

**NATIONAL WEATHER SERVICE INSTRUCTION 10-504**

**MARCH 9, 2021**

**Operations and Services**

**Public Weather Services, NWSPD 10-5**

**NATIONAL PUBLIC WEATHER FORECAST PRODUCTS SPECIFICATION**

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**NOTICE:** This publication is available at: <http://www.nws.noaa.gov/directives/>.

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**OPR:** W/AFS21 (D. Nagele)

**Certified by:** W/AFS21 (M.Hawkins)

**Type of Issuance:** Routine

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**SUMMARY OF REVISIONS:** This directive supersedes NWSI 10-504, “National Public Weather Forecast Products Specification”, dated June 5, 2015. This directive incorporates the following changes:

1. Changed OPR
2. Updated format examples for mixed case as applicable
3. Removed Model Diagnostic Discussion (product category PMDHMD)
4. Removed South America Synopsis (product category PMDSA)
5. Removed Surface Instantaneous Precipitation Charts (12-48 hours)
6. Alaska Extended Forecast Discussion (product category PMDAK) added
7. Days 4 - 8 Alaska Surface Progs (no product ID or Header) added
8. National High and Low Temperature for the Contiguous United States (product category SCS04) added

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## National Public Weather Forecast Products Specification

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# National Public Weather Forecast Products Specification

## 1 Introduction

This procedural instruction describes narrative, tabular and graphical weather products issued by multiple National Centers for Environmental Prediction (NCEP) offices. The Canadian Urban Forecast, issued by the Meteorological Service of Canada, and retransmitted by the National Weather Service (NWS), is included for domestic public interests.

## 2 Short Range Forecast Discussion (product category PMDSPD)

### 2.1 Mission Connection

The Weather Prediction Center (WPC) issues a Short Range Forecast Discussion that provides the meteorological reasoning behind the Surface Fronts and Pressure Charts (section 11) graphical products. This guidance is used by CONUS NWS Weather Forecast Offices (WFOs) and the general meteorological community such as the private sector and the media, as well as the aviation community. The Short Range Forecast Discussion is available at the following link: <https://www.wpc.ncep.noaa.gov/discussions/pmdspd.html>.

### 2.2 Issuance Guidelines

#### 2.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

#### 2.2.2 Issuance Criteria

This is a routine, schedule-driven product.

#### 2.2.3 Issuance Times

0900 and 2100 UTC.

#### 2.2.4 Valid Time

1200 UTC Day 1 to 0000 UTC Day 3 for 0900 UTC issuance, and 0000 UTC Day 2 to 1200 UTC Day 3 for 2100 UTC issuance.

#### 2.2.5 Product Expiration Time

Product expires with the next issuance.

### 2.3 Technical Description

The Short Range Forecast Discussion should follow the format and content described in this section.

#### 2.3.1 MND Broadcast Line

Not applicable.

#### 2.3.2 MND Header

The MND header is Short Range Forecast Discussion.



### 2.3.3 Content

A narrative that may use standard NWS abbreviations that summarizes expected weather hazards, and describes the meteorological reasoning for the location of significant weather features and precipitation across the CONUS for the next 12 to 48 hours.

### 2.3.4 Format

```
FXUS01 KWBC ddhhmm
PMDSPD

Short Range Forecast Discussion
NWS Weather Prediction Center College Park MD
Time AM/PM TIMEZONE Day Mon dd yyyy

Valid hhZ Day Mon dd yyyy - hhZ Day Mon dd yyyy

...Descriptive Headline #1...

...Descriptive Headline #2...

(Up to 4 headlines may be used to call attention to noteworthy conditions)

Free-form technical discussion that describes the national weather pattern
across the CONUS over the next couple days. Generally 2-3 paragraphs long.

Forecaster's Name

Graphics available at
www.wpc.ncep.noaa.gov/basicwx/basicwx\_ndfd.php
$$
```

## 2.4 Updates, Amendments, and Corrections

This product is not routinely updated or amended, however amendments should be made if the National Hurricane Center (NHC) has introduced a named tropical system, or changed the storm strength or forecast track. WPC will correct for format and grammatical errors as required.

## 3 Extended Forecast Discussion (product category PMDEPD)

### 3.1 Mission Connection

WPC issues an Extended Forecast Discussion that provides the meteorological reasoning behind the forecasts for Days 3 to 7. This guidance is used by CONUS NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community.

### 3.2 Issuance Guidelines

**3.2.1 Creation Software**

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

**3.2.2 Issuance Criteria**

This is a routine, schedule-driven product.

**3.2.3 Issuance Time**

Daily at 0700 UTC and 1900 UTC.

**3.2.4 Valid Time**

1200 UTC Day 3 to 1200 UTC Day 7.

**3.2.5 Product Expiration Time**

Product expires with next product issuance.

**3.3 Technical Description**

The Extended Forecast Discussion should follow the format and content described in this section.

**3.3.1 MND Broadcast Line**

Not applicable.

**3.3.2 MND Header**

The MND header is Extended Forecast Discussion.

**3.3.3 Content**

This is a text product that describes the meteorological reasoning, forecast uncertainty, and significant weather hazards associated with the Days 3 to 7 forecast, including generation of the Days 3 to 7 surface prognostications (progs; section 13). WPC also routinely produces gridded forecast guidance for the CONUS that includes temperature, dew point, winds, cloud cover, probability of precipitation, weather type, quantitative precipitation forecasts (QPF; see NWSI 10-930), and a Winter Weather Outlook (WWO; see NWSI 10-514). All Days 3 to 7 forecast products are available at the following link: <https://www.wpc.ncep.noaa.gov/medr/medr.shtml>

**3.3.4 Format**

```
FXUS02 KWBC ddhhmm
PMDEPD
```

```
Extended Forecast Discussion
NWS Weather Prediction Center College Park MD
Time AM/PM TIMEZONE Day Mon dd yyyy
```

```
Valid hhZ Day Mon dd yyyy - hhZ Day Mon dd yyyy
```

```
...Headline (only added in special circumstances to draw attention to a
significant threat in the extended forecast period)...
```

```
...Guidance/Predictability Assessment...
```

Description of the evolution of the larger scale pattern over the CONUS and an analysis of model guidance preferences and uncertainty.

...Weather Pattern/Hazard Highlights...

A brief discussion of the potential for organized areas of hazardous weather across the CONUS.

Forecaster's Name

Hazards:

- (Short description of Hazard #1, valid dates)
  - (Short description of Hazard #2, valid dates)
- (list of hazards is appended from the Day 3-7 Hazards Outlook once per day, see section 3.4 Updates, Amendments and Corrections)*

Additional 3-7 Day Hazards information can be found on the WPC medium range hazards chart at:

<https://www.wpc.ncep.noaa.gov/threats/threats.php>

WPC medium range 500mb heights, surface systems, weather grids, quantitative precipitation, winter weather outlook probabilities and heat indices are at:

[https://www.wpc.ncep.noaa.gov/medr/5dayfcst500\\_wbg.gif](https://www.wpc.ncep.noaa.gov/medr/5dayfcst500_wbg.gif)

[https://www.wpc.ncep.noaa.gov/medr/5dayfcst\\_wbg\\_conus.gif](https://www.wpc.ncep.noaa.gov/medr/5dayfcst_wbg_conus.gif)

[https://www.wpc.ncep.noaa.gov/5km\\_grids/5km\\_gridsbody.html](https://www.wpc.ncep.noaa.gov/5km_grids/5km_gridsbody.html)

<https://www.wpc.ncep.noaa.gov/qpf/day4-7.shtml>

[https://www.wpc.ncep.noaa.gov/wwd/pwpf\\_d47/pwpf\\_medr.php?day=4](https://www.wpc.ncep.noaa.gov/wwd/pwpf_d47/pwpf_medr.php?day=4)

[https://www.wpc.ncep.noaa.gov/heat\\_index.shtml](https://www.wpc.ncep.noaa.gov/heat_index.shtml)

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### 3.4 Updates, Amendments, and Corrections

Updated once by 2030 UTC, Monday through Friday only, to append headlines from the Day 3-7 Hazards Outlook. The update does not occur on Saturday and Sunday. WPC will correct for format and grammatical errors as required.

## 4 Alaska Extended Forecast Discussion (product category PMDAK)

### 4.1 Mission Connection

WPC issues an Extended Forecast Discussion for the state of Alaska that provides the meteorological reasoning behind the forecasts for Days 4 to 8. This guidance is used by Alaska WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community. The products support the NWS public and aviation weather programs.

### 4.2 Issuance Guidelines

#### 4.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

**4.2.2 Issuance Criteria**

This is a routine, schedule-driven product.

**4.2.3 Issuance Time**

Daily at 0000 UTC.

**4.2.4 Valid Time**

1200 UTC Day 4 to 1200 UTC Day 8.

**4.2.5 Product Expiration Time**

Product expires with next product issuance.

**4.3 Technical Description**

The Alaska Extended Forecast Discussion should follow the format and content described in this section.

**4.3.1 MND Broadcast Line**

Not applicable.

**4.3.2 MND Header**

The MND header is Alaska Extended Forecast Discussion.

**4.3.3 Content**

This is a text product that describes the meteorological reasoning, forecast uncertainty, and significant weather hazards associated with the Days 4 to 8 forecast, including generation of the Days 4 to 8 surface prognostications (progs; section 14). WPC also routinely produces gridded forecast guidance for Alaska that includes temperature, dew point, winds, cloud cover, probability of precipitation, and weather type. All Days 4 to 8 forecast products for Alaska are available at the following link: <https://www.wpc.ncep.noaa.gov/alaska/akmedr.shtml>

**4.3.4 Format**

```
FXAK02 KWNH ddhhmm
PMDAK
```

```
Alaska Extended Forecast Discussion
NWS Weather Prediction Center College Park MD
Time AM/PM TIMEZONE Day Mon dd yyyy
```

```
Valid hhZ Day Mon dd yyyy - hhZ Day Mon dd yyyy
```

```
...Headline (only added in special circumstances to draw attention to a
significant threat in the extended forecast period)...
```

```
...Overview and Guidance/Predictability Assessment...
```

```
Description of the evolution of the larger scale pattern over the CONUS and
an analysis of model guidance preferences and uncertainty.
```

```
...Weather/Hazard Highlights...
```

A brief discussion of the potential for organized areas of hazardous weather across the CONUS.

Forecaster's Name

Hazards:

- (Short description of Hazard #1, valid dates)
  - (Short description of Hazard #2, valid dates)
- (list of hazards is appended from the Day 3-7 Hazards Outlook; only includes Alaska hazards in this discussion)*

Additional 3-7 Day Hazards information can be found on the WPC medium range hazards chart at:

<https://www.wpc.ncep.noaa.gov/threats/threats.php>

WPC medium range Alaskan products including 500mb, surface fronts/pressures progs and sensible weather grids can also be found at:

[https://www.wpc.ncep.noaa.gov/alaska/ak\\_5dayfcst500\\_wbg.gif](https://www.wpc.ncep.noaa.gov/alaska/ak_5dayfcst500_wbg.gif)

<https://www.wpc.ncep.noaa.gov/alaska/akmedr.shtml>

[https://www.wpc.ncep.noaa.gov/alaska/ak\\_5km\\_gridbody.html](https://www.wpc.ncep.noaa.gov/alaska/ak_5km_gridbody.html)

\$\$

#### **4.4 Updates, Amendments, and Corrections**

This product is not updated or amended. WPC will correct for format and grammatical errors as required.

### **5 Hawaii Discussion (product category PMDHI)**

#### **5.1 Mission Connection**

The Hawaii Discussion focuses on Days 1-7 model differences, and highlights the reasoning used by the WPC forecaster in terms of model preferences for particular weather situations. This product supports the public and private sector with a focus on Hawaii.

#### **5.2 Issuance Guidelines**

##### **5.2.1 Creation Software**

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

##### **5.2.2 Issuance Criteria**

This is a routine, schedule-driven product.

##### **5.2.3 Issuance Time**

1200 UTC.

##### **5.2.4 Valid Time**

0000 UTC Day 1 to 0000 UTC Day 8.

##### **5.2.5 Product Expiration Time**

Product expires after the next product issuance.

**5.3 Technical Description**

The Hawaii Discussion should follow the format and content described in this section.

**5.3.1 MND Broadcast Line**

Not applicable.

**5.3.2 MND Header**

The MND header is Hawaii Extended Forecast Discussion.

**5.3.3 Content**

This is a text product that describes the meteorological reasoning for the location of significant weather and precipitation features in the vicinity of the Hawaiian Islands for the 7 day period.

**5.3.4 Format**

```
FXHW01 KWNH ddhhmm
PMDHI
```

```
Hawaii Extended Forecast Discussion
NWS Weather Prediction Center College Park MD
Time AM/PM TIMEZONE Day Mon dd yyyy
```

```
Valid hhZ Day Mon dd yyyy - hhZ Day Mon dd yyyy
```

```
...Headline (only added in special circumstances to draw attention to a
significant threat in the extended forecast period)...
```

```
A brief discussion highlighting model differences and preferences, and the
relationship to significant weather and precipitation.
```

```
Forecaster's Name
```

```
$$
```

**5.4 Updates, Amendments, and Corrections**

No updates are issued for this product. WPC will correct for format and grammatical errors as required.

**6 Caribbean Discussion (product category PMDCA)****6.1 Mission Connection**

The WPC International Desks issue the Caribbean Discussion as an operational product in support of the San Juan, PR WFO, and as guidance to Mexican, Central American and Caribbean Basin users. It includes a forecast discussion and model comparison.

**6.2 Issuance Guidelines**

**6.2.1 Creation Software**

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

**6.2.2 Issuance Criteria**

This is a routine, schedule-driven product.

**6.2.3 Issuance Time**

Preliminary discussion in support of the San Juan WFO issued by 1300 UTC, Monday through Friday, and on weekends and holidays upon request, or for significant weather events. Basin-wide discussion issued by 1830 UTC, Monday through Friday only, and excluding holidays.

**6.2.4 Valid Time**

Preliminary discussion is valid from 1200 UTC Day 1 through 0000 UTC Day 5. Basin-wide discussion is valid from 0000 UTC Day 1 through 1200 UTC Day 3.

**6.2.5 Product Expiration Time**

Product expires with next product issuance.

**6.3 Technical Description**

The Caribbean Discussion should follow the format and content described in this section.

**6.3.1 MND Broadcast Line**

Not applicable.

**6.3.2 MND Header**

The MND header is TROPICAL DISCUSSION - INTERNATIONAL DESKS.

**6.3.3 Content**

The preliminary discussion provides a synopsis and forecast focused solely on the San Juan WFO forecast area, including Puerto Rico and the U.S. Virgin Islands. The basin-wide discussion gives a synopsis and forecast for Mexico, the Caribbean and South America north of the Equator. An accompanying set of graphics for the Caribbean basin is produced each day, as well as quantitative precipitation forecast (QPF) guidance for the San Juan WFO. These graphics are available at the following links:

[https://www.wpc.ncep.noaa.gov/international/crb\\_day1-3.shtml](https://www.wpc.ncep.noaa.gov/international/crb_day1-3.shtml)  
[https://www.wpc.ncep.noaa.gov/qpf/pr\\_qpf.php](https://www.wpc.ncep.noaa.gov/qpf/pr_qpf.php)

**6.3.4 Format**

The format is described separately below for the preliminary discussion (first) and the basin-wide discussion (second).

```
FXCA20 KWBC ddhhmm
PMDCA
```

```
TROPICAL DISCUSSION - INTERNATIONAL DESKS
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
TIME AM/PM TIMEZONE DAY MON dd yyyy
```

PRELIMINARY DISCUSSION FOR PUERTO RICO AND THE USVI FROM MON dd/hhUTC: *(FREE FORM DISCUSSION WITH FORECAST SUMMARY AND MODEL COMPARISON)*

FORECASTER NAME...WPC (USA)

\$\$

FXCA20 KWBC ddhhmm  
PMDCA

TROPICAL DISCUSSION - INTERNATIONAL DESKS  
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD  
TIME AM/PM TIMEZONE DAY MON dd yyyy

TROPICAL DISCUSSION FROM MONTH dd/hhUTC: *(REGION #1...REGIONAL FORECAST DISCUSSION THAT DESCRIBES THE SYNOPTIC WEATHER PATTERN AND PRECIPITATION POTENTIAL)*

*(REGION #2...ADDITIONAL REGIONAL DISCUSSIONS AS NECESSARY)*

TROPICAL/EASTERLY WAVES INITIALIZED ON MONTH dd AT hh UTC:  
TYPE - dd/hh dd/hh dd/hh dd/hh dd/hh dd/hh dd/hh dd/hh SOF  
TW - xxW xxW xxW xxW xxW xxW xxW xxW xxW xxN  
TW - xxW xxW xxW xxW xxW DISS ----- xxN  
TW - xxW EXITS ----- xxN

*(THIS SECTION IS USED TO TRACK AND DESCRIBE SIGNIFICANT TROPICAL WAVES AND OTHER FEATURES OF INTEREST IN THE TROPICS. A DATA TABLE IS INCLUDED FIRST IN THE FORMAT SHOWN ABOVE WITH "xx" INDICATING LATITUDE OR LONGITUDE. THIS IS FOLLOWED BY A DISCUSSION OF INDIVIDUAL FEATURES OF INTEREST)*

FORECASTER NAME...WPC (USA)  
FORECASTER NAME...(ORGANIZATION) (COUNTRY)

\$\$

## 6.4 Updates, Amendments, and Corrections

This product is not updated or amended. WPC will correct for format and grammatical errors as required.

## 7 South America Forecast Discussion (product category PMDSA)

### 7.1 Mission Connection

WPC International Desks issue an overview discussion of numerical model guidance for South America to regional users.

### 7.2 Issuance Guidelines

#### 7.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.



**7.2.2 Issuance Criteria**

This is a routine, schedule-driven product.

**7.2.3 Issuance Time**

1630 UTC, Monday through Friday only, and excluding holidays.

**7.2.4 Valid Time**

0000 UTC Day 1 through 0000 UTC Day 6.

**7.2.5 Product Expiration Time**

Product expires with next product issuance.

**7.3 Technical Description**

The South America Forecast Discussion should follow the format and content described in this section.

**7.3.1 MND Broadcast Line**

Not applicable.

**7.3.2 MND Header**

The MND header is SOUTH AMERICA FORECAST DISCUSSION - INTERNATIONAL DESKS.

**7.3.3 Content**

This text bulletin provides an overview of the model forecasts and associated weather for South America for Days 1 through 6. An accompanying set of graphics for South America is produced each day, and these graphics are available at the following link:

[https://www.wpc.ncep.noaa.gov/international/sam\\_fcsts.shtml](https://www.wpc.ncep.noaa.gov/international/sam_fcsts.shtml)

**7.3.4 Format**

```
FXSA20 KWBC ddhhmm
PMDSA
```

```
SOUTH AMERICA FORECAST DISCUSSION - INTERNATIONAL DESKS
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
TIME AM/PM TIMEZONE DAY MON dd yyyy
```

```
GFS DATA AT FTPPRD.NCEP.NOAA.GOV/PUB/DATA/NCCF/COM/GFS/PROD/
```

```
FORECAST DISCUSSION FROM MONTH dd/hhUTC: FREE FORM DISCUSSION THAT DESCRIBES
THE SYNOPTIC WEATHER PATTERN...PRECIPITATION POTENTIAL...AND SIGNIFICANT
WEATHER EVENTS ACROSS SOUTH AMERICA.
```

```
FORECASTER NAME...WPC (USA)
FORECASTER NAME...(ORGANIZATION) (COUNTRY)
```

```
$$
```

## 7.4 Updates, Amendments, and Corrections

No updates or amendments are issued for this product. WPC will correct for format and grammatical errors as required.

## 8 Surface Fronts and Pressure Analysis (product categories 90F, 90I)

### 8.1 Mission Connection

WPC issues the Surface Fronts and Pressure Analysis as guidance to CONUS NWS WFOs and Alaskan WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community. The product extends a historical legacy and archive of map analysis that extends back to the earliest days of the NWS.

The product also forms a portion of the NWS Unified Surface Analysis, which is jointly produced by NHC, the Ocean Prediction Center (OPC), and WFO Honolulu, Hawaii and integrates analysis from multiple offices for a large portion of the Northern Hemisphere. More information on the Unified Surface Analysis is available at this link: [https://ocean.weather.gov/unified\\_analysis.php](https://ocean.weather.gov/unified_analysis.php)

### 8.2 Issuance Guidelines

#### 8.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

#### 8.2.2 Issuance Criteria

These are routine, schedule-driven products.

#### 8.2.3 Issuance Time and Valid Time

Refer to Table 1.

**Table 1:** Surface Fronts and Pressure Chart Issuance and Valid Times

<i><b>WPC Surface Fronts and Pressure Analysis Product Schedule</b></i>				
<i>Valid Time (UTC)</i>	<i>Issuance Time (UTC)</i>	<i>AWIPS ID</i>	<i>WMO Header</i>	<i>Product Description</i>
0000	0130	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
0300	0430	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
0600	0730	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
0900	1030	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
1200	1330	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
1500	1630	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
1800	1930	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)
2100	2230	RBG90F RBG90I	PYAA98 KWNO PPAA89 KWNO	Surface Front & Pressure Analysis (N. America, CONUS, AK, Regional U.S.)

### 8.2.4 Product Expiration Time

Not applicable.

## 8.3 Technical Description

Charts should follow the format and content described in this section and described in more detail in the NCEP Unified Surface Analysis Manual located here:

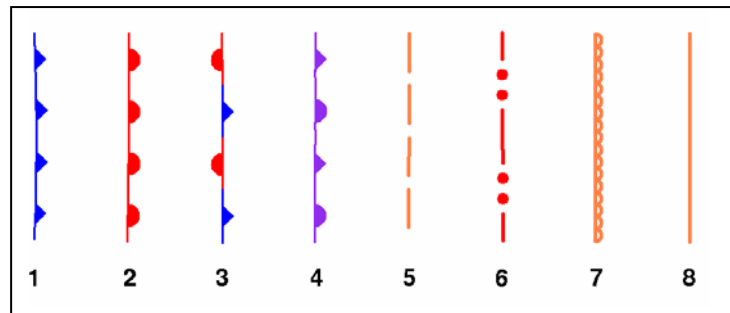
<https://www.wpc.ncep.noaa.gov/sfc/UASfcManual.pdf>

### 8.3.1 MND Broadcast Line and Header

Not applicable.

### 8.3.2 Content

This product depicts the analysis of synoptic and sub-synoptic / mesoscale surface features including highs, lows, fronts, troughs, outflow boundaries, squall lines, and dry lines. The analysis domain covers most of North America, the Western Atlantic and Eastern Pacific oceans, and the Gulf of Mexico.



**Figure 1:** Symbols Used for Surface Analysis

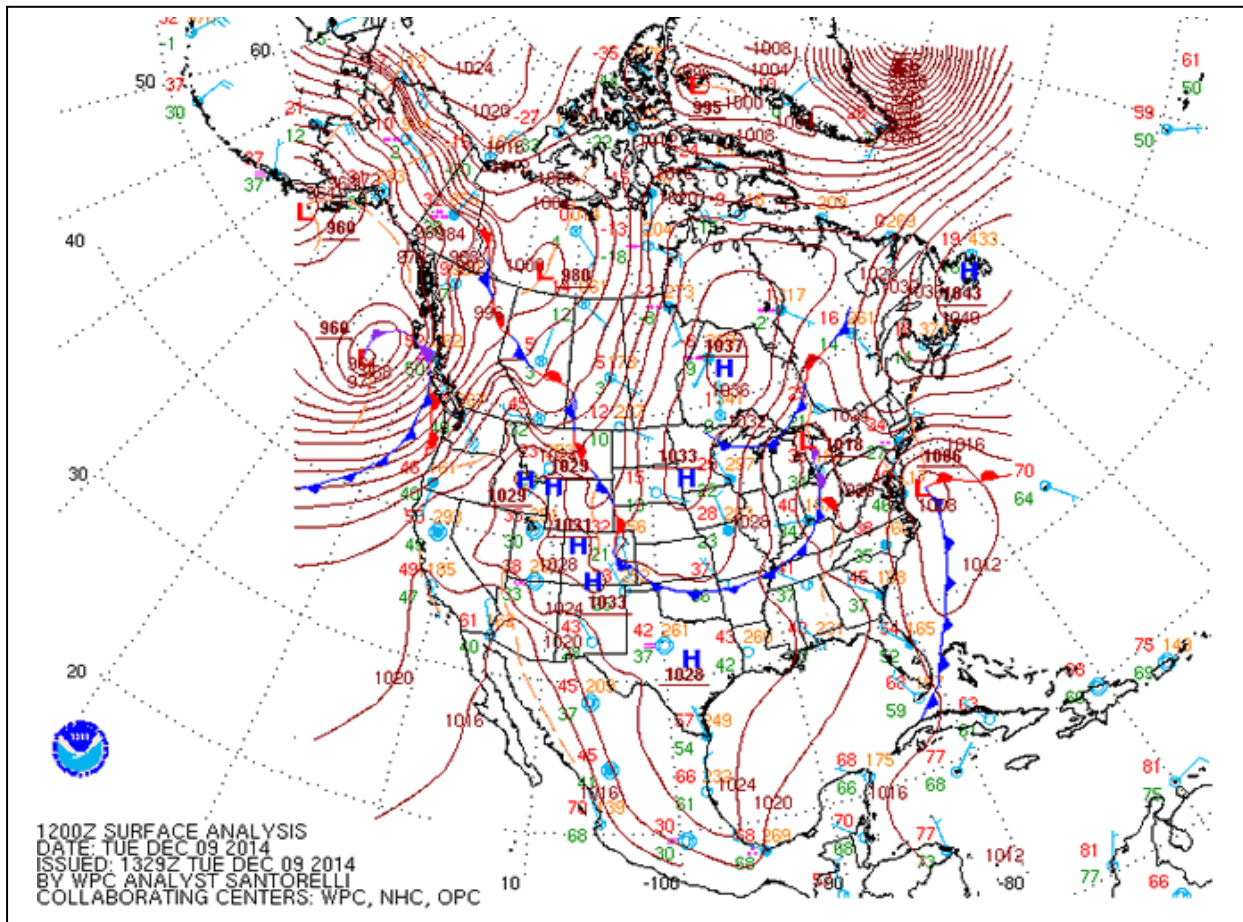
### Key to Features

1 – Cold Front; 2 – Warm Front; 3 – Stationary Front; 4 – Occluded Front; 5 – Trough (“TROF”), also used to Depict Outflow Boundary (“OUTFLOW BNDRY”); 6 – Squall Line; 7 – Dry Line; 8 – Tropical Wave (“TRPCL WAVE”)

### 8.3.3 Format

Product will follow the format as indicated by Figure 2 below, which shows a North American scale version of the analysis. Additional map domains are available at the following link:

<https://www.wpc.ncep.noaa.gov/html/sfc2.shtml>



**Figure 2:** Surface Fronts and Pressure Analysis

## 8.4 Updates, Amendments, and Corrections

Products are not updated or amended. Corrections are issued as necessary.

## 9 Coded Surface Frontal Positions (product category CODSUS)

### 9.1 Mission Connection

WPC issues the Coded Surface Frontal Positions as guidance to NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community.

### 9.2 Issuance Guidelines

#### 9.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

### 9.2.2 Issuance Criteria

These are routine, schedule-driven products.

### 9.2.3 Issuance Time and Valid Time

Refer to Tables 2 and 3.

**Table 2:** Coded Surface Frontal Position Product Schedule for Low Resolution Product

<i><b>WPC Coded Surface Frontal Position Schedule</b></i>				
<i><b>Issuance Time (UTC)</b></i>	<i><b>Valid Time (UTC)</b></i>	<i><b>AWIPS ID</b></i>	<i><b>(WMO Header)</b></i>	<i><b>Product Description</b></i>
0130	0000	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
0430	0300	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
0730	0600	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1030	0900	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1330	1200	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1630	1500	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
1930	1800	CODSUS	ASUS01 KWBC	Coded description of frontal analysis
2230	2100	CODSUS	ASUS01 KWBC	Coded description of frontal analysis

**Table 3:** Coded Surface Frontal Position Product Schedule for High Resolution Product

<i><b>WPC Coded Surface Frontal Position Schedule</b></i>				
<i><b>Issuance Time (UTC)</b></i>	<i><b>Valid Time (UTC)</b></i>	<i><b>AWIPS ID</b></i>	<i><b>(WMO Header)</b></i>	<i><b>Product Description</b></i>
0130	0000	CODSUS	ASUS02 KWBC	Coded description of frontal analysis
0430	0300	CODSUS	ASUS02 KWBC	Coded description of frontal analysis
0730	0600	CODSUS	ASUS02 KWBC	Coded description of frontal analysis
1030	0900	CODSUS	ASUS02 KWBC	Coded description of frontal analysis
1330	1200	CODSUS	ASUS02 KWBC	Coded description of frontal analysis
1630	1500	CODSUS	ASUS02 KWBC	Coded description of frontal analysis
1930	1800	CODSUS	ASUS02 KWBC	Coded description of frontal analysis
2230	2100	CODSUS	ASUS02 KWBC	Coded description of frontal analysis

### 9.2.4 Product Expiration Time

Not applicable.

## 9.3 Technical Description

Charts should follow the format and content described in this section.

### 9.3.1 MND Broadcast Line

Not applicable.

### 9.3.2 MND Header

The MND header is CODED SURFACE FRONTAL POSITIONS.

### 9.3.3 Content

These are text bulletins that describe the latitude and longitude positions of vertices along the analyzed frontal positions or significant weather features, as well as the positions of high and low pressure centers. The low resolution product rounds the latitude and longitude to the nearest degree. The high resolution product reports latitude and longitude to a tenth of a degree.

Here is specific information on how to decode / interpret the bulletin:

44109: 44°N Latitude, 109°W Longitude (*coordinates for low resolution product*)  
 4431092: 44.3°N Latitude, 109.2°W Longitude (*coordinates for high resolution product*)  
 HIGHS: High Pressure Centers  
 LOWS: Low Pressure Centers  
 COLD: Cold Front  
 WK: Weak  
 WARM: Warm Front  
 STNRY: Stationary Front  
 TROF: Surface Boundary (*can be a trough, outflow boundary, squall line, or dry line*)  
 OCFNT: Occluded Front

The valid time is decoded MMDDHH.

### 9.3.4 Format

The format shown below is for the low resolution product. The latitude and longitude will be slightly different in the high resolution product, as described in section 9.3.3. Pressure values are indicated by “p,” latitude values are indicated by “A,” and longitude values are indicated by “O.”

```
ASUS01 KWBC ddhhmm
CODSUS

CODED SURFACE FRONTAL POSITIONS
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
TIME AM/PM TIMEZONE DAY MON dd yyyy

VALID mmddhhZ
HIGHS pppp AA00 pppp AA000 (sequence repeats as necessary; note that
longitude varies in length depending on whether it is east or west of 100°W)
LOWS pppp AA00 pppp AA00 (sequence repeats as necessary)
TROF AA00 AA000 AA000 AA000 (sequence repeats as necessary)
COLD WK AA000 AA000 AA000 AA000 (sequence repeats as necessary)
COLD AA00 AA00 AA00 AA00 (sequence repeats as necessary)

(The product will include as many lines as needed to convey all the features
included on a particular surface analysis)

$$
```

## 9.4 Updates, Amendments, and Corrections

This product is not updated or amended. Corrections are issued as necessary.

## 10 Today's National Forecast Chart (no product ID or Header).

### 10.1 Mission Connection

WPC compiles three significant weather charts that highlight the critical weather expected over the next three days for the CONUS. These products are used by NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community. A Spanish version is also issued for all three days.

### 10.2 Issuance Guidelines

#### 10.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

#### 10.2.2 Issuance Criteria

These are routine, schedule-driven products.

#### 10.2.3 Issuance Time and Valid Time

Refer to Table 4.

**Table 4:** National Forecast Chart Product Schedule

<i><b>WPC National Forecast Chart Product Schedule</b></i>		
<i><b>Version</b></i>	<i><b>Issuance Time</b></i>	<i><b>Valid Time</b></i>
Day 1	1000 UTC	1200 UTC Day 1 to 1200 UTC Day 2
Day 2	1000 UTC	1200 UTC Day 2 to 1200 UTC Day 3
Day 3	1000 UTC	1200 UTC Day 3 to 1200 UTC Day 4
Day 1 Update	2200 UTC	0000 UTC Day 2 to 1200 UTC Day 2

#### 10.2.4 Product Expiration Time

Product expires with the next issuance.

### 10.3 Technical Description

Charts should follow the format and content in this section.

#### 10.3.1 MND Broadcast Line

Not applicable.

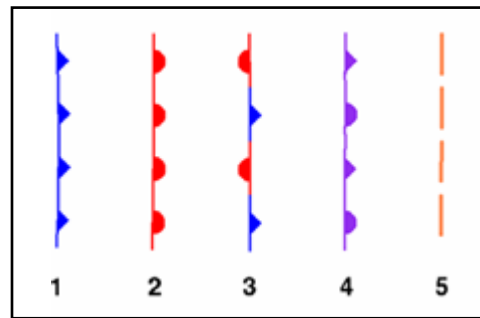
#### 10.3.2 MND Header

Not applicable.

#### 10.3.3 Content

These are graphical products that depict the instantaneous positions of frontal features (warm, cold, occluded, trough lines, etc.) and high and low pressure centers at the valid time of the product. In addition, significant weather hazards such as flash flooding, severe thunderstorms, winter weather, and critical fire weather are highlighted. Finally, general precipitation areas, such as rain and snow, are also depicted.





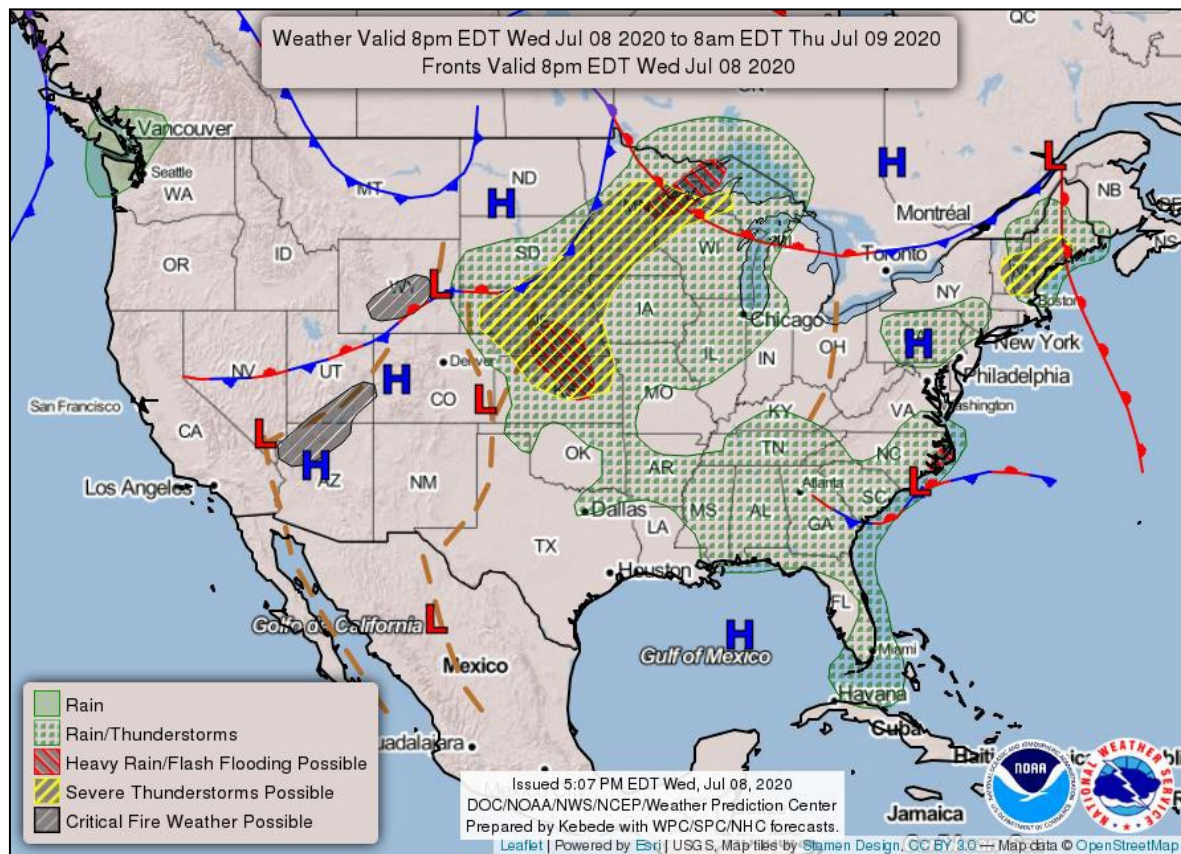
**Figure 3:** Symbols Used for National Forecast Charts

#### Key to Features:

1 – Cold Front; 2 – Warm Front; 3 – Stationary Front; 4 – Occluded Front; 5 – Trough (“TROF”)

#### 10.3.4 Format

Product will follow the format as indicated in Figure 4, below.



**Figure 4:** National Forecast Chart

The National Forecast Chart is available as a static image, and as an interactive map where the user can zoom and turn layers on and off. The interactive map is available at the following link:

<https://www.wpc.ncep.noaa.gov/NationalForecastChart/map.php>

#### 10.4 Updates, Amendments, and Corrections

The Day 1 chart is updated routinely each day by 2200 UTC. The Day 2 and 3 charts can be



updated when there are tropical systems on the map, to reflect the latest forecast position from NHC. Corrections are issued as necessary.

## 11 Surface Fronts and Pressure Charts (12-60 hours) (product categories 91F, 92F, 93F, 94F, 95F, 96F, 98F, 99F)

### 11.1 Mission Connection

WPC issues the surface fronts and pressure charts as guidance to CONUS NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community. These products describe the location and strength of major meteorological features over the next 60 hours.

### 11.2 Issuance Guidelines

#### 11.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

#### 11.2.2 Issuance Criteria

These are routine, schedule-driven products.

#### 11.2.3 Issuance Time and Valid Time

Refer to Table 5.

**Table 5:** Short Range Surface Fronts and Pressure Chart Issuance and Valid Times

<i><b>WPC Short-Range Surface Fronts and Pressure Chart Schedule</b></i>				
<i>Issuance Time (UTC)</i>	<i>Valid Time (UTC)</i>	<i>AWIPS ID</i>	<i>(WMO Header)</i>	<i>Product Description</i>
0300	0600 Day 1 1200 Day 1	RGB91F RBG92F	PPIA01 KWBC PPIC01 KWBC	06-hour fronts and pressures 12-hour fronts and pressures
0430	1800 Day 1 0000 Day 2	RBG93F RBG94F	PPID01 KWBC PPIE01 KWBC	18-hour fronts and pressures 24-hour fronts and pressures
0700	0600 Day 2 1200 Day 2 0000 Day 3 1200 Day 3	RBG95F RBG96F RBG98F RBG99F	PPIF01 KWBC PPIG01 KWBC PPII01 KWBC PPIK01 KWBC	30-hour fronts and pressures 36-hour fronts and pressures 48-hour fronts and pressures 60-hour fronts and pressures
1500	1800 Day 1 0000 Day 2	RGB91F RBG92F	PPIA01 KWBC PPIC01 KWBC	06-hour fronts and pressures 12-hour fronts and pressures
1630	0600 Day 2 1200 Day 2	RBG93F RBG94F	PPID01 KWBC PPIE01 KWBC	18-hour fronts and pressures 24-hour fronts and pressures
1900	1800 Day 2 0000 Day 3 1200 Day 3 0000 Day 4	RBG95F RBG96F RBG98F RBG99F	PPIF01 KWBC PPIG01 KWBC PPII01 KWBC PPIK01 KWBC	30-hour fronts and pressures 36-hour fronts and pressures 48-hour fronts and pressures 60-hour fronts and pressures

#### 11.2.4 Product Expiration Time

Not applicable.

### 11.3 Technical Description

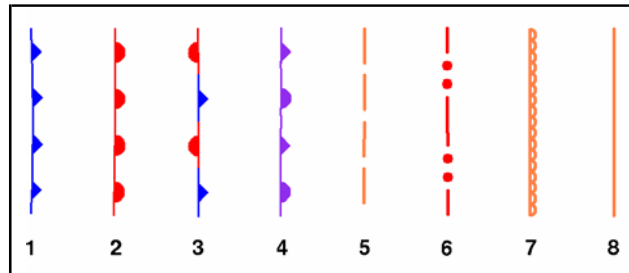
Charts should follow the format and content in this section.

#### 11.3.1 MND Broadcast Line and Header

Not applicable.

### 11.3.2 Content

These are graphical products that depict the instantaneous positions of frontal features (warm, cold, occluded, trough lines) and high and low pressure centers at the valid time of the product. Shaded areas of precipitation that underlay the fronts and pressures are from NDFD and will automatically refresh to reflect the most current data.



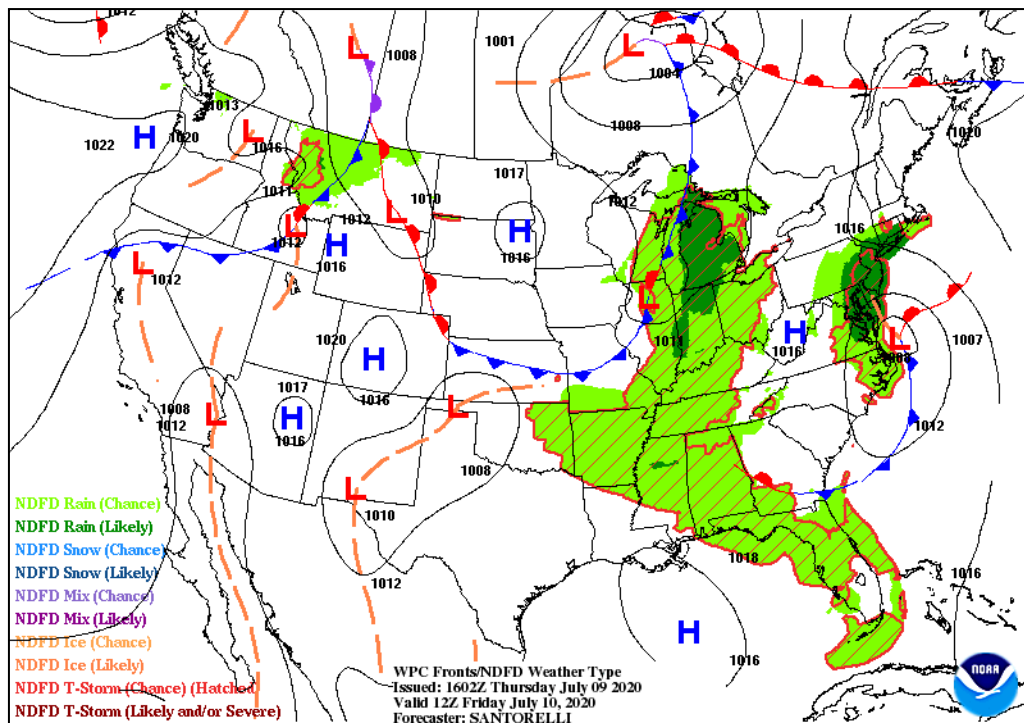
**Figure 5:** Symbols Used for Surface Fronts and Pressure Charts

### Key to Features

1 – Cold Front; 2 – Warm Front; 3 – Stationary Front; 4 – Occluded Front; 5 – Trough (“TROF”), also used to Depict Outflow Boundary (“OUTFLOW BNDRY”); 6 – Squall Line; 7 – Dry Line; 8 – Tropical Wave (“TRPCL WAVE”)

### 11.3.3 Format

Product will follow the format as indicated in Figure 6.



**Figure 6:** Surface Fronts and Pressure Chart

### 11.4 Updates, Amendments, and Corrections

Products are typically not updated or amended, with the exception of instances when NHC changes a tropical cyclone track or strength. Corrections are made as necessary.

## 12 Coded Surface Frontal Positions Forecast (product category CODSRP)

### 12.1 Mission Connection

WPC issues coded Surface Frontal Position Forecasts. These products are used by NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community.

### 12.2 Issuance Guidelines

#### 12.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products.

#### 12.2.2 Issuance Criteria

These are routine, schedule-driven products.

#### 12.2.3 Issuance and Valid Time

Refer to Table 6.

**Table 6:** Coded Surface Frontal Position Product Schedule

<i><b>WPC Coded Surface Frontal Position Product Schedule</b></i>				
<i><b>Issuance Time (UTC)</b></i>	<i><b>Valid Time (UTC)</b></i>	<i><b>AWIPS ID</b></i>	<i><b>(WMO Header)</b></i>	<i><b>Product Description</b></i>
0430	1200 Day 1 0000 Day 2	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
0700	1800 Day 1 0600 Day 2 1200 Day 2 0000 Day 3	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
1630	0000 Day 2 1200 Day 2	CODSRP	FSUS02 KWBC	Coded description of frontal forecast
1900	0600 Day 2 1800 Day 2 0000 Day 3 1200 Day 3	CODSRP	FSUS02 KWBC	Coded description of frontal forecast

#### 12.2.4 Product Expiration Time

Not applicable.

### 12.3 Technical Description

Message should follow the format and content described in this section.

#### 12.3.1 MND Broadcast Line

Not applicable.

#### 12.3.2 MND Header

The MND header is CODED SURFACE FRONTAL POSITIONS FORECAST.

#### 12.3.3 Content

These are text bulletins that describe the latitudes and longitudes (to the nearest degree) of vertices along the forecast frontal positions, along with the positions of highs and lows and pressures. These correspond directly with the 92F, 94F, 96F, 98F products described in Section 11. These text messages allow the private sector, academia, and the media to plot the location of

these weather systems.

Here is specific information on how to decode / interpret the bulletin:

44109: 44°N Latitude, 109°W Longitude

HIGHS: High Pressure Centers

LOWS: Low Pressure Centers

COLD: Cold Front

WK: Weak

WARM: Warm Front

STNRY: Stationary Front

TROF: Surface Boundary (*can be a trough, outflow boundary, squall line, or dry line*)

OCFNT: Occluded Front

The valid time is decoded MMDDHH.

### 12.3.4 Format

The product will follow the format shown below. Pressure values are indicated by “p,” latitude values are indicated by “A,” and longitude values are indicated by “O.”

```
FSUS02 KWBC ddhhmm
CODSRP

CODED SURFACE FRONTAL POSITIONS FORECAST
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD
TIME AM/PM TIMEZONE DAY MON dd yyyy

hhHR PROG VALID mmddhhZ
HIGHS pppp AAOO pppp AAOO (sequence repeats as necessary; note that
longitude varies in length depending on whether it is east or west of 100°W)
LOWS pppp AAOO pppp AAOO (sequence repeats as necessary)
TROF AAOO AAOO AAOO AAOO (sequence repeats as necessary)
COLD WK AAOO AAOO AAOO AAOO (sequence repeats as necessary)
COLD AAOO AAOO AAOO AAOO (sequence repeats as necessary)

(The product will include as many lines as needed to convey all the features
included on a particular forecast chart)

(Multiple forecast hours can be included in the same product. The block of
Formatted text just repeats, beginning with hhHR PROG VALID mmddhhZ.)

$$
```

## 12.4 Updates, Amendments, and Corrections

Products are not updated or amended. Corrections are issued as necessary.

## 13 Days 3 - 7 Surface Progs (product categories 9JH-9NH)

### 13.1 Mission Connection

WPC issues Days 3 through 7 Surface Progs for the CONUS as guidance to NWS WFOs and

the general meteorological community such as the private sector and the media, as well as the aviation community. These products describe the location of surface fronts and pressures for Days 3 through 7.

## 13.2 Issuance Guidelines

### 13.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products. Additional gridded forecast guidance is generated using AWIPS Graphical Forecast Editor (GFE).

### 13.2.2 Issuance Criteria

These are routine, schedule-driven products.

### 13.2.3 Issuance and Valid Time

Refer to Table 7.

**Table 7:** Day 3-7 Surface Prog Product Schedule

<i><b>WPC Day 3-7 Surface Prog Product Schedule</b></i>				
<i><b>Issuance Time (UTC)</b></i>	<i><b>Valid Time (UTC)</b></i>	<i><b>AWIPS ID</b></i>	<i><b>(WMO Header)</b></i>	<i><b>Product Description</b></i>
0430, 1630	1200 Day 3	RBG9JH	PPHK01 KWBC	Medium Range Day 3 Surface Forecast
0430, 1630	1200 Day 4	RBG9KH	PPHM01 KWBC	Medium Range Day 4 Surface Forecast
0430, 1630	1200 Day 5	RBG9LH	PPHO01 KWBC	Medium Range Day 5 Surface Forecast
0430, 1630	1200 Day 6	RBG9MH	PPTG98 KWBC	Medium Range Day 6 Surface Forecast
0430, 1630	1200 Day 7	RBG9NH	PPTR98 KWBC	Medium Range Day 7 Surface Forecast

### 13.2.4 Product Expiration Time

Not applicable.

## 13.3 Technical Description

Charts should follow the format and content described in this section.

### 13.3.1 MND Broadcast Line

Not applicable.

### 13.3.2 MND Header

Not applicable.

### 13.3.3 Content

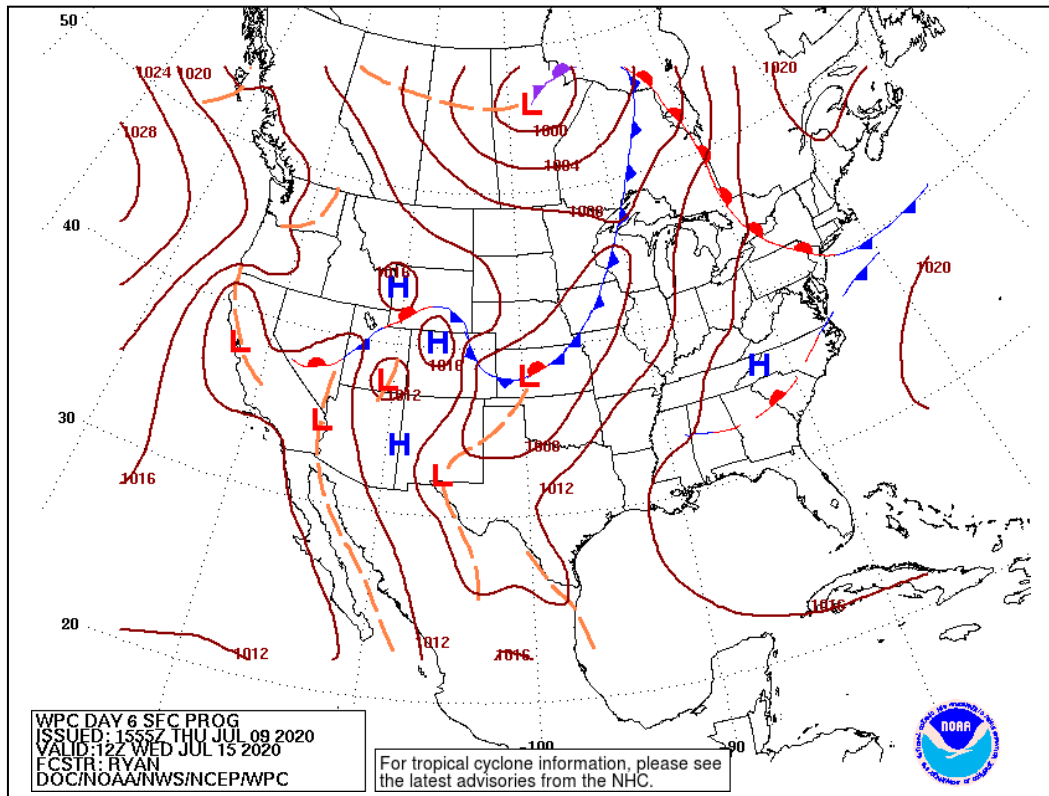
These are graphical products that depict the locations of surface fronts and pressures over the CONUS, and adjacent portions of the Pacific and Atlantic Oceans, for Days 3 through 7. WPC also routinely produces gridded forecast guidance for the CONUS that includes temperature, dew point, winds, cloud cover, probability of precipitation, weather type, quantitative precipitation forecasts (QPF; see NWSI 10-930), and a Winter Weather Outlook (WWO; see NWSI 10-514). All Days 3 to 7 forecast products are available at the following link:

<https://www.wpc.ncep.noaa.gov/medr/medr.shtml>

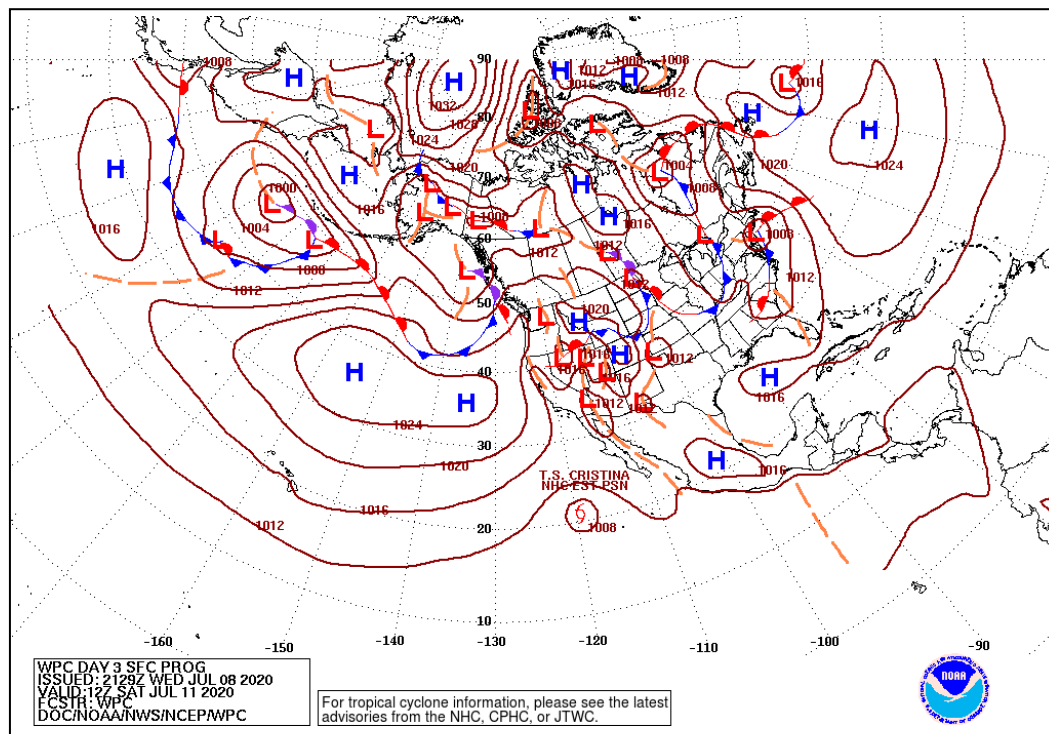
Additionally, WPC issues Days 3 to 7 surface progs for a large portion of the Northern Hemisphere once per day by 2130 UTC, incorporating the final progs for Alaska (section 14).

### 13.3.4 Format

Product will follow the format indicated in Figures 7 and 8 below.



**Figure 7: Day 3 to 7 Surface Prog Example (CONUS)**



**Figure 8: Day 3 to 7 Surface Prog Example (Northern Hemisphere)**

### 13.4 Updates, Amendments, and Corrections

Products are not updated or amended. Corrections are issued as necessary.

## 14 Days 4 - 8 Alaska Surface Progs (no product ID or Header)

### 14.1 Mission Connection

WPC issues Days 4 through 8 Surface Progs for Alaska as guidance to NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community. These products describe the location of surface fronts and pressures for Days 4 through 8.

### 14.2 Issuance Guidelines

#### 14.2.1 Creation Software

WPC will use the National Centers AWIPS (NAWIPS) software to generate these products. Additional gridded forecast guidance is generated using AWIPS GFE.

#### 14.2.2 Issuance Criteria

These are routine, schedule-driven products.

#### 14.2.3 Issuance and Valid Time

Refer to Table 8.

**Table 8:** Day 4-8 Alaska Surface Progs Product Schedule

<i>WPC Day 4-8 Alaska Surface Progs Schedule</i>		
<i>Issuance Time</i>	<i>Valid Time</i>	<i>Product Description</i>
2030 UTC	1200 UTC Day 4	Alaska Medium Range Day 4 Surface Forecast
2030 UTC	1200 UTC Day 5	Alaska Medium Range Day 5 Surface Forecast
2030 UTC	1200 UTC Day 6	Alaska Medium Range Day 6 Surface Forecast
2030 UTC	1200 UTC Day 7	Alaska Medium Range Day 7 Surface Forecast
2030 UTC	1200 UTC Day 8	Alaska Medium Range Day 8 Surface Forecast

#### 14.2.4 Product Expiration Time

Not applicable.

### 14.3 Technical Description

Charts should follow the format and content described in this section.

#### 14.3.1 MND Broadcast Line

Not applicable.

#### 14.3.2 MND Header

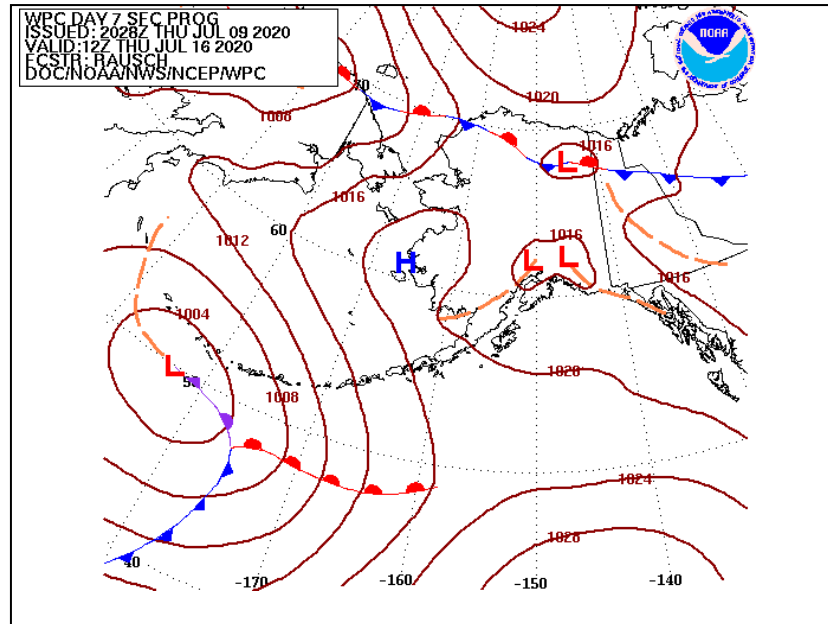
Not applicable.

#### 14.3.3 Content

These are graphical products that depict the locations of surface fronts and pressures over Alaska, and adjacent portions of the Pacific and Arctic Oceans, for Days 4 through 8. WPC also routinely produces gridded forecast guidance for Alaska that includes temperature, dew point, winds, cloud cover, probability of precipitation, and weather type. All Days 4 to 8 forecast products for Alaska are available at the following link: <https://www.wpc.ncep.noaa.gov/alaska/akmedr.shtml>

#### 14.3.4 Format

Product will follow the format indicated in Figure 9 below.





Refer to Table 9.

**Table 9:** Days 3-7 Temperature/Precipitation Forecast Product Schedule

<b><i>WPC Day 3-7 Temperature/Precipitation Forecast Anomalies Product Schedule</i></b>				
<b><i>Issuance Time (UTC)</i></b>	<b><i>Valid Date</i></b>	<b><i>AWIPS ID</i></b>	<b><i>(WMO Header)</i></b>	<b><i>Product Description</i></b>
0400, 1600	Day 3	RBG93P	PYWK43 KWBC	Day 3 Temp./Precipitation Forecast
0400, 1600	Day 4	RBG94P	PYWM44 KWBC	Day 4 Temp./Precipitation Forecast
0400, 1600	Day 5	RBG95P	PYWO45 KWBC	Day 5 Temp./Precipitation Forecast
0400, 1600	Day 6	RBG96P	PYWQ46 KWBC	Day 6 Temp./Precipitation Forecast
0400, 1600	Day 7	RBG97P	PYWS98 KWBC	Day 7 Temp./Precipitation Forecast

#### **15.2.4 Product Expiration Time**

Not applicable.

### **15.3 Technical Description**

Products should follow the format and content described in this section.

#### **15.3.1 MND Broadcast Line**

Not applicable.

#### **15.3.2 MND Header**

Not applicable.

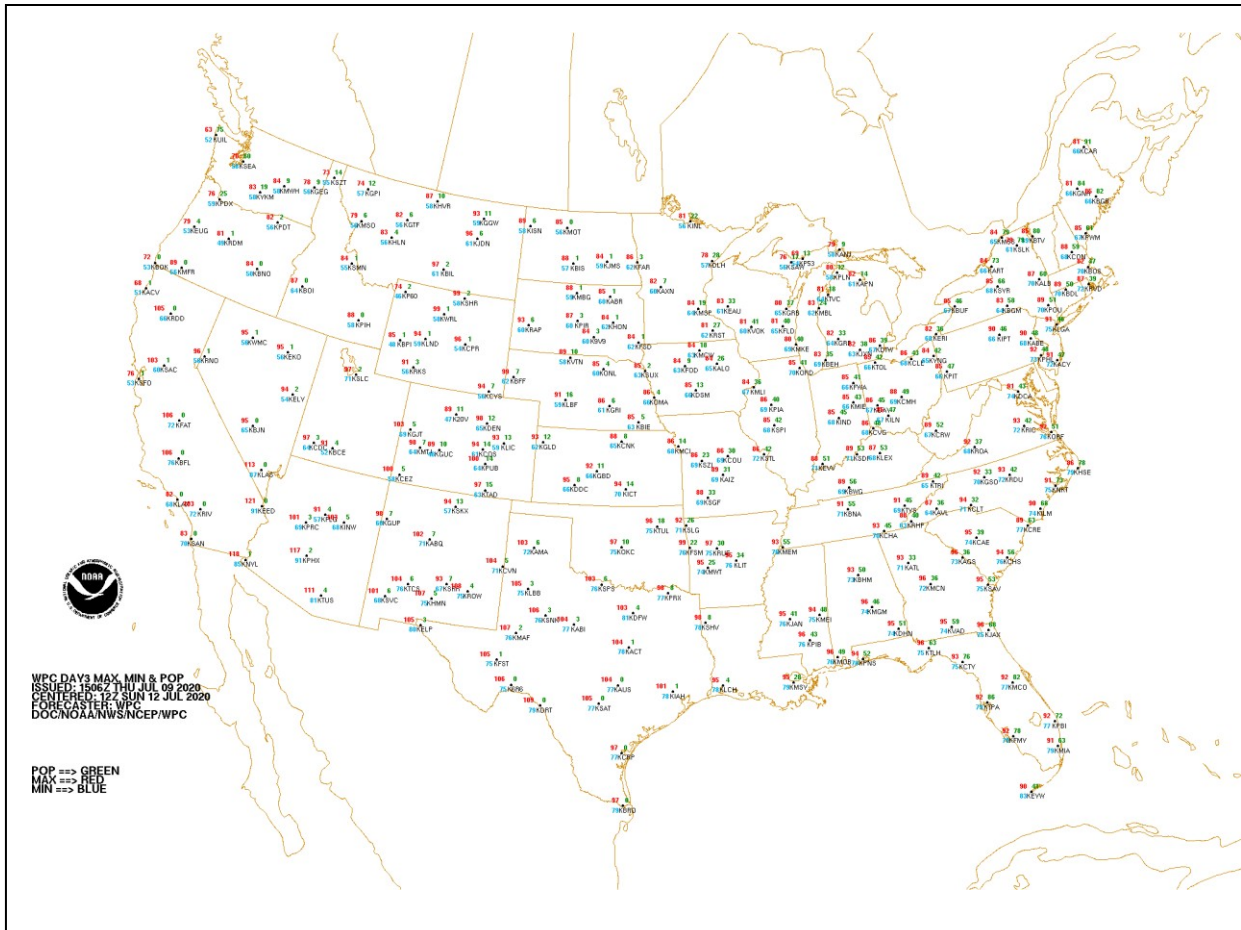
#### **15.3.3 Content**

These are graphical products that depict the Days 3 - 7 temperature and probability of precipitation (PoP) for 93 stations over the CONUS. The graphical product is accompanied by a text file that lists the forecast values in a tabular format, including anomalies of temperatures and PoP. The text file can be found at this link:

<https://www.wpc.ncep.noaa.gov/medr/newlistfile>

### 15.3.4 Format

Product will follow the format indicated in Figure 10 below.



**Figure 10:** Days 3-7 Temperature/Precipitation Forecast Chart Example

### 15.4 Updates, Amendments, and Corrections

Products are not updated or amended. Corrections are issued as necessary.

## 16 5-Day Mean Max/Min Temperature Anomalies (product categories 95A, 95B)

### 16.1 Mission Connection

WPC issues the 5-day Mean Maximum and Minimum Temperature Anomaly Charts as guidance to CONUS NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community. These products describe the maximum and minimum temperature anomalies from climatology over the next five days.

### 16.2 Issuance Guidelines

#### 16.2.1 Creation Software

WPC uses National Centers AWIPS (N-AWIPS) software to generate these products.

**16.2.2 Issuance Criteria**

These are routine, schedule-driven products.

**16.2.3 Issuance and Valid Time**

Refer to Table 10.

**Table 10:** Mean 5 Day Max/Min Temperature Anomaly Product Schedule

<i><b>WPC Mean 5-Day Max/Min Temperature Anomalies Product Schedule</b></i>				
<i><b>Issuance Time (UTC)</b></i>	<i><b>Valid Time (UTC)</b></i>	<i><b>AWIPS ID</b></i>	<i><b>(WMO Header)</b></i>	<i><b>Product Description</b></i>
1000	1200 Day 1 - 1200 Day 5	RBG95A	PTIO52 KWBC	5 - Day Mean Maximum Temperature Anomaly (MOS)
1000	1200 Day 1 - 1200 Day 5	RBG95B	PTIO53 KWBC	5 - Day Mean Minimum Temperature Anomaly (MOS)

**16.2.4 Product Expiration Time**

Not applicable.

**16.3 Technical Description**

Charts should follow the format and content described in this section.

**16.3.1 MND Broadcast Line and Header**

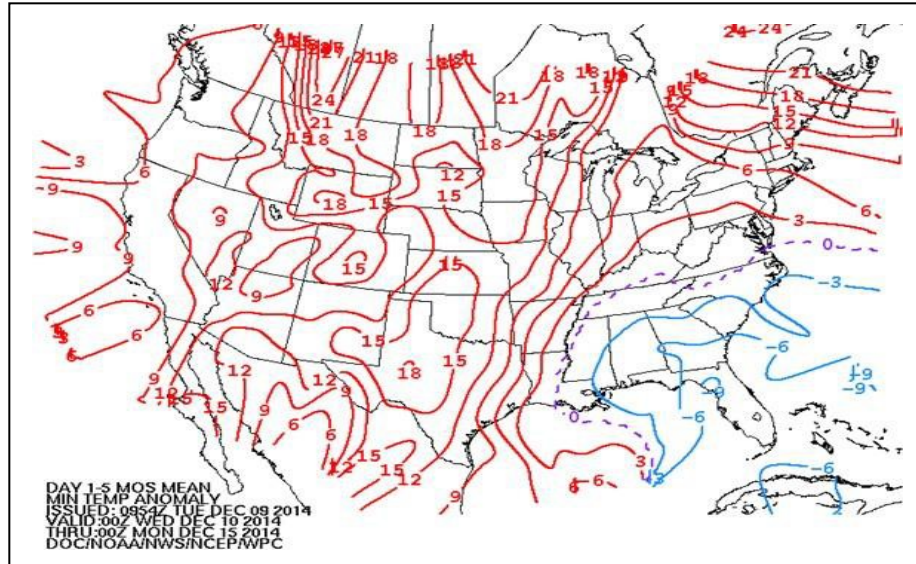
Not applicable.

**16.3.2 Content**

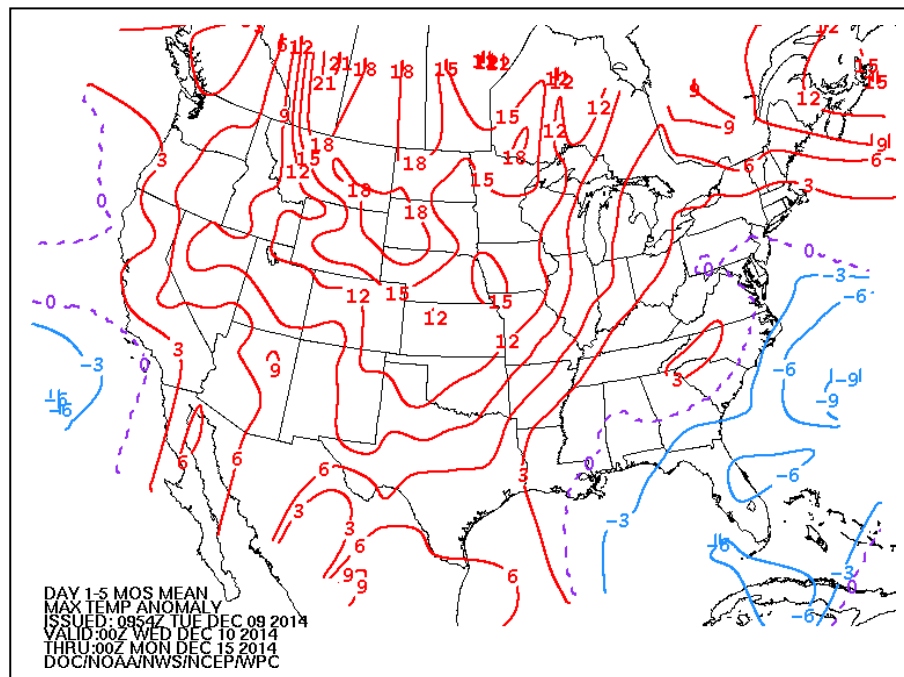
These are graphical products that depict the mean GFS MOS maximum and minimum temperature anomalies in degrees Fahrenheit from climatology.

**16.3.3 Format**

Products will follow the format indicated in Figures 11 and 12 below.



**Figure 11:** Mean 5-Day Minimum Temperature Anomaly (MOS)



**Figure 12:** Mean 5-Day Maximum Temperature Anomaly (MOS)

#### 16.4 Updates, Amendments, and Corrections

These products are not updated or amended. Corrections are issued as necessary.

### 17 Ultraviolet Index (UVI) Forecast (product category UVICAC)

#### 17.1 Mission Connection

The Climate Prediction Center (CPC) issues a UV Index (UVI) Forecast for 58 U.S. cities

daily. CPC generates the UVI Forecast to help people understand the effects on their skin of their exposure to the sun's ultraviolet radiation. This product is used by the media and supports public weather programs.

## **17.2 Issuance Guidelines**

### **17.2.1 Creation Software**

CPC uses National Centers AWIPS (N-AWIPS) software to generate these products.

### **17.2.2 Issuance Criteria**

This is a routine, schedule-driven product.

### **17.2.3 Issuance Time**

The UVI product is issued daily at approximately 1800 UTC.

### **17.2.4 Valid Time**

The product is valid for solar noon (approximately 12 noon local standard time or 1PM local daylight time), Day 2.

### **17.2.5 Product Expiration Time**

Product expires after valid time.

## **17.3 Technical Description**

The UVI product should follow the format and content described below.

### **17.3.1 MND Broadcast Line**

Not applicable.

### **17.3.2 MND Header**

The UVI MND header is NOAA/EPA ULTRAVIOLET INDEX /UVI/ FORECAST.

### **17.3.3 Content**

Both the text-based and web-based products specify the forecast UVI for solar noon, Day 2.

### **17.3.4 Format**

```
NOAA/EPA ULTRAVIOLET INDEX /UVI/ FORECAST
NWS CLIMATE PREDICTION CENTER COLLEGE PARK MD
533 PM SUN MAR 29 2020
```

```
VALID MAR 30 2020 AT SOLAR NOON /APPROXIMATELY NOON
LOCAL STANDARD TIME OR 100 PM LOCAL DAYLIGHT TIME/
```

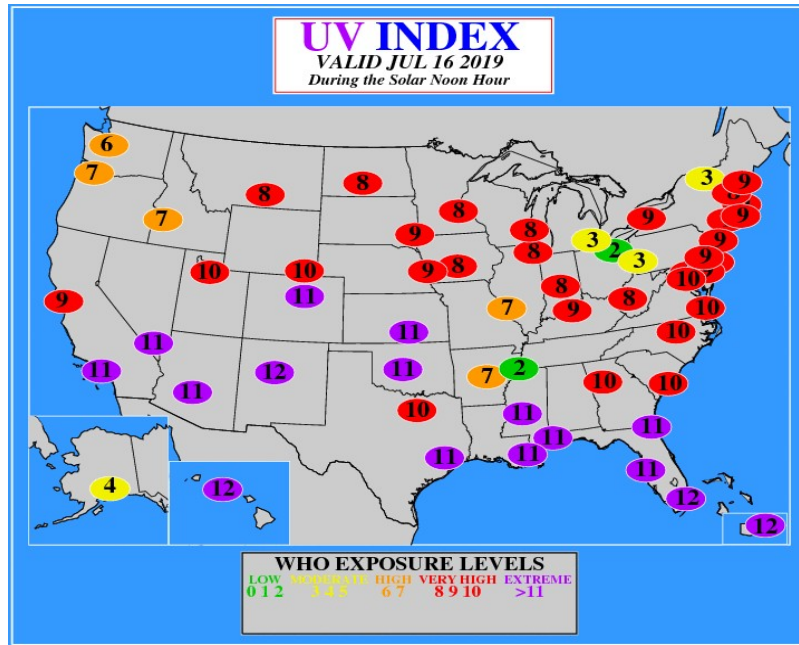
```
THE UV INDEX IS CATEGORIZED BY THE WORLD HEALTH ORGANIZATION
AS FOLLOWS:
```

UVI	EXPOSURE LEVEL
0 1 2	LOW
3 4 5	MODERATE
6 7	HIGH
8 9 10	VERY HIGH
11 AND GREATER	EXTREME

FOR HEALTH RELATED ISSUES GO TO [WWW.EPA.GOV/SUNSAFETY](http://WWW.EPA.GOV/SUNSAFETY)  
 FOR TECHNICAL INFORMATION ABOUT THE UV INDEX....  
 GO TO THE NATIONAL WEATHER SERVICE UV INDEX WEB PAGE:  
[WWW.CPC.NCEP.NOAA.GOV/PRODUCTS/STRATOSPHERE/UV\\_INDEX](http://WWW.CPC.NCEP.NOAA.GOV/PRODUCTS/STRATOSPHERE/UV_INDEX)

CITY	STATE	UVI	CITY	STATE	UVI
ALBUQUERQUE	NM	6	LITTLE ROCK	AR	6
ANCHORAGE	AK	2	LOS ANGELES	CA	7
ATLANTIC CITY	NJ	4	LOUISVILLE	KY	6
ATLANTA	GA	7	MEMPHIS	TN	6
BALTIMORE	MD	3	MIAMI	FL	11
BILLINGS	MT	5	MILWAUKEE	WI	4
BISMARCK	ND	4	MINNEAPOLIS	MN	4
BOISE	ID	2	MOBILE	AL	9
BOSTON	MA	1	NEW ORLEANS	LA	9
BUFFALO	NY	1	NEW YORK	NY	4
BURLINGTON	VT	2	NORFOLK	VA	6
CHARLESTON	WV	5	OKLAHOMA CITY	OK	3
CHARLESTON	SC	7	OMAHA	NE	5
CHEYENNE	WY	5	PHILADELPHIA	PA	4
CHICAGO	IL	3	PHOENIX	AZ	8
CLEVELAND	OH	2	PITTSBURGH	PA	1
CONCORD	NH	1	PORTLAND	ME	1
DALLAS	TX	3	PORTLAND	OR	2
DENVER	CO	5	PROVIDENCE	RI	2
DES MOINES	IA	5	RALEIGH	NC	6
DETROIT	MI	2	SALT LAKE CITY	UT	5
DOVER	DE	4	SAN FRANCISCO	CA	6
HARTFORD	CT	2	SAN JUAN	PU	12
HONOLULU	HI	10	SEATTLE	WA	3
HOUSTON	TX	6	SIOUX FALLS	SD	5
INDIANAPOLIS	IN	4	ST. LOUIS	MO	6
JACKSON	MS	7	TAMPA	FL	10
JACKSONVILLE	FL	7	WASHINGTON	DC	3
LAS VEGAS	NV	6	WICHITA	KS	6

CPC also generates a graphical product depicting the same information and posts it on the Web. See Figure 9.



**Figure 13:** Ultraviolet Index Map

#### 17.4 Updates, Amendments, and Corrections

No updates or amendments are issued for this product. CPC will correct for format and grammatical errors as required.

### 18 Selected Cities Forecast (product categories SCS [01-04])

#### 18.1 Mission Connection

The NWS Telecommunications Operations Center (TOC) began issuing the Selected Cities Forecast (SCS) in January 2009. The SCS provides the observed maximum and minimum temperatures, observed precipitation, and forecast weather and temperatures for selected cities in the U.S., Puerto Rico and the U.S. Virgin Islands. This product is heavily used by the print media and supports the public weather program.

#### 18.2 Issuance Guidelines

##### 18.2.1 Creation Software

TOC uses National Centers AWIPS (N-AWIPS) software to generate these products.

##### 18.2.2 Issuance Criteria

This is a routine, schedule-driven product.

##### 18.2.3 Issuance Time

0100 and 1300 UTC.

##### 18.2.4 Valid Time

1200 UTC Day 1 to 1200 UTC Day 2.

### 18.2.5 Product Expiration Time

Product expires with the next issuance.

## 18.3 Technical Description

The Selected Cities Forecast should follow the format and content described in this section.

### 18.3.1 MND Broadcast Line

Not applicable.

### 18.3.2 MND Header

The SCS header is SELECTED CITIES WEATHER SUMMARY AND FORECASTS.

### 18.3.3 Content

This is a tabular text product consisting of the previous day's maximum and minimum temperatures and observed liquid precipitation, along with forecast weather and temperatures for the next two days for selected cities in the U.S., Puerto Rico and the U.S. Virgin Islands. The abbreviated forecasts are derived from the National Digital Forecast Database (NDFD) grids issued by NWS Weather Forecast Offices (WFOs) and Weather Service Offices (WSOs). The last part (SCS04, FPUS20 KWBN) has a final section that gives the highest and lowest temperatures observed in the CONUS (also see section 19). If a city is missing, it is noted as "MISG" in the weather category and "MM/MM" for the maximum and minimum temperature.

### 18.3.4 Format

#### Example...Morning Issuance:

```
FPUS20
KWBN
041250
SCS01
SELECTED CITIES WEATHER SUMMARY AND
FORECASTS...PART 1 OF 4 NWS/NDFD TELECOMMUNICATION
OPERATIONS CENTER SILVER SPRING MD 850 AM EDT FRI
JUN 04 2010
```

```
TEMPERATURES INDICATE DAYTIME
HIGH...NIGHTTIME LOW B INDICATES
TEMPERATURES BELOW ZERO
PRECIPITATION FOR 24 HOURS ENDING AT 8 AM EDT
```

CITY	THU...JUN 03		FORECAST FRI.....JUN 04		FORECAST SAT.....JUN 05	
	HI/LO	PCPN	WEA	HI/LO	WEA	HI/LO
ABILENE TX	89	68	SUNNY	96/70	SUNNY	100/76
AKRON CANTON	78	61	.14	TSTRMS	82/66	TSTRMS 80/64



ALBANY NY	80	61	.08	PTCLDY	82/65	TSTRMS	82/59
ALBUQUERQUE	91	58		SUNNY	95/64	SUNNY	99/67
ALLENTOWN	85	63	.01	PTCLDY	88/68	MOCLDY	86/66
AMARILLO	86	64		SUNNY	95/64	SUNNY	99/66

### Key to Weather Terminology:

PTCLDY = Partly Cloudy  
 MOCLDY = Mostly Cloudy  
 VRYHOT = Very Hot  
 VRYCLD = Very Cold  
 SNOSHW = Snow Showers  
 DRZL = Drizzle  
 FLRRYS = Snow Flurries

RNSNOW = Rain and Snow  
 BLZZRD = Blizzard  
 BLGSNO = Blowing Snow  
 TSTRMS = Thunderstorms  
 SHWRS = Rain Showers  
 FZRAIN = Freezing Rain  
 FZDRZL = Freezing Drizzle

### Cities Used in Selected

#### Cities Products: Cities

#### for SCS01

ABILENE TX	BATON ROUGE LA	CHARLESTON SC
AKRON/CANTON OH	BILLINGS MT	CHARLESTON WV
ALBANY NY	BIRMINGHAM AL	CHARLOTTE NC
ALBUQUERQUE NM	BISMARCK ND	CHATTANOOGA TN
ALLENTOWN PA	BOISE ID	CHEYENNE WY
AMARILLO TX	BOSTON MA	CHICAGO IL
ANCHORAGE AK	BRIDGEPORT CT	CINCINNATI OH
ASHEVILLE NC	BROWNSVILLE TX	CLEVELAND OH
ATLANTA GA	BUFFALO NY	COLORADO SPGS CO
ATLANTIC CITY NJ	BURLINGTON VT	COLUMBIA SC
AUSTIN TX	CARIBOU ME	COLUMBUS GA
BALTIMORE MD	CASPER WY	COLUMBUS OH

#### Cities for SCS02

CONCORD NH	FARGO ND	HONOLULU HI
CORPUS CHRISTI TX	FLAGSTAFF AZ	HOUSTON INTCNL ARPT TX
DALLAS FT WORTH TX	FLINT MI	HUNTSVILLE AL
DAYTON OH	FORT SMITH AK	INDIANAPOLIS IN
DAYTONA BEACH FL	FORT WAYNE IN	JACKSON MS
DENVER CO	FRESNO CA	JACKSONVILLE FL
DES MOINES IA	GOODLAND KS	JUNEAU AK
DETROIT MI	GRAND JUNCTION CO	KANSAS CITY MO
DULUTH MN	GRAND RAPIDS MI	KEY WEST FL
EL PASO TX	GREAT FALLS MT	KNOXVILLE TN
ELKINS WV	GREEN BAY WI	LAKE CHARLES LA
ERIE PA	GREENSBORO NC	LANSING MI
EUGENE OR	HARRISBURG PA	LAS VEGAS NV
EVANSVILLE IN	HARTFORD CT SPGFLD MA	LEXINGTON KY
FAIRBANKS AK	HELENA MT	

#### Cities for SCS03

LINCOLN IL	NASHVILLE TN	POCATELLO ID
LITTLE ROCK AR	NEW ORLEANS LA	PORTLAND ME
LOS ANGELES CA	NEW YORK CITY NY	PORTLAND OR
LOUISVILLE KY	NEWARK NJ	PROVIDENCE RI
LUBBOCK TX	NORFOLK VA	PUEBLO CO
MACON GA	NORTH PLATTE NE	RALEIGH DURHAM NC
MADISON WI	OKLAHOMA CITY OK	RAPID CITY SD
MEDFORD OR	OMAHA NE	RENO NV
MEMPHIS TN	ORLANDO FL	RICHMOND VA
MIAMI BEACH FL	PADUCAH KY	ROANOKE VA
MIDLAND ODESSA TX	PENDLETON OR	ROCHESTER NY
MILWAUKEE WI	PEORIA IL	ROCKFORD IL
MISSOULA MT	PHILADELPHIA PA	SACRAMENTO CA
MPLS ST PAUL MN	PHOENIX AZ	ST LOUIS MO
MOBILE AL	PITTSBURGH PA	ST. PETERSBURG FL
MONTGOMERY AL		ST THOMAS VI

#### Cities for SCS04

SALEM OR	SIOUX CITY IA	TULSA OK
SALT LAKE CITY UT	SIOUX FALLS SD	TUPELO MS
SAN ANGELO TX	SOUTH BEND IN	WACO TX
SAN ANTONIO TX	SPOKANE WA	WASHINGTON DC
SAN DIEGO CA	SPRINGFIELD IL	W PALM BEACH FL
SAN FRANCISCO CA	SPRINGFIELD MO	WICHITA KS
SAN JOSE CA	SYRACUSE NY	WICHITA FALLS TX
SAN JUAN PR	TALLAHASSEE FL	WILKES BARRE PA
SANTA FE NM	TAMPA FL	WILMINGTON DE
ST STE MARIE MI	TOLEDO OH	YAKIMA WA
SAVANNAH GA	TOPEKA KS	YOUNGSTOWN OH
SEATTLE WA	TUCSON AZ	YUMA AZ
SHREVEPORT LA		

### **18.4 Updates, Amendments, and Corrections**

These products are not updated or amended. The TOC will correct for format and grammatical errors as required.

## **19 National High and Low Temperature for the Contiguous United States (product category SCS04)**

### **19.1 Mission Connection**

WPC issues the High and Low Temperature product to provide locations of the warmest and coldest temperatures, via reliable weather observation networks and NWS vetted reports, across the Contiguous United States (CONUS) over the most recent 24 hour period. This guidance is utilized by NWS WFOs and the general meteorological community such as the private sector and the media, as well as the aviation community.

### **19.2 Issuance Guidelines**

#### **19.2.1 Creation Software**

WPC uses National Centers AWIPS (N-AWIPS) software to generate these products.

**19.2.2 Issuance Criteria**

This is a routine, schedule-driven product.

**19.2.3 Issuance and Valid Times**

Refer to Table 11.

**Table 11:** National High and Low Temperature Product Schedule

<i><b>WPC National High and Low Temperature Product Schedule</b></i>		
<i><b>Issuance Time</b></i>	<i><b>Valid Time</b></i>	<i><b>Product Description</b></i>
0050 UTC	0000 UTC	Reports the new (since local midnight) high temperature extreme and confirms the existing low temperature extreme.
0650 UTC	0600 UTC	Updates the (through local midnight) high temperature extreme and confirms yesterday's low temperature extreme.
1250 UTC	1200 UTC	Reports the new (since local midnight) low temperature extreme and confirms yesterday's high temperature extreme.
1850 UTC	1800 UTC	Updates the (since local midnight) low temperature extreme, and confirms yesterday's high temperature extreme.

**19.2.4 Product Expiration Time**

Product expires with the next issuance.

**19.3 Technical Description**

The National High and Low Temperature product should follow the format and content described in this section.

**19.3.1 MND Broadcast Line**

Not applicable.

**19.3.2 MND Header**

Not applicable.

**19.3.3 Content**

These are text bulletins that list the extreme maximum and extreme minimum temperatures reported at observation sites across the CONUS, generally over the past 24 hours. If more than one station is tied for an extreme value, all of those stations will be listed. The national high and low are appended on the end of the Selected Cities Forecast product (SCS04; section 18), but are also available at the following web link:

<https://www.wpc.ncep.noaa.gov/discussions/hpcdiscussions.php?disc=nathilo>

**19.3.4 Format**

For the web display of the National High and Low Temperature, the product will follow the format indicated below, with “t” indicating the reported temperature.

```
National High and Low Temperature (for the contiguous United
States)
NWS Weather Prediction Center, College Park MD
Issued Time am/pm EDT Day, Month dd, yyyy

High Temperature for Day, Month dd, yyyy
(as received by hh am/pm EDT Month dd)
tt at City, ST (list of cities will continue for tied stations)

Low Temperature for Day, Month dd, yyyy
(as received by hh am/pm EDT Month dd)
tt at City, ST (list of cities will continue for tied stations)
```

#### **19.4 Updates, Amendments, and Corrections**

This product is not routinely updated or amended. WPC will correct for format and grammatical errors as required.

### **20 Canadian Urban Forecasts (product category CSCNMC)**

#### **20.1 Mission Connection**

The product is generated by the Meteorological Service of Canada (MSC), and disseminated internationally to U.S. public interests.

#### **20.2 Issuance Guidelines**

##### **20.2.1 Creation Software**

The NWS Telecommunications Gateway receives this product and re-transmits it to domestic users.

##### **20.2.2 Issuance Criteria**

This is a routine, schedule-driven product.

##### **20.2.3 Issuance Time**

This product is issued daily at approximately 0730 UTC and 1930 UTC.

##### **20.2.4 Valid Time**

Through Day 2.

##### **20.2.5 Product Expiration Time**

Product expires with the next issuance.

#### **20.3 Technical Description**

The product follows the format and content described in this section.

##### **20.3.1 MND Broadcast Line**

Not applicable.

**20.3.2 MND Header**

The MND header for this product is CANADIAN URBAN FORECASTS.

**20.3.3 Content**

This product contains tabular arrays of short forecasts and predicted high and low temperatures (in degrees Celsius) for numerous Canadian cities.

**20.3.4 Format**Example:

```

FPCN12 CWA0 040800
CANADIAN URBAN FORECASTS
TEMPERATURE IN DEGREES CELSIUS
CITY          FORECAST
                FRIDAY
                WEA          HI
IQALUIT        WINDY          M06
YELLOWKNIFE    MAINLY SUNNY   8
WHITEHORSE     MAINLY CLOUDY  8
                FORECAST
                SATURDAY
                WEA          LO/HI
                INCRG CLOUDINESS M12/00
                VARIABLE CLOUD  M02/8
                PARTLY CLOUDY   M03/7

```

Cities for CSCNMC

CALGARY AB	OTTAWA ONT	THUNDER BAY ON
CHARLOTTETOWN PEI	QUEBEC QUE	TORONTO ON
EDMONTON AB	REGINA SK	VANCOUVER BC
FREDERICTON NB	SAINT JOHN NB	VICTORIA BC
HALIFAX NS	SASKATOON SK	WINDSOR ON
IQALUIT NU	ST JOHNS NFLD	WINNIPEG MB
KAMLOOPS BC	SUDBURY ON	WHITEHORSE YT
MONTREAL QUE	SYDNEY NS	YELLOWKNIFE NT

**20.4 Updates, Amendments, and Corrections**

Not applicable.

## Appendix A – Text Product Examples

### 1 Introduction

This appendix provides users with examples of text versions of national public weather products.

### 2 Short Range Forecast Discussion

Short Range Forecast Discussion  
NWS Weather Prediction Center College Park MD  
226 AM EDT Thu Jul 09 2020

Valid 12Z Thu Jul 09 2020 - 12Z Sat Jul 11 2020

...Severe thunderstorms and flash flooding possible for the central U.S. today...

...More hot temperatures for the Great Lakes as well as West Texas...

...Low pressure along the North Carolina coast continues to be monitored by the National Hurricane Center for tropical/subtropical development...

A potent frontal system will move through the Corn Belt today into a warm and juicy air mass. This will support the persistence and development of showers and thunderstorms, some of which may be severe and could produce local flash flooding and ponding on roadways. Temperatures into the upper 80s to mid 90s may approach record highs. The system will move into the central Great Lakes and Midwest on Friday with scattered showers and thunderstorms and a bit cooler temperatures.

Across the South, a lingering frontal boundary will provide the focus for scattered showers and a few thunderstorms from eastern Texas to the Gulf and Atlantic coasts. Along the North Carolina coast, an area of low pressure will lift slowly northeastward and could possibly transition into a subtropical or tropical system. The National Hurricane Center continues to monitor this area but expected impacts, regardless of classification, will be moderate to locally heavy rainfall near and north of its track, gusty winds, and rough surf along the coast. Abundant cloudiness and increasing northeast winds will keep temperatures in the low to mid 80s.

Over the Pacific Northwest, temperatures will trend a bit milder today and then Friday, but remain cooler than normal. Hot temperatures over western Texas and eastern New Mexico may approach records for at least the new two days (and likely beyond). The Desert Southwest will be hotter still, with afternoon temperatures soaring into the 110s each afternoon, with lower 120s likely at Death Valley by Friday into the weekend.

Fracasso

Graphics available at [www.wpc.ncep.noaa.gov/basicwx/basicwx\\_ndfd.php](http://www.wpc.ncep.noaa.gov/basicwx/basicwx_ndfd.php)

### **3    Extended Forecast Discussion**

Extended Forecast Discussion  
NWS Weather Prediction Center College Park MD  
213 PM EDT Mon Jul 06 2020

Valid 12Z Thu Jul 09 2020 - 12Z Mon Jul 13 2020

...Guidance/Predictability Assessment...

Smaller scale differences remain with respect to an Eastern Seaboard coastal low currently being monitored by NHC. The 06z GFS was noticeably faster/more progressive with the low, but the latest 12z run this morning looked better. WPC favors a blend of the ECMWF with the CMC which are closer and more within the spread of the ensembles. The UKMET also lies within the spread, though is stronger (likely owing to a more offshore track) and while it is not out of realm of possibilities, opted to lean closer to continuity and not include in today's blend. Elsewhere across the nation, there is above average consensus on reinforced troughing across the Eastern U.S. late in the period along with troughing moving into the Western U.S.. The blend for today from WPC leaned heavily on the ECMWF days 3-5, with smaller contributions from the 00z CMC and ensemble means. For 6-7, leaned more on the ensemble means to mitigate the less predictable detail differences at the longer range time scale. This maintains very good continuity with the previous WPC forecast.

...Weather Pattern/Hazard Highlights...

Upper trough energies will periodically work inland over an unsettled Northwestern U.S. and western Canada. A steady stream of ejecting impulses then progress downstream over southern Canada and the U.S. northern tier. This will force moderating fronts over the broad region and spawn some strong to severe thunderstorms. Convective rainfall potential may focus from the Northern Plains southeastward across the Midwest. Triple digits maximum temperatures (approaching/exceeding some heat records) are likely from the Desert Southwest/southern Great Basin to the south-central Plains, with heat indices making it feel closer to 115 in some places. Hot and humid weather also stretches into the Midwest and Eastern states as well. A heavy rain/weather threat is also expected to lift from the Southeast to coastal Mid-Atlantic and New England contingent on upper support/coastal low development. The best consensus at this time keeps the heaviest rainfall offshore, but this could shift closer to the coast dependent on surface low track/possible tropical development.

Santorelli/Schichtel

Additional 3-7 Day Hazards information can be found on the WPC medium range hazards chart at:  
<https://www.wpc.ncep.noaa.gov/threats/threats.php>

WPC medium range 500mb heights, surface systems, weather grids, quantitative precipitation, winter weather outlook probabilities and heat indices are at:

[https://www.wpc.ncep.noaa.gov/medr/5dayfcst500\\_wbg.gif](https://www.wpc.ncep.noaa.gov/medr/5dayfcst500_wbg.gif)  
[https://www.wpc.ncep.noaa.gov/medr/5dayfcst\\_wbg\\_conus.gif](https://www.wpc.ncep.noaa.gov/medr/5dayfcst_wbg_conus.gif)  
[https://www.wpc.ncep.noaa.gov/5km\\_grids/5km\\_gridsbody.html](https://www.wpc.ncep.noaa.gov/5km_grids/5km_gridsbody.html)  
<https://www.wpc.ncep.noaa.gov/qpfd/day4-7.shtml>  
[https://www.wpc.ncep.noaa.gov/wwd/pwdf\\_d47/pwdf\\_medr.php?day=4](https://www.wpc.ncep.noaa.gov/wwd/pwdf_d47/pwdf_medr.php?day=4)  
[https://www.wpc.ncep.noaa.gov/heat\\_index.shtml](https://www.wpc.ncep.noaa.gov/heat_index.shtml)

#### **4 Extended Forecast Discussion with Hazards Headlines Appended**

Extended Forecast Discussion  
 NWS Weather Prediction Center College Park MD  
 414 PM EDT Mon Jul 06 2020

Valid 12Z Thu Jul 09 2020 - 12Z Mon Jul 13 2020

...Guidance/Predictability Assessment...

Smaller scale differences remain with respect to an Eastern Seaboard coastal low currently being monitored by NHC. The 06z GFS was noticeably faster/more progressive with the low, but the latest 12z run this morning looked better. WPC favors a blend of the ECMWF with the CMC which are closer and more within the spread of the ensembles. The UKMET also lies within the spread, though is stronger (likely owing to a more offshore track) and while it is not out of realm of possibilities, opted to lean closer to continuity and not include in today's blend. Elsewhere across the nation, there is above average consensus on reinforced troughing across the Eastern U.S. late in the period along with troughing moving into the Western U.S.. The blend for today from WPC leaned heavily on the ECMWF days 3-5, with smaller contributions from the 00z CMC and ensemble means. For 6-7, leaned more on the ensemble means to mitigate the less predictable detail differences at the longer range time scale. This maintains very good continuity with the previous WPC forecast.

...Weather Pattern/Hazard Highlights...

Upper trough energies will periodically work inland over an unsettled Northwestern U.S. and western Canada. A steady stream of ejecting impulses then progress downstream over southern Canada and the U.S. northern tier. This will force moderating fronts over the broad region and spawn some strong to severe thunderstorms. Convective rainfall potential may focus from the Northern Plains southeastward across the Midwest. Triple digits maximum temperatures (approaching/exceeding some heat records) are likely from the Desert Southwest/southern Great Basin to the south-central Plains, with heat indices making it feel closer to 115 in some places. Hot and humid weather also stretches into the Midwest and Eastern states as well. A heavy rain/weather threat is also expected to lift from the Southeast to coastal Mid-Atlantic and New England contingent on upper support/coastal low development. The best consensus at this time keeps the heaviest rainfall offshore, but this could shift closer to the coast dependent on surface low track/possible tropical development.

Santorelli/Schichtel



Hazards:

- Heavy rain possible from eastern Kansas to western Missouri, as well as near the North Carolina coast, Thu-Fri, Jul 9-Jul 10.
- Flooding possible across portions of the northern Plains.
- Flooding occurring or imminent over portions of central North Dakota.
- Excessive heat across portions of the southern Plains to the lower Mississippi Valley, Fri-Sun, Jul 10-Jul 12.
- Much above normal temperatures across portions of the southern High Plains, Sat-Mon, Jul 11-Jul 13.
- Much above normal temperatures across portions of northern New England and into the Great Lakes, Thu-Fri, Jul 9-Jul 10.

Additional 3-7 Day Hazards information can be found on the WPC medium range hazards chart at:

<https://www.wpc.ncep.noaa.gov/threats/threats.php>

WPC medium range 500mb heights, surface systems, weather grids, quantitative precipitation, winter weather outlook probabilities and heat indices are at:

[https://www.wpc.ncep.noaa.gov/medr/5dayfcst500\\_wbg.gif](https://www.wpc.ncep.noaa.gov/medr/5dayfcst500_wbg.gif)

[https://www.wpc.ncep.noaa.gov/medr/5dayfcst\\_wbg\\_conus.gif](https://www.wpc.ncep.noaa.gov/medr/5dayfcst_wbg_conus.gif)

[https://www.wpc.ncep.noaa.gov/5km\\_grids/5km\\_gridsbody.html](https://www.wpc.ncep.noaa.gov/5km_grids/5km_gridsbody.html)

<https://www.wpc.ncep.noaa.gov/qpf/day4-7.shtml>

[https://www.wpc.ncep.noaa.gov/wwd/pwvf\\_d47/pwvf\\_medr.php?day=4](https://www.wpc.ncep.noaa.gov/wwd/pwvf_d47/pwvf_medr.php?day=4)

[https://www.wpc.ncep.noaa.gov/heat\\_index.shtml](https://www.wpc.ncep.noaa.gov/heat_index.shtml)

## **5 Alaska Extended Forecast Discussion**

Alaska Extended Forecast Discussion  
NWS Weather Prediction Center College Park MD  
602 PM EDT Fri Jul 03 2020

Valid 12Z Tue Jul 07 2020 - 12Z Sat Jul 11 2020

...Overview and Guidance/Predictability Assessment...

Upper troughing initially over northeastern Russia and northwestern Canada Tuesday will focus toward western/southwestern Alaska by the end of next week. A system in the Gulf Tuesday will move southeastward toward the southern Panhandle and Haida Gwaii as a northern stream front pushes out of Southcentral. The 12Z GFS/ECMWF paired fairly well with their ensemble means (with partial support from the UKMET/Canadian) such that a blended solution served well through the period. Ensembles have wavered a bit on system timing especially out of the central North Pacific, but a blended solution should minimize further refinements. Increased ensemble weighting was used to balance the uncertainty by later next week, which should carry a system through the Gulf again toward the southern Panhandle and Hadai Gwaii.

...Weather/Hazard Highlights...

Increased troughing will promote cooler than average temperatures over most of the state next week, perhaps by 10-15 degrees in some

spots. Extreme northwestern coastal areas may see near to above average temperatures with an offshore/downsloping flow off the Brooks Range. Showers will be favored over the Alaska Range amid daytime heating and cooling mid-level temperatures. Light showers are possible over the western Aleutians midweek as a dying warm front approaches from the south and a cold front approaches from the north. Showers may be enhanced over Southcentral later in the week as the upper trough from the northwest sinks toward the region. Rainfall is not expected to be heavy over a widespread area.

Fracasso

Additional 3-7 Day Hazard information can be found on the WPC medium range hazards chart at:  
<https://www.wpc.ncep.noaa.gov/threats/threats.php>

Hazards: No significant hazards are expected over Alaska during this forecast period.

WPC medium range Alaskan products including 500mb, surface fronts/pressures progs and sensible weather grids can also be found at:

[https://www.wpc.ncep.noaa.gov/alaska/ak\\_5dayfcst500\\_wbg.gif](https://www.wpc.ncep.noaa.gov/alaska/ak_5dayfcst500_wbg.gif)  
<https://www.wpc.ncep.noaa.gov/alaska/akmedr.shtml>  
[https://www.wpc.ncep.noaa.gov/alaska/ak\\_5km\\_gridsboddy.html](https://www.wpc.ncep.noaa.gov/alaska/ak_5km_gridsboddy.html)

## **6 Hawaii Discussion**

Hawaii Extended Forecast Discussion  
NWS Weather Prediction Center College Park MD  
344 AM EDT Mon Jun 29 2020

Valid 00Z Tue Jun 30 2020 - 00Z Tue Jul 07 2020

Trades of varying strength will continue through the period, supporting primary focus for showers over windward/mountain locations. However some localized sea breeze influence will be possible especially when trades are on the lighter side. Most rainfall during the period should be fairly light. There has been a signal for an area of higher precipitable water values to pass through the area within the Friday-Sunday period but latest guidance has diverged on this.

Expect trades to strengthen Tuesday-Wednesday after the departure of a surface trough/upper weakness, and then return to somewhat lighter speeds Thursday-Friday. During this cycle of trades an upper ridge will build in from the east/northeast and then reach just west/north of the main islands by around the end of the week. Trades should gradually strengthen once again during the weekend and early next week as eastern Pacific high pressure expands. Most guidance keeps the area under a modest weakness aloft Saturday-Monday. As for the area of moisture that has been forecast to cross the state around Friday-Sunday, the 00Z ECMWF and to some degree the 12Z ECMWF mean maintain reasonable continuity but the GFS and GEFS mean have trended noticeably drier

than yesterday. An intermediate solution appears best considering established continuity and the 12Z ECMWF mean recommending somewhat less moisture than the new ECMWF run.

Rausch

## 7 Preliminary Caribbean Discussion

TROPICAL DISCUSSION - INTERNATIONAL DESKS  
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD  
820 AM EDT THU JUL 09 2020

PRELIMINARY DISCUSSION FOR PUERTO RICO AND THE USVI FROM JUL 09/12 UTC: ANOTHER MOSTLY FAIR WEATHER DAY IS EXPECTED TODAY AS A DRY AND DUSTY SAHARAN AIR LAYER LINGERS OVER THE NORTHEAST CARIBBEAN. THIS...HOWEVER...CHANGES ON FRIDAY AS A RETROGRESSING TUTT INDUCES A LOW-MID LEVEL PERTURBATION AS IT ENTERS THE NORTHEAST CARIBBEAN. UNDER INFLUENCE OF THIS PERTURBATION...THE PWAT CONTENT BRIEFLY INCREASES TO AROUND 1.5 INCHES EARLY ON FRIDAY MORNING...LEADING TO A ROUND OF MOSTLY LIGHT CONVECTION AS IT STREAMS ACROSS THE VIRGIN ISLES-EASTERN PUERTO RICO. THROUGH MID AFTERNOON ACTIVITY WILL GRADUALLY EBB FROM THE EAST...WITH FOCUS OF THE AFTERNOON CONVECTION SHIFTING TO NORTHWEST PUERTO RICO...WITH MOST ACTIVE EXPECTED BETWEEN BARCELONETA AND AGUADILLA TO THE NORTHWEST WHERE IT IS TO LIKELY RESULT IN LOCALLY MODERATE RAINFALL AMOUNTS.

THIS SETS THE STAGE FOR THE GRADUAL EROSION OF THE TRADE WINDS INVERSION DURING THE WEEKEND...WITH VIGOROUS TROPICAL WAVE ENTERING THE EASTERN CARIBBEAN ON SATURDAY AFTERNOON. THE GLOBAL MODELS THEN SHOW THIS PERTURBATION STREAMING ACROSS THE FORECAST AREA DURING THE MORNING HOURS ON SUNDAY. ALTHOUGH THE MODELS GENERALLY AGREE ON THE TIMING OF THIS WAVE...THEY DIVERGE ON ITS IMPACT OVER THE NORTHEAST CARIBBEAN ISLANDS. THE GFS AND ECMWF IN PARTICULAR...BOTH SHOW PWAT CONTENT SURGING TO AROUND TWO INCHES AS THE WAVES MAKES LANDFALL OVER THE VIRGIN ISLES-EASTERN PUERTO RICO. THE EUROPEAN MODEL THEN SHOWS ITS MOISTURE QUICKLY EBBING DURING THE DAY ON SUNDAY...WHILE THE GFS PREFERS A HIGHER MOISTURE CONTENT THROUGH THE DAY INTO THE EVENING HOURS. BUT AS THE MJO TRANSITIONS TO ITS CONVERGENT PHASE EARLY NEXT WEEK...THE GFS MIGHT BE TOO BULLISH WITH THE MOISTURE CONTENT. THUS A BLEND OF THESE MODELS MIGHT OFFER THE BETTER SOLUTION...WITH TRAILING MOISTURE LASTING THROUGH MIDDAY THEN RAPIDLY EBBING DURING THE AFTERNOON HOURS. OVER THE VIRGIN ISLES-EASTERN PUERTO RICO/SAN JUAN METRO THE MOST ACTIVE IS EXPECTED BETWEEN 06-15 UTC ON SUNDAY...WITH SECONDARY CONVECTION EXPECTED OVER NORTHWEST PUERTO RICO IN THE AFTERNOON. UNCERTAINTY...HOWEVER...REMAINS HIGH AND CONFIDENCE IN THE FORECAST IS LOW DURING THE MEDIUM RANGE PERIOD.

DAVISON...WPC (USA)

## 8 Basin-Wide Caribbean Discussion

TROPICAL DISCUSSION - INTERNATIONAL DESKS  
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD  
153 PM EDT THU JUL 09 2020

TROPICAL DISCUSSION FROM JULY 09/16 UTC: AT 15 UTC...TROPICAL STORM CRISTINA CENTERED AT 17.4N 110.2W. MINIMUM CENTRAL PRESSURE WAS 995 HPA AND MAXIMUM SUSTAINED WINDS 55KT WITH GUSTS TO 65KT. CRISTINA WAS MOVING TO THE WEST-NORTHWEST OR 300 DEGREES AT 11KT.

IN MEXICO...A DRYING TREND IS EXPECTED TO CONTINUE THROUGH THE CYCLE. CONVECTION WILL BE PRIMARILY ENHANCED ALONG THE SIERRA MADRE OCCIDENTAL AND IN SOUTHERN PORTIONS OF THE COUNTRY...STIMULATED BY TWO TROPICAL WAVES DURING THE WEEKEND. IN THE UPPER LEVELS...A TUTT IS RETROGRESSING FROM THE WESTERN GULF OF MEXICO ON WEDNESDAY TO CENTER SOUTHWEST OF THE BAJA CALIFORNIA PENINSULA BY SATURDAY. THIS WILL GIVE IN TO A RIDGE...FORECAST TO CENTER OVER NORTHERN VERACRUZ BY SATURDAY EVENING. VENTILATION WILL BE THE MOST FAVORABLE IN THE SOUTHERN PERIPHERY OF THE RIDGE...TO SUSTAIN MODERATE AMOUNTS IN OAXACA/GULF OF TEHUANTEPEC REGION IN INTERACTION WITH THE TROPICAL WAVES. ON THURSDAY...LARGEST AMOUNTS ARE EXPECTED BETWEEN JALISCO/COLIMA AND SINALOA...WHERE DIURNAL CONVECTION WILL SUSTAIN 10-15MM/DAY AND MAXIMA OF 20-40MM. DIURNAL CONVECTION IN CENTRAL MEXICO AND IN THE NORTHERN SIERRA MADRE OCCIDENTAL WILL FAVOR 05-10MM/DAY AND MAXIMA OF 15-25MM. ON THURSDAY...EXPECTING 05-10MM/DAY AND ISOLATED MAXIMA OF 15-20MM IN THE EJE VOLCANICO CENTRAL AND MOST OF THE SIERRA MADRE OCCIDENTAL. LARGER ACCUMULATIONS ARE EXPECTED IN SOUTHEAST MEXICO...AS TWO TROPICAL WAVES ARRIVE FROM CENTRAL AMERICA. THESE WILL FAVOR 15-20MM/DAY AND MAXIMA OF 30-60MM IN THE GULF OF TEHUANTEPEC REGION...AND 10-15MM/DAY AND MAXIMA OF 20-40MM IN CHIAPAS AND VERACRUZ. IN THE YUCATAN PENINSULA EXPECTING MAXIMA OF 15M. ON SATURDAY...LARGEST AMOUNTS ARE EXPECTED IN WESTERN CHIAPAS/OAXACA WHERE EXPECTING 10-15MM/DAY AND MAXIMA OF 20-40MM. HOWEVER...ISOLATED LARGER ACCUMULATIONS ARE POSSIBLE IN COASTAL LOCATIONS. IN SOUTHWEST MEXICO/EJE VOLCANICO CENTRAL AND IN THE SIERRA MADRE OCCIDENTAL OF SONORA AND NORTHERN SINALOA EXPECTING ISOLATED ACCUMULATIONS OF 05-10MM/DAY WITH MAXIMA OF 15-25MM.

IN THE CARIBBEAN...A DRYING TREND CONTINUES UNDER THE INFLUENCE OF A DRY AIR MASS ARRIVING FROM THE ATLANTIC AND AN ACCELERATION OF THE TRADES. INITIALLY...A TROPICAL WAVE WILL SUSTAIN SCATTERED CONVECTION IN THE NORTHWEST CARIBBEAN TO FAVOR 05-10MM/DAY AND MAXIMA OF 15-25MM IN CUBA ON THURSDAY...05-10MM/DAY AND MAXIMA OF 15MM IN JAMAICA AND THE CAYMAN ISLANDS...AND 10-15MM/DAY AND MAXIMA OF 20-35MM IN THE SOUTHEAST BAHAMAS/TURKS AND CAICOS. BUT ACCUMULATIONS WILL DECREASE IN AREAS TO THE EAST OF CENTRAL CUBA ON FRIDAY. FRIDAY CONVECTION WILL PEAK IN WESTERN CUBA AND THE NORTHWEST BAHAMAS...WHERE A MOIST PLUME WILL INTERACT WITH VENTILATION IN THE SOUTHEASTERN PERIPHERY OF AN UPPER RIDGE. THIS WILL FAVOR 10-15MM/DAY AND MAXIMA OF 20-35MM. LATE ON FRIDAY...A TROPICAL WAVE ENTERS THE WINDWARD ISLANDS TO FAVOR 10-15MM/DAY AND MAXIMA OF 20-40MM IN TRINIDAD AND TOBAGO...BUT VERY LIGHT ACCUMULATIONS IN AREAS TO THE NORTH. HOWEVER...A MORE ROBUST TROPICAL WAVE ENTERS THE ARC OF THE LESSER ANTILLES DURING THE DAY ON SATURDAY...TO SUSTAIN 05-10MM/DAY AND MAXIMA OF 15-30MM IN AREAS TO THE SOUTH OF GUADELOUPE AND IN EASTERN PUERTO RICO/VIRGIN ISLANDS. IN THE LEEWARD ISLANDS EXPECTING MAXIMA OF 15-20MM/DAY.

CONVECTION IN CENTRAL AMERICA WILL BE LARGELY MODULATED BY TROPICAL WAVES. DAY-TO-DAY VARIABILITY WILL BE PARTICULARLY ENHANCED IN NORTHERN CENTRAL AMERICA...AS A DRY AIR MASS TRAILS BEHIND THE TROPICAL WAVES CROSSING THE REGION ON THURSDAY AND FRIDAY. IN SOUTHERN CENTRAL AMERICA...CONVECTION WILL BE MORE ACTIVE THROUGH THE CYCLE AND PRODUCE LARGER ACCUMULATIONS...AS THE

PANAMANIAN LOW PATTERN AND THE ITCZ WILL REMAIN QUITE ACTIVE IN INTERACTION WITH A TROPOSPHERIC KELVIN WAVE PROPAGATING ACROSS THE REGION. ON THURSDAY...LARGEST AMOUNTS ARE EXPECTED FROM WESTERN PANAMA INTO CENTRAL NICARAGUA AND EASTERN HONDURAS...WHERE TROPICAL WAVE CONVECTION WILL FAVOR 15-20MM/DAY AND MAXIMA OF 30-60MM. TO THE NORTHWEST ACROSS HONDURAS...EL SALVADOR AND SOUTHERN GUATEMALA EXPECTING 05-10MM/DAY AND MAXIMA OF 15-25MM. ON FRIDAY...LARGEST AMOUNTS ARE EXPECTED FROM NORTHWEST COLOMBIA INTO WESTERN COSTA RICA...WHERE SCATTERED CONVECTION WILL SUSTAIN 15-20MM/DAY AND MAXIMA OF 30-60MM. TROPICAL WAVE CONVECTION FROM CENTRAL HONDURAS WEST INTO CHIAPAS WILL SUSTAIN 10-15MM/DAY AND MAXIMA OF 20-40MM...WHILE IN THE YUCATAN PENINSULA EXPECTING MAXIMA OF 15MM. ON SATURDAY...AN ACTIVE PANAMANIAN LOW LATTERN WILL FACOR 15-20MM/DAY AND MAXIMA OF 30-60MM IN COSTA RICA/WESTERN PANAMA AND IN NORTHWEST COLOMBIA...WHILE IN EASTERN PANAMA EXPECTIN MAXIMA OF 20-40MM. A DRY AIR MASS WILL LIMIT ACCUMULATIONS TO MAXIMA OF 15MM IN NORTHERN CENTRAL AMERICA.

IN NORTHERN SOUTH AMERICA...TROPICAL WAVES AND THE NET WILL PLAY AN IMPORTANT ROLE IN MODULATONG CONVECTION. MOST ACTIVE CONVECTION IS EXPECTED IN CENTRAL VENEZUELA AND NORTH-CENTRAL COLOMBIA ON FRIDAY AND SATURDAY IN ASSOCIATION WITH THE NET...TROPICAL WAVES...AND ENHANCEMENT BY A TUTT EXTENDING ACROSS THE CENTRAL CARIBBEAN. SEE THE TROPICAL WAVE SECTION FOR ASSOCIATED ACCUMULATIONS.

TROPICAL/EASTERLY WAVES INITIALIZED ON JULY 09 AT 12 UTC:  
 TYPE - 09/12 10/00 10/12 11/00 11/12 12/00 12/12 13/00 SOF  
 TW - 42W 45W 49W 53W 57W 62W 67W 71W 15N  
 TW - 47W 51W 55W 61W 65W 69W 73W 77W 10N  
 TI - 56W 60W 64W 69W 73W 76W 79W 82W 23N  
 TW - 77W 81W 85W 88W 91W 94W 97W 100W 21N  
 TW - 82W 86W 90W 93W 96W 99W 102W 105W 22N  
 TI - 94W DISS --- --- --- --- --- 20N

A TROPICAL WAVE IS INITIALIZED AT 42W AND TO THE SOUTH F 15W. THIS WAVE IS FORECAST TO AMPLIFY AS IT ENTERS TE CARIBBEAN BASIN...TO ENTER THE ARC OF THE LESSER ANTILLES DURING THE DAY ON SATURDAY. THE MOIST PLUME ASSOCIATED WITH THIS WAVE WILL SUSTAIN A NOTICEABLE INCREASE IN CONVECTION AS ENTERS THE LESSER ANTILLES ON SATURDAY...WHERE IT WILL SUSTAIN 05-10MM/DAY AND MAXIMA OF 15-30MM. IN THE LEEWARD ISLANDS THE WAVE WILL SUSTAIN 05-10MM/DAY AND MAXIMA OF 15-20MM...WHILE IN THE VIRGIN ISLANDS AND EASTERN PUERTO RICO EXPECTING 05-10MM/DAY AND MAXIMA OF 15-30MM ON SATURDAY.

A TROPICAL WAVE IS INITIALIZED AT 47W AND TO THE SOUTH OF 10N. THIS WAVE IS GENERALLY CONFINED TO THE ATLANTIC ITCZ. THE WAVE WILL ARRIVE INTO FRENCH GUIANA ON THURSDAY TO SUSTAIN MAXIMA OF 15MM. NORTH ACROSS SURINAME AND NORTHERN GUYANA EXPECTING MAXIMA OF 15-30MM IN ASSOCIATION WITH ITCZ CONVERGENCE. ON FRIDAY...THE WAVE WILL STIMULATE CONVECTION IN TRINIDAD AND TOBAGO AND IN NORTHEAST VENEZUELA TO FAVOR 10-15MM/DAY AND MAXIMA OF 20-40MM. IN GUYANA EXPECTING 05-10MM/DAY AND MAXIMA OF 15-25MM. IN THE LESSER ANTILLES...LIMITED MOISTURE WILL FAVOR MAXIMA UNDER 10MM/DAY. ON SATURDAY...THE WAVE WILL STIMULATE CONVECTION IN CENTRAL VENEZUELA WHERE IT WILL FAVOR 15-20MM/DAY AND MAXIMA OF 30-60MM. IN EASTERN COLOMBIA/SOUTHERN VENEZUELA EXPECTING 05-10MM/DAY AND MAXIMA OF 15-30MM.

A TUTT-INDUCED PERTURBATION IS INITIALIZED AT 56W...TO THE SOUTH OF 23N AND TO THE NORTH OF 10N. THIS PERTURBATION WILL PROPAGATE ACROSS THE NORTHEAST CARIBBEAN WITH LITTLE IMPACTS IN PRECIPITATION...AS A DRY AIR MASS IS IN PLACE. THE WAVE WILL ENTER THE LEEWARD ISLANDS LATE ON THURSDAY. ON FRIDAY IT WILL PROPAGATE ACROSS PUERTO RICO AND THE DOMINICAN REPUBLIC. ON SATURDAY IT WILL PROPAGATE ACROSS HAITI...JAMAICA...SOUTHEAST/CENTRAL CUBA AND THE SOUTHEAST BAHAMAS.

A ROBUST TROPICAL WAVE IS INITIALIZED AT 77W AND TO THE SOUTH OF 21N. THIS IS THE LARGEST TROPICAL WAVE IN THE REGION...AND IS ASSOCIATED WITH A SIGNIFICANT MOIST PLUME IN THE NORTHERN CARIBBEAN AND THE BAHAMAS. A DRY AIR MASS TRAILS BEHIND THE WAVE AXIS...WHICH WILL SUSTAIN A NOTICEABLE DRYING TREND AS IT CROSSES THE CARIBBEAN. ON THURSDAY...THE WAVE WILL STIMULATE CONVECTION IN COSTA RICA...EASTERN NICARAGUA AND WESTERN PANAMA...WHERE EXPECTING 15-20MM/DAY AND MAXIMA OF 30-60MM. IN THE CAYMAN ISLANDS IT WILL FAVOR MAXIMA OF 15MM...IN CUBA 05-10MM/DAY AND MAXIMA OF 15-25MM...WHILE IN THE SOUTHEAST BAHAMAS EXPECTING 10-15MM/DAY AND MAXIMA OF 20-35MM. ON FRIDAY...THE WAVE WILL STIMULATE CONVECTION IN NORTHERN CENTRAL AMERICA TO SUSTAIN 10-15MM/DAY AND MAXIMA OF 20-40MM FROM CENTRAL HONDURAS AND THE GULF OF FONSECA REGION WEST INTO GUATEMALA AND SOUTHERN BELIZE. IN THE UICATAN PENINSULA EXPECTING MAXIMA OF 15MM. IN CENTRAL AND WESTERN CUBA...TRAILING MOISTURE WILL SUSTAIN 10-15MM/DAY AND MAXIMA OF 20-35MM. SIMILAR ACCUMULATIONS ARE EXPECTED IN THE CENTRAL AND NORTHWEST BAHAMAS. ON SATURDAY...THE WAVE WILL FAVOR 10-15MM/DAY AND MAXIMA OF 20-40MM IN OAXACA AND WESTERN CHIAPAS...ALTHOUGH ISOLATED LARGER AMOUNTS ARE EXPECTED IN COASTAL LOCATIONS.

A MUCH WEAKER TROPICAL WAVE IS INITIALIZED AT 82W. ON THURSDAY...THE WAVE WILL FAVOR MAXIMA OF 30-60MM IN SOUTHWEST NICARAGUA...WHILE IN NORTHERN CENTRAL AMERICA IT FAVORS 05-10MM/DAY AND MAXIMA OF 15-25MM. ON FRIDAY...THE WAVE WILL ENHANCE CONVECTION IN THE GULF OF TEHUANTEPEC REGION/OAXACA...WHERE IT WILL FAVOR 15-20MM/DAY AND MAXIMA OF 30-60MM WITH THE RISK FOR MCS FORMATION. IN VERACRUZ AND CHIAPAS EXPECTING 10-15MM/DAY AND MAXIMA OF 20-40MM. ON SATURDAY...THE WAVE WILL FAVOR 05-10MM/DAY AND MAXIMA OF 15-25MM IN THE SIERRA MADRE DEL SUR OF GUERRERO AND MICHOACAN...AND IN THE EJE VOLCANICO TRANSVERSAL.

A PERTURBATION ORIGINALLY INDUCED BY A TUTT IS INITIALIZED AT 94W BUT IT IS LOSING DEFINITION AS IT PROPAGATES ACROSS THE EASTERN PACIFIC.

GALVEZ/DAVISON...WPC (USA)

## 9 South America Forecast Discussion

SOUTH AMERICA FORECAST DISCUSSION - INTERNATIONAL DESKS  
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD  
1242 PM EDT THU JUN 04 2020

GFS DATA AT FTPPRD.NCEP.NOAA.GOV/PUB/DATA/NCCF/COM/GFS/PROD/

FORECAST DISCUSSION FROM JUNE 03/16UTC: A DEEPENING MID/UPPER LEVEL TROUGH IS TO RAPIDLY BECOME THE DOMINANT SYNOPTIC SCALE

FEATURE OVER THE EASTERN PACIFIC LATER THIS EVENING...WITH AXIS TO SPAN BETWEEN 70W-106W AND TO THE SOUTH OF 25S BY DAYBREAK ON FRIDAY. UNDER THE INFLUENCE OF A RIDGE TO THE WEST...THE HIGHLY AMPLIFIED TROUGH IS TO PERSIST THROUGH THE WEEKEND TO EARLY NEXT WEEK. MEANWHILE...THE MID LEVEL TROUGH IS TO FOCUS SHORT WAVE PERTURBATIONS AND DEEP SUBTROPICAL MOISTURE ACROSS THE SOUTHERN REGIONS OF CHILE. AT LOW LEVELS THIS WILL SUSTAIN A BROAD TROUGH THAT IS TO EXTEND BETWEEN THE BELLINGSHAUSEN-WEDDELL SEAS TO THE THE SOUTHERN CONE OF SOUTH AMERICA...FAVORING A TIGHT PRESSURE GRADIENT AND STRONG BOUNDARY LAYER WINDS ACROSS SOUTHERN CHILE AND PATAGONIA IN ARGENTINA. IN THIS AREA THE WINDS ARE FORECAST TO PEAK AT 35-50KT DURING THE NEXT SEVERAL DAYS. THIS WILL ENHANCE LOW LEVEL MOISTURE TRANSPORT AND CONVERGENCE ON THE SOUTHERN REGIONS OF CHILE...WHILE ADIABATICALLY LIFTING ACROSS THE SOUTHERN ANDES. THE MOST ACTIVE CONVECTION WITH THIS FEATURE IS EXPECTED BETWEEN PUERTO MONTT AND ISLA DE CHILOE IN SOUTHERN CHILE...WITH MAXIMA OF 20-45MM/DAY EXPECTED OVER THE NEXT TWO DAYS AND 20-30MM/DAY DURING THE WEEKEND TO EARLY NEXT WEEK. DUE TO STRONG TOPOGRAPHICAL FORCING AND ABOVE NORMAL MOISTURE CONTENT...LOCALLY HIGHER AMOUNTS ARE HIGHLY LIKELY. FURTHERMORE...THE INFLOW OF COLD AIR ALOFT WOULD LIKELY FAVOR ISOLATED THUNDERSTORMS OVER SOUTHERN CHILE DURING THE DAY ON SUNDAY THROUGH MONDAY MORNING.

ALSO OVER THE EASTERN PACIFIC...A MID/UPPER LEVEL LOW ON THE NORTHERN STREAM MEANDERS OFF THE NORTH COAST OF CHILE. AS THE AFOREMENTIONED TROUGH AMPLIFIES...IT IS TO DISPLACE THE NORTHERN STREAM VORTEX EAST ACROSS THE ANDES OF CHILE TO THE NORTHWEST PROVINCES IN ARGENTINA LATER THIS EVENING/EARLY FRIDAY MORNING. UNDER FAVORABLE JET DYNAMICS...THE CLOSED LOW IS TO GRADUALLY INTENSIFY/DEEPEN AS IT THEN TRACK TO THE EAST-SOUTHEAST ACROSS NORTHERN ARGENTINA TO SOUTHERN BRASIL/URUGUAY LATER ON FRIDAY. AS A SHORT WAVE RIDGE BUILDS TO THE EAST...THE CLOSED LOW IS TO BRIEFLY STALL OVER URUGUAY/RIO GRANDE DO SUL THROUGH MIDAFTERNOON ON SUNDAY...THEN WEAKEN AS IT MEANDERS EAST INTO THE WESTERN ATLANTIC ON SUNDAY-MONDAY. AT 250 HPA...A POLAR JET MAXIMA...IN ADDITION TO FAVOR THE RAPID INTENSIFICATION OF THE MID LEVEL LOW ON FRIDAY...IT IS TO ALSO FAVOR AN UPPER DIVERGENT PATTERN ACROSS URUGUAY-CORRIENTES/MISIONES IN NORTHERN ARGENTINA TO SOUTHERN BRASIL-PARAGUAY...VENTING ORGANIZED/POTENTIALLY SEVERE CONVECTION. AT LOW LEVELS...THE MID LEVEL VORTEX WILL SUSTAIN CYCLOGENESIS ALONG A MEANDERING FRONT OVER CENTRAL SOUTH AMERICA...WITH CLOSED LOW FORMING OVER CORRIENTES ARGENTINA/SOUTHEAST PARAGUAY EARLY IN THE CYCLE. THE FRONTAL LOW IS THEN FORECAST TO DEEPEN AS IT GRADUALLY OCCLUDES ACROSS URUGUAY TO ENTRE RIOS/CORRIENTES IN ARGENTINA. THE DEEPENING LOW WILL THEN DRIVE THE FRONT NORTH ACROSS SOUTHEASTERN BRASIL-MATO GROSSO TO CENTRAL BOLIVIA ON SATURDAY-SUNDAY. OVER PARAGUAY-MISIONES IN ARGENTINA-SOUTHERN BRASIL THIS WILL TRIGGER ORGANIZED/POTENTIALLY SEVERE CONVECTION EARLY IN THE CYCLE...WITH MAXIMA OF 40-80MM. ON FRIDAY...AS THE CONVECTION BUILDS EAST ACROSS PARANA/SANTA CATARINA IN BRASIL TO SAO PAULO-MATO GROSSO DO SUL THE MAXIMA DECREASES TO 20-40MM...WHILE OVER URUGUAY-ENTRE RIOS IN ARGENTINA IT WILL SURGE TO 30-60MM AS MOISTURE WRAPS AROUND THE OCCLUDING LOW IN SUPPORT OF AN ECHO TRAINING PATTERN. ACROSS CENTRAL BOLIVIA...AS THE FRONT SURGES ACROSS MID SECTIONS OF SOUTH AMERICA...IT WILL SUSTAIN MODERATE TO HEAVY RAINFALL AMOUNTS DURING THE NEXT TWO DAYS...WITH MAXIMA OF 20-40MM/DAY.

AT 200 HPA...A CLOSED HIGH OVER NORTHEAST BRASIL ANCHORS A RIDGE OVER NORTHERN SOUTH AMERICA...WITH AXIS DOMINATING THE UPPER FLOW

TO THE NORTH OF 20S. CONSISTENT WITH PREVIOUS FORECASTS...THE HIGH IS TO MEANDER TO THE WEST-SOUTHWEST DURING THE NEXT FEW DAYS...REACHING ACRE IN WESTERN BRASIL/NORTHERN BOLIVIA LATER DURING THE WEEKEND. AS THE RIDGE HOLDS TO THE NORTH...A SUBTROPICAL JET IS TO BOUND THE SOUTHERN FRINGES OF THIS RIDGE DURING THE NEXT COUPLE OF DAYS...MEANWHILE FAVORING A DIVERGENT PATTERN ALOFT THAT IS TO VENT THE AFOREMENTIONED CONVECTION OVER PARAGUAY-SOUTHERN BRASIL. THE RIDGE ALOFT IS TO ALSO VENT CONVECTION ACROSS EQUATORIAL SOUTH AMERICA...WITH MOST INTENSE AS TROPICAL WAVE STREAMING TO THE NORTH INTERACT WITH THE NEAR EQUATORIAL TROUGH. ACROSS AMAZONAS IN BRASIL-SOUTHERN COLOMBIA/NORTHERN PERU-EASTERN ECUADOR THIS IS TO FAVOR SEVERAL DAYS OF SCATTERED DEEP CONVECTION WITH MAXIMA IN THIS AREA PEAKING AROUND 30-60MM EARLY IN THE CYCLE. SCATTERED CONVECTION IS TO THEN PERSIST THROUGH THE WEEKEND...WITH DAILY MAXIMA SETTTLING AROUND 20-40MM/DAY. OTHER CONVECTION IS TO CLUSTER ACROSS AMAPA IN BRASIL/NORTHERN PARA TO THE SOUTHERN GUIANAS...WITH MAXIMA OF 15-30MM EXPECTED OVER THE NEXT FEW DAYS.

DAVISON...WPC (USA)

GALVEZ...WPC (USA)

## **10 Coded Surface Frontal Positions (Low-Resolution)**

CODED SURFACE FRONTAL POSITIONS  
NWS WEATHER PREDICTION CENTER COLLEGE PARK MD  
943 AM EDT THU JUL 09 2020

VALID 070912Z

HIGHS 1016 2688 1009 3897 1014 38107 1017 48114 1017 4078 1013 37112 1014 63106 1026 5435 1018 7039

LOWS 1008 16121 1002 38102 1005 35115 1007 4595 1000 5298 1014 4564 1004 33106 1005 4096 1012 47119 1007 39109 1011 66108 1007 64142 1005 6693 1007 6271 996 6356 1008 3576 1000 58147

TROF 20121 16121 16121

TROF 1994 1794

TROF 2081 1882 1582 1482 1382

TROF 26101 25101 23100 2197

OCFNT WK 5298 5297 5295 5194 5193

COLD WK 5193 5093 4993 4894 4794

STNRY WK 4794 4795 4595

STNRY WK 4572 4573 4575 4478 4480 4582 4583

WARM WK 5193 5091 4988 4886 4683 4583

COLD WK 4564 4465 4467 4469 4571 4572

TROF 4092 3893 3795 3797 3799 37101

TROF 37102 36102 35103 34105 33106

TROF 35115 36115 38116

TROF 48126 45127 41131

TROF 33106 32109 33111

TROF 36118 37120 39122 41124

TROF 47119 49119 51120

TROF 47119 46119 44121

STNRY WK 39109 39110 39112 40115 39116

COLD WK 5098 4899 47101 46103 45107

STNRY WK 64142 65145 67148 67153

COLD WK 66108 65109 64112 62116 61120 60122

STNRY WK 60122 60124 61128 63131 63138 64142

TROF 6693 6393 5894



TROF 6693 6894 7194  
 COLD WK 6253 6054 5856 5657 5561 5564 5568  
 STNRY WK 5568 5572 5477 5480 5484 5487 5693 5697  
 TROF 6271 6074 5979  
 TROF 41114 43116 45116  
 STNRY WK 40104 40105 41106 41108 39109  
 COLD WK 4595 4394 4295 4196 4198  
 STNRY WK 4198 4199 41101 40102 40104  
 TROF 35115 33114 32114 30114 28113  
 TROF 53101 52105 53110  
 TROF 67157 68164 70169  
 OCFNT WK 6357 6355 6253  
 WARM WK 4564 4462 4262 4060  
 WARM WK 6253 6151 6049 5947 5846  
 STNRY WK 3576 3477 3379 3380 3381 3383  
 TROF 4564 4763 4962  
 TROF 6357 6657 7259 7875  
 WARM WK 58138 55135 53132  
 COLD WK 58138 53144 51150  
 OCFNT WK 58147 59145 59143 59141 58139  
 STNRY WK 3570 3672 3674 3575 3576

## 11 Coded Surface Frontal Positions (High-Resolution)

CODED SURFACE FRONTAL POSITIONS  
 NWS WEATHER PREDICTION CENTER COLLEGE PARK MD  
 943 AM EDT THU JUL 09 2020

VALID 070912Z  
 HIGHS 1016 2640878 1009 3820972 1014 3781067 1017 4781142 1017 3970784 1013  
 3671122 1014 6261060 1026 5390350 1018 7020391  
 LOWS 1008 1601210 1002 3751015 1005 3501146 1007 4530951 1000 5200979 1014  
 4490636 1004 3291060 1005 3980965 1012 4751188 1007 3951093 1011 6651076 1007  
 6451424 1005 6590934 1007 6160707 996 6320563 1008 3470761 1000 5781465  
 TROF 1991208 1601210 1591210  
 TROF 1940936 1700937  
 TROF 2040814 1810815 1460816 1430816 1330816  
 TROF 2621010 2461009 2290995 2050971  
 OCFNT 5190980 5210966 5200949 5130936 5060930  
 COLD 5060930 5030928 4890929 4780936 4710942  
 STNRY 4710942 4650946 4520951  
 STNRY 4490720 4510730 4490754 4370784 4370804 4460823 4530828  
 WARM 5080930 5030910 4900884 4790855 4630835 4530828  
 COLD 4490636 4410647 4370669 4390688 4460710 4490720  
 TROF 4010921 3810935 3690952 3650973 3670990 3731007  
 TROF 3741015 3581023 3471034 3361052 3281061  
 TROF 3501146 3631154 3781158  
 TROF 4821256 4461267 4131312  
 TROF 3271062 3241087 3301109  
 TROF 3561183 3681201 3861221 4061237  
 TROF 4741187 4911190 5091202  
 TROF 4741188 4561192 4391205  
 STNRY 3941093 3921104 3921122 3971145 3951164  
 COLD 5020980 4840990 4701008 4601033 4521071  
 STNRY 6441423 6511446 6681483 6751532  
 COLD 6651076 6491091 6361121 6241155 6061197 6041216  
 STNRY 6041216 6041241 6141278 6271314 6311381 6431421  
 TROF 6580935 6250928 5830942

TROF 6590934 6840944 7110935  
 COLD 6190529 5980535 5770556 5640575 5540607 5500643 5530684  
 STNRY 5540684 5530721 5420768 5370805 5380841 5430873 5560929 5550973  
 TROF 6160709 5970740 5860788  
 TROF 4091139 4291157 4511165  
 STNRY 3971039 3991049 4081060 4071076 3941093  
 COLD 4520951 4340941 4160947 4110962 4130984  
 STNRY 4130984 4140991 4111007 4011024 3971039  
 TROF 3491146 3331139 3161141 3011140 2831135  
 TROF 5261013 5241054 5291101  
 TROF 6711573 6821637 6961690  
 OCFNT 6310567 6280550 6200529  
 WARM 4490636 4410625 4210617 4030602  
 WARM 6190527 6110509 6000488 5920473 5790459  
 STNRY 3470762 3360773 3280787 3250801 3270815 3260832  
 TROF 4490635 4670634 4880619  
 TROF 6340568 6630568 7170593 7770753  
 WARM 5781385 5541347 5251323  
 COLD 5781385 5341438 5101496  
 OCFNT 5781467 5861454 5891433 5861405 5781385  
 STNRY 3540703 3570723 3560738 3530752 3480761

## 12 Coded Surface Frontal Positions Forecast

CODED SURFACE FRONTAL POSITIONS FORECAST  
 NWS WEATHER PREDICTION CENTER COLLEGE PARK MD  
 519 PM EDT THU JUL 09 2020

SURFACE PROG VALID 202007100600Z  
 HIGHS 1016 4411101 1019 3881065 1017 2650888 1013 3501115 1016 3760829 1014  
 4901038  
 LOWS 1012 3931220 1008 4361164 1008 4461069 1012 4791185 1008 5321142 1008  
 3511150 1008 4091133 1005 3651027 1007 3251063 1010 4280885 1015 4470566 1000  
 5460885  
 TROF 5871200 5661178 5391143  
 STNRY 5520760 5490804 5540844 5520871  
 COLD 5231409 4931412 4661429  
 WARM 5231406 5021386 4811363  
 TROF 2650995 2410990 2160973  
 WARM 3740754 3800739 3790716 3820698  
 STNRY 3740754 3740754 3620762 3420767 3270778 3180797 3190823  
 OCFNT 5450888 5480876 5450860 5400847  
 COLD 4270884 4060899 3910930 3860965 3880993 3971016  
 COLD 5400846 5090846 4710860 4510872  
 STNRY 4510872 4400879 4280884  
 STNRY 3981018 4071033 4171043 4341054 4451069  
 OCFNT 5321142 5211123 5051115  
 WARM 5061115 4911101 4631088  
 STNRY 4461069 4521080 4631088  
 COLD 5051116 4821117 4641132 4531147  
 STNRY 4531148 4461158 4361164  
 TROF 3921219 3691204 3531185  
 TROF 3501149 3101138 2621109 2321100  
 TROF 3661026 3700997 3660966  
 TROF 3651026 3501037 3381055 3251064  
 TROF 3231064 2971059 2691043 2431035  
 WARM 5400848 5400846 5300811 5010770 4900739 4810683 4770665  
 4730653

STNRY 4460567 4410591 4490618 4660637 4740654  
WARM 4460566 4380550 4210535  
TROF 4470568 4650585 4870588  
TROF 5311023 5300960 5430903  
TROF 4771184 4581192 4431217  
TROF 5621251 5271236 4961254  
TROF 4081134 3921136 3701152 3511150  
TROF 4451068 4231076 4081094  
COLD 4361165 4201180 4101205 4041232 3841265 3671299 3601319

SURFACE PROG VALID 202007101200Z  
HIGHS 1020 3861064 1016 4361103 1016 3860804 1022 4531256 1017 4550976 1017  
3511105 1018 2630893  
LOWS 1012 3971219 1013 4791185 1011 4401133 1008 3431146 1008 3681011 1010  
3241063 1011 4170890 1008 5381125 1010 4591065 1001 5470872  
COLD 5341381 5101375 4871378 4651398 4501425  
COLD 3971231  
WARM 5341378 5151361 4981344 4811321  
OCFNT 5450874 5480860 5430845  
STNRY 3130797 3110811 3160835 3320857  
COLD 3780753 3570753 3350765 3200780 3130797  
WARM 3830753 3870747 3880736 3830719 3810702  
STNRY 5480723 5550795 5550853  
WARM 5430846 5370806 5130766 4990736 4860702 4820687  
STNRY 4330583 4470602 4620631 4730662 4810686  
COLD 5420845 5090836 4760847 4440870  
STNRY 4440870 4370875 4180890  
STNRY 3931005 3961016 4031026 4141033  
WARM 4581065 4441050 4291041 4131033  
WARM 5011101 4921090 4721080  
STNRY 4581065 4641074 4721080  
OCFNT 5371124 5201106 5011099  
COLD 4391133 4251148 4141177 4101209 4051225  
COLD 4041226 3911246 3571277 3461302 3411321  
TROF 4391132 4161126 3911134  
TROF 3231063 2961058 2681044 2411036  
TROF 3681011 3750992 3780962  
TROF 3671012 3531025 3381051 3251063  
TROF 3421146 3171141 2861125 2501098 2201090  
TROF 3431146 3651158 3881159  
TROF 3961219 3741208 3481184  
TROF 4781185 4561195 4361219  
TROF 5371125 5591147 5851157  
TROF 5641244 5351230 5051237  
TROF 5460872 5350907 5310955 5301012  
COLD 4170891 3950908 3840943 3931002  
TROF 2630995 2360989 2120972  
COLD 5011101 4771107 4641117  
STNRY 4641117 4551125 4411134

