

# Emergency Shelter Assessment Tool Specific to Vulnerable Populations

UNC Chapel Hill Environmental Studies Capstone team

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# Introduction

# Observed Problems

- Individuals with functional needs are often underserved
- Important to minimize risk after arrival
- Shelter facilities may face unique challenges
- Identifying gaps will strengthen process

# Goals

- Construct a user-friendly emergency shelter audit tool to assessing the ability of emergency shelters to meet the needs of vulnerable populations
- Identify gaps in the emergency sheltering process

# Vulnerable Populations

- Vulnerable populations: Populations that face a higher incidence of risk in the event of an emergency

Extremes of Age	Low-Income
Mobile Home Owners	No Access to Transportation
People with Funtional Needs	People with Medical Needs
Pet Owners	Criminal Populations
Socially Isolated	Non-English Speakers

# Counties As Case Studies

## Duplin County

## Forsyth County

- Performed community based research with emergency planning and county officials
- Studied existing demographic information

# Facilities



<http://winstonsalemchurches.org/christ-wesleyan-church/>



<http://www.winstonsalemmonthly.com/>



[www.facilitiesonline.org](http://www.facilitiesonline.org)

# Our Approach

- Preliminary review of existing research
- Collection of demographic information from existing data collections
- Interviews/Transcribing/Coding
- Qualitative analysis of relationships between coded quotes in the data
- Piloting and field testing of audit tool



# Research

# Existing literature

- Preliminary research on existing shelter recommendations
- Three main categories of literature
  - Information/tools provided by leading authorities on emergency management
  - Scholarly publications on emergency management
  - Information and materials produced by people and organizations representing vulnerable populations

# American Red Cross Survey



## Shelter Facility Survey

### BASIC SHELTER INFORMATION

Site Name/  
School District \_\_\_\_\_ NSS ID# \_\_\_\_\_ Date \_\_\_\_\_

Name of  
building \_\_\_\_\_ Building # \_\_\_\_\_ of \_\_\_\_\_

Phone # \_\_\_\_\_ Fax # \_\_\_\_\_ Website \_\_\_\_\_

Shelter address \_\_\_\_\_

Town/  
City \_\_\_\_\_ County/  
Parish \_\_\_\_\_ State \_\_\_\_\_ Zip  
Code \_\_\_\_\_

Mailing Address  
(if different) \_\_\_\_\_

Town/  
City \_\_\_\_\_ County/  
Parish \_\_\_\_\_ State \_\_\_\_\_ Zip  
Code \_\_\_\_\_

Agency operating shelter  
(check one)  Red Cross  FEMA  DHS  TSA  SBC  Other \_\_\_\_\_

Shelter agency type  
(check one)  Red Cross managed  Red Cross partner  Red Cross supported  Independent \_\_\_\_\_

Shelter type (check all that apply)  Evacuation  General  Medical  Other \_\_\_\_\_

General facility notes \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# American Red Cross Survey



## Shelter Facility Survey

Site Name/  
 School District \_\_\_\_\_  
 Name of  
 building \_\_\_\_\_  
 Phone # \_\_\_\_\_  
 Shelter address \_\_\_\_\_  
 Town/  
 City \_\_\_\_\_  
 Mailing Address  
 (if different) \_\_\_\_\_  
 Town/  
 City \_\_\_\_\_  
 Agency operating shelter  
 (check one)  \_\_\_\_\_  
 Shelter agency type  Red C  
 (check one) mana  
 Shelter type (check all that apply)  
 General facility notes \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

### SANITATION, FEEDING & UTILITIES

#### Sanitation, Utilities & Power

The recommended ratio for toilet facilities is a minimum of 1 toilet for 20 people. The optimum scenario for showers is 1 shower for every 25 residents. Count all facilities that will be available to shelter residents and staff.

Showers available  Yes # of showers \_\_\_\_\_  No | Toilets available  Yes # of toilets \_\_\_\_\_  No

Check all that apply Heating  Electric  Natural Gas  Propane  Fuel Oil | Cooling  Electric  Natural Gas  Propane

Check all that apply Cooking  Electric  Natural Gas  Propane | Water  Municipal  Well(s)  Trapped

Self-sufficient power  Yes Type \_\_\_\_\_  No

Note fuel requirements, generator capacity, facility areas supported by generator(s), and other relevant information.

Emergency generator on site  Yes  No Notes \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

#### Feeding

Food Prep (check all that apply)  Warming oven kitchen  Full service  Central kitchen (delivery)

Food stock stored on site  Yes # meal can be served \_\_\_\_\_  No | Refrigeration units on site  Yes # units \_\_\_\_\_  No

Seating capacity  Cafeteria \_\_\_\_\_  Snack Bar \_\_\_\_\_  Other indoor seating \_\_\_\_\_ Total estimated seating capacity for eating \_\_\_\_\_

Notes on feeding \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

### ACCESSIBILITY

# Interview Process

# Interviews

Purpose - gather information regarding vulnerable populations and sheltering

- Script for interviews prepared
  - Questions written using info from lit review, plan for audit tool
- Interview candidates identified
  - Professionals in emergency management and related fields
- Potential interviewees invited to participate in interviews

# Interviews

- Interviews followed common format
- All interviews recorded with consent of interviewee
  - Identity, specifics of position kept confidential in final documents
- Recordings used to create transcriptions for coding and analysis

# Transcribing and Coding

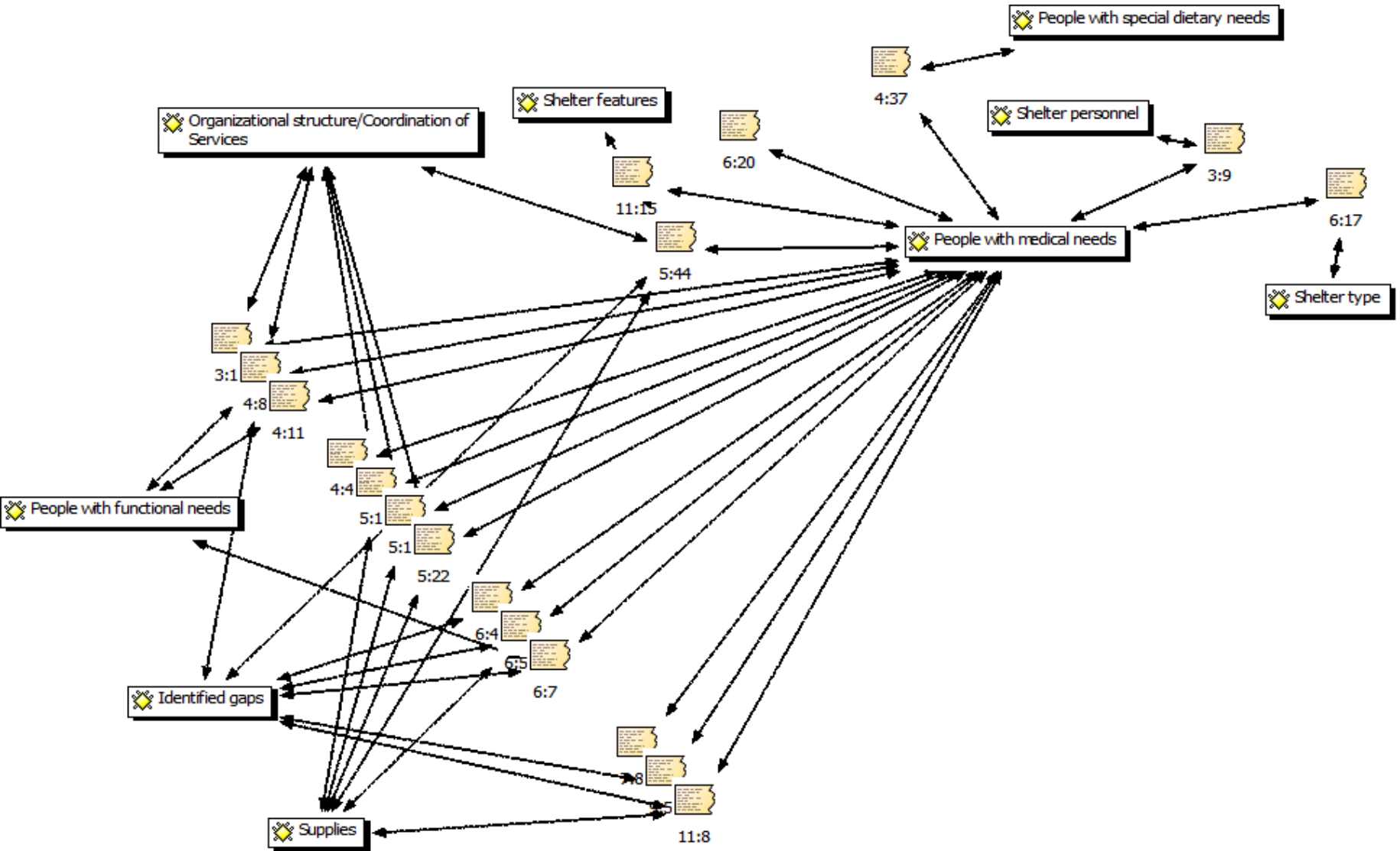
- Transcripts analyzed using ATLAS.ti
- Relevant quotes identified and labeled using codes
- Relationships identified with codes
- Analysis of relationships provided further insight



# Codes Used in Analysis

Children	Criminal Populations
Identified Gaps	Low-income
Migrant Workers	Mobile Home Owners
Non-English-speaking populations	Vulnerable Populations
Older Adults	Organizational Structure/Coordination of Services
People with Functional Needs	People with Medical Needs
People with Special Dietary Needs	People without Personal Transportation
Pet Owners	Shelter Features
Shelter Personnel	Shelter Type
Socially Isolated	Supplies

# Sample of Analysis



# Product

# Our Product Goal

...a comprehensive checklist used to evaluate how well emergency shelters accommodate the needs of vulnerable populations

# Achieving that goal

- Literary research identified:
  - List of vulnerable populations
  - List of needs
- Drafted and piloted checklist at:
  - North Forsyth High School
  - Parkland High School
  - Coliseum
  - 7th Day Adventist Church
  - Walkertown Middle/High School

# Piloted Tool - Draft

Shelter Evaluation Tool- Draft Version		
Name of Facility		
Address of Facility		
Description of Facility		
Entity Managing Shelter		
Date Evaluation Audit Started		
Date Evaluation Audit Completed		
Evaluation Completed By		
Question	Score (0,1,2)	Notes
<b>A: General Habitability--Average Score _____</b>		
<b>1. How susceptible is the location to flooding? (8)</b>		
2- Minimal Flood Risk (Zone C, unshaded Zone X, Zone D)		
1- Moderate Flood Risk (Zone B, shaded Zone X)		
0- High Flood Risk (Zone A)		
<b>2. How close is the shelter located to a nuclear facility? (9)</b>		
2- More than 10 miles		
1- 5 to 10 miles		
0 - Less than 5 miles		
<b>3. How close is the facility located to an evacuation zone? (9)</b>		
2- More than 5 miles		
1- 1 to 5 miles		
0- Less than 1 mile		
<b>4. How close is the facility located to an evacuation route? (9)</b>		
2- Less than 5 miles		
1- 5 to 20 miles		
0 - More than 20 miles		

# How the Checklist Works

- 2 main categories
  - General habitability
  - Vulnerable populations
- Scaled, not scored
  - 0 - insufficiently meets needs
  - 1 - somewhat capable
  - 2 - sufficiently meets needs

# Revision

## Shelter Accessibility and Livability Tool (SALT) - Draft Version

Name of Facility:

Address of Facility:

Description of Facility:

Entity Managing Shelter:

Date Evaluation Audit Started:

Date Evaluation Audit Completed:

Evaluation Completed By:

Notes:

The Shelter Accessibility and Livability Tool (SALT) helps assess the suitability of a proposed shelter and how well it can accommodate various vulnerable populations. Completing this tool will help emergency planners identify the most suitable shelter locations and suggest opportunities for improving shelters for all community members. It is not designed to replace other survey tools or designate whether certain types of facilities can be used as emergency shelters.

SALT uses a 0-1-2 scale for answering each question. A score of "0" represents the least preferred circumstance and a score of "2" represents the most preferred circumstance. Once determined, answer scores are averaged for each section. Higher section averages represent a shelter's greater capability for supporting the corresponding shelter function or vulnerable population.



# Revision

Preliminary Facility Evaluation - Draft Version		
Facility Contact Information		
Name of Facility:		
Facility Phone #:		
Facility Fax#:		
Website:		
	Facility Physical Address	Facility Mailing Address (if different)
Street Address: _____		_____
City: _____		_____
County: _____		_____
State: _____		State: _____
Zip: _____		Zip: _____
Shelter Capacity		
Total sq feet of facility: _____		

Name of

Address:

Description

Entity Name

Date Evaluated

Date Evaluated

Evaluation

The Shelter is suitable to replace

SALT use score of section function

# Revision

## Preliminary Facility Evaluation - Draft Version

Shelter Accessibility and Livability Tool (SALT) - Draft Version

Question	Score (0,1,2)	Notes
<b>A: General Habitability--Average Score _____</b>		
<b>A1. How susceptible is the location to flooding? (8)</b> 2- Minimal Flood Risk (Zone C, unshaded Zone X, Zone D) 1- Moderate Flood Risk (Zone B, shaded Zone X) 0- High Flood Risk (Zone A)		
<b>A2. How close is the shelter located to a nuclear facility? (9)</b> 2- More than 10 miles 1- 5 to 10 miles 0 - Less than 5 miles		
<b>A3. How close is the facility located to an evacuation zone? (9)</b> 2- More than 5 miles 1- 1 to 5 miles 0- Less than 1 mile		
<b>A4. How close is the facility located to an evacuation route? (9)</b> 2- Less than 5 miles 1- 5 to 20 miles 0- More than 20 miles		
<b>A5. Is this facility suitable to withstand the kind and scale of disaster that can reasonably be expected to affect this area?</b> 2- Building is expected to incur only minimal damage and should be comfortably habitable 1- Building is expected to incur moderate damage and should be minimally habitable 0- Building is expected to incur severe damage and will most likely be uninhabitable		
<b>A6. Is the building ADA-compliant? Visit <a href="http://www.ada.gov/shleterck.htm">http://www.ada.gov/shleterck.htm</a> for current</b> 2- Completely ADA-compliant 1- Generally ADA-compliant; some exceptions may exist		

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# Important Findings

# Demographics

- Through demographic research we found there to be large populations of:
  - People who speak English less than "very well"
  - People with a variety of disabilities
  - People below the poverty level
  - People of extremes of age
- All data are from the US Census Bureau American Community Survey

# Recurring Themes

- Medications
  - People forget their medications
  - Storage Issues
- Barriers to Pets
  - Deficiencies in housing
  - Problems of air quality and sanitation
  - Lack of veterinary care and supplies

# Recurring Themes

- Barriers to Non-English Speaking Populations
  - Translated print materials
  - No guarantee of interpreters
- Transportation
  - Limited to disaster transportation

# Recurring Themes

- Security
  - Identifying and Accommodating Sex Offenders
- People with Functional Needs
  - Volunteers
  - If shelters can't meet their needs they are sent to the hospital

# Conclusions



# Conclusions

- Certain populations have specific needs
- Populations may be hurt by not having those needs met in shelters
- This tool may be useful for identifying areas for improvement in emergency shelters
- The tool can be expanded to apply to new populations

# Intended Impacts

- Increased awareness
  - Vulnerable populations
  - The needs of those populations
- Improvements in shelter capabilities

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# Questions