

# 2018 Alamo Area Integrated Warning Team Messaging Workshop 2018



**National Weather Service Austin-San Antonio TX** 



# Welcome From San Antonio OEM



#### EOC Overview





- **1. Welcome and Introduction**
- 2. Inland Hurricane Messaging
- 3. Break
- 4. Weather Messaging (Media, EM Perspective)
- 5. Messaging Tools
- 6. Open Discussion, Wrap Up

# **Ground Rules**

#### Participate

- Judgment free zone
  - No accusing or blaming
  - Keep comments to your jurisdiction
  - Keep comments factual
- Ask Questions
- Make introductions to those you don't know
- Media reminder: please do not take quotes from the workshop, but if interested in quotes ask individuals outside of the workshop

# **Participant Introductions**

# Name and what you do for your company, agency, etc.

# Welcome From NWS Austin-San Antonio TX

#### **Staff Introductions**



- Forecasts
- Watches/Warnings
- Decision Support
- Local Research
- Outreach



# **Members of the Integrated Warning Team**



Emergency Management Officials



National Weather Service



America's Weather and Climate Industry

**Working Together** 

# **Principles of the Integrated Warning Team**

## Partners must:

 Have the same understanding of weather hazards and risks

 Share information among agencies and organizations (NWSChat)

 Communicate a consistent set of warning messages



**Texas Weather Related Deaths, 1990-2010** 



Characteristics of Effective Warning Messages

- Consistent content
- Timeliness
- Specific information

# Inconsistent Messages

- Delayed Decision Making
- Dismissed Warnings
- Wrong ActionNo Action

Let's start with Tropical Messaging



# **Tropical Messaging**



Jason Runyen Lead Forecaster NWS Austin-San Antonio



# **Messaging Topics**

Invests Spaghetti Plots Cone of Uncertainty Rainfall - Inland Flooding Tornadoes Wind Social Media Model

## What is an "Invest"

A weather system for which a tropical cyclone forecast center (NHC, CPHC, or JTWC) is interested in collecting specialized data sets and/or running model guidance. (In other words, something we want to investigate further.)





## **Caveats for Invests**

- Opening an "invest" allows NHC to monitor disturbances more carefully:
  - Collection of microwave data
  - Ability to run model guidance
- No standard for opening an invest
- Guidance is typically run when a cloud system center is apparent
- More meteorological uncertainty associated with invests!
  - Extreme caution should be used when looking at model plots for invests





## What Does the Public See?



## But what is the likelihood of development, Warnings, and IMPACTS?



#### What Does the Public See? What Do Decision Makers See? LOW INVEST 90 (AL90)

Early-cycle track guidance initialized at 0000 UTC, 22 May 2018



#### **Graphical Tropical Weather Outlook**



Mon May 21 2018

#### Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



All Disturbances 7:30 pm EDT

For the North Atlantic...Caribbean Sea and the Gulf of Mexico:

1. A broad surface low pressure area has formed over the northwestern Caribbean Sea a couple of hundred miles east of the coast of Belize. This low and an upper-level trough are producing widespread cloudiness and showers extending from the northwestern Caribbean Sea across Cuba and the Florida peninsula. While environmental conditions are expected to be unfavorable for development during the next couple of days, some gradual subtropical or tropical development is possible later this week while the system moves slowly northward into the central or eastern Gulf of Mexico. Regardless of development, locally heavy rainfall is possible across western Cuba and much of Florida during the next several days. For more information on the heavy rain threat, please see products issued by your local weather office. The next Special Tropical Weather Outlook on this system will be issued by 800 AM EDT on Tuesday.

\* Formation chance through 48 hours...low...near 0 percent.

\* Formation chance through 5 days...medium...40 percent.

100W90W80W70W60W50W40W30W20WCurrent Disturbances and Five-Day Cyclone Formation Chance: S< 40%</td>\$\$ 40-60%\$\$ > 60%Tropical or Sub-Tropical Cyclone: O Depression< 50W</td>\$\$ 40%\$\$ 40-60%\$\$ > 60%Tropical or Sub-Tropical Cyclone: O Depression< 50W</td>\$\$ 40%\$\$ 40%\$\$ > 60%O Depression< 50W</td>< 60%</td>< 60%</td>\$\$ > 60%\$\$ < 60%</td>O Depression< 60%</td>O DepressionO Depression</

#### **Graphical Tropical Weather Outlook**



Five-Day Graphical Tropical Weather Outlook National Hurricane Center Miami, Florida





Tropical Weather Outlook NWS National Hurricane Center Miami FL 800 AM EDT Tue Aug 22 2017

For the North Atlantic...Caribbean Sea and the Gulf of Mexico:

1. Disorganized showers and thunderstorms over the Yucatan Peninsula and adjacent water areas are associated with the remnants of Harvey. Environmental conditions are expected to be conducive for development when the system moves over the Bay of Campeche tonight, and a tropical depression is expected to form over the southwestern Gulf of Mexico on Wednesday or Thursday. Regardless of development, locally heavy rainfall and gusty winds are expected to spread westward across Belize and the Yucatan Peninsula during the next day or so. Interests in northeastern Mexico and along the Texas coast should monitor the progress of this system.

- \* Formation chance through 48 hours...high...70 percent.
- \* Formation chance through 5 days...high...90 percent.

Current Disturbances and Five-Day Cyclone Formation Chance: 🗱 < 40% 🗱 40-60% 🗱 > 60% Tropical or Sub-Tropical Cyclone: O Depression 🥑 Storm 🗲 Hurricane & Post-Tropical Cyclone × Remnants



## **Spaghetti Plots**

- What does this set of lines represent?
- Do they accurately convey the uncertainty in the track forecast?
- Are they all created equal?
- What's missing?

This plot does not display official storm information. Use for information purposes only. DO NOT USE FOR LIFE AND DEATH DECISIONS!

## **Recognize This?**



## Spaghetti Plots TROPICAL STORM DEBBY (AL04)

NCEP GFS Ensemble track guidance initialized at 0000 UTC, 24 June 2012



## **Posting Individual Model Runs**



## **Posting Individual Model Runs**



A Share

Most Relevant \*

45 Comments

0000

#### Tropical Cyclone Potential Track Area "Cone of Uncertainty"



#### **Tropical Cyclone Potential Track Area** Flawed Briefing Tool

ke

#### Harvey



#### **Tropical Cyclone Potential Track Area** Flawed Briefing Tool

- Does the cone tell you anything about TC hazards?
- Is the cone a decision making tool, such that in the cone you prepare and out of the cone you don't prepare?
- Does the cone convey the uncertainty of the track forecast for all cases

#### **Are Track Forecasts Getting Better?**



In general, track errors increase about 30-40 n mi per day.

## **Tropical Cyclone Forecast Cone Update**

Forecast period (h)	Circle rac (n mi) 2017	dii 2018	Percent change from 2016	Percent change from 2010
12	29	26	-3	-19
24	45	43	-8	-27
36	63	56	-5	-26
48	78	74	-7	-28
72	107	103	-7	-34
96	159	151	-6	-28
120	211	198	-11	-26

- Set so that 2/3<sup>rds</sup> of historical official forecast errors from previous 5 years fall within cone.
- 1/3<sup>rd</sup> of forecasts fall OUT of cone historically

## 2 Day Forecast Track Errors



#### Averages are Nice to Know – BUT Each Storm is Different



#### **Track Errors By Intensity**



As the initial intensity of the storm increases, NHC track errors on average get smaller.

#### **Track Errors – First 2 Forecasts vs Remaining Forecasts**



Forecasts for a particular storm get better over time

#### **Are Track Forecasts Getting Better?**



Day 2-5 intensity errors are on the order of about a category

#### **Regional Verification**

Track





#### Lets Talk Hazards and Messaging



Flooding La Grange - Harvey Wind Rockport - Harvey Tornadoes Dallas – Hermine



Estimated Rainfall Valid: 08/24/2017 07:00 PM - 08/29/2017 01:00 AM CDT


## Harvey Model Rainfall Forecasts 4 Days Prior to Landfall

**GFS (American)** 

#### **ECMWF (European)**



## Harvey Model Rainfall Forecasts 2 Days Prior to Landfall

**GFS (American)** 

**ECMWF (European)** 



## **Posting One Model Run and Exact Model Values**



#### Probabilistic Rainfall Forecast Tropical Storm Bill



**10<sup>th</sup> Percentile** 

- 10% Chance Rainfall Won't Exceed 1/2-1"
- "Expect at Least This Much Scenario"

#### Probabilistic Rainfall Forecast Tropical Storm Bill



50<sup>th</sup> Percentile

- 50% Chance Rainfall Won't Exceed 2-3"
- "Most Likely Scenario"

#### Probabilistic Rainfall Forecast Tropical Storm Bill



**90<sup>th</sup> Percentile** 

- 90% Chance Rainfall Won't Exceed 3-4"
- "Reasonable Worst Case Scenario"

#### Excessive Rainfall Outlook Hurricane Harvey

rink Bossie

49



#### Tropical Cyclone Tornadoes 1995-2010



#### Tropical Cyclone Tornadoes 1995-2010



#### Tropical Cyclone Strength at Tornado Time

TC Category	Max Sus. Wind (mph)
MH 5	>155
MH 4	131-155
MH 3	111-130
MH 2	96-110
MH 1	74-95
TS 0	
TD -1	<38
N -2	Not classified

#### Tropical Cyclone Tornadoes 1995-2010

CLEAR SCREEN



#### **Shallow and Quick**

#### Wind Speed Probabilities A Tool to Deal with Uncertainty



#### Wind Speed Probabilities A Tool to Deal With Uncertainty

- 1,000 realistic alternative scenarios (realizations) are created using
  - Official NHC track and intensity forecasts
  - Historical NHC track and intensity forecast errors
  - Climatology and persistence wind radii model
- Accounts for weakening of storms over land
- Uses model spread to account for track forecast uncertainty
- Probability of exceeding 34, 50, and 64 kt wind thresholds are computed at individual locations



370 of 1,000 realizations bring 34-kt winds to Nantucket, Massachusetts 370/1,000 = 0.37 = 37% chance of tropical storm force winds at Nantucket

# Wind Speed Probabilities A Tool to Deal with Uncertainty



#### Wind Speed Probabilities A Tool to Deal With Uncertainty

- 3-5 days out emphasize uncertainty and spread of risk
  - Probabilities won't be very high at any individual location due to track uncertainty
  - Use to direct attention away from the specifics of the official forecast toward the broader risk
  - Trends on Probabilities



#### Wind Speed Probabilities A Tool to Deal With Uncertainty

- As the watch/warning time frame approaches, point probabilities will increase
- Trends driven by changes to the official forecast and decreasing uncertainty
- TS probabilities will become quite large for large hurricanes
- Point hurricane probabilities become more focused near official forecast track, but point probabilities often remain below 50% until you get within 12 h of landfall



#### Focus Beyond the Category of the Storm! Saffir Simpson WIND Scale

# Only Somewhat Related **Not Related** Storm Surge Flooding

# Tornadoes ANGELO'S

#### **Related - Although Not Whole Story**

**Not Related** 





## Harvey Briefing Example - Rainfall

## **Expected Storm Total Rainfall**



WEATHER FORECAST OFFICE

Austin / San Antonio



Note: There will likely be locally higher amounts

- 10-20 inches east of I-35 Friday through Tuesday.
- Local amounts in excess of 25 inches possible near and south of I-10
- Higher rain amounts could be expanded farther north or west depending on exactly where Harvey slows or stalls.

Hurricane Harvey

## Harvey Briefing Example - Rainfall

# Potential Wind Impacts





8/24/2017 4:45 PM

#### There is a potential for:

- 60-80 mph winds in High and Extreme threat area beginning most likely late Friday night
- Potential 40-50 mph winds in Moderate threat area
- Damage to trees, power lines, and homes likely in High and Extreme threat area.
- Communication and power outages likely in High and Extreme threat area.

www.weather.gov/SanAntonio

## **Threat Levels & Confidence**



## **Briefing Strategy – Social Media**



## **Briefing Strategy – Social Media**



US National Weather Service New Orleans Louisiana

NHC is now indicating a 20% chance of tropical cyclone development over the southeast Gulf of Mexico in the next 5 days. This system will have no impact to the local area through at least Thursday. However, depending on the track and how quickly the disturbance moves, it could bring heavy rainfall to the northern Gulf Coast area toward and through the weekend.





...

UPDATE (800pm CDT): Latest information from the National Hurricane Center now gives this disturbance a 40% chance for tropical cyclone formation in 5 days over the Gulf of Mexico.

A REGARDLESS of any tropical development, there will likely be local impacts including: the potential for flash flooding, high surf conditions are LIKELY, at least minor coastal flooding is possible (starting late Friday), and moderate to HIGH rip current risk possible this weekend.

\*\*The local impacts depend HEAVILY on how this system evolves\*\*

Your local one-stop-shop for tropical weather information: www.weather.gov/srh/tropical?office=mob (bookmark it).

You can find our local US National Weather Service Mobile Alabama forecasts at www.weather.gov/mob.

You can find information NOAA NWS National Hurricane Center outlooks at www.hurricanes.gov.





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1 Like

...

US National Weather Service Tallahassee Florida 13 hrs · @

The NOAA NWS National Hurricane Center has issued a special outlook for a low end (20%) chance for tropical development later this week: https://www.nhc.noaa.gov/gtwo.php?basin=atlc&fdays=5

...

Regardless of development, the area will receive plenty of rain this week! 7 day rainfall graphic from NOAA NWS Weather Prediction Center shows 3-7" possible through Sun night.



C Comment

Share

# **Messaging Topics**

Invests Spaghetti Plots Cone of Uncertainty Rainfall - Inland Flooding Tornadoes Wind Social Media Model



## **15 Min Break**



## UTSA

The University of Texas at San Antonio<sup>™</sup>

**Emergency Warning Capabilities & Best Practices at UTSA** 

Dr. Lorenzo D. Sanchez, Director Mrs. Jacqueline Silva, EM Coordinator

## Weather Messaging at UTSA

- Why is this important?
  - Provide timely information to UTSA community
- What messaging tools do we use?
  - UTSA Alerts (text, voice, email)
  - Alertus Desktop Notification
  - Indoor/Outdoor Mass Notification (Sirens)
  - Social Media
  - Website
  - Private weather service
  - Opt-in Feature & Alert Enrollment
- How do we brief management/leadership?
  - NWS Briefings send timely information
  - Use professional judgment to apply forecast to our organization and campus needs
  - Knowledge of special events notify event management



## Timing & Types of Messaging

- Types of Messages
  - Weather Alerts
  - Campus Threats
  - Facility Issues/Construction/Utility Failure
  - Special Event Notices
- Timing
  - Useful timeframe: Mid-Day Weather Forecast
  - During weather event, need to meet a 5 pm and/or 10 pm news cycle deadline, depending on situation
  - Regular and set conference calls is beneficial (i.e. 2:30 pm, etc.)

## **Best Practices**

- Educate Your Community
  - Sharing information with leadership helps them understand forecasts
  - Training educates your community (Skywarn Stormspotter, Homeowner Disaster Preparedness, etc.)
- Communicate with Event Planners
  - Share weather information with planners to make good, actionable decisions
  - Messaging certainty and uncertainty: How do you successfully communicate an "iffy" forecast?
- Messaging
  - Keep up with new technologies (i.e. apps, alerts, desktop notification, beacons, etc.)
  - Review and revise emergency messages regularly (i.e. templates, on-the-fly messages, etc.)
  - Identify who can send messages and train appropriate personnel

# **Questions?** Thank You!

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# Integrated Warning Team Workshop - Media

KSAT Weather



## Watch & Warning Color Consistency KSAT NWS



TOR Watch – Dark Red TOR Warning – Red SVR Watch – Yellow SVR Warning – Orange FF Watch – Dark Green



TOR Watch – Yellow TOR Warning – Red SVR Watch – Yellow or Pink SVR Warning – Orange FF Watch – Bright Green FF Warning – Dark Red



## **Covering A Weather Event On-Air**





As meteorologists, we analyze weather and potential threats independent of NWS. However...

We <u>rely on and don't waver</u> <u>from</u> NWS watch/warning info

Storm speed determined by the NWS allows us to track
storms without wasting time doing the math ourselves



## Storm Reports = Ground Truth

- Any storm reports mentioned on NWSChat are helpful <u>during</u> and <u>after</u> a weather event
- Verified (by NWS) reports are usable on-air
  - KSATConnect App allows you to post and view storm images. Very useful!



Station	Tor Watch	Tor Warning	SVR Watch	SVR Warning	FF Watch	FF Warning
KABB						
KSAT						
KENS						
Telemundo						
NWS						
WOAI						

Event	Warning	Watch	Advisory	
Tornado				0
Severe Thund				
Flash Flood				

ource US Watch	Warnings			
ime Source				
🔵 Data Time				
System Time (	Now)			
Offset from 'No	ow' (+ days) 0	(day 1) 💌		
Display issued	events up to	72 💌 hou	rs before their val	lid time
Annearance Table				
KSAT_NWS_Warn	ning_Fill			10
vent sort order Pr	iority			<b>4</b>
Event	Warning	Watch	Advisory	
Tornado				
Tsunami				
Extreme Wind				
Severe Thund				
Flash Flood		Image: Second		
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Coastal Flood				
Hurrisono				
Torrivane				
Hurricane Forc				
Inland Hurrisana				[

## The Role of Social Media Weather Messaging



## Outlook Phase – 72+ Hours Out

- Focus on potential
- Highlight broad areas/General Info
- Opportunity to share relevant preparedness information
- Plant the seed

#### **Outlook and Alert Phases**




## Alert Phase –

### 72-24+ Hours Out

- Begin to narrow focus (timing & area)
- Trend toward certainty
- Continue sharing preparedness information
- Ramp up wording
- Set the ceiling/baseline for impacts

### **Outlook and Alert Phases**

Facebook can be the primary platform since posts can be longer with more information
2-3 posts per day



## Watch Phase – 23 - 0 Hours Out

- Further narrow the focus & scope
- Supplemental information to watches
- Message IS certainty
- Personalize the risk

### Watch Phase





## Warning Phase – Event Ongoing

- Continual information NOWcast
- Specific impacts
- Supplemental warning information
- Request and send reports (actual impacts)

### Warning Phase



- Twitter should be primary platform
- Near constant updates on
- Twitter, occasional broad updates on Facebook



### **Post Event Phase –**

- Event summaries
- Recovery information
- Continued Info gathering

### **Post-Event Phase**



- Information shared on both platforms
  - · Updates as information becomes available



#### **BexarCountySevereWX**

@BexarCOSW Follows you

NWS EWX #VOST partner & NOAA Weather-Ready Nation Ambassador™. Along with @NWSSanAntonio, we inform, educate & provide general/urgent weather info. #SATWX

San Antonio, TX
 Joined July 2016



#ewxspotter

10:36 AM - 20 May 2018

#### Following

Follow



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Avery Tomasco @averytomascowx



.@NWSSanAntonio photos sent in from highway 183/ highway 21 in Mustang ridge. Possible wall cloud between 1:30 and 1:40 PM #atxwx #ewxspotter



1:59 PM - 20 May 2018



Picture of the funnel cloud that prompted the tornado warning in Williamson County a few minutes ago. Warning has expired but we'll continue to monitor these storms. #ewxspotter

TXStormSpotters @TXStormSpotters

@KXAN Weather

Damage on hero way in Leander, TX @AlbertR\_KVUE

#### Jackie @ShirleyJ254 Replying to @Taniaon Got a picture of the to home.

Replying to @TaniaonFox7 @fox7austin @ChelseaFOX7WX Got a picture of the tornado trying to form as we were heading home.

9:08 AM - 20 May 2018



NWS Austin/San Antonio



Careful of fakes! We received this fake photo (left) of a tornado claiming to be today near San Antonio. Original on right from years ago!



5:41 PM - 11 Apr 2017



Q 2

↑**〕 39** 

(7) 15



#satwx OR #txwx OR storm OR thunder OR lightning OR hail OR damage OR tornado OR twister OR debris OR outage OR roof OR water OR wind OR cyclone OR roads OR sleet OR snow OR freeze OR freezing OR ice OR cancelled OR canceled OR clouds OR heat OR drought OR visibility OR fog OR flood OR flooding OR downpour OR rain OR rainstorm OR river OR flash OR accident geocode:29.424759,-98.4986344,50mi

# **NWS Messaging Tools**

# **Weather Messaging Tools**



# **NWSChat**

- Chatroom for Core Partners
  24/7 access
  EMs, Media, NWS, Ham radio
- Weather messaging discussion before, during, after events
   One Stop Shop

## https://nwschat.weather.gov/

NOAA's National Weather Service NWSChat NWSChat Home Change Password Documen	Search [ tation/Help Contacts Online Tools NWS Toolbox	• NWS O AII NOAA GO	
	NWSChat		
	You are accessing a U.S. Government information system, which includes: 1) this computer, 2) this computer network, 3) all computers connected to this network, and 4) all devices and storage media attached to this network or to a computer on this network. You understand and consent to the following: you may access this information system for authorized use only; you have no reasonable expectation of privacy regarding any communication of data transiting or stored on this information system; at any time and for any lawful Government purpose, the Government may monitor, intercept, and search and seize any communications or data transiting or stored on this information system; and any communications or data transiting or stored on this information system may be disclosed or used for any lawful Government purpose.	NWSChat Live!         Access NWSChat Live.         Access Online Tools         NWSChat Username (not handle) :	Log-in To Rooms
		@nwschat.weather.gov Password: Log In	
	NWSChat is an Instant Messaging program utilized by NWS operational personnel to share critical warning decision expertise and other types of significant weather information essential to the NWS's mission of saving lives and property. This information is exchanged in real-time with the media and emergency response community, who in turn play a key role in communicating the NWS's hazardous weather messages to the public.	Important Links Change NWSChat Password Request NWSChat Account - NWS Partners Request Account - NWS Personnel	Request Access
	NWS partners can use NWSChat as an efficient means of seeking clarifications and enhancements to the communication stream originating from the NWS during a fast-paced significant weather or hydrologic event.	Documentation Office Contacts	



# Weather Messaging Tools



# NWSChat

What do you Like?
What don't you Like?
Technical Discussion or No?
Suggested Colors?



Test for Media Test for Other Test for Emergency Managers

# iNWS..... https://inws.ncep.noaa.gov/

Recent News

FAQ Feedback Home News

Log in Register

### **iNWS** - Interactive NWS National Weather Service Mobile Decision Support Services (MDSS)

### **INWS MOBILE ALERTING**

Receive customized text message and e-mail alerts for National Weather Service products that you care about.



#### Welcome

InteractiveNWS (iNWS) is the home of new mobile and desktop innovations of the National Weather Service. This application suite allows NWS partners to receive National Weather Service products in new and innovative ways, such as text messaging and mobile-enabled webpages. iNWS strives to fulfill our mission of protecting life and property by using technology to reach out to our customers.

Note: If you are receiving alerts, but never signed up for them, they may be coming from a new FEMA public system called the Wireless Emergency Alerts (WEA). More information can be found at http://ctia.org/wea

iNWS is an experimental service intended for NWS core partners: emergency managers, community leaders, other government agencies and the electronic media.

DOC NOAA National Weather Service - iNWS Version 6.4.0.1 Privacy Policy | Terms of Use | FOIA | Information Quality | Disclaimer | Glossary | Texting While Driving



**Create your Alert Area** 

Tap to Load Preview

\* 82% 🔳 (i)

## iNWS..... https://inws.ncep.noaa.gov/

News FAQ Feedback Home

Paul Yura Register Log out

Alerts Home

촮 Account Settinas

#### 🚽 Log out

Alert Areas

🔶 Add New Alert Area Bastrop Co., TX Bexar Co., TX Caldwell Co., TX Comal Co., TX Guadalupe Co., TX Hays Co., TX Lee Co., TX Travis Co., TX Williamson Co., TX Hill Country **Rio Grande Counties** 

S,SE Counties

Western CWA

Hydrology Alert Points

🔶 Add New Hydro Point

WMBT2: Blanco River at Wimberley



**Customize your area Polygon, County, Point Different Alert types Hydro Alerts** 



# iNWS..... https://inws.ncep.noaa.gov/



- Customize your area
- Polygon, County, Point
- Different Alert types
- Hydro Alerts

Questions or Discussion on iNWS?

# **Weather Messaging Tools**



- Free sign up
- Links to great Outreach and messaging material
- Input to/about NWS products

## Become a Weather Ready Nation Ambassador





### **Infographics and Twitter/Facebook Posts**

#### Infographic - Power of Water

#### Facebook

Don't underestimate the power of water. It only takes 6 inches of fast-moving water to knock over and carry away an adult, 12 inches to carry away a car, and 18-24 inches to carry away most large SUVs, vans and trucks. Turn Around Don't Drown! weather.gov/safety/flood-turn-around-dont-drown #FloodSafety #SummerSafety

#### Twitter

Don't underestimate the power of water. Turn Around Don't Drown! weather.gov/safety/flood-turn-around-dont-drown #FloodSafety #SummerSafety



Summer 2018: Social Media Plans

Weather.gov > Weather-Ready Nation > Summer 2018: Social Media Plans

Weather Safety Ambassador Education Collaboration News & Events About



Back to Summer Safety







Air Quality











**Rip Currents** 

Heat









Weather-Ready Wednesday

# **Open Discussion**

## **NWS Heads Up Emails**

## Getting a "Heads up" message can:

- EMs Can start an early response process.
- Media Can alert the public to "Keep an eye to the sky" (more people tune to media for warning information)



NATIONAL WEATHER SERVICE WEATHER FORECAST OFFICE AUSTIN / SAN ANTONIO

Good Evening South-Central Texas Partners,

<u>Update Since Afternoon Email</u>: A new Severe Thunderstorm Watch has been issued through midnight for portions of including Austin and San Antonio.

#### Headline:

...Strong to Severe Storms Possible through Midnight... ...Large Hail and Damaging Straight-Line Winds Primary Threat...

#### Area of Concern:

Areas along and east of a Burnet to San Antonio line. (see attached graphic)

#### Threats & Impacts:

- Hail: Large hail up to ping pong size
- · Winds: Straight-line wind damage with gusts up to 70 MPH
- · Rainfall: Most amounts will be below one inch, with some localized totals between 1-2 inches

#### Timing and Overview:

A new Severe Thunderstorm Watch has been issued this evening valid through midnight for portions of the eastern Hill Country counties from Austin to San Antonio. Isolated to scattered thunderstorms are expected to develop ahead of a cold front moving favorable for some storms to become strong to severe, with large hail the primary threat and a secondary threat of damaging s tornadoes and flash flooding is expected to remain low.

#### Confidence:

- Severe Storms: Moderate
- Rainfall: Low to Moderate

#### Additional Information Resources:

- NWS Austin / San Antonio Contact Numbers: 830-606-3617
- NWS Austin / San Antonio Webpage: <u>http://www.weather.gov/sanantonio</u>
- Storm Prediction Center: <u>http://www.spc.noss.gov/</u>
- Report Severe Weather to us on Twitter using: @NWSSanAntonio and #ewxspotter

#### Request for Information:

# **NWS Heads Up Emails**



### Graphics



Highest

Threat

### Locally Heavy Rainfall Possible Friday

#### National Weather Service Austin / San Antonio



Rainfall amounts of 1-2" with isolated totals up to 4 inches will be possible across the Edwards Plateau and **Rio Grande Plains.** 

@NWSSanAntonio weather.gov/ewx

#### 5/2/2018 2:08 PM

#### Impacts:

- Urban and small stream flooding possible.
- Localized Flash Flooding West of I-35.
- Some minor street flooding.
- Swollen drainage ditches.
- Welcome drought relief!

#### Timing:

- Tonight through Saturday Morning
- Heaviest rainfall expected **Friday and Friday Night** across much of South Central Texas.



# **NWS Heads Up Emails**



AMOUNT: Forecast rainfall of 1 to 2 inches of precipitation is expedied across the eastern 1/3 of the WORFC area. Locally higher amounts possible in the stronger thunderstorms.

RIVER IMPACTS: Many rivers across East Texas have recovered from recent rainfall and fooding. Reservoirs along the Nechea and Sabine are managing releases. Rainfall over 2 inches could, emphasize could, generate runoff and the possibility of out of banks and/or minor flooding. Widespread river flooding is NOT expedied.



Low

#### FORECAST NOTES

- The chance for locally heavy rainfall returns to East and Southeast Texas this weekend.
- The primary focus for river impacts will be across the lower Trinity, Sabine, and Neches River basins
- With spring vegetation and soils recovering/drying across the area, forecasters are expeding runoff to be slow to occur based on the current rainfall forecast.

#### Threats/Hazardous Weather Types



#### General Timing



#### Forecaster Confidence



#### ADDITIONAL RESOURCES





Is occurring....travel hazard/delay, inconveniences

# Weather Watch





### Severe weather is imminent or is occurring in the warned area...

### **Seek shelter now!**





### The most significant threat term the NWS uses

### Flash Flood Emergency

### **Tornado Emergency**



### Wimberley Flash Flood

Moore, OK EF5 (2013)

## **Tornado Warning**



## Severe Thunderstorm Watch



## Severe Thunderstorm Warning



## Aviso de Tormenta Severa



## Flash Flood Warning





