

# Understanding the Relationships between Household Decisions and Infrastructure Investment in Disaster Recovery: Cases from Superstorm Sandy

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## Introduction

Due to recent catastrophes and disasters, such as the Indian Ocean Tsunami, Hurricane Katrina, and Hurricane Sandy, policymakers, researchers, and the media are all devoting more attention to the recovery phase of disaster management, specifically whether resettlement is a better option than rebuilding *in situ*, and whether to invest in mitigation and repair or just repair the current transportation infrastructure. While many have discussed these issues in passing, research devoted to household relocation and resettlement decision-making is relatively sparse, and research on the impact of transportation infrastructure on these decisions is even sparser. Most scholarship in this area only tangentially relates to resettlement, or merely offers “best practice” recommendations. The purpose of this study is to understand how households decide to either resettle in a new location or rebuild *in situ* following a disaster and to illuminate critical elements of those decisions that could inform planning models.

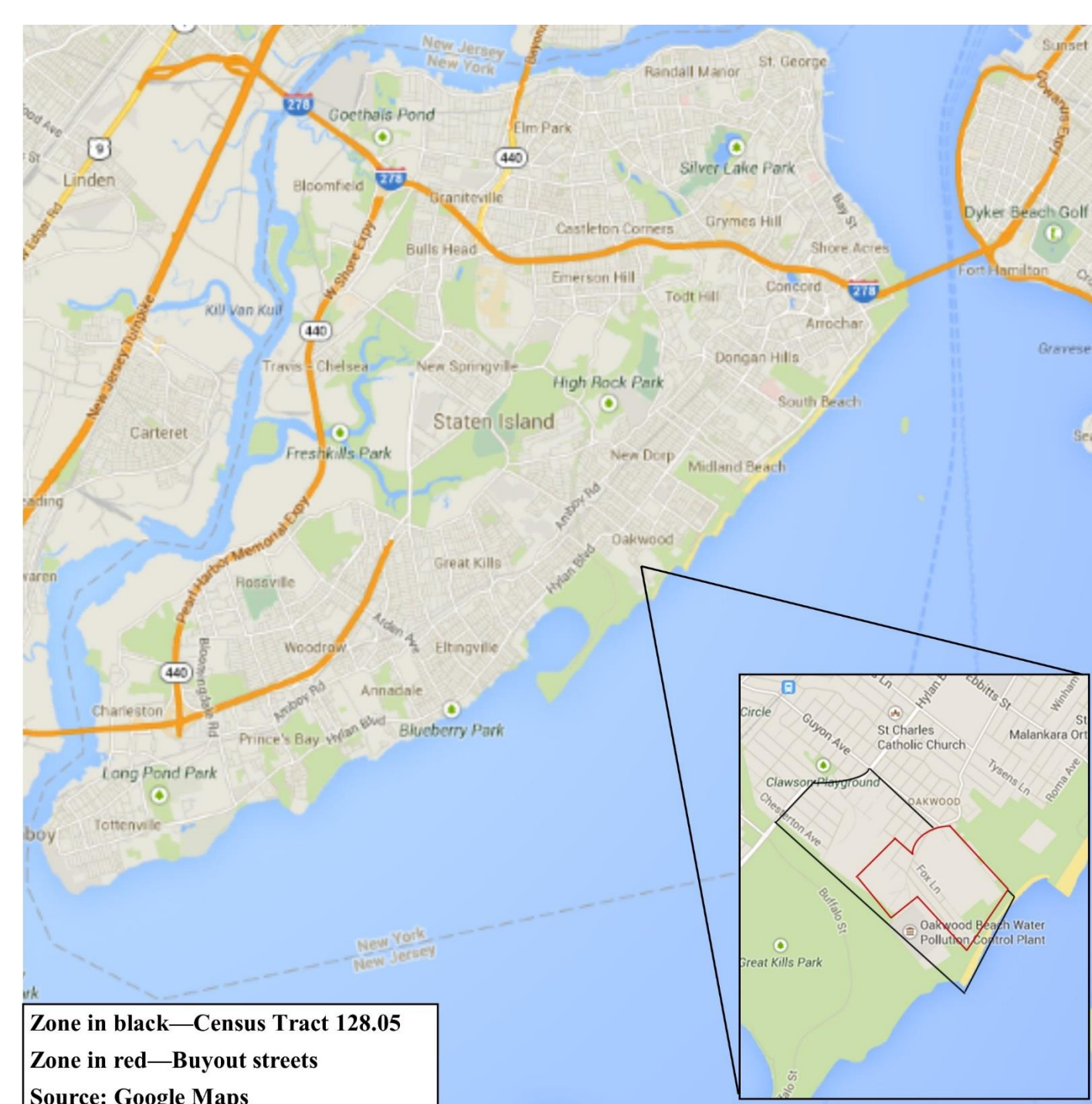
## Case Study Sites

### Oakwood

- 3,158 residents
- 1,154 homes
  - 71% owner-occupied
  - 5.5% vacancy
- \$77,788 median household income
- 91.6% white

### Sea Bright

- 1,412 residents
- 1,211 homes
  - 35% owner-occupied
  - 34.6% vacancy
- \$78,550 median household income
- 94.6% white



## Research Questions

- How do households decide whether to resettle or rebuild *in situ* following a disaster?
  - What is the process?
  - What factors do they rank as important?
    - When, during the decision-making process, are these factors important?
  - How do households understand their own hazard exposure?
  - Does the condition of the transportation infrastructure influence the decision?
- What factors do policymakers consider important when developing rebuilding or resettlement policy?
  - What does the policy say?

## Objectives

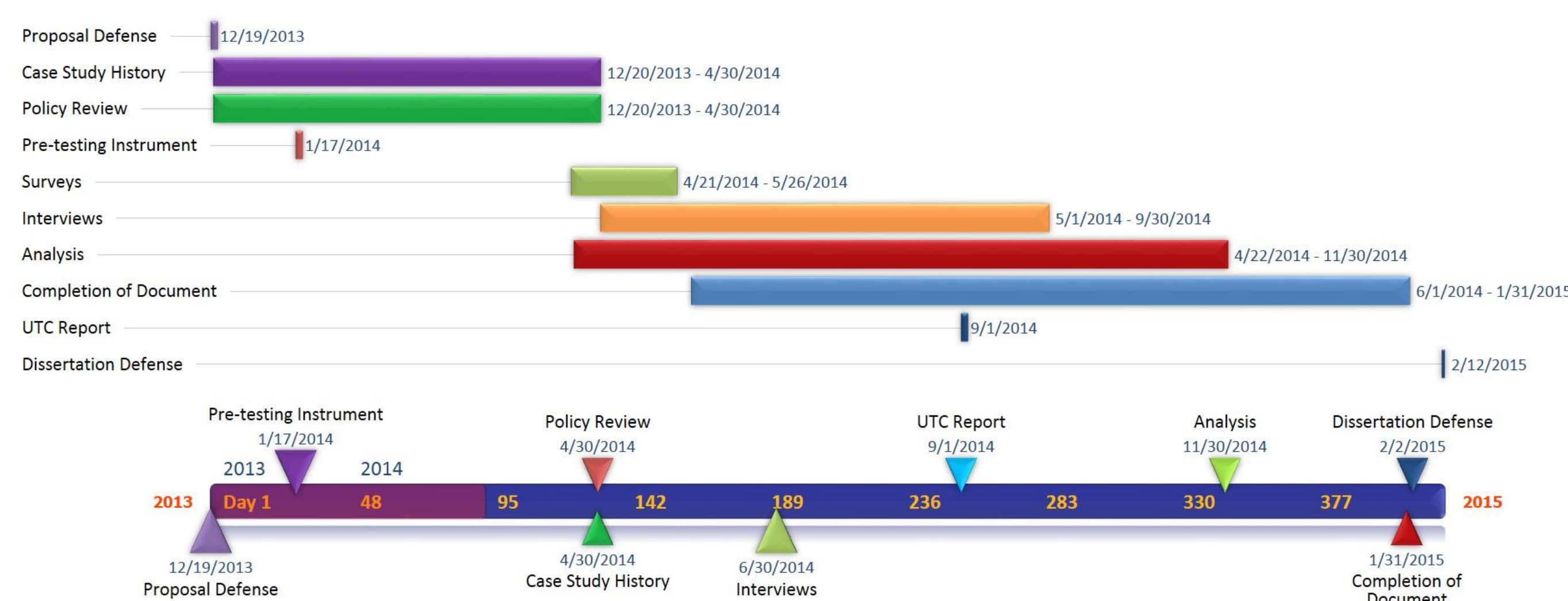
1. Better understand how the post-disaster transportation demand changes over time and from pre-disaster conditions
2. Better understand how the state of transportation infrastructure influences the decision to relocate
3. Explore how household surveys after a disaster can be used to complement existing data and models to forecast demand
4. Explore the role risk of natural hazards including damage to infrastructure and changes in demand play in asset management
5. Map our findings with spatial analysis tools to investigate locational trends in the data



## Methods

Policy Review	Surveys	Interviews
<ul style="list-style-type: none"> <li>• Major federal policies and programs</li> <li>• National Recovery Framework</li> <li>• National Disaster Housing Strategy</li> <li>• Sandy Recovery and Improvement Act of 2013</li> <li>• Hazard Mitigation Grant Program</li> <li>• Community Development Block Grant Program</li> <li>• National Flood Insurance Program</li> <li>• Flood Insurance Reform Act</li> <li>• State policies and aid applications</li> <li>• Local redevelopment plans</li> </ul>	<ul style="list-style-type: none"> <li>• Population of both communities</li> <li>• Serve as base for interviewee sampling</li> <li>• Key elements include:                             <ul style="list-style-type: none"> <li>• Property status</li> <li>• Attachment to place</li> <li>• Community functioning</li> <li>• Perception of damage</li> <li>• Disruption</li> <li>• Mitigation activities</li> <li>• Risk perception</li> <li>• Residential plans</li> <li>• Miscellaneous decision-making factors</li> <li>• Demographic factors</li> <li>• Steps in recovery effort</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Semi-structured interviews</li> <li>• Households that resettled</li> <li>• Households that rebuilt <i>in situ</i></li> <li>• Key stakeholders (local, county, state, and federal level)                             <ul style="list-style-type: none"> <li>• Federal Emergency Management Agency</li> <li>• Housing and Urban Development</li> <li>• Small Business Administration</li> <li>• Department of Transportation</li> <li>• Land-use planners</li> <li>• Long-term recovery officers</li> <li>• Emergency managers</li> </ul> </li> </ul>

## Completion Schedule



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