

# Equity & Floodplain Management

Mitch Paine, CFM | March 8, 2023, FEMA Region 10 Mitigation Summit



## FEMA

## Indicators of Social Vulnerability

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- Demographic characteristics
  - Age, race/ethnicity, family structure, gender, language proficiency
- Socioeconomic status
  - Income, wealth, education, occupation
- Land tenure
  - Owners, renters
- Health
  - Access, stress, disease, mortality, sanitation
- Neighborhood characteristics
  - Transportation, population density, housing, resource dependency
- Risk perception
  - Awareness, prior experience, knowledge of flood protection, risk denial/acceptance, trust in officials



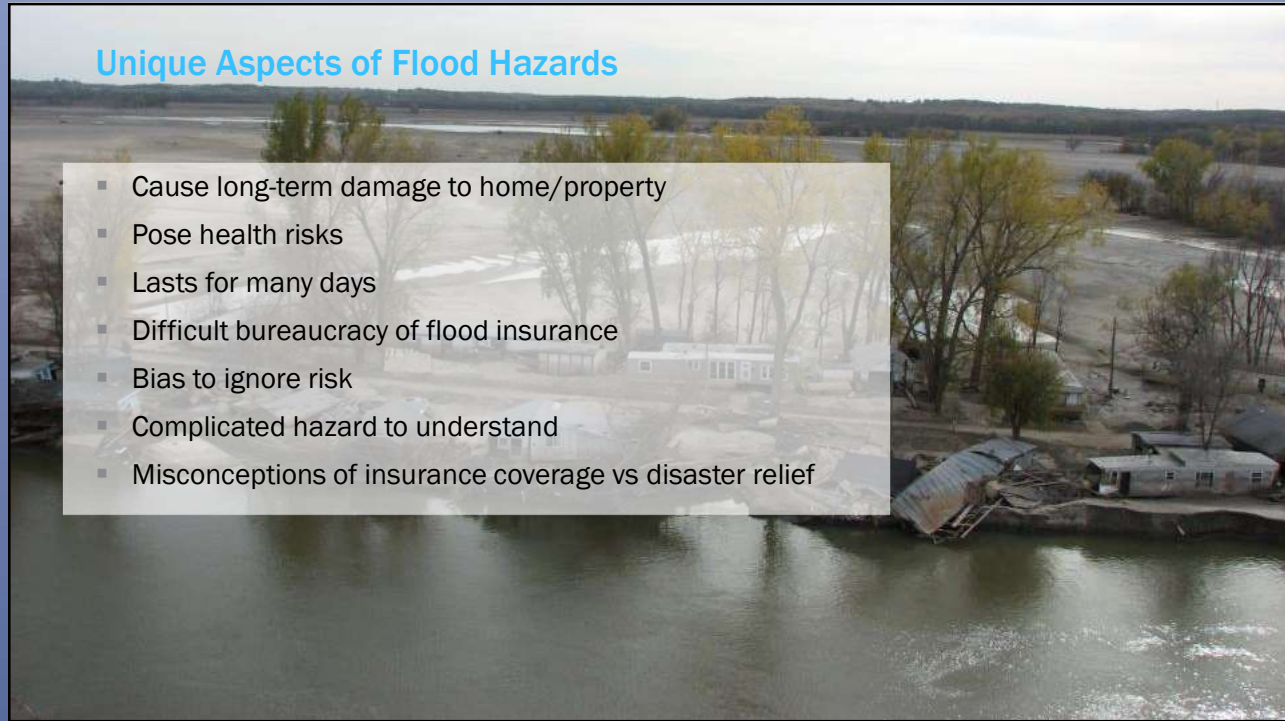
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## Unique Aspects of Flood Hazards

- Cause long-term damage to home/property
- Pose health risks
- Lasts for many days
- Difficult bureaucracy of flood insurance
- Bias to ignore risk
- Complicated hazard to understand
- Misconceptions of insurance coverage vs disaster relief



## Nebraska DNR Project – funded through a CTP Grant

- We wanted to try to answer the question “Who lives in floodplains?”
- For example, if there is a larger than expected Hispanic/Latino population, then we can help communities do better outreach
- Knowing who lives there can help us plan better after flood disasters
- Help us identify gaps in flood risk reduction or flood risk perception



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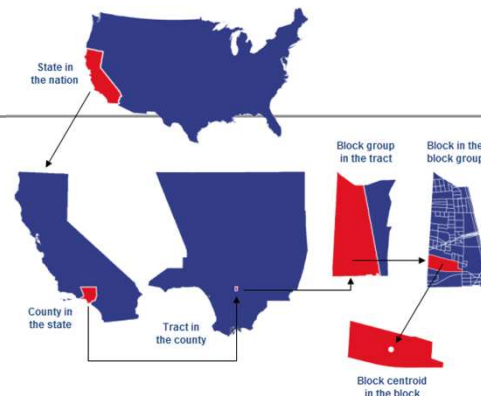
## Process

- Used Census 2010 data for communities across the state
- Selected 60 communities to analyze individually
- Used the following Census data indicators:
  - Housing:
    - Occupancy status
    - Tenure
  - Household structure:
    - Household size
    - Household type
  - Demographics:
    - Race/ethnicity
    - Gender
    - Age

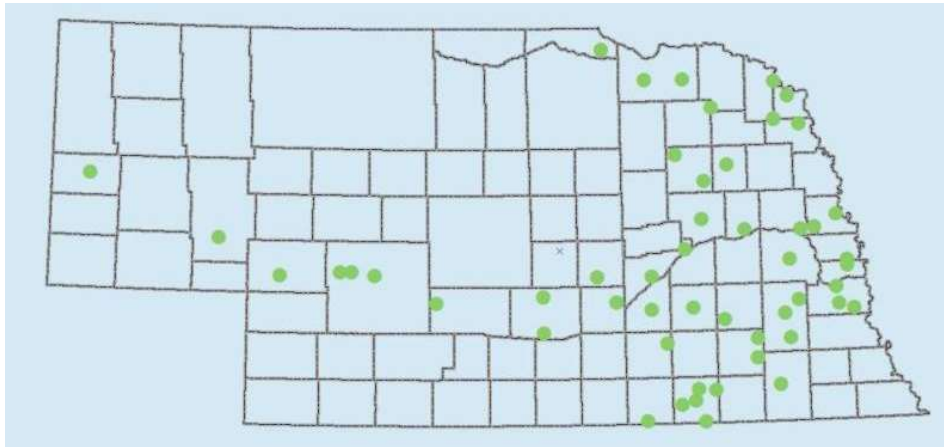


## Data Constraints

- Census organized into geographical units:
  - State
  - County
  - Tract
  - Block group
  - Block
- Data is different in each unit – block is smallest unit, but only decadal data available
- Much more data at block group level, but difficult to correspond with floodplain boundaries



## Communities Analyzed



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## Communities Analyzed

- 51 chosen based on flood attributes
  - Communities with levees (on flood maps) analyzed separately
- Wanted communities that had some area in the floodplain and some not in the floodplain to compare
- Communities either entirely in or out of the floodplain were captured in state-wide totals
- Each indicator was compared between “floodplain populations” and “non-floodplain populations”
- Wanted to examine cities/villages as they have the most concentrated flood risk



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## Results for the 51 communities

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- Housing:
  - Occupancy status
  - Tenure
- Household structure:
  - Household size
  - Household type
- Demographics:
  - Race/ethnicity
  - Gender
  - Age

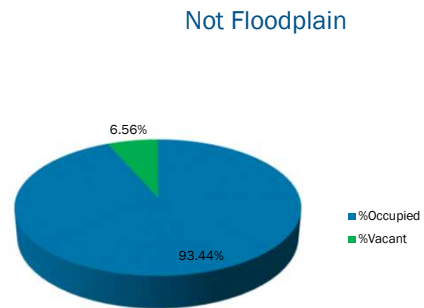
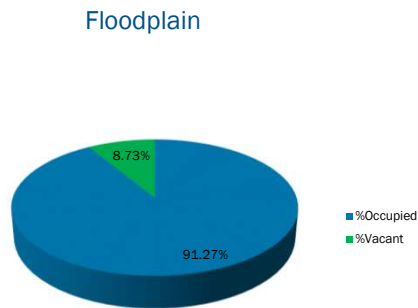


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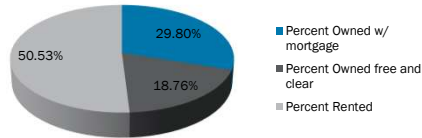
## Housing – Occupancy Status

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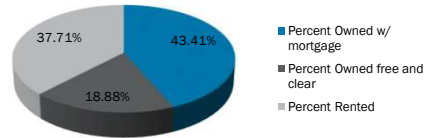


## Housing - Tenure

Floodplain

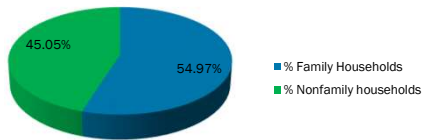


Not Floodplain



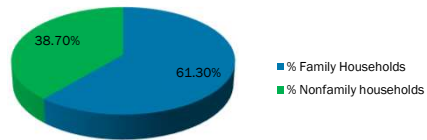
## Household Structure - Type

Floodplain



- 34.72% hh'er living alone
- 11.11% female hh'er, no husband present

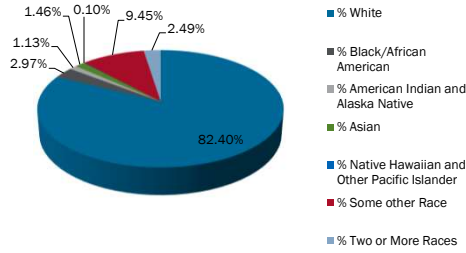
Not Floodplain



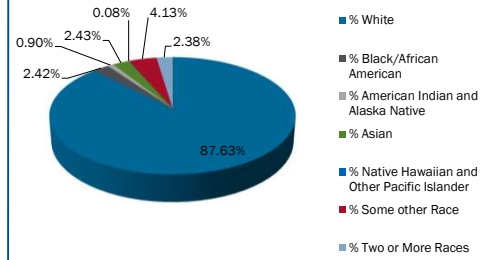
- 30.65% hh'er living alone
- 10.28% female hh'er, no husband present

## Demographics – Race/Ethnicity

Floodplain

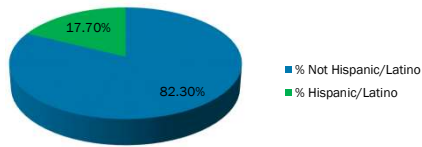


Not Floodplain

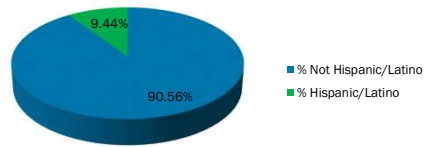


## Demographics – Hispanic/Latino

Floodplain

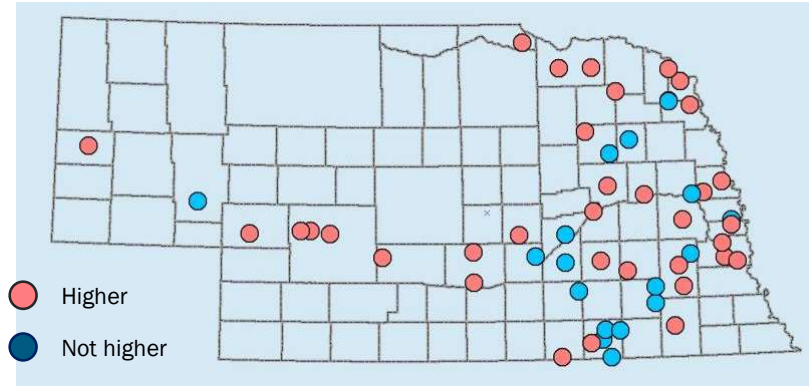


Not Floodplain



### Higher vacancy rate in floodplain

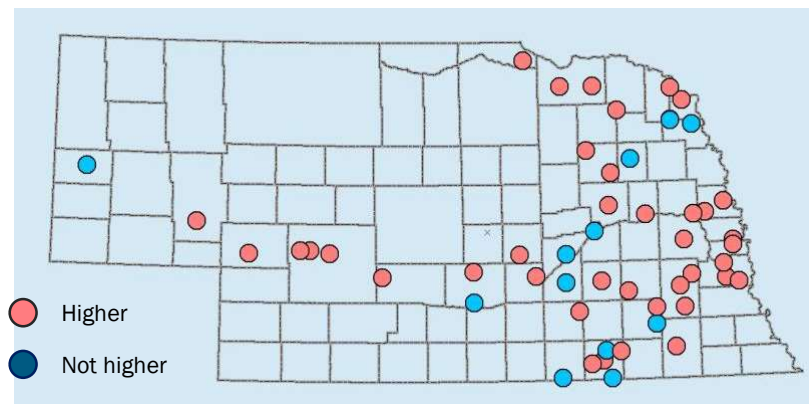
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### Higher percentage of properties rented

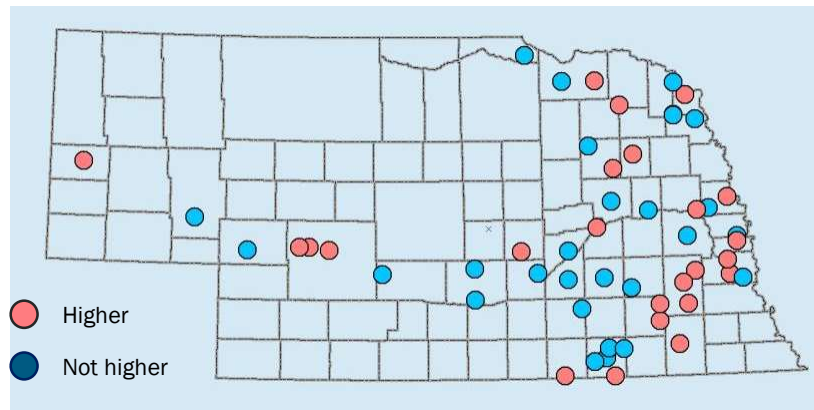
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## Higher percentage of Hispanic/Latino population



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## Key Results from Cities Analyzed

- Much higher percentage of properties **rented** in floodplain
- Much higher percentage **Hispanic/Latino** in floodplain
- More **diverse** population in floodplain
- Higher percentage of **non-family households** and of **those living alone** in floodplain
- Slightly higher percentage of family households consisting of female householder with no husband present in floodplain
- Higher **vacancy** rate in floodplain



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## City of Lincoln Results

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- Lincoln – capital city, ~300,000 population
- Significant factors:
  - 16,000 people live in floodplains
  - 68% rent in floodplains, 40% rent across the community
  - Double the percentage of African American and American Indian/Alaska Native in floodplain
  - 12% Hispanic/Latino in floodplain, 6% in community
  - 55% nonfamily households in floodplain, 40% in community



## Renters in Floodplains

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- Renters insurance does not cover flood damage
- Renters very unlikely to know about flood risk
- More likely to be lower income, minority, more vulnerable to impacts from flooding
  
- Nearly 20,000 renters live in floodplains in the communities analyzed
- Data from FEMA suggests fewer than 40 contents-only coverage purchased in Nebraska



## Conclusions

- In targeted areas/communities, Nebraska has a population at risk from flooding that is likely to be more vulnerable to flooding impacts than the overall population
- Communities need to play a larger role in helping their citizens understand the risk from flooding
- State and communities need to encourage renters to protect their property/contents
- NeDNR can play a bigger role in helping Hispanic/Latino communities better understand flood risk, floodplain regulations, and flood insurance



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## Takeaways for Region 10

- We need to better understand the population who live in our floodplains
- Look strategically at vulnerable populations and identify mitigation projects that can help those populations
- Help local governments look closer at their vulnerable populations, incorporate equity into hazard mitigation and comprehensive plans, and submit HMA applications for projects

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Thank you!

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