



Christmas Time Arctic Outbreak for the RGV: Slides

2 PM CT

Wednesday, December 21, 2022

What's Changed:

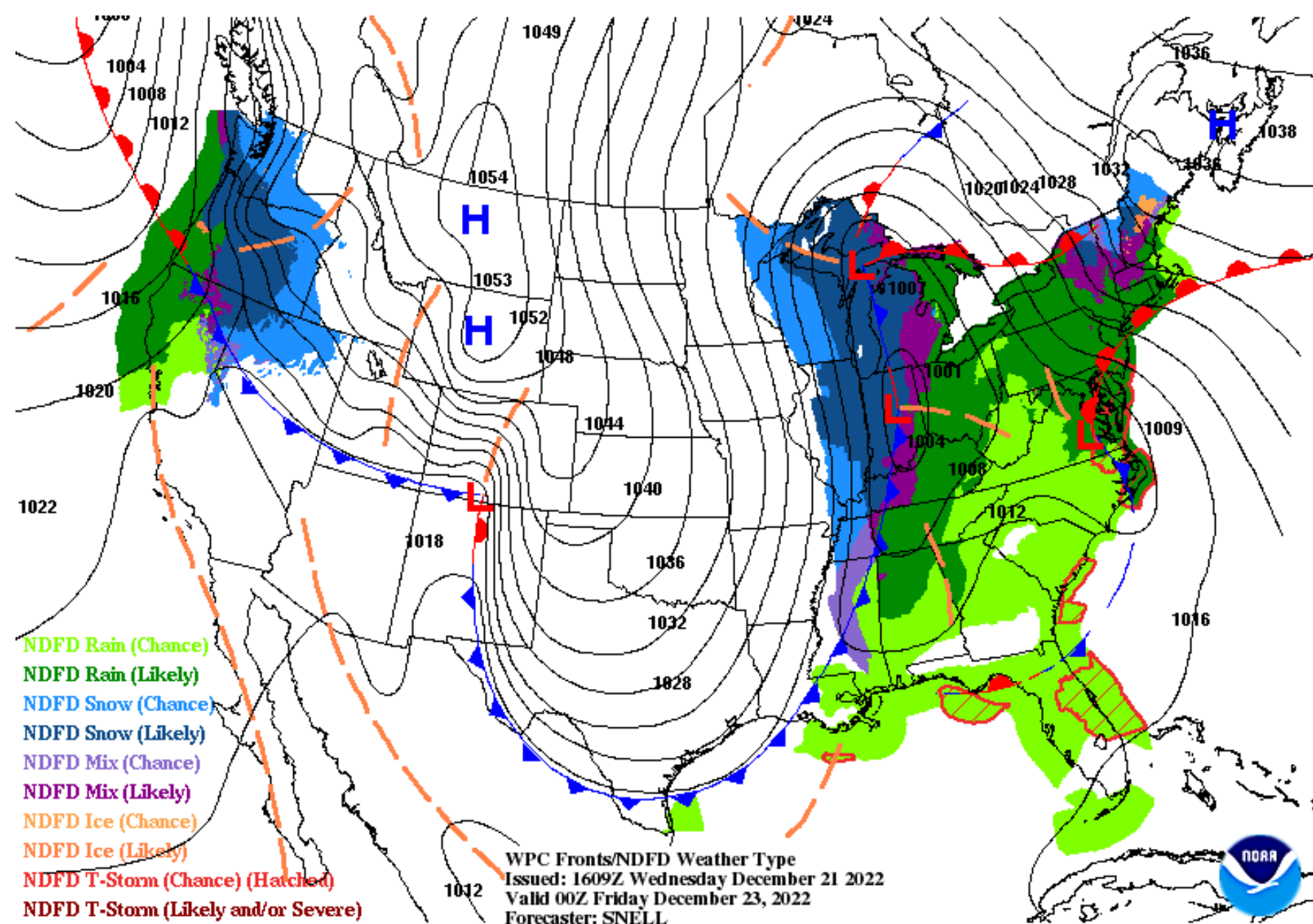
- Watches/Warnings issued
- Slight adjustment to weather near the coast

Disclaimer: The information contained within is time-sensitive. Do not use after 5 AM CST Dec. 22.



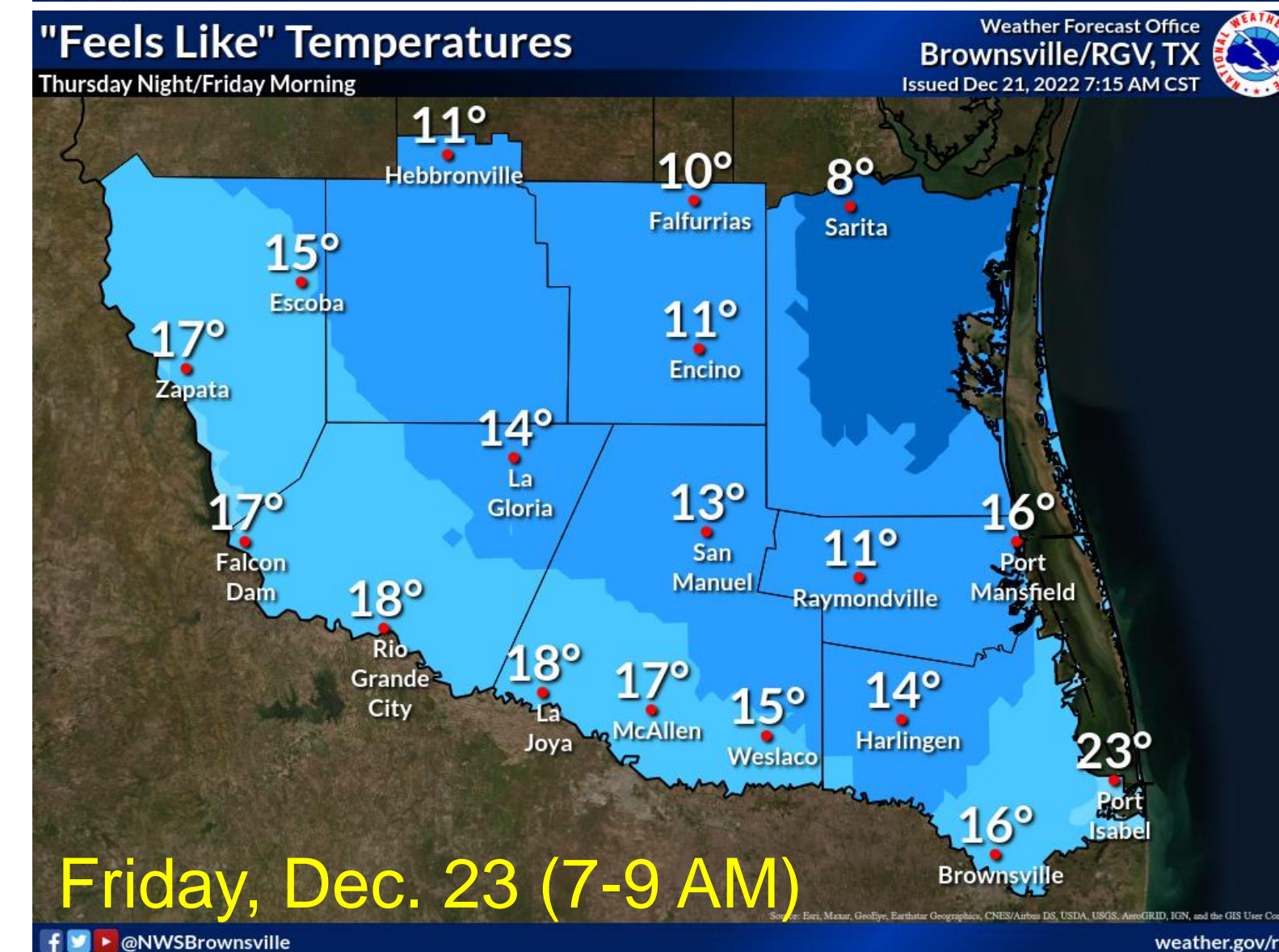
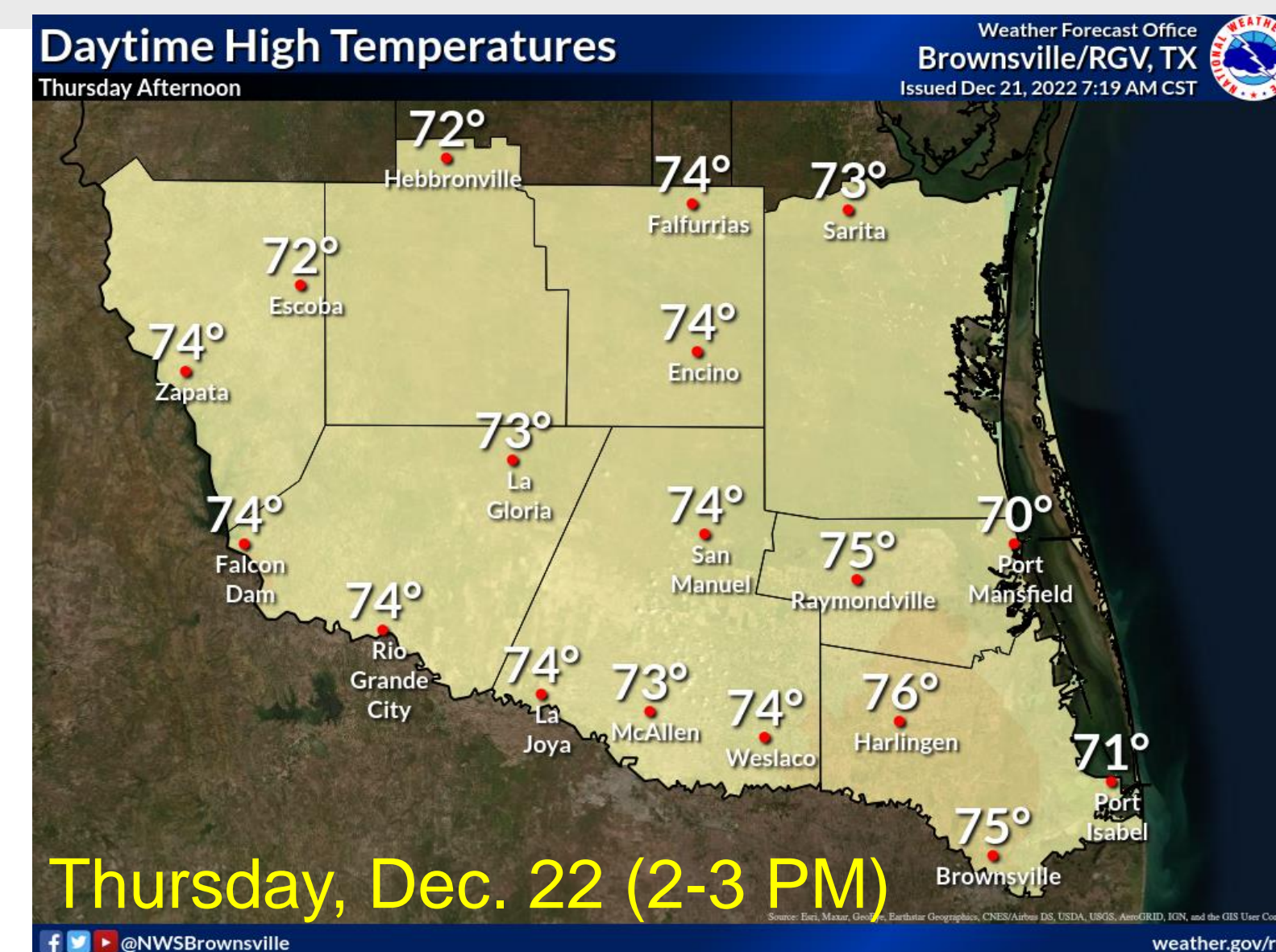
Overview

ChristmasTime Arctic Outbreak 2022



Forecast Map, Sunset, Thursday Dec. 22

A very strong cold front will drop temperatures sharply from the afternoon of Dec. 22 through daybreak of Dec. 23. Following high temperatures in the 70s on the 22nd, wake-up temperatures will be below freezing, with “feels like” temperatures as low as 10°F. The arctic-sourced cold will continue through Christmas morning, with sub-freezing temperatures at sunrise each day, and very low “feels like” temperatures through at least noon on Christmas Eve day.





Bottom Lines: The Numbers

ChristmasTime Arctic Outbreak 2022

- **“Sharp Change”**: “Feels like” temperatures falling from the mid 70s at 2 PM Thursday to **8 to 18 degrees** at 7-9 AM Friday. A **60 to 65 drop**.
- Timing: Onset of the cold blast (front) on Dec. 22:
 - 6 PM Hebbronville to Sarita, as early as 4-5 PM
 - 8-9 PM Rio Grande Valley, as early as 7 PM
 - Freeze: 3-4 AM Hebbronville-Sarita, 5-6 AM RGV
 - Wind Chill Below 25: Midnight Hebbronville-Sarita, 3 AM Rio Grande Valley
- **Hard Freezes (Temperature Only, General)**
 - **Dec. 23**: Temperatures below 28°F for all but the lower Valley for a few hours, mainly from 6 AM to 9 AM; at or below 32°F until noon most areas.
 - **Dec. 24**: Temperatures below 28°F for all but the lower Valley for 6 to 9 hours, starting as early as just after midnight and continuing through 9 AM
- **Wind**
 - Along/east of IH-69E/US 77: Increasing to **25 to 35 mph with gusts to 40+ mph** soon after sunset Thursday, continuing for several hours (all night toward the coast). Gusts 50+ mph for a few hours east of IH-69E (Cameron/Willacy)
 - Gulf: **Gale force sustained wind (40 mph) with gusts between 50 and 55 mph** Thursday evening through Friday afternoon
- **Other**
 - Increasing chances for **light sleet (ice pellets) or perhaps icing** east of IH-69E (Cameron/Willacy) **Friday night through Saturday morning**. Impacts highly uncertain at this time.



Bottom Lines: The Impacts

ChristmasTime Arctic Outbreak 2022

■ Cold/Freeze and “sharpness”:

- Hypothermia to persons without adequate protection/heat. Sharp “feels like” temperature change combined with sub-freezing actual temperatures increases the threat for death.
- Livestock and pets could be killed if not provided relatively warm locations, given the rapid change in ambient/wind chill
- Cold-sensitive crops, including citrus, are at very high risk due to combination of low temperature and very low humidity. Effective temperature in the upper teens to lower 20s from pre-dawn Friday through late morning Christmas Eve could freeze the fruit.
- Sea/Bay water will plunge to or below 50°F between midday and sunset Friday, putting thousands of sea turtles at risk along the Lower TX coast from cold “stunning” requiring a mass rescue
- Exposed pipes, especially those with water in them, could burst due to the combination of cold and dry (effective temperature)

■ Wind

- Gusts above 35 mph may blow lightweight objects around, including inflatables
- Frequent gusts 40+ mph will cause additional damage to poorly fastened roofs/poorly anchored objects
- Combination of cold temperatures and strong winds may lead to scattered to numerous power outages, beginning Thursday late evening and continuing through Christmas morning. Greatest threat for widespread outages is along/east of IH-69E.



Impact Timeline

ChristmasTime Arctic Outbreak 2022



December 22 – 23 Weather Impact Timeline

Thursday Afternoon

Fair and Mild

Thursday Night

Cold Front Slams Through RGV;
Crashing Temperatures; Gusty North
Wind, Power Outages Begin

Friday Afternoon

Partly to Mostly Cloudy & Cold;
Continued Very Low Wind Chill,
Power Outages Improve a Little

Thursday Evening

Cold Front Entering
Northern Counties
(early)

Friday Morning

Cold Temperatures, Gusty
Wind, Dangerous Wind Chill
(10-20°F), Hypothermia and
Unprotected Crop Freeze;
Power Outages peak

Friday Night

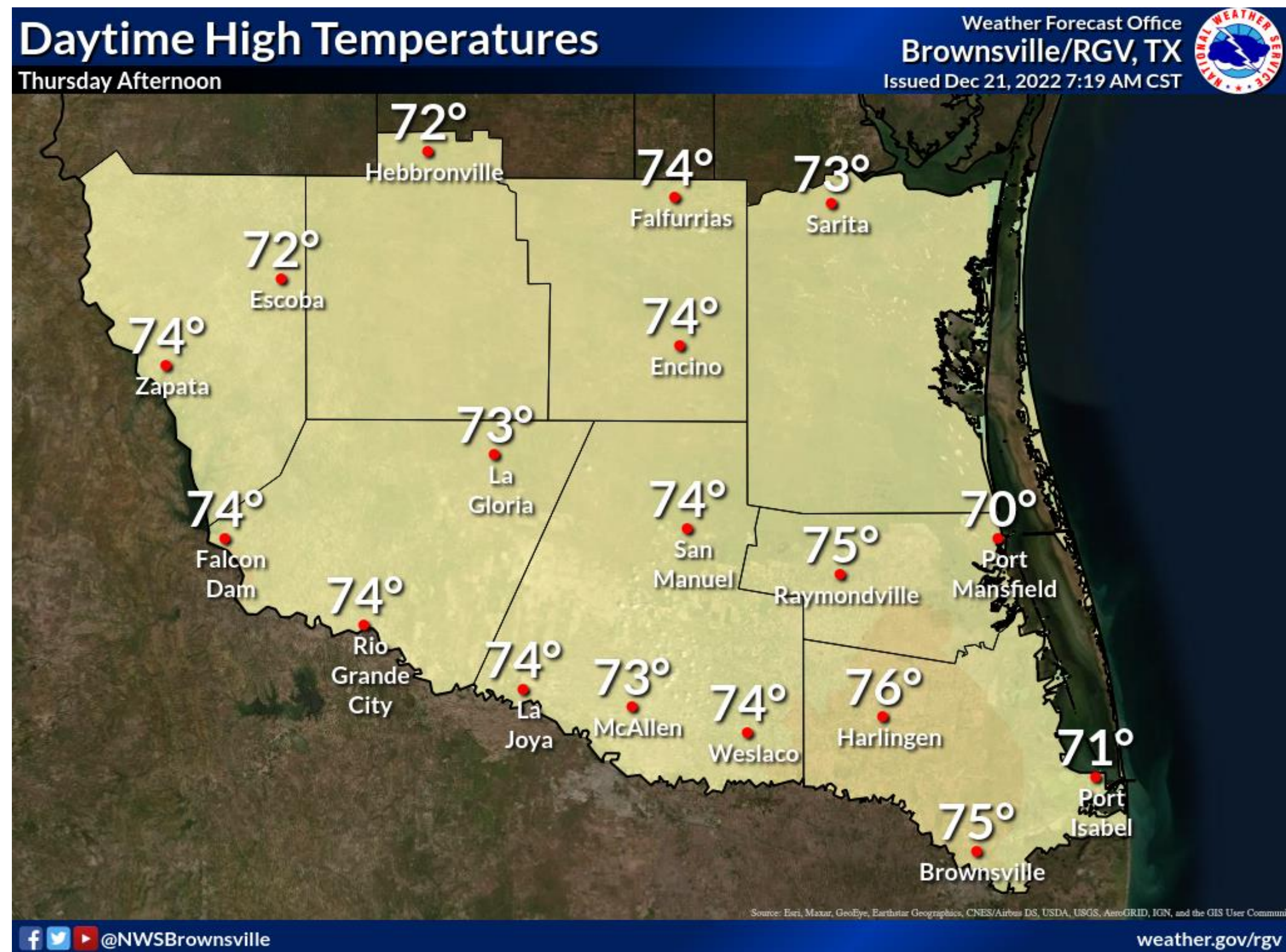
Another Frigid Night; Sub-
freezing Temperatures
Likely with Additional
Hypothermia and Crop
Damage



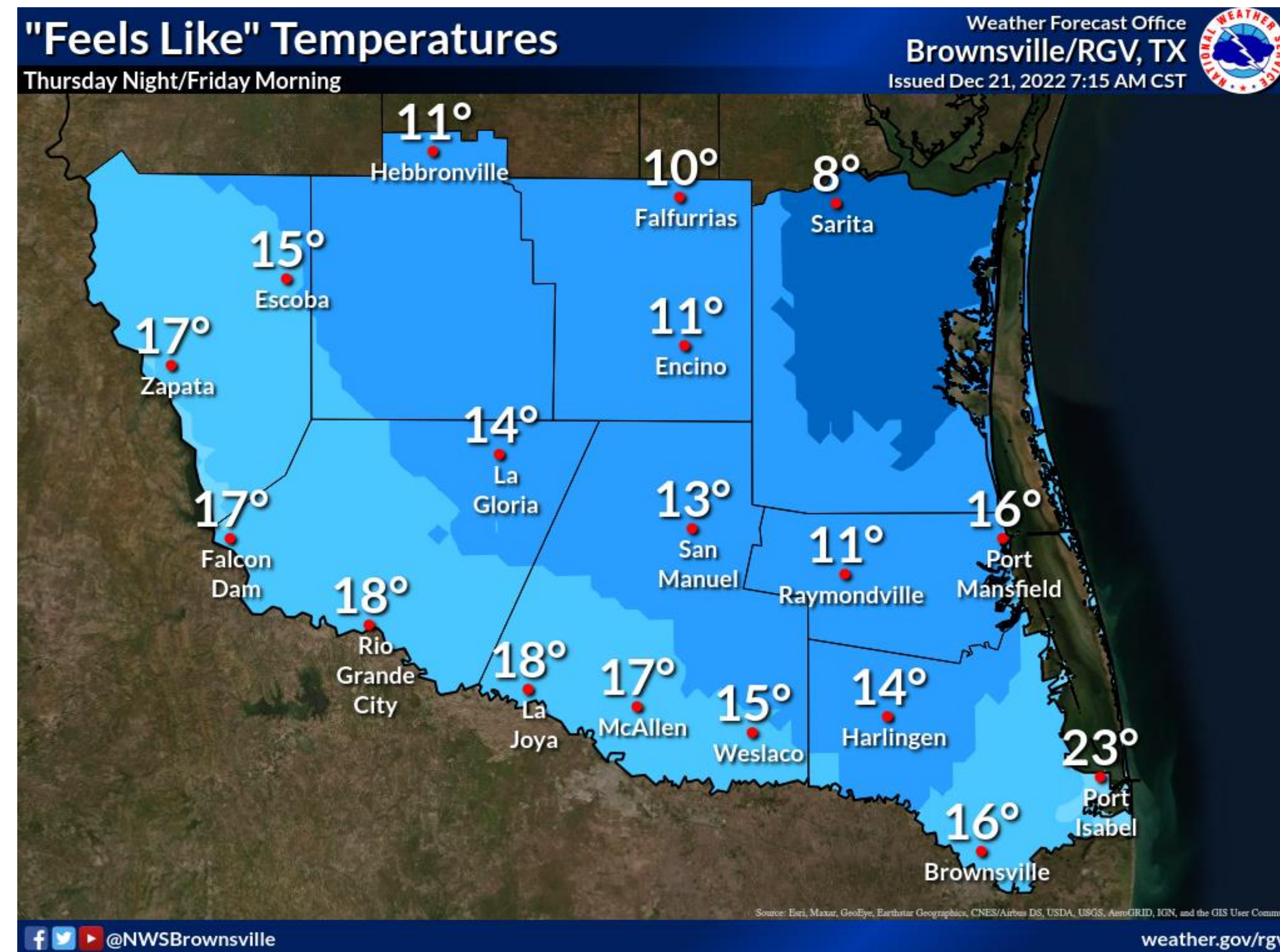


Sharp Change in Apparent Temperatures

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Dec. 22, 2 PM



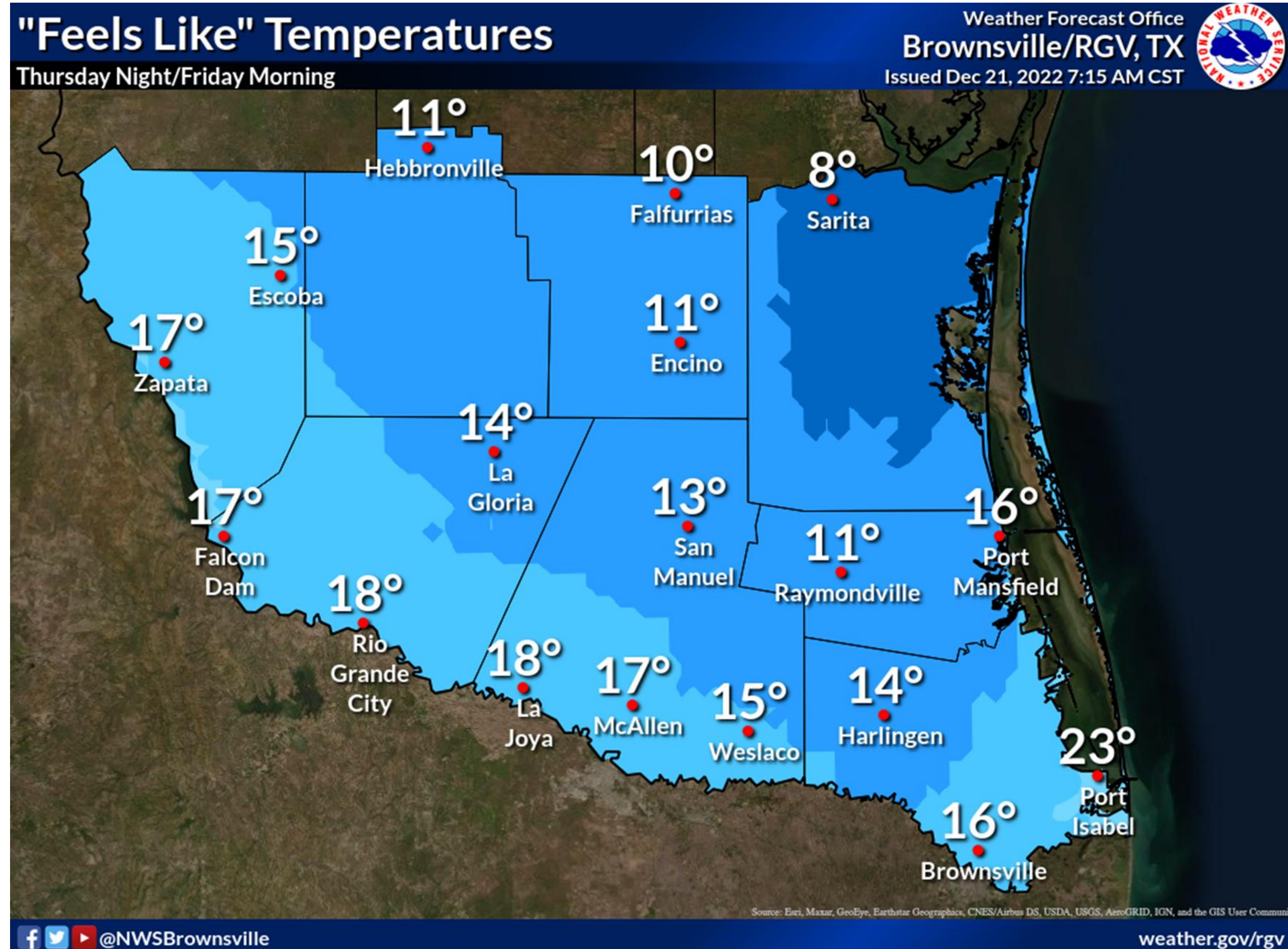
Dec. 23, 7 to 9 AM

A 60 to 65 degree “feels like” temperature drop in just 18 hours!

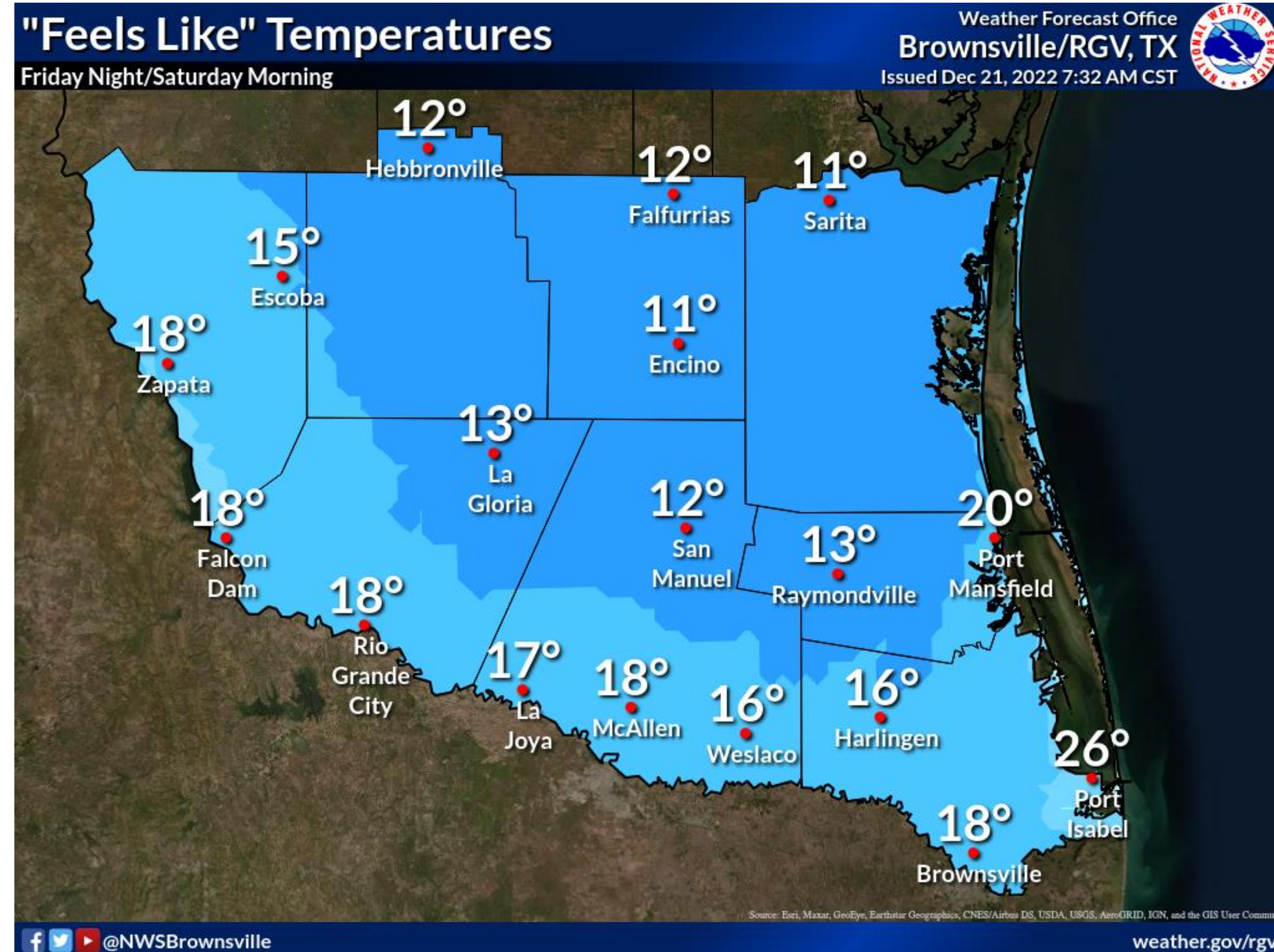


Coldest "Feels Like" Temperature Dec. 23 and 24

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Friday, December 23



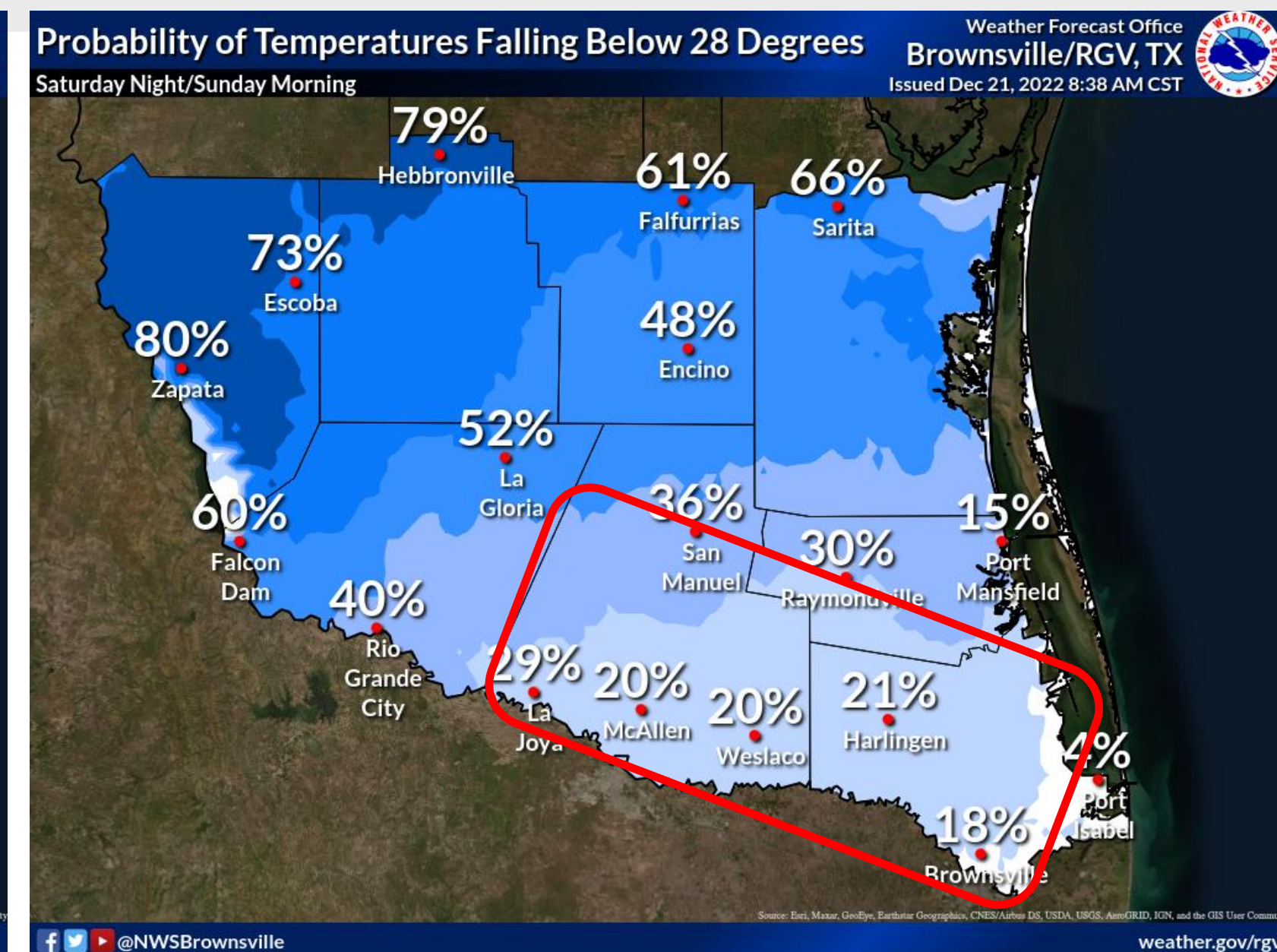
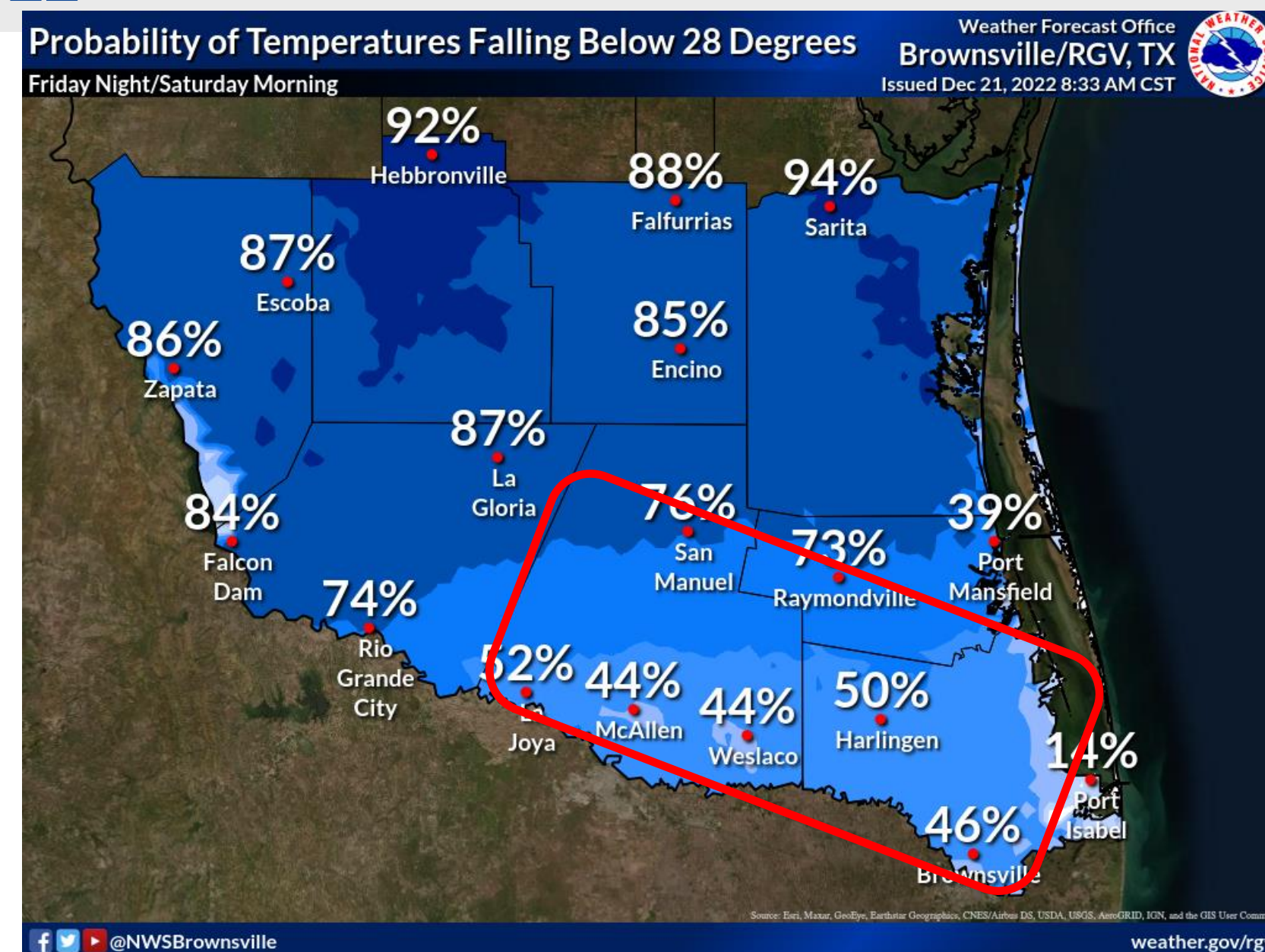
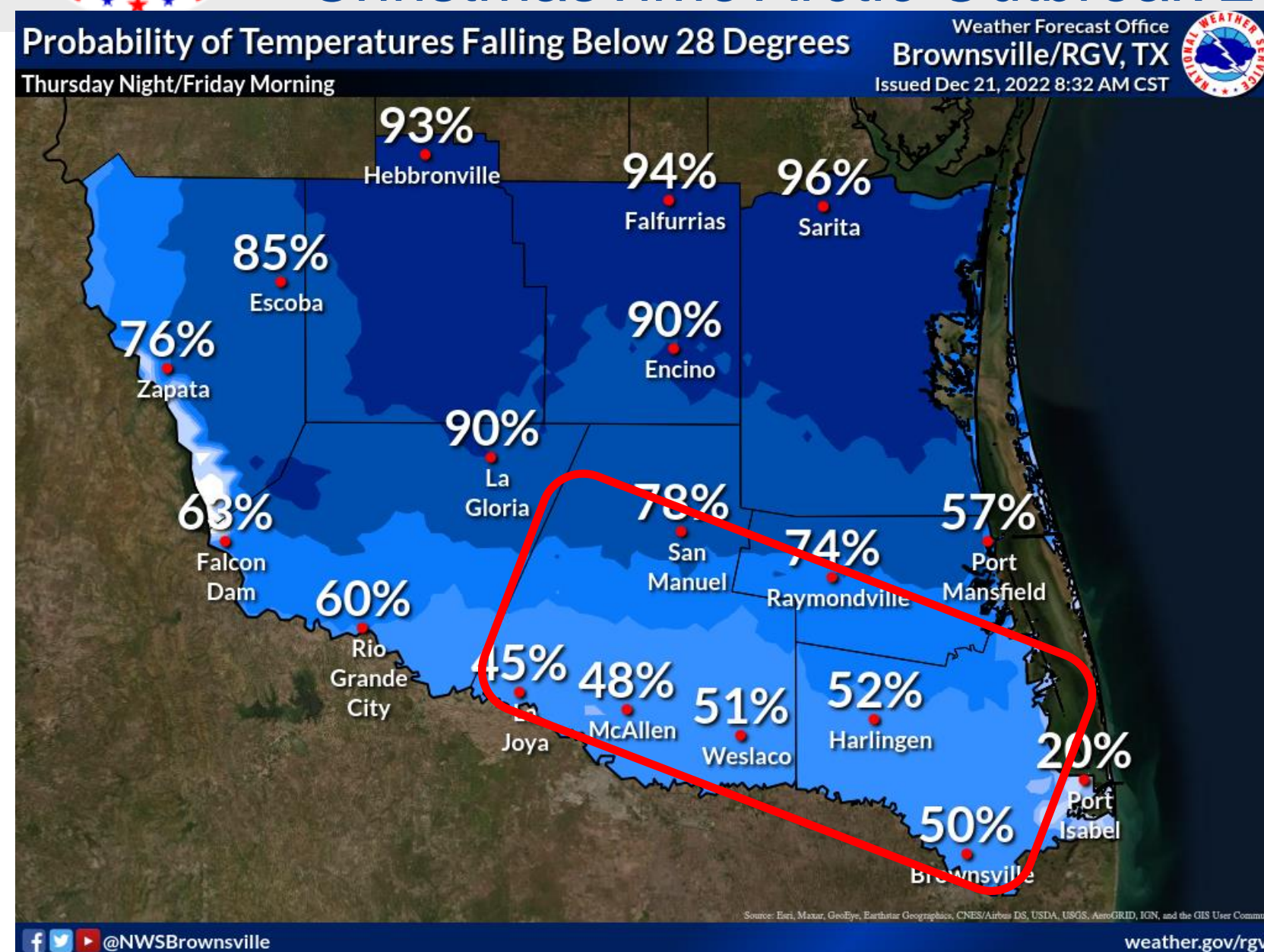
Saturday, December 24

- Will only **rise to 25 to 30 Friday** afternoon, despite more sun than clouds (except lower Valley, with more clouds)
- Will only rise to **30 to 35** Saturday afternoon (could be colder near the coast)



Probability of Hard Freeze (<28°F), Dec. 23-25

ChristmasTime Arctic Outbreak 2022



Friday, December 23

- Note: Effective temperature, known as “wet-bulb temperature”, can create hard-freeze like conditions even when actual temperatures are at or above 28°. Effective temperatures will bottom out between the upper teens and lower 20s. Potential times for hard freeze and lowest effective temperatures:

- Friday, 4 AM to noon
- Saturday, midnight to 9 AM
- Will heavily damage exposed/unprotected sensitive crops and plants**

Saturday, December 24

Christmas Morning

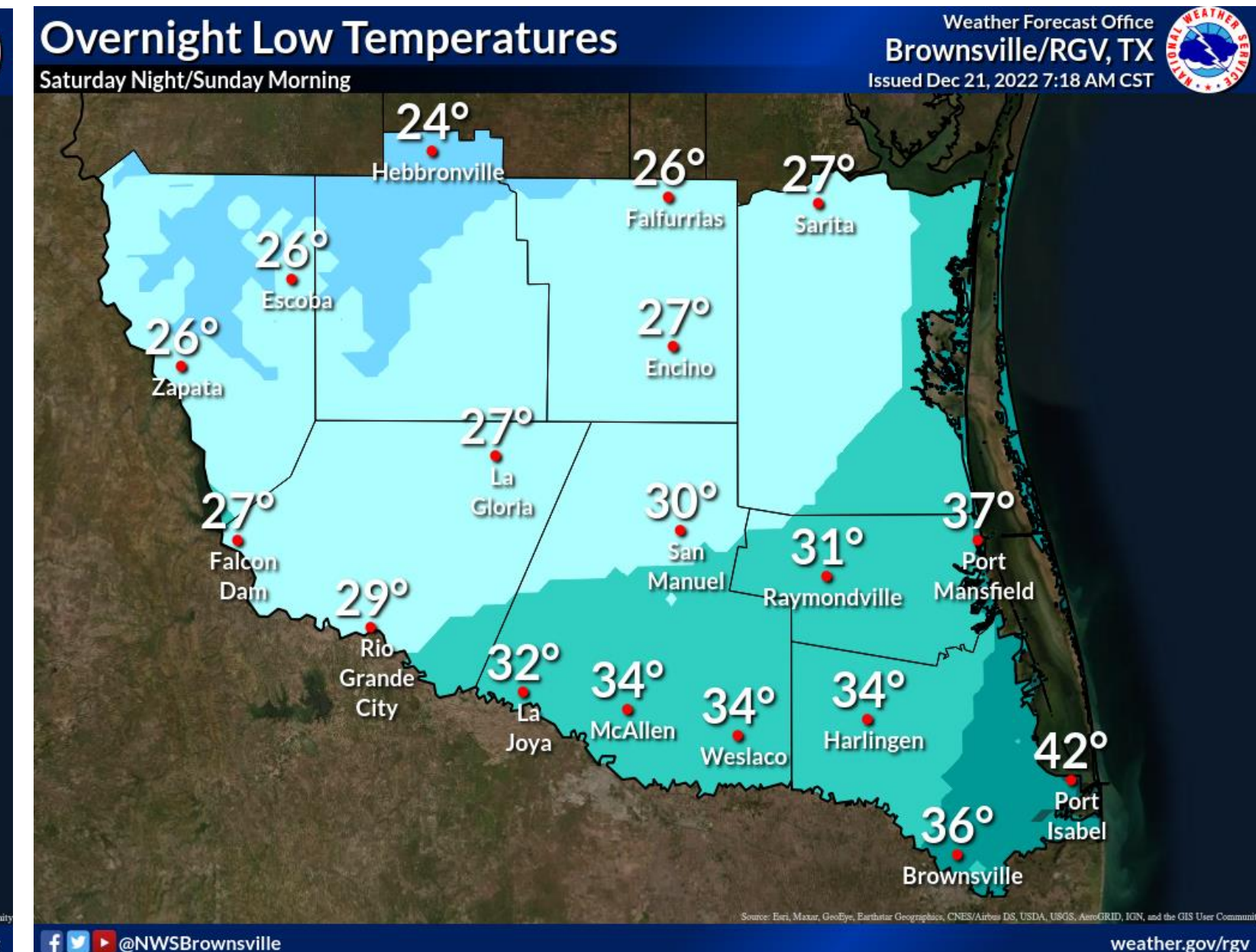
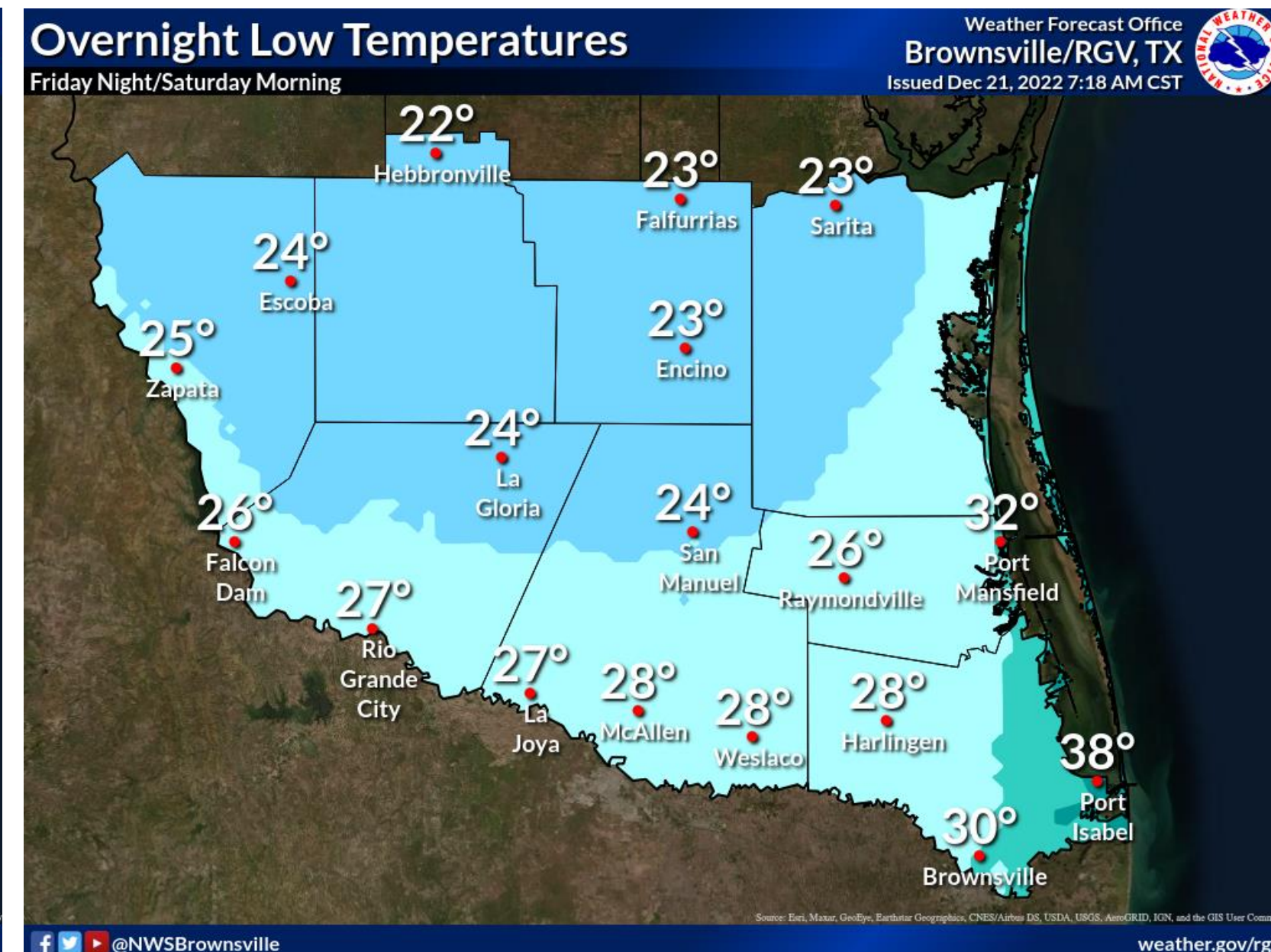
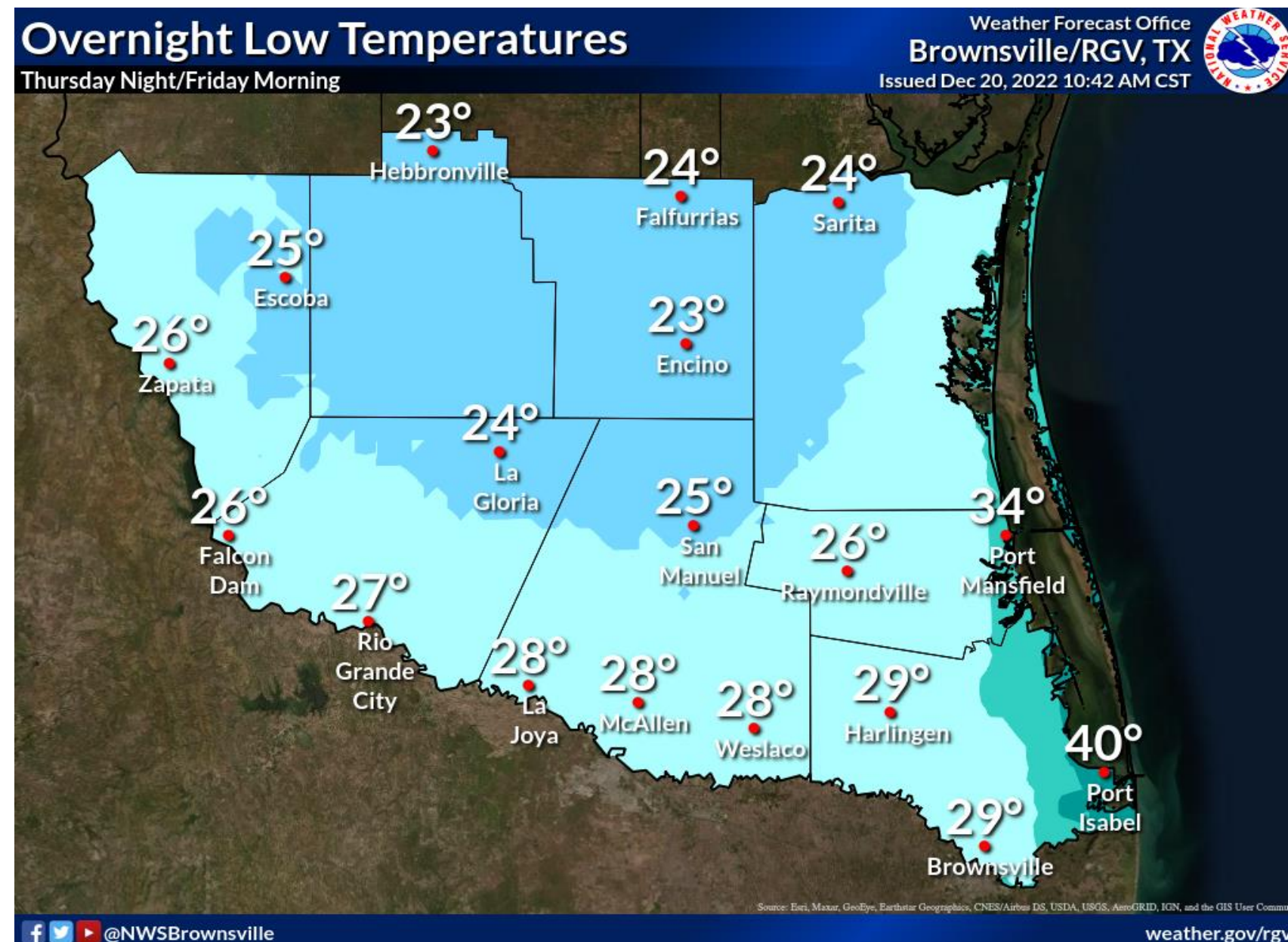
- Highest Hard Freeze Chances – generally 9 in 10 chance Friday/Saturday, across ranch country
 - Effective temperature 15 to 20° during same time frames above.
 - Could be deadly to unprotected livestock**, and will “freeze-cure” rangeland grass and brush

Primary Citrus/Crop Zone



Minimum Temperature Forecast Dec. 23-25

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Friday, December 23

Saturday, December 24

Christmas Morning

Hard freezes (27°F or lower for 2 or more hours) across the Rio Grande Plains and Brush/Ranch Country each Day

Freezes likely elsewhere Friday and Saturday, not as cold Christmas morning

This does not include the **impact of effective temperature**, which will be 5 to 7 degrees lower mainly west of IH-69E/US 77



Expected Duration of Freeze/Hard Freeze

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Freeze (32° or Lower)

Location	Thursday Night	Friday Night	Saturday Night
Brownsville	5-7 Hours	7-9 Hours	Not Expected
Harlingen	7-9 Hours	12-14 Hours	Not Expected
Weslaco	7-9 Hours	12-14 Hours	Not Expected
McAllen	5-7 Hours	9-11 Hours	Not Expected
Edinburg	7-9 Hours	14-16 Hours	2-4 Hours
Rio Grande City	6-8 Hours	13-15 Hours	6-8 Hours
Zapata	7-9 Hours	13-15 Hours	9-11 Hours
Hebbronville	12-14 Hours	18-20 Hours	12-14 Hours
Falfurrias	10-12 Hours	17-19 Hours	11-13 Hours
Raymondville	8-10 Hours	15-17 Hours	3-5 Hours

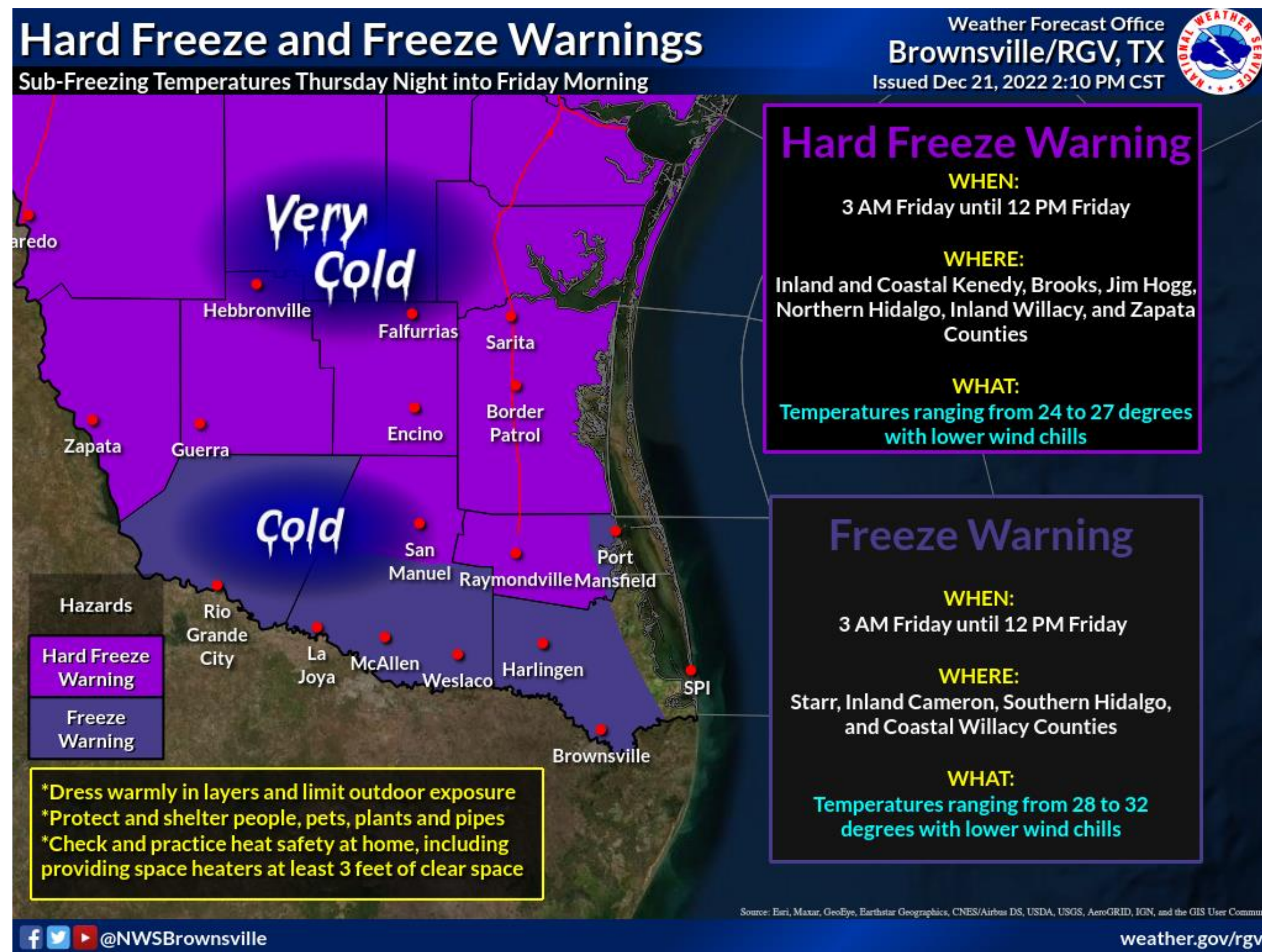
Freeze (≤32°) and Hard Freeze (≤27°)

Location	Thursday Night (Hours ≤ 32°) (Hours ≤ 27°)	Friday Night (Hours ≤ 32°) (Hours ≤ 27°)	Saturday Night (Hours ≤ 32°) (Hours ≤ 27°)
Brownsville	5-7 Hours Not Expected	7-9 Hours Not Expected	Not Expected Not Expected
Harlingen	7-9 Hours Not Expected	12-14 Hours Not Expected	Not Expected Not Expected
Weslaco	7-9 Hours Not Expected	12-14 Hours Not Expected	Not Expected Not Expected
McAllen	5-7 Hours Not Expected	9-11 Hours Not Expected	Not Expected Not Expected
Edinburg	7-9 Hours Not Expected	14-16 Hours 3-5 Hours	2-4 Hours Not Expected
Rio Grande City	6-8 Hours Not Expected	13-15 Hours 2-4 Hours	6-8 Hours Not Expected
Zapata	7-9 Hours Not Expected	13-15 Hours 4-6 Hours	9-11 Hours 2-4 Hours
Hebbronville	12-14 Hours 6-8 Hours	18-20 Hours 12-14 Hours	12-14 Hours 6-8 Hours
Falfurrias	10-12 Hours 6-8 Hours	17-19 Hours 11-13 Hours	11-13 Hours 4-6 Hours
Raymondville	8-10 Hours 3-5 Hours	15-17 Hours 5-7 Hours	3-5 Hours Not Expected



Current Land-Based Warnings

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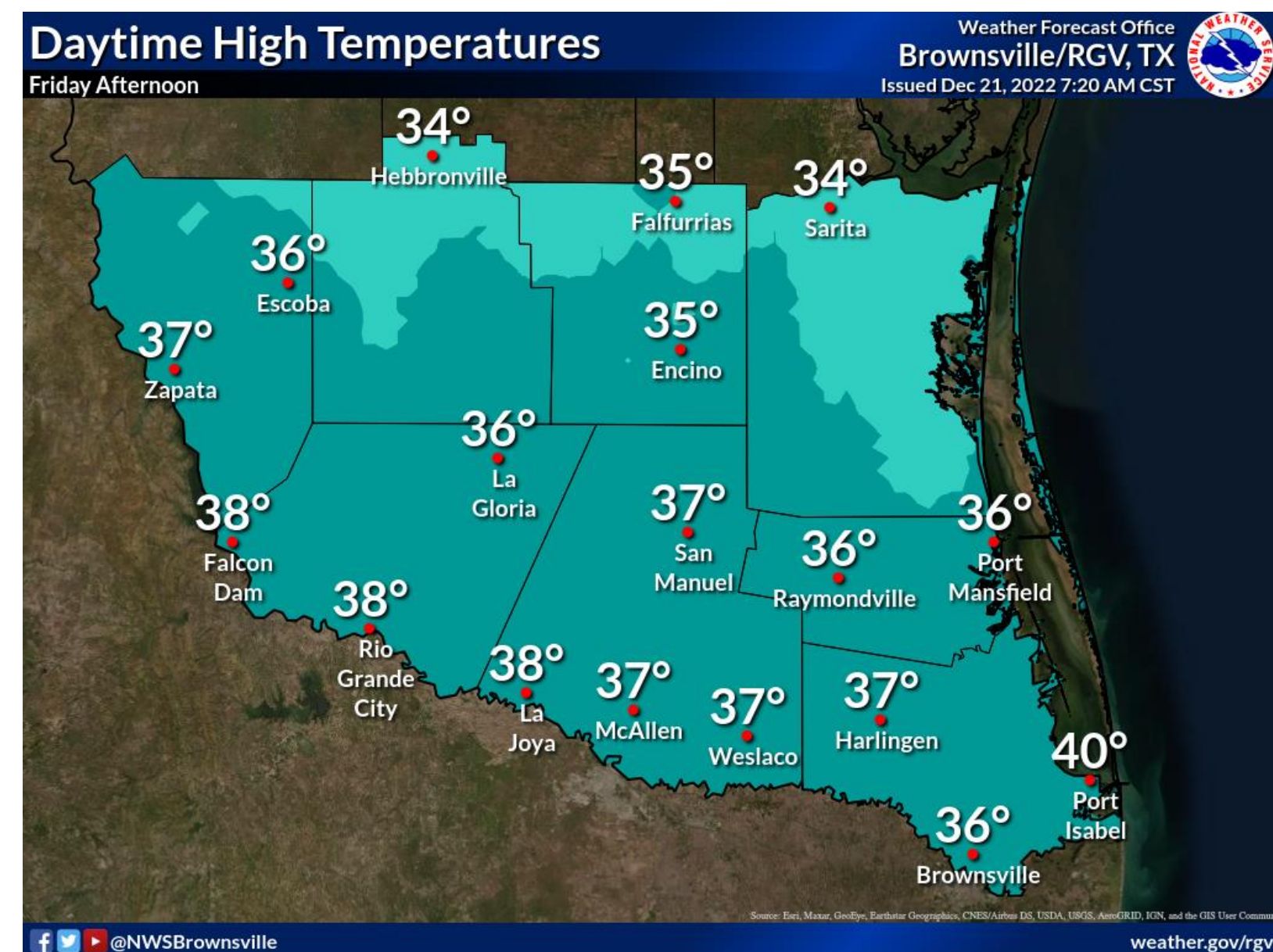


Note: Warnings include buffers for potential earlier start and later end times than the specific forecast

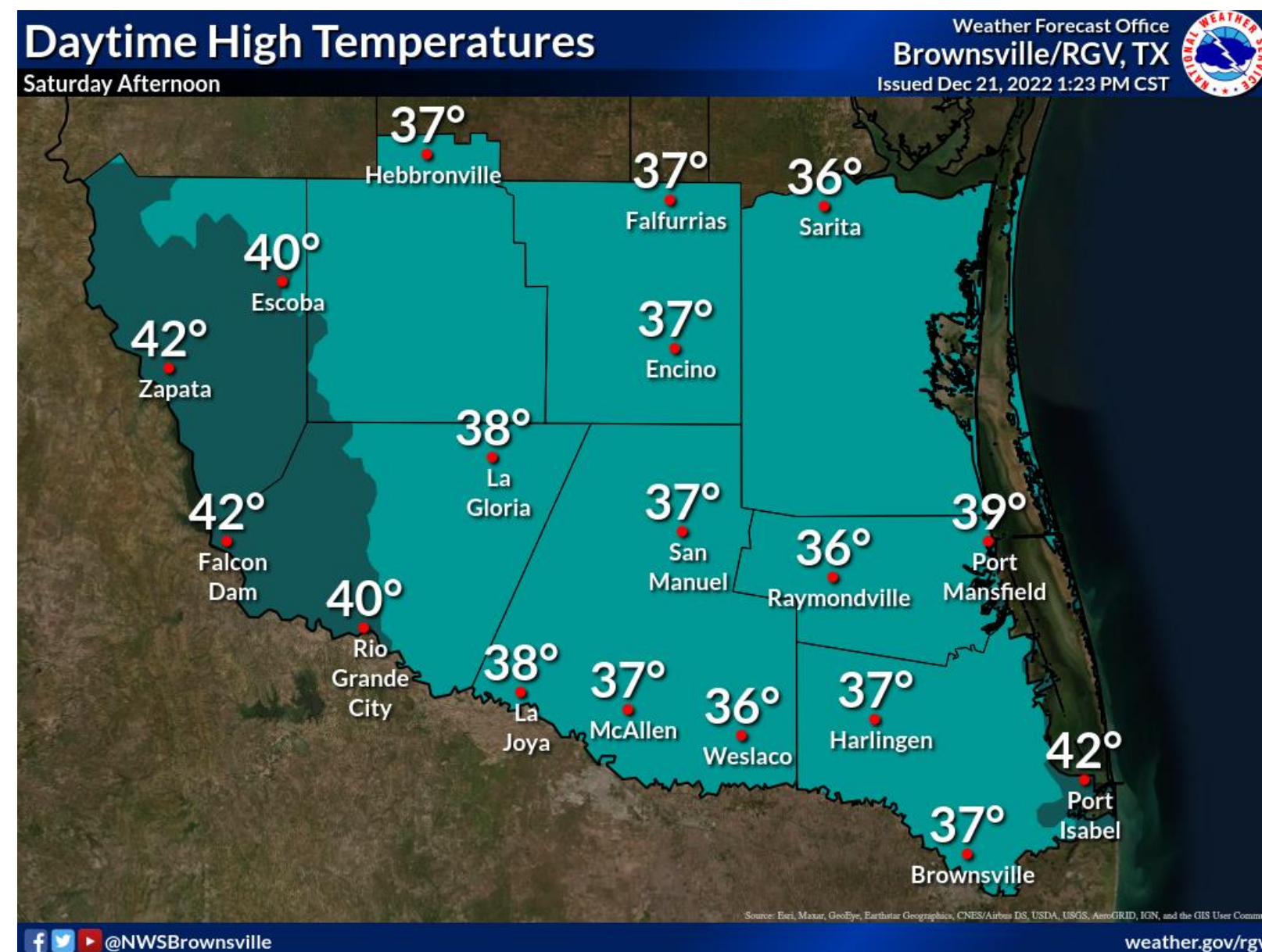


Maximum Temperature Forecast Dec. 23-25

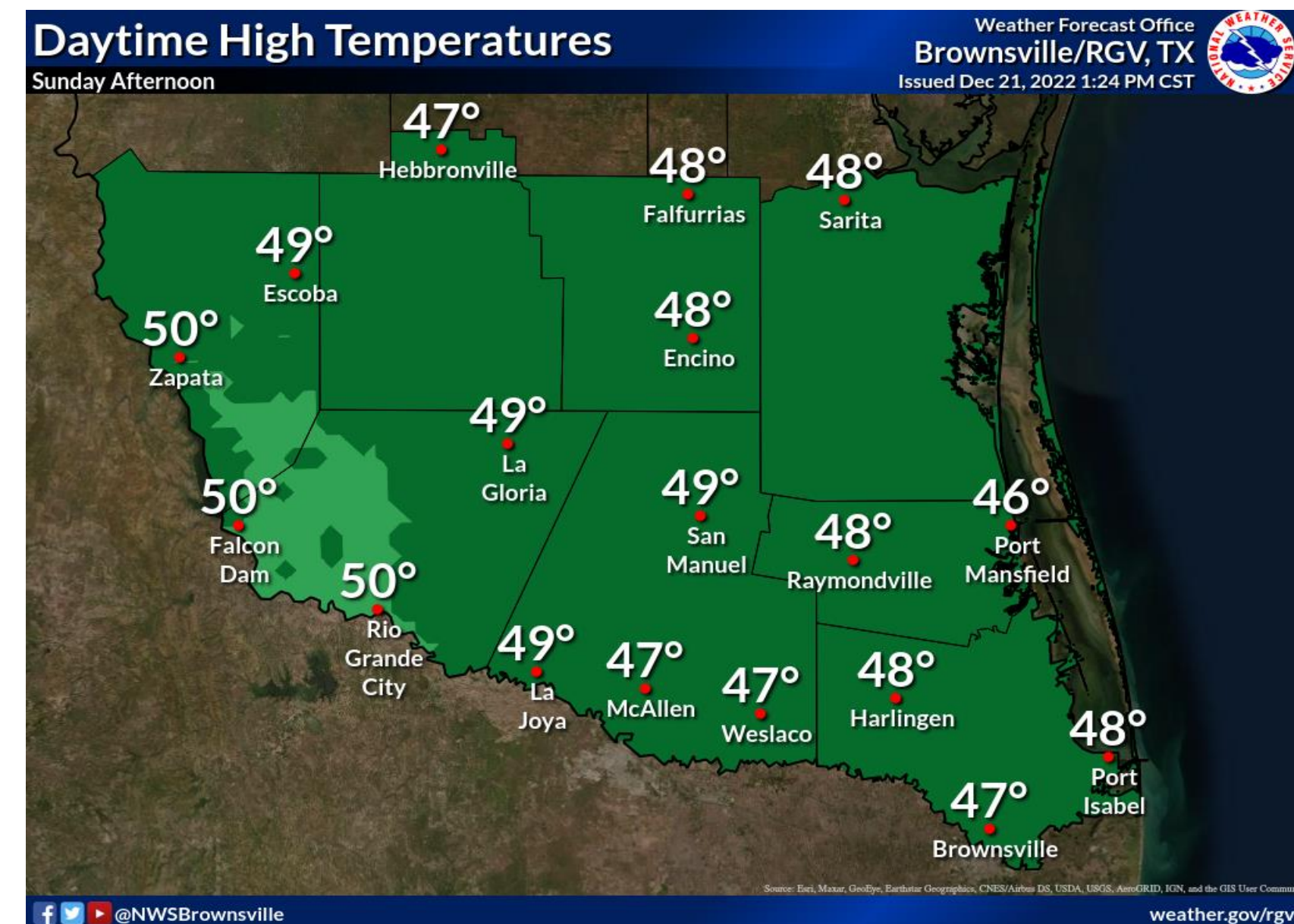
ChristmasTime Arctic Outbreak 2022



Friday, December 23



Saturday, December 24



Christmas Day

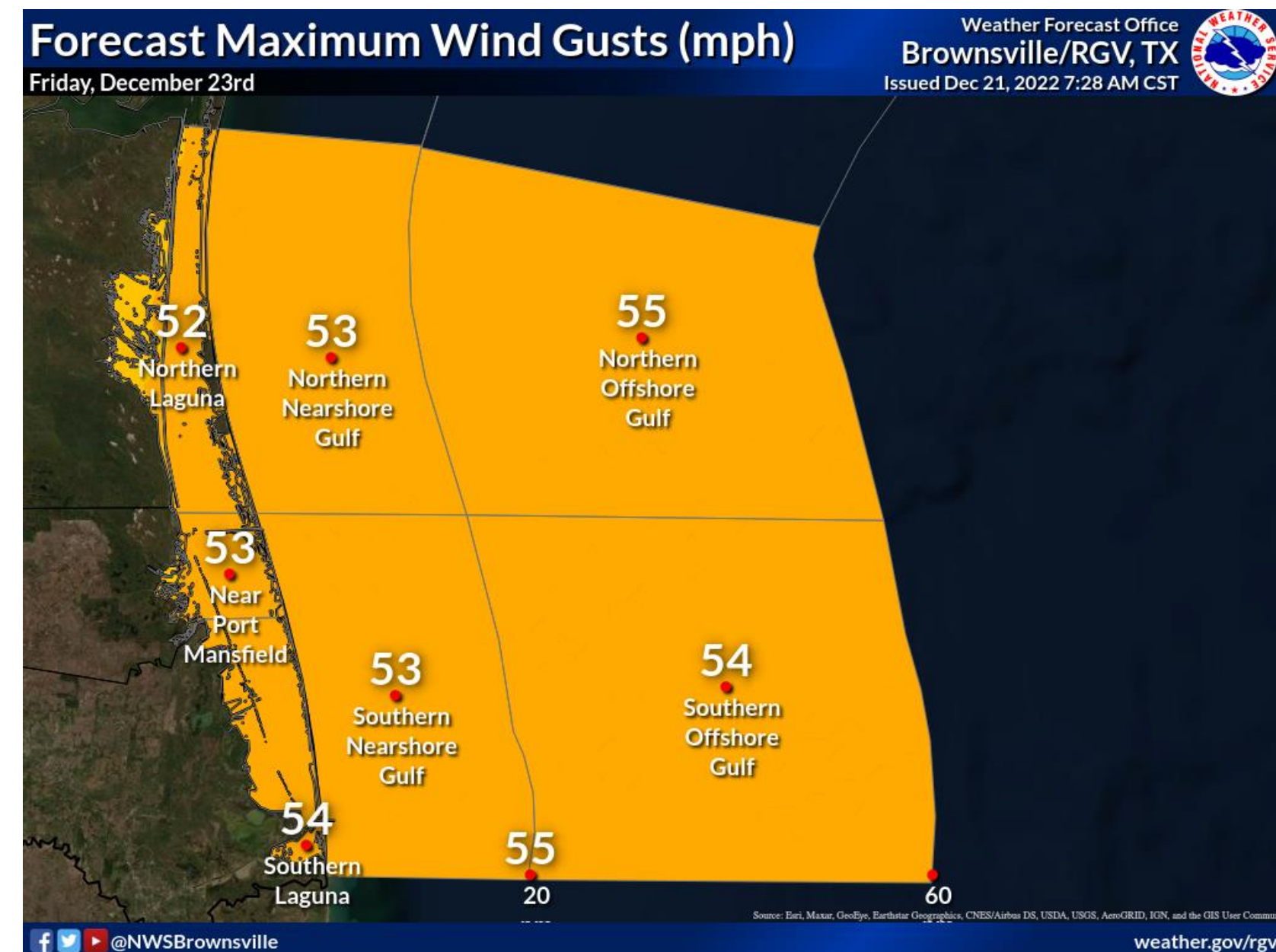
It's going to feel like the weather you see in commercials and movies!



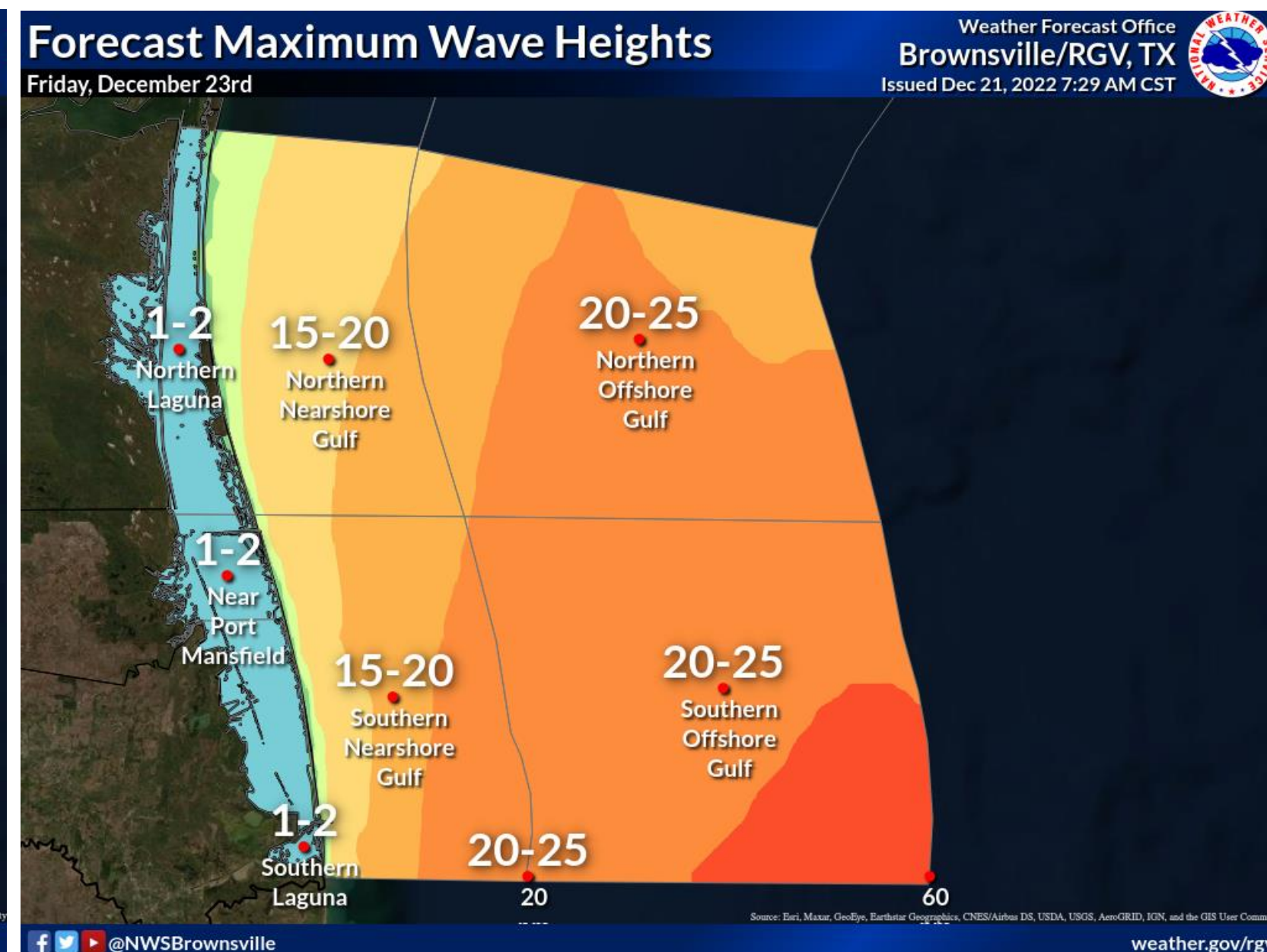


Life-Threatening Boating/Dangerous Shipping Weather

ChristmasTime Arctic Outbreak 2022



December 23 (in miles per hour)



December 23 (in feet)



Beaufort Scale 8 Sea State

Sea state will look like the upper right by pre-dawn Friday

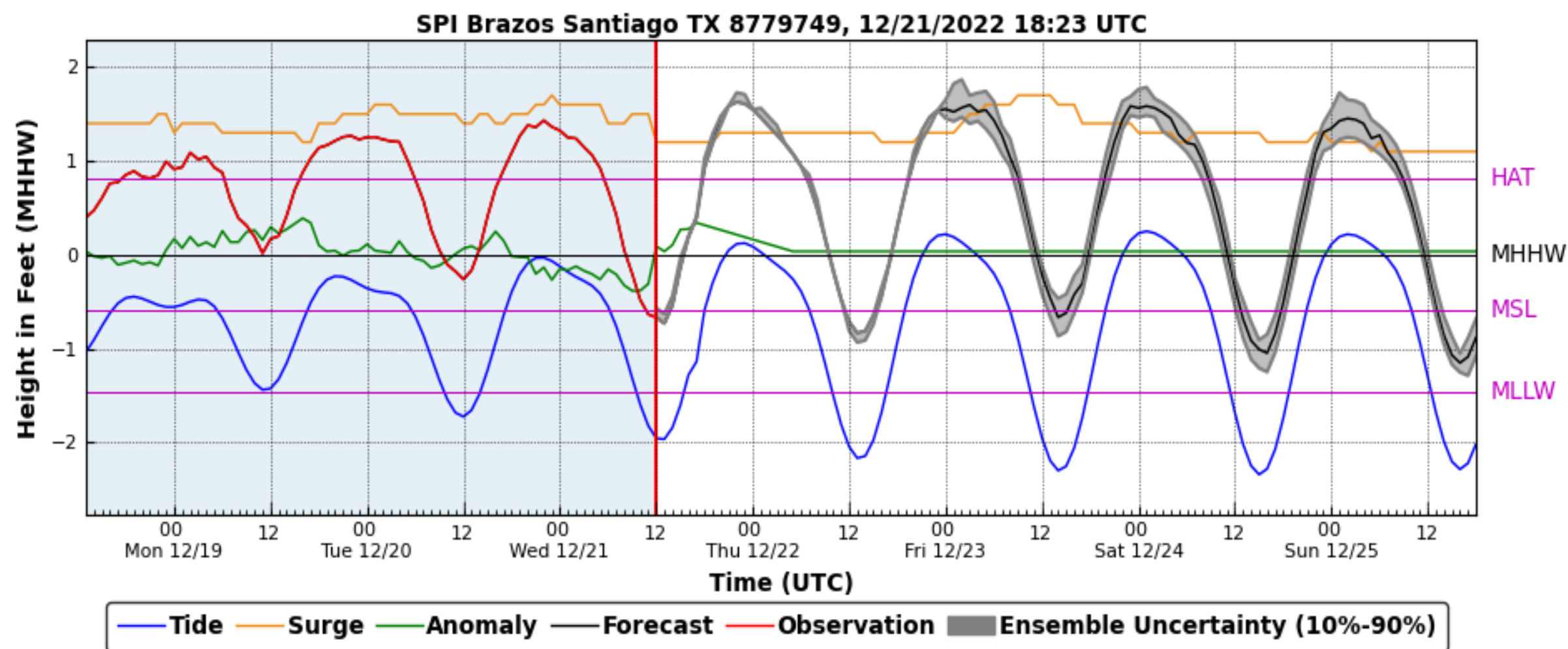
Small Craft Should Remain in Port From Sunset Thursday through Christmas Day

Larger shipping and military vessels should plan arrivals/departures to the Port of Brownsville prior to sunset

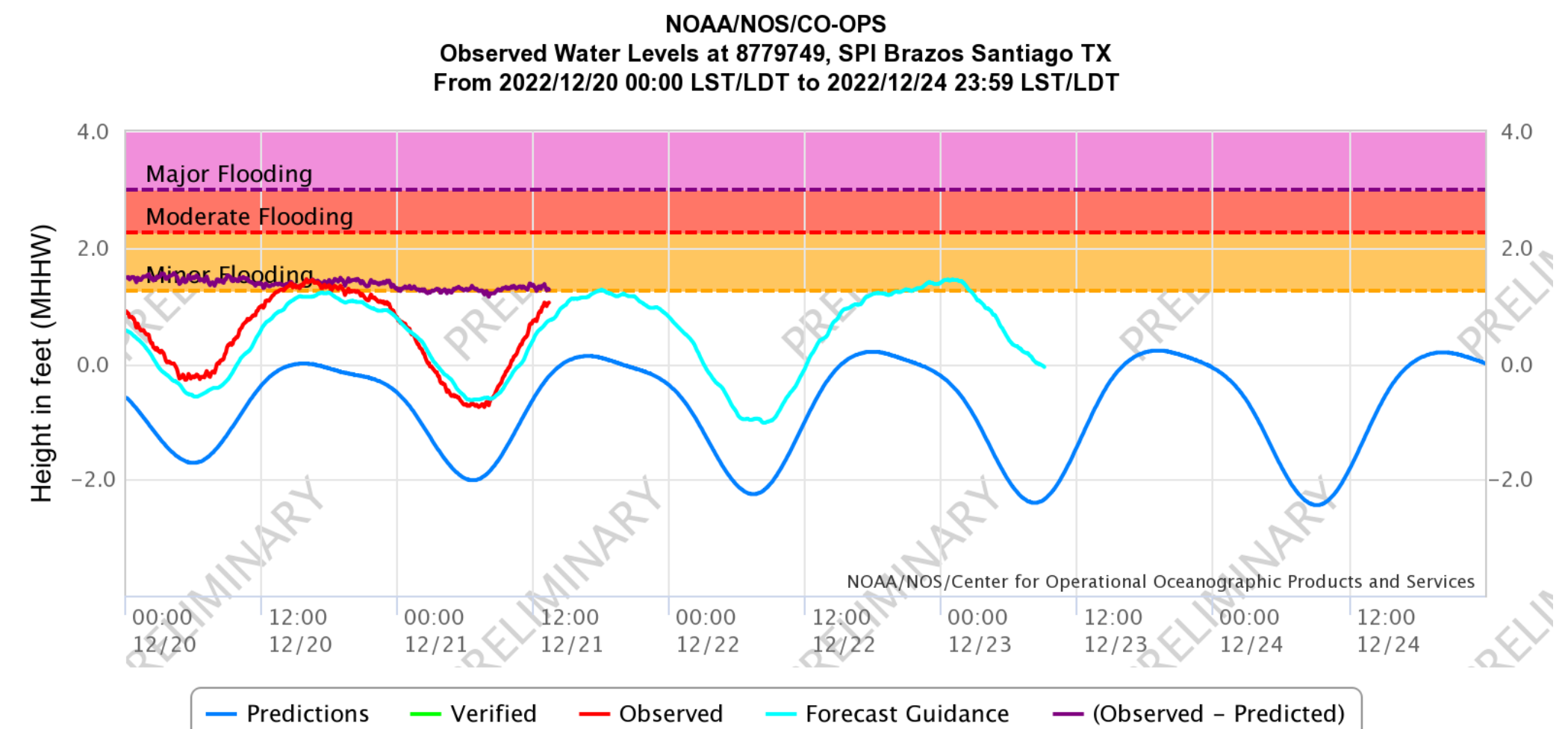


Beach/Coastal Issues

ChristmasTime Arctic Outbreak 2022



Predicted Tide Values, Isla Blanca Jetty



Observed/Predicted Tide Values, Isla Blanca Jetty

Narrow beaches are likely to **continue to flood up to the dune line**, especially at high tide, through the weekend, from tide values and wave energy “push” onshore

State Highway 4 will be flooded by overwash from South Bay from late Thursday night through at least early Saturday, especially at high tide



Comparison with the 1983 and 1989

ChristmasTime Arctic Outbreak 2022

Climatological Data for Brownsville Area, TX (ThreadEx) - December 1983

Click column heading to sort ascending, click again to sort descending.

	High	Low	Average	Departure
1983-12-23	39	34	36.5	-26.8
1983-12-24	39	24	31.5	-31.6
1983-12-25	30	20	25.0	-38.0
1983-12-26	39	28	33.5	-29.4

Climatological Data for Brownsville Area, TX (ThreadEx) - December 1989

Click column heading to sort ascending, click again to sort descending.

	High	Low	Average	Departure
1989-12-22	44	23	33.5	-29.9
1989-12-23	34	16	25.0	-38.3
1989-12-24	54	18	36.0	-27.1
1989-12-25	62	30	46.0	-17.0

Current Forecast for Brownsville area

Date	Forecast High	Forecast Low	Forecast Avg.
12/23	36	29	32.5
12/24	37	30	33.5
12/15	47	36*	41.5

- This will be the coldest Christmas Time in the Rio Grande Valley **since 1989...**
- ...However, the current forecast, and potential trends, suggest it will be not quite as cold as 1989, and nowhere near as cold as 1983 (which was a widespread killing freeze event)

*Could be a few degrees colder than shown here.



Key Recommendations

ChristmasTime Arctic Outbreak 2022

Before Sunset Thursday (Dec. 22):

- **People, pets, plants, and pipes should be prepared/winterized**
- **Vehicles should be checked for battery and other cold-critical items, with each replaced if needed**
- **Crop growers and ranchers should also have protective actions completed for hard freezes and low “effective” temperatures**
- **Sea turtle rescue volunteers should be ready to act as soon as winds and waves recede, beginning Christmas Eve afternoon**
- **Scattered to locally numerous power outages are likely, especially along/east of IH-69C. Residents should anticipate and ready their homes.**



Safety Information: Heaters



NWS Brownsville, TX

Space Heater Safety Tips



- Place the heater on a hard, level, nonflammable surface, such as a ceramic tile floor.
- Plug your heater directly into a wall outlet, **DO NOT** use extension cords
- Make sure the heater is at least three feet away from any flammable materials, children and pets.
- Verify your space heater has tip over protection and is UL approval
- **NEVER** leave a space heater on when you go to sleep or leave a room
- **DO NOT** use portable propane space heaters indoors or in any confined space unless they are specifically designed for indoor use.

***Space heaters account for ~85% of all home heating deaths and nearly half of all home heating fires according to the National Fire Protection Agency**



Safety Information: Overview

Prepare for the Cold Later this Week!

Significantly Colder Temperatures are Expected Ahead of the Holidays

Weather Forecast Office
Brownsville/RGV, TX

Issued December 19, 2022 10:38 AM CST



Protect Your Plants

Cover your plants before the cold weather arrives to help retain some heat. Bring your Sensitive plants indoors.



Protect Your Home

Protect outdoor pipes. Open the sink cabinets to keep warmer air flowing and let indoor faucets drip.

Protect Your Pets

Bring your pets inside or have a plan for your pets if you're traveling. If you're cold, they're cold!



Very Cold Temperatures are expected heading into the Holiday Weekend. What can you do **NOW** to prepare?



Protect People

Check in on neighbors and family members. Make sure they're aware and prepared! Have extra blankets and jackets.

Protect Your Vehicle

Fill up your tank before the colder temperatures arrive! Have extra supplies in the trunk like water, blankets, jumper cables, etc.



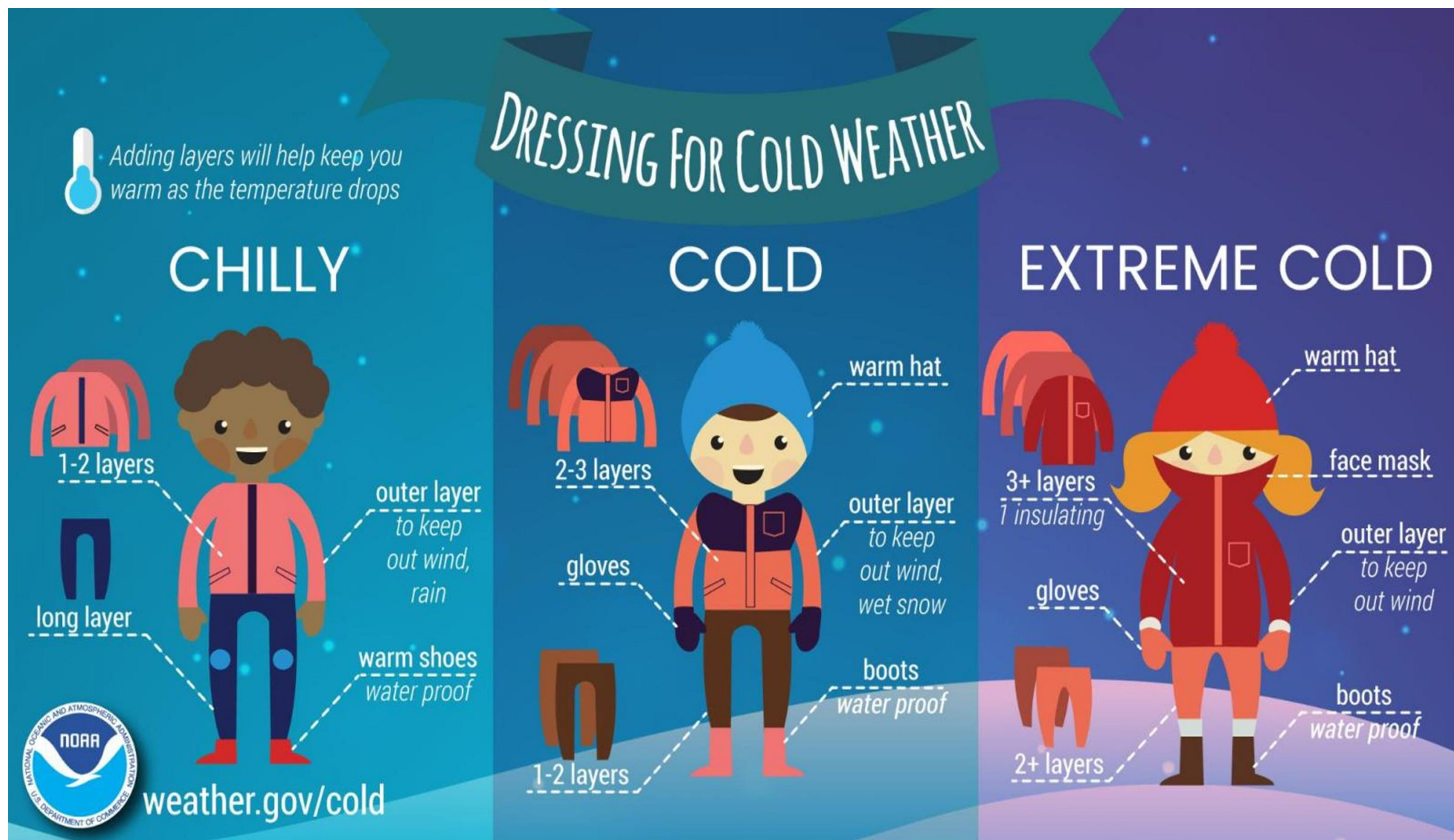
Stay Up To Date!

Check back frequently for the latest forecasts. Make sure you are following a reliable source!



Safety Information: Dressing for Cold

ChristmasTime Arctic Outbreak 2022



- By Friday morning (Dec. 23), continuing through Christmas Day morning:
Extreme Cold
- Christmas Day afternoon:
Cold to cool



Safety Information: Hypothermia

Tropical Storm Nicholas

Warning Signs of Hypothermia



Confusion



Shivering



**Difficulty
Speaking**

ZZZ...



Sleepiness



**Stiff
Muscles**

weather.gov/cold



Don't Forget Your Furry Friends!



NWS Brownsville/Rio Grande Valley

Updated 4:51 PM December 23, 2022



Dangerous Weather for Any Pets Left Outside:

Please provide
nourishing food, fresh
water, & protection
for outdoor pets!

Check our webpage
<https://www.weather.gov/rgv/>
for timing & locations of these
hazards

Early Friday

**Midnight: Low to
mid 40s**

Daybreak: 25-30

**Daybreak Wind
Chill: 10-20°F**

Friday through Christmas Eve

Daytime: 30s to 40

Midnight: 28 to 34

Daybreak: 25-30

**Wind Chill: Teens
to lower 20s**



Safety Information: Sea Turtles

Cold and Wintry Precipitation, January 20-21, 2022

Watch for Sea Turtles

When coastal water temperatures drop drastically to 50-55°F and below

Sea turtles can become “cold-stunned” and float to the surface, unable to avoid watercraft, or wash up and become stranded along coastal shores

If you see any stranded or cold-stunned sea turtles, please contact the sea turtle emergency hotline at

956-243-4361



National Weather Service
Brownsville/Rio Grande Valley



- **Mass Cold Stunning Event Expected along the Entire Texas coast**
- **Timing: Friday through December 26th, perhaps longer**
- **Lower Texas coast impacts begin Friday, and peak Saturday into early Sunday**
- **Poor water conditions (waves/seas/chop/wind) may preclude rescues until Christmas Day**



Safety Information: Pelicans

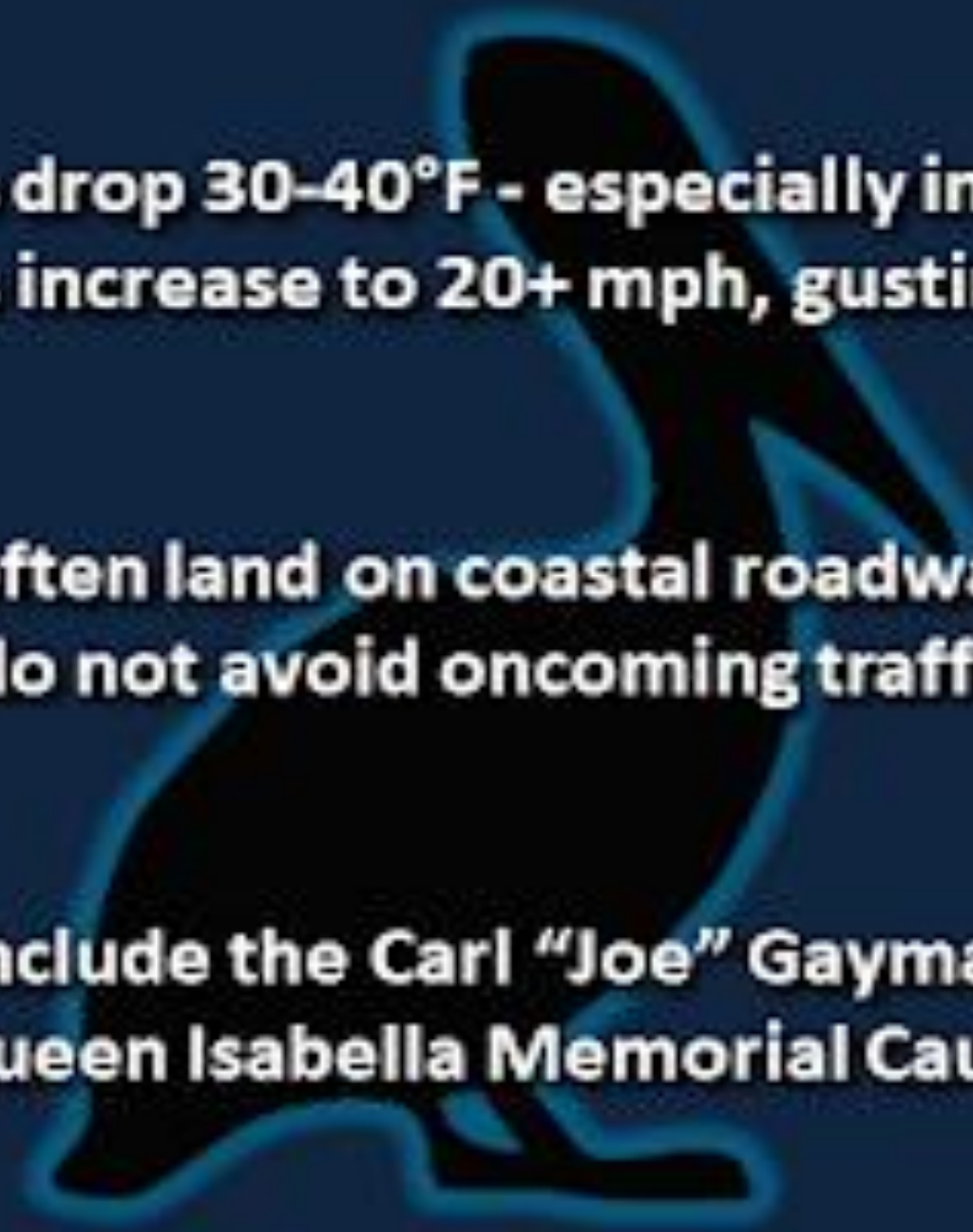
Cold and Wintry Precipitation, January 20-21, 2022

Watch for Pelicans

When temperatures drop 30-40°F - especially into the 40s and below
and winds increase to 20+ mph, gusting 30+ mph

Pelicans will often land on coastal roadways and bridges
and do not avoid oncoming traffic well

Favored landing areas include the Carl "Joe" Gayman bridge on HWY48 near
Bahia Grande and the Queen Isabella Memorial Causeway to SPI on HYW100



National Weather Service
Brownsville/Rio Grande Valley




- **Timing: Thursday
night through
Saturday (Dec. 23-
24)**





Next Briefing:


Webinar, Dec. 22 at 2 PM


Emails continuing through at least Christmas Eve


**Web:** <https://weather.gov/rgv>

**Phone:** (956) 504-1432 x2

**E-mail:** sr-bro.ops@noaa.gov

**Facebook:** NWSBrownsville

**Twitter:** NWSBrownsville

**YouTube:** NWSBrownsville