Collecting Data in Colonias Settlements: A Pilot Study in Hidalgo County, Texas

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Purpose of Pilot Study

- Statistical purpose:
  - Test the two stage sample plan and accuracy of administrative data.
- Operational purpose:
  - Observe accessibility of housing units
  - Experience the receptivity of residents
  - Measure the feasibility of efficient data collection
- Substantive purpose:
  - To prepare for a larger survey to learn about the knowledge, experience and preparedness of residents living in areas vulnerable to flooding.

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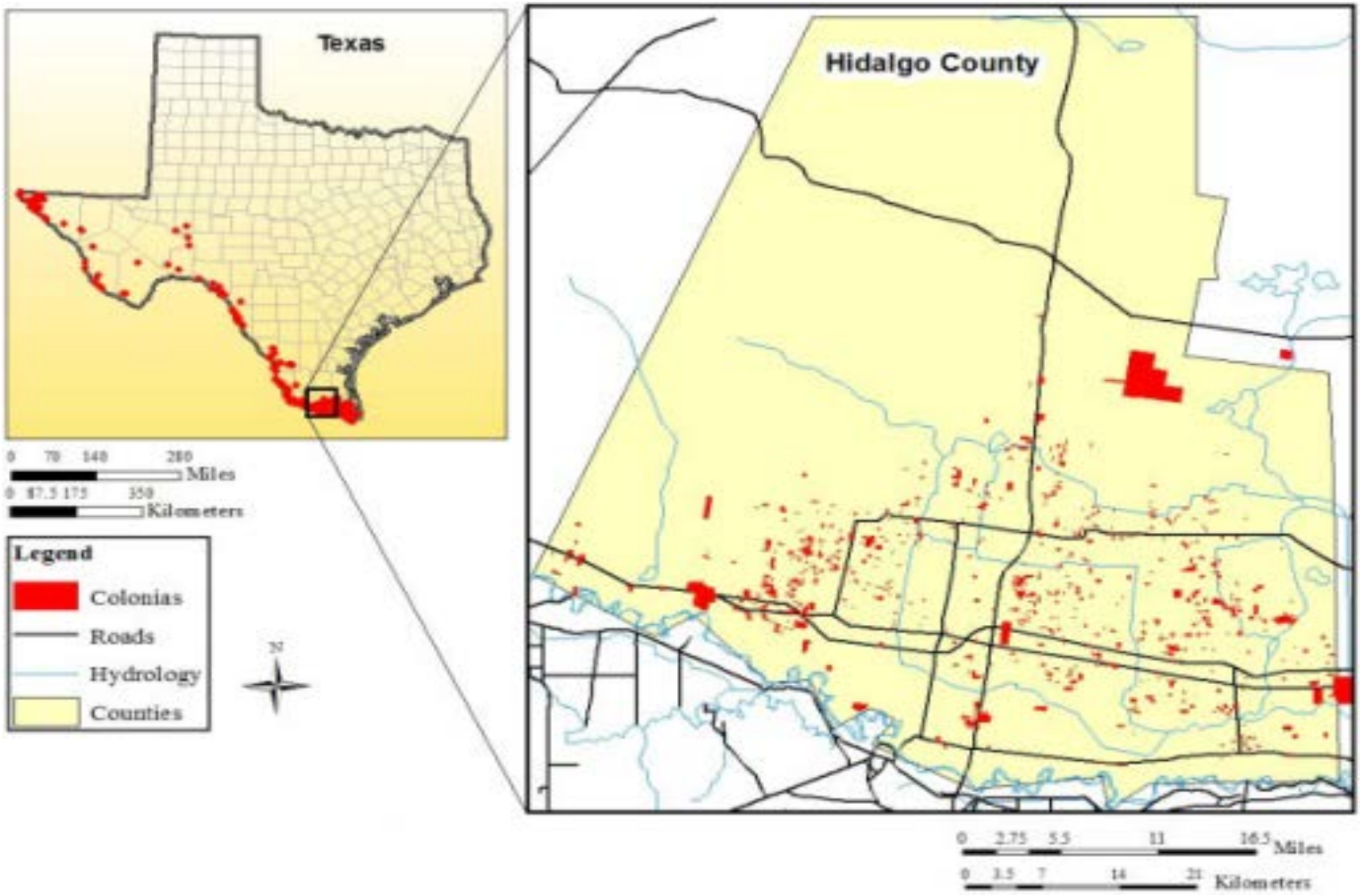
What is a Colonia?

- Spanish word for “neighborhood.”
- Makeshift settlement often established in areas particularly vulnerable to natural disasters and health risks.
- Many colonias do not have adequate government services and oversight.

Where are Colonias in Texas Found?

South Texas along the border with Mexico; Location of Sample



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Characteristics of Colonias

Expected (Images captured from Internet Searches)

Agriculturally worthless land.

Located in floodplains or other rural properties.

Unpaved, poor quality roads.

Lack of safe water, wastewater infrastructure, and electricity.

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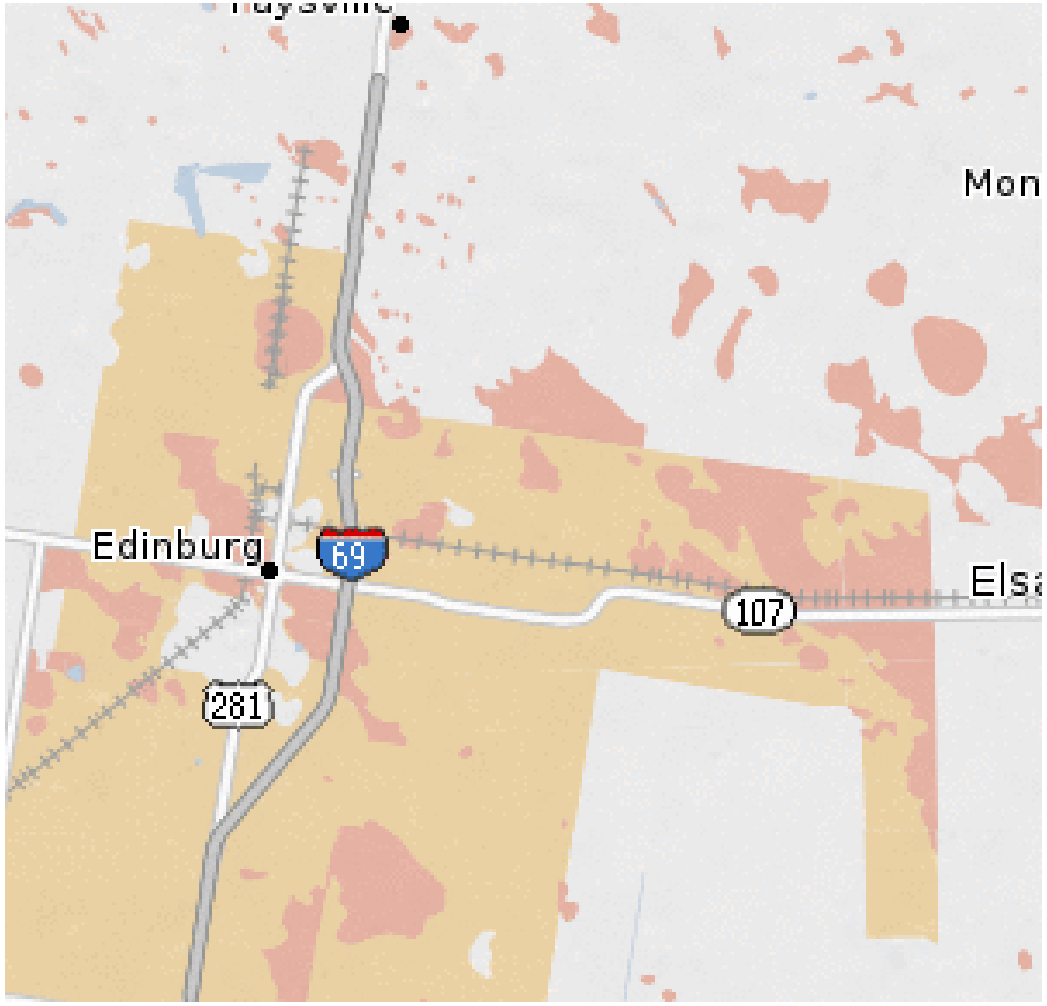
Flooding in Colonias in Hidalgo County Texas

Flood Plain Map



- Yellow = Low to Moderate Risk
- Pink = High Risk

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Flooding in Colonias in Hidalgo County Texas

Flooding in Edinburg, TX June 2015 (photo source: themonitor.com)

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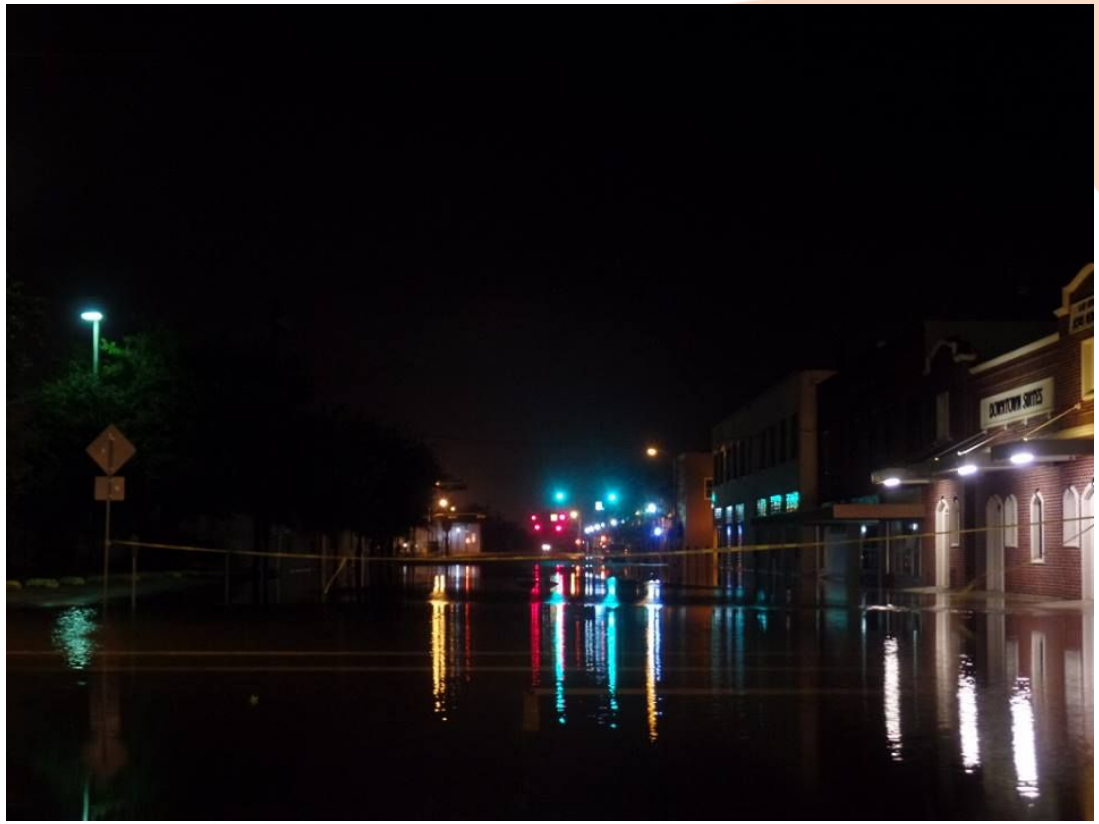
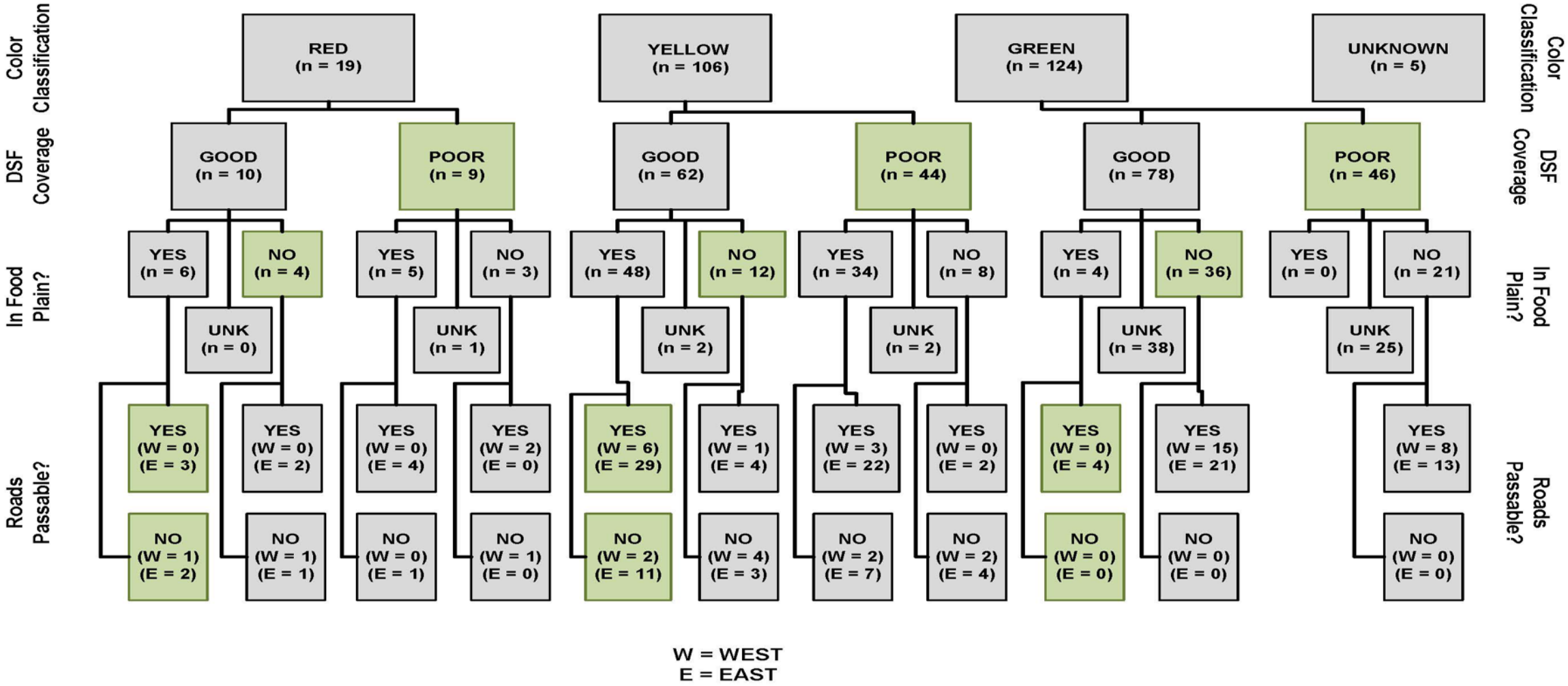


Sample Plan

- First stage purposive sample
  - Purposively selected geographically clustered Colonias to maximize efficiency and minimize costs over the short study period.
  - Purposively stratified based on delivery sequence file coverage, flood plain status, and passible road status.
- Second stage address based sample
  - We selected the housing units in the nine Colonias with good DSF coverage.
  - We listed and then selected the housing units in the three Colonias with poor DSF coverage.

Sample Plan



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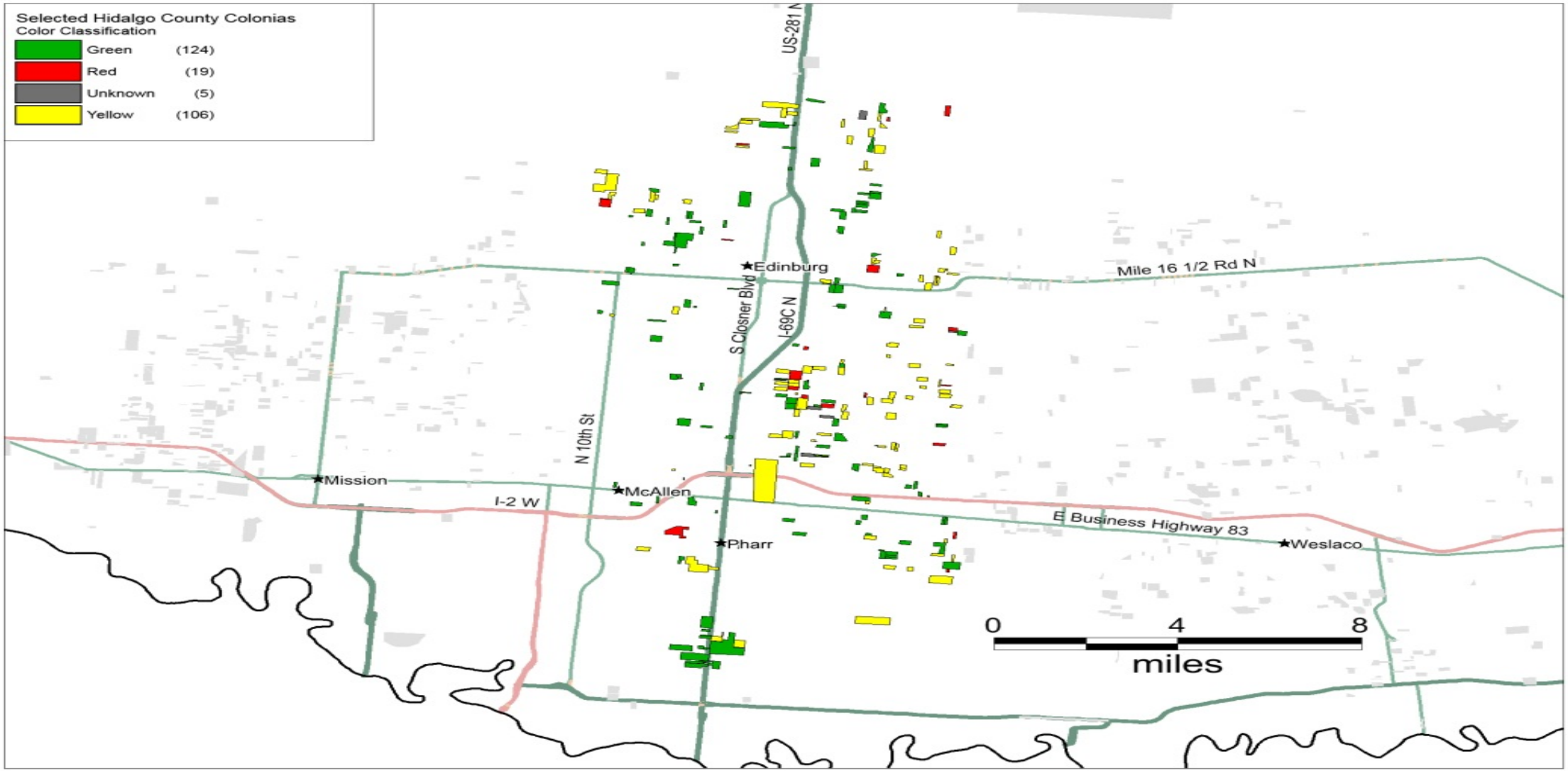
Geographically Clustered Sample



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Measure of Accuracy and Success of Sample Plan

- Compared local government provided data with respondent answers:
  - Wastewater collection
  - Potable water
  - Trash collection
  - Passable roads in all weather conditions
  - Flooding and flood plain status
- Many of the comparisons were in close agreement.

Measure of Accuracy and Success of Sample Plan

- Some comparisons did not have exceptional agreement. Possible reasons:
  - Improvement in colonia services over time,
  - Respondent reporting error, and/or
  - Imperfect agreement between question asked in the survey and data reported by the local government.

Characteristics of Colonias

Paved roads

Substantial homes; variety of housing stock with mostly wood frame and brick an mortar

Access to water and electricity; waste water; mail delivery

Operational Experience

- One field manager and two interviewers
- Conducted 96 interviews in 14 days; far exceeding the target.
- Housing units easily accessible
- Residents receptive
  - Letter of endorsement from two respected service providers
  - $25 incentive

Findings

- Perceived threats from natural disasters by risk status:
  - We asked each HH to name their top three perceived threats from natural disasters and examined the answers according to their risk status. We found difference in the perceived threat of hurricanes and flooding:
    - the groups with the least risk (79%)
    - mid-level (89%)
    - and high risk (91%).
- We found high rate of preparedness with supplies across the risk status groups

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Findings

- With only 8% having contacted the agency, respondents appear to have overwhelmingly made little use of FEMA for assistance.

- Most (90%) anticipate few problems with transportation should a disaster occur; nearly half (48%) have not received information on local disasters, suggesting that unfamiliarity with shelters or evacuation routes may negate the effectiveness of transportation access.

Findings

- In anticipation of a flood event, a majority of respondents (86%) would flee.
- Among those who reported that they would remain (roughly 14%), fear of looting or further damage was a common theme when probed for explanations. Some reported simply:

  "I do not want to leave my house alone,"

- Others more specifically cited the prominent factor in their decision to remain as:

  "looters and burglars"

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Thank You!

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