National Weather Service

2020-21 Winter Outlook &

Tools to Help You

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Outline

- **What is "Normal"**

- **What we have seen in the past**

- **This winter's outlook**
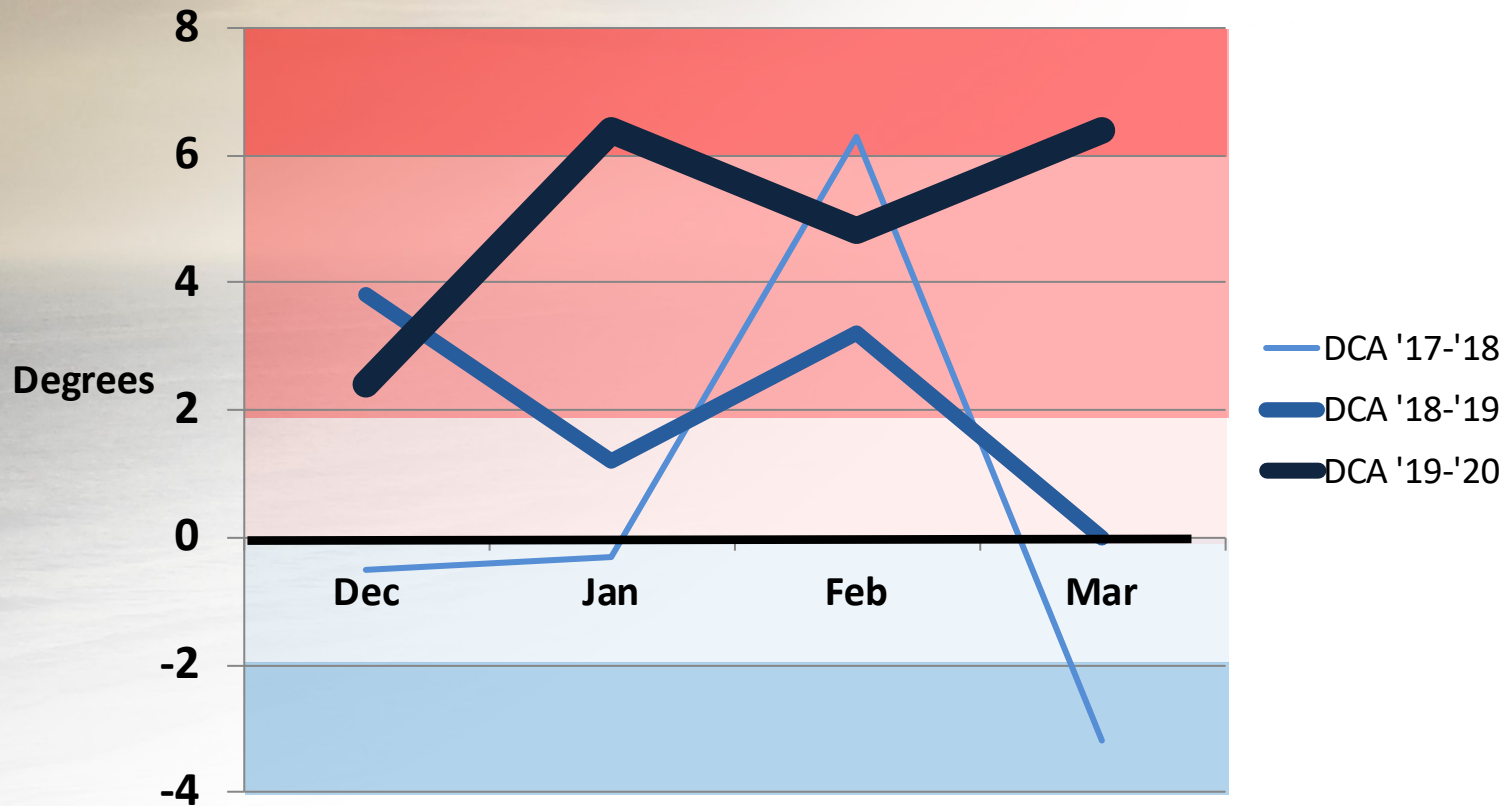
What is a "Normal" Winter
1981-2010

DCA	Nov	Dec	Jan	Feb	Mar
Temperature (High/Low)	58°/41°	47°/33°	43°/29°	47°/31°	56°/38°
Snowfall 14.5" total	0.5"	2.3"	5.6"	4.8"	1.3"

Past 3 Winters (DCA)
Temperature

- **Mild ... Last winter was 7th warmest on record**

Departure from Normal — Degrees

Legend: DCA '17-'18, DCA '18-'19, DCA '19-'20

Past 3 Winters (DCA)
Temperature

DCA Winter Temperature
20-yr rolling average (1941-2020)
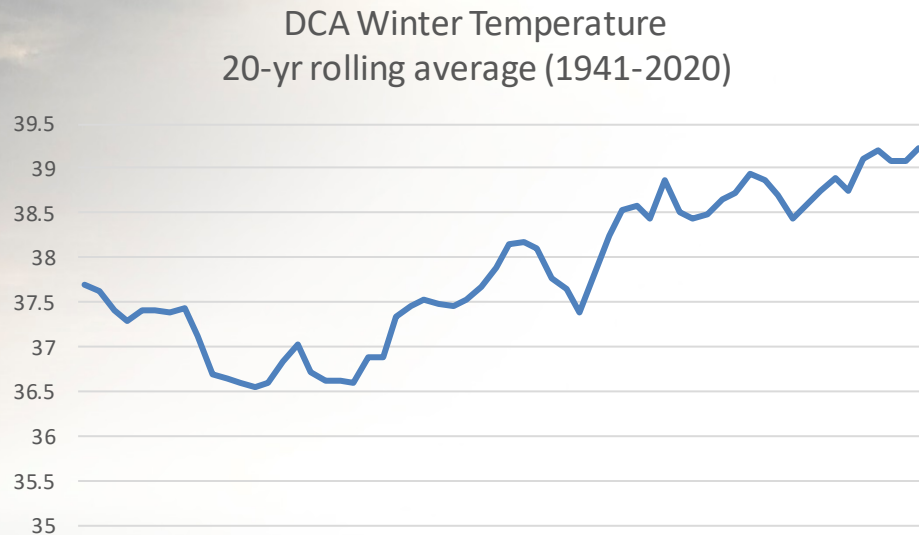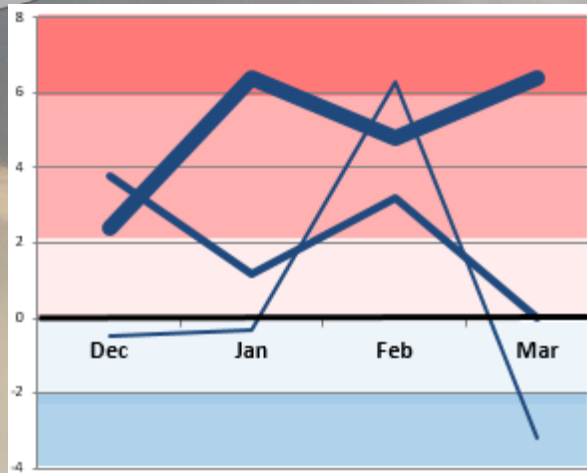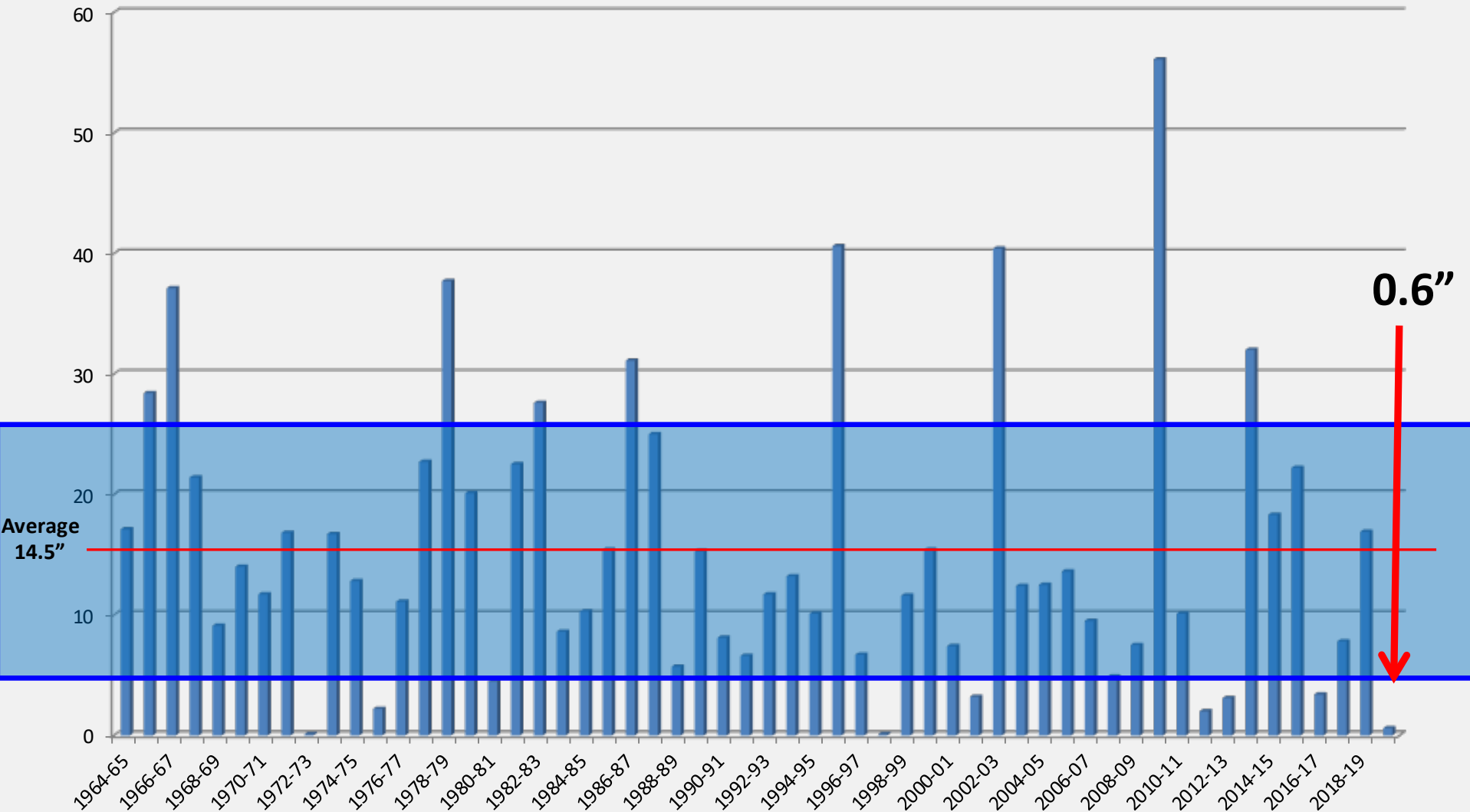

- **At DCA, a winter as warm as the last one happened:**
  - Once in the 2nd half of the 20th century,
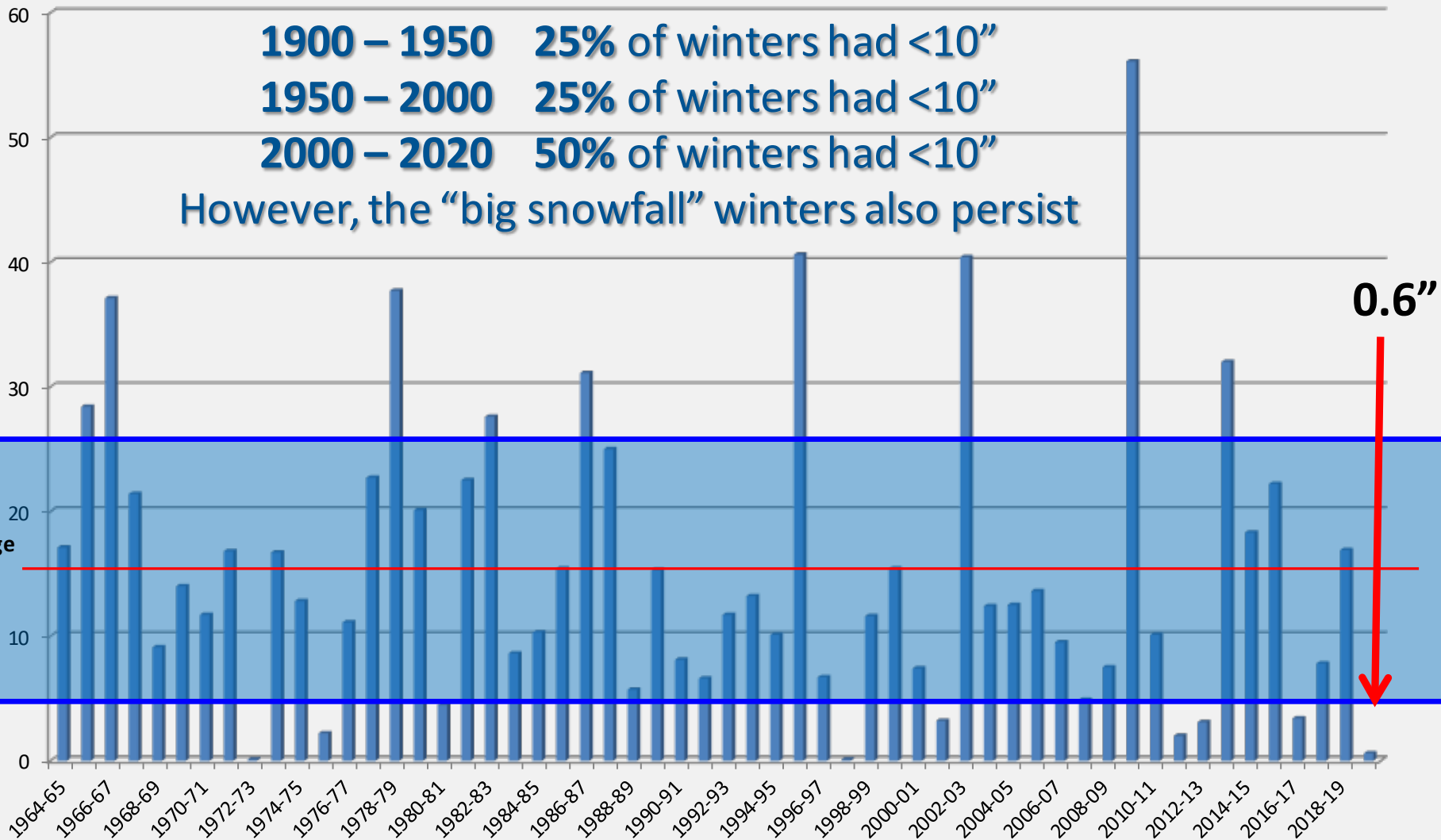 - 4 times in the past 20 winters, and
  - 2 times in the past 4 winters

DCA Annual Winter Snowfall

DCA Annual Winter Snowfall

Inches

1900 – 1950   25% of winters had <10"
1950 – 2000   25% of winters had <10"
2000 – 2020   50% of winters had <10"
However, the "big snowfall" winters also persist

0.6"

Average 14.5"

Seasonal Forecast - Temperature
(Dec – Feb)
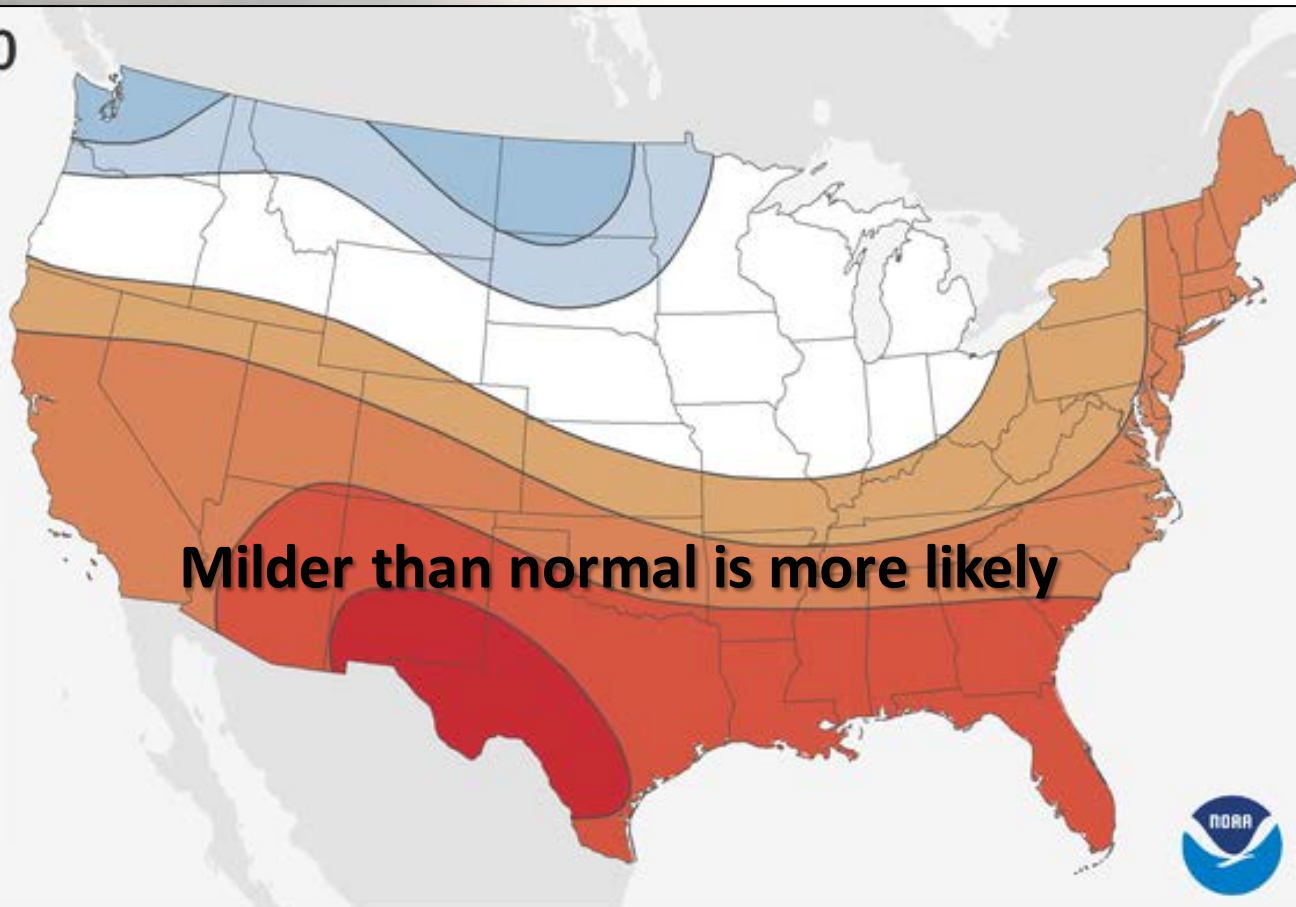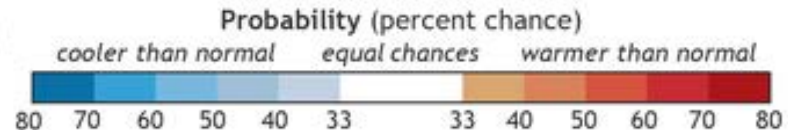
Seasonal Forecast - Precipitation
(Dec – Feb)
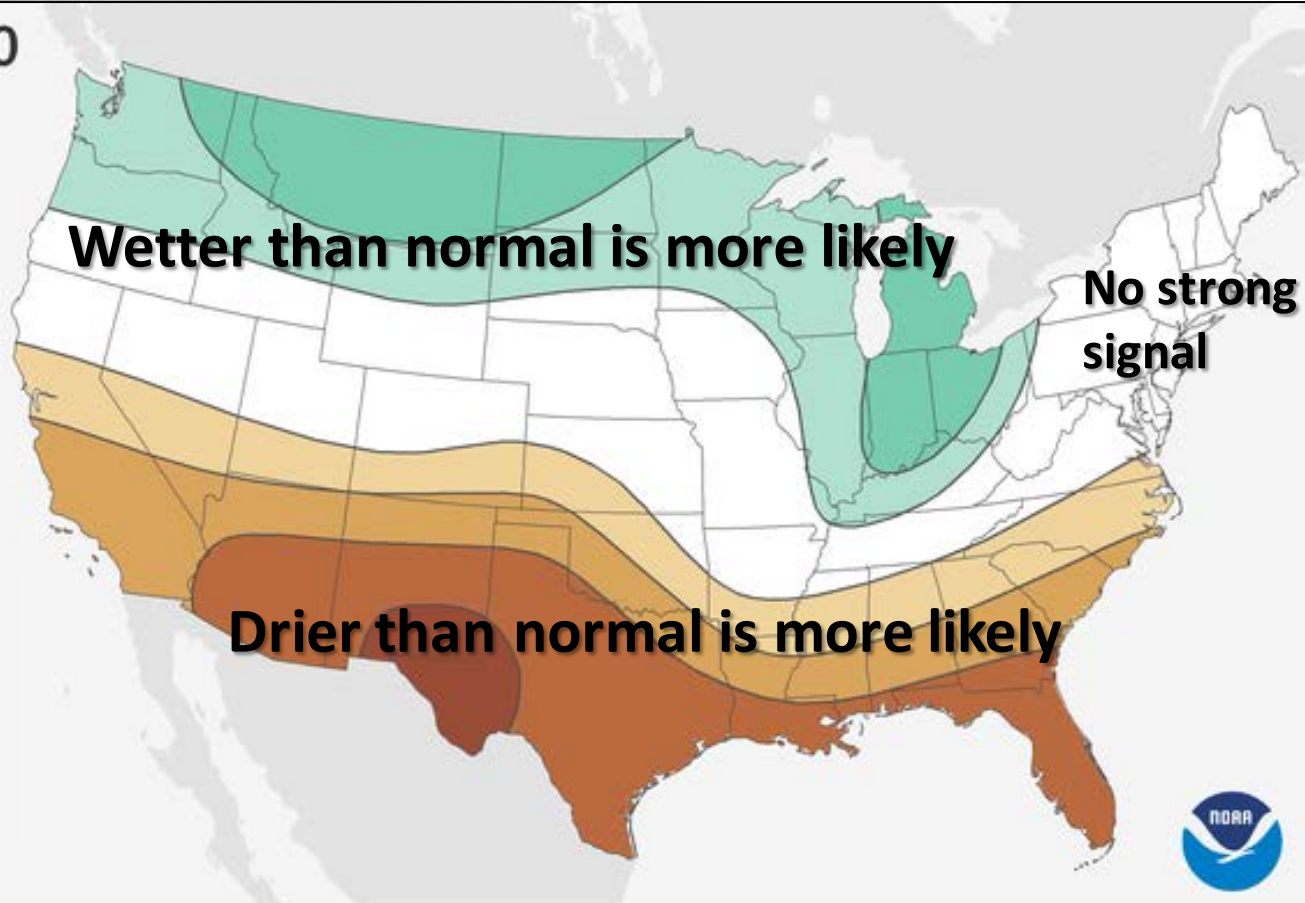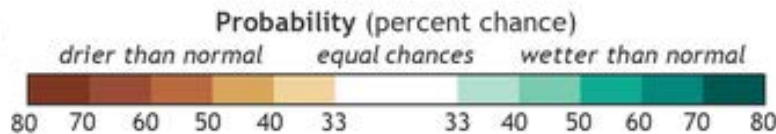
Mid-Atlantic
Winter Outlook 2020-21

- **El Niño/La Niña Cycle**
  - **La Niña**
    - **More storm tracks to our west, can result in more freezing rain.**

- **Mid-Atlantic Outlook:**
  - **Temperature**
    - **Lesser chance of long-lasting cold**
    - **Fewer arctic outbreaks**

  - **Precipitation**
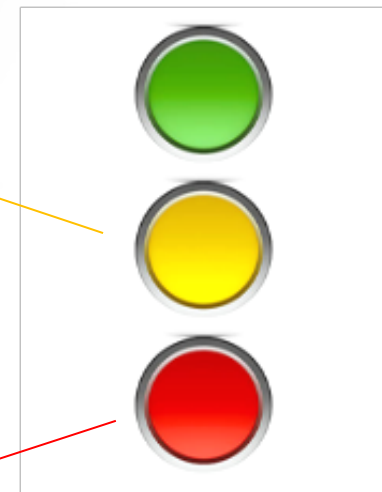   - **No strong signal on more/less precipitation at this time**

Everything we will discuss is on our
NWS Winter Page

www.weather.gov/washington/winter

NWS "Headlines"

- **Winter Storm Watch**
  - Possibility of 5+" snow
  - ~1-3 days in advance

- **Winter Storm Warning** 5"+
- **Winter Weather Advisory** 1-4"
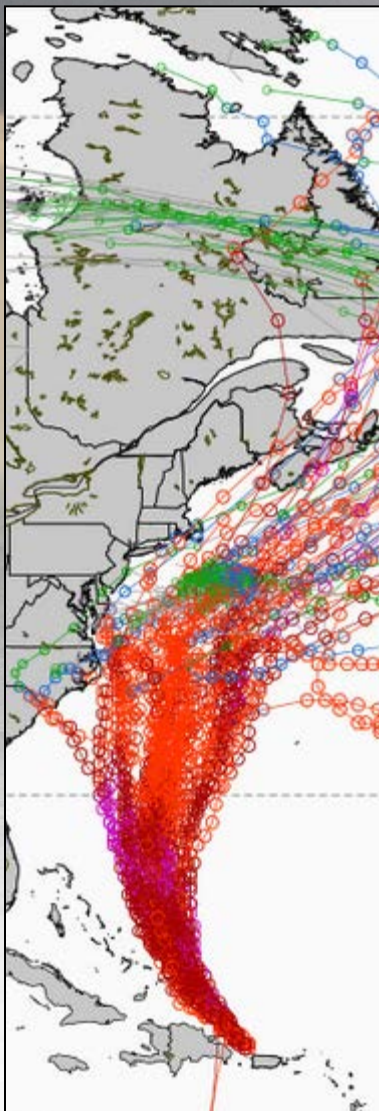 - Expectation
  - ~12-24 hours in advance

Why Uncertainty?

- **For winter precipitation threats…**

  – <u>Dozens</u> of international models
  (not simply U.S. vs. European)

  – Looking further into the future, they become increasingly hazy on…
    - where -and-
    - how strong

  …next weather system will be

  Let's look at one storm for example…
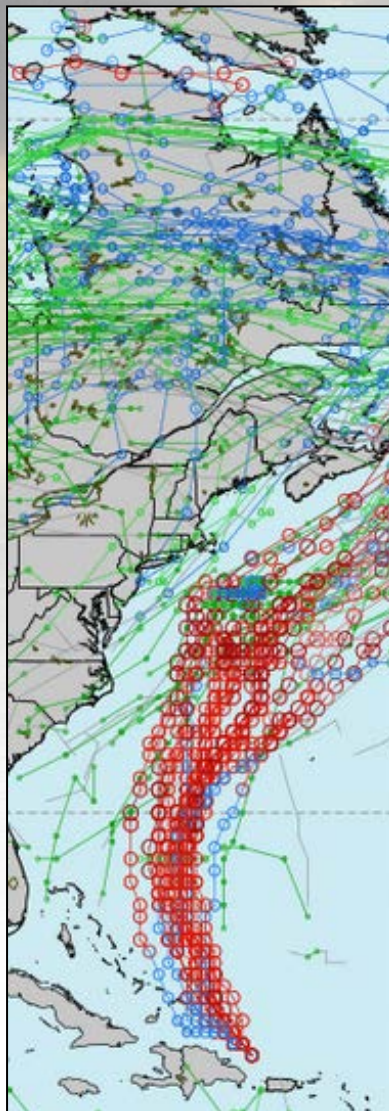
Why Uncertainty?
Dozens of Model Forecasts
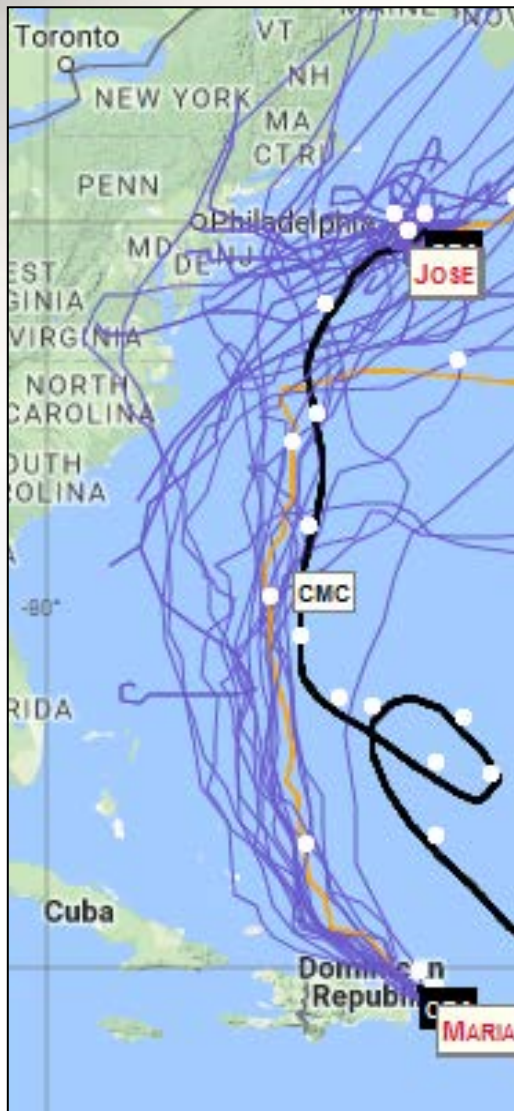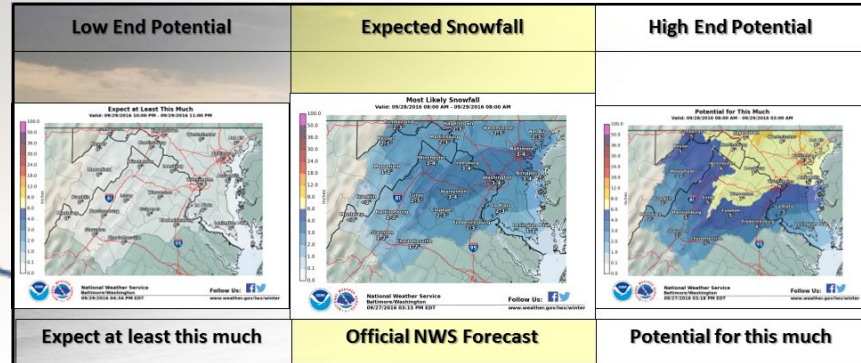
European

American

Canadian

United Kingdom

As Event Nears, "Range of Possibilities" Shrinks & Level of Forecast Detail Increases
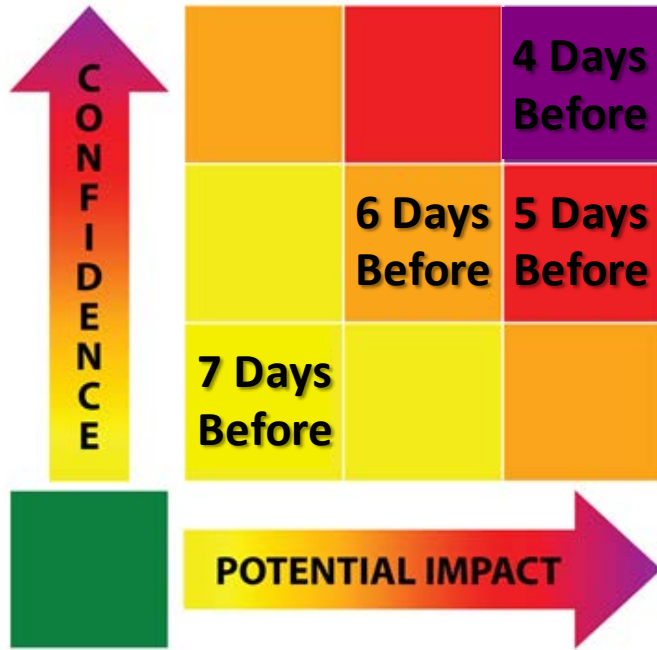
Low End Potential	Expected Snowfall	High End Potential
Expect At Least This Much	Most Likely Snowfall	Potential for This Much
Expect at least this much	Official NWS Forecast	Potential for this much

Range of Possibilities

Threat Level

Possible Amounts

3-7 Days	1-3 Days	0-1 Day

Small Weather, BIG Impact

CONFIDENCE

✓

POTENTIAL IMPACT

Winter Storm Threat

Range of Possibilities — Threat Level 3-7 Days — Possible Amounts 1-3 Days — 0-1 Day — Small Weather, BIG Impact

- **A real-world example:**
  Mid-Atlantic Blizzard of Jan 2016
  - 7 days of threat
  - Threat increased
 - "**High**" threat 4 days before first flakes

High	**High threat of high impact winter storm.** Potential impacts include significant travel delays, closures, and threats to life and property. Plan ahead to minimize impact on you and your family.
Moderate	**Moderate winter storm threat.** Potential impacts include significant travel delays and closures. Plan ahead to minimize impact on you and your family.
Enhanced	**Enhanced winter storm threat.** Primary threat is disruption to travel.
Slight	**Slight winter storm threat.** If threat materializes, may cause travel disruptions.
None	**No significant winter storm threat is currently expected.** However, light wintry precipitation may still be possible.
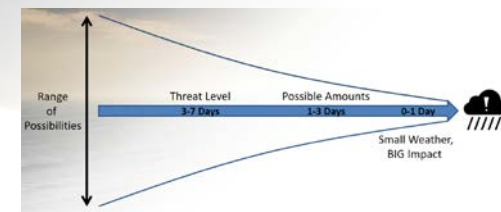
Current Snowfall Expectation

What our forecasters expect now.

Based on the latest, constantly-evolving models

Expected Snowfall - Official NWS Forecast

High-End Potential

How much/little could it be, given what some models still show
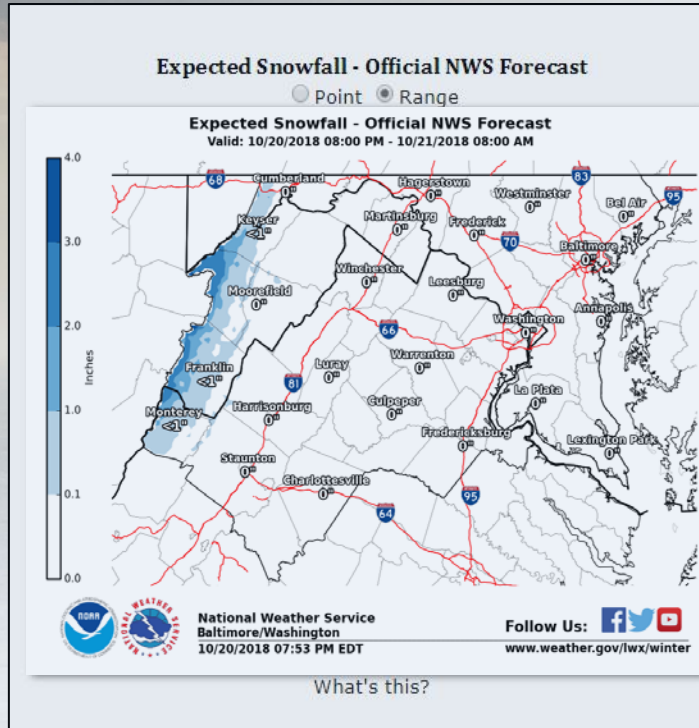
Low-End Potential

High End Amount 1 in 10 Chance (10%) of Higher Snowfall
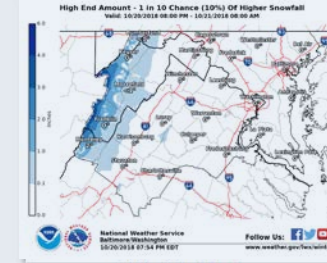
Low End Amount 9 in 10 Chance (90%) of Higher Snowfall

0-1 Days in Advance
Potential Winter Commuting Hazard

Recipe for Traffic Disaster

- 1" or less of snow
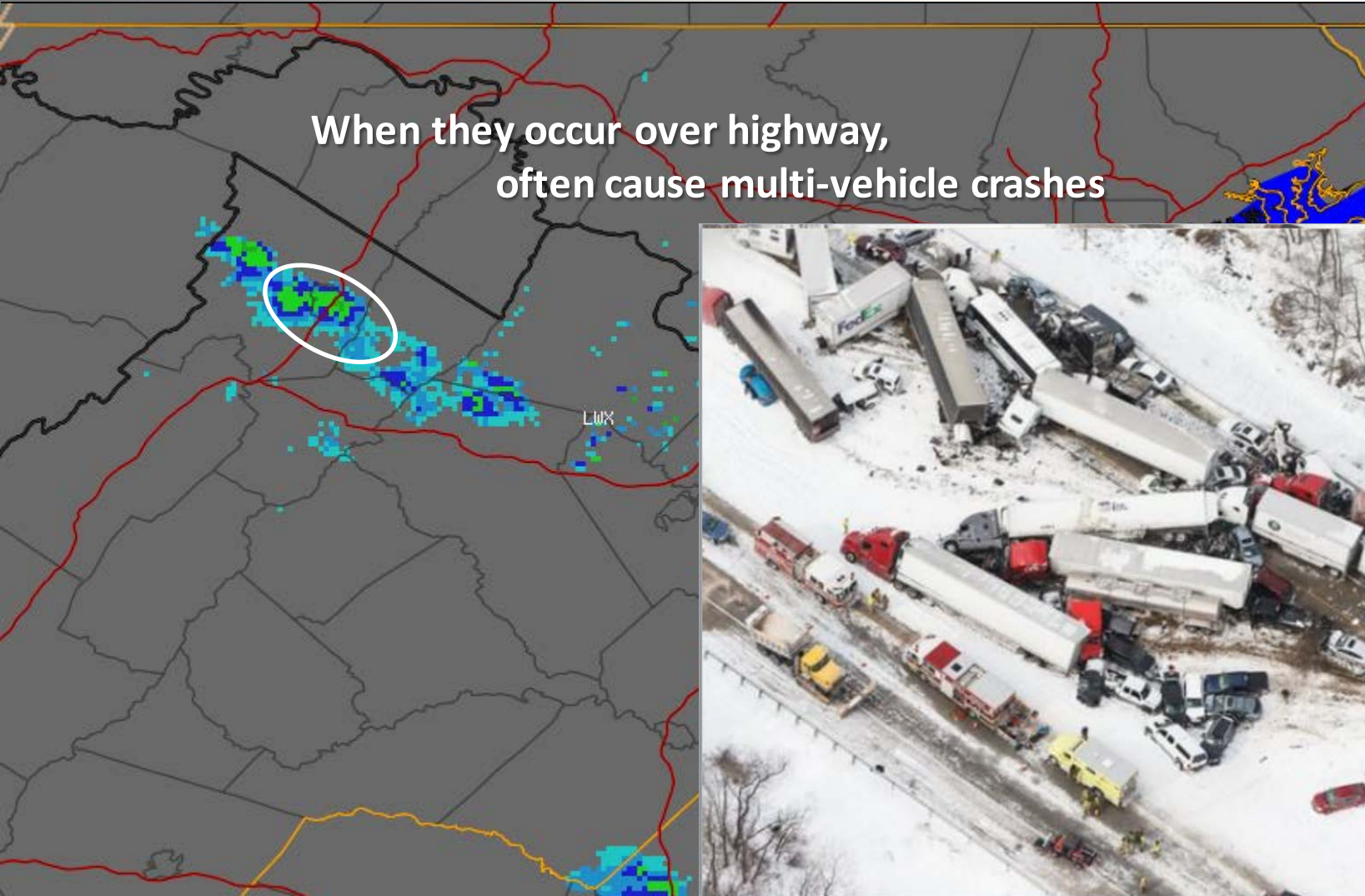- During urban rush hour
- Sub-freezing road temperatures

Together, these often create gridlock.

Potential Winter Commuting Hazard Statement (~24hrs in advance)
if we see a chance of these coming together

0-1 Days in Advance
Snow Squall Warning

When they occur over highway,
often cause multi-vehicle crashes

Social Media

NWSBaltWash

@NWS_BaltWash

Summary

- **The NWS – DOT/SHA partnership has helped develop new ways to communicate snow forecasts:**
  - Days 3-7   Winter Storm Threat level
  - Days 0-3   "Range of Possible" Snow Accumulations
  - Days 0-1   Potential Winter Commuting Hazard Statement & Snow Squall Warning

- **Previously existing communication**
  - Watch / Warning / Advisory

- **NWS winter outlook 2020-21**
  - Fewer arctic outbreaks, but we will get them.
  - Higher likelihood of freezing rain & mixed precipitation

www.weather.gov/washington/winter