Emergency Shelter Assessment Tool Specific to Vulnerable Populations

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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
• 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

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Extremes of Age</td>
<td>Low-Income</td>
</tr>
<tr>
<td>Mobile Home Owners</td>
<td>No Access to Transportation</td>
</tr>
<tr>
<td>People with Functional Needs</td>
<td>People with Medical Needs</td>
</tr>
<tr>
<td>Pet Owners</td>
<td>Criminal Populations</td>
</tr>
<tr>
<td>Socially Isolated</td>
<td>Non-English Speakers</td>
</tr>
</tbody>
</table>
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
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
  o Information/tools provided by leading authorities on emergency management
  o Scholarly publications on emergency management
  o Information and materials produced by people and organizations representing vulnerable populations
# American Red Cross Survey

## Shelter Facility Survey

### BASIC SHELTER INFORMATION

<table>
<thead>
<tr>
<th>Site Name/ School District</th>
<th>NSS ID#</th>
<th>Date</th>
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<table>
<thead>
<tr>
<th>Name of building</th>
<th>Building #</th>
<th>of</th>
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<thead>
<tr>
<th>Phone #</th>
<th>Fax #</th>
<th>Website</th>
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<tr>
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<table>
<thead>
<tr>
<th>Shelter address</th>
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<tbody>
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</table>

<table>
<thead>
<tr>
<th>Town/ City</th>
<th>County/ Parish</th>
<th>State</th>
<th>Zip Code</th>
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<thead>
<tr>
<th>Mailing Address (if different)</th>
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</tbody>
</table>

### 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
- [ ] Other

### General facility notes

<table>
<thead>
<tr>
<th>General facility notes</th>
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<tbody>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>General facility notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
### Shelter Facility Survey

#### 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 [ ] No
- **# of showers**
- **Toilets available** [ ] Yes [ ] No
- **# of toilets**

**Check all that apply**

- **Heating**
  - [ ] Electric
  - [ ] Natural Gas
  - [ ] Propane
  - [ ] Fuel Oil
- **Cooling**
  - [ ] Electric
  - [ ] Natural Gas
  - [ ] Propane
- **Cooking**
  - [ ] Electric
  - [ ] Natural Gas
  - [ ] Propane
- **Water**
  - [ ] Municipal
  - [ ] Well(s)
  - [ ] Trapped

**Self-sufficient power** [ ] Yes [ ] No

**Type**

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 [ ] No
- **# meal can be served**
- **Refrigeration units on site** [ ] Yes [ ] No
- **# units**

**Seating capacity**

- [ ] Cafeteria
- [ ] Snack Bar
- [ ] Other indoor seating

**Total estimated seating capacity for eating**

**Notes on feeding**

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**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
<table>
<thead>
<tr>
<th>Codes Used in Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
</tr>
<tr>
<td>Identified Gaps</td>
</tr>
<tr>
<td>Migrant Workers</td>
</tr>
<tr>
<td>Non-English-speaking populations</td>
</tr>
<tr>
<td>Older Adults</td>
</tr>
<tr>
<td>People with Functional Needs</td>
</tr>
<tr>
<td>People with Special Dietary Needs</td>
</tr>
<tr>
<td>Pet Owners</td>
</tr>
<tr>
<td>Shelter Personnel</td>
</tr>
<tr>
<td>Socially Isolated</td>
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</table>
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
# Shelter Evaluation Tool - Draft Version

<table>
<thead>
<tr>
<th>Name of Facility</th>
<th>Address of Facility</th>
<th>Description of Facility</th>
<th>Entity Managing Shelter</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Date Evaluation Audit Started</th>
<th>Date Evaluation Audit Completed</th>
<th>Evaluation Completed By</th>
</tr>
</thead>
</table>

## A: General Habitability - Average Score

<table>
<thead>
<tr>
<th>Question</th>
<th>Score (0,1,2)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How susceptible is the location to flooding? (8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Minimal Flood Risk (Zone C, unshaded Zone X, Zone D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Moderate Flood Risk (Zone B, shaded Zone X)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. High Flood Risk (Zone A)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. How close is the shelter located to a nuclear facility? (9)

<table>
<thead>
<tr>
<th>Score (0,1,2)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 10 miles</td>
<td></td>
</tr>
<tr>
<td>1-5 to 10 miles</td>
<td></td>
</tr>
<tr>
<td>Less than 5 miles</td>
<td></td>
</tr>
</tbody>
</table>

3. How close is the facility located to an evacuation zone? (9)

<table>
<thead>
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<th>Score (0,1,2)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>More than 5 miles</td>
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<td></td>
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<tr>
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<td></td>
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</tbody>
</table>

4. How close is the facility located to an evacuation route? (9)

<table>
<thead>
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<th>Score (0,1,2)</th>
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</tbody>
</table>
How the Checklist Works

• 2 main categories
  o General habitability
  o Vulnerable populations

• Scaled, not scored
  o 0 - insufficiently meets needs
  o 1 - somewhat capable
  o 2 - sufficiently meets needs
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.
## Preliminary Facility Evaluation - Draft Version

### Facility Contact Information

- **Name of Facility:**
- **Facility Phone #:**
- **Facility Fax#:**
- **Website:**

### Facility Physical Address

- **Street Address:**
- **City:**
- **County:**
- **State:**
- **Zip:**

### Facility Mailing Address (if different)

- **Street Address:**
- **City:**
- **County:**
- **State:**
- **Zip:**

### Shelter Capacity

- **Total sq feet of facility:**

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The Shelter shall accommodate suitable occupancy (if not), and the SALT use score of the section shall function.
## Preliminary Facility Evaluation - Draft Version

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

<table>
<thead>
<tr>
<th>Question</th>
<th>Score (0, 1, 2)</th>
<th>Notes</th>
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<tbody>
<tr>
<td><strong>A: General Habitability - Average Score</strong></td>
<td></td>
<td></td>
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<tr>
<td>A1. How susceptible is the location to flooding? (8)</td>
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<td></td>
</tr>
<tr>
<td>1. Moderate Flood Risk (Zone B, shaded Zone X)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0. High Flood Risk (Zone A)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2. How close is the shelter located to a nuclear facility? (9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. More than 10 miles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. 5 to 10 miles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0. Less than 5 miles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3. How close is the facility located to an evacuation zone? (9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. More than 5 miles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. 1 to 5 miles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0. Less than 1 mile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A4. How close is the facility located to an evacuation route? (9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Less than 5 miles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. 5 to 20 miles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0. More than 20 miles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A5. Is this facility suitable to withstand the kind and scale of disaster that can reasonably be expected to affect this area?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Building is expected to incur only minimal damage and should be comfortably habitable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Building is expected to incur moderate damage and should be minimally habitable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0. Building is expected to incur severe damage and will most likely be uninhabitable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Completely ADA-compliant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Generally ADA-compliant; some exceptions may exist</td>
<td></td>
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</tbody>
</table>
Important Findings
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
  o People forget their medications
  o Storage Issues

• Barriers to Pets
  o Deficiencies in housing
  o Problems of air quality and sanitation
  o Lack of veterinary care and supplies
Recurring Themes

• Barriers to Non-English Speaking Populations
  o Translated print materials
  o No guarantee of interpreters

• Transportation
  o Limited to disaster transportation
Recurring Themes

• Security
  o Identifying and Accommodating Sex Offenders

• People with Functional Needs
  o Volunteers
  o 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
  o Vulnerable populations
  o The needs of those populations

• Improvements in shelter capabilities
Acknowledgements

Michelle Brock
Reid Southerland
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  David Goldberg
  Alison Frazzini
Our Capstone Advisor
  Dr. Shay
Questions