

# NWS Corpus Christi Decision Support Program



**Jason Runyen**

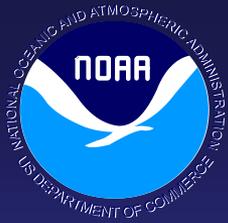
**John Metz**

**Scott Cordero**

Fire Weather / Decision Support  
Program Leader

Warning Coordination Meteorologist

Meteorologist-in-Charge



# What is our Business?



## *Information Business*

- 1) Collaboration*
- 2) Communication*
- 3) Coordination*

## The Value of a Weather Forecast:

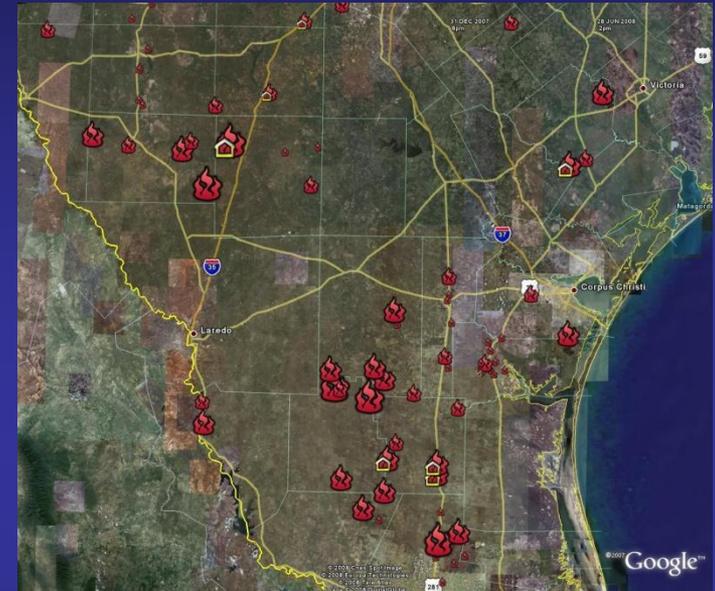
- Information, however accurate, has no intrinsic value...
- ...unless it can be used to make decisions that benefit the end user.



# Threats in South Texas

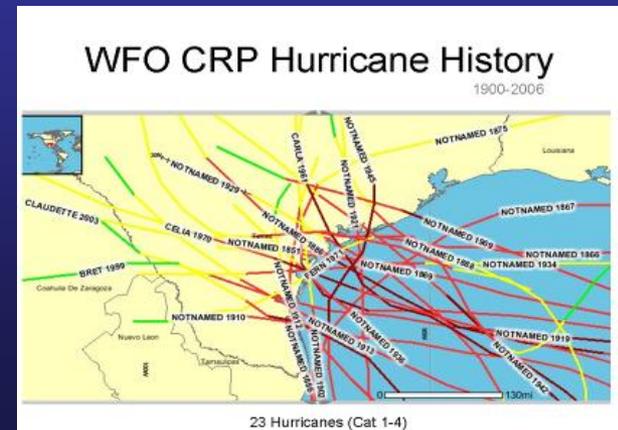


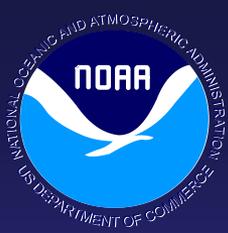
- 23 hurricanes since 1900 along 100 miles of South Texas coastline
- Major wildfires in 2005-2006 and 2008-2009
- Nearly half of all acres burned during the 2008 Texas Wildfires occurred in South and Deep South Texas
- Major river flooding disasters along Guadalupe and Nueces



2008 South Texas Fires

WFO CRP Hurricane Landfalls 1900 - 2008





# Threats in South Texas



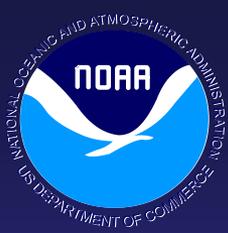
- Port of Corpus Christi – 6<sup>th</sup> largest U.S. port and deepest inshore port on the Gulf of Mexico
- The oil and petrochemical industry size in Corpus Christi is second along the Texas coast, only to Houston
- U.S. 77 and I-35 run north-south through the CWA, are major links to Mexico, and thoroughfares for large quantities of hazardous materials

Oil Spill in  
Corpus Christi  
Ship Channel  
2006



HAZMAT Rollover  
on U.S. 77 2007





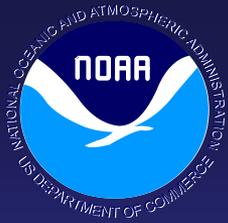
## Threats in South Texas



- The Port of Victoria - center for chemical, construction, steel fabrication and agribusiness industries
- Victoria County - major rail and highway link running through the county, transporting a very large quantity of hazardous materials
- Victoria Crossroads is also home to a large plastics manufacturing industry, industrial chemical plants and the petrochemical refining industry



Formosa Plant  
Explosion  
2005



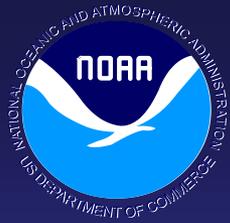
# Top Three Core DSP Partners



*County & City EMs*  
*Refining & Chemical Industry*  
*Fire Weather Partners*

*Other Non-Traditional Partners*

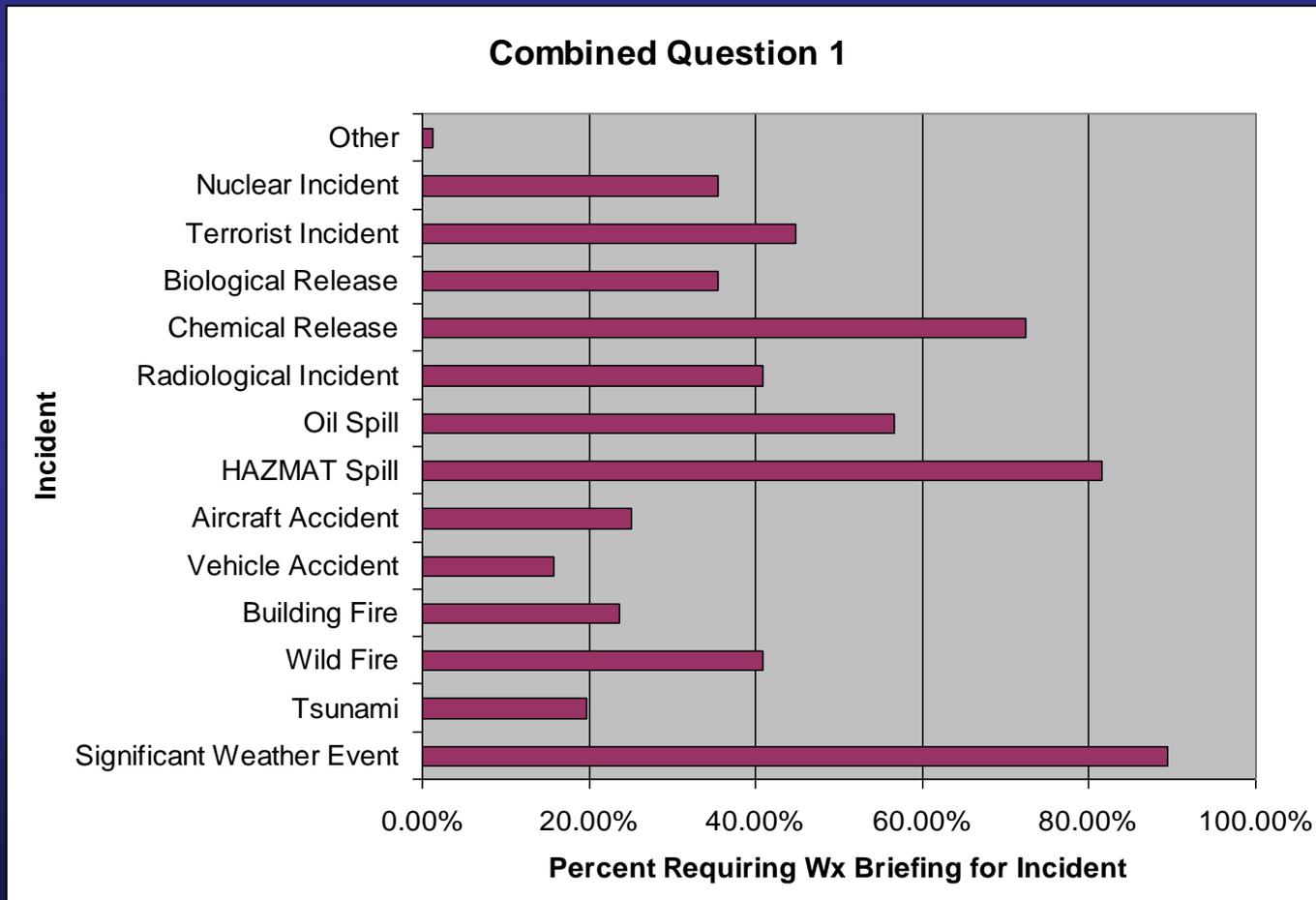


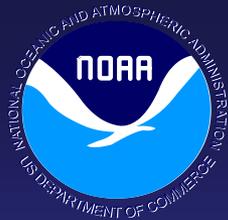


# 2007 Surveys



## Under what circumstances would you require weather briefings from NWS?

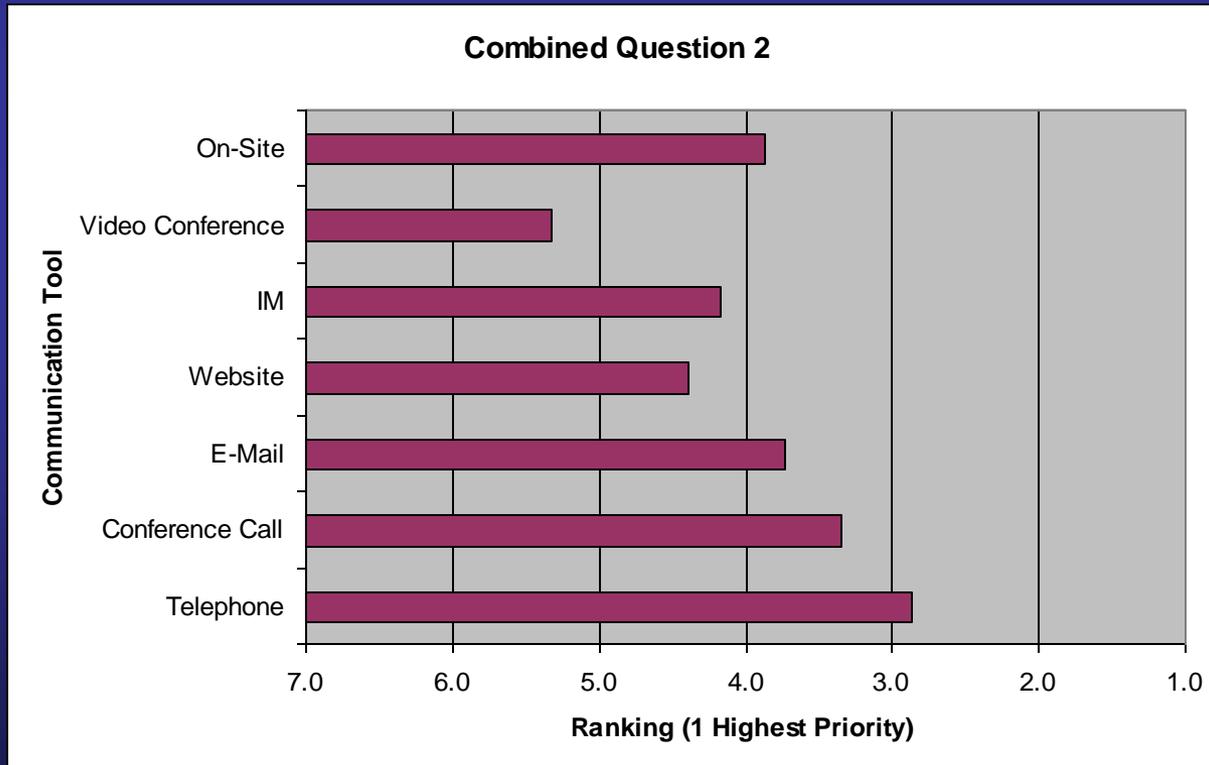


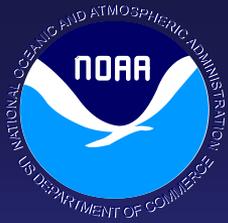


# 2007 Surveys



If a weather briefing is needed what communication tool would best meet your needs?





## Surveys from 2007



Under what circumstances would you need on-site site weather briefings?

- **Major** and/or **long duration** incidents where weather is important
- Significant weather events by themselves (i.e. hurricanes)



# A Team & Strategic Plan is Formed



## 2008 Goals and Accomplishments

Equipment

Drills

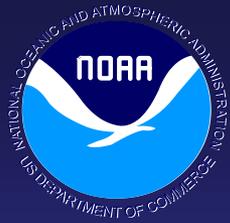
Staff Training

Educational  
Outreach

Partnerships

Web Briefings

On-Site Best  
Practices

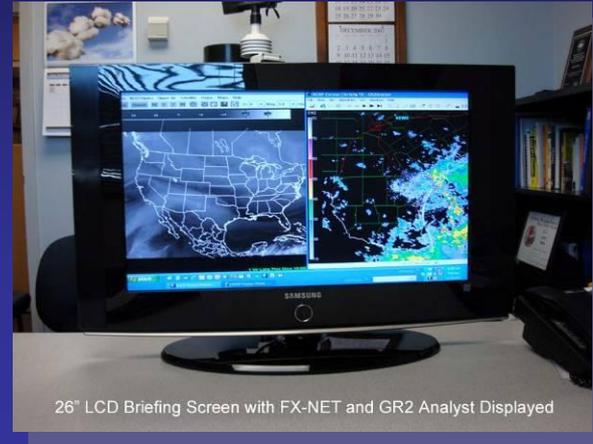


# WFO CRP On-Site Support Hardware



WFO Corpus Christi ISP Laptop and Portable Printer

**SR and local Laptop & Portable Printer**



26" LCD Briefing Screen with FX-NET and GR2 Analyst Displayed

**26" LCD Briefing Screen**



**Portable Generator**



**Portable MK-III Remote Observing System**

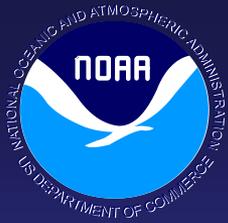


Victoria County Mobile Command Trailer and NWS MK-III Portable Weather Station



# Broadband Card with Wireless Router for use with Multiple Laptops





# WFO CRP On-Site Support Software



- FX-NET
- NWS Chat
- GRLevel2 Analyst
- WeatherView 32
- CAMEO/ALHOA, MARPLOT
- Hurrevac, SLOSH
- Google Earth
- FX-Connect
- Weather For Powerpoint

# Instant Messaging

crpchat@conference.iemchat.com

Conversation Options

crpchat@conference.iemchat.com x

Topic:

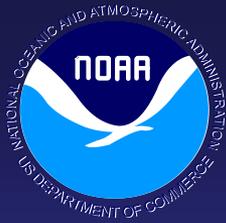
Matagorda Ship Channel from 20 to 60 NM [GM] till 2:00 PM CST  
(2009-01-11 09:24:25) **iembot**: CRP [continues Small Craft Advisory](#) for Coastal waters from Baffin Bay to Port Aransas out 20 NM, Coastal waters from Port Aransas to Matagorda Ship Channel out 20 NM [GM] till 12:00 PM CST  
(2009-01-11 14:58:40) **iembot**: CRP [issues Freeze Warning](#) valid at Jan 12, 2:00 AM CST for Bee, Goliad, La Salle, Live Oak, McMullen, Victoria [TX] till Jan 12, 9:00 AM CST  
(2009-01-11 15:07:26) **iembot**: CRP [issues NEAR FREEZING TEMPERATURES EARLY MONDAY MORNING](#) for Aransas, Calhoun, Duval, Jim Wells, Kleberg, Nueces, Refugio, San Patricio, Webb [TX] till 11:00 PM CST  
(2009-01-11 18:00:00) **iembot**: ----- Jan 12, 2009 [GMT] -----  
(2009-01-11 20:18:56) **iembot**: CRP [continues Freeze Warning](#) valid at Jan 12, 2:00 AM CST for Bee, Goliad, La Salle, Live Oak, McMullen, Victoria [TX] till Jan 12, 9:00 AM CST  
(2009-01-11 23:39:22) **iembot**: CRP [issues NEAR FREEZING TEMPERATURES ARE EXPECTED MONDAY MORNING](#) for Aransas, Calhoun, Duval, Jim Wells, Kleberg, Nueces, Refugio, San Patricio, Webb [TX] till 8:00 AM CST  
(2009-01-12 18:00:00) **iembot**: ----- Jan 13, 2009 [GMT] -----  
(2009-01-12 20:59:38) **iembot**: CRP [issues Small Craft Advisory](#) valid at Jan 13, 2:00 AM CST for Waters from Baffin Bay to Port Aransas from 20 to 60 NM, Waters from Port Aransas to Matagorda Ship Channel from 20 to 60 NM [GM] till Jan 13, 6:00 PM CST  
(2009-01-12 20:59:38) **iembot**: CRP [issues Small Craft Advisory](#) valid at Jan 13, 2:00 AM CST for Bays and Waterways from Baffin Bay to Port Aransas, Bays and Waterways from Port Aransas to Port O Connor, Coastal waters from Baffin Bay to Port Aransas out 20 NM, Coastal waters from Port Aransas to Matagorda Ship Channel out 20 NM [GM] till Jan 13, 3:00 PM CST  
(2009-01-13 03:26:28) **iembot**: CRP [extends time of Small Craft Advisory](#) for Bays and Waterways from Baffin Bay to Port Aransas, Bays and Waterways from Port Aransas to Port O Connor, Coastal waters from Baffin Bay to Port Aransas out 20 NM, Coastal waters from Port Aransas to Matagorda Ship Channel out 20 NM [GM] till 12:00 PM CST  
(2009-01-13 03:26:28) **iembot**: CRP [continues Small Craft Advisory](#) for Waters from Baffin Bay to Port Aransas from 20 to 60 NM, Waters from Port Aransas to Matagorda Ship Channel from 20 to 60 NM [GM] till 6:00 PM CST  
(10:11:51) **iembot**: CRP [issues Red Flag Warning](#) for Aransas, Calhoun, Kleberg, Nueces, Refugio, San Patricio [TX] till 2:00 PM CST  
(10:16:15) **nwscrp\_isp**: hi roger, its john at lepc conference.  
(10:28:25) **nwscrp (Roger)**: I see your message...  
(10:29:41) **nwscrp (Roger)**: Winds have picked up along the coastal counties... Caused us to issue Red Flag Warning.  
(10:29:44) **nwscrp\_isp**: just had a report of a wild fire in duval county near realitos. DEM just left here to take a helo flight to the site. We just gave a weather brief. Please pass on to the forecasters.  
(10:30:34) **nwscrp (Greg)** entered the room.  
(10:30:34) **nwscrp (Roger)**: Done...  
(10:30:50) **nwscrp\_isp**: thanks roger.

5 people in room

- iembot
- nwscrp (Greg)
- nwscrp (Roger)
- nwscrp\_isp
- texasmesonet

Invite Remove Send

NWS Chat



# ICS Training



**All Forecasters, HMTs, Interns & Management were required to take ICS 100 and NIMS 700**

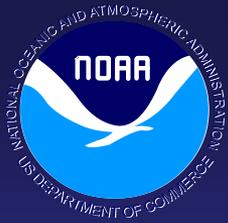
***ICS 100 / NIMS 700: All forecasters have completed***

***ICS 200 – Required to go on-site. 5 forecasters have completed***

***ICS 300 – Optional. 3 forecasters have completed***

***NWS Basic Briefing Training for Incident Support - All forecasters taking this quarter. Will be required to go on-site***

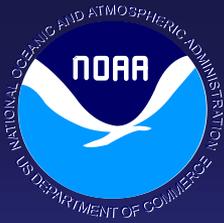
***IS-775 (EOC Management & Operations) – Currently evaluating course for suitability for NWS forecasters.***



# WFO CRP Staff Training



- *ICS 100 and 200 (all)*
- *NIMS 700 (all)*
- *NIMS 800*
- *S290 (all)*
- *Media Response and Crisis Communication Training – Dick Brundage*
- *HYSPLIT (COMET) and in-house HYSPLIT Drill (all)*
- *NWS Response During Hazardous Materials Emergencies (COMET) (all)*
- *ICS 300, NIMS 800, AWR/IEM 160, IEM 180, IEM 190, S390 (optional for those deployed)*

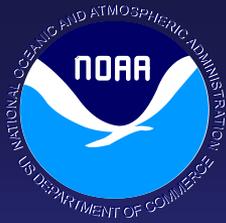


# Office Training Day held on Jan 23, 2008 dedicated to Decision Support



- CAMEO/ALOHA training
  - GoToMeeting training
  - Equipment training
- Corpus Christi EOC familiarization trip





# Outreach



**NWS Support During All Hazards Incidents**

**Jason Runyen**  
Fire Weather and Incident Response Program Leader  
NWS Corpus Christi, TX

Department of Commerce  
National Oceanic and Atmospheric Administration

**All-Hazards Incident Response**  
*An Emergency Manager's Guide to NWS Weather Support During All-Hazards Incidents in South Texas*

**National Weather Service**

National Weather Service  
WFO Corpus Christi, TX  
Phone: 888-579-9731



## WFO Corpus Christi ISP Training DVD

Distributed to EMCs, Fire Departments and Police Departments

## All-Hazard Incident Support Talks given to:

- LEPC groups & conferences
- Harbor Safety Committee
- Corpus Christi Office of Emergency Management
- Corpus Christi Police and Fire Departments
- Victoria County Office of Emergency Management
- City of Laredo

## Trifold

Distributed to EMCs, Fire Departments and Police Departments



# Partnerships

## San Patricio County

*Use of their Communications Trailer*



### Corpus Christi

*Use of their Mobile Command Trailer and Seat in their Emergency Operations Center*

San Patricio County Communications

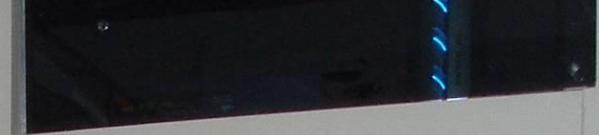
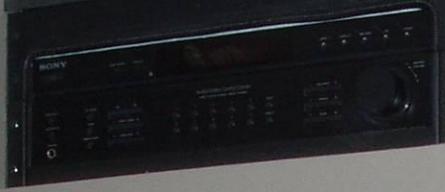
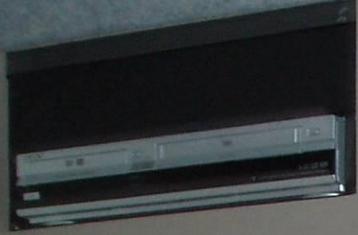


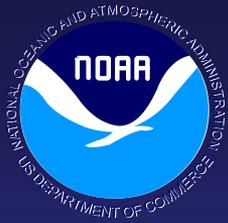
### Victoria County

*Use of their Mobile Command Trailer and Seat in their Emergency Operations Center*

# SAN PATRICIO COUNTY COMMUNICATIONS

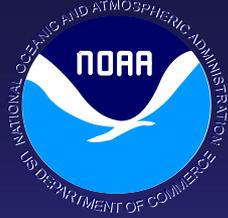






# Drill Participation

*Plan, Plan, Plan*



# Drill Participation – From Office



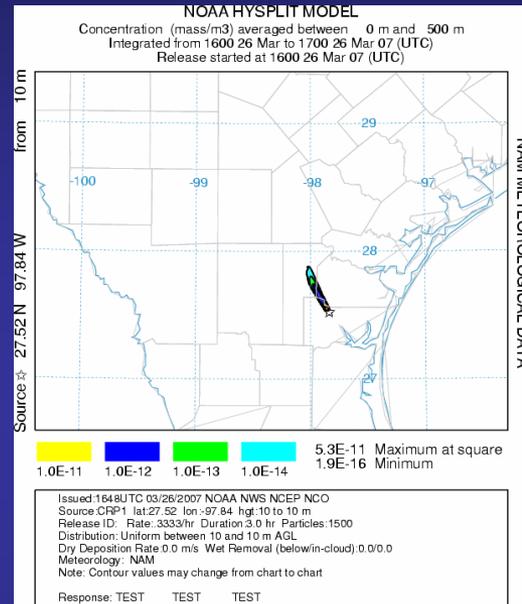
SPOT FORECAST FOR HAZMAT DRILL...NWS  
 NATIONAL WEATHER SERVICE CORPUS CHRISTI TX  
 1211 PM CDT MON MAR 26 2007

IF CONDITIONS BECOME UNREPRESENTATIVE...CONTACT THE NATIONAL WEATHER SERVICE.

.DISCUSSION...A SOUTHEAST SURFACE WIND AND SOUTH-SOUTHEAST TRANSPORT WIND WILL CONTINUE THROUGH THE DAY...GUSTY AT TIMES. AN UPPER LEVEL DISTURBANCE IS CURRENTLY MOVING OUT OF MEXICO AND INTO TEXAS. SCATTERED SHOWERS WILL BE POSSIBLE THROUGH THE EARLY AFTERNOON AHEAD OF THE DISTURBANCE ACROSS SOUTH TEXAS. MORE ORGANIZED SHOWERS AND THUNDERSTORMS WILL BE POSSIBLE MID TO LATE AFTERNOON AND INTO THE EVENING.

.TODAY...

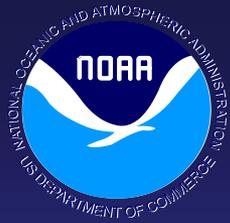
TIME (CDT)	11AM	12PM	1PM	2PM	3PM	4PM	5PM
CLOUD COVER....	CLDY	CLDY	MCLDY	MCLDY	CLDY	CLDY	CLDY
WEATHER COV....	CHC	CHC	CHC	CHC	CHC	LKLY	LKLY
WEATHER TYPE....	SHURS	SHURS	SHURS	TSTMS	TSTMS	TSTMS	TSTMS
POP (%).....	30	30	40	40	50	60	70
TEMP.....	74	76	77	78	79	78	77
RH.....	82	77	72	69	66	70	74
20 FT WIND DIR..	SE						
20 FT WIND SPD..	16	18	20	20	21	21	20
20 FT WIND GUST.	20	21	23	25	26	26	26
MIX HGT (FT)...	2500	2800	3000	3100	3200	3200	3000
TRANSP WIND DIR.	SSE						
TRANSP WIND SPD.	22	22	23	23	23	23	23



From Office

Kingsville/Bishop HAZMAT Drill

Mar, 26 2007



# Drill Participation CITGO Worst Case Discharge



WFO Corpus Christi Forecaster Jason Runyen - September 27, 2007

***Onsite***

***CITGO Worst Case Discharge Drill***

***Sep, 26-27 2007***

TRG D620-02  
102.158.76.52

# Corpus Christi Drill Situation Map

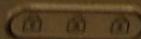
September 27, 2007 1300hrs

The Response Team



DELL

LATITUDE | D620



Print Screen

Num Lock

Pause

Insert

Home

Page Up



# Drill Participation CITGO Worst Case Discharge



NWS Weather Support During Citgo Oil Spill Drill



WFO Corpus Christi Forecaster Jason Runyen - September 27, 2007

NWS Weather Support During Citgo Oil Spill Drill



WFO Corpus Christi Forecaster Jason Runyen - September 27, 2007

Debriefing at Citgo Oil Spill Drill



WFO Corpus Christi - September 27, 2007

## Preparing Forecasts

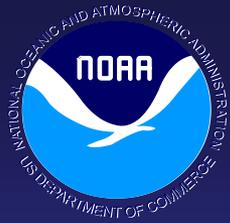
## Briefing

## De-Brief

### Lessons Learned – Citgo Exercise

1. NWS logo on laptop
2. IMET must check in, inform planning section leader when leaving post.
3. Wind Direction, Wind Speed, Precipitation, River Forecast, and Lightning, Timing!
4. Hourly Map Briefings?
5. UTC/GMT/ZULU/12 HR, 48HR, etc... terminology is not understood by everyone. Use local time...ie. Thu 1300 CDT
6. Need printer and Paper!!!
7. Need plastic laptop keyboard cover.
8. Check with Buchanan about spot formatter.
9. Keep running log during hazmat incident. (ICS Form 214a)
10. Weather for powerpoint and FX-Connect for laptop?
11. Screen or LCD (24-27")
12. Carrying Case
13. Jump Drive
14. Test email & cell phone comms
15. Wireless card & wireless phone package
16. Regular check in with WFO
17. Coordinate staffing

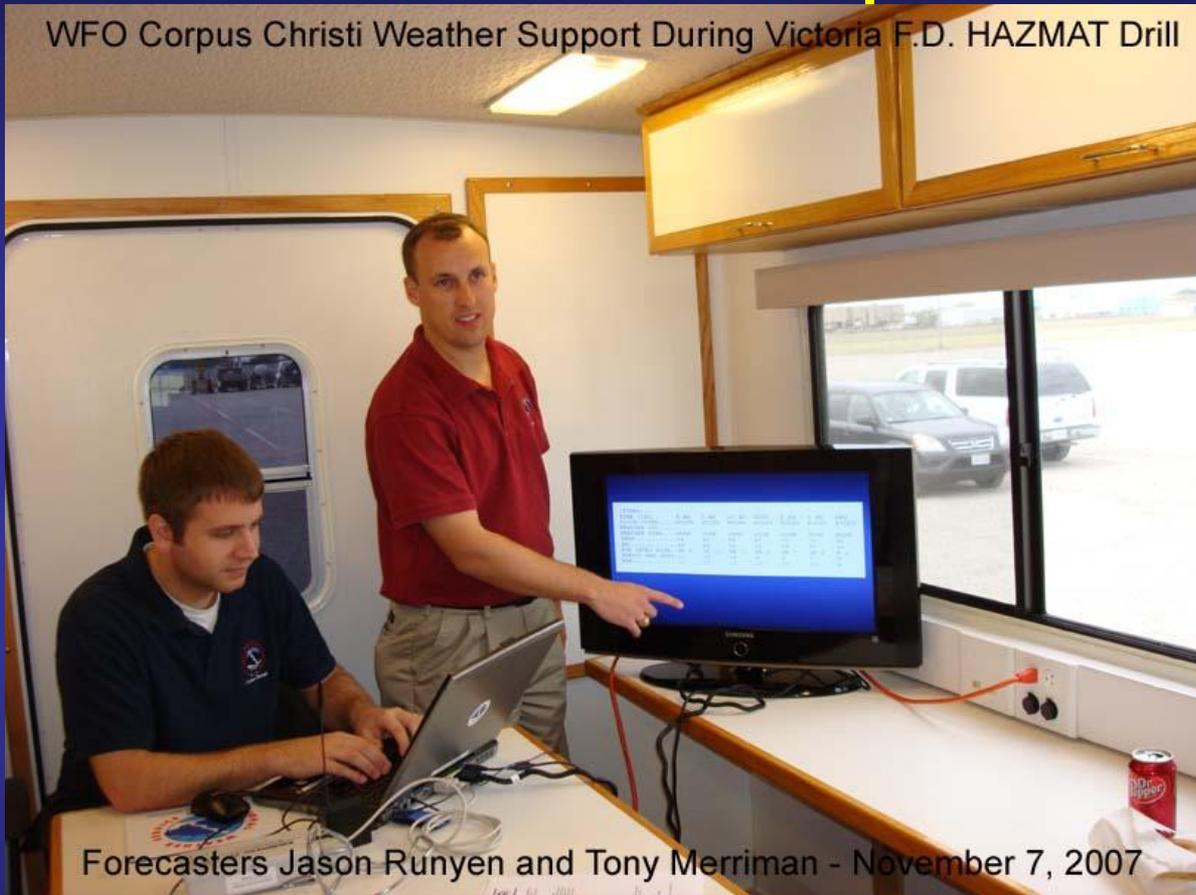




# Drill Participation Victoria Fire Dept.



WFO Corpus Christi Weather Support During Victoria F.D. HAZMAT Drill



Forecasters Jason Runyen and Tony Merriman - November 7, 2007

**Onsite**

**Victoria F.D. HAZMAT Drill**

**Nov, 7 2007**



Lessons Learned/Best Practices:

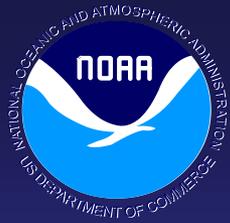
- Resolution Settings for Laptop/LCD need to be worked on. This was an issue
- Needed cellular broadband card. Lost the Wifi signal once we went to the Incident Command Post
- MK-III wind direction was off, except when solar panel faces south
- MK-III range and battery Life needs to be tested further
- In addition to Incident Support Training at the next staff training day, practice on setting up of equipment (possibly having a timed contest) needs to be done
- Have an initial SPOT forecast that is done by a forecaster back at the office and ready upon arrival. This was nice to have for questions during the time it took to set-up and in the swing of things
- For HYSPLIT Requests – EMC Contact Numbers need to be updated and a link added to the Emergency SDM
- Victoria F.D. did not seem completely proficient in CAMEO/ALOHA
- CAMEO/ALOHA/MARPLOT installed on laptop
- CAMEO/ALOHA training for our staff
- County files downloaded for MARPLOT
- Need a Tool Box for Wrench, Screwdriver, Ties, Zip-ties, etc...
- Universal HAZMAT login for laptop with admin privileges for logging into an outside LAN and wireless connection
- Departure Checklist (for equipment)
- Binder or electronic folder with cheat sheets on equipment, software, briefing suggestions, links, phone lists, etc...

Victoria County Mobile Command Trailer  
and NWS MK-III Portbale Weather Station



# Drill Participation Refinery Terminal Fire Department





# Drill Participation Corpus Christi International Airport Triennial Exercise

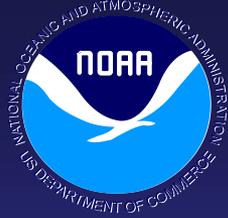


*Weather Briefings out of back of Suburban*



*MK-III Weather Station Deployed Onsite*

*March 28 2008*



# NWS Support During All Hazards Incidents

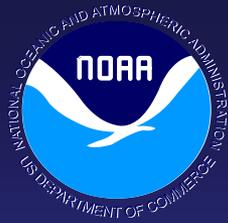


## Formosa Explosion – Point Comfort

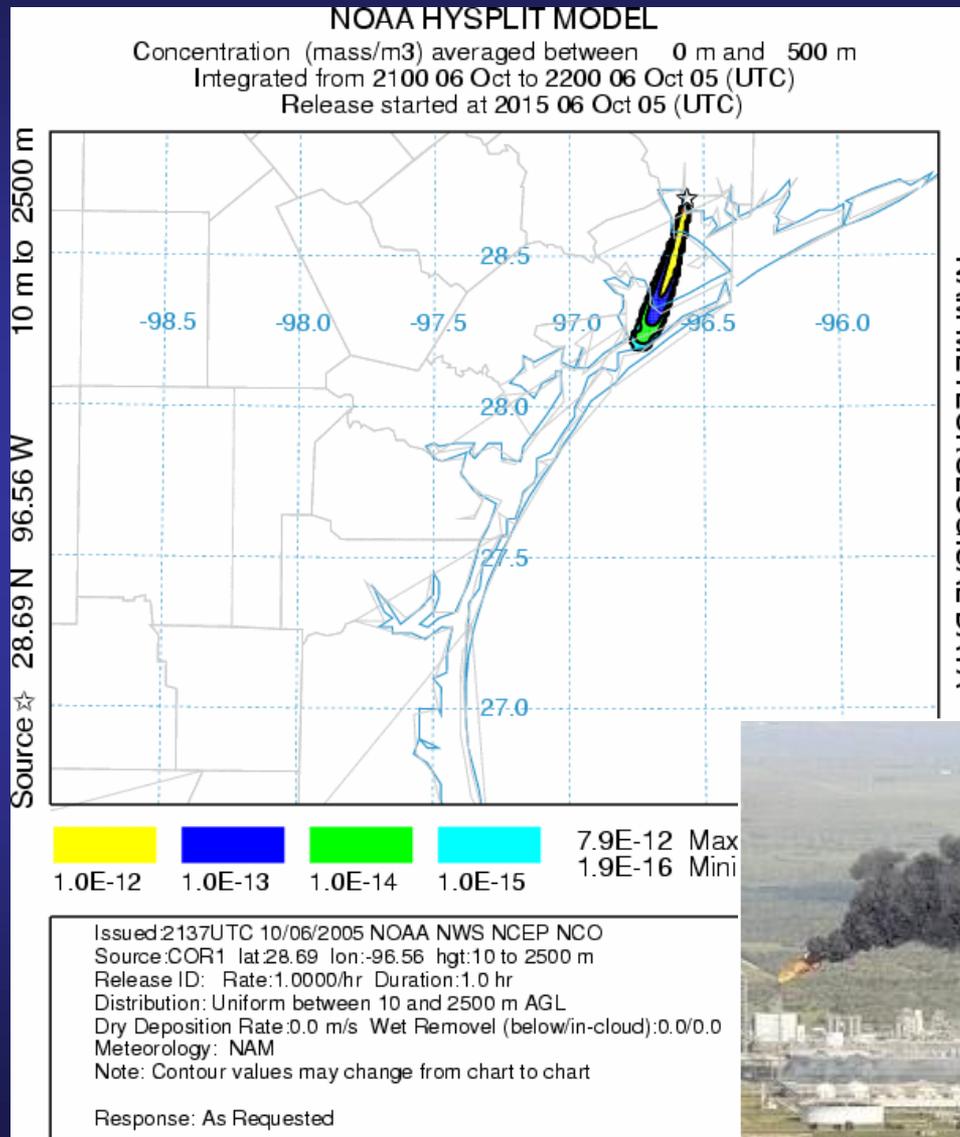
***7 October 2005***

- Plant employees 1500 people, located near Port Lavaca
- Occurred in Olefins 2 unit – where building blocks of plastics are made
- Explosion occurred around 1515 CDT
- 11 injured, 2 seriously
- Fire extinguished after about three hours
- Shelter in place ordered for nearby residents and schools in Point Comfort and Port Lavaca



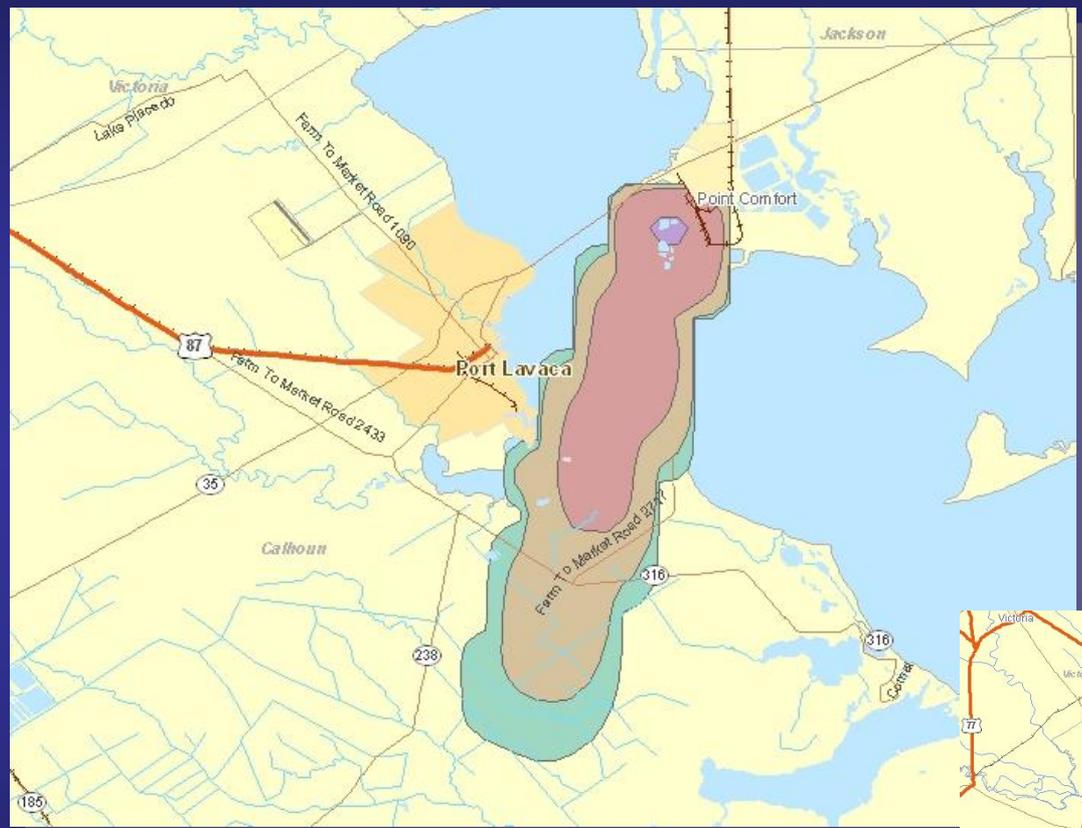


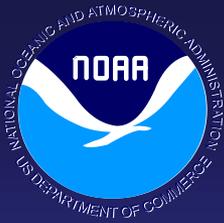
# NWS Support During All Hazards Incidents





# NWS Support During All Hazards Incidents



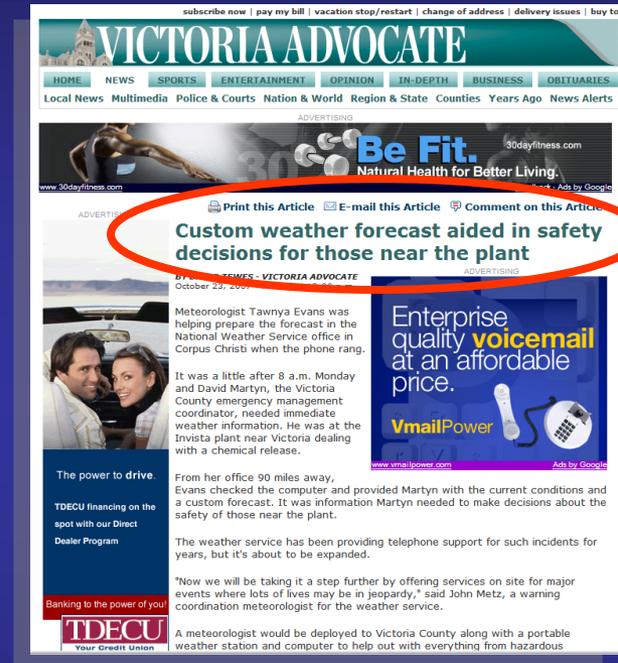


# Recent Incidents Supported From Office



## U.S. 77 Tanker Rollover – Closed highway for over 24 hours

Oct, 9 2007

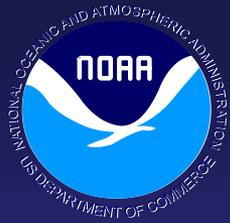


## Invista Plant Release

Oct, 22 2007

Weather Support was provided via phone and SPOT briefings from the NWS Office in Corpus Christi

# Texas Homeland Security Conference Incident Support



*NWS Booth at Texas Homeland Security Conference*

***Onsite***

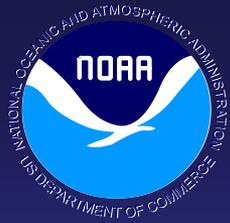
***TX Homeland Security Conference***

***Dec 3-7 2007***



***Texas Homeland Security Conference***

*Jason Runyen, Hector Guerrero, Barry Goldsmith, John Metz, Larry Eblen, Gary Woodall, Jody James, Gene Hafele, Roger Erickson, John Fausett, Armando Garza, William Bunting*



# Region VI LEPC Conference

(Texas, Arkansas, Oklahoma, Louisiana, New Mexico)



**Onsite**

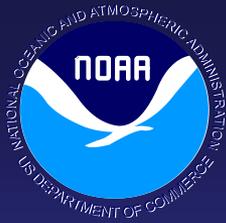
**Jan 12-14 2009**



# Bayfest Corpus Christi



**Onsite**  
**Sep 25-27 2008**



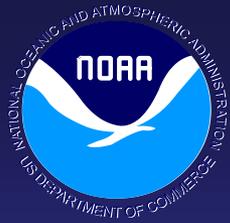
# Texas International Boat Show



*Onsite weather briefing tent for city officials*

- *Tens of thousands of visitors over four days*
- *Briefings provided to city marina officials*
- *Wake low event damaged tents on 1<sup>st</sup> day*
- *Squall line came though overnight on the 3<sup>rd</sup> day. Briefings overnight from office allowed city officials to tie down and save many tents*
- *Strong to severe thunderstorms on final day accurately predicted and briefed days out*
- *Briefing booth onsite during the days. Briefings handled from office overnight*

**March 25-27<sup>th</sup> 2008**



# Goliad County Prescribed Burn

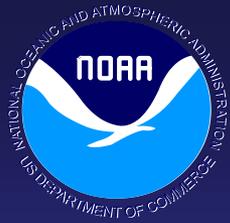


***First Live Test of Briefing from Vehicle***



***MK-III Weather Station Deployed Onsite***

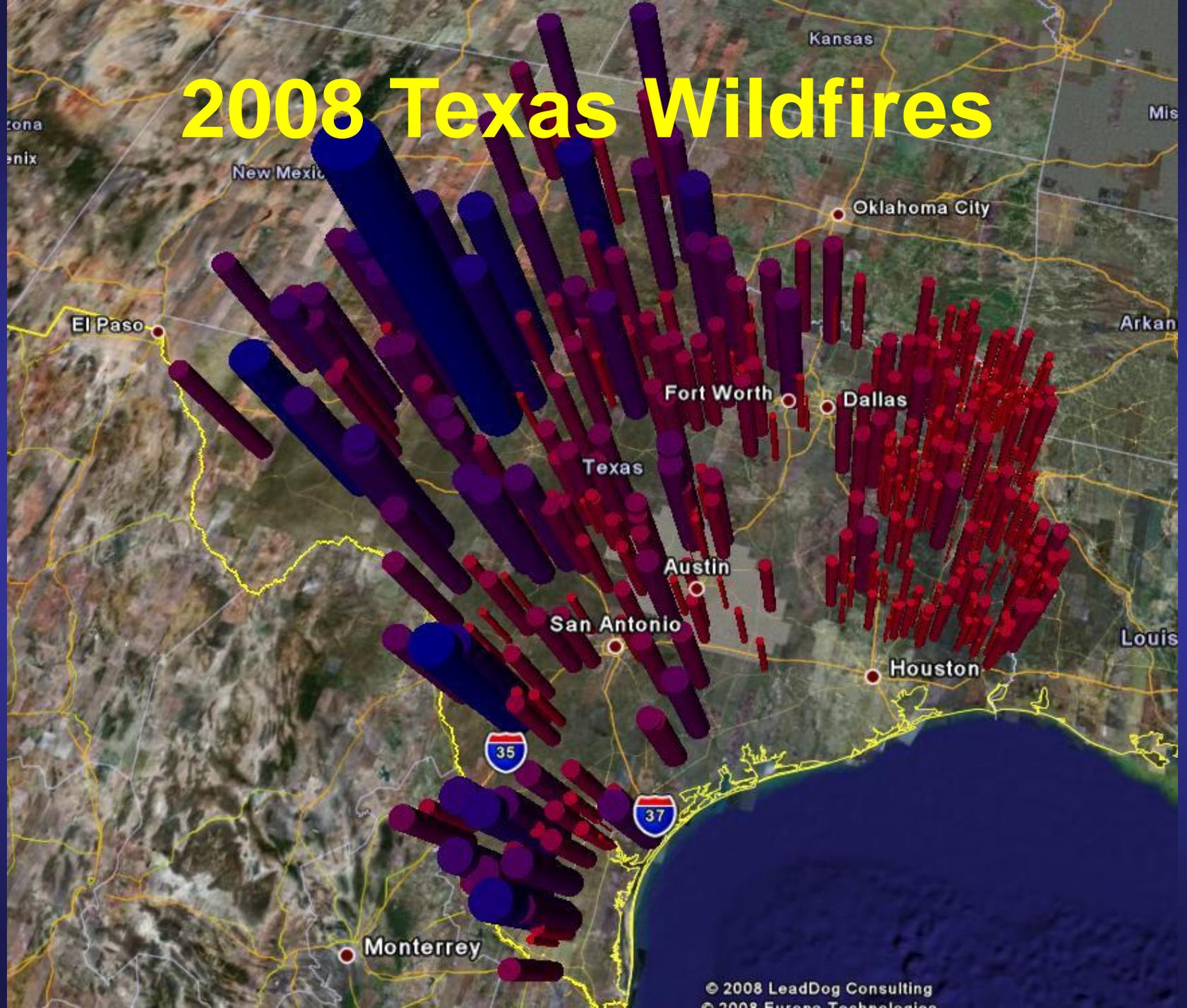
***February 19 2008***



# King Ranch Prescribed Burn



# 2008 Texas Wildfires



31 DEC 2007  
6pm

28 JUN 2008  
2pm

59

Victoria

Matagorda

37

Corpus Christi

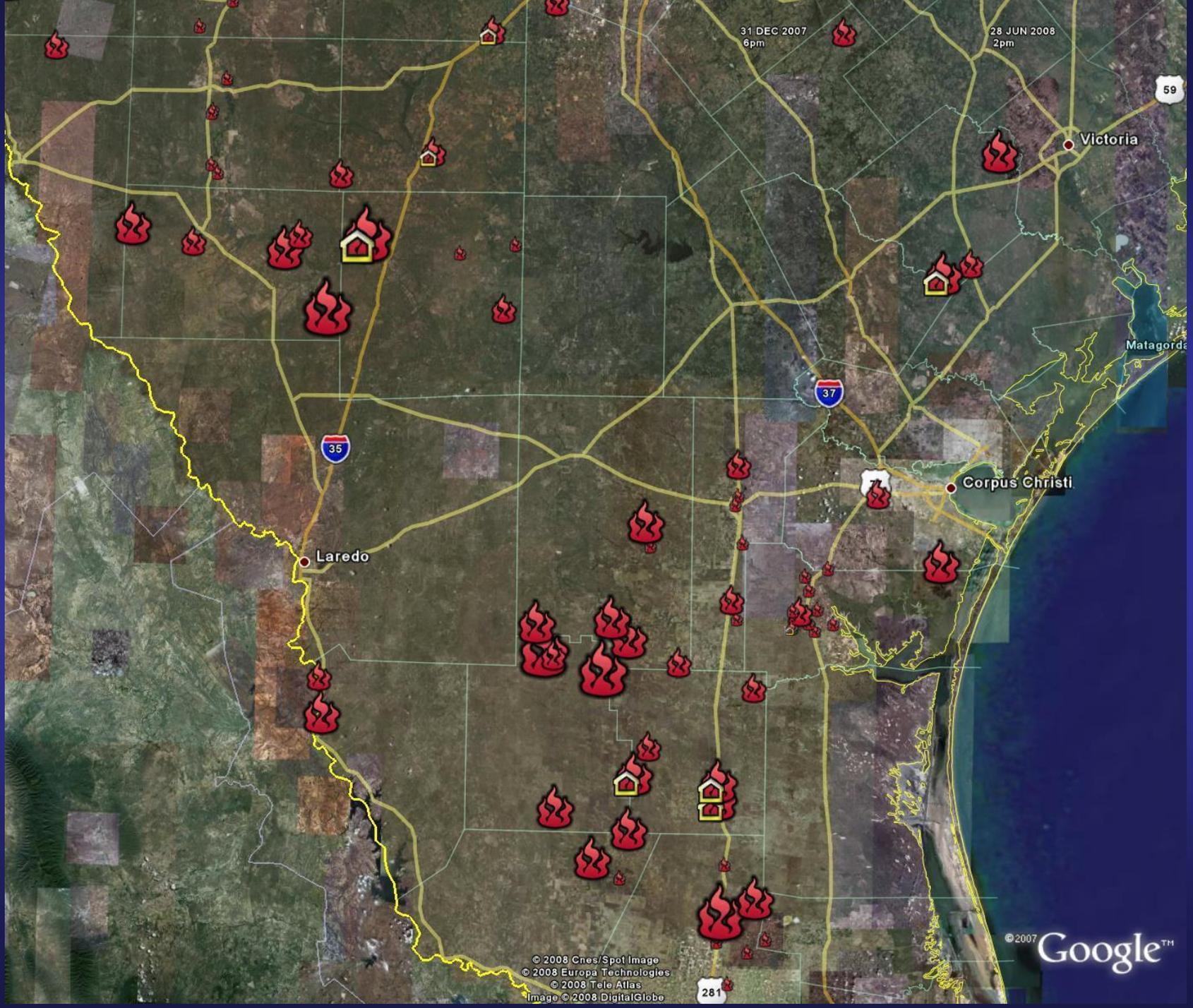
35

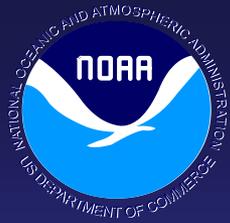
Laredo

281

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# Laureles Fire (King Ranch)



- ***Controlled Burn escaped on the King Ranch south of Corpus Christi***
- ***Smoke effected south side homes and businesses in Corpus Christi***
- ***Several SPOT forecasts and phone briefings conducted with the Texas Forest Service, DPS, and CC EM***

***February 6-7 2008***



# Cotulla Fire

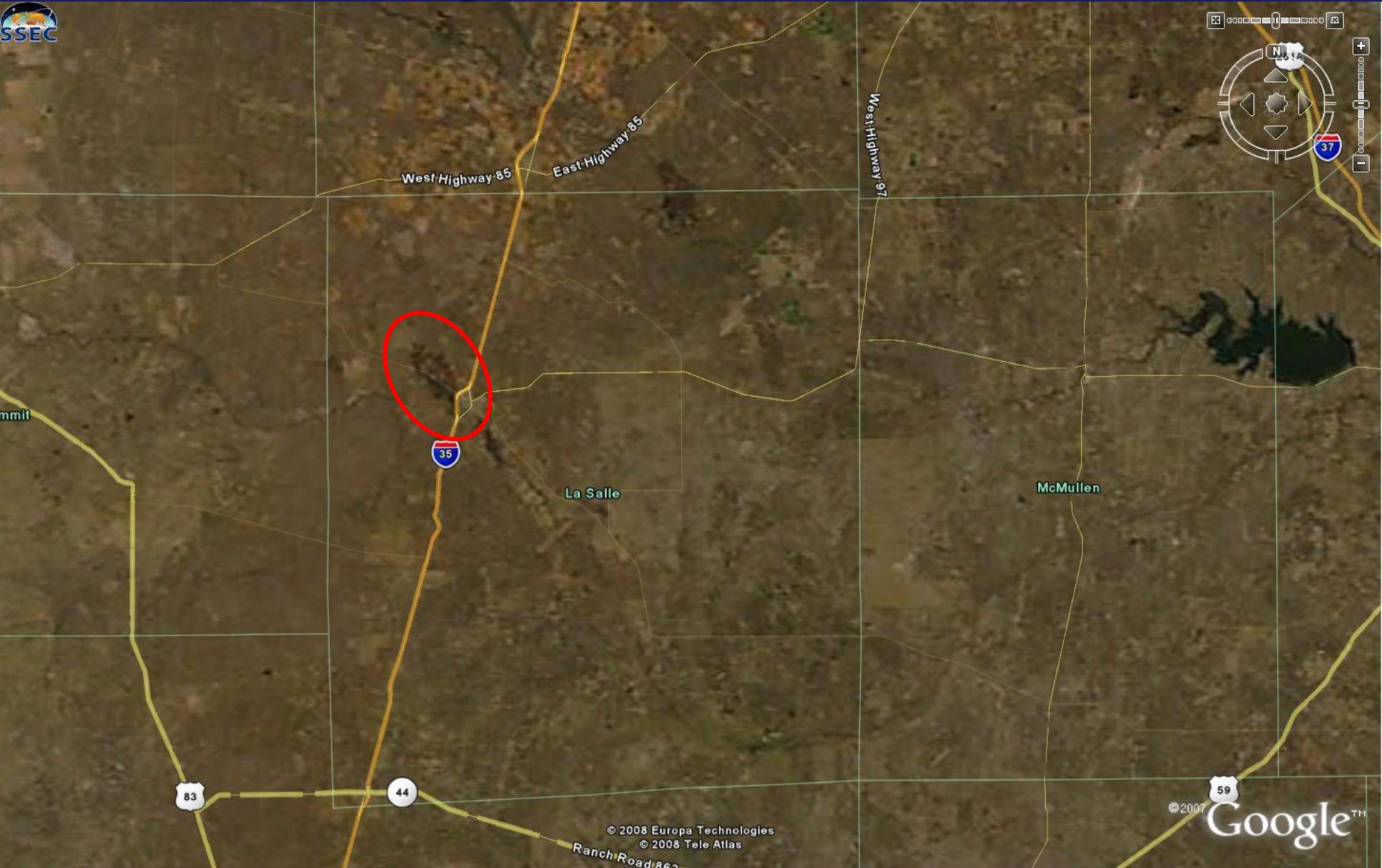


*Burn scar over I-35*

- *19,000 acre wildfire*
- *Jumped Interstate 35*
- *7 homes destroyed and 30 damaged near Cotulla*
- *Several phone briefings conducted with the Texas Forest Service and DPS*

*February 1-2 2008*

# January 31<sup>st</sup> – Cotulla Fire



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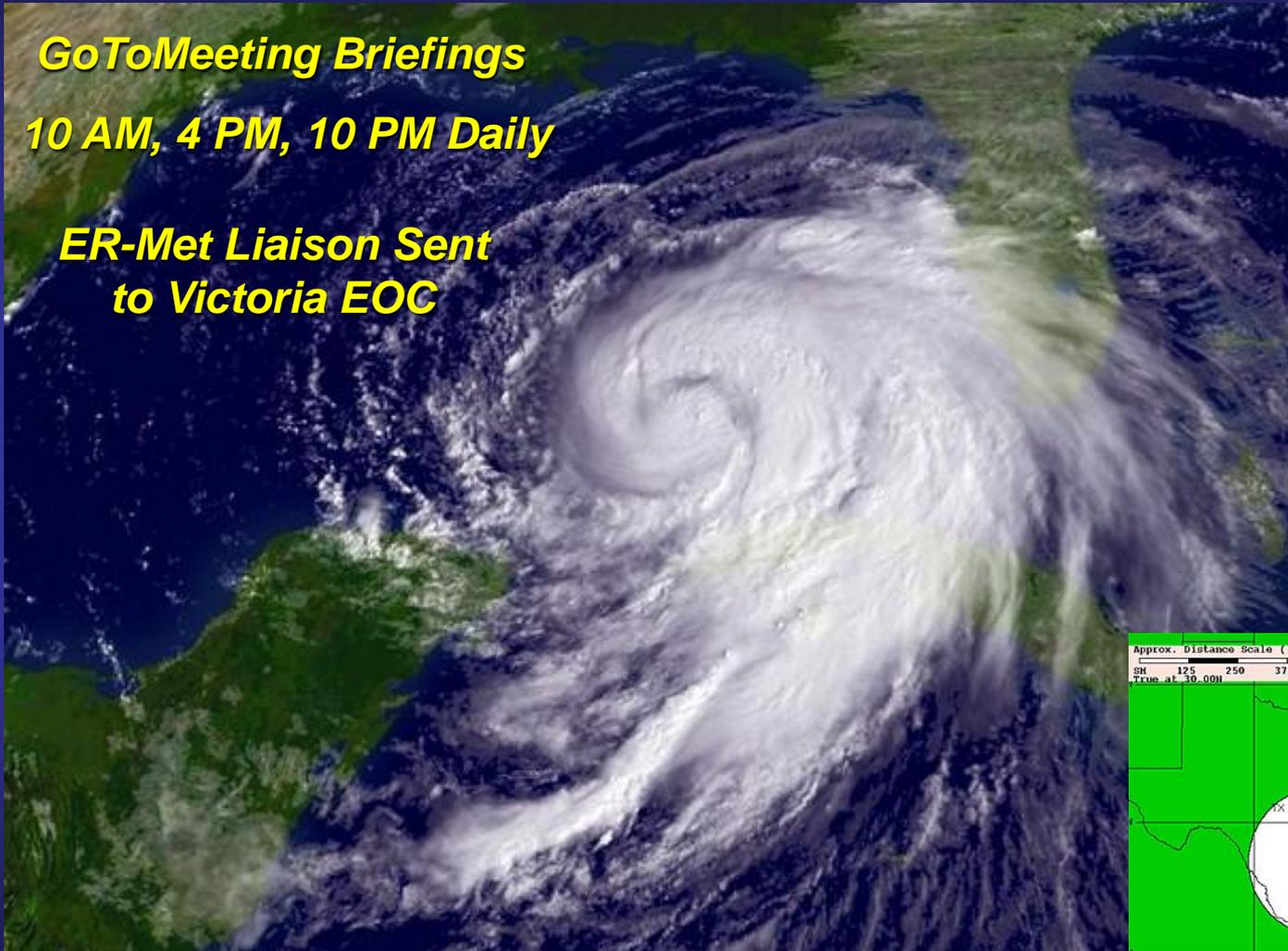
© 2007 Google™

# Hurricane Ike Decision Support

**GoToMeeting Briefings**

**10 AM, 4 PM, 10 PM Daily**

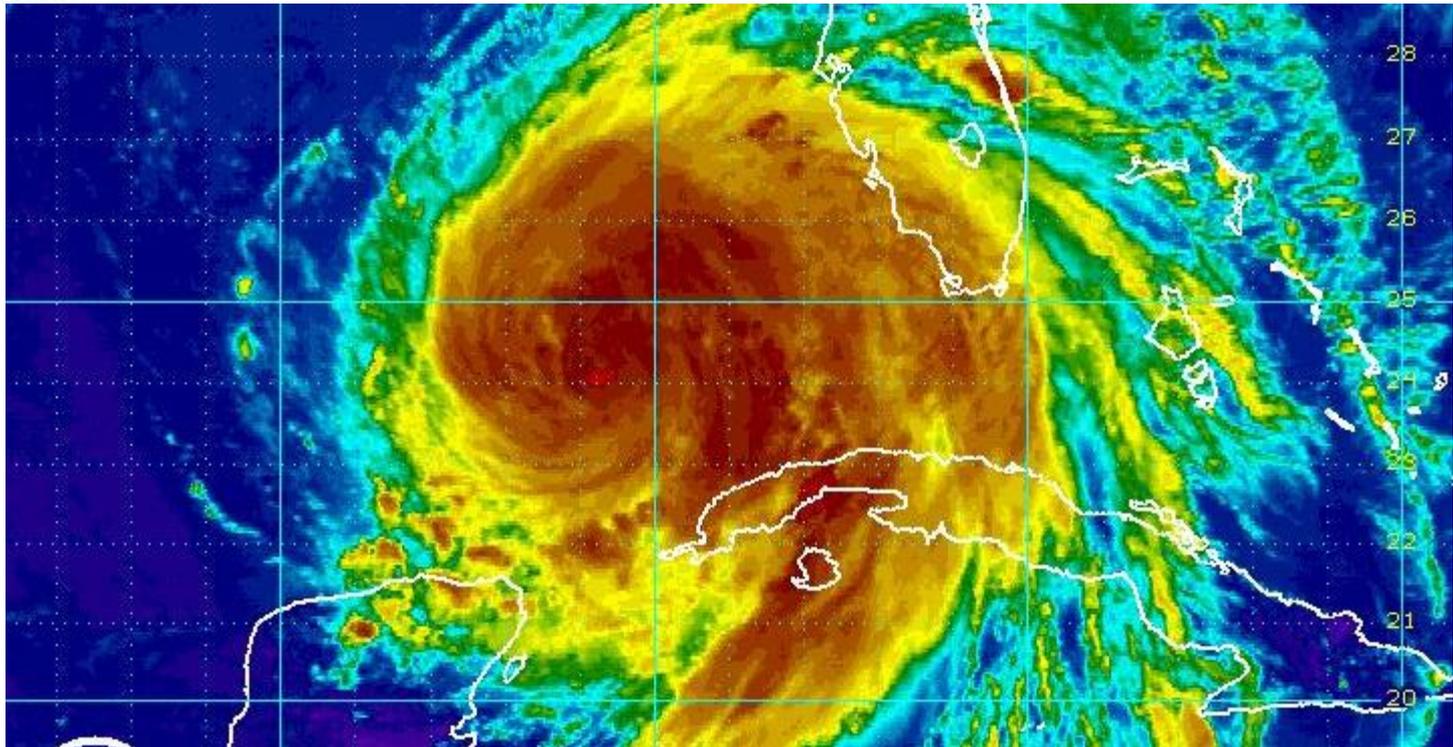
**ER-Met Liaison Sent  
to Victoria EOC**





# National Weather Service

## 4pm Ike Briefing



By John Metz

Warning Coordination Meteorologist  
NWS Corpus Christi, TX

Wed September 10, 2008

# Victoria EOC



- Morning IAP Briefings
- Policy Group Briefings
- Coordination - Trust built long before Hurricane Ike
- Storm Surge Surveys





# Other Recent Events



## ***Beach to Bay Expo***

***May 16 2008***

## ***2008 Texas Hurricane Conference***

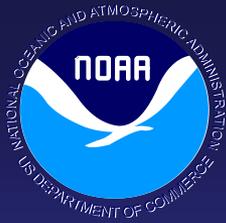
***May 20-22 2008***

## ***Weekly Outlook GoToMeeting Briefings for various partners***

***Mondays during Spring and Summer 2008***

## ***Email Briefings to Fire Weather Partners during 2008 & 2009 Wildfires***

***Winter and Spring 2008 & 2009***



# Challenges

## 🌐 Scheduling & Funding

- Took baby steps at first
- Unique partnerships (ex comms trailers)
- Incident incurring lodging & per diem costs

## 🌐 Training & Certification

- Basic ICS training added to local training plan
- Core group of on-site forecasters

## 🌐 Infusion of Science & Technology

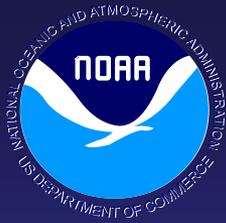
- Best practices, Regional DSP team

## 🌐 Internal Marketing

- What is DSP and what it isn't
- Send forecasters out to EOC visits, drills, prescribed burns

## 🌐 True Collaboration

- Shadowing EMs, particularly during inclement and adverse times



# What Do We Want to Accomplish This Year?



- **Training / In House Drills:** Formosa WES case and HYSPLIT/CAMEO drill in Spring. DSP workshop late Spring or Fall?
- **True Collaboration:** Place DSP team members with EMs at their office or EOC to shadow their jobs and best learn how they do their jobs and make their decisions. How can we provide better services to make their decisions easier?
- **Exercises:** Get more team members involved in exercises so they may
  - 1) become better familiar with ICS environments
  - 2) confidently provide interpretation of forecasts so key leaders can effectively make decisions
  - 3) become better familiar with and equipment, software, GoToMeeting
- **Wish List Items to procure**
  - Shirts and Caps (ER-MET)
  - Another wireless card Another GPS unit
  - Magnetic DSP (ER-MET) sign
  - 2 Kestrels
  - Teardrop banner signs

## The Value of a Weather Forecast:

- Information, however accurate, has no intrinsic value...
- ...unless it can be used to make decisions that benefit the end user.



“Although the Weather Service hasn't predicted rain, certain indicators can't be ignored.”