

CWUIC
XSR COMPONENT
11/06/2026 to 11/06/2026

Excess Rainfall
Wind and Storm Surge

Final Event Briefing

Belize Water Services (BWS)
Belize

19 June 2026

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1 SUMMARY

This event briefing is designed to review the modelled losses due to wind, storm surge and excess rainfall calculated by CCRIF's CWUIC model for a rainfall event that occurred between 9 and 11 June 2026 for affected CCRIF member water utilities. The Belize Water Services (BWS) was the only CCRIF water utility member for which the CCRIF CWUIC loss model for wind, storm surge and excess rainfall produced losses due to this rainfall event.

From the late hours of 10 June through 11 June, showers and thunderstorms affected Belize due to the presence of a surface trough off the Yucatán Peninsula. On 11 June, the passage of a tropical wave over the region further intensified convection, bringing heavy rainfall mainly over central-eastern Belize, with peak intensity between 0900 and 1500 UTC.

The runs of the CCRIF CWUIC model produced losses greater than zero for Belize Water Services (BWS) due to this rainfall event. The losses for BWS are below the Attachment Point of its CWUIC policy and therefore this occurrence is designated as a Loss Event[1] for BWS's policy. Therefore, no payout is due under the utility's policy.

2 INTRODUCTION

From the late hours of 10 June, showers and thunderstorms developed over the Yucatán Peninsula, the Bay of Campeche, and Belize due to the presence of a surface trough located off the Yucatán Peninsula and oriented along an axis extending from 22°N, 90°W to 18.5°N, 93°W (Figure 1), combined with the availability of abundant deep tropical moisture over the region. The moderate to locally heavy precipitation associated with this convective activity affected most of Belize starting from 2100 UTC (Figure 2a).

On the following day, 11 June, the passage of a tropical wave across the region further enhanced convective activity (Figure 1). A strong thunderstorm developed over southern Belize at 0600 UTC (Figure 2b) and subsequently moved northward, remaining centred over central Belize between 0900 UTC and 1800 UTC, when it dissipated (Figures 2c and 2d). The storm produced heavy rainfall mainly over central and eastern Belize, with peak intensity occurring between 0900 UTC and 1500 UTC.

On 12 June, the surface trough moved northwestward while the tropical wave dissipated, allowing more stable conditions to become established over Belize.

[1]Any CWUIC event which produces a modelled loss greater than zero but lower than the policy Attachment Point (AP) in one or more policyholder utility

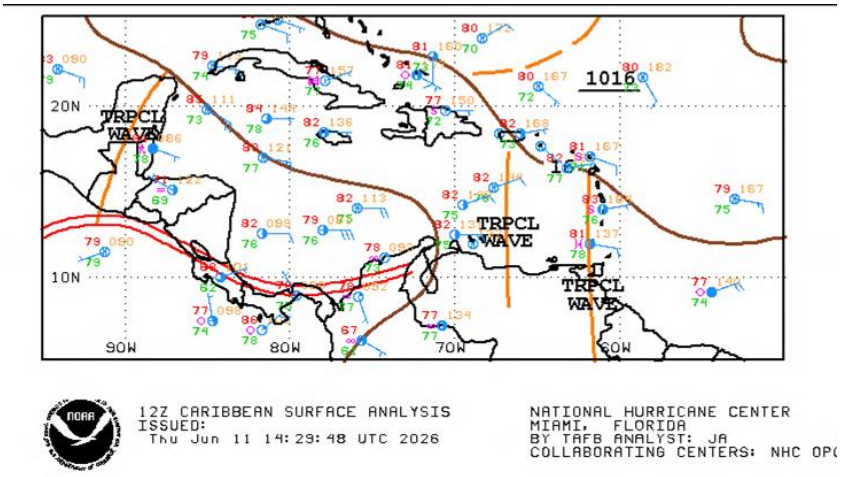
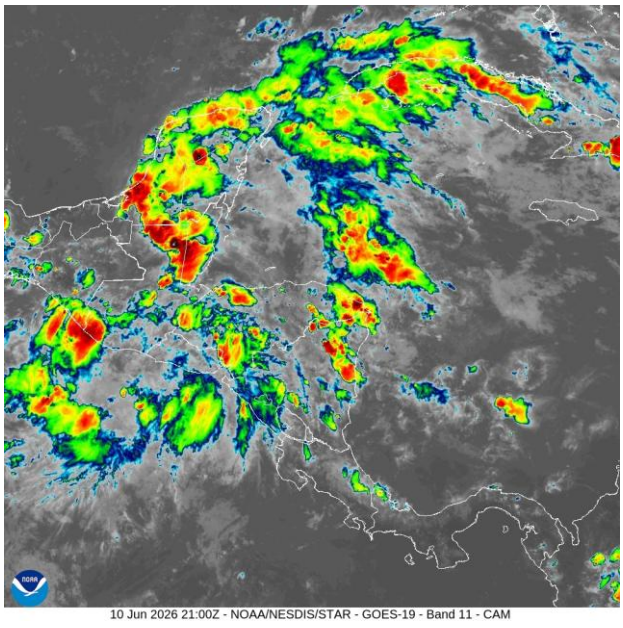
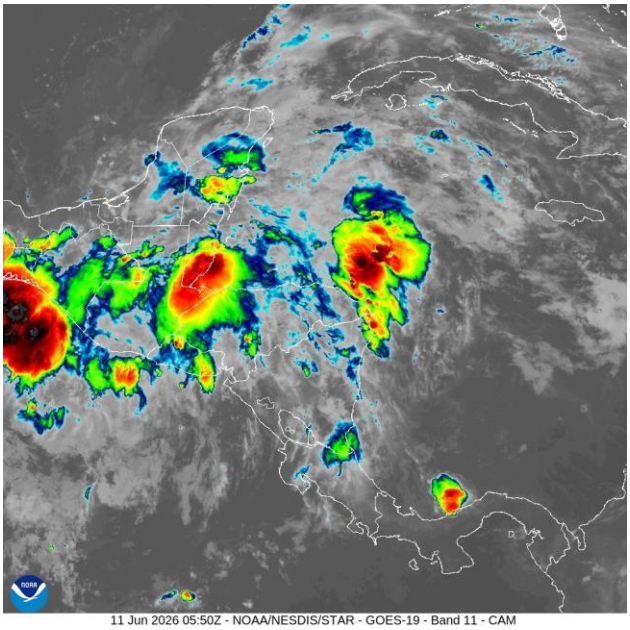


Figure 1 Surface analysis over the Caribbean area on 11 June at 1200UTC. Source: US National Hurricane centre[2]

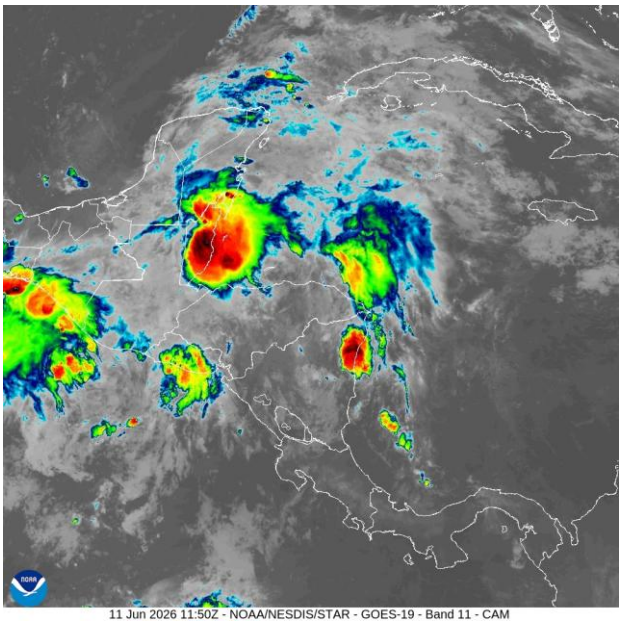


a) 10 June at 2100UTC

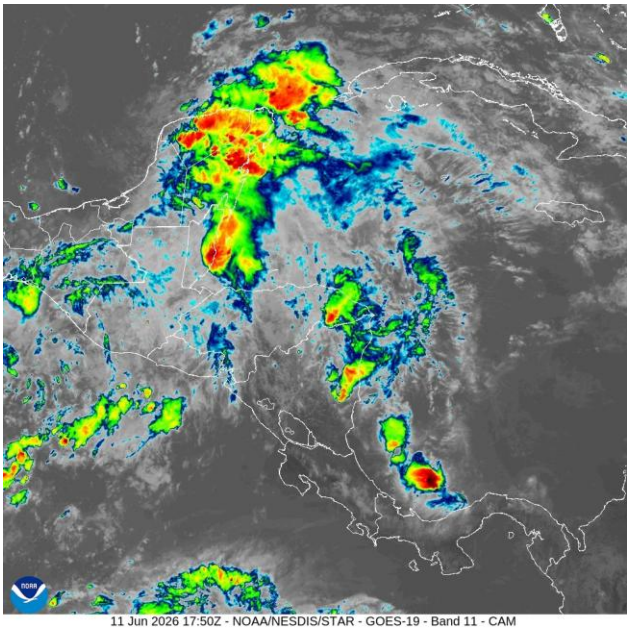


b) 11 June at 0550UTC

[2]National Oceanic and Atmospheric Administration - FTP, National Hurricane centre, review date: 11 June 2026, available at: https://www.nhc.noaa.gov/tafb /CAR12Z.gif



c) 11 June at 1150UTC



d) 11 June at 1750UTC

Figure 2 Satellite imagery on 10 and 11 June, 2026 at different times as indicated in 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. Source: NOAA, National Environmental Satellite, Data and Information Service[3].

3 CCRIF SPC MODEL OUTPUTS

The CWUIC model is made up of two components: the tropical cyclone (TC) component, accounting for the losses produced by wind and storm surge, and the excess rainfall (XSR) component, accounting for the losses associated with excess rainfall. Each of the two model components 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) happen 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

[3]RAMSDIS Online Archive, NOAA Satellite and Information Service, available here

This CARE does not involve any tropical cyclone activity. No modelled wind or storm surge losses for BWS 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 Belize and the surrounding waters during the period 9 to 11 June 2026. Each data source reported a specific distribution and accumulation of rainfall, as discussed below in Table 1 and shown in Figure 3. A CARE for Belize was activated on 11 June and lasted for one day. The CARE was activated due to the use of the 12-hour and the 48-hour aggregation intervals for precipitation[5] and thus the period considered by the XSR 3.1 model for the loss estimate based on the accumulated precipitation in Belize was 9 to 11 June 2026.

Table 1: Report from XSR 3.1 Data Sources on the Precipitation over Belize, 9 to 11 June 2026

CMORPH	CMORPH reported total accumulated precipitation values larger than 80mm over portions of central and northern Belize and a small area in southern Belize. The highest values, exceeding 400 mm, were reported over a localized area between the Districts of Belize and Stann Creek. Lower values were showed over the remainder of Belize.
IMERG	IMERG showed total accumulated precipitation with a spatial pattern consistent with that of CMORPH, with the highest accumulations concentrated along the central coast, at the border between the Districts of Belize and Stann Creek, but with substantially lower intensities (between 160 mm and 200 mm). Consistent with CMORPH, a secondary maximum was reported over southern Belize, with values between 80 mm and 160 mm. Values lower than 80 mm were showed over the remainder of Belize.
WRF5	WRF5 reported total accumulated precipitation greater than 80 mm along the central and northern coast, with peak values between 160 mm and 200 mm at

[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, 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.

[5] 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.

	the border between the Districts of Belize and Stann Creek. Lower values were shown over the remainder of Belize.
WRF7	WRF7 reported total accumulated precipitation greater than 80 mm along the coast, with peak values between 160 mm and 200 mm in the District of Stann Creek. Lower values were shown over the remainder of Belize.
WRF11	WRF11 reported total accumulated precipitation greater than 80 mm in two localized areas, the first over the Orange Walk District and the second over extreme southern Belize, both with maximum values ranging between 160 mm and 200 mm. Lower values were reported over the remainder of the country.
WRF15	WRF15 showed total accumulated precipitation greater than 120 mm along the central coast and over northern Belize, with maximum values between 240 mm and 320 mm over a localized area in the northern district of Corozal. Lower values were reported over the remainder of the country.

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/BLZ/CARE_1_2026/daily_prec_short.mp4

https://wemap.ccrif.org/OUTPUT/CCRIF/CWUICXSR/Events/BLZ/CARE_1_2026/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, WRF7, and WRF15. The RIL was very similar among the three, with WRF15 reporting the highest value.

The final RIL (RIL_{FINAL}) was calculated as the average of the three RILs from CMORPH, WRF7 and WRF15. The RIL_{FINAL} was below the attachment point of the Excess Rainfall component of BWS's CWUIC policy and therefore the policy was not triggered; thus no payout is due to the Belize Water Services under its CWUIC policy.

4 REPORTED IMPACTS

While Belize experienced rainfall during the indicated period, at the time of writing this report, there were no reports of specific impacts to the Belize Water Services.

5 CCRIF LOSS MODEL

The final run of the CCRIF CWUIC tropical cyclone and excess rainfall loss model for the Belize Water Services (BWS), 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

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 continuousbasis 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 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.
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 this Attachment.
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 this Attachment.

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.