

CWUIC
XSR COMPONENT
23/10/2026 to 25/10/2026

Excess Rainfall

Final Event Briefing

National Water Commission (NWC)
Jamaica

30 October 2026

1 SUMMARY

This event briefing is designed to review the excess rainfall losses estimated by CCRIF's CWUIC model for the rainfall event that affected Jamaica from 23 to 25 October 2026. The National Water Commission (NWC) in Jamaica was the only CCRIF water utility member for which the model produced losses.

From 23 to 25 October, an upper-level trough brought unstable atmospheric conditions over the northern Caribbean Sea, further enhanced by several surface troughs. Strong thunderstorms developed over the region during the afternoon hours (local time). Eastern Jamaica was affected by heavy rainfall mainly on 23 October, peaking in intensity at 1800UTC. The same area also experienced rainfall over the following two days, although to a lesser extent and with lower intensity.

The CCRIF CWUIC model produced losses for NWC; however, these were below the policy's Attachment Point and no payout is due.

2 INTRODUCTION

On 23 October, a deep upper-level trough extended from the eastern United States to the Yucatan Peninsula (Figure 1). The associated strong ventilation aloft over eastern Cuba, eastern Jamaica, Hispaniola, and the south-eastern Bahamas supported marked divergence in the upper troposphere over these areas, while also drawing abundant tropical moisture from Tropical Storm Vance, centered over the Pacific waters west of Central America (Figure 1). Also, several low-level troughs over the northwestern Caribbean Sea locally enhanced atmospheric instability in their vicinity, triggering vigorous thunderstorms. The surface analysis at 1800UTC(Figure 2), corresponding to the peak of the event, showed a surface trough stretched from eastern Jamaica to the south-western edge of the Caribbean Sea. Combined with the upper-level divergence and the abundant moisture, this trough led to the development of a large thunderstorm over eastern Jamaica and the Jamaica Channel, which brought heavy rainfall to the eastern part of the island from 1500UTC until 2100UTC, peaking at 1800UTC (Figure 3). During the first half of 24 October, the convective system drifted over the central Caribbean Sea, away from Jamaica.

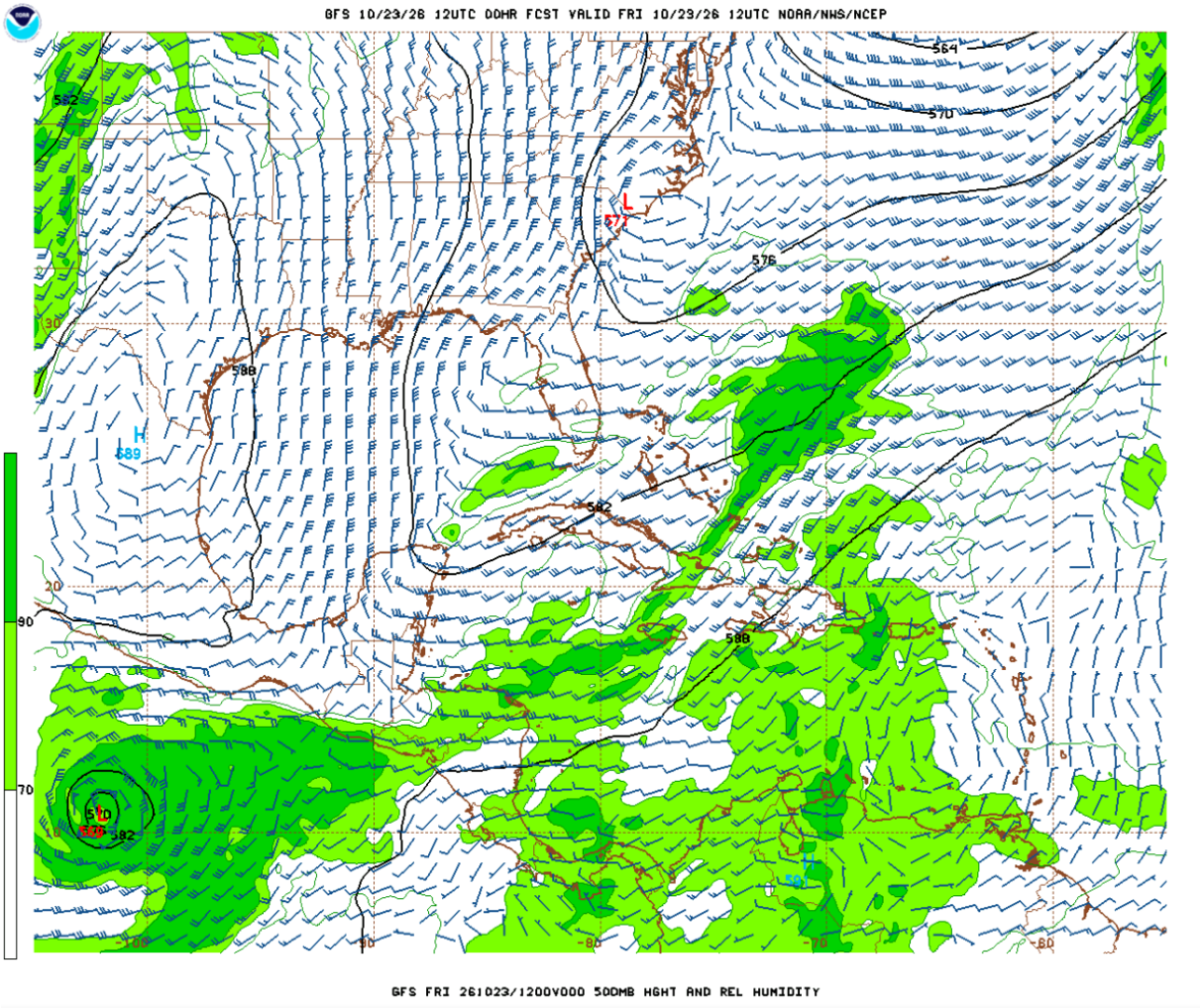


Figure 1. Upper-level analysis over the Caribbean and Central America area on 23 October 2026 at 1200UTC. The map reports geopotential height, wind and relative humidity at 500 hPa. The green colours indicate areas with relative humidity higher than 70% (light green) and 90% (dark green). Source: US National Hurricane Center[1]

[1] National Oceanic and Atmospheric Administration, National Weather Service, review dates: 23 October, 2026, available at: https://mag.ncep.noaa.gov/data/gfs/00/west-atl/500_rh_ht/gfs_west-atl_000_500_rh_ht.gif

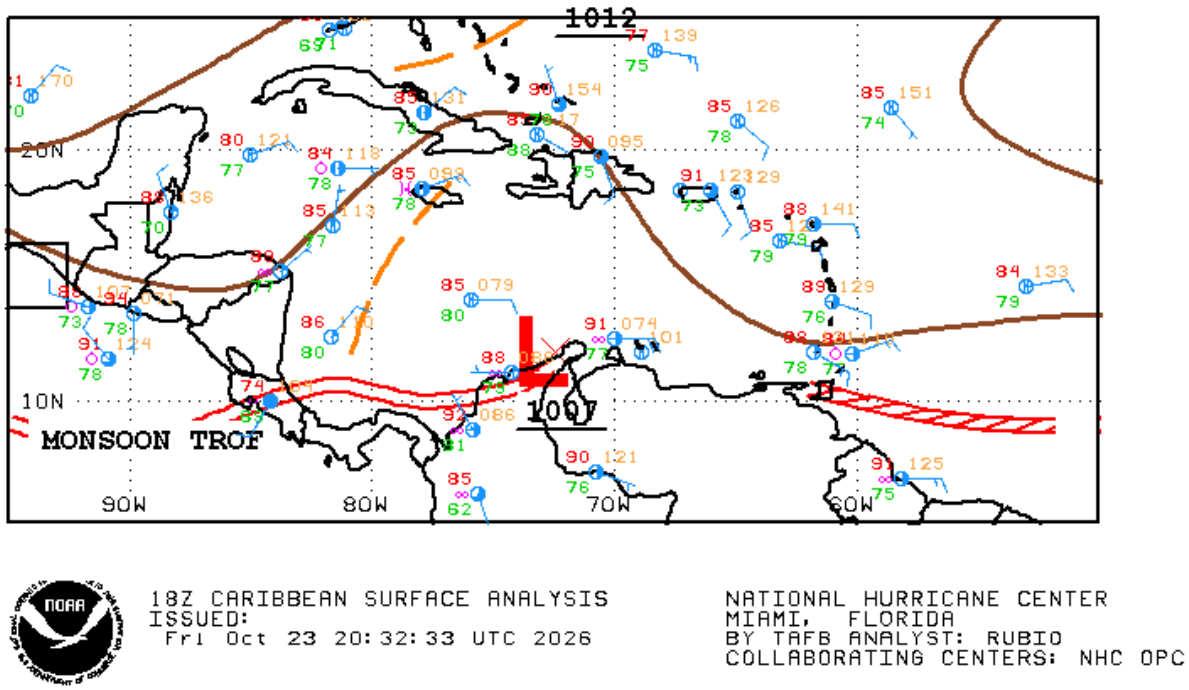


Figure 2. Surface analysis over the Caribbean at 1800UTC on 23 October.
Source: US National Hurricane Center[2]

[2] National Oceanic and Atmospheric Administration - FTP, National Hurricane Center, review date: 23 October 2026, available at: https://www.nhc.noaa.gov/tafb/CAR_18Z.gif

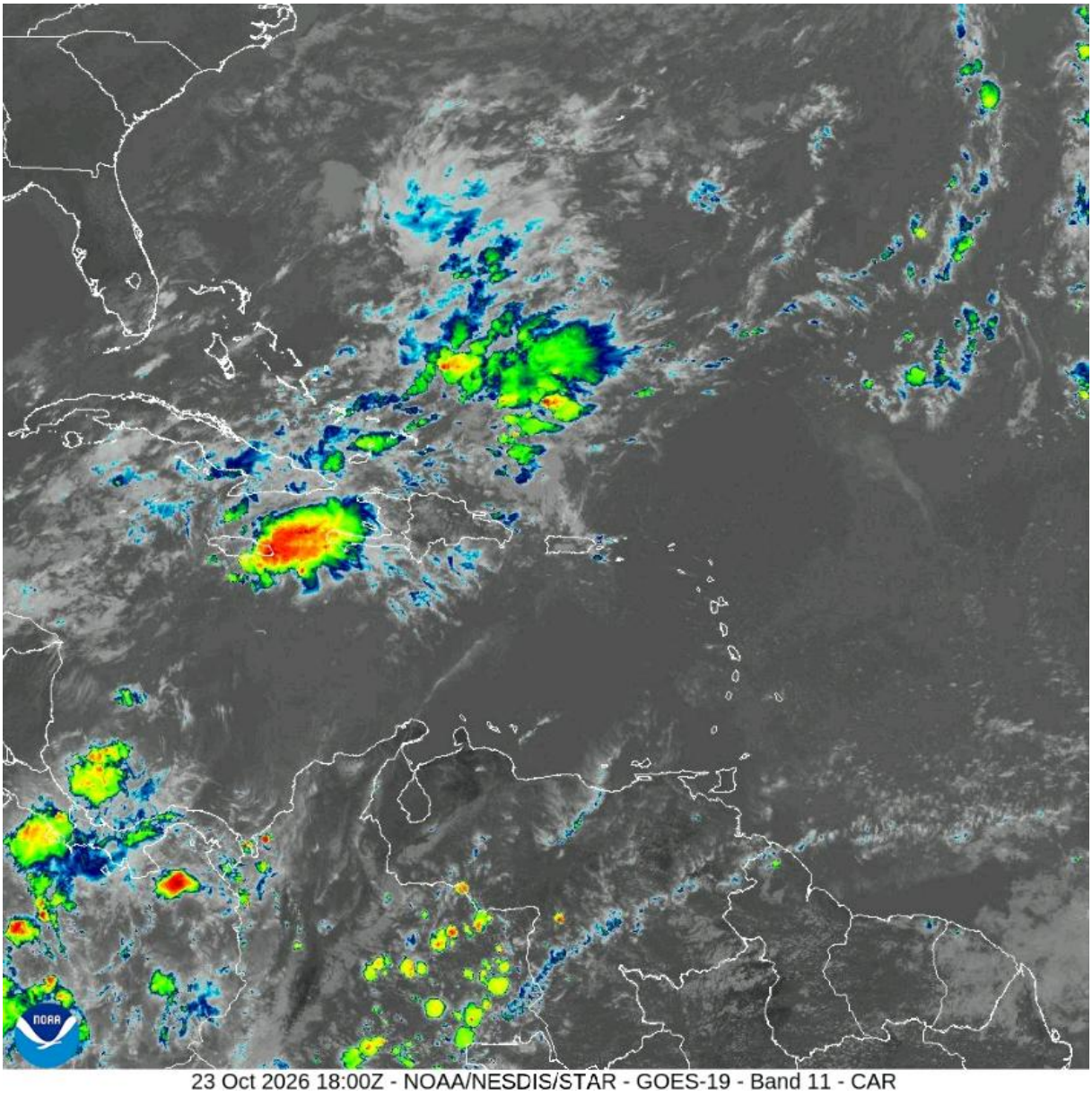


Figure 3. Satellite imagery at 1800UTC on 23 October 2026 from the thermal infrared channel enhanced with colour. Blue/green colours represent high-altitude clouds (top cloud temperature between -50°C and - 70°C), while the red/yellow colours represent very high-altitude clouds (cloud- top temperatures below -70°C). High altitude clouds indicate strong convection associated with intense precipitation. Source: NOAA, National Environmental Satellite, Data and Information Service[3].

[3] NESDIS Online Archive, NOAA Satellite and Information Service, available at https://cdn.star.nesdis.noaa.gov/GOES16/ABI/SECTOR/pr/11/

On 24 and 25 October, the upper-level trough slowly propagated southeastward while several surface troughs formed and dissipated over the northern Caribbean Sea, keeping the region unstable and gradually displacing the most active area eastward.

On 24 October, starting at 1800UTC and for the following six hours, eastern Jamaica again received moderate to locally heavy precipitation, although over smaller areas and for a shorter time than on the previous day. This was due to the approach of a second thunderstorm, which had developed over eastern Cuba and struck mainly Haiti during the first half of 25 October.

On 25 October at 1800UTC, a squall line of showers and thunderstorms formed, with its axis running from the eastern Bahamas across eastern Cuba and southward to the central Caribbean Sea. It only marginally affected eastern Jamaica.

On 26 October, the most active convection shifted further east-northeastward, away from Jamaica, following the movement of the upper-level trough and marking the end of the rainfall event over this country.

3 CCRIF SPC MODEL OUTPUTS

The CWUIC model consists of two components: the tropical cyclone (TC) component, accounting for losses produced by wind and storm surge, and the excess rainfall (XSR) component, accounting for losses associated with excess rainfall. Each model component estimates a loss value specifically related to the hazard for which it is designed. When both a tropical cyclone and a Covered Area Rainfall Event (CARE) occur at the same time, the outputs of the two model components are added together. When only one model component, TC or XSR, reports losses associated with a specific event, only the losses produced for that component are used. In the following description, the model output for each component is described separately.

TC Component

This CARE does not involve any tropical cyclone activity. No modelled wind or storm surge losses for NWC are attributed to a tropical cyclone, and therefore the tropical cyclone component was not activated.

XSR Component

All data sources used by the XSR 3.1 model, CMORPH, IMERG, WRF5, WRF7, WRF11 and WRF15[4], detected the occurrence of precipitation over Jamaica and the surrounding waters during the period 21 to 25 October 2026. Each data source reported a specific distribution

[4] CMORPH Model: the satellite-based rainfall precipitation estimates provided by the NOAA Climate Prediction Center (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 reportWRF5,

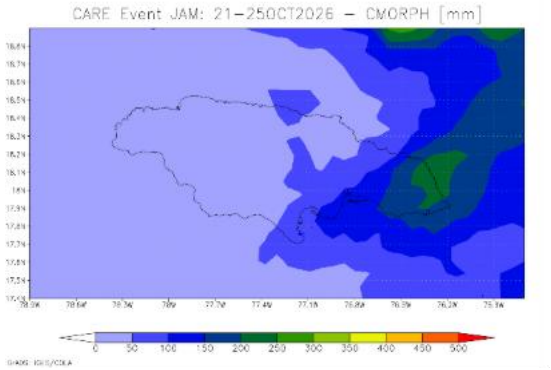
and accumulation of rainfall, as discussed below in Table 1 and shown in Figure 4. A CARE for Jamaica was activated on 23 October and lasted until 25 October. The CARE was activated due to the use of the 12-hour and the 48-hour aggregation intervals for precipitation, and thus the period considered by the XSR 3.1 model for the loss estimate based on the accumulated precipitation in Jamaica was 21 to 25 October 2026.

Table 1: Report from XSR 3.1 Data Sources on the Precipitation over Jamaica, 21 to 25 October 2026

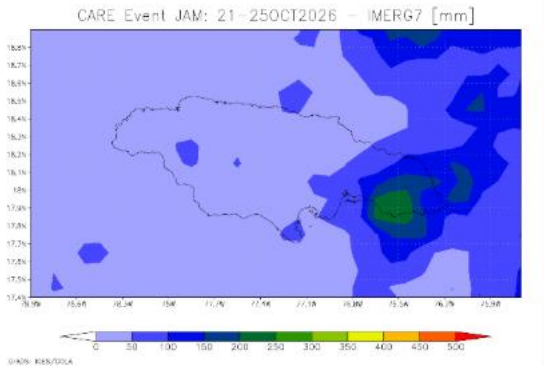
CMORPH	CMORPH reported total accumulated precipitation values higher than 100 mm over the eastern portion of Jamaica, in particular over the parishes of St. Thomas, eastern Portland and southern St. Andrew. Maximum values, between 200 mm and 250 mm, were observed over eastern St. Thomas and south-eastern Portland. Lower values, below 50 mm, were reported across the rest of the country.
IMERG	IMERG showed total accumulated precipitation values higher than 100 mm over the south-eastern portion of Jamaica, mostly over St. Thomas. The highest values, between 200 mm and 250 mm, were reported over a localized area along the southern coast of St. Thomas. Lower values, below 50 mm, were reported across the rest of the territory.
WRF5	WRF5 reported total accumulated precipitation values exceeding 100 mm over the eastern portion of Jamaica, locally reaching maximum values between 250 mm and 350 mm over eastern Portland and St. Thomas. Values lower than 100 mm were reported across the remainder of Jamaica, with the lowest values, below 50 mm, over Kingston and portions of the western and central parishes.
WRF7	WRF7 showed total accumulated precipitation values between 100 mm and 150 mm over the northern portion of Jamaica, from St. James to St. Mary, as well as over eastern Portland and St. Thomas. The highest values, between 150 mm and 200 mm, were reported over small localized areas along the northern coast of Trelawny and St. Ann. Lower values were reported across the remainder of Jamaica.
WRF11	WRF11 showed total accumulated precipitation values higher than 200 mm over the eastern portion of Jamaica and over localized areas in the north-western and south-central parts of the country. The highest values, exceeding 500 mm, were reported over a region in Portland. Values between 300 mm and 350 mm were shown over small areas of St. James and southern Clarendon, while values lower than 100 mm were reported over most of western Jamaica.

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.

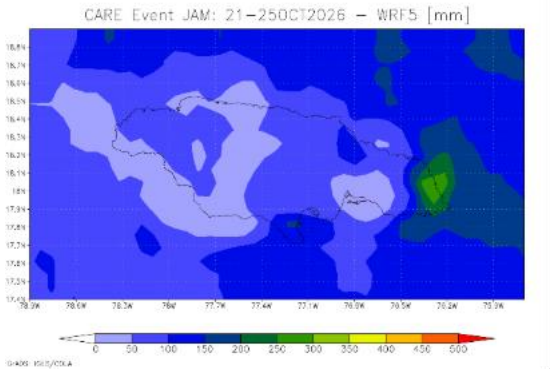
WRF15 WRF15 reported accumulated precipitation values exceeding 200 mm over a localized area in south-central Jamaica, between St. Elizabeth and Manchester. The maximum values, between 400 mm and 450 mm, were shown over a small region there. Values between 150 mm and 250 mm were reported over small localized areas of Portland and St. Thomas, while lower values were reported across the rest of the territory.



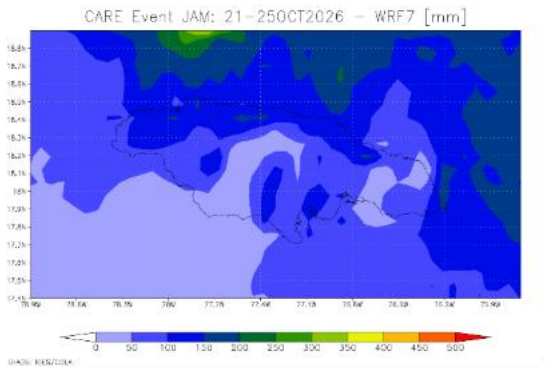
a) CMORPH



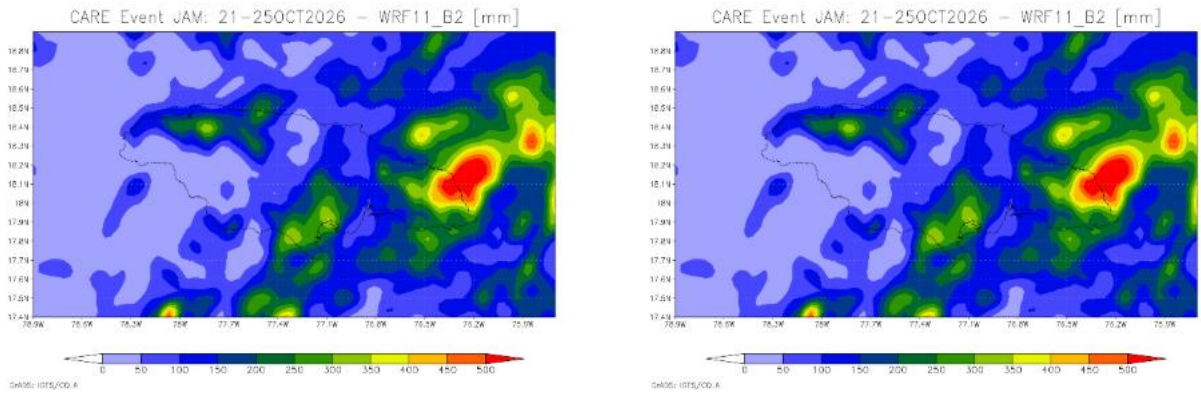
b) IMERG



c) WRF5



d) WRF7



e) WRF11 f) WRF15

Figure 4. Total accumulated precipitation from 21 to 25 October 2026, as estimated by CMORPH (a), IMERG (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 CWUIC 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/CWUICXSR/Events/JAM/CARE_3_2026/daily_prec_short.mp4

https://wemap.ccrif.org/OUTPUT/CCRIF/CWUICXSR/Events/JAM/CARE_3_2026/daily_prec_long.mp4

The Rainfall Index Loss exceeded the loss threshold for three XSR 3.1 data sources: CMORPH, WRF7, and WRF11, with CMORPH producing the highest value

The final RIL (RIL_{FINAL}) was calculated as the average of the three RILs from CMORPH, WRF7 and WRF11. The RIL_{FINAL} was below the attachment point of the Excess Rainfall component of NWC's CWUIC policy and therefore the policy was not triggered and no payout is due.

4 REPORTED IMPACTS

National Water Commission (NWC) advisories and local media reports indicated that heavy rainfall on 23–25 October 2026 increased turbidity and blocked intakes, disrupting NWC operations in Portland, St. Thomas, Clarendon, and St. Andrew. These reports indicated reduced or suspended production in Portland on 23 October and at least four affected facilities in St. Thomas on 24 October[5]. Temporary shutdowns also affected Clarendon's Peace River system and St. Andrew's Isaac Hole facility, interrupting supplies until water quality improved and operations

[5] Heavy Rain Disrupts Water Supply Across St Thomas Communities - Jamaica Homes News

could safely resume[6]. At the time of writing this briefing, available reports described mainly operational disruptions and did not clearly document structural damage to NWC facilities.

5 CCRIF LOSS MODEL

The final run of the CCRIF CWUIC tropical cyclone and excess rainfall loss model for the National Water Commission (NWC) produced losses below the Attachment Point of its CWUIC policy and therefore no payout under this policy is due.

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

[6] National Water Commission | Jamaica — Water for Life

DEFINITIONS

Active Exposure Cell Percentage Threshold	The percentage of the total number of XSR Exposure Grid Cellswithin the Covered Area of the Insured, that must be exceeded to trigger a Covered Area Rainfall Event.
Active Exposure Grid Cells	The XSR Exposure Grid Cells for which in the same single daythe 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.
Aggregate Rainfall #1	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 AggregationPeriod#1 of n hours, the Aggregate Rainfall #1 is the maximumamount of rainfall accumulated over any of the n-hour windowsthat intersect the day itself considering a time interval of 3 hours.
Aggregate Rainfall #2	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 AggregationPeriod#2 of n hours, the Aggregate Rainfall #2 is the maximumamount of rainfall accumulated over any of the n-hour windowsthat intersect the day itself considering a time interval of 3 hours.
Calculation Agent	Entity charged with undertaking the primary calculation ofthe Rainfall Index Loss.
CMORPH-based Maximum Aggregate Rainfall #1	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.
CMORPH-based Maximum Aggregate Rainfall #2	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.

CMORPH-based Covered Area Rainfall Parameters	The CMORPH Model information provided on a continuous basis by the XSR Model Data Reporting Agency used bythe 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. Measurementunits and precision of data ingested by the XSR Rainfall Modelare identical to those provided by the XSR Model Data Reporting Agency and are further elaborated in the Attachment of the policy entitled 'Calculation of Rainfall Index Loss and Policy Payment
CMORPH Model	The satellite-based rainfall estimation model provided by NOAA CPC as described in the Rainfall Estimation Models section of the Policy.
IMERG Model	The satellite-based rainfall estimation model developed by NASA as described in the Rainfall Estimation Models section of the Policy.
Covered Area	The territory of the Insured as represented in the XSR Rainfall Model.
Covered Area Rainfall Event	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.
Country Disaster Alert	An official disaster alert issued by Relief Web (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 Relief Web and/or its attached documentation must include specific reference to the CARE dates with a tolerance period of 2 calendar days.

Maximum Aggregate Rainfall #1	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.
Maximum Aggregate Rainfall #2	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.
Rainfall Event Threshold #1	Aggregate Rainfall #1 level as defined in the Schedule which should be exceeded to trigger an Active Exposure Cell.
Rainfall Event Threshold #2	Aggregate Rainfall #2 level as defined in the Schedule which should be exceeded to trigger an Active Exposure Cell.
Rainfall Aggregation Period #1	The number of hours over which the Aggregate Rainfall #1 is computed for all XSR Exposure Grid Cells during a Covered Area Rainfall Event.
Rainfall Aggregation Period #2	The number of hours over which the Aggregate Rainfall #2 is computed for all XSR Exposure Grid Cells during a Covered Area Rainfall Event.
Rainfall Index Loss	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.
WRF5 Model	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 the Policy.

WRF7 Model	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 the Policy.
WRF11 Model	The weather research and forecasting rainfall model by NOAA with Configuration #11 initialized with the data provided by the National Center for Environmental Prediction and based on the standard setup provided by the Caribbean Institute for Meteorology and Hydrology (CIMH) as described in the Rainfall Estimation Models and in the Input Data to the Rainfall Estimation Models sections of the Policy.
WRF15 Model	The weather research and forecasting rainfall model by NOAA with Configuration #15 initialized with and assimilating the data provided by the National Center for Environmental Prediction and based on the standard setup provided by the Instituto National de Sismología, Vulcanología, Meteorología e Hidrología (INSIVUMEH) of Guatemala, as described in the Rainfall Estimation Models and in the Input Data to the Rainfall Estimation Models sections of the Policy.
XSR Rainfall Model	The computer model used to calculate the Rainfall Index Loss, as described in the Attachment entitled 'Calculation of Rainfall Index Loss and Policy Payment'.
XSR Exposure Grid Cells	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.
XSR Grid Cell Exposure Value	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.