Role of the Warning Coordination Meteorologist (WCM)

Robert Molleda

U.S. National Weather Service

Miami/South Florida Forecast Office
U.S. National Weather Service

122 local weather forecast offices
9 National Centers - 3 with WCMs
U.S. 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
It is said that the WCM wears several hats.
WCM Job Description/Duties
Local Weather Forecast Office (WFO)

- **Primary interface** between WFO and core community partners (emergency managers/public safety officials and media)

- **Product Evaluation**: seeks and implements partner feedback on improvements and additions to products and services
WCM Job Description/Duties

Local Weather Forecast Office (WFO)

- Organizes and conducts yearly partner training/meetings such as Integrated Warning Team workshops and takes part in local and state exercises
- Attends and represents NWS at partner-organized meetings to better understand partner and community needs, and apply those to NWS products and services
WCM Job Description/Duties
Local Weather Forecast Office (WFO)

• Conducts and arranges media interviews on high-impact weather events
• Press conferences for seasonal outlooks
WCM Job Description/Duties
Local Weather Forecast Office (WFO)

• Responsible for planning, coordinating, and carrying out the public weather awareness and preparedness program
  – Educate the public to ensure the mitigation of death, injury and property damage or loss caused by meteorological events
Community Outreach

- Yearly hurricane/severe weather expos
- Being accessible to community-at-large
- Office tours/open house
- Speaking to business and civic groups, and schools
It’s All About Partnerships

Government

Emergency Management

Academia

Private Sector

Broadcast Media

Social Science

Building a Weather-Ready Nation

Weather-Ready Nation
Over 7,000 WRN Ambassadors in the U.S., almost 90 in South Florida alone
WCM Job Description/Duties
Local Weather Forecast Office (WFO)

- 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**
• Communities must meet basic guidelines for receiving and disseminating alerts as well as 24-hour monitoring
• Perform at least 4 safety talks per year
• Maintain hazardous weather operations plan, record of storm spotters and participate yearly in weather-related exercises
• Must Be Renewed Every 3 Years
WCM Job Description/Duties

Local Weather Forecast Office (WFO)

Customer Service/Outreach

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

Local Mitigation Strategy
WCM Job Description/Duties

Local Weather Forecast Office (WFO)

- Conduct storm spotter training classes year-round
- Several hundred new spotters trained every year in South Florida alone
WCM Job Description/Duties
Local Weather Forecast Office (WFO)

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

• Act as acting branch/office chief
  - full range of administrative duties
Coordinates with partners on the provision of **impact** decision support
Impact Decision Support Services

- Provide direct and specific weather-based and/or event-based weather support to government officials either on-site at a command post or remotely 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
What IS Impact Decision Support Services?

A. Provision of forecast advice and interpretative services to help core partners, such as emergency personnel and public safety officials, make decisions when weather, water and climate impacts lives and livelihood

B. Providing specific temperature and wind information to a private event organizer
 Coordinates with partners on the provision of impact decision support
WCM Job Description/Duties

Local Weather Forecast Office (WFO)

- Coordinates and performs NWS post-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
  - At a WFO, the WCM and Meteorologist-In-Charge serve that role

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

- Coordinates with Federal and State partners more than local officials
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), March
- Hurricane Awareness Tour (one week, alternating each year between U.S. Gulf and East Coasts), April or May
- Caribbean Hurricane Awareness Tour, April
- National Hurricane Preparedness Week, May
- State conferences
- Scientific conferences
  - Transition of new science from research into operations

“Battle is won (or lost) during the off-season…”
- When is the BEST time to get to know your core partners?

A. Right at the beginning of hurricane season

B. Well before hurricane season

C. 5 days before a high-impact weather event

D. When you show up at Emergency Operations Center two days before a hurricane landfall
“Battle is won (or lost) during the off-season…”

- **Main message**: don’t wait until a disaster to get to know the people your 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
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
- What impressions did the news report give?

A. People didn’t have enough time to protect themselves

B. Event was poorly forecasted

C. No warning was given

D. Some inconsistency in information provided by anchor and reporter versus what actually happened
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
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**

- **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

Additional Facts:
- 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.
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!