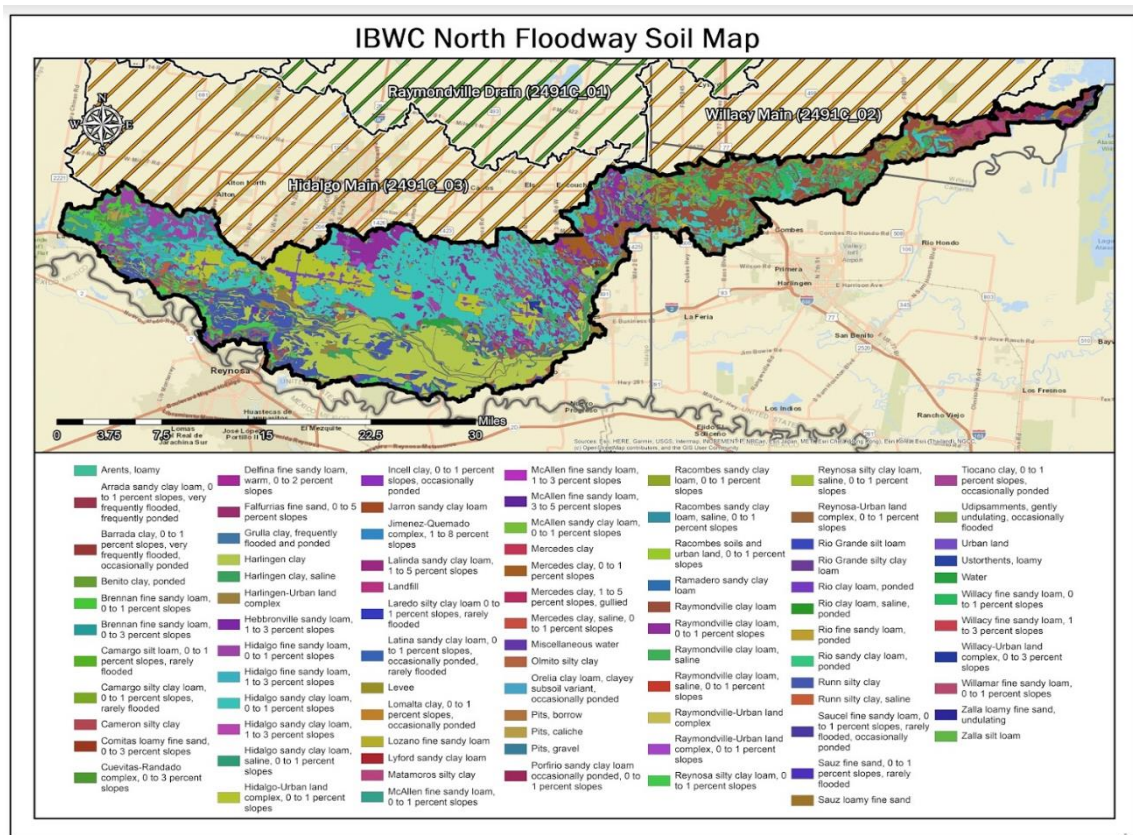


Figure 7: Hidalgo and Willacy Main Watershed Soils

Similarly, the IBWC North Floodway watershed soil categories were similar to the Hidalgo/Willacy Main watershed since the majority of both watersheds area are located within Hidalgo County. The main soil classification is sandy clay loam from 0 to 1 and from 1 to 3 percent slopes. In the southern area of the watershed, there is a considerable amount of silt clay loam with a slope ranging from 0 to 1 percent. For the Raymondville Drain watershed soil, the main soil classification was clay loam with a slopes ranging from 0 to 3 percent.



1.6. Habitat & Wildlife

Both Texas Parks and Wildlife Department (TPWD) and National Wildlife Refuge (NWR) operate wildlife management units within the North and Central watersheds. The Wildlife Management areas within the North and Central Watersheds are Baird, Taormina, Longoria, and Chapote Unit in the IBWC North Floodway Watershed. This information was extracted from the TPWD at the Las Palomas area. The Lower Rio Grande Valley NWR was determined to be within the boundaries of the Raymondville Drain. The NWR participates in conserving several endangered species such as the ocelot and jaguarundi. Furthermore, exotic birds include the green jay and the chachalaca. There are also threatened plants such as Barreta and Esenbeckia Ruyonii. The refuge is constantly affected by the weather since its location is just above the Tropic of Cancer. Wetlands are included in this refuge as well.

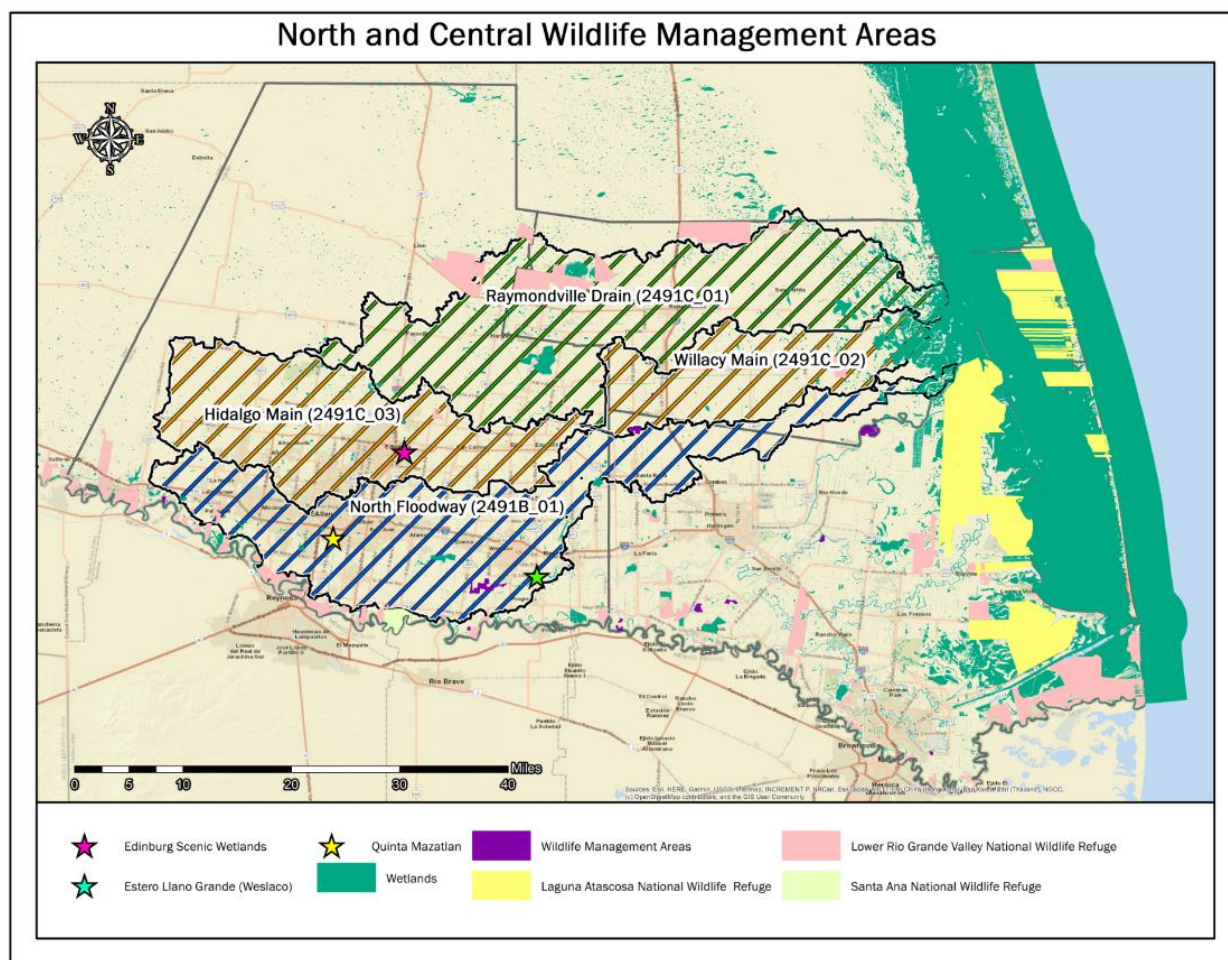


Figure 10: Wildlife Management and Habitat Areas

The IBWC North Floodway watershed covers two world birding centers, the Quinta Mazatlán and Estero-Llano Grande in Weslaco. These areas preserve an ecosystem to maintain a healthy environment for the species. The Quinta Mazatlán includes birds, wildlife, butterflies, native plants, and facilities for the community to engage in this type of environment.

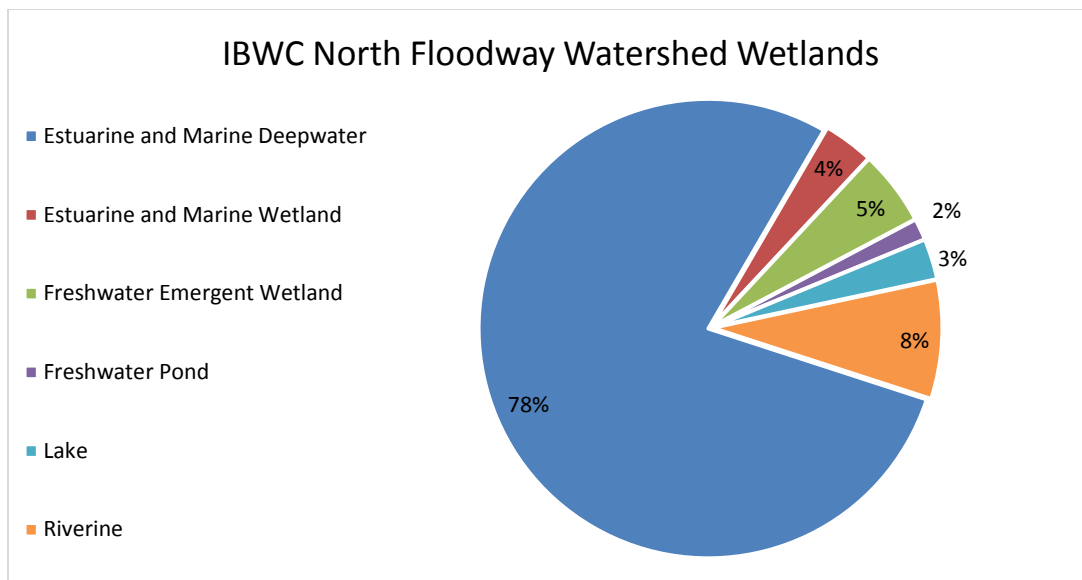


Figure 11: IBWC North Floodway Watershed Wetlands

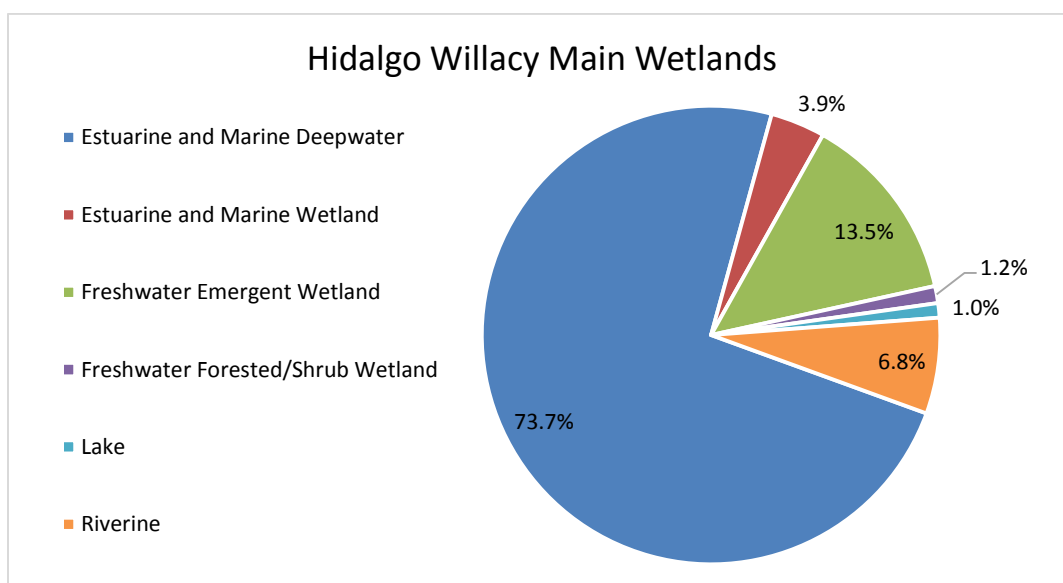


Figure 12: Hidalgo Willacy Main Watershed Wetlands

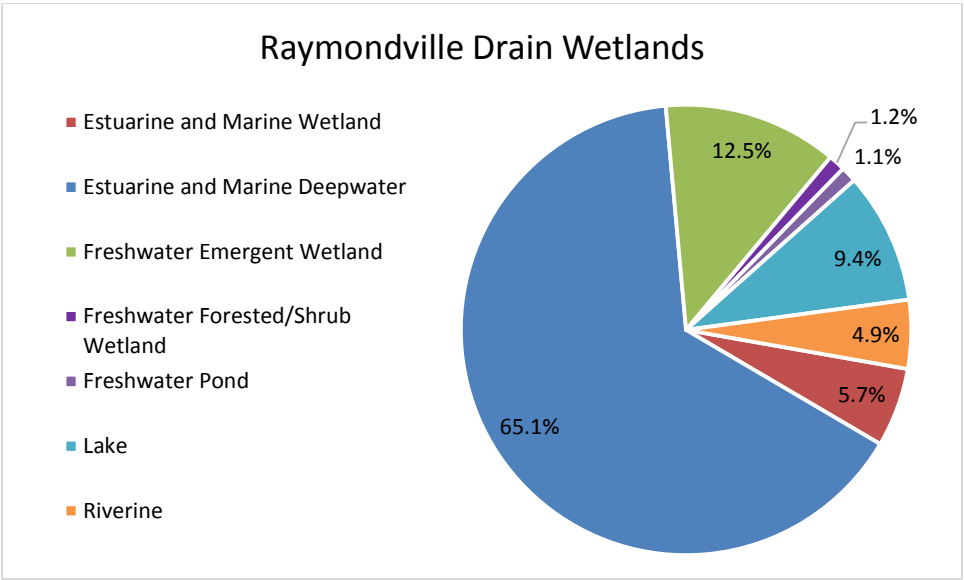


Figure 13: Raymondville Drain Watershed Wetlands

2. Land Use and Population Characteristics

2.1. Land use and land cover

The Lower Rio Grande Valley (LRGV) is a diverse region well-known for its agricultural activity has experience. Recent population growth characterized by new developments with commensurate increases the urbanized areas. The land use for the North and Central watersheds was extracted from the TNRIS database as a raster file and edited in ArcMap to label each category of the land use using the Multi-Resolution Land Characteristics Consortium table. Figure 14 shows the land use category within each watershed. The Hidalgo/Willacy Main and IBWC North Floodway watersheds mostly consist of urbanized areas and vegetation. A large portion of cultivated crops pertains to both watersheds. Figure 15 shows a comparison of the different land use categories in the three watersheds.

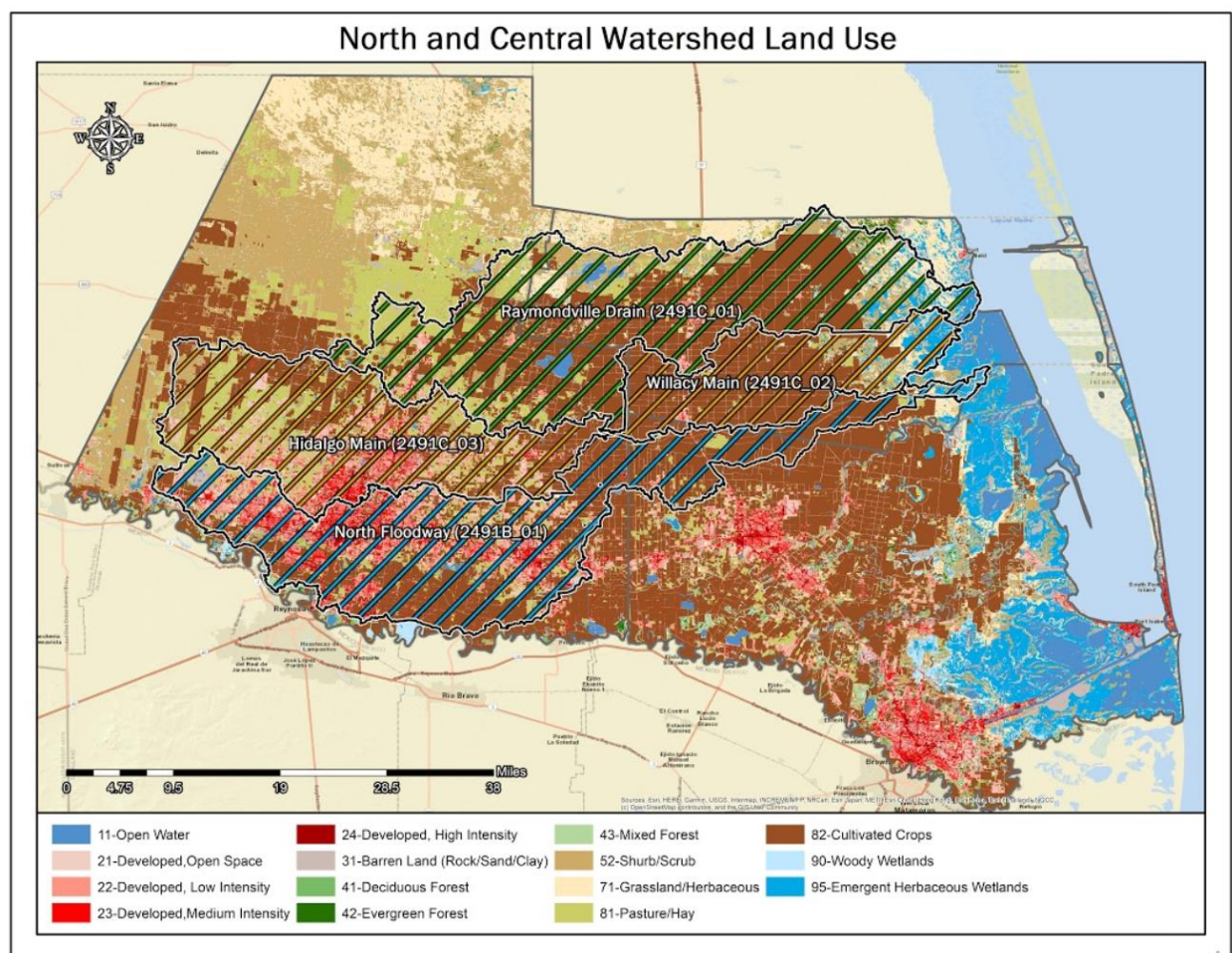


Figure 14: North and Central Watersheds Land Use Map

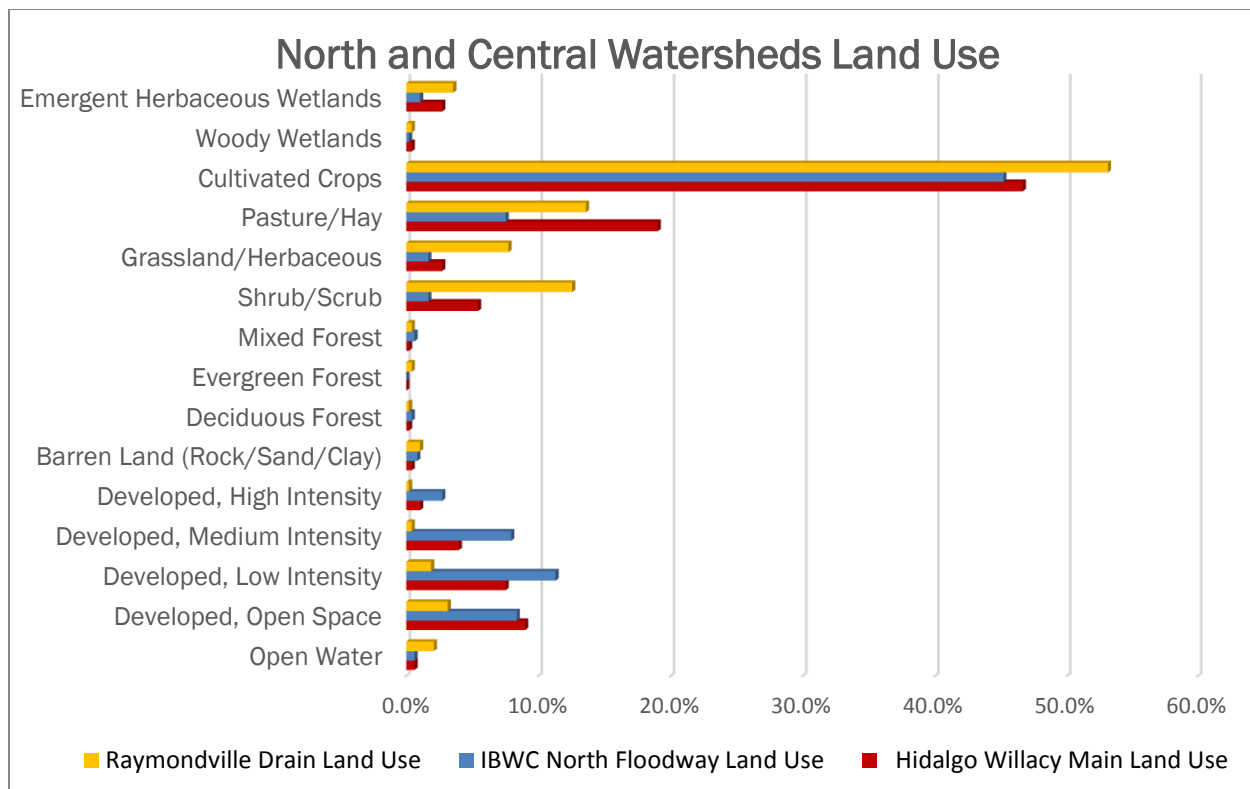


Figure 15: North and Central Watersheds Land Use Percentages

The North and Central watersheds land use data were analyzed separately to obtain the relative contribution of each type of land use. the Hidalgo/Willacy Main watershed and the IBWC North Floodway watershed were determined to have higher urbanization percentages compared to the other watershed (Figures 16 and 17). This occurred because these watersheds include cities such as McAllen, Mission, Edinburg and Weslaco which are considered metropolitan cities in the region. In contrast, for Raymondville Drain watershed, the highest percentage (55%) of the land is cultivated crops, followed by shrub/scrub of 13%. The other type of land use in the watershed has minimal contribution to the Raymondville Drain Watershed (Figure 18).

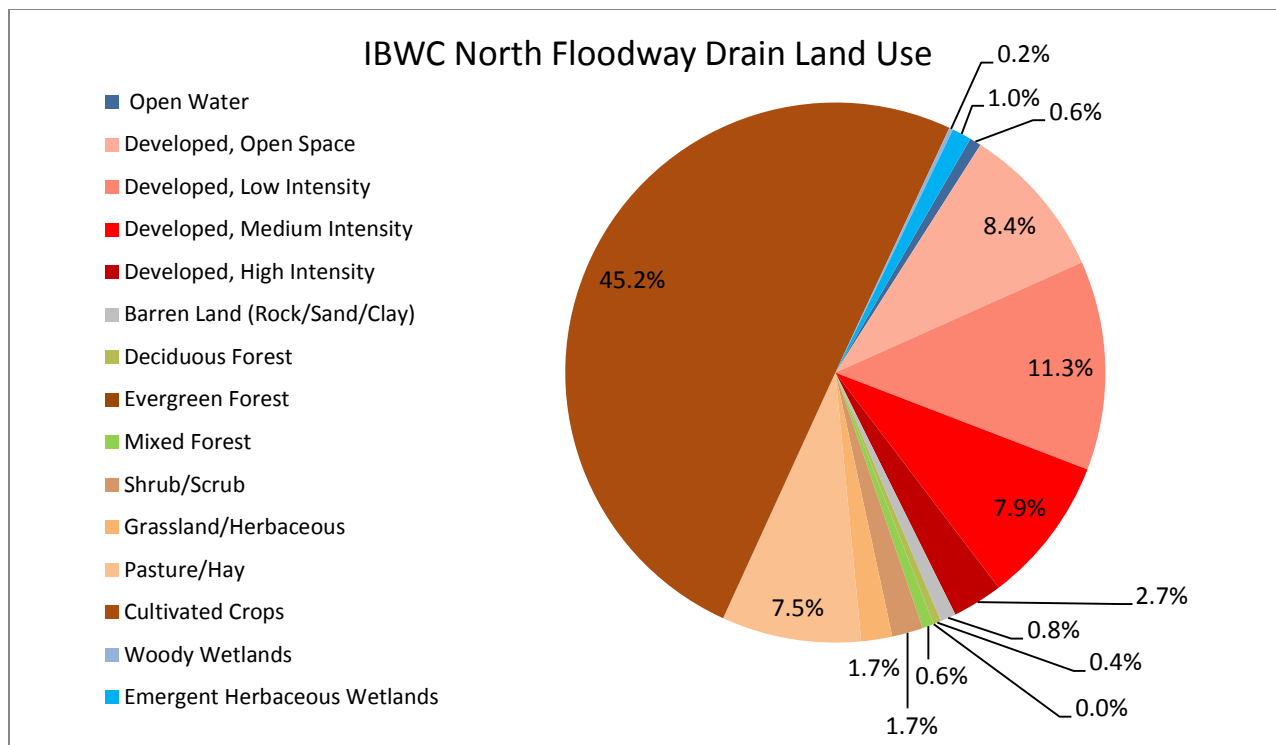


Figure 16: IBWC North Floodway land use percentages

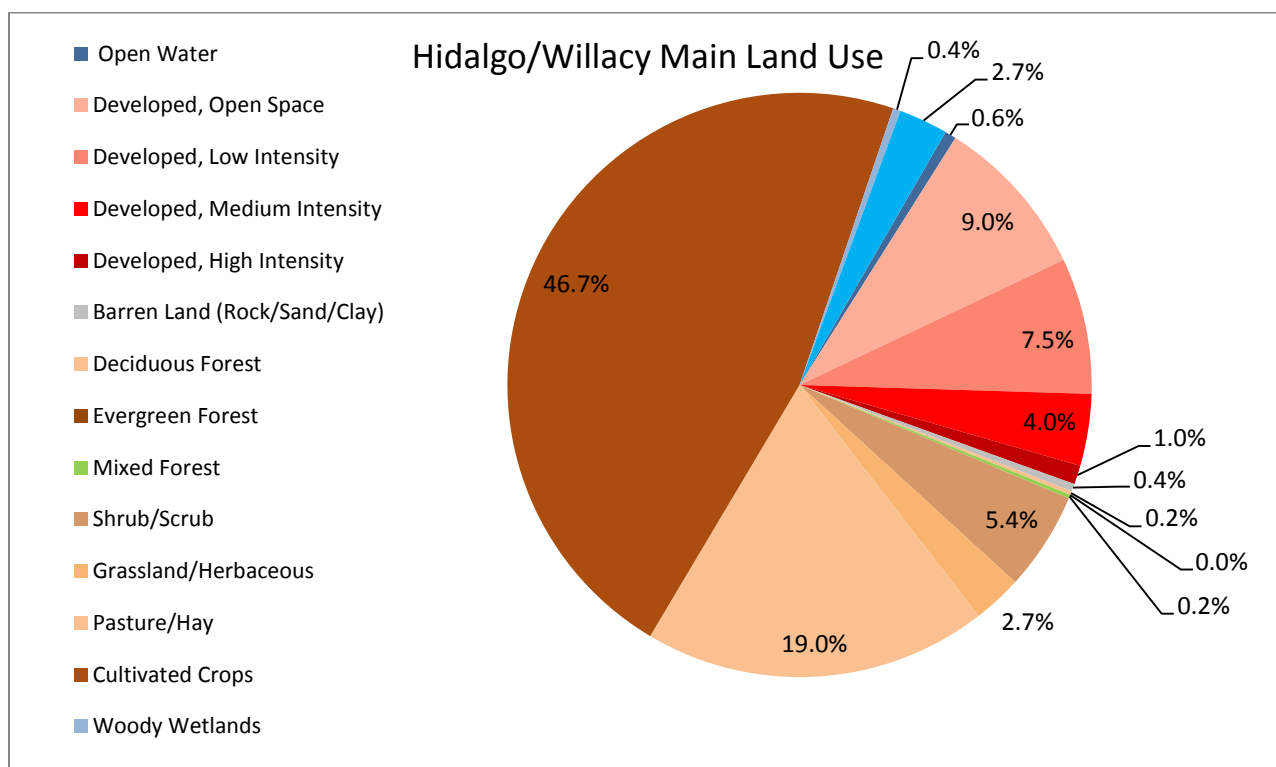


Figure 17: Hidalgo/ Willacy Main Drain land use percentages

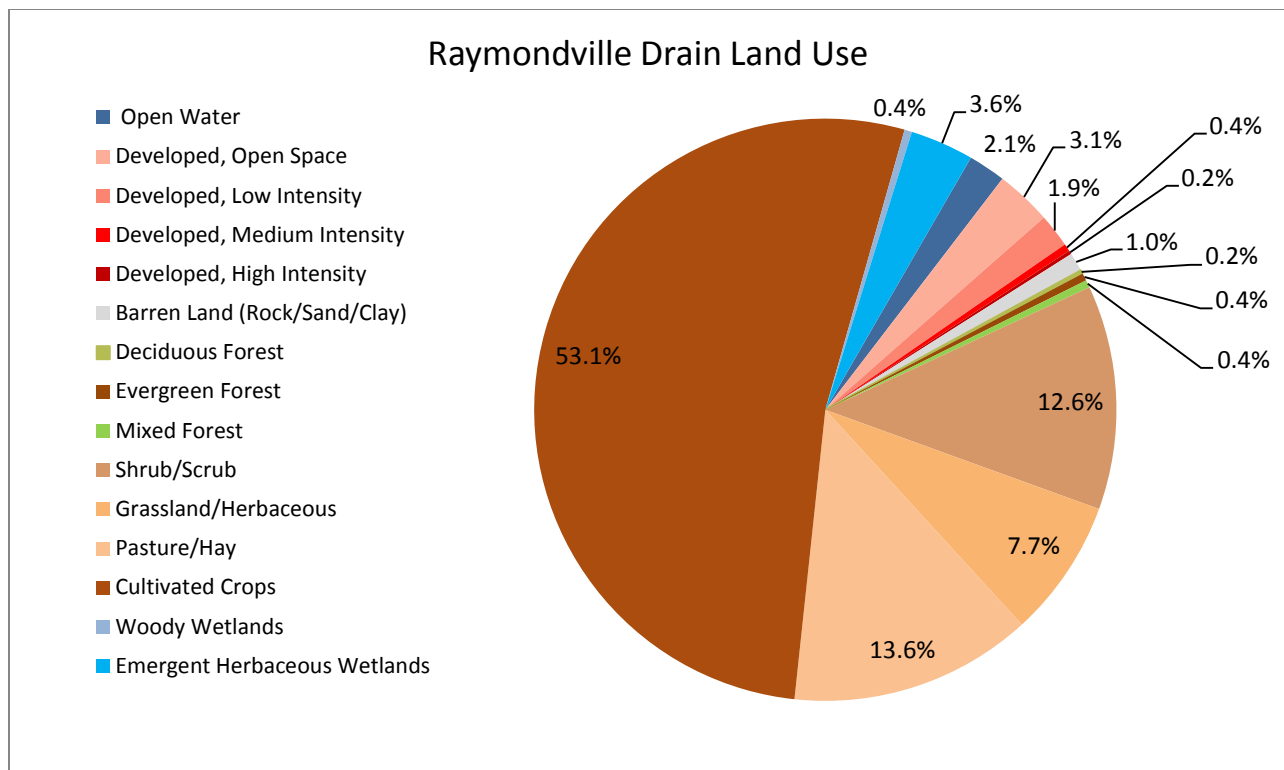


Figure 18: Raymondville Drain land use percentages

2.2. Demographics

The North and Central Watersheds are located within three counties Cameron, Hidalgo, and Willacy Counties. The region is considered one of the fastest-growing regions in the country because of the high international cross-border trade with Mexico. The region's substantial growth is important for the watershed's outreach strategies and the people living within the three watersheds. The watersheds account for the Metropolitan Statistical Area (MSA) of McAllen/Edinburg /Mission. The City of Edinburg represents the greatest population center within the Hidalgo/Willacy Main Drain watershed which spans Hidalgo County and some other areas from the Willacy and Cameron Counties. The Raymondville Drain watershed encompasses a large portion of colonias on the west side and the major city within the watershed area is Raymondville.

In figure 19, colonias, ranches, and 2010 census areas are portrayed for the North and Central watersheds. The colonias were classified as priority 2 to 4 and FEMA flood hazard areas were identified as well (Figure 20). This information was provided by local entities to contribute to the study for the characterization of watersheds.

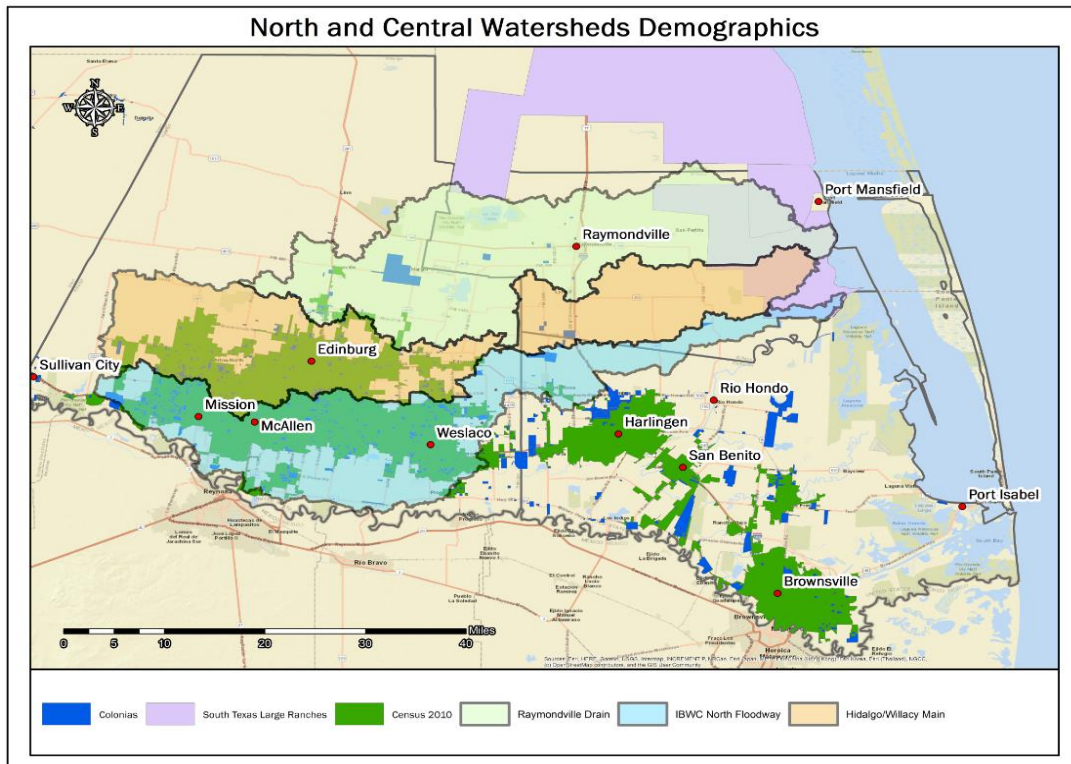


Figure 19: North and Central Watersheds Demographics

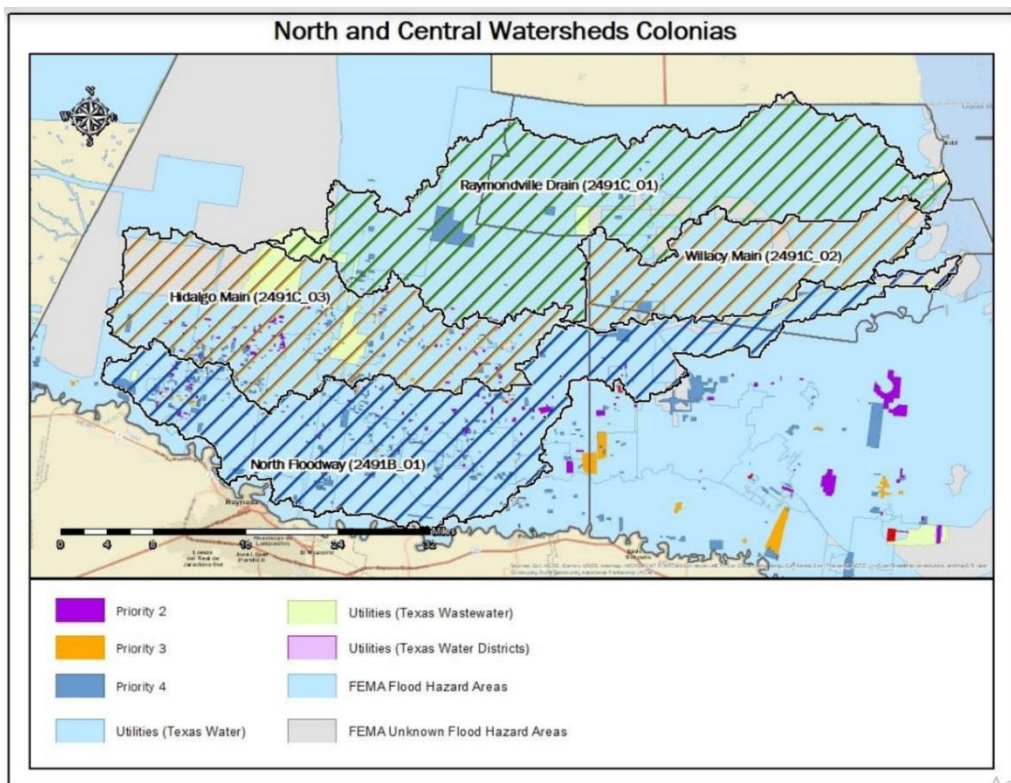


Figure 20: North and Central Watersheds Colonias

Table 5: IBWC North Floodway Watershed colonias (Source: Rural Community Assistance Partnership (RCAP))

Hidalgo County			
Nearest City	Estimated Population	%	Area (Acres)
Alamo	11,520	15.0%	1,532.6
Alton	96	0.1%	8.5
Donna	4,801	6.2%	343.2
Edinburg	695	0.9%	19.9
Hidalgo	999	1.3%	76.7
La Joya	9,277	12.1%	955.7
La Villa	174	0.2%	206.2
Palmview	1,413	1.8%	156.2
Penitas	1,921	2.5%	917.4
Progreso	506	0.7%	23.8
McAllen	2,161	2.8%	350.6
Mission	6,934	9.0%	871.0
Pharr	14,652	19.0%	1,414.0
San Juan	3,178	4.1%	295.8
Weslaco	18,628	24.2%	935.9
Total	76,955.0		8,107.5
Cameron County			
Nearest City	Estimated Population	%	Area (Acres)
Combes	2,658	73.4%	61.4
Santa Rosa	904	25.0%	1,241.3
Undefined	61	1.7%	8.2
Total	3,623		1,311.0
Willacy County			
Nearest City	Estimated Population	%	Area (Acres)
Santa Monica	65	100%	146.8

Table 7: Raymondville Drain Watershed colonias (Source: Rural Community Assistance Partnership (RCAP))

Hidalgo County			
Nearest City	Estimated Population	%	Area (Acres)
Edinburg	98	2%	6.5
Undefined	4,462	98%	5434.6
Total	4,560		5441.1
Willacy County			
Nearest City	Estimated Population	%	Area (Acres)
Raymondville	12	1%	10.0
Undefined	1,354	99%	621.6
Total	1,366		631.5

Table 6: Hidalgo and Willacy Main Watershed colonias (Source: Rural Community Assistance Partnership (RCAP))

Hidalgo County			
Nearest City	Estimated Population	%	Area (Acres)
Alton	7,489	19%	582.1
Donna	40	0%	9.7
Edcouch	412	1%	41.3
Edinburg	7,447	19%	1,214.2
Elsa	1,613	4%	262.1
La Villa	174	0%	218.3
Palmhurst	132	0%	57.3
Pharr	693	2%	35.5
McAllen	3,014	8%	609.3
Mission	333	1%	75.6
Weslaco	17	0%	13.3
Undefined	17,360	45%	2,929.3
Total	38,724	100%	6,047.9
Cameron County			
Nearest City	Estimated Population	%	Area (Acres)
Santa Rosa	53	54%	194.3
Undefined	46	46%	1,128.0
Total	99		1,322.4
Willacy County			
Nearest City	Estimated Population	%	Area (Acres)
Undefined	1,971	100%	589.6

3. Waterbody and Watershed Conditions

3.1. Source Water Assessments

The source for water assessments of the North and Central watersheds was extracted from TCEQ website. The active Surface Water Quality Monitoring (SWQM), IBWC, and local stations were used to identify the locations where any water quality data is collected. For IBWC North Floodway, two flow monitoring stations were installed by IBWC in 2012, and one water quality monitoring station (Station ID: 20930) for TCEQ.

For Hidalgo/Willacy main, there is only one water quality monitoring station (Station ID: 22003), and 15 flow monitoring stations that were installed by Hidalgo County Drainage District #1. Similar to Hidalgo/Willacy Main, Raymondville Drain has also one water quality monitoring station (Station ID: 220004), however, no flow stations are installed along the waterway. All the three waterways discharge their flow into the Laguna Madre Watershed with an assessment unit number 2491_01 and 2491_02.

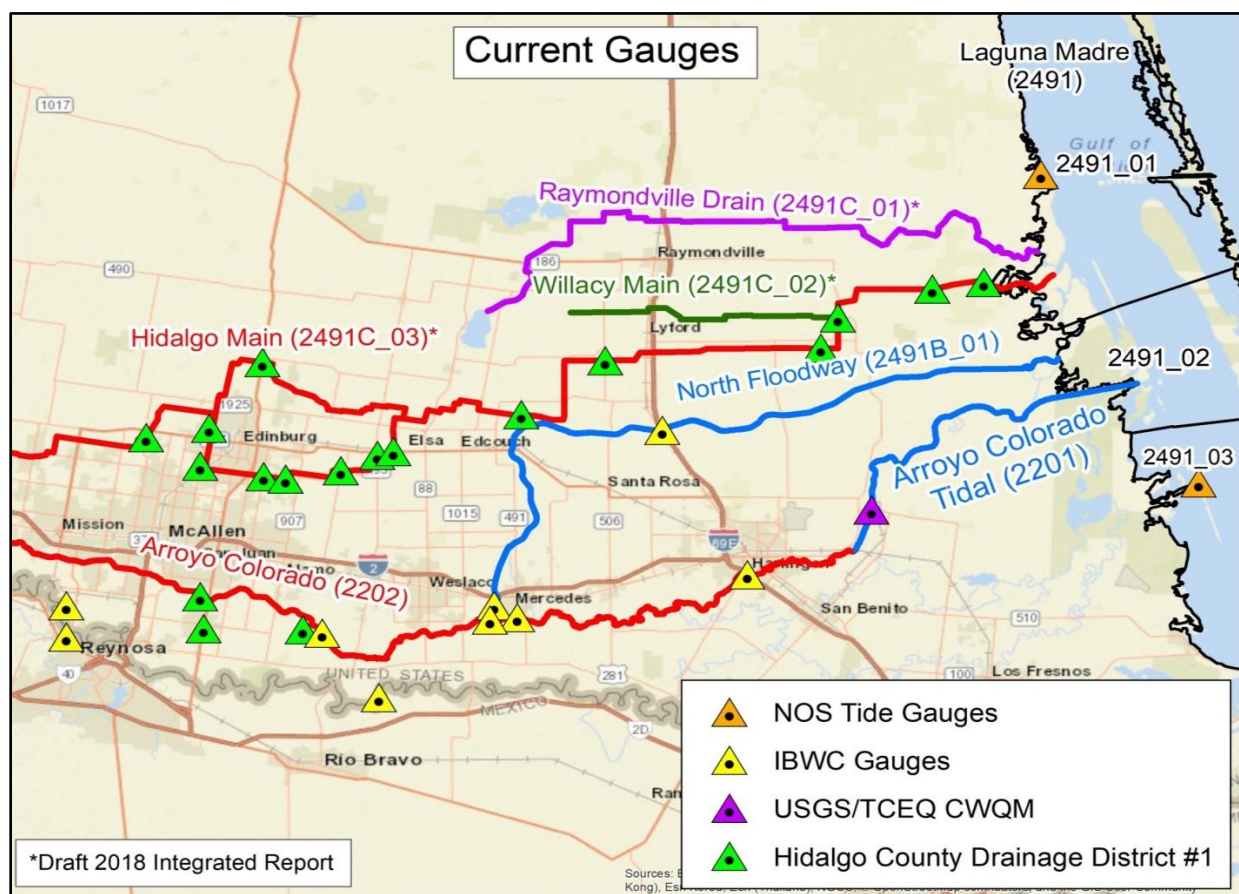


Figure 21: North and Central Watersheds Water Quality Assessments

4. Pollutant Sources

4.1. Point sources

The point sources of pollution among these watersheds include permitted wastewater outfalls, MS4s, landfills, Texas Land Application Permit (TLAP), and discharge permits are considered potential contributors to water quality impairments in all three watersheds. All the data related to the NPS pollutant sources were obtained from the TCEQ website (www.tceq.texas.gov).

Discharge permits data were obtained from local entities. The density of point sources is greater in the IBWC compared to the Hidalgo Willacy and Raymondville Drains. The number of wastewater outfalls permits for The IBWC North Floodway, Hidalgo/Willacy Main, and Raymondville drain have 24, 10, and 6 permitted wastewater outfalls; respectively.

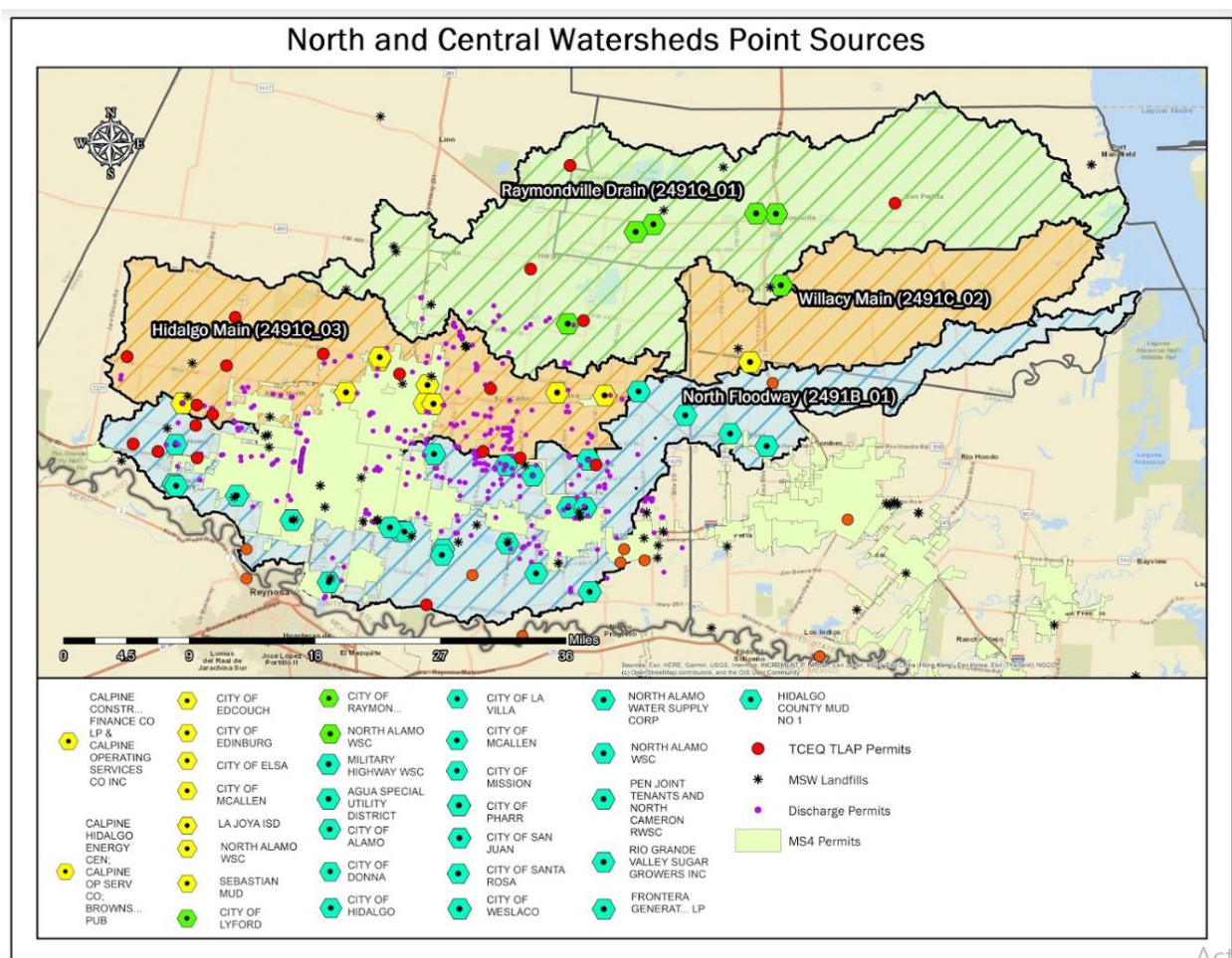


Figure 22: North and Central Watersheds Point Source

Table 8: Hidalgo/ Willacy watersheds wastewater outfalls permits (Source: www.tceq.texas.gov)

	Permit Number	Permittee
1	13523-014	La Joya ISD
2	04040-000	Calpine Construction Finance CO LP & Calpine Operating Service CO INC
3	10503-002	City of Edinburg
4	04138-000	Calpine Hidalgo Energy CEN; Calpine OP SEV CO; Brownsville PUB
5	10503-002	City of Edinburg
6	10633-004	City of McAllen
7	13742-001	Sebastian MUD
8	11510-002	City of Elsa
9	04782-000	North Alamo WSC
10	14919-001	City of Edcouch

Table 9: Raymondville Drain watershed wastewater outfalls permits (Source: www.tceq.texas.gov)

	Permit Number	Permittee
1	04480-000	North Alamo WSC
2	13747-001	North Alamo WSC
3	13747-004	North Alamo WSC
4	10365-001	City of Raymondville
5	05251-000	City of Raymondville
6	11210-001	City of Lyford

Table 10: On-site Sewage Facility (OSSF) Data per County (Source: www.tceq.texas.gov)

County	ATC
Hidalgo	1821
Cameron	439
Willacy	30

Table 11: IBWC North Floodway watershed wastewater outfalls permits (Source: www.tceq.texas.gov)

	Permit Number	Permittee
1	14950-001	Hidalgo County MUD NO 1
2	04915-000	North Alamo WSC
3	04051-000	FRONTERA Generation LP
4	10484-001	City of Mission
5	10504-001	City of Donna
6	14415-003	Agua Special Utility District
7	10619-001	City of Weslaco
8	10619-003	City of Weslaco
9	10619-005	City of Weslaco
10	10633-003	City of McAllen
11	13633-001	City of Alamo
12	10330-001	City of Santa Rosa
13	13462-006	Military Highway WSC
14	15513-001	North Alamo WSC
15	11512-001	City of San Juan
16	14781-002	City of La Villa
17	11080-001	City of Hidalgo
18	04789-000	North Alamo WSC
19	11512-001	City of San Juan
20	04758-000	Pen Joint Tenants and North Cameron RWSC
21	15163-001	North Alamo WSC
22	10596-001	City of Pharr
23	04754-000	Military Highway WSC
24	01752-000	Rio Grande Valley Sugar Growers INC

Table 12: Raymondville Drain watershed municipal solid waste facilities (Source: www.tceq.texas.gov)

	Name	Facility
1	Hidalgo County	NOT CONSTRUCTED
2	Willacy County Solid Waste Landfill	NOT CONSTRUCTED
3	Recycling Consultants Services	ACTIVE
4	Union Y Digidad Landfill	CLOSED
5	City of Edinburg Landfill	NOT CONSTRUCTED
6	City of Lyford Landfill	CLOSED
7	City of Mercedes Transfer Station Facility	NOT CONSTRUCTED
8	City of Edinburg Landfill	ACTIVE
9	City of Raymondville Landfill	POST CLOSED

Table 13: Hidalgo/Willacy Main watershed municipal solid waste facilities (Source: www.tceq.texas.gov)

	Name	Facility
1	City of McAllen Landfill	Post Closed
2	Hidalgo County Shredder-Grinder Facility	Not Constructed
3	Hidalgo County	Closed
4	City of Mission Landfill	Closed
5	City of Weslaco Landfill	Inactive
6	Willacy County Landfill	Post Closed
7	Grease Specialist Liquid Waste Processing Facility	Not Constructed
8	City of McAllen	Not Constructed
9	Hidalgo County Landfill	Inactive
10	Rubens Vacuum & Hydro-jetting Liquid Waste Processing Facility	Inactive
11	MLB Edinburg Liquid Transfer Station	Inactive
12	City of Edinburg	Closed

Table 14: IBWC North Floodway watershed municipal solid waste facilities (Source: www.tceq.texas.gov)

	Name	Facility
1	Hidalgo County	Closed
2	City of San Juan Landfill	Closed
3	South Texas Waste Water McAllen Transfer Station	Inactive
4	Clean B Grease and Grit Waste Processing Facility	Not Constructed
5	Clean B Grease and Grit Waste Processing Facility	Not Constructed
6	City of Weslaco Landfill	Closed
7	City of McAllen-Composting Facility	Inactive
8	City of Alamo Landfill	Closed
9	L & M Solid Waste Disposal Landfill	Closed
10	City of McAllen Transfer Station	Closed
11	City of Donna Landfill	Post Closed
12	City of Weslaco Transfer Station	Closed
13	City of Weslaco Landfill	Closed
14	City of Mission Landfill	Closed
15	City of Hidalgo Landfill	Closed
16	City of Pharr Landfill	Closed
17	City of Pharr	Closed
18	Safety Kleen CORP McAllen	Missing
19	Rio Grande Valley Landfill	Active

4.2. Non-point sources

The non-point sources of pollution for the North and Central Watersheds include urbanization areas, cultivated crops, and Texas large ranches. This information was extracted from the same layer of the land use data source. Figure 23 highlights the areas from land use that impact water quality and that would eventually carry pollutants such as pesticides in the cultivated area and play a major role in the agricultural runoff.

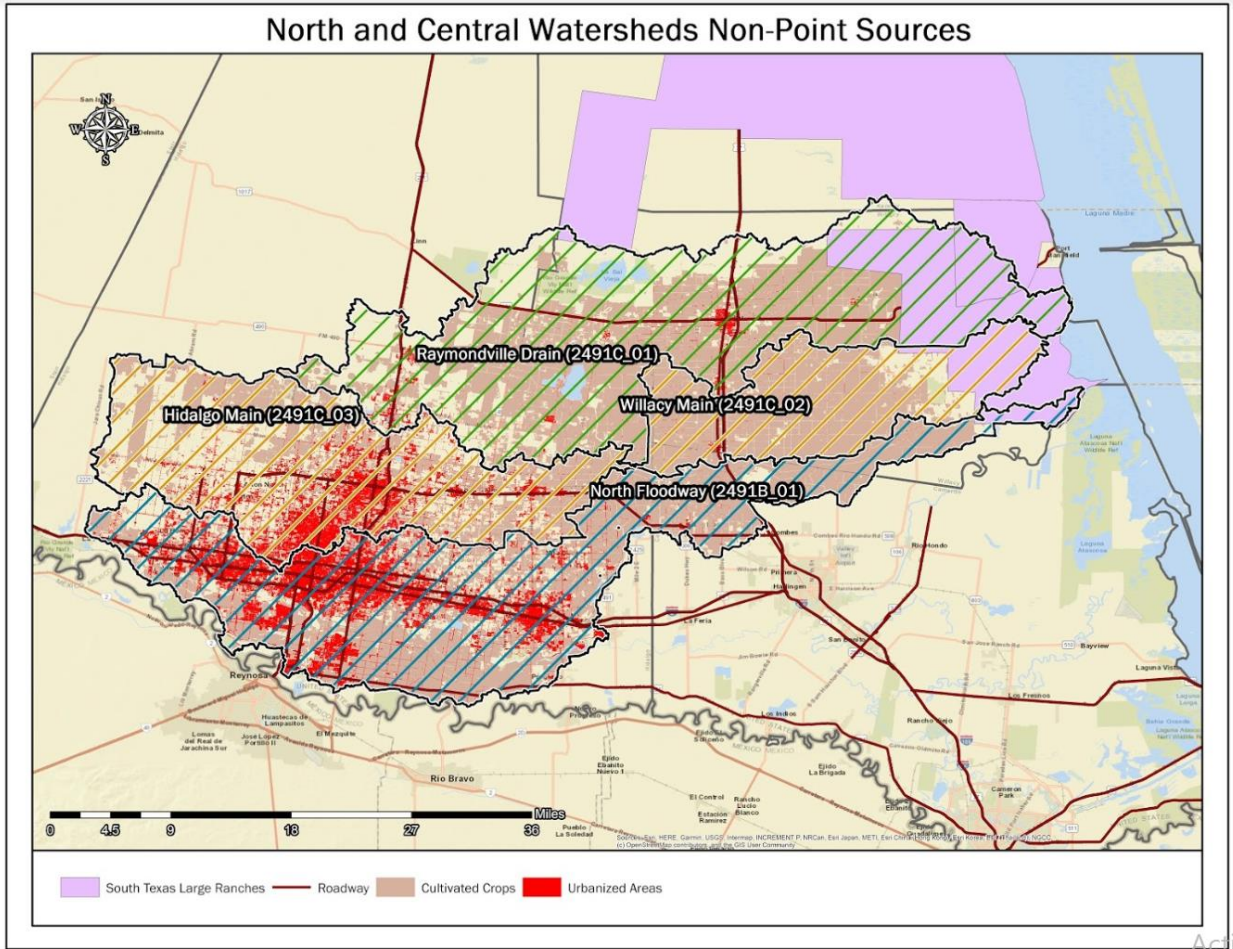


Figure 23: North and Central Watersheds Point Source

Appendix 1: Updated GIS Layers in REON Cyberinfrastructure Network

Type of Layer	Source	Year	Purpose	Obtained	REON
LIDAR Data	USGS Willacy and Hidalgo data.tnris.org IBWC Cameron County data.tnris.org	2011	Sub-watershed Delineation	Yes	No
Sub-watersheds	Hidalgo Countywide Flood Map Modernization Project Hydrology Analysis TSDN Report (Hidalgo County and FEMA)	2005	Sub-watershed Delineation	No	No
Hydrography	National Hydrography Dataset (NHD) Pre-staged Subregions tnris.org	N/A	Sub-watershed Delineation and Map Development	Yes	Yes
Local Drainage Network	City and County drainage network layers. HCDD Layers Pharr Layers Edinburg Layers Weslaco Layers Brownsville Layers	Most recent	Sub-watershed Delineation and Map Development	No	No
Irrigation Canals	GIS layers available from Irrigation Districts and TAMU HCID#2 Layer TAMUK LRGV Maps HIDCC1	Most recent	Sub-watershed Delineation and Map Development	No	No
IBWC Gauge Locations	IBWC TCEQ provided GIS layer to UTRGV	N/A	Map development	Yes	Yes
Land Use/Land Cover	National Land Cover Database 2016 www.mrlc.gov	2016	Map development	Yes	Yes
Land Use	Cities in each watershed	Most recent	Map development	Yes	Yes

Soil Map Unit Boundaries and Properties	NRCS SSURGO databases websoilsurvey.sc.egov.usda.gov Web Soil Survey	various	Map development	Yes	Yes
Geology Units	USGS Geologic Atlas of Texas Environmental Geologic Atlas of the Texas Coastal Zone--Brownsville-Harlingen Area (Texas Bureau of Economic Geology)	Most recent 1980	Map development and watershed characterization	Yes	Yes
Urbanized Areas (2010)	U.S. Census Bureau TIGER/Line® Shapefiles www.census.gov cfpub.epa.gov	2010	Map development; define regulated stormwater	Yes	Yes
TCEQ Permitted Wastewater Outfalls	TCEQ GIS Site Layers Download Page www.tceq.texas.gov	N/A	Map and hydrology development and pollution source analysis	Yes	Yes
TCEQ Assessment Units	TCEQ GIS Hydrology Layers www.tceq.texas.gov	N/A	Map and hydrology development	Yes	Yes
Water Rights Diversion Points	TCEQ Water Rights Diversion Points www.tceq.texas.gov	N/A	Map and hydrology development	No data available	
Water and sewer service areas	TCEQ GIS Regulatory/ Administrative Boundaries, Water & Sewer Certificates of Convenience and Necessity Service Areas,	Present	Pollution source analysis		
Census Data	U.S. Census www.census.gov	2018	Determine population per sub-watershed.	Yes	Yes
Census Urban Areas	U.S. Census www.census.gov	2018	Determine regulated MS4 areas.	Yes	Yes
Roadways	TxDOT	Most recent	Map development	Yes	

Roadways	Cities in each watershed	Most recent	Map development	Yes	
Wells	TWDB Well locations www.twdb.texas.gov	Most recent	Map development	Yes	Yes
TCEQ Surface Water Quality Monitoring Stations	TCEQ GIS Site Layers Download Page www.tceq.texas.gov	N/A	Map development	Yes	Yes
Address Points	Hidalgo, Willacy, and Cameron Counties available at tnris.org	2018		Yes	Yes
Parcels	Hidalgo, Willacy, and Cameron Counties available at TNRIS tnris.org	2018		No	No
Sewer Service Areas	Coastal Zone – Texas AgriLife Extension Hidalgo and Cameron Counties – TWRI	2019	No Data Available	No	No
OSSF Points	Coastal Zone – Texas AgriLife Extension Hidalgo and Cameron Counties -TWRI	2019	No Data Available	No	No
PAD Database	Protected Areas database Department of the Interior		Define areas that are protected such as National Wildlife Refuge.	Yes	Yes
Large Ranches South Texas	TCEQ NPS Team	2018	Show large South Texas ranch areas on maps.	No	No
Seagrass	TPWD tpwd.texas.gov	2016	Show seagrass in Laguna Madre.	Yes	Yes
Wildlife Management Areas	TPWD tpwd.texas.gov	2018		Yes	Yes
Water Districts	TCEQ www.tceq.texas.gov	2015		Yes	Yes

Colonias	Rural Community Assistance Partnership	2015	Extracted from ARC-GIS	Yes	No
Coastal Zone Boundary	General Land Office www.glo.texas.gov	2011	Map development	Yes	Yes
Existing Urban BMP locations	Information of existing BMPs will be gathered from cities	Most recent		Yes	Yes
Areas of drainage project locations	Areas of existing and future drainage projects will be obtained from cities and drainage districts.	Most recent	Assess impact on sub-watershed boundaries and flow	No	No