

HURRICANE SANDY'S IMPACTS IN THE TWO BRIDGES NEIGHBORHOOD

PLANA4208
FINAL PRESENTATION

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INTRODUCING THE TWO BRIDGES COMMUNITY

Location	Between Brooklyn and Manhattan Bridges along the East River
Demographics	Historically diverse, low- to moderate-income neighborhood
Housing	Significant government-subsidized housing, including NYCHA developments
Cultural History	Populated by European, Latin American, and Chinese immigrants
Current Trends	Gentrification juxtaposed with affordability challenges

PLANNING PROBLEM: FLOODING RISKS

Key Issues

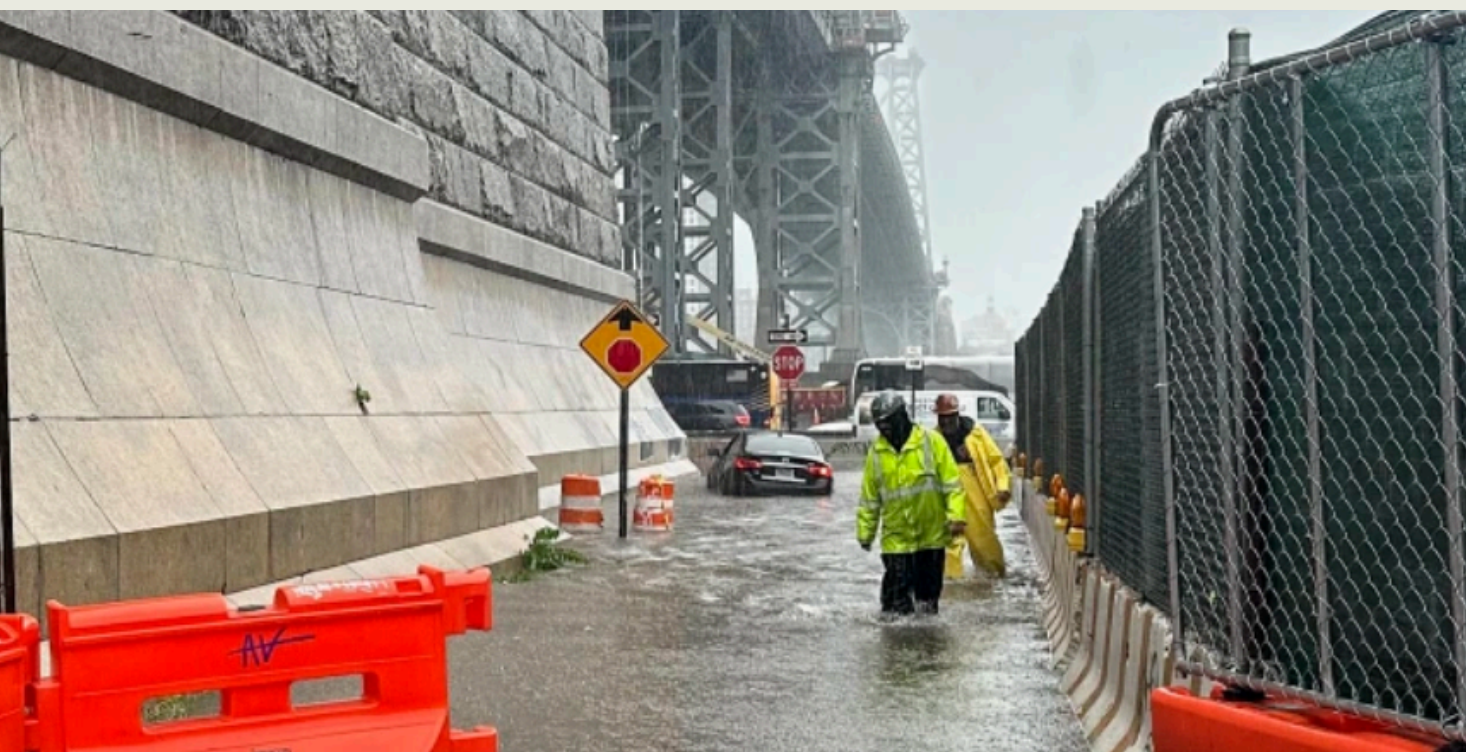
- Coastal location and low elevation heighten flooding risks
- Aging infrastructure not meeting modern resiliency standards

Impacts

- Affordable housing units, especially ground floors, are highly vulnerable
- Retrofitting reduces housing availability, exacerbating shortages

Challenges

- Balancing flood protection with affordable housing preservation
- Preventing displacement of vulnerable populations



RESEARCH FOCUS

Research Question:

How and why does flooding (Sandy) impact NYCHA housing different than private housings?

The research examines:

- Flooding challenges in Two Bridges
- Impacts on affordable housing and community vulnerability



DATA

Data Name	Source
MapPluto 2012	NYC Department of City Planning
2020 Neighborhood Tabulation Areas Boundaries	NYC Department of City Planning
Sandy damage estimate by block group	U.S. Department of Housing and Urban Development
Sandy Inundation Zone	NYC Department of Small Business services
Answers from surveys and interviews	Residents from the study area

METHODOLOGY

Research Question:
Flooding for NYCHA
V.S. non-NYCHA

**Collect / Process
Data:**
Group by building
types and Sandy
damage status

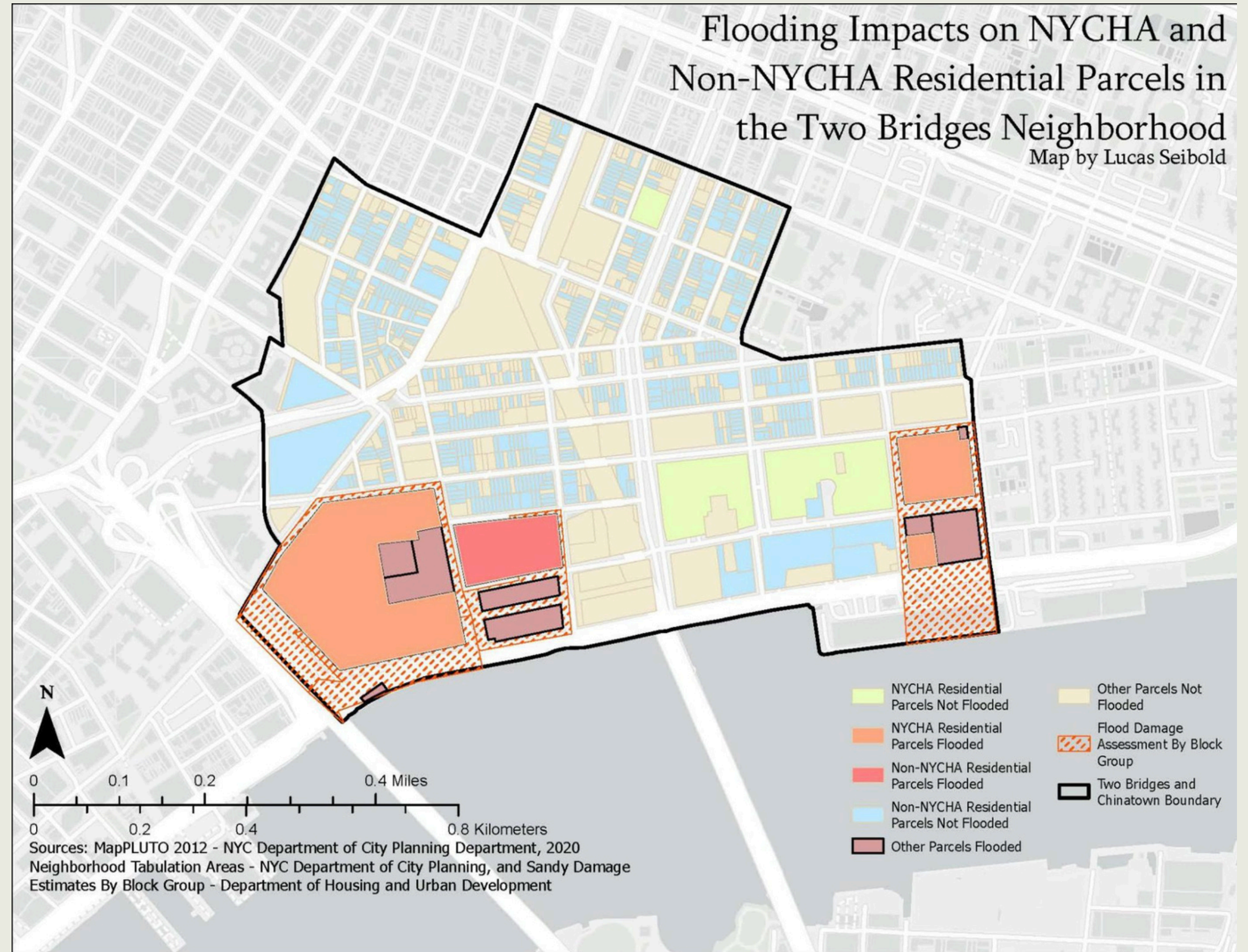
**Find patterns /
Define the problem:**
Descriptive Statistics
and Proportion-test

Interviews/ Surveys:
Location,
economic status

**Conclusion /
Suggestion**

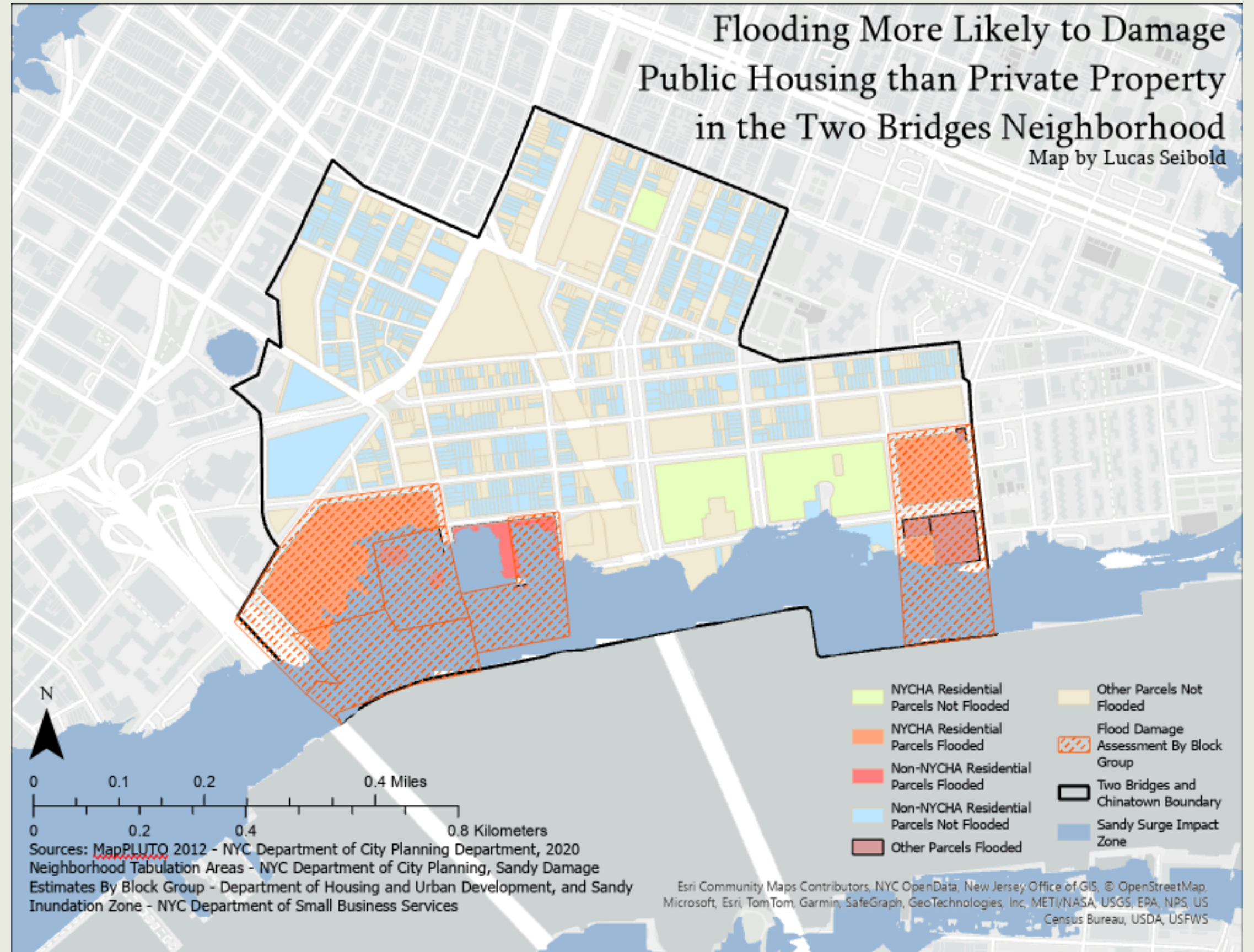
MAPS

**Did Sandy impact
NYCHA V.S. Non-
NYCHA buildings
differently in Two
Bridges?**



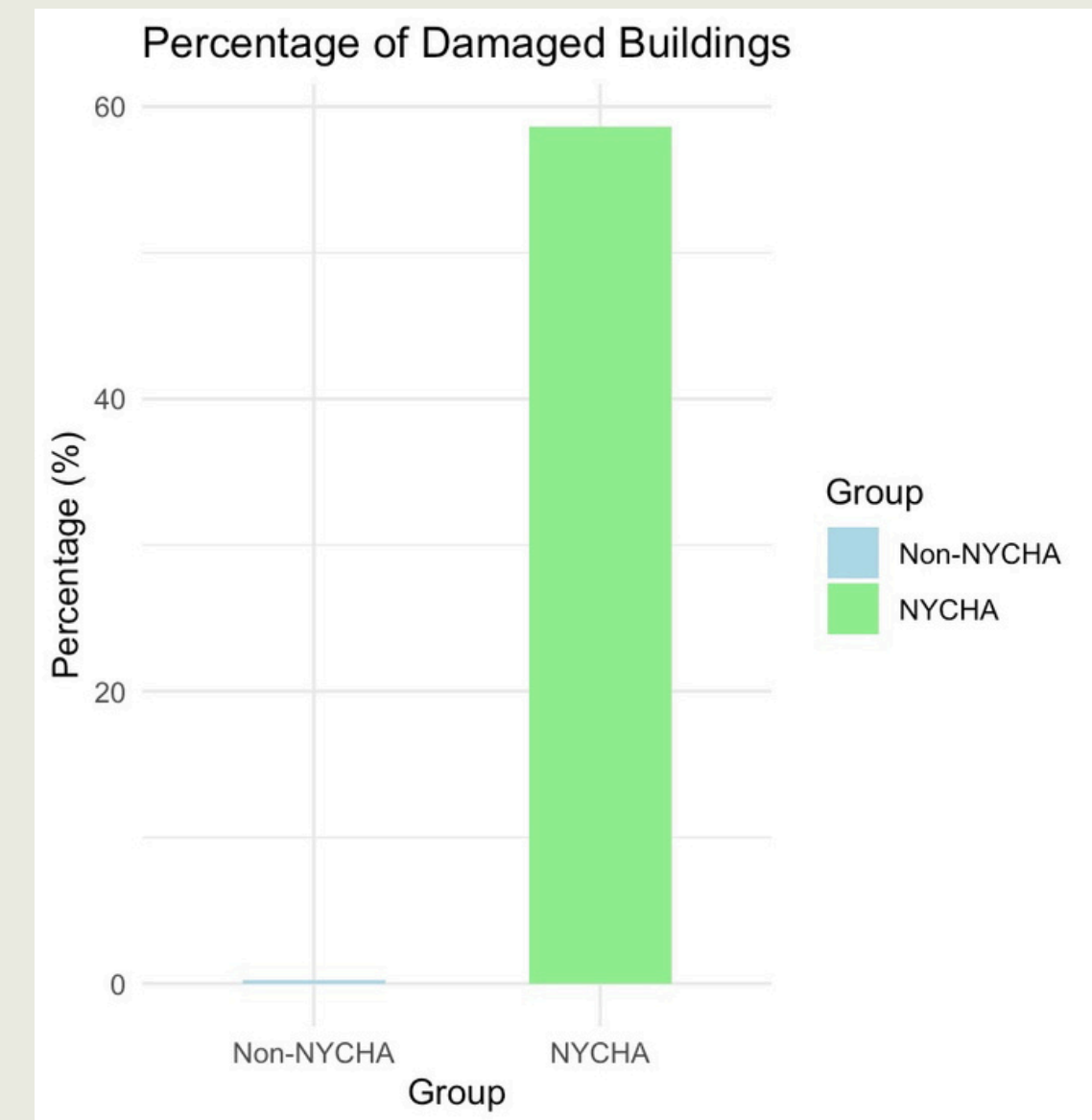
MAPS

**Did Sandy impact
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Bridges?**



Did Sandy impact NYCHA V.S. Non-NYCHA buildings differently in Two Bridges?

- Two-sample proportion test shows statistically significant difference between proportions of damaged buildings in NYCHA V.S. Non-NYCHA housing.



2-sample test for equality of proportions with continuity correction

```
data:  x out of n
X-squared = 388.75, df = 1, p-value < 2.2e-16
alternative hypothesis: two.sided
95 percent confidence interval:
 0.3864597 0.7808061
sample estimates:
      prop 1      prop 2 
0.586206897 0.002574003
```


FINDINGS: INTERVIEWS

Questions asked include:

- Can you describe how Hurricane Sandy impacted you personally or your household?
- What was the extent of the damage, and how long did it take to recover?
- Do you feel that your building is adequately protected from future flooding based on new plan implementation?
- How well do you feel the city or NYCHA has addressed flooding risks?
- How did flooding affect your ability to access essential services, such as transportation, healthcare, food, or schools?

FINDINGS: INTERVIEWS

Restaurant Owner:

- Damage: Severe flooding destroyed kitchen equipment and spoiled all food supplies.
- Closure Duration: Closed for 3 months for repairs and equipment replacement.
- Financial Strain: The cost of pumping out water and equipment replacement was high.

Shop Owner:

- Damage: Approximately 1 foot of water-damaged flooring and lower shelves.
- Closure Duration: Business slowed for 2–3 months; the initial 3 weeks saw a sharp customer decline.
- Financial Strain: Faced revenue loss due to decreased customer traffic; repair costs were minimal.

FINDINGS: INTERVIEWS

Alfred E. Smith Resident Association, Sonya P., Coordinator:

- Sonya and mother displaced from fourth floor apartment
- Feels building is adequately protected and NYCHA is active
- No access to home via transportation

Alfred E. Smith Resident Association, Aixa T., President:

- Unable to stay in fifth story apartment; no power, only gas
- Homes below six stories had water
- Schools closed for two weeks
- Building is not protected, NYCHA wasted funds; floodgates to protect property, not people
- Sandy repairs still happened until recently





FINDINGS: INTERVIEWS

Two Bridges Neighborhood Council, Tanya C., Member:

- Apartment still affected today
- **Developers did not report damage or inspect their buildings; more funding**
- HESCO flood barriers unkempt
- Common Theme: Priority should be resiliency protections over development
 - Interrupted Brooklyn Bridge-Montgomery Coastal Resilience and East Side Coastal Resiliency
- Common Theme: NYCHA is low to middle income, but bypassing residents
- Common Theme: Prevention versus Mitigation

CONCLUSION

Planning and Policy Recommendations

- Identify and establish clear evacuation routes.
- Ensure resources, such as food, water, and medical supplies, are readily available as well as generators and boilers
- Empower residents by providing education and opportunities to take part in planning decisions.

Potential Next Steps in Research

- Compare with other Neighborhoods
- Study similar neighborhoods in New York City that experienced Hurricane Sandy.
- Identify common patterns and differences in the impact on public and private housing.

REFERENCES

U.S. Department of Housing and Urban Development (HUD). (2023). Sandy damage estimates by block group. HUD GIS Open Data. Retrieved November 15, 2024, from <https://hudgis-hud.opendata.arcgis.com/datasets/sandy-damage-estimates-by-block-group/about>

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Golden Unicorn, personal communication, 12/2/2024

Wei Wei International Store, personal communication, 11/29/2024

Sonya P., personal communication, 12/2/2024

Aixa T., personal communication, 12/3/2024

Tanya C., personal communication, 12/2/2024