Role of the Warning Coordination Meteorologist (WCM)

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122 local weather forecast offices
9 National Centers - 3 with WCMs
US National Weather Service
Weather Forecast Offices (WFOs)

• Issue all Local Forecasts and Warnings

• Build and Maintain Relationships with key partners.

• Coordinate and Provide **Expert Decision Support** to Emergency Operations Centers and other key partners

• Solicit Customer Feedback on Products and Services

• Conduct Community Awareness and Education Programs

• Train Volunteer Observers and Storm Spotters

**Warning Coordination Meteorologist** serves as the primary interface between WFO and Customers
WCM Job Description
Local Weather Forecast Office (WFO)

- Principal interface between NWS and users of the products and services
  - Leads product evaluation and improvement

- Responsible for planning, coordinating, and carrying out the public awareness program
  - Educate the public to ensure the mitigation of death, injury and property damage or loss caused by meteorological events
WCM Job Description

- Coordinates preparedness program with government officials and media
  - Works with media and emergency managers to ensure that preparedness message is consistent and plans are in place well before a weather threat
WCM Job Description

Other Duties

• Serves as Senior Forecaster
  – Performs full range of responsibilities of that position
  – Serves in this role about 25% of the time

• Leads or participates in meteorological studies and developmental projects
  – designed to capitalize on or incorporate the benefits of new science/technology/local techniques towards enhancing WFO preparedness
Product Evaluation and Promotion

- Leads and conducts evaluations of NWS products
  - Interfaces with all users of NWS products/services to evaluate the adequacy and usefulness of services
  - Collaborates with federal, state, and local agencies in tailoring products to increase usefulness

- Works with government agencies and other key partners to develop plans for promoting more effective use of NWS products and services
Examples of WCM Roles

- Perform media interviews concerning current weather issues and general NWS-related topics
- Keep partners and general public informed of weather statistics and other pertinent topics
Decision Support

- Provide direct and specific event-based weather support to government officials either on-site or from NWS office
- Focus on providing an expectation of impacts that could affect a large public event or a community’s preparation in advance of severe weather
- Examples: severe weather/tropical cyclone events, festivals, sporting events
Examples of WCM Roles

• Attendance at emergency manager and media conferences, meetings and events is VERY important

• Understanding our partners’ roles to better serve them during critical weather situations
Examples of WCM Roles

• Yearly hurricane/severe weather expos
• Being accessible to community-at-large
• Office tours/open house
• Speaking to business and civic groups and schools
Train Weather Spotters
Storm Surveys

- Coordinates and performs NWS storm surveys to assess damage and rate the intensity and effects of a storm
- Normally done for tornado events but can also be done for flooding and hurricanes
NHC WCM

• Conducts a tropical cyclone preparedness program
  – Identifies preparedness objectives and projects to meet them
  – Reviews NHC warning efforts and determines adequacy of NHC preparedness activities
  – Coordinates with NWS WCMs to ensure uniformity of effort, collaboration, and compatibility
  – Interacts with NCEP, and regional and NWS headquarters on TC preparedness activities

• Conducts a marine preparedness program
  – Coordinates NHC interactions with marine customers
  – Serves as a liaison between NHC TAFB and the marine user community
Key Tasks of NHC WCM

- Works with FEMA Emergency Management Institute (EMI) to conduct 3-one week EM training courses on hurricane preparedness and evacuation decision making.

- Develops NHC outreach and training agenda for National Hurricane Conference.

- Coordinates NHC participation at state EM or hurricane conferences.
Key Tasks of NHC WCM

• Develop training plan and course for media

• Coordinates and develops table top hurricane exercise material for state and federal agencies

• Works with NWS WCMs and Regions to improve NHC/WFO Watch/Warning coordination

• Works with international met. services to improve forecast coordination
Other Tasks of NHC WCM

• Serves on team to improve NWS watch and warning collaboration

• Serves on NWS Assessment Teams

• Works with COMET on on-line hurricane preparedness module

• Participates in U.S. Hurricane Awareness Tour

• WORKS OPERATIONAL FORECAST SHIFTS FROM MAY 15 - NOVEMBER 30!
Difference Between WFO and NHC WCMs

• NHC Director and Deputy Director are the primary spokespersons for the center
  – WFO- WCM and Meteorologist-In-Charge serve that role

• All NHC Hurricane Specialists perform WCM duties
  – Outreach & preparedness activities
  – Training & education presentations

• NHC WCM role is more of an Outreach Coordinator and Planner

• Coordinates with Federal and State partners more than local officials
“Battle is won (or lost) during the off-season…”

Highlights of annual NHC involvement:

- FEMA/NWS week-long Introduction to Hurricane Preparedness course for emergency managers (three courses), January-February
- U.S. Interdepartmental Hurricane Conference, March
- National Hurricane Conference, April
- World Meteorological Organization workshop for international meteorologists (2-week course at NHC), April
- Hurricane Awareness Tour (one week, alternating each year between U.S. Gulf and East Coasts), April or May
- Caribbean Hurricane Awareness Tour
- National Hurricane Preparedness Week (late May)
- National media conferences
- State/”Governor’s” conferences
- Scientific conferences
  - Transition of new science from research into operations
“Battle is won (or lost) during the off-season…”

• **Main message**: don’t wait until a disaster to get to know the people you serve and work with

• This involves a continuous, year-long effort and engagement with key partners

• Battle is won (or lost) during the “off-season” (Max Mayfield)
The U.S. National Weather Service Outreach and Education Program
The Basic NWS Goal: 
Building A Weather-Ready Nation

- Protect Life And Property Through The Issuance Of Warnings And Advisories For Hazardous Weather

- Promote Commerce And The Economy Through Collection Of Weather Data And Preparation Of Forecasts And Statements

A Weather-Ready Nation
National Weather Service Strategic Plan
Is There Really A Need For More Outreach and Education?

Timeliness and Accuracy Of Forecasts and Warnings Are Steadily Improving...But Deaths and Injuries From Weather Related Events Still Occur... Are We Missing Something???

A Basic Problem:
Even The Most Accurate Forecasts And Warnings Are Ineffective If Users Either Do Not Understand Them Or Do Not Know What Actions To Take!
January 24, 2012: A massive outbreak of strong/violent tornadoes affects the southern United States.
The Previous Spring, another tornado outbreak affected the same area...

- 122 Tornadoes
- 31 Rated EF3 or Higher
- 4 EF5 Tornadoes
- Average Path Length 66 Miles
- $4.2 Billion In Damage
How Was This Event Handled?

- It Was Anticipated And Forecast Several Days In Advance.
- Tornado Watch Lead Times Ranged From 3 To 6 Hours For The Significant Tornadoes
- Tornado Warning Mean Lead Time Was 22.1 Minutes.
- 89% Of The Tornadoes Were Detected And Warned For.

Conclusion: From A Forecast And Warning Perspective, The Event Was Very Well Handled.
However...

If The Event Was Indeed So Well Handled...

Why Were There 316 Deaths???
Service Assessment Findings

Despite A Robust Outreach & Education Program, There Were Still Numerous Response Issues...

- **Myths** – “Tornadoes Can’t Cross Rivers” etc.

- “False Alarm” or “Cry Wolf” Syndrome

- **Waiting For Confirmation**
  - Multiple Sources Saying The Same Thing
  - Actual Visual Confirmation

- Many Who Waited For Confirmation Did Not Have Time To Find Safe Shelter.
What We Do Well:
- Accurate & Timely Watches & Warnings

What Needs Improvement:
- Ensuring That The Public Knows What They Should Actually Do to Protect Themselves When They Hear Those Warnings!
Where Do We Start?

- Multi-agency public outreach and education campaigns
- Participation in exercises and drills with Emergency Managers and other local officials
- Community Outreach
Public Awareness/Education

- Hazardous weather awareness weeks
- Media campaigns
- Partnership with EMs
- Tours of Office
- Talks to student, business, civic groups
Hazardous Weather Drills

- “Stress test” for communication systems
- Test for personal, school, business safety plans
- Typically part of hazardous weather awareness week
Media Outreach and Coordination

- Primary disseminators to the public
- Awareness of NWS products and services
- Ensure timely receipt of products
- Ensure all entities speak with one voice
Social Media... The New Communications Model?

Social Media Users
As of January 2014

Facebook
1.15 billion + users

Twitter
230 million + users

LinkedIn
238 million + users

Google+
500 million + users

YouTube
1 billion unique monthly users

Pinterest
70 million + total users

Instagram
130 million + users

Pinterest was the fastest growing social network of 2013
Over 2.6 million companies have pages on LinkedIn
Google+ adds 25,000 new users every day
Social Media... The New Communications Model?

• Despite inherent problems, social media has to be acknowledged as a key communications platform

• Use social media to provide accurate, official information as well as to dispel false information

• Build strong, reliable, trusted social media presence well BEFORE a disaster
Integrated Warning Team

- Made up of NWS, media and emergency managers in a local area
- Meet at least once a year to discuss items related to public safety
- Designed To Enhance Communication During Hazardous Weather Events.
- County/Community Must Meet Standards Based On Population
- Must Be Renewed Every 3 Years
It’s All About Partnerships

AMBASSADOR

WEATHER-READY NATION™

Serving ALL of Southern Florida from Naples to Lake Okeechobee to the Atlantic beaches!
It’s All About Partnerships

Government  Emergency Management  Academia  Private Sector  Broadcast Media  Social Science

Building a Weather-Ready Nation
WRN Ambassador initiative

- Formal recognition of organizations that work with NOAA toward building a Weather-Ready Nation
- WRN Ambassadors become “force multipliers”
- Making this work consistently across the entire agency
- Already being embraced by the external community
- Not intended to cross over public/private balance
Conclusions

- Despite An Ongoing Outreach/Education Effort, More Work Needs To Be Done!
- Forecasts And Warnings Are Improving...The Social Aspect Of Weather Preparedness Must Also Improve
- Technology Provides New Opportunities To Enhance Our Communication And Outreach Efforts.
- Building A Weather-Ready Nation Is A Partnership That Includes Everyone!
Questions?

Thank you for your time, and safe trip home!

National Weather Service
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