Preventing the Disaster of Mass Evacuations

2017 Governor’s Hurricane Conference

May 18, 2017
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Try it out. How many of you need coffee?

I'm well caffeinated.

I do!

You want me to text this early in the morning?

My body is a temple. Caffeine never enters this holy vessel.

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Introductions

Lee Mayfield
- Planning Chief
- Lee County Emergency Management

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- Operations Chief
- Lee County Emergency Management

Gisele Parry
- Regional Client Services Director
- Hagerty Consulting, Inc.

Southwest Florida Regional Evacuation Planning
Purpose

- Review the methodology and process used to develop the evacuation framework
- Review the response coordination concepts that were developed to help Southwest Florida (SW FL) Region 6 evacuate
- Identify and discuss how these concepts can work for your region
Agenda

- Welcome and introductions
- Evacuation issues across the nation
- Evacuation issues in SW FL Region 6
- Building a Regional Coordination Framework
- Open discussion
Does An Evacuation Cause a Secondary Disaster?
Recent Mass Evacuation Events

<table>
<thead>
<tr>
<th>Event</th>
<th># of Evacuees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hurricane Floyd, 1999</td>
<td>3,000,000</td>
</tr>
<tr>
<td>World Trade Center, 2001</td>
<td>500,000</td>
</tr>
<tr>
<td>Hurricane Katrina, 2005</td>
<td>1,200,000</td>
</tr>
<tr>
<td>Hurricane Rita, 2005</td>
<td>3,100,000</td>
</tr>
<tr>
<td>California Wildfires, 2007</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Hurricane Gustav, 2008</td>
<td>1,900,000</td>
</tr>
<tr>
<td>Hurricane Sandy, 2012</td>
<td>375,000</td>
</tr>
</tbody>
</table>

Southwest Florida Regional Evacuation Planning
Atlanta 2014: Is this what an improvised nuclear device (IND) event might look like?
Lessons Learned

- Evacuation is not the only solution
  - Reduce the number of people to evacuate
- Use common evacuation terminology
  - Optional evacuation, voluntary evacuation, non-mandatory evacuation causes an over-evacuation
  - Without clear directives, people *assume* what protective action to take.
  - Help residents visualize threats.
Lessons Learned cont. 1

- Understand your population demographics
  - Identify all subsets of transportation dependent communities, the “AGARs”
  - Senior citizens are the sub-group least likely to evacuate, especially if they have pets.
  - Twenty percent of all pets taken to a shelter are never reclaimed by owners.
  - Hospitals and assisted care facility evacuation plans need to be realistic and validated.
  - Tourists are the least prepared sub-group, but they have the means to leave affected area immediately.
Lessons Learned cont. 2

- Evacuation authority at state, county, and local levels must be clearly defined and rehearsed for the system to work.
  - Communication and coordination between states and jurisdictions, special districts must improve.
  - Establish a unified coordination group made up of all stakeholders.

- Identify ways to decrease logistical demands
  - Evacuation distance correlates with an increase in logistical needs. An effective evacuation should aim to move the least amount of people the shortest distance possible.
  - Evacuation routes need to guide residents to areas that can support them.
  - Plan ahead and take into account intersecting evacuation routes.
  - The demand for evacuation shelters correlates to household income.
Lessons Learned cont. 3

- Contraflow of roadways may not be effective.
- Plan effective use of alternative modes of transportation.
  - School buses are not always the most viable solution.
- Tap into emerging technology like waze and uber
Do you think is the most difficult issue to solve in evacuation planning?

- Triggers and timing of evacuation?
- Coordination with state and other jurisdictions?
- Clearly communicating to the public on what they should do?
Evacuation Planning in SW FL Region 6
SW FL Region 6

- Charlotte
- Collier
- Desoto
- Glades
- Hendry
- Highlands
- Lee
- Manatee
- Okeechobee
- Sarasota
SW FL Regional Planning Impetus

- Most difficult area of the county to evacuate by Atkins North America – 2012
- Labeled as a Special Hurricane Preparedness District by the Florida Department of Emergency Management (FDEM)
  - High risk of storm surge inundation
  - Extremely high regional evacuation times
  - Limited roadway capacity
  - Limited sheltering capacity
  - Large mobile and manufactured home populations
  - Large elderly population
Region 6 Evacuation Zones

- Evacuation Zones:
  - A+B+C

- Population:
  - 1,350,547

Collier County does not have formally established evacuation zones. Their zones displayed on these maps are their storm surge from the SW FL Regional Evacuation Study.
Region 6 Evacuation Zones

- Evacuation Zones:
  - A+B+C+D+E

- Population:
  - 1,819,299

Collier County does not have formally established evacuation zones. Their zones displayed on these maps are their storm surge from the SW FL Regional Evacuation Study.
## Population-At-Risk from Hurricanes by Evacuation Zone*

<table>
<thead>
<tr>
<th>County</th>
<th>Up to Zone A</th>
<th>Up to Zone B</th>
<th>Up to Zone C</th>
<th>Up to Zone D</th>
<th>Up to Zone E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee</td>
<td>104,882</td>
<td>329,027</td>
<td>509,382</td>
<td>580,010</td>
<td>657,895</td>
</tr>
<tr>
<td>Collier</td>
<td>149,477</td>
<td>252,138</td>
<td>325,937</td>
<td>338,934</td>
<td>342,278</td>
</tr>
<tr>
<td>Charlotte</td>
<td>77,504</td>
<td>164,106</td>
<td>187,436</td>
<td>191,996</td>
<td>192,175</td>
</tr>
<tr>
<td>Manatee</td>
<td>45,583</td>
<td>74,362</td>
<td>108,656</td>
<td>179,470</td>
<td>278,548</td>
</tr>
<tr>
<td>Sarasota</td>
<td>22,776</td>
<td>76,104</td>
<td>219,136</td>
<td>317,406</td>
<td>348,403</td>
</tr>
<tr>
<td>Region 6 Coastal Counties</td>
<td>296,117</td>
<td>895,737</td>
<td>1,350,547**</td>
<td>1,607,816</td>
<td>1,819,299</td>
</tr>
</tbody>
</table>

* 2010 SW FL and Tampa Bay Regional Evacuation Study 2015 population estimates
** Total anticipated for SW FL regional evacuation
Forecast Error Challenges

Local evacuation decisions made with limited and changing information

Average Track Forecast Errors (2012-2016)

- Five days out  ➔  196 n miles
- Four days out  ➔  149 n miles
- Three days out ➔  103 n miles
- Two days out   ➔  70 n miles
- One day out    ➔  40 n miles
- 12 hours out   ➔  25 n miles

- National Hurricane Center (NHC) continuing to work on timing and intensity
- Rapidly intensifying/weakening storms still a challenge
Timing, Trigger, and Approach

- **Timing**
  - Regional conference calls per usual when counties enter five-day forecast cone
  - Large scale regional evacuation would require three to five days

- **Trigger(s)**
  - Any Region 6 county Zone C or higher evacuation (approx. 20 feet or more storm surge)

- **Phased Evacuation (In-County and In-Region)**
  - Sync evacuations among counties (i.e., all Zone As are ordered simultaneously, then Bs)
## Regional Shelter Capacity Outside Zone A, B, and C

<table>
<thead>
<tr>
<th>County</th>
<th>Shelter Capacity *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charlotte County</td>
<td>0</td>
</tr>
<tr>
<td>Collier County</td>
<td>7,300</td>
</tr>
<tr>
<td>Desoto County</td>
<td>1,900</td>
</tr>
<tr>
<td>Glades County</td>
<td>350</td>
</tr>
<tr>
<td>Hendry County</td>
<td>9,942</td>
</tr>
<tr>
<td>Highlands County</td>
<td>1,980</td>
</tr>
<tr>
<td>Lee County</td>
<td>11,003</td>
</tr>
<tr>
<td>Manatee County</td>
<td>32,500</td>
</tr>
<tr>
<td>Okeechobee County</td>
<td>9,000</td>
</tr>
<tr>
<td>Sarasota County</td>
<td>14,000</td>
</tr>
<tr>
<td><strong>Total Regional Evacuation Shelter Capacity</strong></td>
<td><strong>87,975</strong></td>
</tr>
</tbody>
</table>

*Shelter spaces outside of Zone A, B, and C (or equivalent)*
Planning Timeline

- April 2013 – FDEM Shelter Meeting
  - Participants agree to collaborate on regional evacuation planning efforts

- October 2013 – Current Issue In Emergency Management Meeting
  - Decision was made that Region 6 counties would identify capabilities and provide list of resource needs to State

- November 2013 – Spring 2016
  - Region 6 counties and FDEM Region 6 Coordinator hold multiple planning meetings to address regional evacuation concept of operation and resource management gaps
  - Local response partners, additional state agencies, and Region 7 counties participate
**Planning Timeline cont.**

- **Summer 2016 – Spring 2017**
  - Region 6 uses Fiscal Year (FY) 2015 State Homeland Security Grant Program funds to hire regional evacuation professionals (Hagerty Consulting, Inc.) to draft Regional Evacuation Guide/Operational tools and facilitate a regional tabletop exercise.
  - As part of the planning effort in November 2017, the region meets with FDEM leadership and Emergency Support Function (ESF) Leads to review plan concepts.
  - March 2017 conduct regional tabletop exercise to socialize plan concepts.
Exercise Participation

- American Red Cross
- Cape Coral Emergency Management
- Charlotte County Emergency Management Agency; Fire and Emergency Medical Services; Health Department
- Desoto County Emergency Management Agency
- Florida Department of Health
- Florida Department of Law Enforcement
- Florida Department of Transportation
- Florida Division of Emergency Management
- Florida Emergency Preparedness Association
- Florida State Emergency Response Team
- Fort Myers Fire and Hazmat
- Glades County Emergency Management Agency; School District, Sheriff’s Office
- Highlands County Emergency Management Agency
- Lee County Department of Public Safety; Emergency Management Agency; Health Department; Office of Communications; Sheriff’s Office; Transit
- Manatee County Area Transit; Emergency Management Agency,
  Okeechobee County Emergency Management Agency
- Salvation Army
- Sarasota County Emergency Management Agency; Health and Human Services
Have a regional evacuation plan or are in the process of developing one?

Yes

No

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If you see this message in presentation mode, install the add-in or get help at Poll Everywhere.
If you answered no? What is keeping you back?
Overview of The Regional Coordination Guide
The overall objective of this initiative is to:
- Develop a regional evacuation plan concept
- Design and conduct a tabletop exercise

The project consisted of five phases:
- **Phase 1**: Kickoff Meeting and Data Collection
- **Phase 2**: Regional Evacuation Framework Development Meetings
- **Phase 3**: Regional Evacuation Framework Development
- **Phase 4**: Regional Evacuation Tabletop Exercise Design
- **Phase 5**: Tabletop Exercise Facilitation and After Action Report Development
Regional Evacuation Guide Scope

- Create an **all-hazards** regional evacuation framework ("Regional Coordination Guide (RCG)") that addresses operational and policy challenges involved in significant evacuation operations
  - Covers Region 6 counties in SW FL
  - Using information and feedback provided by stakeholders
  - Leveraging existing studies, models, and research on transportation models, clearance time, road capacity, etc.

- Design and conduct a Homeland Security Exercise and Evaluation (HSEEP)-compliant tabletop exercise to validate the procedures outlined in the newly developed regional evacuation framework
The RCG is divided into two parts:

- **Part 1: Elements of Regional Coordination**
  - Overview of evacuation concept of operations
  - Detail on the Unified Coordination Group (UCG)
  - Operational phases and common terminology

- **Part 2: Operational Tools**
  - Quick reference materials for executing the plan
Basic Planning Principles

- For both **notice** and **no-notice** events, all hazards.
- Articulate the **regional consensus** on **operational strategies**.
- Move as **few people** as possible the **shortest distance**.
- **Shelter-in-place** always considered as the **first option**.
- Establishing a **common understanding**, including language and general approach across the region.
- Promote **phased, zone-based, omnidirectional evacuation options** evacuation movement.
Common Terminology

- **Types of Protective Actions**
  - Shelter-in-Place
  - Point-to-Point
  - Hub-and-Spoke

- **Types of Incidents**
  - Notice v. no-notice

- **Types of Evacuation Communities**
  - Sending community
  - Pass-through community
  - Host community

- **Evacuation Sites and Facilities**
  - Evacuation assembly point
  - Regional hub reception center
  - Shelter

- **Evacuation Populations**
  - Self-evacuees
  - Shadow evacuees
  - Transportation dependent populations (TDP)
Unified Coordination Group

- **UCG is a virtual mechanism** designed to ensure shelter-in-place and evacuation actions are coordinated.

- **UCG coordination focuses on the following:**
  - Exchange shelter-in-place and evacuation information, including evacuation sites and facilities.
  - Enable real-time decision making across jurisdictional borders.
  - Establish a clear and consistent message to the public with recommended actions.
  - Prioritize the management of local and state resources during shelter-in-place and evacuation operations.
UCG Task Forces

- Mass Care Task Force
  - The Mass Care Task Force will coordinate mass care logistics on a regional level.

- Traffic Management Task Force
  - The Traffic Management Task Force collaborates on traffic management operations such as route determination, traffic control points, major bottlenecks, and transportation resources and assets.

- Re-Entry Task Force
  - The Re-Entry Task Force streamlines re-entry operations and ensures return of TDP.
## Shelter Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
</table>
| **Strategy 1:** Shelter-in-Place Directly to RESIDENCE/BUSINESS | ✓ Fastest protective action to employ  
✓ Less costly and disruptive  
✓ Preferable in poor weather conditions | x Not safe in all hazards (e.g., plumes reacting to common substances)  
x Short-term protection only  
x Dependent on resource availability at location of shelter |
| **Strategy 2:** Point-to-Point EAP → SHELTER | ✓ Fastest evacuation action to employ  
✓ Most direct and streamlined  
✓ Least resource-intensive evacuation concept | x May have limited capacity for very large displacements  
x Not ideal if end-state unknown |
| **Strategy 3:** Hub-and-Spoke EAP → RC → SHELTER | ✓ Increased capacity  
✓ Multiple levels of triage  
✓ Provides layover to get large population out of harm’s way | x Delayed onset, takes time to organize  
x Requires additional resources  
x Requires extensive coordination |
Evacuee Support Process

Displaced Population → Sending Jurisdiction → Pass-Through Jurisdiction → Host Jurisdiction (Destination)

- Evacuee
- Personal Vehicle
- Evacuation Support Services
- Reception Center → Shelter
- Health or Long-Term Care Facility

Critical Transportation Needs (CTN) Population → Evacuation Assembly Point

- Support Transportation
- Transport directly to a medical facility for treatment

Health or Long-Term Care Facility

Southwest Florida Regional Evacuation Planning
Regional Hub Reception Center (RHRC)

RHRCs will:
- Meet **immediate, life safety** needs.
- Meet evacuees’ other needs or demonstrate reasonable accommodation.
- **Register** and **assess** evacuees.
- Identify the **most appropriate sheltering solutions** for evacuees.
- Coordinate the **distribution of evacuees**, avoid overwhelming local jurisdictions.
- Coordinate the **transport of individuals** to the assigned shelters or welcome centers.

RHRCs will NOT:
- Shelter individuals for more than 24 hours.
- Provide **ongoing mass care services**.
- Provide skilled medical care.
Rhrc footprint

Southwest Florida Regional Evacuation Planning
Public Information

- Coordination of public information dissemination is critical for:
  - Ensuring the most vulnerable populations are evacuated first.
  - Sending consistent and clear messages to the public.
  - Performing rumor monitoring and management.
- It gets the right information to the public in a timely and consistent manner.

- Pre-scripted or just-in-time messaging
- Agreement on terminology and message
- Target audience for distribution, to include phased and zone-based communications
- Coordination of message timing to implement protective actions
Resource Management

- Large incidents impacting multiple jurisdictions in the Region will require resource coordination.
- The UCG may be utilized to discuss the allocation of resources:
  - Access and functional needs, transportation dependent populations, and household pet evacuations.
- Jurisdictions follow FDEM’s established procedures.
# Phased Re-Entry

<table>
<thead>
<tr>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BLACK</strong></td>
<td>Provides maximum control and oversight. Citizens will not be allowed into the hazard area. These zones are likely monitored by a law enforcement presence at access control points.</td>
</tr>
<tr>
<td><strong>RED</strong></td>
<td>Citizens enter the evacuation zone at their own risk for limited durations. The area is not considered safe for re-entry, as emergency services and utilities have not been restored.</td>
</tr>
<tr>
<td><strong>YELLOW</strong></td>
<td>Citizens may re-enter the evacuation zone at their own risk. The area has partial restoration of emergency services, public services, and utilities.</td>
</tr>
<tr>
<td><strong>GREEN</strong></td>
<td>The evacuation zone is determined safe for re-entry. All public services and utilities are functioning at acceptable levels.</td>
</tr>
</tbody>
</table>
Making the Plan Work: Operational Tools

- **UCG Conference Call Agenda:** Guide for UCG communication.
- **UCG Execution Checklist:** Phased reference for actions expected of the UCG.
- **UCG Decision Support Tool:** Identifies key decision points, barriers to success, and essential functions.
- **Essential Elements of Information:** Supports the establishment of and agreement on regional essential elements of information (EEI).
- **Mass Care Decision Support Tool:** Identifies key decision points, barriers to success, and essential functions.
Guidance for Further Planning: Operational Tools

- **Local Jurisdiction Evacuation Plan Checklist**: Cross-referencing existing local evacuation plans with the contents laid out in RCG.

- **Public Information Guidance**: Research and guidance for effective public information messaging for regional evacuation operations.
How to Apply These Concepts To Your Region

- Required representatives from neighboring jurisdictions
  - Coordination of efforts and timing
  - Sharing of resources
- All-Hazards
  - UCG establishes a framework for coordination to respond to any type of disaster

- Identify an effective method for maximizing shelter resources such as employing a RHRC
  - Identify potential locations
  - Identify how to staffing and equip
  - Use of common technology tools like National Mass Evacuation Tracking Systems (NMETS)
- Leverage current coordinating mechanisms
  - Regional coordination call lead by FDEM Regional Liaison
- Develop tools for communicating evacuation concepts
  - Plan summary
Unified Coordinating...
Regional Hub Reception...
Coordinated Phased Re-Entry

Other?
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For More Information

- Sign up to receive copies of the SW FL Region 6 Plan
- Contact Sandra, Lee, or Gisele

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