



Transportation Adaptations for Evacuation and Sheltering During COVID-19

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VEMS 21



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Objectives



Methods and Findings



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**Acknowledgements
and Contact**

Research Question 1

How has COVID-19 altered the composition and distribution of vulnerable populations and transportation options for evacuation and sheltering?



Research Question 3

How can transportation adapt to the needs of the additional populations and demands for evacuation and sheltering in the case of a compound (pandemic + other) hazard?



Research Question 2

What is the threshold for evacuation and sheltering in the case of a compound natural hazard?

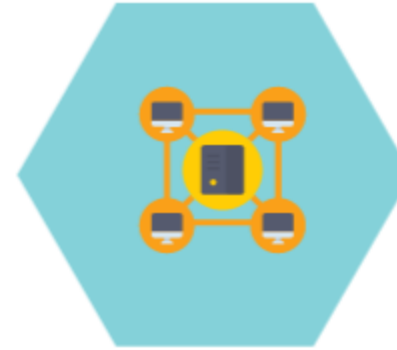




Methods

Hurricane Florence Survey

Led by: VMASC and ODU, Social Science Research Center
November 2018 - February 2020
Survey Topics: Evacuation / Sheltering Behavior, Risk Perception and Messaging
Participants: 1,210 residents of Hampton Roads



Converge Workshops

Led by: USF and ODU
May and June 2020
Workshop Topics: Vulnerability, Health, Logistics, Public Messaging, Workforce, and Psychological Adjustment
Participants: 265 professionals from 20 states



COVID-19 Vulnerability and Transportation Focus Groups

Led by: ODU Faculty and Researchers
August and September 2020
Focus Group Topics: Vulnerability and Transportation
Participants: 43 local and 35 national transportation, public health, and emergency management professionals



Life in Hampton Roads Survey

Led by: ODU, Social Science Research Center
June and July 2020
Survey Topics: Quality of Life and Perceptions of COVID-19
Participants: 1,100 residents of Hampton Roads



Focus Group - Web App

COVID-19 Transportation Workshop User Input

Layers

- Workshop Data - Points
- Workshop Data - Lines
- Workshop Data - Polygons
- VA Counties and Cities
- Virginia Hurricane Evacuation Zones (2020 Update)
- Public Transportation

(1 of 2)

Title	Pick up Point
Description	Elm and Lincoln St.
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Findings

Converge Workshops

Transportation and Vulnerability:

- Increased vulnerability for elderly and those with underlying conditions
- Additional busses needed for social distancing
- PPE needed for staff, volunteers, and evacuees
- Staff and volunteer fatigue concerns

COVID-19 Vulnerability and Transportation Focus Groups

Current changes to account for COVID-19:

- Local evacuation with family and friends is encouraged to reduce transmission
- Require those seeking shelter and/or transportation to bring their own supplies
- Ride-share and hotel contracts

Areas for additional focus:

- Military Housing / Universities / Parking Garages
- Low count census tracts
- Vaccine distribution expectations

Hurricane Florence Survey

Transportation and Evacuation Behavior :

- Evacuate outside Hampton Roads: **13% did, 86% did not**
- Of those who stayed in Hampton Roads, **7% sheltered somewhere other than their home**
- Reasons for staying included: **15% caring for a person with a medical condition, 10% cost, and 3.5% no transportation access**
- Traffic congestion was not a significant factor in the decision to stay

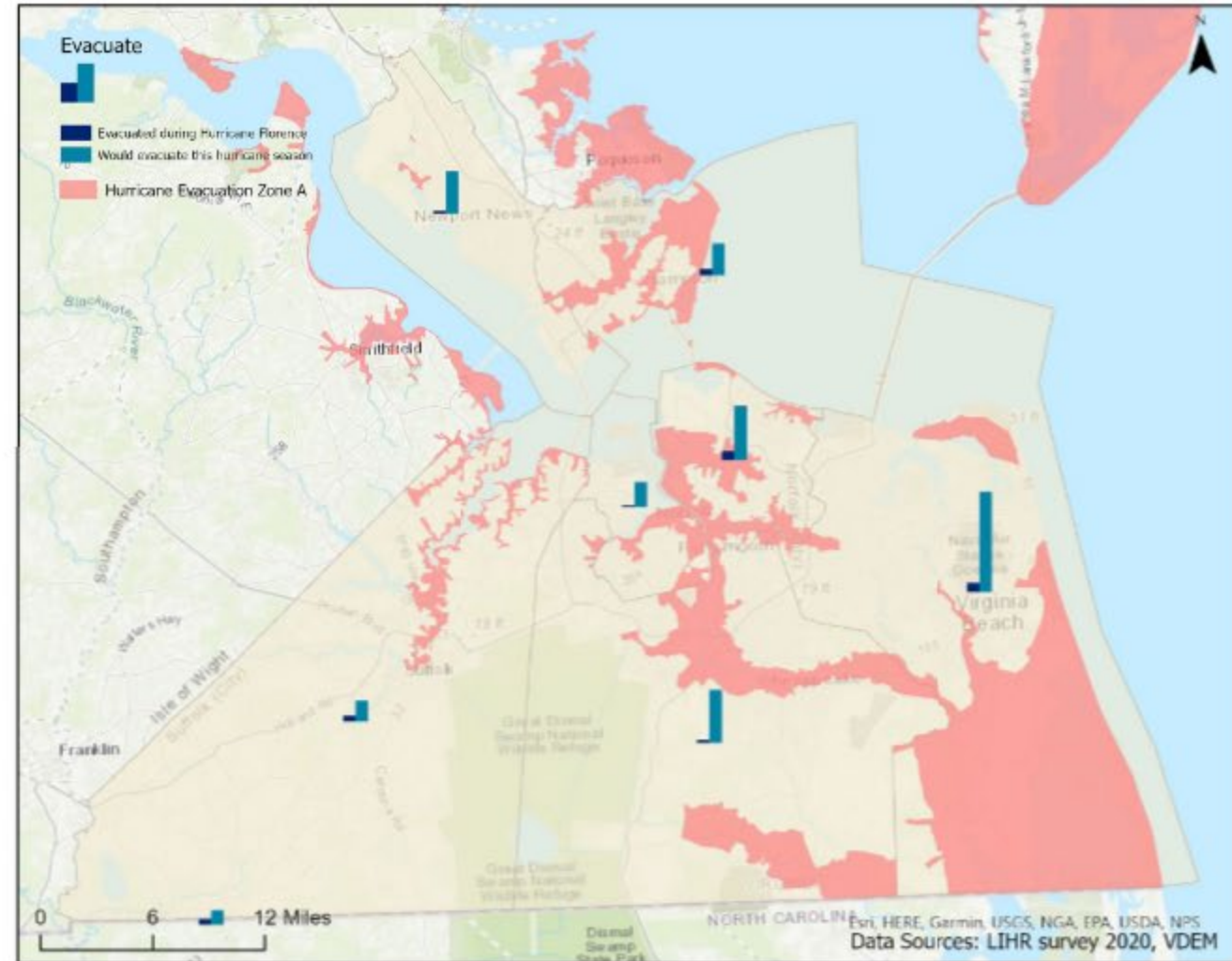
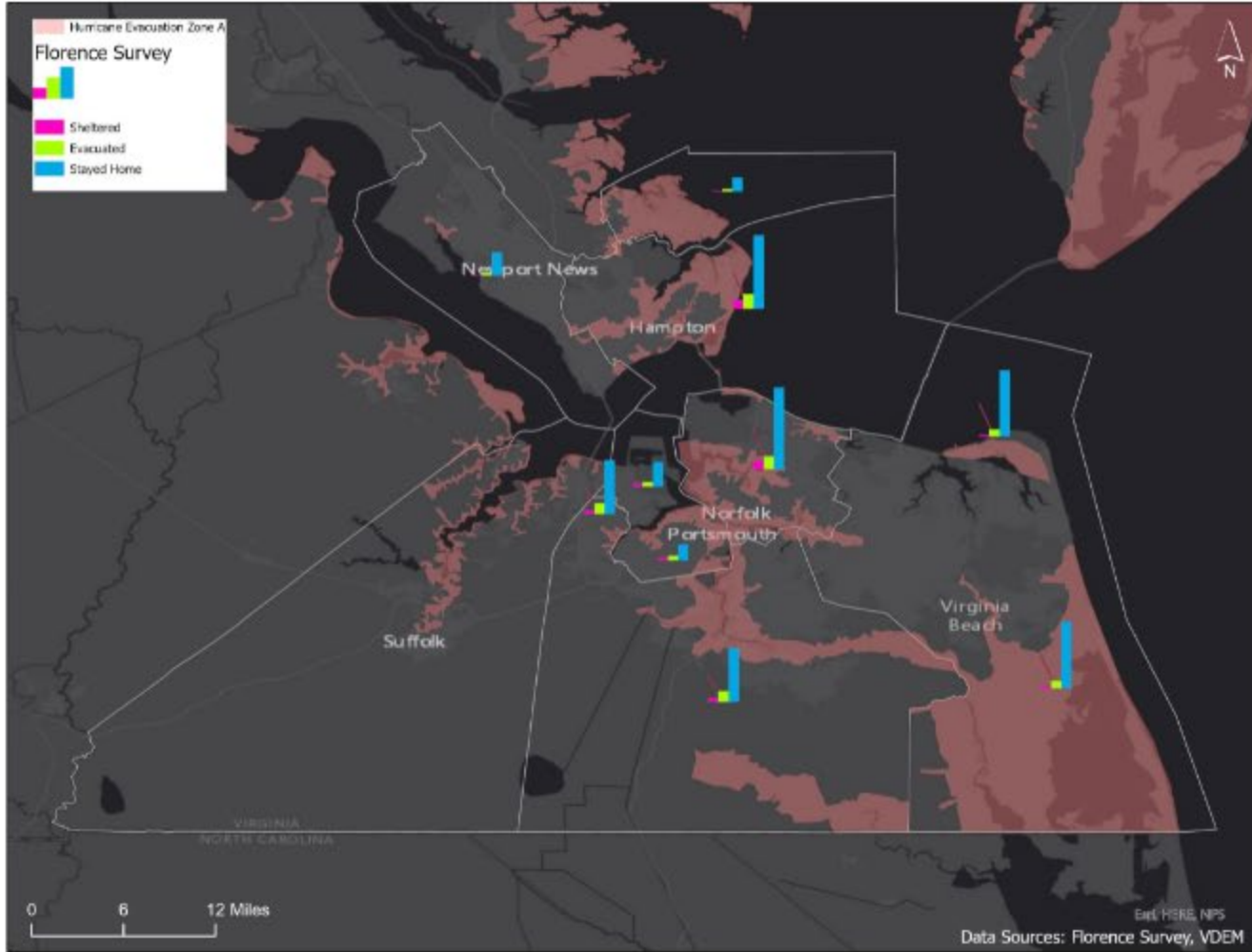
Life in Hampton Roads Survey

COVID-19 and Evacuation Behavior :

- Evacuate: **45% would, 26% unsure, 29% would not**
- Of those who would not **30% were concerned about having enough cash or credit on hand**
- Public Shelter: **18% would, 19% unsure, 63% would not**
- Of those that would not, **70% were concerned about COVID-19 transmission**



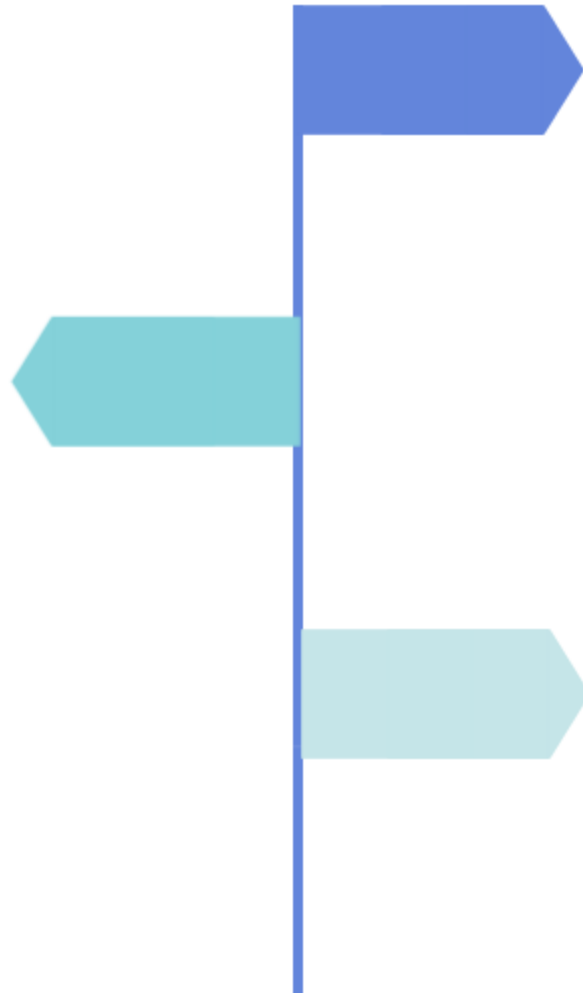
Findings - Survey Results





Findings - Vulnerability and Behavior

- Public shelters remain a refuge of last resort for those who had to shelter before.
- Households that did not previously use public shelters may be unwilling to go to one because of possible virus transmission.



- The intent to evacuate and shelter is elevated above previous behavior in Hampton Roads.
- COVID-19 related financial concerns are preventing some from considering evacuation.
- More people with limited resources may remain in high-risk areas this hurricane season unless alternative transportation and sheltering options are available.



Findings - Emergency Management

- The decision to rely on individuals to self-report symptoms and provide their own PPE, sanitization, and meals was made, although not consistently.
- Safety protocols for public transit were largely agreed upon, despite continued concerns about enforcement.
- Outsourcing contracts had been explored for non-congregant options.



- The preference for local evacuations was broadly accepted.
- Pre-registration was desirable.
- Stockpiles and sharing agreements were identified for health and safety supplies.



- Additional considerations regarding willingness to participate and accommodate certain populations were identified.
- Public resources were adjusted to accommodate those still in need of congregant options.



Modeling to identify route and pick-up point changes in the case of a local mobilization for a specific storm severity and path



Allowing additional time for deploying strained resources despite local hesitation to order evacuations early in the hopes of avoiding congregant situations

Local behavior surveying and web application development to include additional supplies and health / social services



Coordinating real-time weather, resource, staffing, and traffic information and local knowledge with interjurisdictional data

- WAZE
- Weather forecasts
- Emergency staff availability
- Scenario modeling
- Food, mental health, and sanitation resources

Recommendations



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Questions?

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**View the StoryMap for this project:
<https://arcg.is/OmaSqa0>**

