

Mapping Flood Hazards and Vulnerability in the Coastal Bend

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Community Development Block Grant – Mitigation (CDBG-MIT)

Regional Mitigation Program (COG MOD):

- Each council of governments (COG) impacted by Hurricane Harvey will be allocated funds.
- Each COG will develop a method of distribution (MOD) to allocate funds to local units of governments.
- Each project must mitigate against one of the top two severe risks Texas experiences:
 - **hurricanes/tropical storms/tropical depressions**
 - **severe coastal/riverine flooding**

Community Development Block Grant – Mitigation (CDBG-MIT)

Regional Mitigation Program (COG MOD):

- At least 50% of funds must address mitigation needs in HUD Most Impacted and Distressed (MID) areas
- 50% of all CDBG-MIT funds must benefit low-to-moderate income (LMI) persons

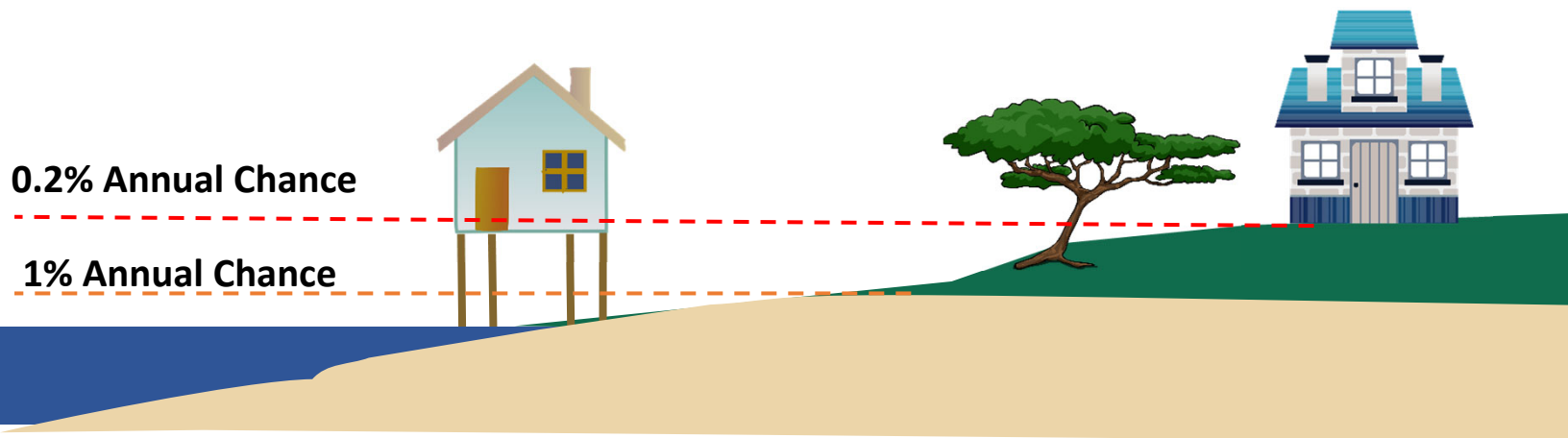
<https://recovery.texas.gov/documents/action-plans/mitigation/mitigation-sap-amend-1.pdf>

Where are vulnerable communities?

Where does flooding occur?

What projects would you like to see that address the priority risks you care about?

Flood Zones

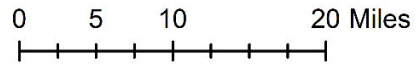
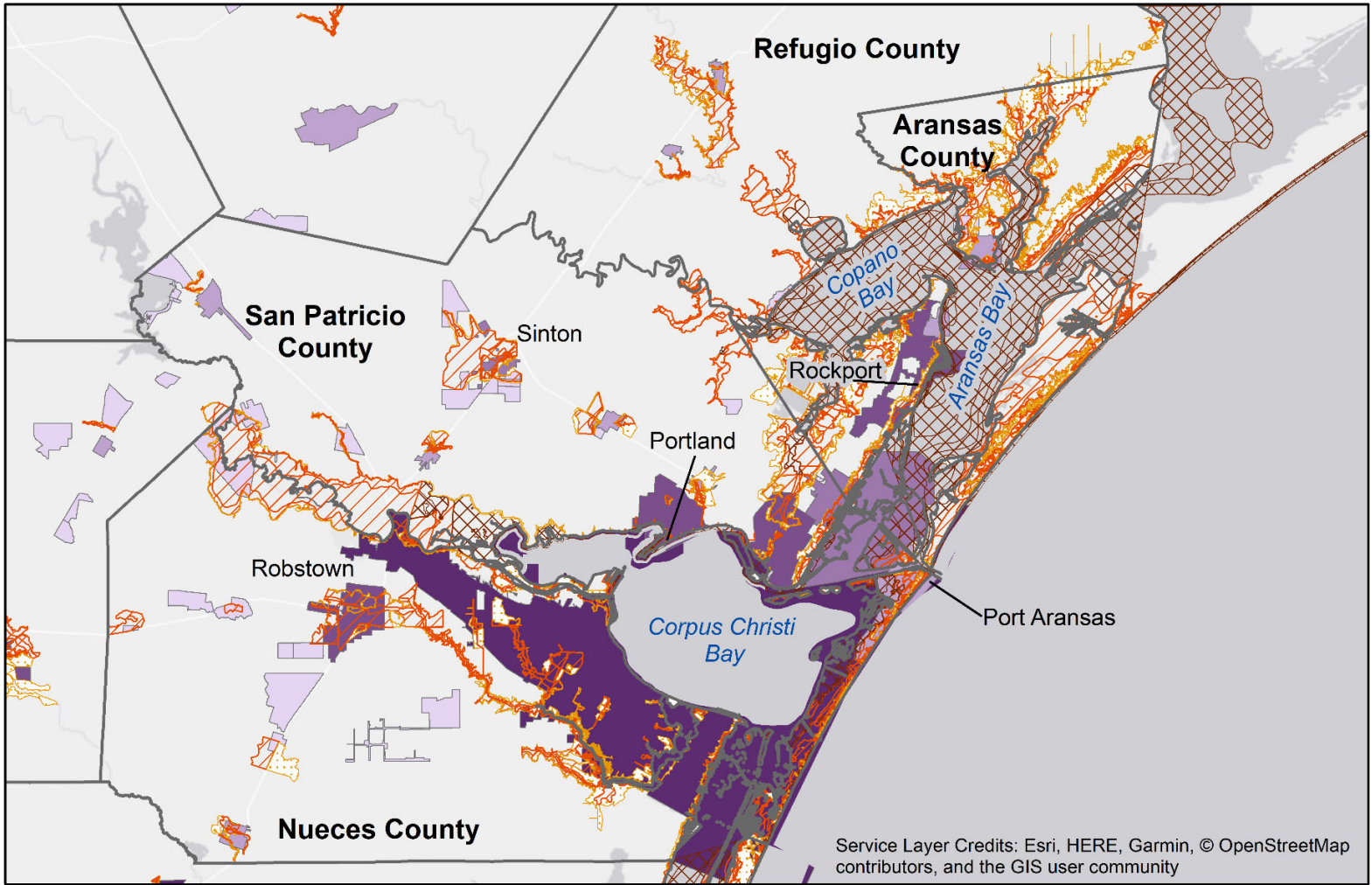


- Flood hazard areas identified on FEMA’s Flood Insurance Rate Maps
- The 1-percent-annual-chance flood is also referred to as the base flood or 100-year flood (SFHA)
 - Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30.
- The 0.2-percent-annual-chance (or 500-year) flood. Moderate flood hazard areas:
 - Zone B or Zone X

<https://www.fema.gov/glossary/flood-zones>

<https://www.fema.gov/glossary/special-flood-hazard-area-sfha>

Population and FEMA Flood Zones Regionwide



Legend

Floodplain

Flood Zone

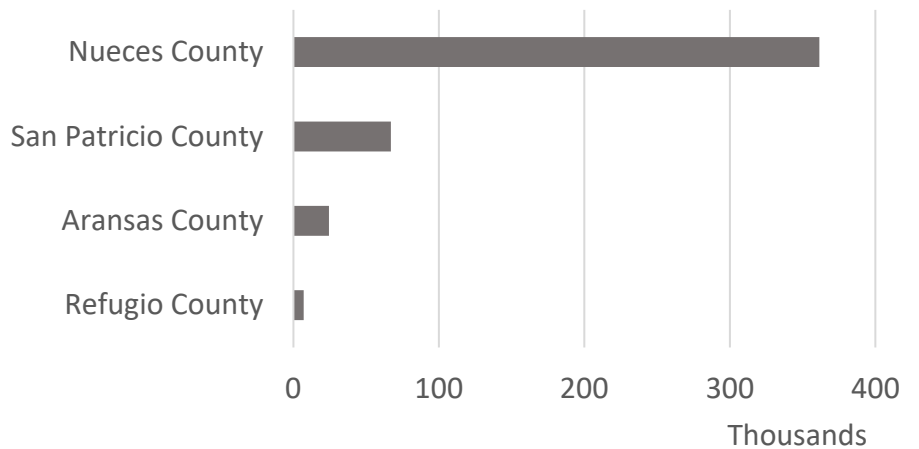
- 1% Annual Chance- A Zones
- 1% Annual Chance - V Zones
- 0.2% Annual Chance
- OPEN WATER

Census Place (ACS 2015-2019)

Total Population

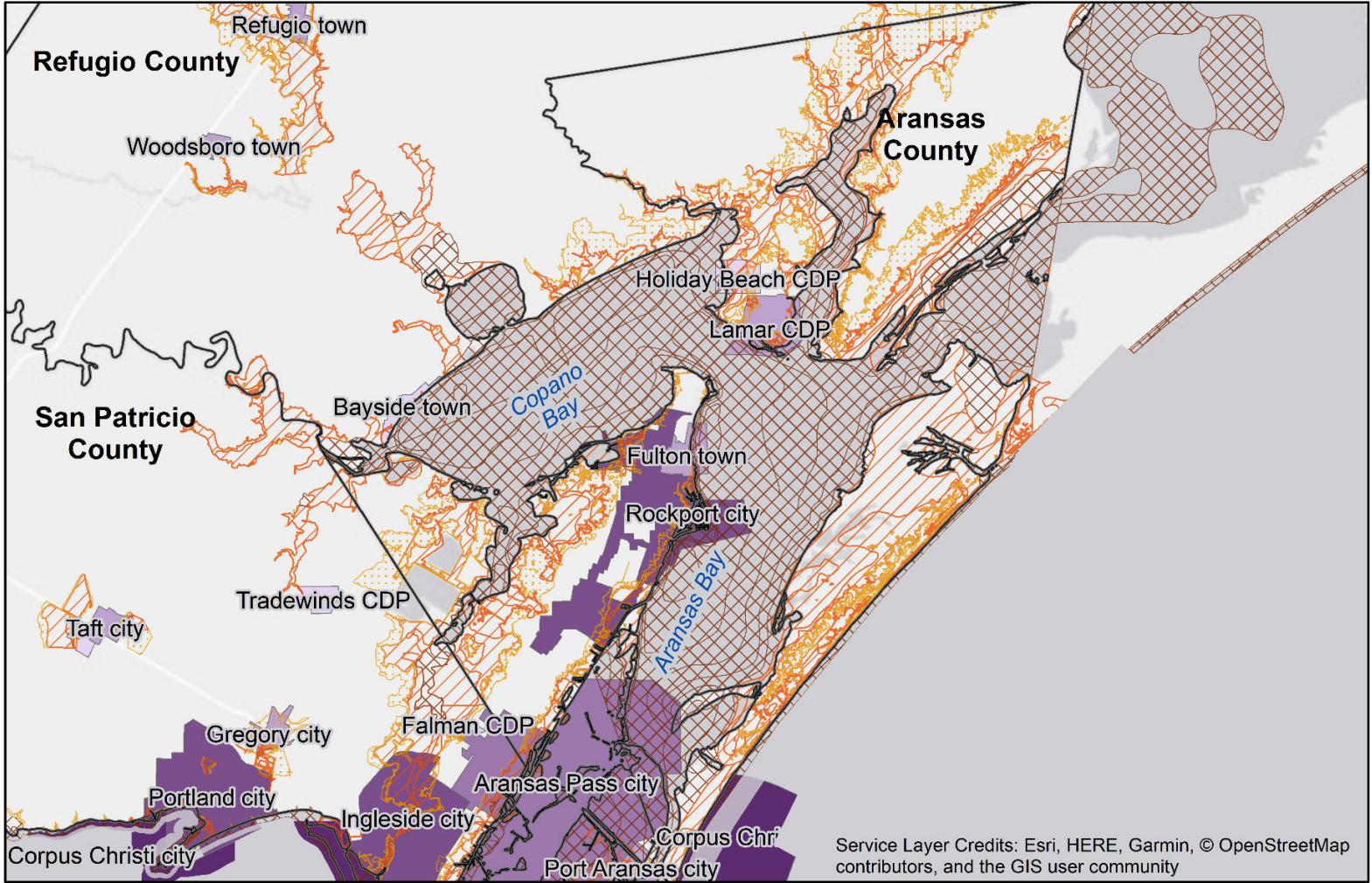
- 0 - 1,000
- 1,001 - 5,000
- 5,001 - 10,000
- 10,001 - 25,000
- 25,001 - 325,780

County Population



Population and FEMA Flood Zones

Aransas County







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Legend






Floodplain

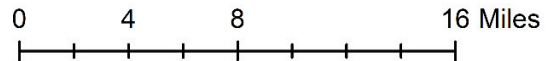
Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Census Place (ACS 2015-2019)

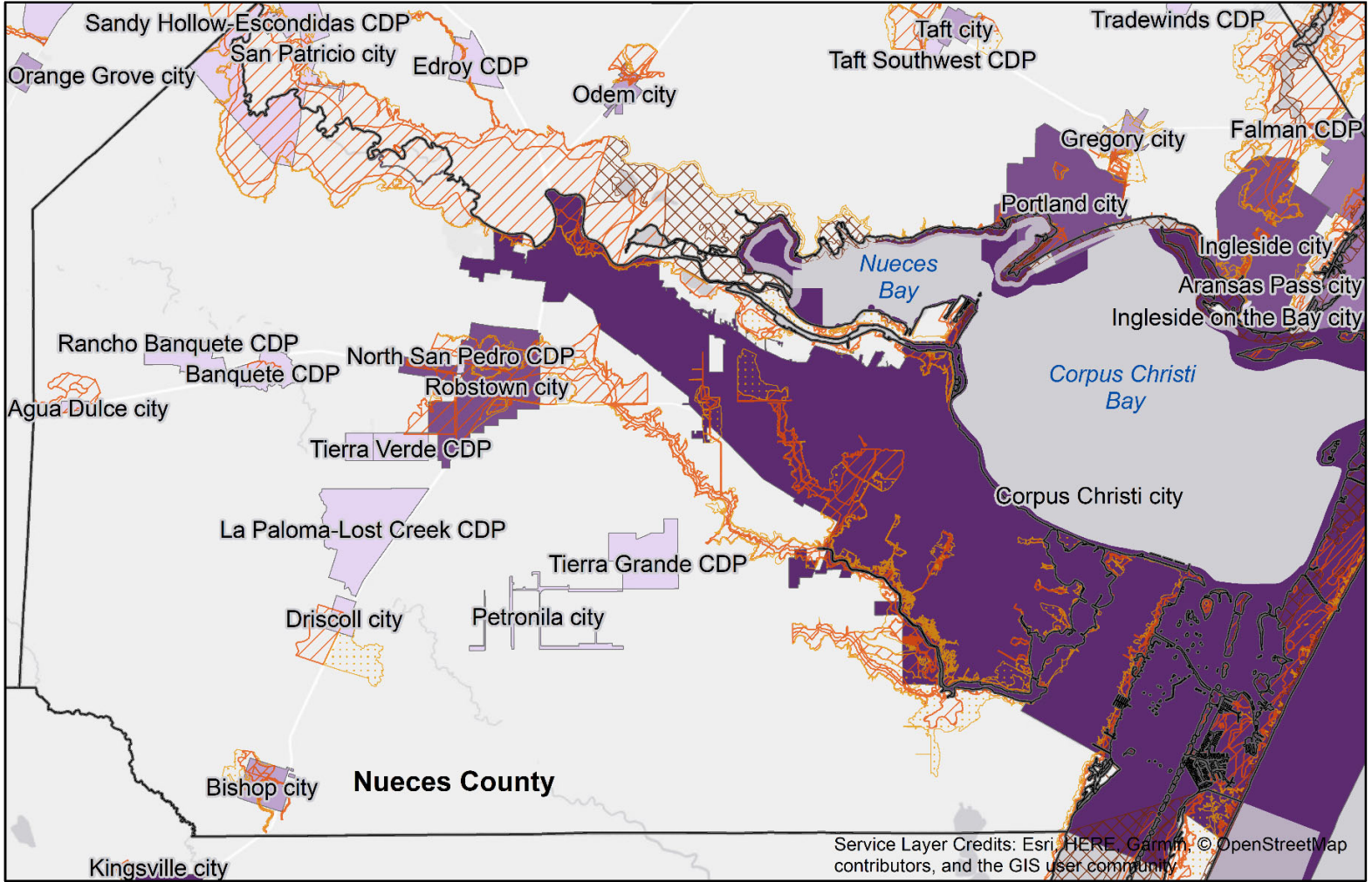
Total Population

-  0 - 1,000
-  1,001 - 5,000
-  5,001 - 10,000
-  10,001 - 25,000
-  25,001 - 325,780



Place	Population
Rockport city	10,841
Aransas Pass city	8,088
Port Aransas city	4,123
Fulton town	1,503
Lamar CDP	1,154
Ingleside on the Bay city	802
Holiday Beach CDP	698
Bayside town	333





Population and FEMA Flood Zones Nueces County



Legend






Floodplain

Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Census Place (ACS 2015-2019)

Total Population

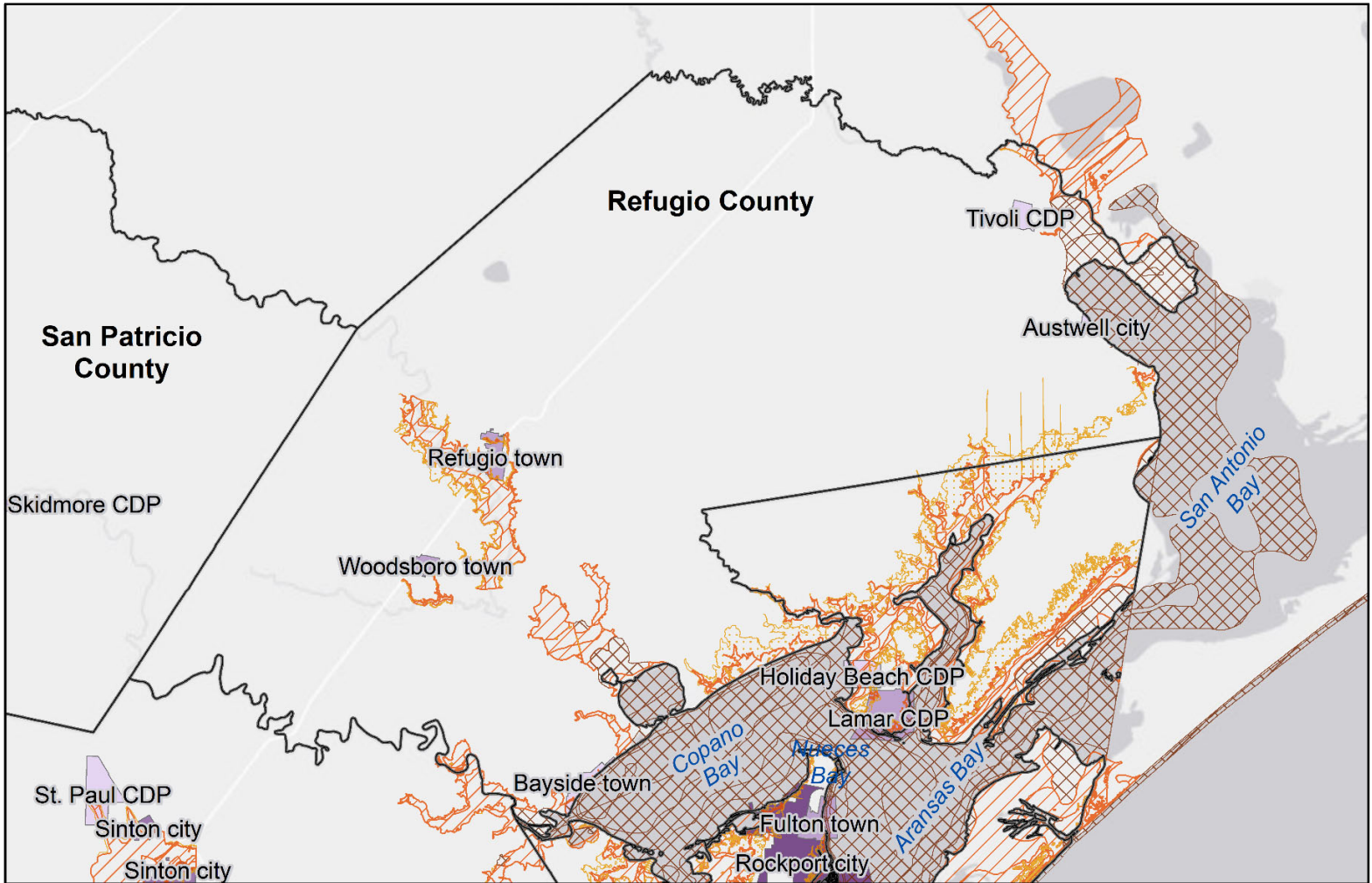
-  0 - 1,000
-  1,001 - 5,000
-  5,001 - 10,000
-  10,001 - 25,000
-  25,001 - 325,780

0 4 8 16 Miles



Place	Population
Corpus Christi city	325,780
Robstown city	11,400
Bishop city	3,093
North San Pedro CDP	645
Driscoll city	631
La Paloma-Lost Creek CDP	613
Spring Gardens CDP	565
Rancho Banquete CDP	484
Tierra Verde CDP	441
Banquete CDP	381
Tierra Grande CDP	334
Sandy Hollow-Escondidas CDP	296
Petronila city	103





Population and FEMA Flood Zones Refugio County



Legend






Floodplain

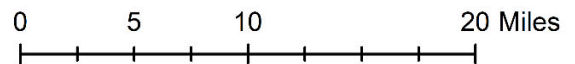
Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Census Place (ACS 2015-2019)

Total Population

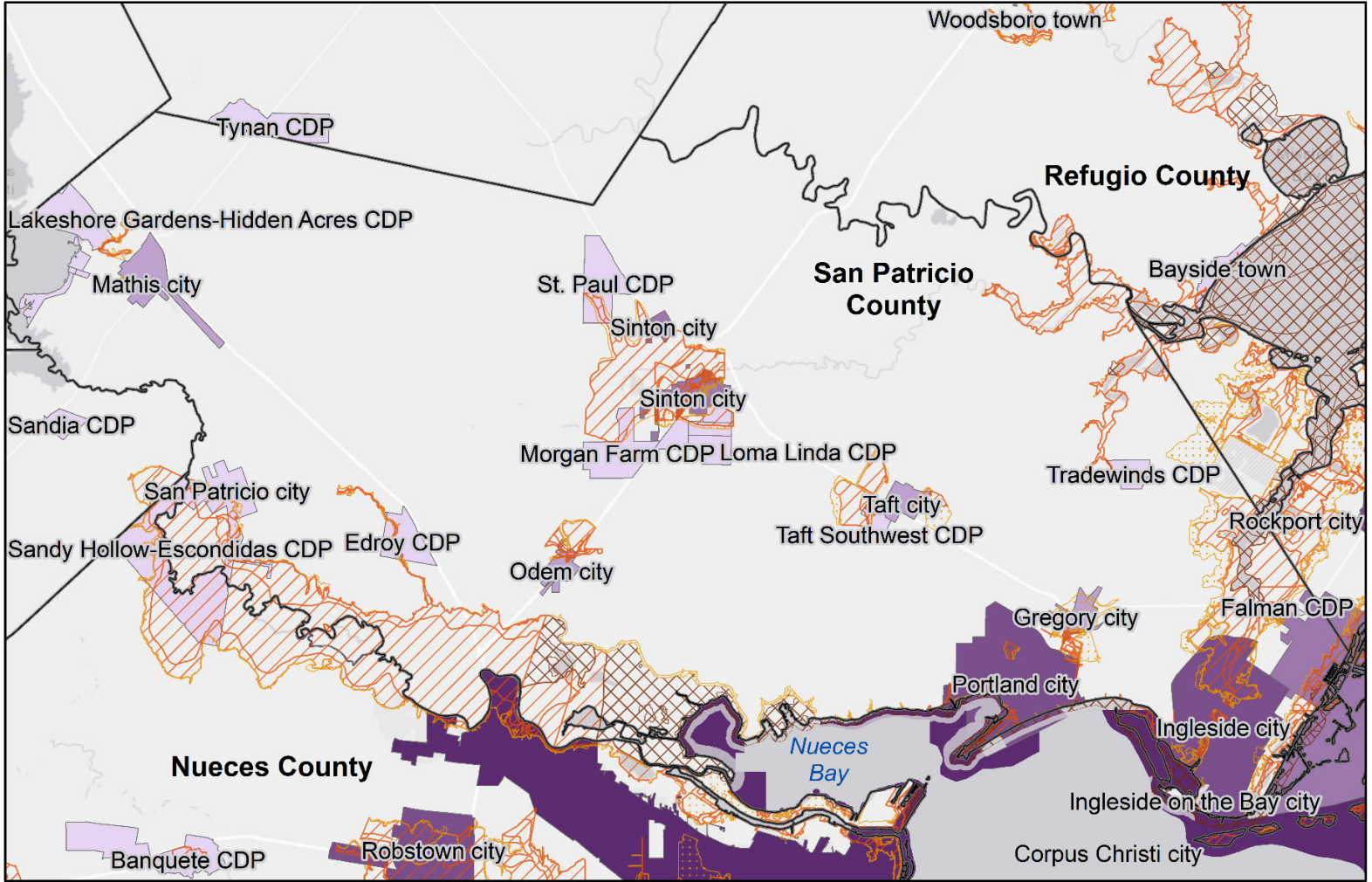
-  0 - 1,000
-  1,001 - 5,000
-  5,001 - 10,000
-  10,001 - 25,000
-  25,001 - 325,780



Place	Population
Refugio town	2,806
Woodsboro town	1,344
Tivoli CDP	527

Population and FEMA Flood Zones





San Patricio County



Legend






Floodplain

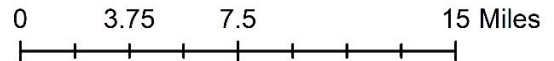
Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Census Place (ACS 2015-2019)

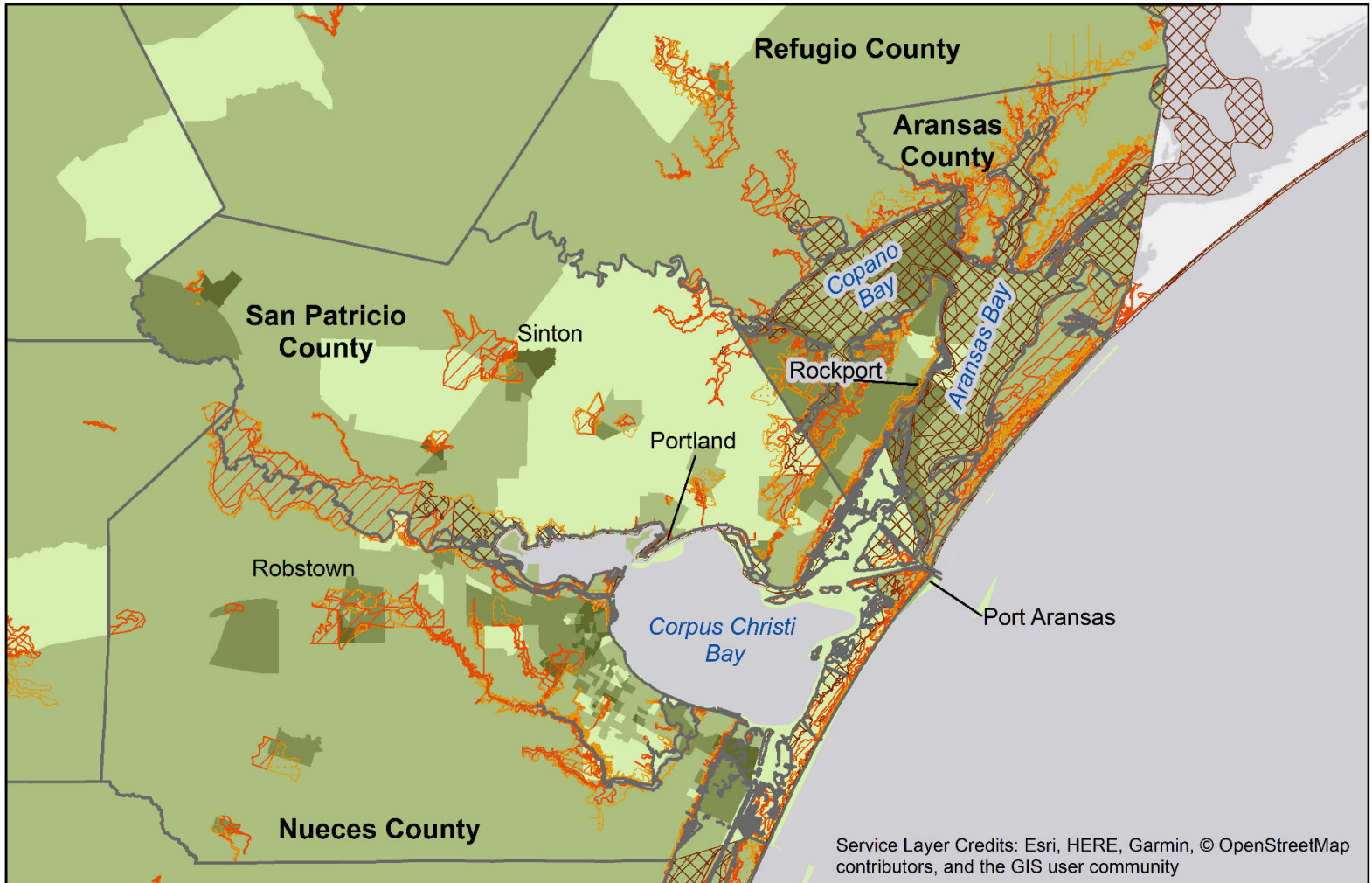
Total Population

-  0 - 1,000
-  1,001 - 5,000
-  5,001 - 10,000
-  10,001 - 25,000
-  25,001 - 325,780



Place	Population
Portland city	17,025
Ingleside city	10,165
Sinton city	5,504
Mathis city	4,826
Taft city	2,945
Odem city	2,649
Gregory city	1,977
Taft Southwest CDP	982
St. Paul CDP	966
Lakeshore Gardens-Hidden Acres CDP	741
Rancho Chico CDP	725
Edroy CDP	550
Lake City town	545
San Patricio city	394





Low & Moderate Income and FEMA Flood Zones Regionwide







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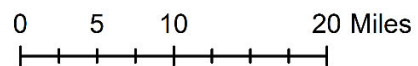
Floodplain

Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Low & Moderate Income Individuals (LMI) Percentage of LMI

-  0 - 0.25
-  0.26 - 0.5
-  0.51 - 0.75
-  0.76 - 1

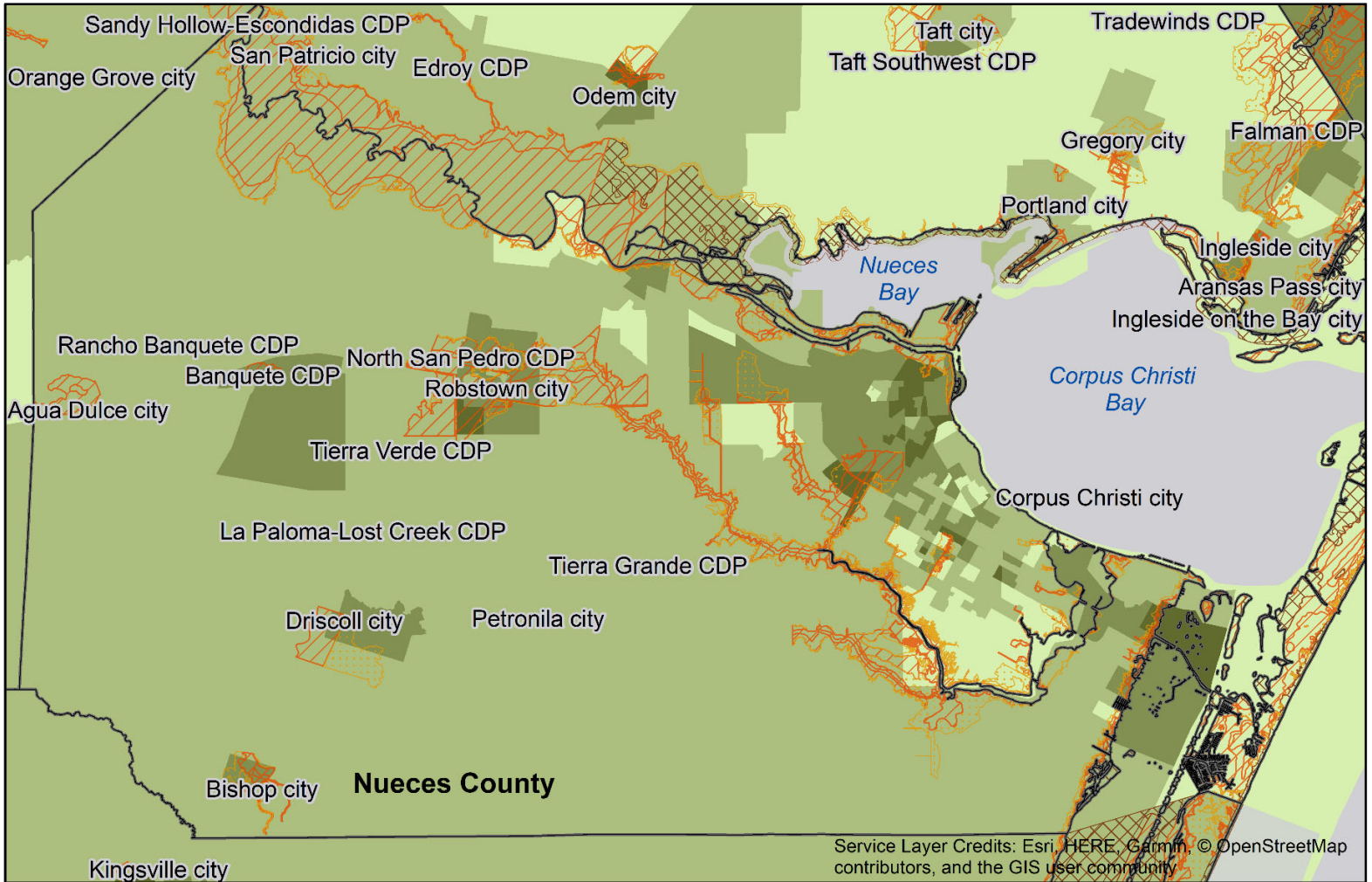


These data provide estimates of the number of low- and moderate-income individuals (LMISD) by block group based on the 2011-2015 American Community Survey (ACS).

Department of Housing and Urban Development:

<https://www.hudexchange.info/programs/cdbg/cdbg-low-moderate-income-data/>





Low & Moderate Income and FEMA Flood Zones Nueces County



Legend





Floodplain

Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Low & Moderate Income Individuals (LMI)

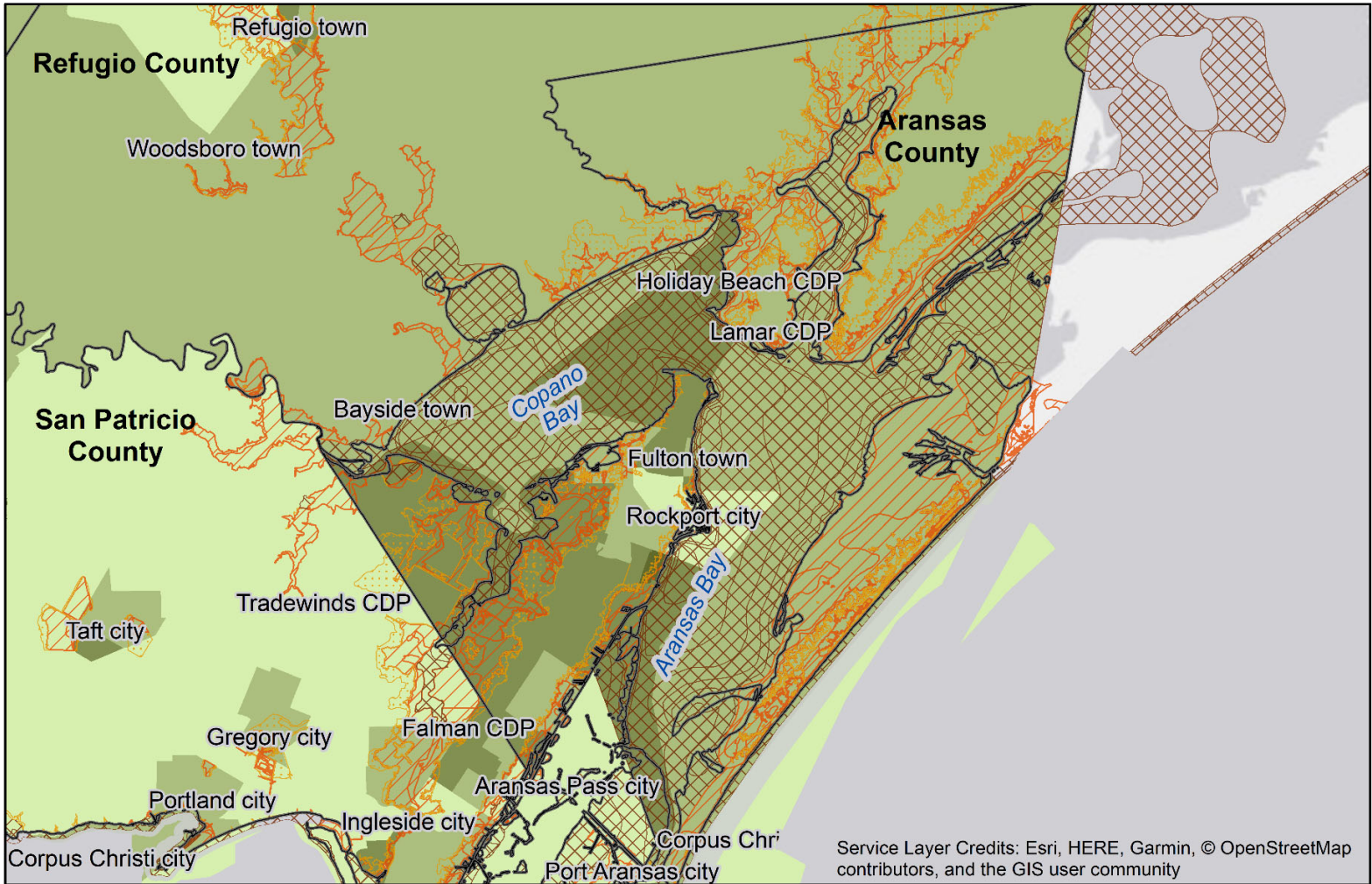
Percentage of LMI

-  0 - 0.25
-  0.26 - 0.5
-  0.51 - 0.75
-  0.76 - 1

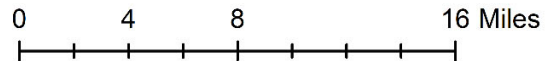
Over 40% LMI

Place	Percent LMI
Driscoll city	73.4%
Banquete CDP	70.8%
North San Pedro CDP	64.4%
Robstown city	57.7%
La Paloma-Lost Creek CDP	45.7%
Agua Dulce city	44.6%
Spring Gardens CDP	41.6%

Low & Moderate Income and FEMA Flood Zones Aransas County







Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community



Legend





Floodplain

Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Low & Moderate Income Individuals (LMI)

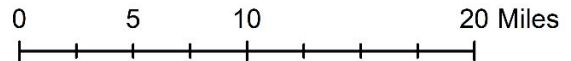
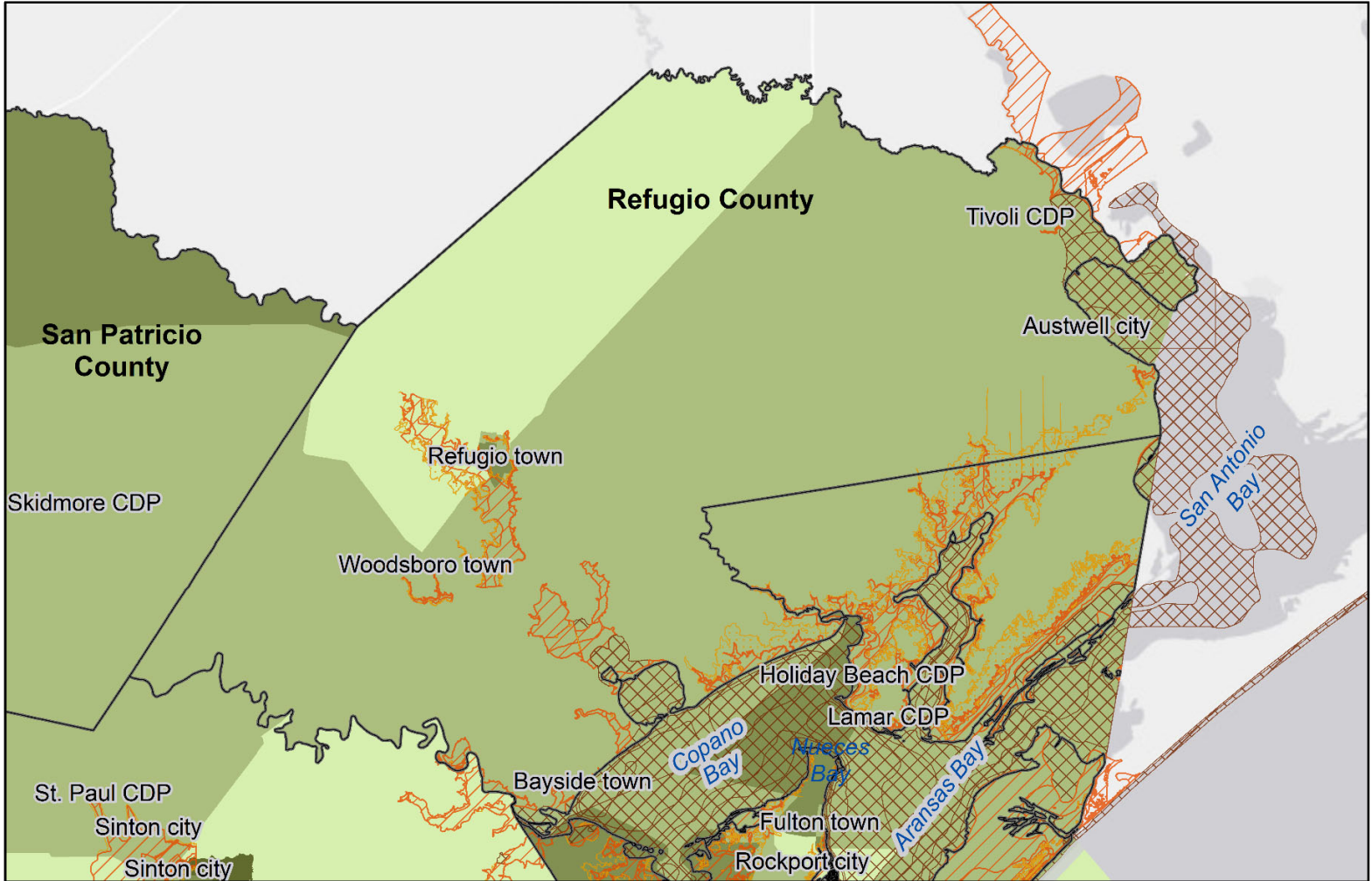
Percentage of LMI

-  0 - 0.25
-  0.26 - 0.5
-  0.51 - 0.75
-  0.76 - 1

Over 40% LMI

Place	Percent LMI
Holiday Beach CDP	59.30%
Fulton town	49.20%
Aransas Pass city	49.10%
Rockport city	41.30%
Bayside town	41.00%





Low & Moderate Income and FEMA Flood Zones Refugio County



Legend





Floodplain

Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Low & Moderate Income Individuals (LMI)

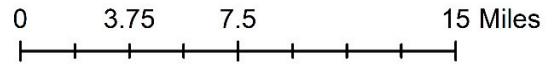
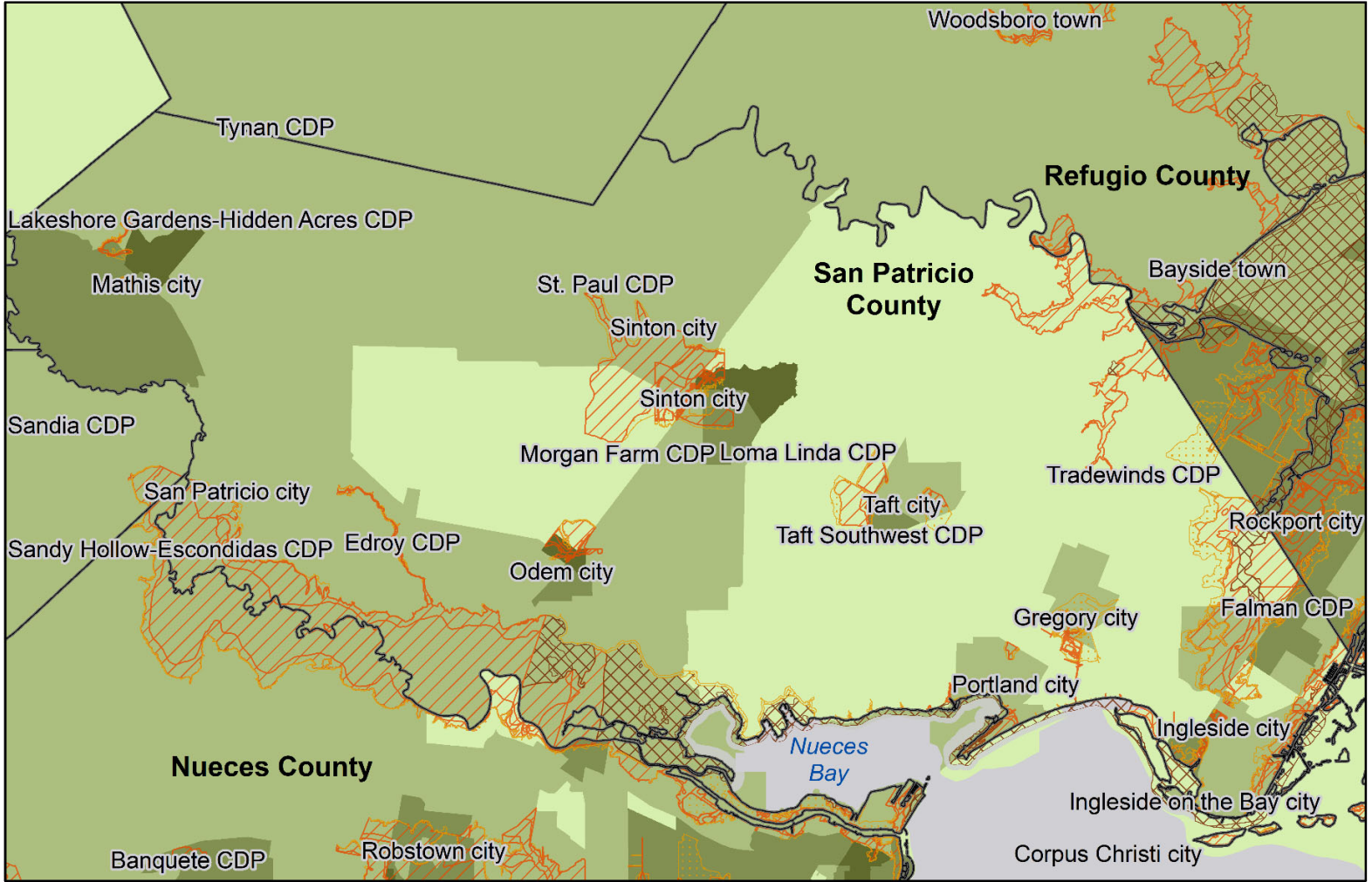
Percentage of LMI

-  0 - 0.25
-  0.26 - 0.5
-  0.51 - 0.75
-  0.76 - 1

Over 40% LMI

Place	Percent LMI
Tivoli CDP	52.90%
Refugio town	46.80%





Low & Moderate Income and FEMA Flood Zones San Patricio County



Legend





Floodplain

Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Low & Moderate Income Individuals (LMI)

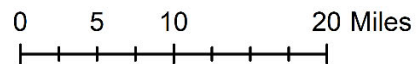
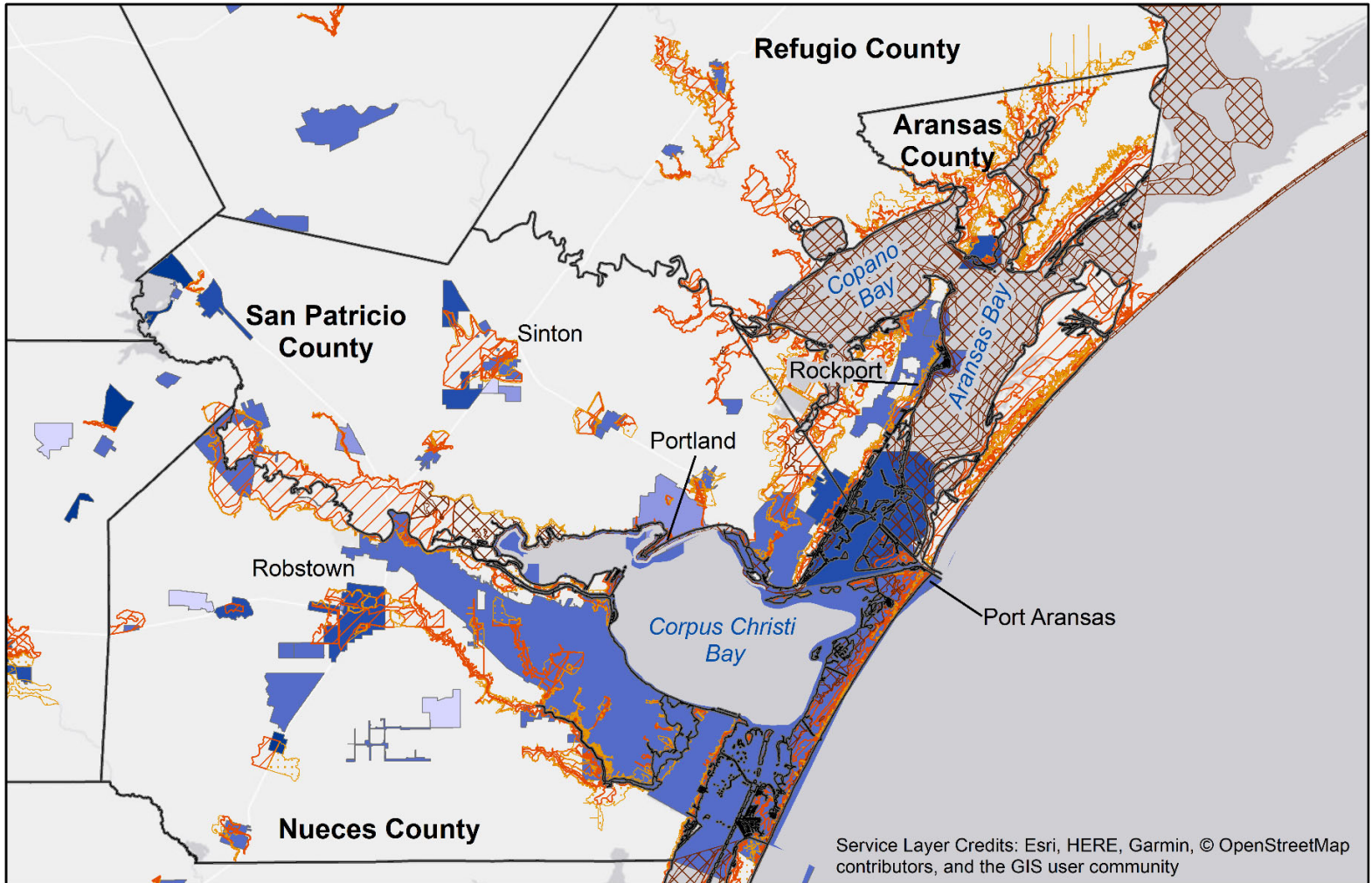
Percentage of LMI

-  0 - 0.25
-  0.26 - 0.5
-  0.51 - 0.75
-  0.76 - 1

Over 40% LMI

Place	Percent LMI
Edgewater Estates CDP	88.20%
La Paloma Addition CDP	85.00%
Rancho Chico CDP	80.70%
Paisano Park CDP	68.80%
Mathis city	67.10%
Odem city	59.60%
Taft Southwest CDP	56.20%
Lake City town	55.70%
Lakeshore Gardens-Hidden Acres	50.90%
Taft city	49.90%
Gregory city	44.30%
Sinton city	42.80%
St. Paul CDP	41.80%
Falman CDP	40.00%





Social Vulnerability Index and FEMA Flood Zones Regionwide



Legend






Floodplain

Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Social Vulnerability Index

SoVI Class

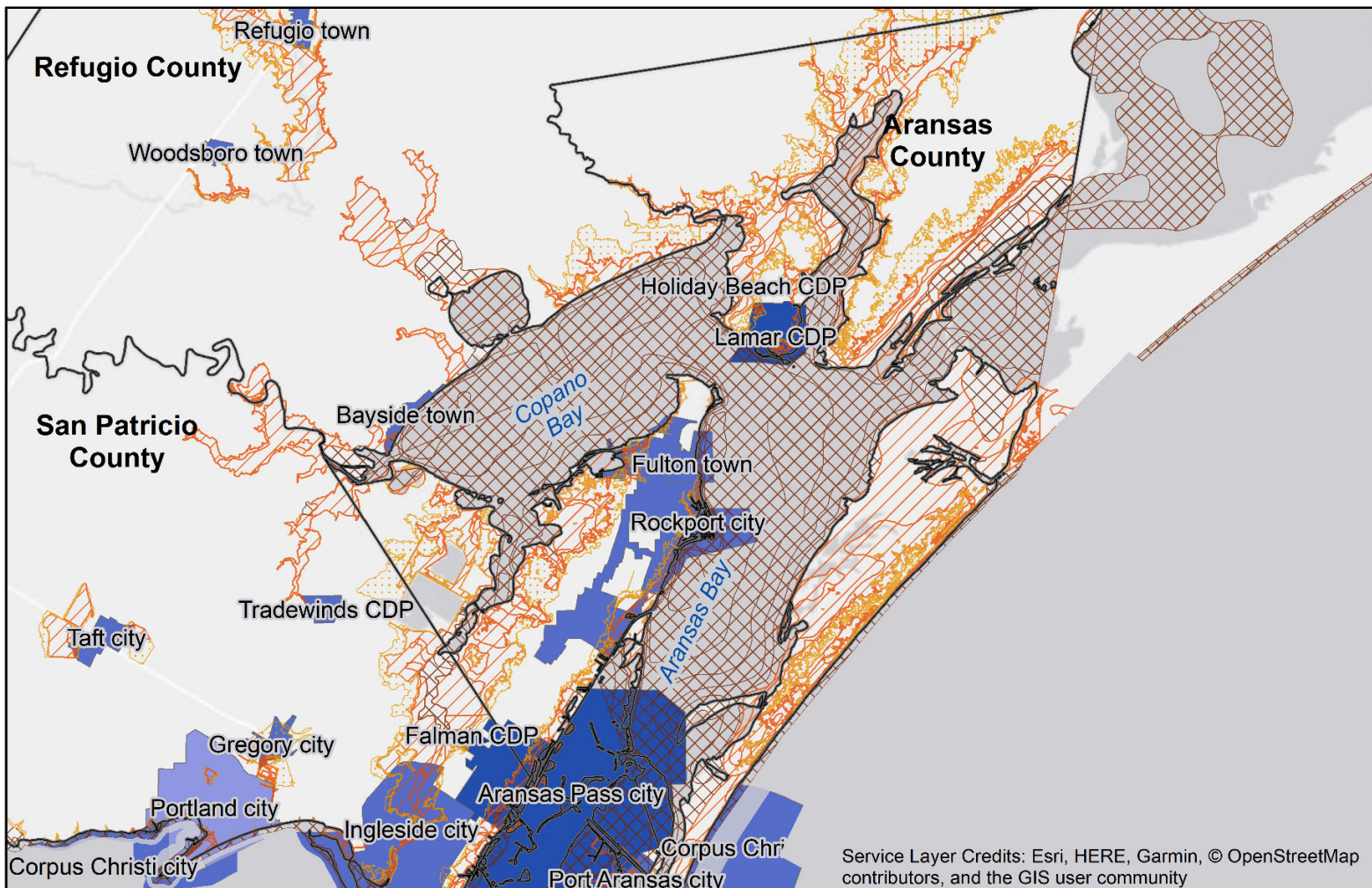
-  Low
-  Medium Low
-  Medium
-  Medium High
-  High

The Social Vulnerability Index is a measure of a community's ability to prepare for, respond to, and recover from environmental hazards. The index considers several variables related to housing, employment structure, population structure, socio-economic status, race/ethnicity and special needs.*

*<https://recovery.texas.gov/files/programs/mitigation/cdbg-mit-submitted-plan.pdf>

Social Vulnerability Index and FEMA Flood Zones

Aransas County







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Legend






Floodplain

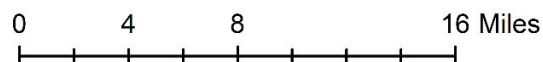
Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Social Vulnerability Index

SoVI Class

-  High
-  Medium High
-  Medium
-  Medium Low
-  Low



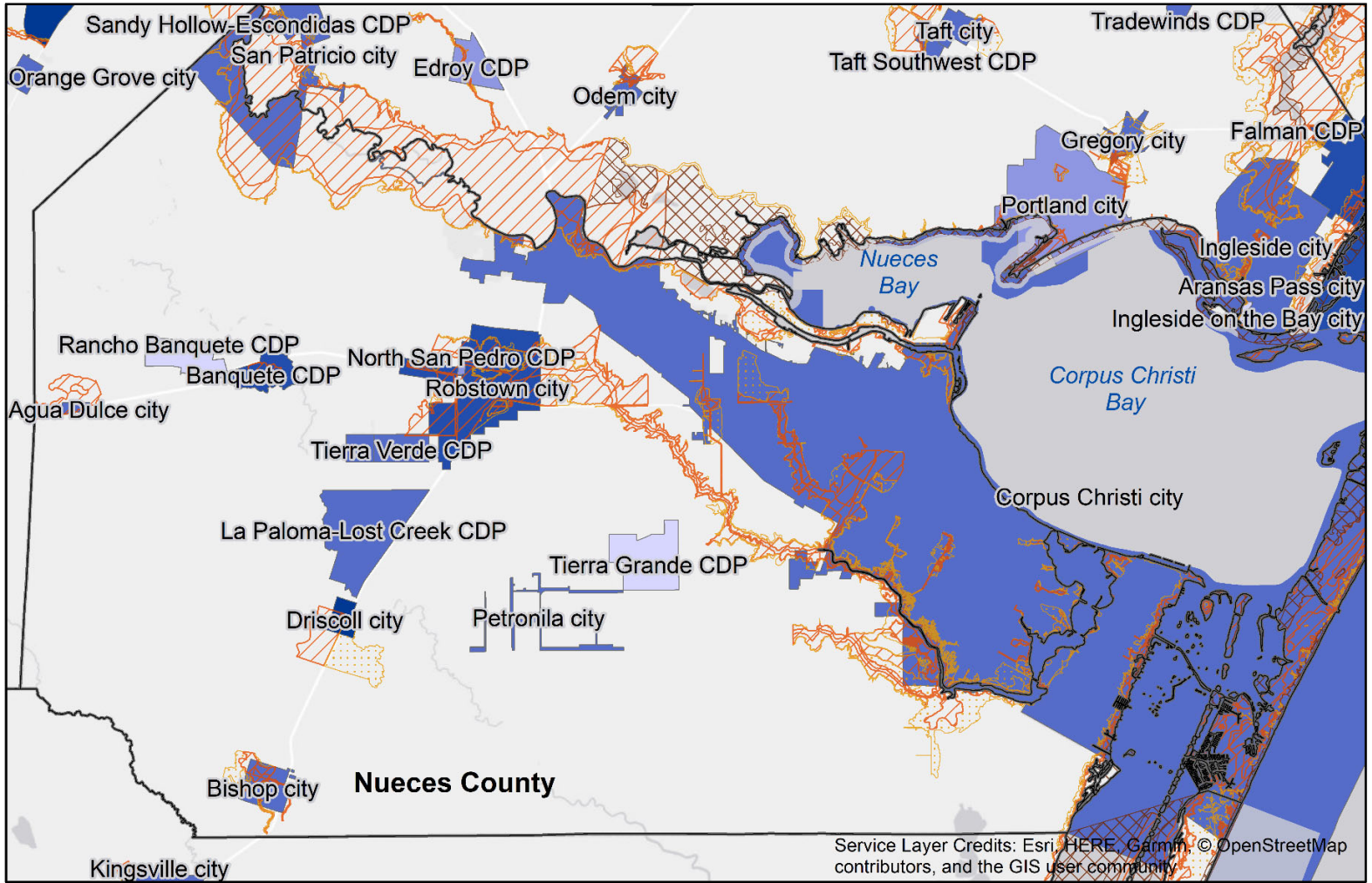
Place

SoVI Class

Aransas Pass city	Medium High
Lamar CDP	Medium High
Bayside town	Medium
Fulton town	Medium
Rockport city	Medium

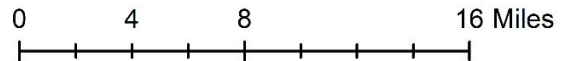
Social Vulnerability Index and FEMA Flood Zones

Nueces County







Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

Legend








Floodplain

Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

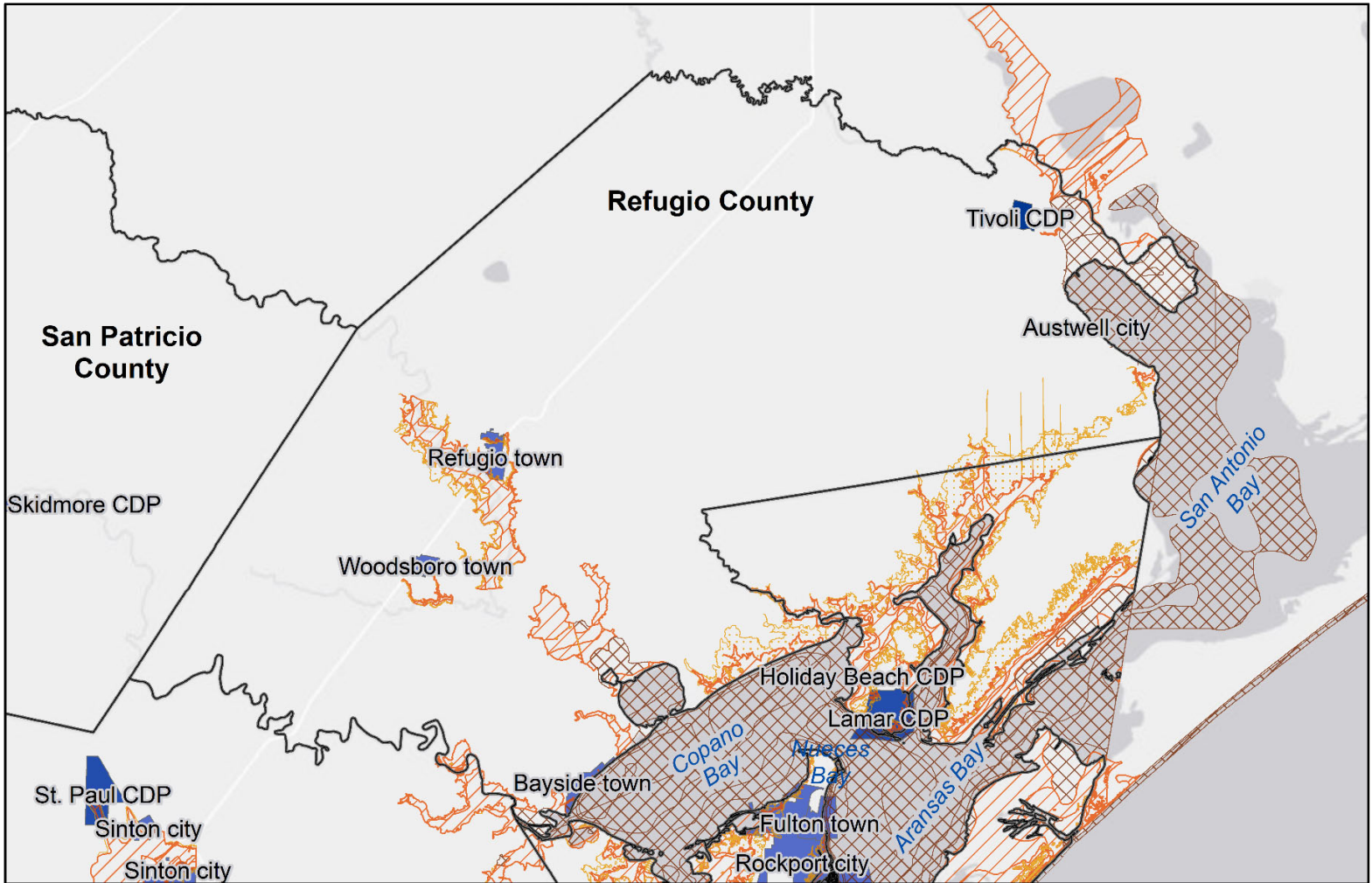
Social Vulnerability Index

SoVI Class

-  High
-  Medium High
-  Medium
-  Medium Low
-  Low

Place	SoVI Class
Driscoll city	High
Robstown city	Medium High
Banquete CDP	Medium High
Agua Dulce city	Medium
Bishop city	Medium
Petronila city	Medium
La Paloma-Lost Creek CDP	Medium
Spring Gardens CDP	Medium
Tierra Verde CDP	Medium
Corpus Christi city	Medium
Port Aransas city	Medium
Sandy Hollow-Escondidas CDP	Medium





Social Vulnerability Index and FEMA Flood Zones Refugio County



Legend






Floodplain

Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Social Vulnerability Index

SoVI Class

-  High
-  Medium High
-  Medium
-  Medium Low
-  Low

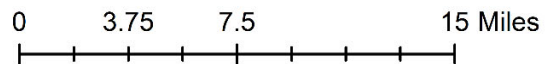
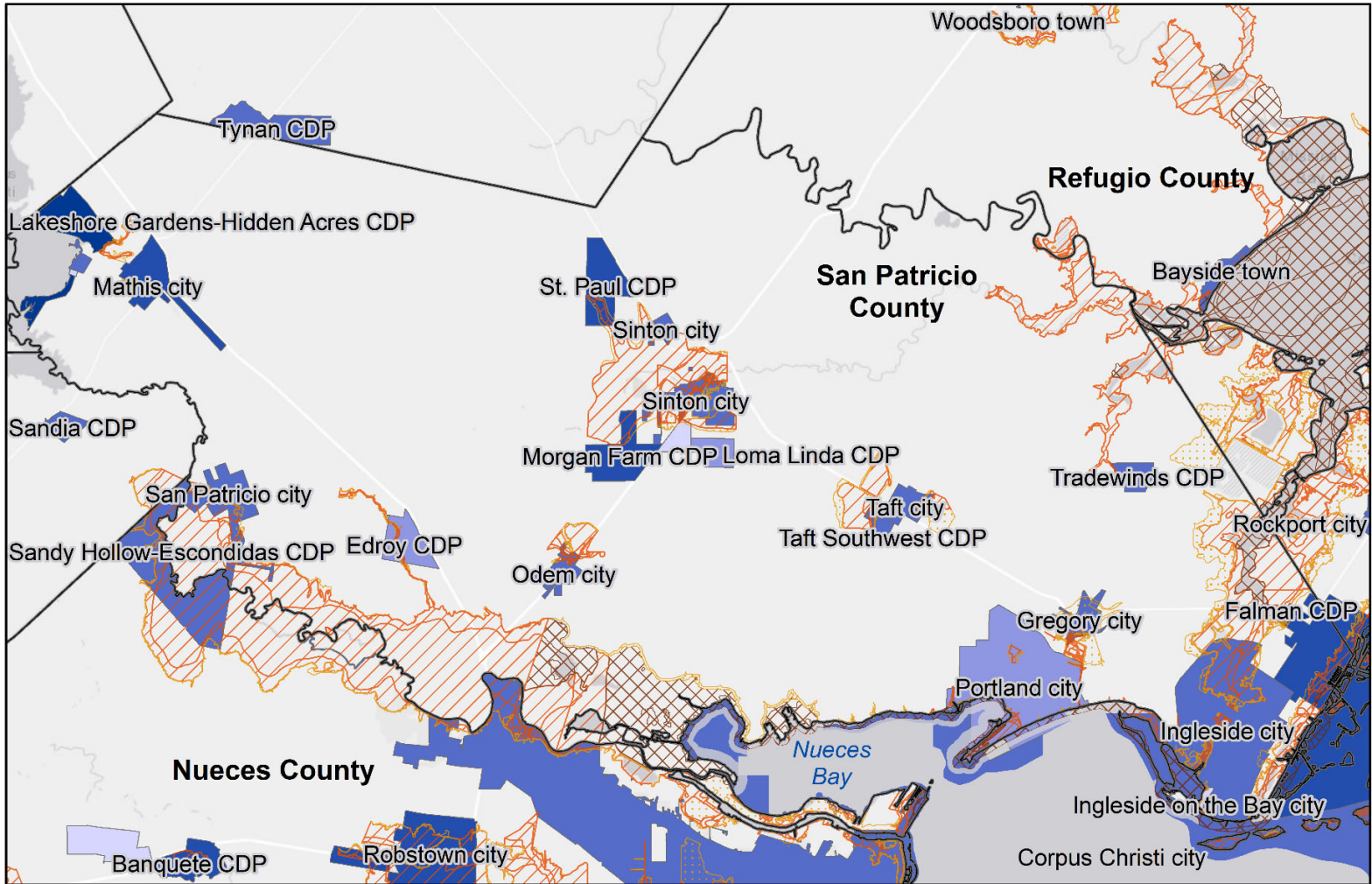
0 5 10 20 Miles



Place	SoVI Class
Tivoli CDP	High
Refugio town	Medium
Woodsboro town	Medium

Social Vulnerability Index and FEMA Flood Zones





San Patricio



Legend






Floodplain

Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

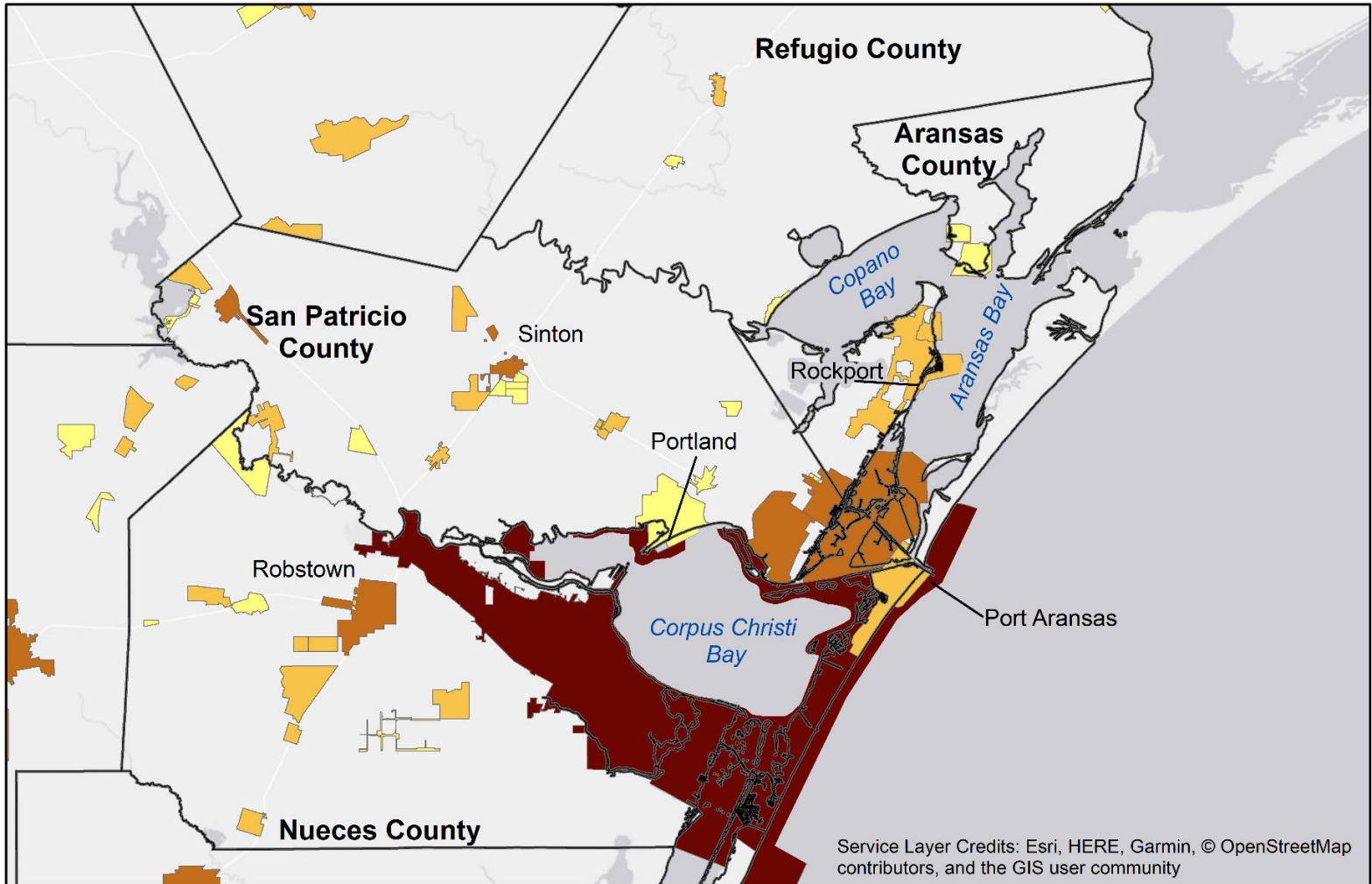
Social Vulnerability Index

SoVI Class

-  Low
-  Medium Low
-  Medium
-  Medium High
-  High

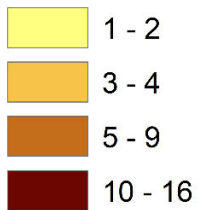
Place	SoVI Class
Lake City town	High
Country Acres CDP	High
Lakeshore Gardens-Hidden Acres CDP	High
Mathis city	Medium High
Morgan Farm CDP	Medium High
St. Paul CDP	Medium High

FEMA Public Assistance Program- Declared Disasters Regionwide



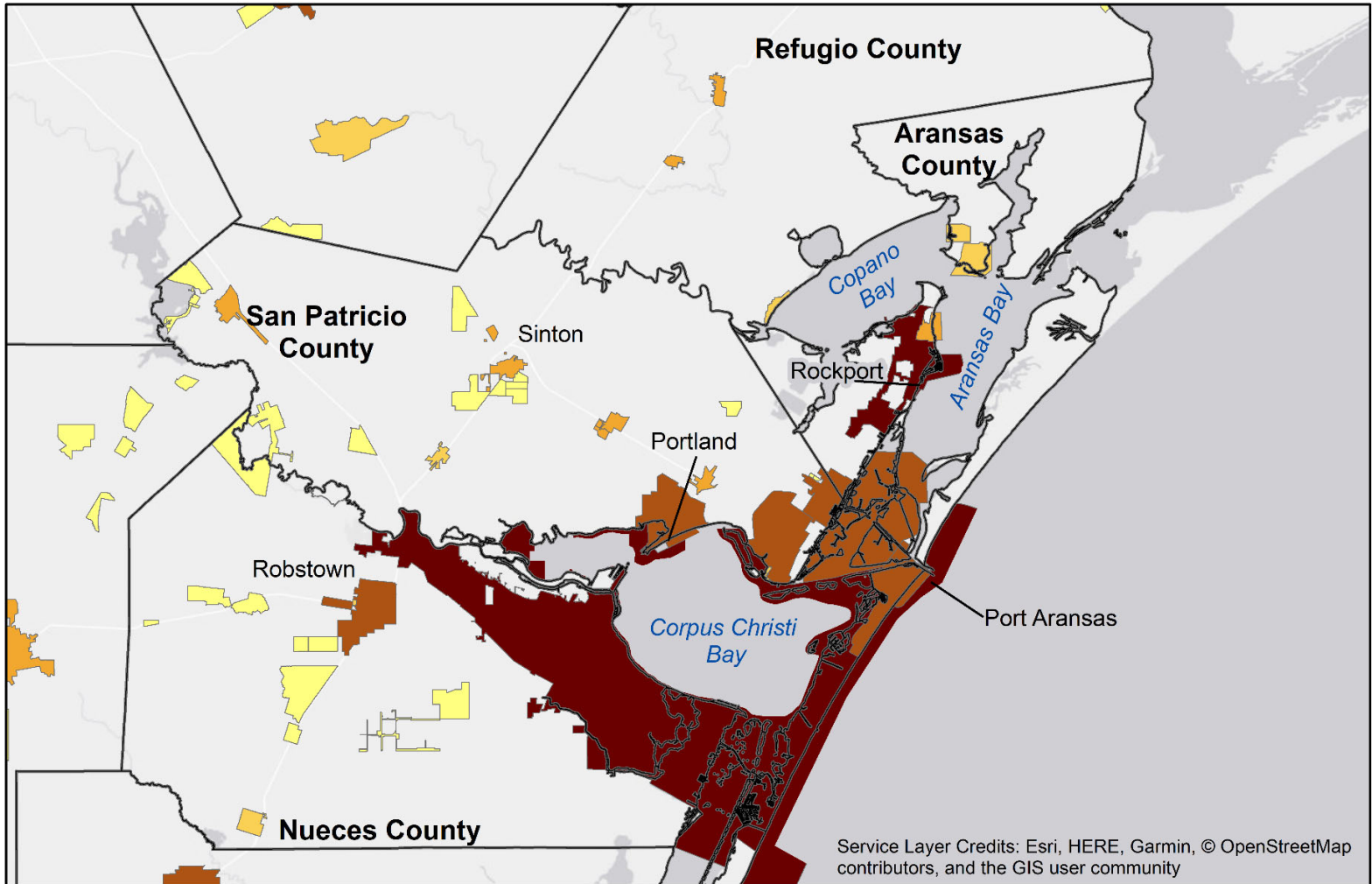
Legend

FEMA Individual Assistance Declared disasters (2002-2019)



FEMA's Individuals and Households Program (IHP) provides financial and direct services to eligible individuals and households affected by a disaster, who have uninsured or underinsured necessary expenses and serious needs. Assistance for individuals and households (FEMA.gov).

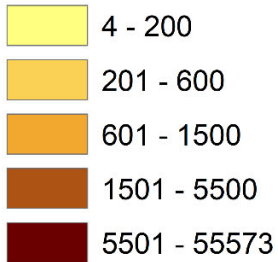
FEMA Public Assistance Program- Number of Applicants Regionwide



Legend

FEMA Individual Assistance

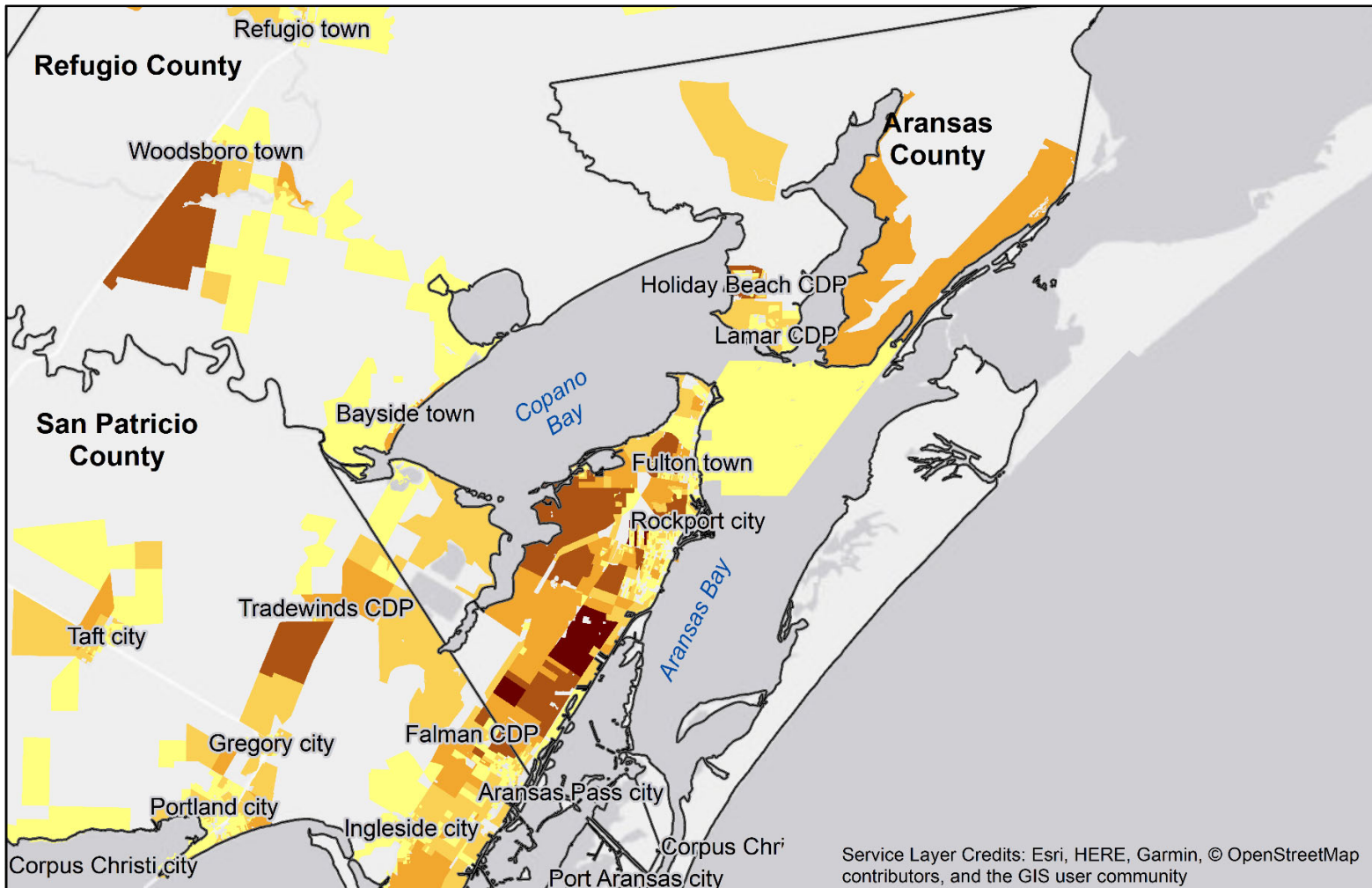
Applicants



FEMA's Individuals and Households Program (IHP) provides financial and direct services to eligible individuals and households affected by a disaster, who have uninsured or underinsured necessary expenses and serious needs. Assistance for individuals and households (FEMA.gov).

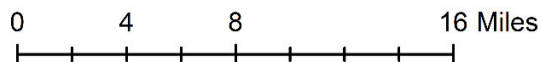
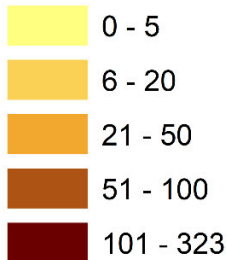
FEMA Public Assistance Program- Number of Applicants

Aransas County



Legend

FEMA Individual Assistance Applicants with RPFVL



5 Declared Disasters in 2008

Year of Declaration Date	Declaration Title	Disaster Number
2008	HURRICANE DOLLY	1780
	HURRICANE GUSTAV	3290
	HURRICANE IKE	1791
		3294
	WILDFIRES	3284

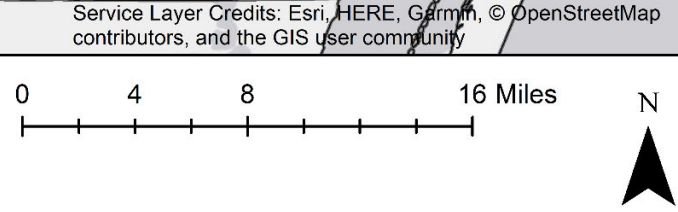
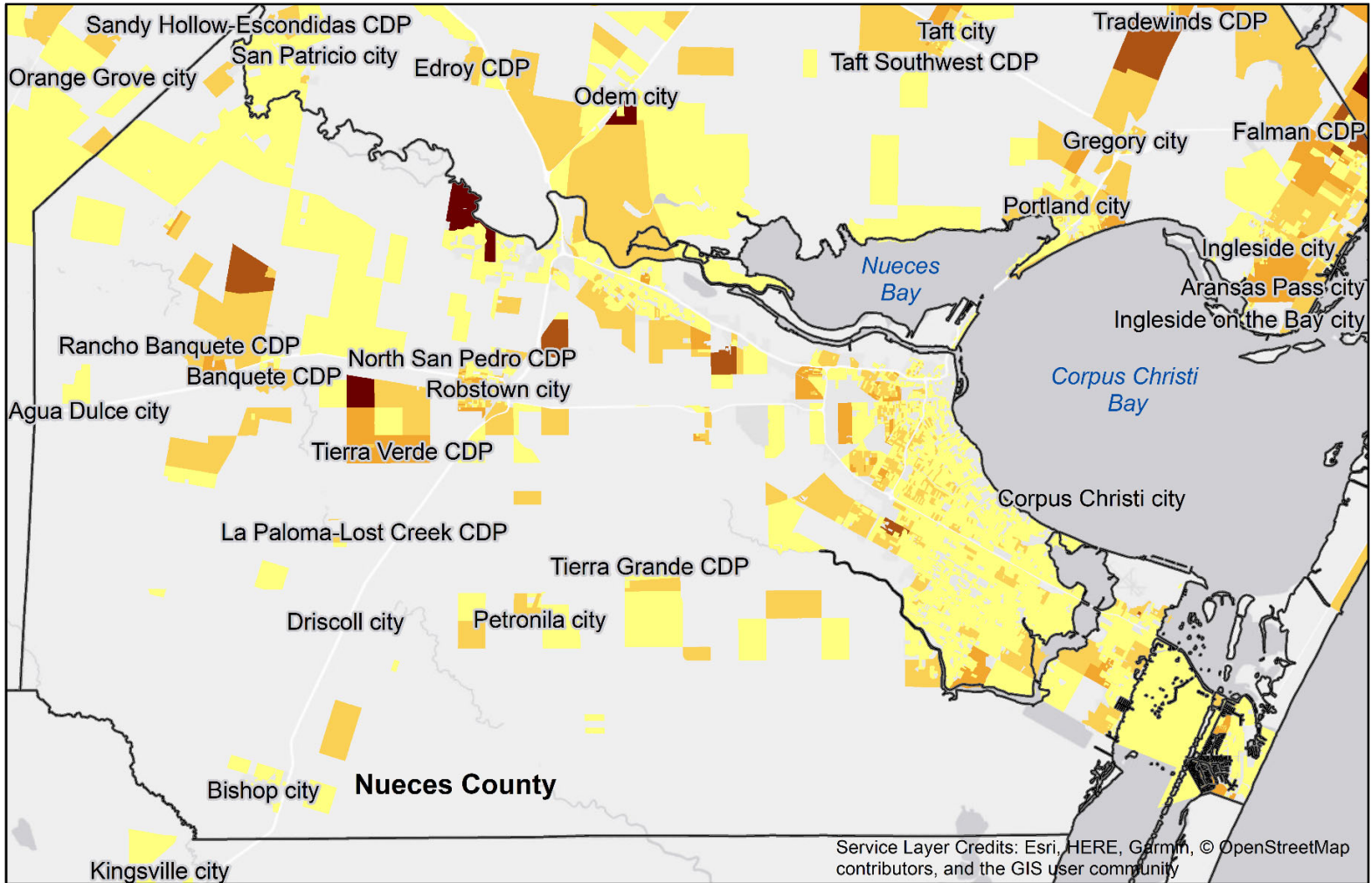
<https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>

FVL = FEMA Verified Loss (IA Inspector verified the damage)

RP = Real Property (e.g. building property)

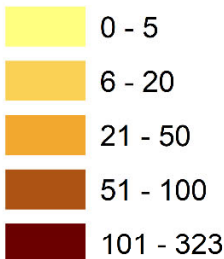
FEMA Public Assistance Program- Number of Applicants

Nueces County



Legend

FEMA Individual Assistance Applicants with RPFVL



5 Declared Disasters in 2008

Year of Declaration Date	Declaration Title	Disaster Number
2008	HURRICANE DOLLY	1780
	HURRICANE GUSTAV	3290
	HURRICANE IKE	1791
		3294
	WILDFIRES	3284

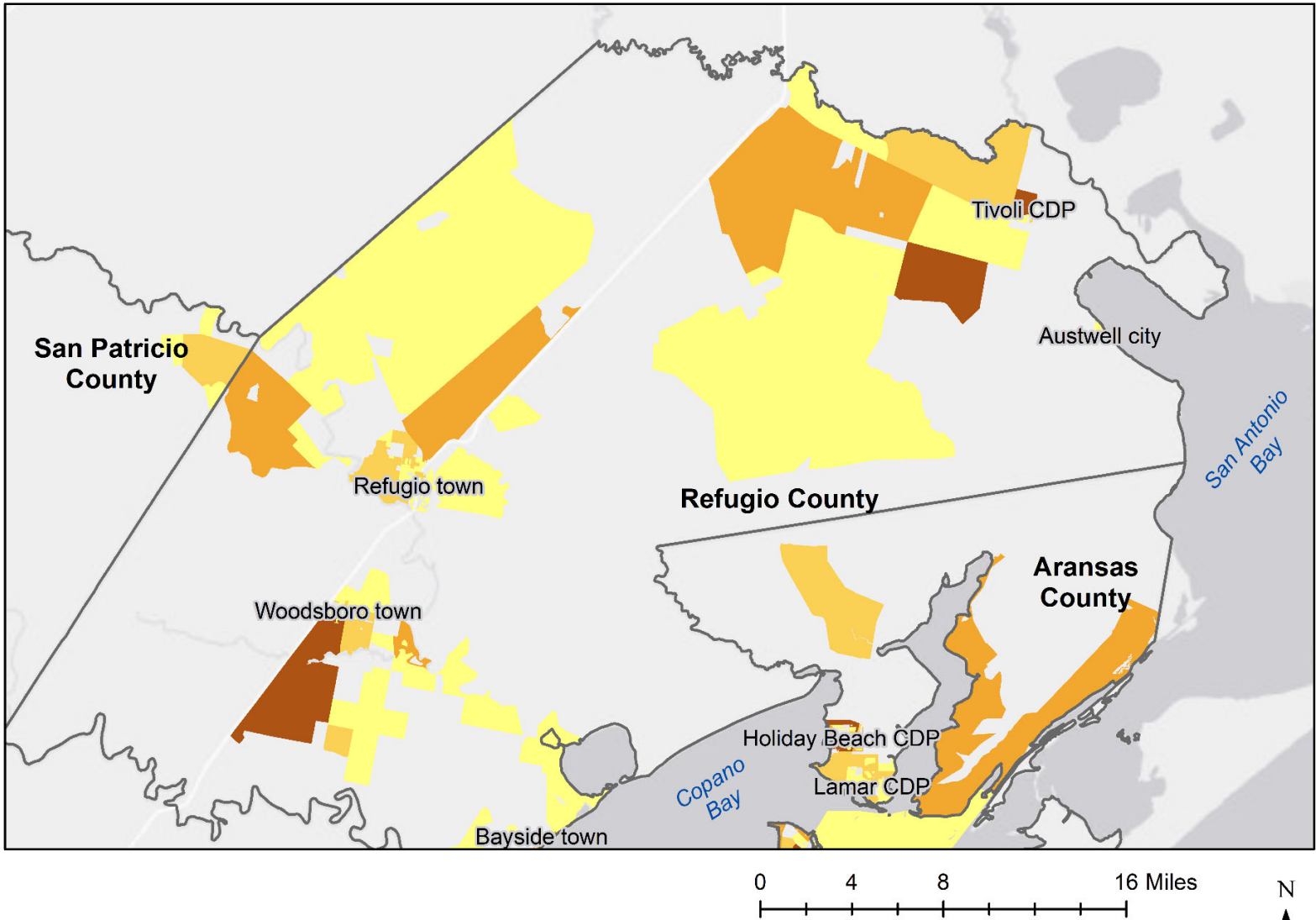
<https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>

FVL = FEMA Verified Loss (IA Inspector verified the damage)

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FEMA Public Assistance Program- Number of Applicants

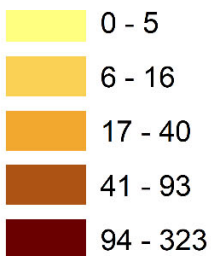
Refugio County



Legend

FEMA Individual Assistance

Applicants with RPFVL



5 Declared Disasters in 2008

Declaration Date	Declaration Title	Disaster Number
2008	HURRICANE DOLLY	1780
	HURRICANE GUSTAV	3290
	HURRICANE IKE	1791
		3294
	WILDFIRES	3284

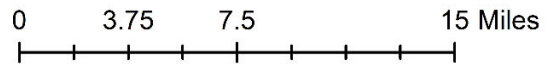
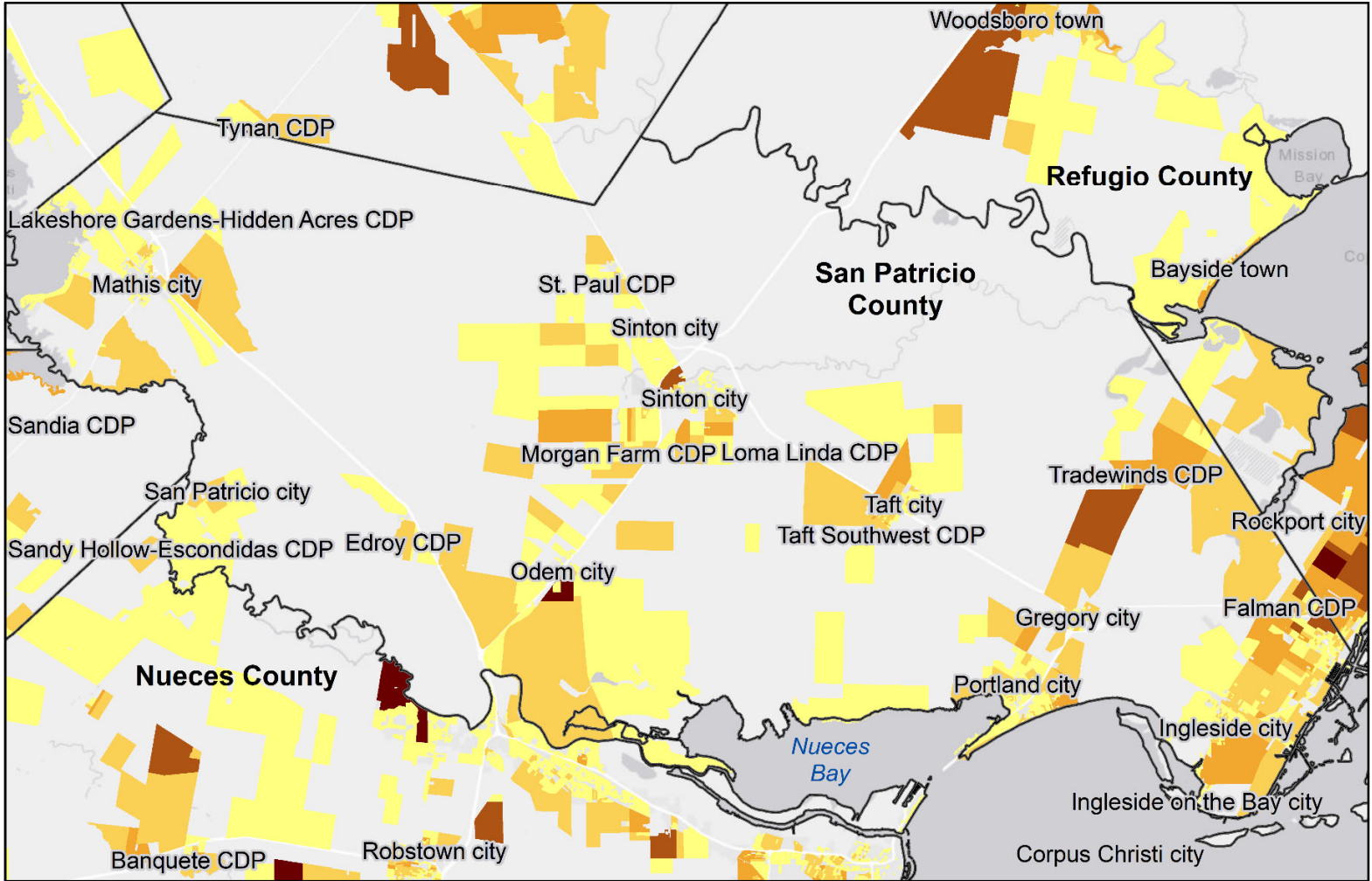
<https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>

FVL = FEMA Verified Loss (IA Inspector verified the damage)

RP = Real Property (e.g. building property)

FEMA Public Assistance Program- Number of Applicants

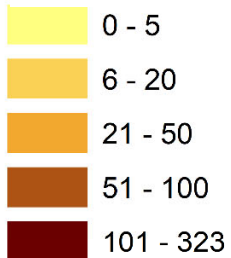
San Patricio County



Legend

FEMA Individual Assistance

Applicants with RPFVL



5 Declared Disasters in 2008

Year of Declaration Date	Declaration Title	Disaster Number
2008	HURRICANE DOLLY	1780
	HURRICANE GUSTAV	3290
	HURRICANE IKE	1791
		3294
	WILDFIRES	3284

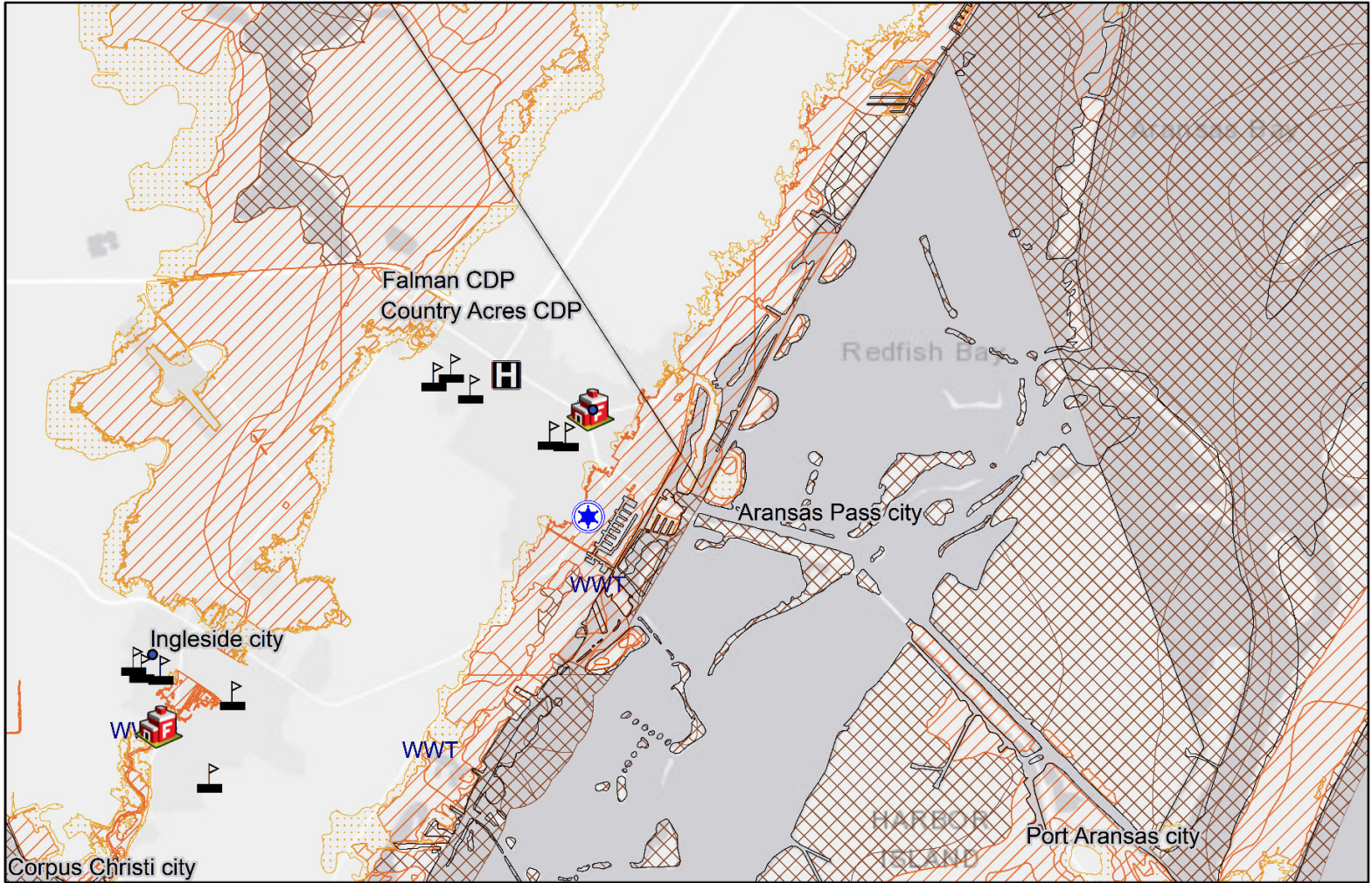
<https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties>

FVL = FEMA Verified Loss (IA Inspector verified the damage)

RP = Real Property (e.g. building property)

Critical Infrastructure and FEMA Flood Zones

Aransas Pass



Legend

Community Critical Infrastructure

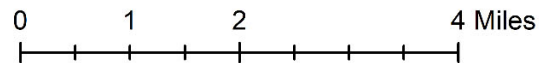
- City / Town Hall
- ★ Local Law Enforcement
- 🚒 Fire Stations
- State Emergency Operations Center
- 🏥 hospitals
- 🏫 public_schools

WWT Wastewater Treatment Facility

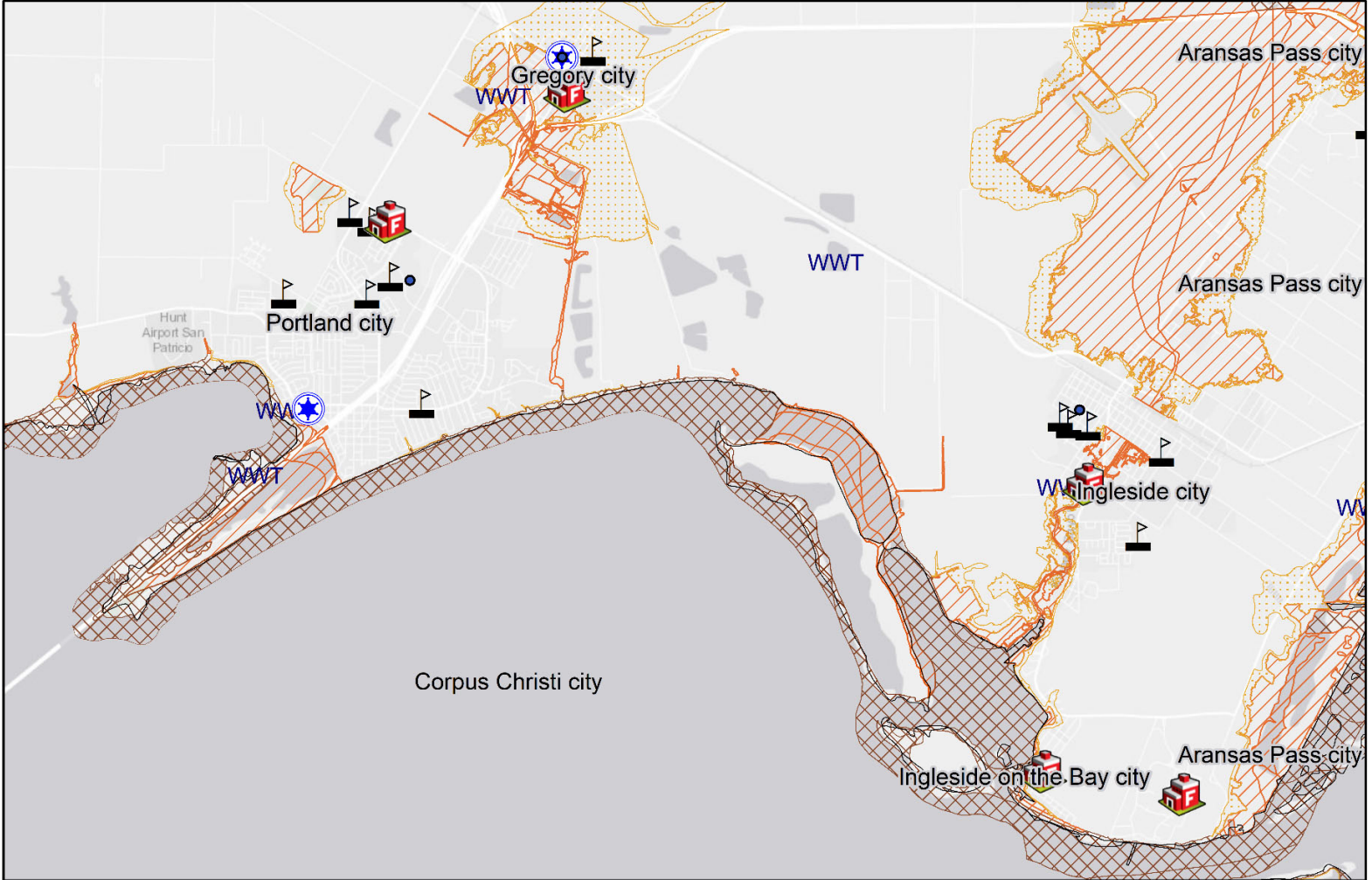
Floodplain

Flood Zone

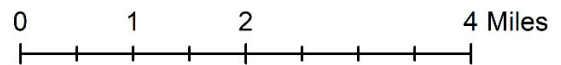
- 1% Annual Chance- A Zones
- 1% Annual Chance - V Zones
- 0.2% Annual Chance
- OPEN WATER



Critical Infrastructure and FEMA Flood Zones Portland-Ingleside-Gregory



Legend







Community Critical Infrastructure

- City / Town Hall
-  Local Law Enforcement
-  Fire Stations
- State Emergency Operations Center
-  hospitals
-  public_schools

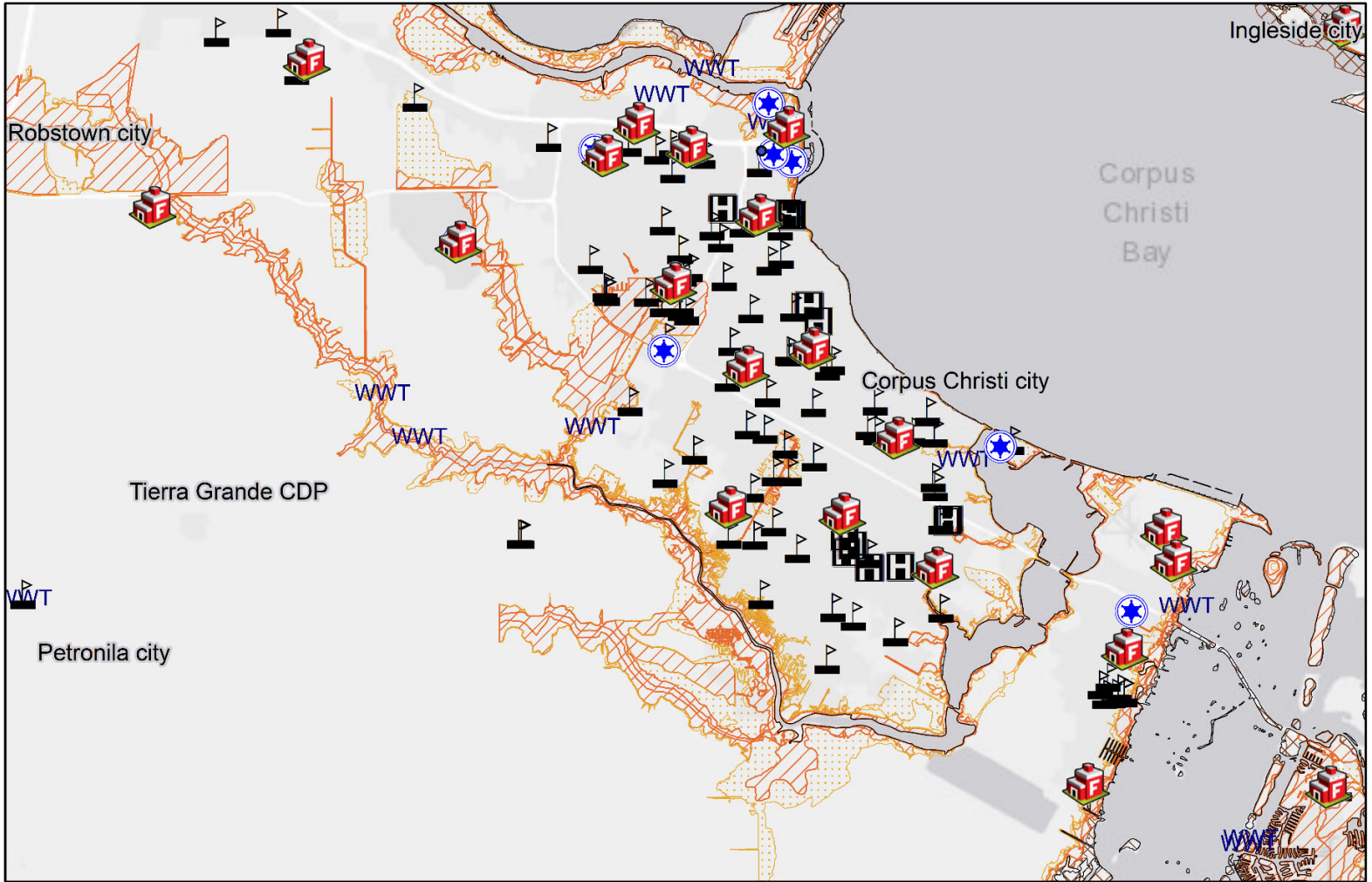
WWT Wastewater Treatment Facility

Floodplain

Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Critical Infrastructure and FEMA Flood Zones Corpus Christi



Legend

0 2 4 8 Miles







Essential Community Facilities

- City / Town Hall
-  Local Law Enforcement
-  Fire Stations
- State Emergency Operations Center
-  hospitals
-  public_schools

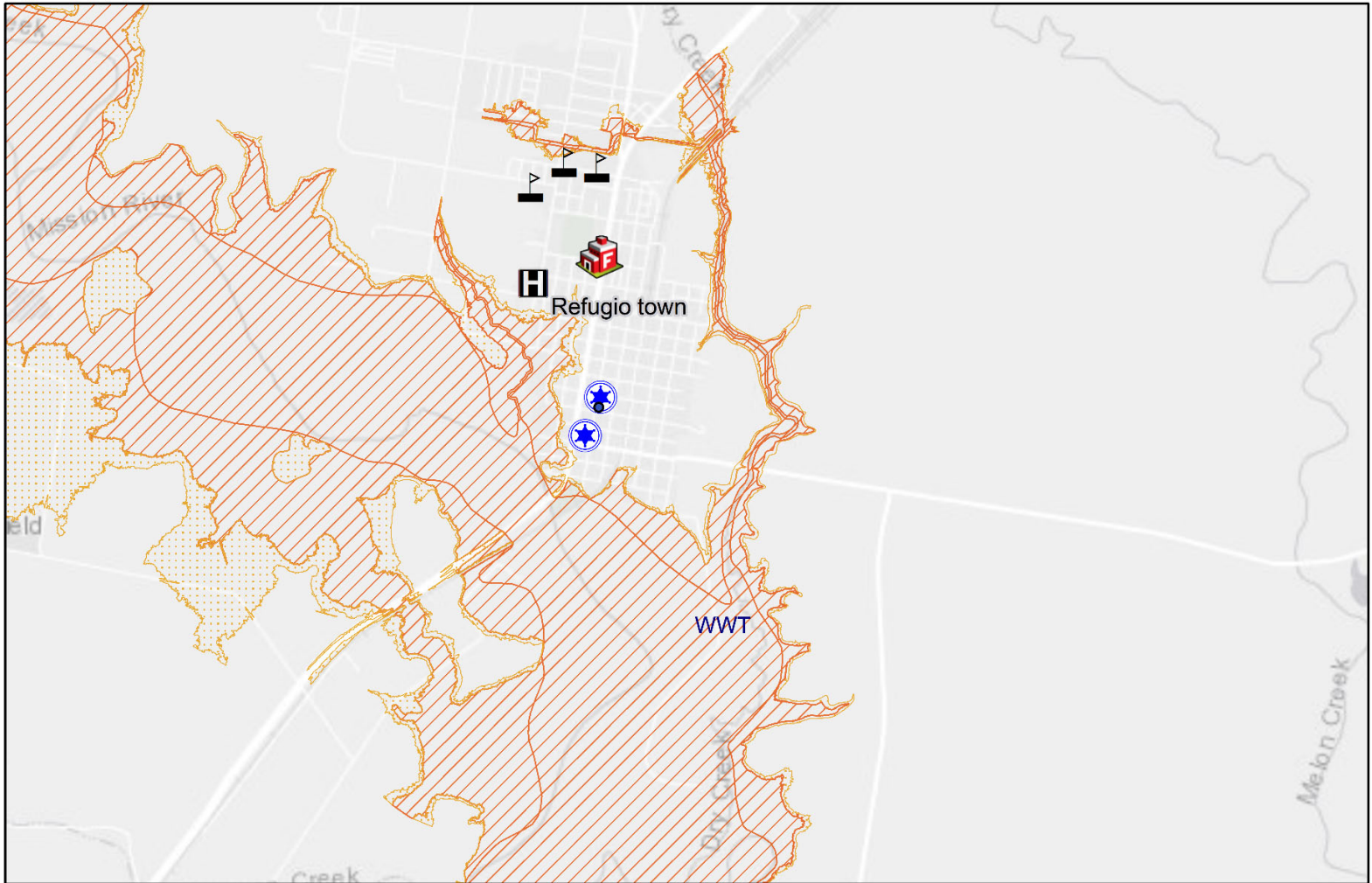
WWT Wastewater Treatment Facility

Floodplain

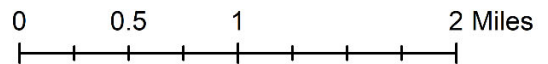
Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Critical Infrastructure and FEMA Flood Zones Refugio



Legend







Essential Community Facilities

- City / Town Hall
-  Local Law Enforcement
-  Fire Stations
- State Emergency Operations Center
-  hospitals
-  public_schools
- WWT Wastewater Treatment Facility

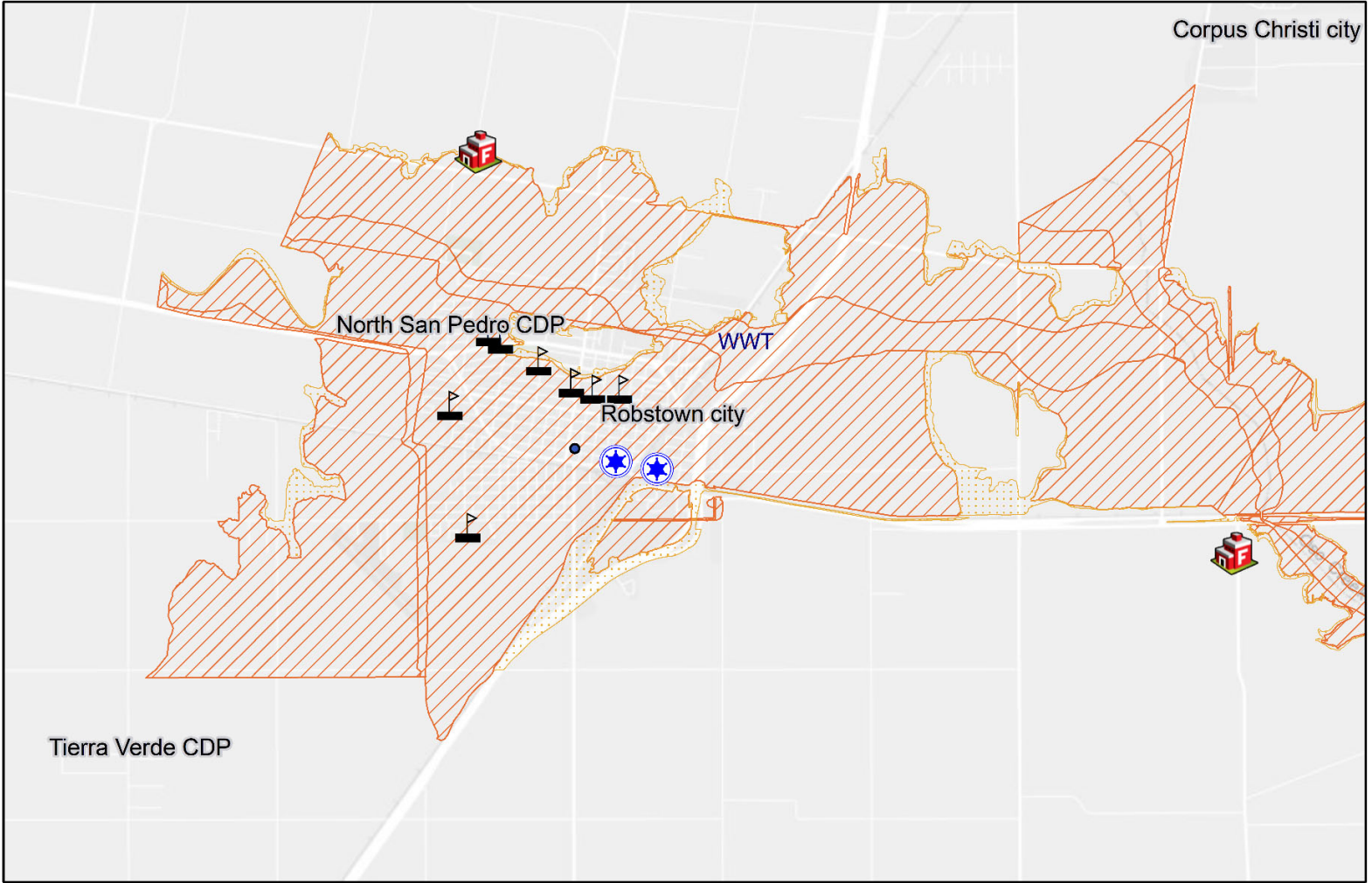
Floodplain

Flood Zone

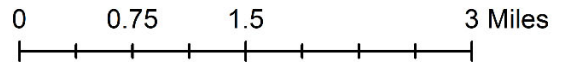
-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Critical Infrastructure and FEMA Flood Zones




Robstown



Legend







Essential Community Facilities

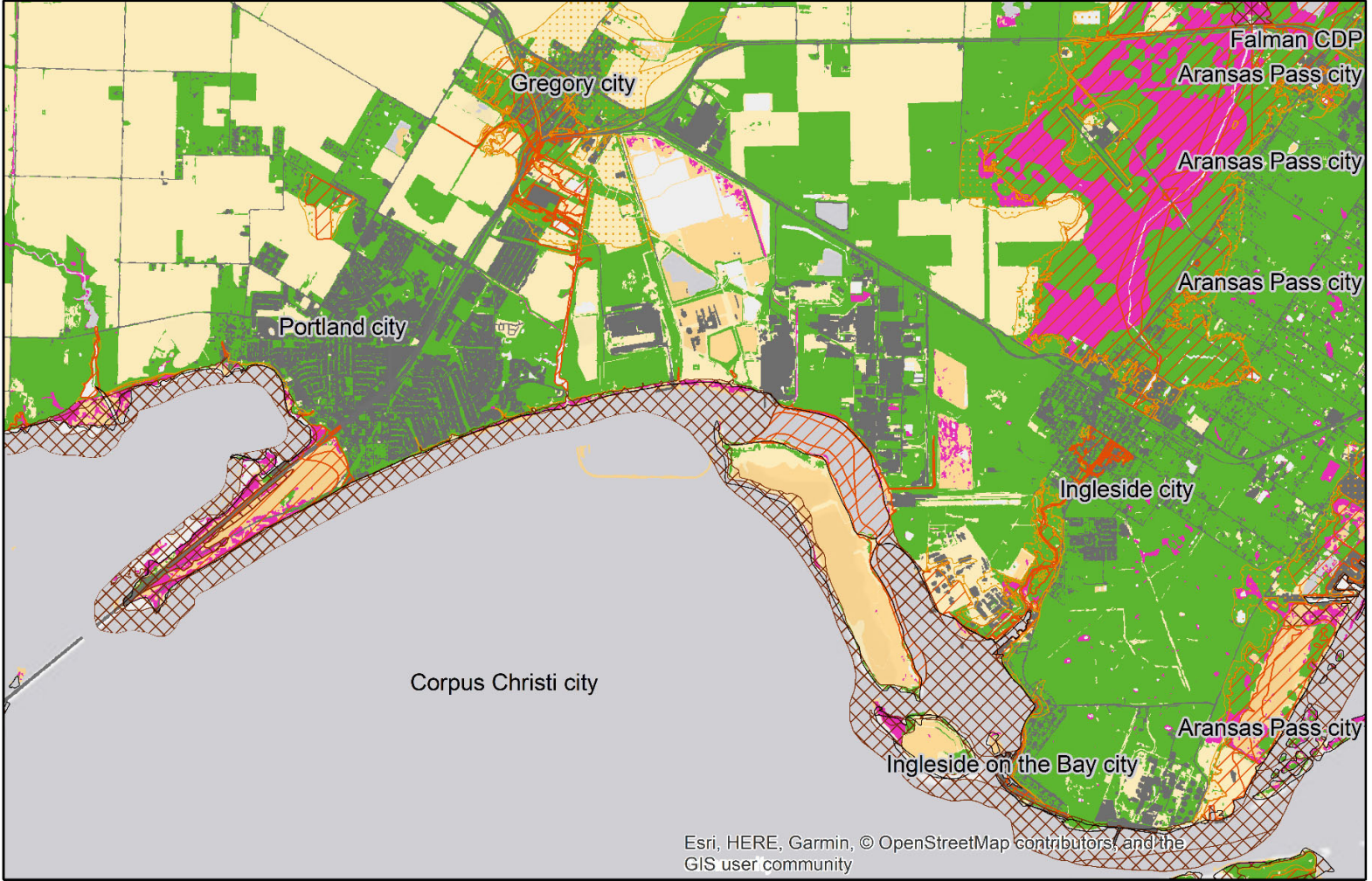
- City / Town Hall
-  Local Law Enforcement
-  Fire Stations
- State Emergency Operations Center
-  hospitals
-  public_schools
- WWT Wastewater Treatment Facility

Floodplain

Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER

Landcover and FEMA Flood Zones Portland-Ingleside-Gregory



Legend

NOAA CCAP 2015 Landcover

Class_Name

- Barren Land
- Developed, Impervious
- Wetland
- Vegetated
- Unconsolidated Shore

Floodplain

Flood Zone

- 1% Annual Chance- A Zones
- 1% Annual Chance - V Zones
- 0.2% Annual Chance
- OPEN WATER

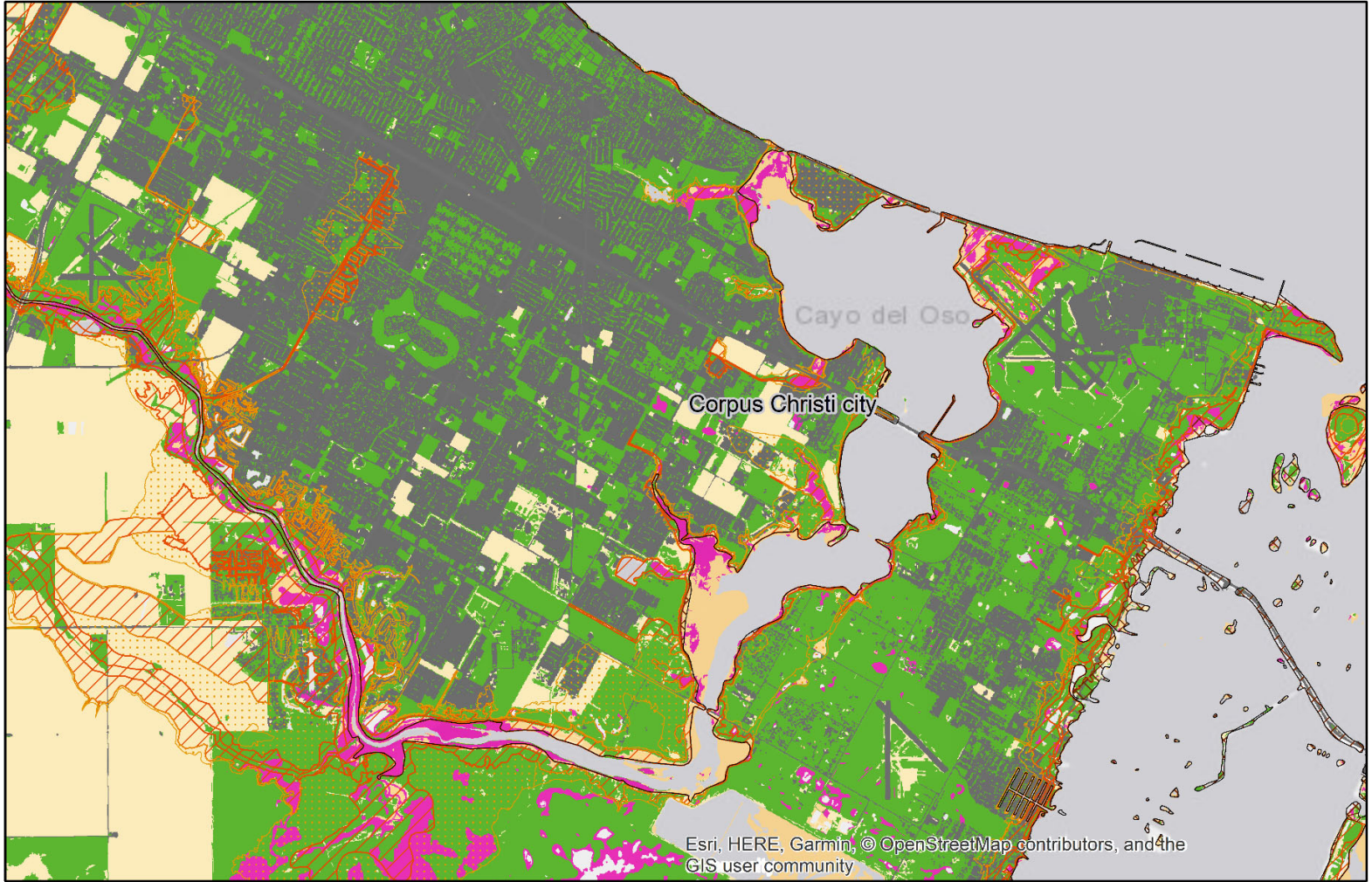
0 1 2 4 Miles

N



	% Green Space	% Impervious	% Wetland
Ingleside city	53%	9%	7%
Ingleside on the Bay city	35%	39%	0%
Port Aransas city	21%	13%	9%
Portland city	18%	17%	2%
Gregory city	28%	24%	0%






Landcover and FEMA Flood Zones Corpus Christi



Legend





NOAA CCAP 2015 Landcover

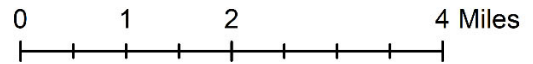
Class_Name

-  Barren Land
-  Developed, Impervious
-  Wetland
-  Vegetated
-  Unconsolidated Shore

Floodplain

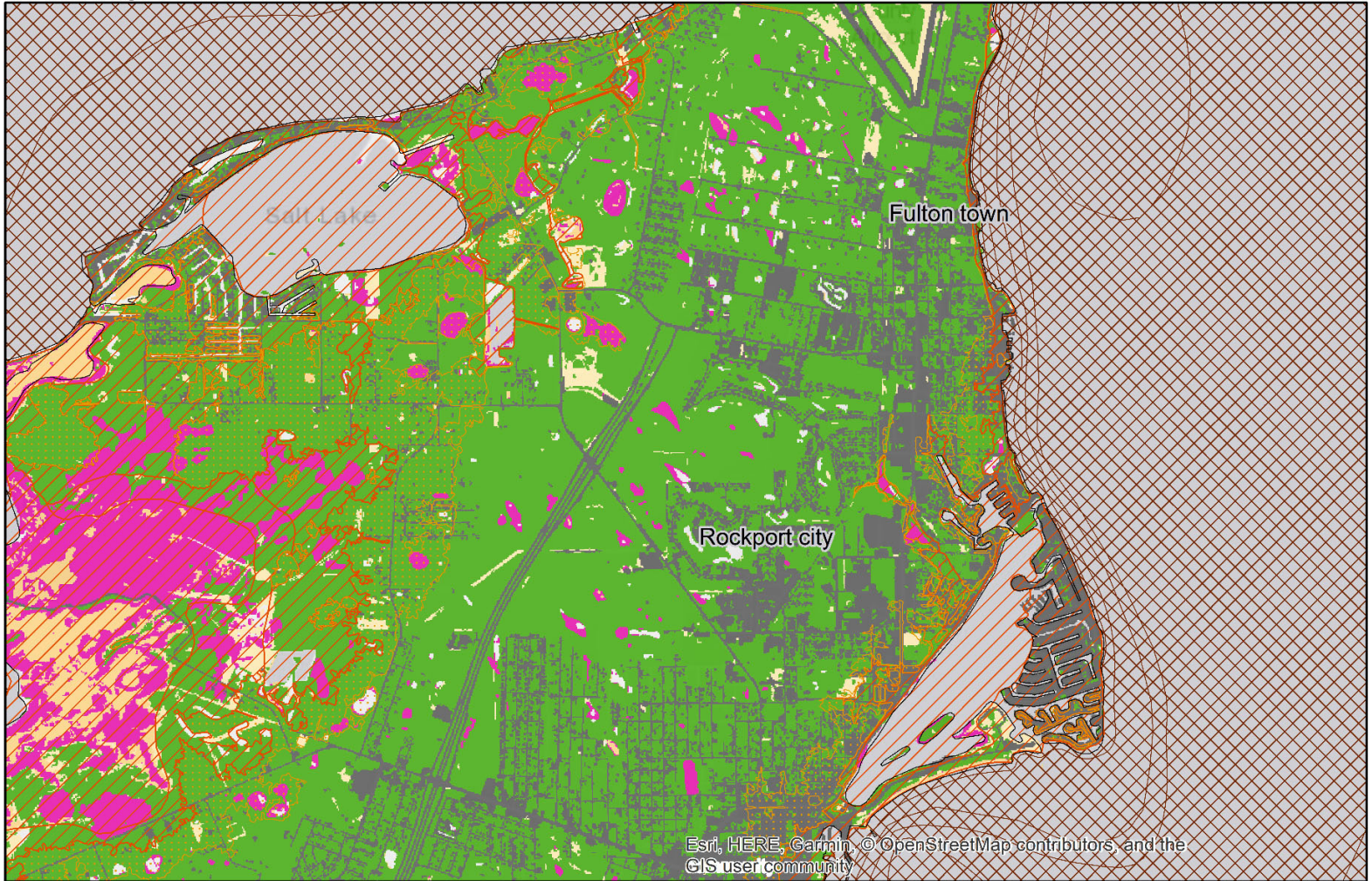
Flood Zone

-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER



	% Green Space	% Impervious	% Wetland
Corpus Christi city	10%	9%	2%

Landcover and FEMA Flood Zones Rockport-Fulton



Legend





NOAA CCAP 2015 Landcover

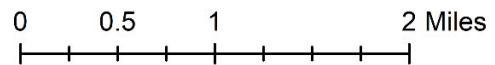
Class_Name

-  Barren Land
-  Developed, Impervious
-  Wetland
-  Vegetated
-  Unconsolidated Shore

Floodplain

Flood Zone

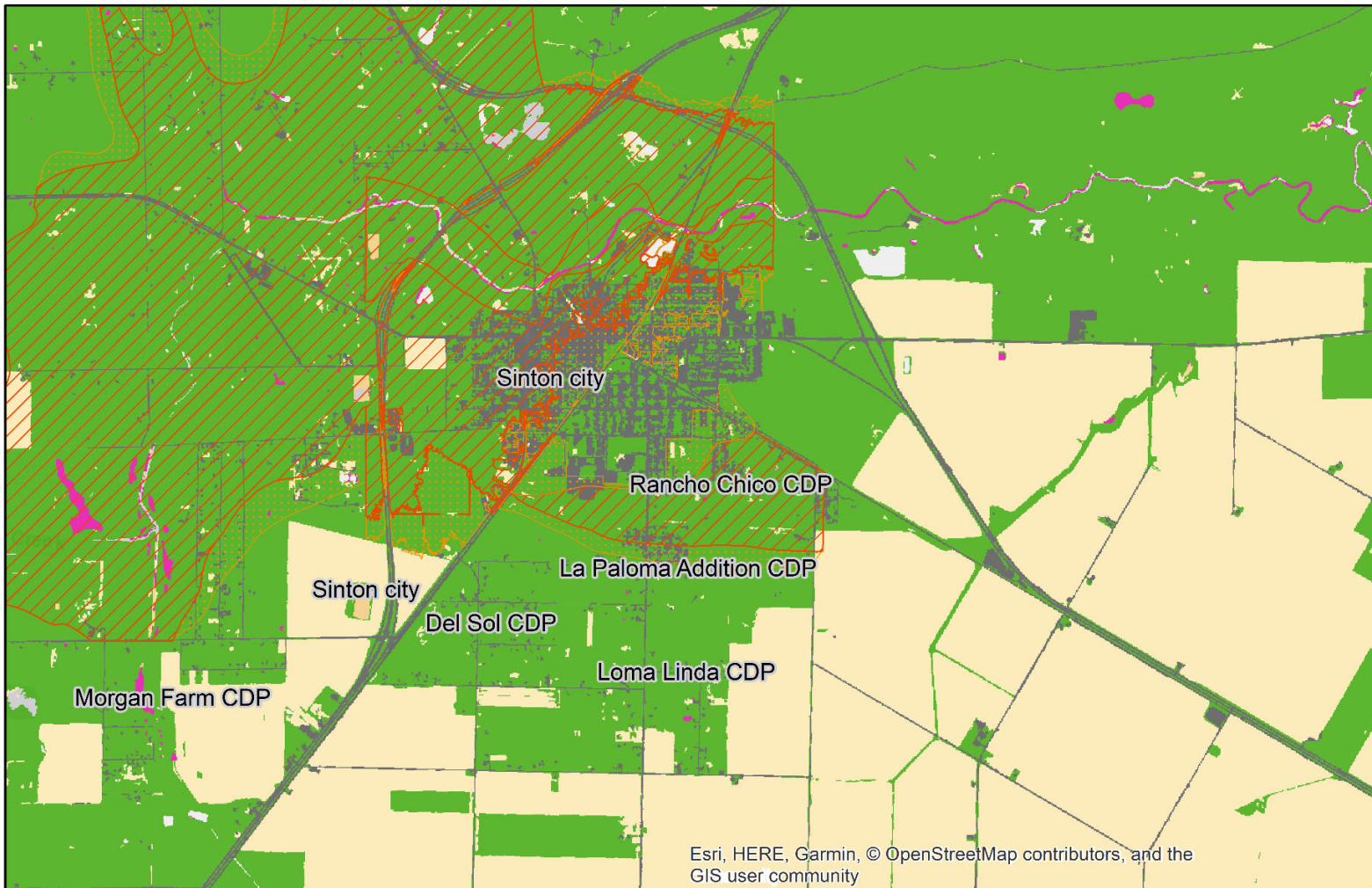
-  1% Annual Chance- A Zones
-  1% Annual Chance - V Zones
-  0.2% Annual Chance
-  OPEN WATER



	% Green Space	% Impervious	% Wetland
Fulton town	26%	18%	0%
Rockport city	41%	14%	3%

Landcover and FEMA Flood Zones

Sinton



Legend

NOAA CCAP 2015 Landcover

Class_Name

- Barren Land
- Developed, Impervious
- Wetland
- Vegetated
- Unconsolidated Shore

Floodplain

Flood Zone

- 1% Annual Chance- A Zones
- 1% Annual Chance - V Zones
- 0.2% Annual Chance
- OPEN WATER

	% Green Space	% Impervious	% Wetland
Sinton city	42%	31%	0%

HOW TO GET IN TOUCH WITH US

Maps will be posted to:
<http://www.coastalbendcog.org/node/45>

Email: RRP@tamucc.edu