



Covered Area Rainfall Events (07/10/2025 to 09/10/2025)

Excess Rainfall

Event Briefing

Belize

17 October 2025

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1 INTRODUCTION

This event briefing describes the impact of rainfall on Belize which was associated with a Covered Area Rainfall Event (CARE) starting on 7 October and ending on 9 October 2025. The Rainfall Index Loss (RIL) for the Covered Area Rainfall Event was below the attachment point of Belize's Excess Rainfall policy, and therefore no payout is due to the Government of Belize. This CARE did not activate the Wet Season Trigger¹ or Localized Event Trigger² endorsement of Belize's Excess Rainfall policy and therefore no payout under either of these endorsements is due.

2 EVENT DESCRIPTION

On 6 and 7 October, a surface trough was located parallel to the eastern coasts of the Yucatán Peninsula and Belize (Figure 1). Supported by abundant tropical moisture across the region, it generated scattered moderate showers and isolated strong thunderstorms over much of the far western Caribbean Sea west of longitude 81°W, including the Gulf of Honduras, eastern Mexico, and Belize (Figure 2). Over Belize, convective activity peaked on 7 October, when a strong thunderstorm developed over the northern part of the country in the early hours of the day and subsequently extended toward the central region throughout the day (Figure 2b). The associated heavy rainfall primarily affected northern Belize between 0600 and 2100 UTC, while moderate to locally intense precipitation was observed across the rest of the country.

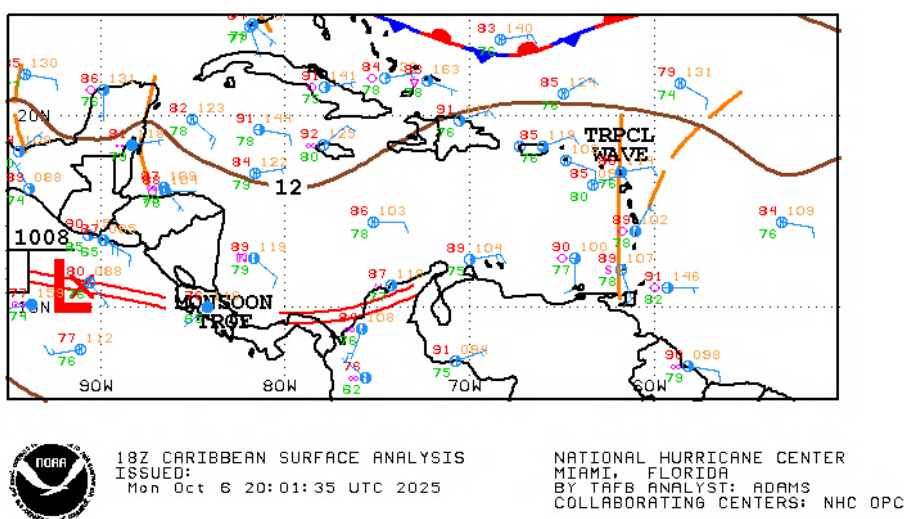


Figure 1 Surface analysis over the Caribbean area on 6 October at 1800UTC. Source: US National Hurricane centre³

¹ The Wet Index (WI) was below the Wet Season Trigger Activation Threshold (AT_{WST})

² The Local Index (LI) was below the Localized Event Trigger Activation Threshold (AT_{LET})

³ National Oceanic and Atmospheric Administration - FTP, National Hurricane centre, review date: 6 October 2025, available at: https://www.nhc.noaa.gov/tafb/CAR_18_Z.gif

On 8 and 9 October, the surface trough gradually drifted westward across the Bay of Campeche toward eastern Mexico. Consequently, the most significant convective activity shifted to the west of the Yucatán Peninsula. However, on 8 October, an isolated thunderstorm developed over central–southern Belize around 0900 UTC and remained active until 1500 UTC, bringing locally intense rainfall to the area. On 9 October, only brief showers of moderate intensity were observed during the last hours of the day.

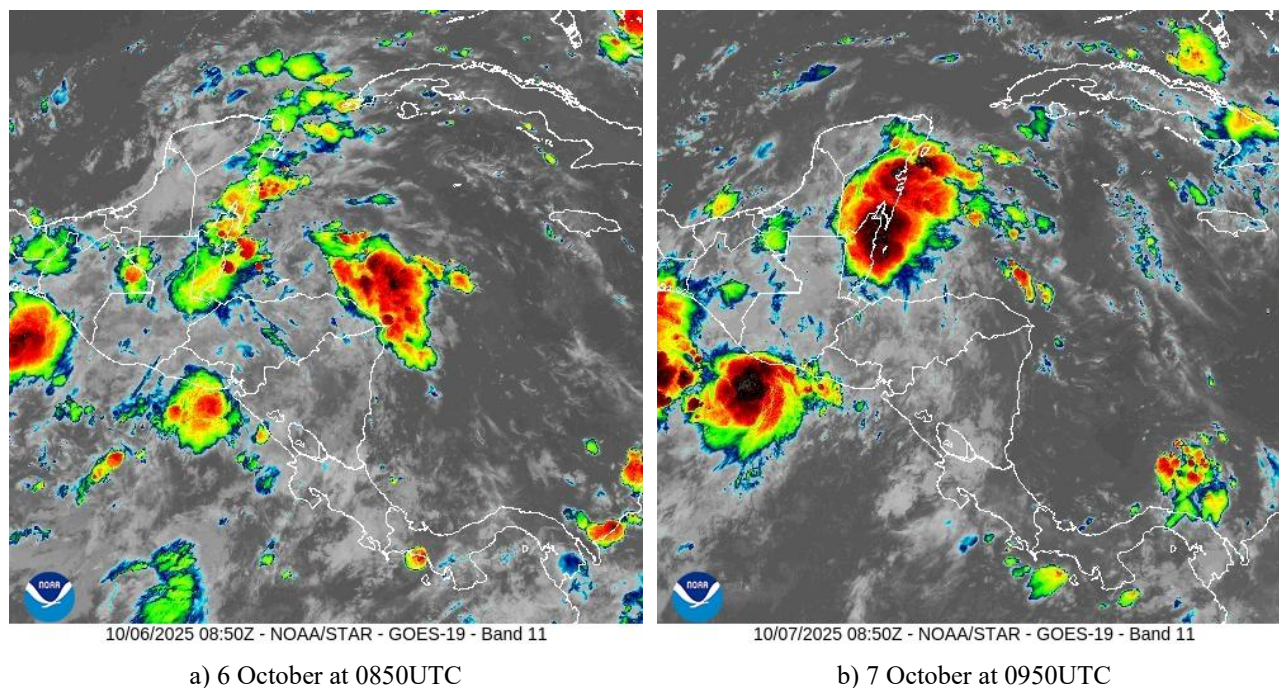


Figure 2 Satellite imagery on 6 and 7 October 2025 at different times as indicated by the labels from the thermal infrared channel enhanced with colour. Blue/green colours represent high-altitude clouds (top cloud temperature between -50°C and -70°C), while the red/yellow colours represent very high-altitude clouds (top cloud lower than -70°C). High altitude clouds indicate strong convection associated with intense precipitation. The violet square indicates the location of the Turks and Caicos Islands. Source: NOAA, National Environmental Satellite, Data and Information Service⁴

3 REPORTED IMPACTS

At the time of writing this report, there was no information about damage in Belize due to this Covered Area Rainfall Event during the indicated period.

⁴ RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: <https://cdn.star.nesdis.noaa.gov/GOES16/ABI/SECTOR/pr/11/>

4 RAINFALL MODEL OUTPUTS

All data sources used by the XSR 3.1 model, CMORPH, IMERG, WRF5, WRF7, WRF11 and WRF15⁵, detected the occurrence of precipitation over Belize during the period 05 to 09 October 2025. Each data source reported a specific distribution and accumulation of rainfall, as discussed below and shown in Figure 3. A CARE for Belize was activated on 07 October and closed on 09 October. The CARE was activated due to the use of the 12-hour and the 48-hour aggregation intervals for precipitation⁶ and thus the period considered by the XSR 3.1 model for the loss estimate based on the accumulated precipitation in Belize was 05 to 09 October 2025

Table 1: Report from XSR 3.1 Data Sources on the Precipitation over Belize, October 05 to 09, 2025

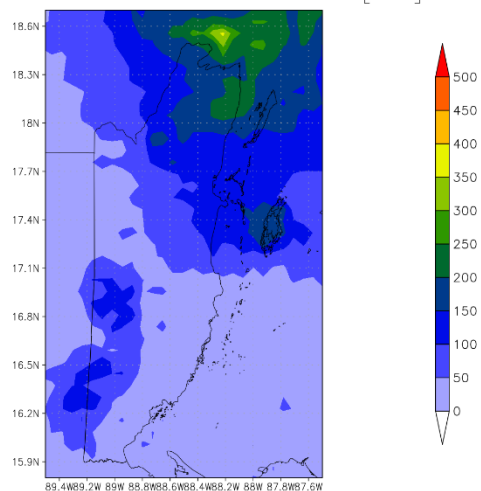
CMORPH	CMORPH reported total accumulated values of precipitation higher than 150 mm over the norther districts of Belize, with the highest values, between 200 mm and 250 mm, over Corozal district. Lower values were reported over the remainder of the territory.
IMERG	IMERG reported total accumulated precipitation higher than 200 mm over the northern districts and over an area between Belize and Stann Creek districts, with the highest values, between 250 mm and 350 mm, over Corozal district. Lower values were reported over the remainder of the territory.
WRF5	WRF5 showed total accumulated values of precipitation ranging between 50 mm and 200 mm over most of Belize. Higher values, between 150 mm and 200 mm, were reported over Corozal district and in a small area over Stann Creek district.
WRF7	WRF7 reported total accumulated values of precipitation lower than 150 mm over the entire territory of Belize.
WRF11	WRF11 showed total accumulated values of precipitation lower than 200 mm over most of Belize, except for an area in the Corozal district, where total accumulated values of precipitation between 400 mm and 450 mm were reported.
WRF15	WRF15 reported accumulated values of precipitation higher than 150 mm over the coastal districts of Corozal, Belize, Stann Creek and Toledo. The highest values, between 400 mm and 500 mm, were reported over two areas in Corozal district. Values lower than 150 mm were shown over the rest of the territory.

⁵ CMORPH Model: the satellite-based rainfall precipitation estimates provided by the NOAA Climate Prediction centre (CPC) using the so-called Morphing Technique

http://www.cpc.ncep.noaa.gov/products/janowiak/cmorph_description.html. Further details are provided in the Definitions section of this report
 IMERG Model: The satellite-based rainfall estimation model developed by NASA, expressed in mm, derived by aggregating the IMERG 30-minute Rainfall Data at 10km spatial resolution and available at <https://jsimpsonhttps.pps.eosdis.nasa.gov/imerg/late>. Further details in the Definitions section of this report
 WRF5, WRF7, WRF11 and WRF15 Models: the Weather Research and Forecasting Model weather model-based Configuration #1 and #2 data <https://www.mmm.ucar.edu/weather-research-and-forecasting-model>. These data are initialised by the NCEP FNL dataset. (NCEP FNL Operational Model Global Tropospheric Analyses [<http://rda.ucar.edu/datasets/ds083.2/>]). Further details are provided in the Definitions section of this report.

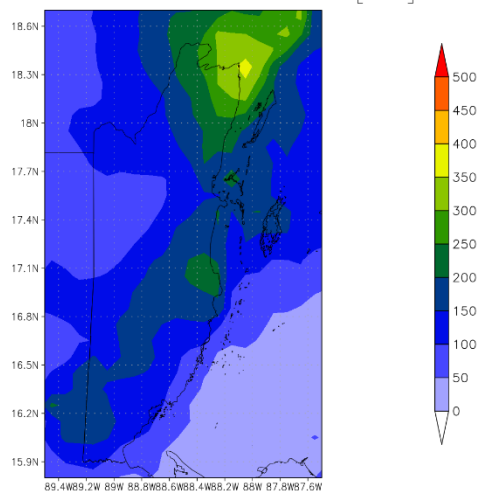
⁶ The two aggregation periods correspond to the Rainfall Aggregation Period #1 and Rainfall Aggregation Period #2, as indicated in the Schedule. Further details in the Definitions section of this report.

05 OCT – 09 OCT 2025 – CMORPH [mm]



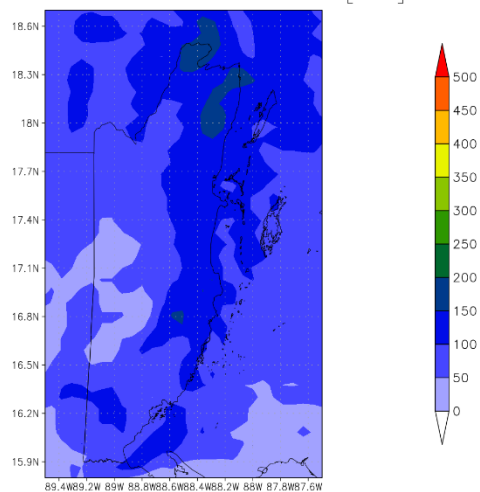
a) CMORPH

05 OCT – 09 OCT 2025 – IMERG7 [mm]



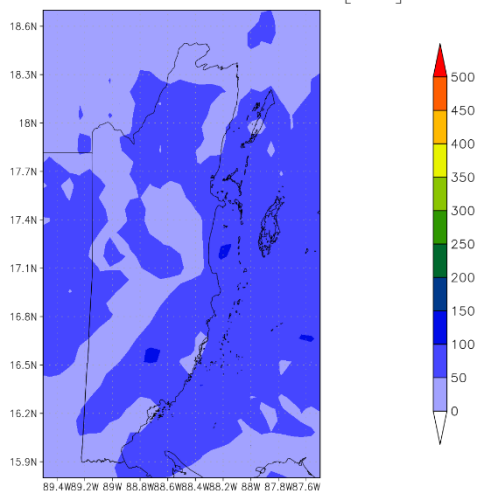
b) IMERG7

05 OCT – 09 OCT 2025 – WRF5 [mm]



c) WRF5

05 OCT – 09 OCT 2025 – WRF7 [mm]



d) WRF7

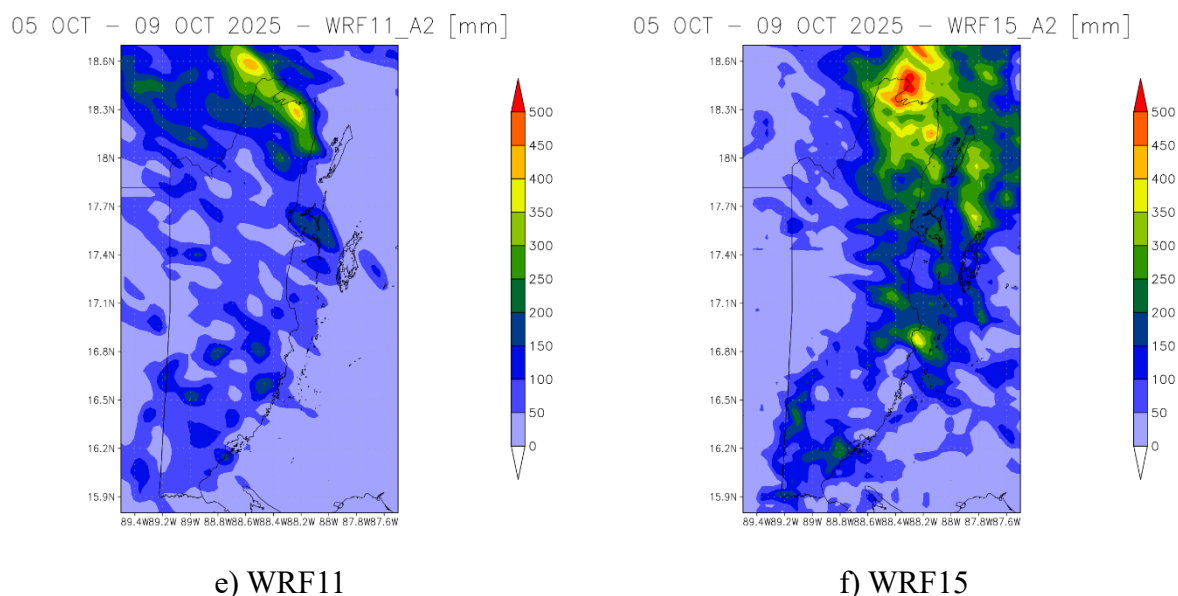


Figure 3 Total accumulated precipitation during the period 05 to 09 October, 2025 imated by CMORPH (a), IMERG7 (b), WRF5 (c), WRF7 (d), WRF11 (e), WRF15 (f). Source: CCRIF SPC

Daily rainfall maps by CMORPH, IMERG, WRF5, WRF7, WRF11 and WRF15 over the exposure map of XSR 3.1 are not included here and they can be downloaded at the following links for 12-hour aggregation and 48-hour aggregation respectively:

https://wemap.ccrif.org/OUTPUT/CCRIF/XSR/Events/BLZ/CARE_3_2025/daily_prec_short.mp4

https://wemap.ccrif.org/OUTPUT/CCRIF/XSR/Events/BLZ/CARE_3_2025/daily_prec_long.mp4

The Rainfall Index Loss (RIL) was above the loss threshold for Belize for three of the data sources used by XSR3.1: CMORPH, IMERG and WRF15. The RIL was the highest for CMORPH.

The final RIL (RIL_{FINAL}) was calculated as the average of the three RILs from CMORPH, IMERG and WRF15. The RIL_{FINAL} was below the attachment point of the country’s Excess Rainfall policy, and thus the policy was not triggered. Therefore, no payout is due under this Excess Rainfall policy to the Government of Belize.

The Wet Season Trigger (WST) endorsement of the XSR3.1 model did not identify this CARE as a “Wet Season” event⁷. Therefore, no payout is due under the Wet Season Trigger endorsement of Belize’s Excess Rainfall policy.

⁷ The WST endorsement is designed to provide a predetermined payout for rainfall events occurring amidst already saturated soil conditions, effectively capturing the heightened risk of flooding and landslides. It is activated based on two factors: the Wet Index (the average 1-month Standardized Precipitation Index for all grid cells in the country) and Wet Periods (the period of time where the Wet Index exceeds 1, which indicates that the soil is wetter than its long-term average and serves as an indicator of soil saturation). The WST policy endorsement provides a payment when one or more CAREs with a modelled loss greater than zero and lower than the policy Attachment Point occur within a Wet Period and the corresponding value of the Wet Index during the Wet Period

The Localized Event Trigger (LET) component of the XSR3.1 model did not identify this CARE as a localized event⁸. Therefore, no payout is due under the Local Event Trigger endorsement of the Belize’s Excess Rainfall policy.

5 TRIGGER POTENTIAL

The Rainfall Index Loss calculated for the Covered Area Rainfall Event (CARE) for Belize was below the attachment point of Belize’s Excess Rainfall policy, and therefore no payout is due. This CARE did not activate the Wet Season Trigger or Localized Event Trigger endorsement of the Excess Rainfall policy and therefore no payout under either of these endorsements is due.

For additional information, please contact CCRIF SPC at: pr@ccrif.org

exceeds a predetermined threshold. Wet season event (WE). Any period of consecutive days, during which the Wet Index (WI) is equal or greater than 1.

⁸ The LET is designed to cover rainfall events that affect only a small portion of the country. To determine a qualifying localized event, two conditions must be met: the average precipitation in the 10% of the area with highest precipitation – known as the “Local Exposure” - from (i) either of the satellite datasets (CMORPH or IMERG) and (ii) at least three of the six WRF models must be greater than the local precipitation threshold (LPT).

DEFINITIONS

<i>Active Exposure Cell Percentage Threshold</i>	The percentage of the total number of XSR Exposure Grid Cells within the Covered Area of the Insured, that must be exceeded to trigger a Covered Area Rainfall Event.
<i>Active Exposure Grid Cells</i>	The XSR Exposure Grid Cells for which in the same single day the Aggregate Rainfall #1 value computed using the CMORPH-based Rainfall Estimate equals or exceeds the Rainfall Event Threshold #1 or the Aggregate Rainfall #2 value computed using the CMORPH-based Rainfall Estimate equals or exceeds the Rainfall Event Threshold #2.
<i>Aggregate Rainfall #1</i>	The rainfall amount accumulated over the Rainfall Aggregation Period #1 (as defined in the Schedule) measured in millimeters (mm) in any of the XSR Exposure Grid Cells in the Covered Area of the Insured. For a given day and a Rainfall Aggregation Period #1 of n hours, the Aggregate Rainfall #1 is the maximum amount of rainfall accumulated over any of the n-hour windows that intersect the day itself considering a time interval of 3 hours.
<i>Aggregate Rainfall #2</i>	The rainfall amount accumulated over the Rainfall Aggregation Period #2 (as defined in the Schedule) measured in millimeters (mm) in any of the XSR Exposure Grid Cells in the Covered Area of the Insured. For a given day and a Rainfall Aggregation Period #2 of n hours, the Aggregate Rainfall #2 is the maximum amount of rainfall accumulated over any of the n-hour windows that intersect the day itself considering a time interval of 3 hours.
<i>Calculation Agent</i>	Entity charged with undertaking the primary calculation of the Rainfall Index Loss.
<i>CMORPH-based Maximum Aggregate Rainfall #1</i>	The maximum value during the Covered Area Rainfall Event of the Aggregate Rainfall #1 computed using the CMORPH-based Rainfall Estimates in any given XSR Exposure Grid Cell over the Covered Area of the Insured.
<i>CMORPH-based Maximum Aggregate Rainfall #2</i>	The maximum value during the Covered Area Rainfall Event of the Aggregate Rainfall #2 computed using the CMORPH-based Rainfall Estimates in any given XSR Exposure Grid Cell over the Covered Area of the Insured.
<i>CMORPH-based Covered Area Rainfall Parameters</i>	The CMORPH Model information provided on a continuous basis by the XSR Model Data Reporting Agency used by the

	Calculation Agent to obtain the CMORPH-based Rainfall Estimates using the XSR Rainfall Model. Parameters are drawn from XSR Exposure Grid Cells within the Covered Area of the Insured, by their respective latitude and longitude. Measurement units and precision of data ingested by the XSR Rainfall Model are identical to those provided by the XSR Model Data Reporting Agency and are further elaborated in the Attachment entitled ‘Calculation of Rainfall Index Loss and Policy Payment’.
<i>CMORPH Model</i>	The satellite-based rainfall estimation model provided by NOAA CPC as described in the Rainfall Estimation Models section of the Policy.
<i>Covered Area</i>	The territory of the Insured as represented in the XSR Rainfall Model.
<i>Covered Area Rainfall Event</i>	Any period of days, with an interruption less than or equals to the Event Tolerance Period, during which the number of Active Exposure Grid Cells is greater than or equal to the product of (a) Active Exposure Cell Percentage Threshold multiplied by (b) the total number of XSR Exposure Grid Cells within the Covered Area.
<i>Country Disaster Alert</i>	An official disaster alert issued by ReliefWeb (http://reliefweb.int/) for the country in question for one of the following types of events: tropical cyclone, flood, flash flood and severe local storm. Any disaster alert issued later than seven (7) days after the completion of the Covered Area Rainfall Event (CARE) event will not be considered. The Disaster Alert description issued by ReliefWeb and/or its attached documentation must include specific reference to the CARE dates with a tolerance period of 2 calendar days.
<i>Maximum Aggregate Rainfall #1</i>	The highest value during a Covered Area Rainfall Event of the Aggregate Rainfall #1 amount in any of the XSR Exposure Grid Cells in the Covered Area of the Insured computed.
<i>Maximum Aggregate Rainfall #2</i>	The highest value during a Covered Area Rainfall Event of the Aggregate Rainfall #2 amount in any of the XSR Exposure Grid Cells in the Covered Area of the Insured computed.
<i>Rainfall Event Threshold #1</i>	Aggregate Rainfall #1 level as defined in the Schedule which should be exceeded to trigger an Active Exposure Cell.

<i>Rainfall Event Threshold #2</i>	Aggregate Rainfall #2 level as defined in the Schedule which should be exceeded to trigger an Active Exposure Cell.
<i>Rainfall Aggregation Period #1</i>	The number of hours over which the Aggregate Rainfall #1 is computed for all XSR Exposure Grid Cells during a Covered Area Rainfall Event.
<i>Rainfall Aggregation Period #2</i>	The number of hours over which the Aggregate Rainfall #2 is computed for all XSR Exposure Grid Cells during a Covered Area Rainfall Event.
<i>Rainfall Index Loss</i>	For any Covered Area Rainfall Event affecting the Insured, the US Dollar loss calculated by the Calculation Agent using the XSR Rainfall Model, as described in the Attachment entitled ‘Calculation of Rainfall Index Loss and Policy Payment’. The Rainfall Index Loss can only be calculated once the Covered Area Rainfall Event is completed.
<i>WRF5 Model</i>	The weather research and forecasting rainfall model by NOAA with Configuration #5 data initialized with and assimilating the data provided by the National Center for Environmental Prediction as described in the Rainfall Estimation Models and in the Input Data to the Rainfall Estimation Models sections of this Attachment.
<i>WRF7 Model</i>	The weather research and forecasting rainfall model by NOAA with Configuration #7 data initialized with and assimilating the data provided by the National Center for Environmental Prediction as described in the Rainfall Estimation Models and in the Input Data to the Rainfall Estimation Models sections of this Attachment.
<i>XSR Rainfall Model</i>	The computer model used to calculate the Rainfall Index Loss, as described in the Attachment entitled ‘Calculation of Rainfall Index Loss and Policy Payment’.
<i>XSR Exposure Grid Cells</i>	The 30 arc-second by 30 arc-second grid of cells each of which is attributed with an XSR Grid Cell Exposure Value greater than zero.
<i>XSR Grid Cell Exposure Value</i>	The value, used to calculate the CMORPH-based Exposure Grid Cell Loss, the WRF5-based Exposure Grid Cell Loss, and the WRF7-based Exposure Grid Cell Loss.