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FINAL REPORT

Next-Generation Rainfall IDF Curves for the Virginian Drainage Area of Chesapeake Bay

SERDP Project RC18-1569

JUNE 2019

Xixi Wang, Ph.D., P.E.
Old Dominion University

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14. ABSTRACT Probability-based intensity-duration-frequency (IDF) curves are needed but currently lacking for Department of Defense (DoD) to construct and manage its infrastructure in changing climate. The objectives of this project were to: 1) develop an innovative approach for considering rainfall non-stationarity in developing such IDF curves; and 2) apply this approach to the state of Virginia. In this regard, the observed data on 15-min rainfall at 57 gauges and the precipitations projected by twelve pairs of Regional Climate Model (RCM) and Global Circulation Model (GCM) were used. For a given gauge or watershed, in terms of fitting the empirical exceedance probabilities, a best statistical distribution was chosen and then used to create the existing, projected historic, and projected future IDF curves. For a given return period, the projected historic IDF curves were compared with the existing ones to determine the lower and upper limits of the future IDF curve. The most-probable future IDF curve was determined as the average of the twelve curves responding to the GCM-RCM models. In addition, for a given duration and return period, the responding rainfall intensities were used to create a probability-based IDF curve. Further, the areal precipitations for each of the 53 watersheds were used to create the watershed-level future IDF curves. The project results are expected to be a useful and usable tool in guarding against over- or under-committing resources.					
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LIST OF ACRONYMS

CPZ: Climatic-Physiographic Zone

CUSUM: Distribution-free cumulative sum technique

DoD: Department of Defense

ECDF: Empirical cumulative distribution function

GCM: Global Circulation Model or General Circulation Model

HUC: Hydrologic Cataloging Unit

IDF: Intensity-duration-frequency

K-S: Kolmogorov-Smirnov

NARCCAP: North American Regional Climate Change Assessment Program

NCDC: National Climate Data Center

NHD: National Hydrography Dataset

NIPCC: Nongovernmental International Panel on Climate Change

NOAA: National Oceanic and Atmospheric Administration

RCM: Regional Climate Model

SCS: Soil Conservation Service

USDA: U.S. Department of Agriculture

USGS: U.S. Geological Survey

KEYWORDS

Climate change

Design storm

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ABSTRACT

Hydraulic flow infrastructure is conventionally designed under the guidance of historic rainfall intensity-duration-frequency (IDF) curves that assume climate stationarity. However, climate change has altered, and will continue to modify, rainfall characteristics in many regions, particularly in coastal areas such as the Chesapeake Bay Watershed. As a result, the stationarity assumption will likely become invalid, making the existing deterministic IDF curves inadequate in accordance with relevant engineering design standards. To resolve this issue, next-generation probability-based IDF curves that can reflect the non-stationarity at temporal and spatial scales are needed to improve future Department of Defense (DoD) infrastructure planning processes and prevent over- or under-committing resources. In present, such probability-based IDF curves are lacking.

Objectives: The objectives of this project were to: 1) develop an innovative approach for creating next-generation IDF curves that consider nonstationary rainfall, and 2) use this approach to create probability-based IDF curves for the state of Virginia, most of which is located within the Chesapeake Bay Watershed.

Technical Approach: This project used 15-min rainfall data for the historical (prior 2013) periods of 57 rain gauges in Virginia and the projected precipitation time series by twelve pairs of Regional Climate Model (RCM) and Global Circulation Model (GCM).

The approach consisted of five steps. *First*, the missing values at each of the rain gauges were filled using advanced geostatistical techniques, such as inverse distance weighting and Kriging. For a given gauge and its record period, the missing-filled time series was used to formulate a dataset of historical annual maximum rainfall intensity. *Second*, for each gauge with a record period longer than 30 years, the time series were used to detect possible temporal trends using a modified Mann-Kendall technique. Herein, the non-stationarity was defined in terms of cumulative deviations from the mean. *Third*, in accordance to Gumbel, Fréchet, and Weibull statistical distributions, a best distribution was chosen for each of the 57 gauges. *Fourth*, statistical methods were developed and used to downscale the 3-h predictions of the RCM-GCM models to the gauges. Datasets of projected annual maximum rainfall intensities for selected twelve durations from 15 min to 72 h were created. *Fifth*, the best statistical distribution was applied to the historical and projected datasets to create gauge-level IDF curves.

In addition, the boundaries of the 53 Virginia 8-digit watersheds were extracted from the National Hydrography Dataset. Each watershed was subdivided into several Thiessen polygons in ArcGIS[®] to compute the areal rainfall intensities, which in turn were used to formulate the datasets of historical and projected annual maximum rainfall intensities. The best statistical distribution for this watershed, which was assumed to be same as that of the gauge with a largest Thiessen polygon area, was applied to the datasets to create the watershed-level IDF curves.

Results: To facilitate the development of such an innovative approach, this project created several Microsoft[®] Excel spreadsheets and computer scripts in VBA and R. They proved to be efficient in manipulating large-size datasets for creating next-generation IDF curves. While no significant step changes were detected across Virginia, the historical annual maximum rainfall intensity was detected to have a significant (at a significance level of $\alpha = 0.05$) decreasing trend at 11 gauges and a nonsignificant decreasing trend at another 46 gauges. For four gauges, the significant decreasing trends have led to the significant non-stationarity of annual maximum

rainfall intensity. Given that the continuation of current climate trends would result in significant non-stationarity of annual maximum rainfall intensity at more gauges, it is imperative to develop probability-based IDF curves.

For a gauge with significant non-stationarity, each of its datasets of annual maximum durational rainfall intensity was iteratively subdivided into two or more sub-datasets until all sub-datasets were stationary. The sub-datasets were then used to develop IDF curves for this gauge. The annual maximum rainfall intensities at 30 gauges best fitted Gumbel distribution, while those at another 23 gauges best fitted Weibull distribution. These two distributions were found to be equally accurate for the remaining 4 gauges. Using the best distributions, this project generated 61 historical IDF curves for the rain gauges and 68 sets of historical IDF curves for the watersheds of Virginia. The gauge-level historical IDF curves were visually comparable with the Point Precipitation Frequency Estimates (PPFEs) of the National Oceanic and Atmospheric Administration (NOAA). Nevertheless, limited by the project period, probability-based IDF curves were created for eight gauges and one watershed only. For other gauges and watersheds, the relevant datasets were formulated for creating probability-based IDF curves.

Benefits: The preliminary results of this project demonstrated the inevitable need for probability-based IDF curves. An innovative approach for the development of such curves was developed and then applied to the state of Virginia. The project results can be a useful tool for the planning, design, and management of DoD, as well as civic, infrastructure.

Follow-on Research: Although this project fulfilled its initial objectives, a follow-on project will be crucial to make the probability-based IDF curves applicable in practice by pursuing the following issues that were raised during this project period.

First, the datasets on 15-min precipitation have a significant number of missing values. As glimpsed by a NOAA's senior hydro-meteorologist in an email communication, the number of missing values tended to become large for the record years after 2010 and some recorded time periods might be longer than 15 min. A follow-on research will enable us to scrutinize the accuracy of the recorded values by consulting relevant NOAA scientists. In addition, we will systematically compare the historical gauge-level IDF curves with the NOAA PPFEs to elucidate the reasons for any noted discrepancies.

Second, this project developed regression equations using predictions by one RCM-GCM model. With the assumption that the equations were independent of the RCM-GCM models, this same set of equations were used to downscale and disaggregate the predictions made by each model. A follow-on research will enable us to validate such an assumption by comparing the regression equations to be developed using the predictions by the twelve RCM-GCM models. Also, we will develop methods to quantify uncertainties in the downscaled and disaggregated data and then incorporate the uncertainties into the creation of next-generation IDF curves.

Third, limited by time, this project created the probability-based IDF curves for eight gauges and one watershed only. A follow-on research will allow us to generate probability-based IDF curves (totaling 1210 sets) for all 57 gauges and 53 watersheds in Virginia. Also, we will apply this approach to other DoD concerned regions, such as Maryland.

Finally, A follow-on research will allow us to standardize the spreadsheets and computer scripts generated in this project to develop user-friendly software tools that can be used by others to create next-generation IDF curves for the regions of their interest.

OBJECTIVE

The overarching goal of this project was to advance the scientific understanding of climate non-stationarity and to improve the planning, design, and management of hydrology-influenced infrastructure (e.g., port locks and military bases) in changing climate.

The specific objectives were to:

- Develop an innovative approach for creating next-generation probability-based IDF curves that consider nonstationary rainfall
- Use this approach to create probability-based IDF curves for the state of Virginia

To facilitate the process of developing such an approach, this project generated a variety of Microsoft® Excel spreadsheets and computer scripts in VBA and R. It has been shown that this approach can be effectively used to manipulate large datasets for practically creating next-generation IDF curves. Limited by the project time, probability-based IDF curves were created for eight gauges and one watershed only. Datasets for creating probability-based IDF curves for the other gauges and watersheds in Virginia were also formulated.

The tools and datasets created in this project have laid a solid foundation for a more extensive follow-on project with minimal technical or scientific risks.

The next-generation IDF curves created in this project reflect “*the non-stationarity at temporal and spatial scales relevant for improving future Department of Defense (DoD) infrastructure planning processes*” (Statement of Need). They will be beneficial for the DoD to construct and/or manage its hydrology-influenced infrastructure in changing climate; additional prevention against over- or under-committing resources can also be provided via using such IDF curves.

1. BACKGROUND

1.1 Practical Needs

The 166,534 km² Chesapeake Bay Watershed (hereinafter referred to as Bay) is an estuary lying land from the Atlantic Ocean. As the largest watershed in the United States, it stretches across six states, covering parts of Virginia, West Virginia, the District of Columbia, Delaware, Maryland, Pennsylvania, and New York (Figure 1). Across the watershed, there are numerous populated centers (e.g., cities of Norfolk and Virginia Beach in Virginia) and civic and military infrastructure (e.g., Norfolk Naval Station) (Wray, 2013). This study focused on the state of Virginia.



Figure 1. The Chesapeake Bay Watershed.
(Source: Smith *et al.*, 2013)

Conventionally, the infrastructure involving hydrologic flows, such as stormwater management facilities, erosion and sediment control structures, and flood protection structures, were designed in terms of historic rainfall intensity-duration-frequency (IDF) curves, which are functional relationships among historic rainfall event statistics of intensity, duration, and frequency or return period (McCuen, 1998; Prodanovic and Simonovic, 2007; Wolcott *et al.*, 2009). Herein, the IDF curves assume that climate is stationary (Auld, 2013), meaning that for a given location, the paired values of rainfall intensity, duration, and frequency are temporally invariant.

However, as climate has shown significant changes in rainfall characteristics in many regions (particularly in coastal regions such as the Bay) (NIPCC, 2011), such a stationary assumption will likely become invalid and thus the adequacy of the existing IDF curves may be questionable (Liew *et al.*, 2013). For instance, a dyke designed to resist a 100-year flood event (meaning that each year the probability of occurrence of a flood exceeding the design value is 0.01) would provide a significantly lower level of protection if the rainfall magnitude will be increasing (Auld, 2013). In contrast, if the rainfall magnitude will be decreasing, the dyke would provide unnecessary overprotection. Such an over- or under-protection is possible for various infrastructure. Hence, it is necessary to create next-generation IDF curves that consider the changed rainfall characteristics in a foreseeable future (Kutschera *et al.*, 2011; AMEC, 2012; Liew *et al.*, 2013; Mirhosseini, 2013; Mirhosseini *et al.*, 2013; Rodríguez *et al.*, 2013; Wang *et al.*, 2013).

1.2 Previous Studies

Liew *et al.* (2013) used a novel three-step (i.e., downscaling-comparison-derivation or DCD) approach to derive IDF curves for both present and future climates at stations (i.e., sites) with a short or no rainfall record in Indonesia. First, the 30-km 6-h-resolution ERA-40 Global Reanalysis Datasets (available at <http://www.ecmwf.int/research/era>) were downscaled using a Weather Research and Forecasting Model (WRF) (available at <http://www.wrf-model.org>) for

four stations with observed IDF curves and the site of interest where there is no rainfall record but IDF curves need to be created. Second, for the present (i.e., 1961 to 1990) climate and for each of the three of the four stations, the IDF curves based on the downscaled precipitation were compared with the IDF curves based on the observed rainfall to determine a “range of bias correction.” Herein, a generalized extreme value (GEV) distribution (McCuen, 1998) was adopted to derive the IDF curves. The GEV parameters were estimated (Hosking *et al.*, 1985; Bhunya *et al.*, 2007) by fitting the distribution to the data at those three stations. Subsequently, for the fourth station, this “range of bias correction” was used to adjust the IDF curves based on the downscaled precipitation and the adjusted IDF curves were compared with the IDF curves based on the observed rainfall to validate the “range of bias correction.” Third, for the site of interest, its IDF curves for the present climate were derived using the downscaled precipitation with adjustments by the “range of bias correction.” In turn, the climate change factors (future or 2011 to 2100 rainfall intensities minus present rainfall intensities) were added to the rainfall intensities of these present IDF curves to derive the future IDF curves for the site of interest. The results indicated that this approach worked well for the study area and could provide the lower and upper limits of an IDF curve. However, this study did not examine uncertainties in climatologic input parameters. That is, it did not adopt an ensemble approach of multiple simulations using perturbed initial and lateral boundary conditions: the future precipitation was simply simulated by a Regional Climate Model (RCM) driven by a Global Climate Model (GCM ECHAM5) for the A2 emission scenario only (NIPCC, 2011; Solaiman and Simonovic, 2011). In addition, this study made a stationary assumption without detecting whether there are any step change and/or trend in the historic and future precipitations. Further, this study used a constant ratio of the future to present intensities regardless of the durations and frequencies, which is inconsistent with the finding of previous studies (e.g., Groisman *et al.*, 1999; Endo *et al.*, 2006; NIPCC, 2011; Wang *et al.*, 2013) that climate change will likely cause more frequent low- and high-magnitude precipitations with distinctly different amplification factors.

Mirhosseini *et al.* (2013) used six historic (i.e., 1968 to 2000) and future (i.e., 2038 to 2070) projections of 3-h precipitation, downloaded from the North American Regional Climate Change Assessment Program (NARCCAP) website (<http://www.narccap.ucar.edu>), to assess the impacts of climate change on rainfall IDF curves in the state of Alabama. First, in accordance with the randomly selected events from the 15-min observed precipitation data, downloaded from the National Climate Data Center (NCDC) website (<http://www.ncdc.noaa.gov>), the 3-h projections were disaggregated into 15-min-resolution time series using a stochastic method that was presented by Socolofsky *et al.* (2001). Second, the 15-min-resolution time series were used to derive future IDF curves by fitting a GEV distribution. Third, the future IDF curves were compared with the present IDF curves to assess the impacts of climate change. The results revealed that for short rainfall durations (i.e., less than 4 h), the precipitation pattern for Alabama will veer toward less intense rainfalls, for long durations (i.e., greater than 4 h), however, a large uncertainty on projected rainfall intensity by these six climate models made it difficult to draw any inclusive conclusions about expected changes of future rainfall intensity. Those authors recommended that methodologies be developed for creating probability-based IDF curves. Although it adopted an ensemble approach of multiple simulations by HRM3-HadCM3, CRCM-CGCM3, HRM3-GFDL, CRCM-CCSM, RCM3-GFDL, and ECP2-GFDL, this study made a stationary assumption without detecting any step change and/or trend in the historic and future precipitations, so the possible violation of stationarity required by the GEV distribution might cause unknown uncertainties in the derived IDF curves. Also, this study derived IDF curves only

for individual climatic stations and did not provide IDF curves at watershed levels, which can be a limitation in straightly determining a design storm for a drainage area of interest.

Rodríguez *et al.* (2013) assessed influences of climate change on IDF curves at six thermo-pluviometric stations of the Spanish Meteorology Agency in the metropolitan area of Barcelona in Spain. These stations had more than 20 years of observed daily rainfall data. The study used 114 time series of precipitation predicted by five GCMs (NIPCC, 2011), namely EGMAM, CBCM3, ECHAM5, BCM2, and AR3, for four greenhouse gas emission scenarios (NIPCC, 2011), namely A1B, A2, B1, and B2. The control period was either from 1951 to 1999 or 1961 to 1999, depending on the models and scenarios of interest, while the future period was from 2071 to 2100. First, at daily time scale, each of the time series was downscaled to the stations using an analogue method presented by Ribalaygua *et al.* (2013). Second, the daily rainfall IDF curves for the future period were created using an empirical potential-exponential distribution (Casas *et al.*, 2004). Third, the values for climate change factor (Arnbjerg-Nielsen, 2012), defined as the ratio between the rainfall intensity with a return period for a future climate scenario to the rainfall intensity with the same return period for the control climate, were computed and used to examine influences of climate change on IDF curves. The results indicated an increase of at least 4% on the expected daily rainfall for return periods of longer than 20-year. This study adopted an ensemble approach of multiple simulations from five GCMs for four emission scenarios. However, it did not create probability-based IDF curves, which is needed to address uncertainties in climate drivers (e.g., future economy, demography, and technology) and climate models (Solaiman and Simonovic, 2011). Also, as with the studies of Liew *et al.* (2013) and Mirhosseini *et al.* (2013), this study did not examine stationarity of the historic and future precipitations.

1.3 Research Needs and Objectives

Although the above studies presented a few preliminary applications of methodologies for assessing influences of climate change on IDF curves, there is a large room for improvement because they: 1) made a stationary assumption without detecting any possible step change and/or trend in historic and future precipitations; 2) adopted only one type of distribution, namely GEV, exponential, or Gringorten (Gringorten, 1963; NOAA, 1986; McCuen, 1998), with its parameters determined by solely fitting the distribution to the historic data on precipitation; however, the three special cases of the GEV distribution (Coles, 2001; Viessman and Lewis, 2003), namely Fréchet (1927), Weibull (1951), and Gumbel (1958), which have been widely used in practice, may be more tangible; 3) assumed that a fitted distribution is independent of climate (i.e., applicable for both historic and future precipitations); 4) did not create probability-based IDF curves except for Solaiman and Simonovic (2011); and 5) were not conducted in geographic regions with dense DoD facilities.

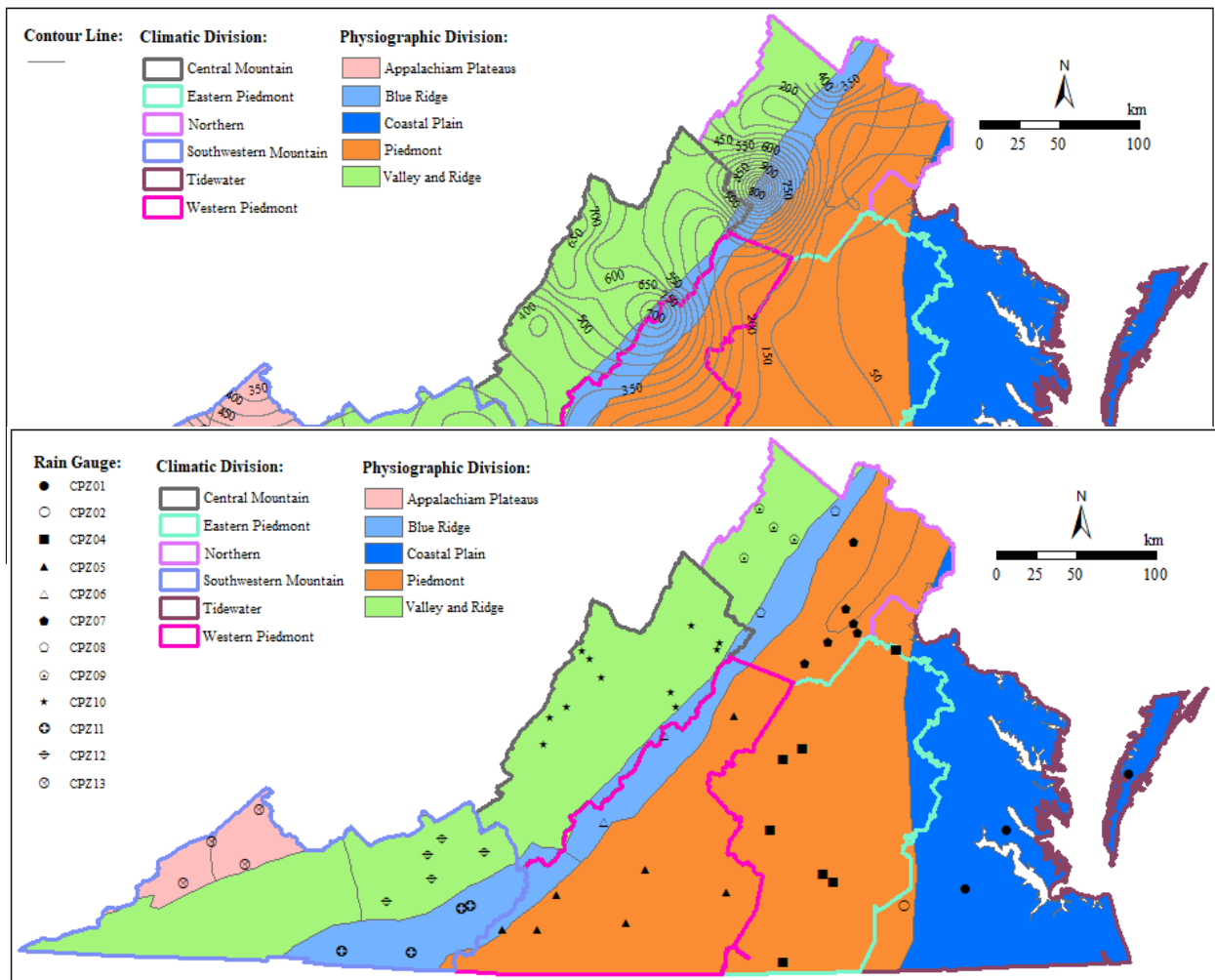
In contrast, our project studied the entire state of Virginia, which is a very important geographic region with numerous DoD infrastructure. Our project filled these research gaps and developed an approach that can be used to create next-generation probability-based rainfall IDF curves by considering non-stationarity of historic and future precipitations, and applied this approach to the Virginian drainage area of Chesapeake Bay. Herein, it is hypothesized that the rainfall IDF curves created using such an approach will be least influenced by non-stationarity-related uncertainties and thus they can be used in practice with more confidence.

2. MATERIALS AND METHODS

2.1 The Study Sites

This project was conducted for the entire state of Virginia, most of which is located within the Chesapeake Bay Watershed (Figure 1). The state has a humid subtropical climate, with an annual average of 35 to 45 days of thunderstorm activity and an average annual precipitation of 1080 mm. The average temperature varies from -3°C in January to 30°C in July.

Virginia has a significant topographic relief (Figure 2a), with elevations varying from Virginia Beach in the east at sea level to Mount Rogers in the west at 1746 m above sea level (Wikipedia, 2018). The major gradations occur at the edges of the Atlantic Ocean, the end of the Piedmont, and the Blue Ridge and Allegheny chains of the Appalachian Mountains. The moderating influence of the ocean from the east, powered by the Gulf Stream, also creates the potential for hurricanes near the mouth of Chesapeake Bay. Cold air masses arrive over the mountains, especially in winter, which can lead to significant snowfalls when coastal storms,



(b)

Figure 2. The Virginian climatic and physiographic divisions superimposed by the: (a) topographic elevation contours at a 50-m interval, and (b) 57 rain gauges with 15-min rainfall data.

known as nor'easters, move up the Atlantic coast. The interaction of these elements with the state's topography creates micro-climates in the Shenandoah Valley, the mountainous southwest, and the coastal plains that are slightly but noticeably distinct from each other. To differentiate and characterize the micro-climates, NOAA (National Oceanic and Atmospheric Administration) subdivides Virginia into six climatic divisions (Figure 2), namely Tidewater, Eastern Piedmont, Western Piedmont, Northern, Central Mountain, and Southwestern Mountain.

On the other hand, to differentiate and characterize the topographic relief, USGS (U.S. Geological Survey) subdivides Virginia into five physiographic divisions (Figure 2), namely Coastal Plain, Piedmont, Blue Ridge, Valley and Ridge, and Appalachian Plateaus. The Coastal Plain division is between the Atlantic coast and the fall line. It includes the Eastern Shore and major estuaries of Chesapeake Bay. The Piedmont division is a series of sedimentary and igneous rock-based foothills east of the mountains which were formed in the Mesozoic era. The region, known for its heavy clay soil, includes the Southwest Mountains around City of Charlottesville. The Blue Ridge division is a physiographic province of the Appalachian Mountains with the highest points in the state, the tallest being Mount Rogers. The Valley and Ridge division is west of the mountains and includes the Great Appalachian Valley. The region is carbonate rock based and includes Massanutten Mountain. The Cumberland Plateau and the Cumberland Mountains are in the southwest corner of Virginia, south of the Allegheny Plateau.

This study overlaid the climatic and physiographic divisions, resulting in 13 zones (Table 1 and Figure 2b), within which the 57 rain gauges with 15-min rainfall data are located. Note that there is no such rain gauge in one of the zones (i.e., CPZ03). This project did some analyses by pooling together the rainfall data at the rain gauges within each of the climatic-physiographic zones, as detailed in the following contexts.

Table 1. The climatic-physiographic zones with inclusive rain gauges.

Climatic-Physiographic Zone	Climatic Division	Physiographic Division	Rain Gauge ID
CPZ01	CD1 (Tidewater)	PGD1 (Coastal Plain)	446475, 448800, 449151
CPZ02	CD1 (Tidewater)	PGD2 (Piedmont)	448129
CPZ03	CD2 (Eastern Piedmont)	PGD1 (Coastal Plain)	None
CPZ04	CD2 (Eastern Piedmont)	PGD2 (Piedmont)	440778, 440993, 441322, 441929, 442941, 443192, 443200, 444414
CPZ05	CD3 (Western Piedmont)	PGD2 (Piedmont)	440166, 441614, 446178, 446692, 447025, 447338, 449272
CPZ06	CD3 (Western Piedmont)	PGD3 (Blue Ridge)	440561, 445690
CPZ07	CD4 (Northern)	PGD2 (Piedmont)	442159, 442729, 446712, 447130, 447164, 448396
CPZ08	CD4 (Northern)	PGD3 (Blue Ridge)	440720, 445851
CPZ09	CD4 (Northern)	PGD4 (Valley and Ridge)	442663, 443229, 48046, 448149
CPZ10	CD5 (Central Mountain)	PGD4 (Valley and Ridge)	442044, 442208, 443310, 444128, 445142, 445423, 445595, 445880, 448062, 448172, 449159
CPZ11	CD6 (Southwestern Mountain)	PGD3 (Blue Ridge)	443272, 444246, 448547, 449169
CPZ12	CD6 (Southwestern Mountain)	PGD4 (Valley and Ridge)	440766, 446955, 448022, 449060, 449301
CPZ13	CD6 (Southwestern Mountain)	PGD5 (Appalachian Plateaus)	442269, 444180, 444410, 449215

2.2 Data and Preprocessing

This study used data on observed 5-min precipitation, predicted precipitation by Regional Climate Models (RCMs), topography, and hydrography.

2.2.1 The observed 15-min precipitation

The data on 15-min precipitation observed at 57 rain gauges were downloaded from the NOAA National Climatic Data Center (NCDC) website <https://www.ncdc.noaa.gov/data-access/land-based-station-data>. The gauges were grouped by the climatic-physiographic zones (Figure 2b and Table 2). Herein, it was hypothesized that the data at the gauges within a same zone are from a same population and can be pooled together into one dataset for statistical analysis. The rationale behind this hypothesis is that the spatial variability of precipitation across the zone might be statistically insignificant because each CPZ has a similar micro-climate and a similar physiology, as stated above. However, given the limited time, this project could not test this hypothesis using a statistical technique. A test will be done once a follow-up research will be awarded.

For a given rain gauge, the record only has times when precipitation was nonzero. To make the record consecutive at a 15-min interval, the times when precipitation was zero were added back by executing a Microsoft® Excel VBA program developed by the project team. In addition, the record has missing values for a time interval or more on a record day and/or for one day or more in a record year. The missing values were filled by executing another VBA program, which estimates a missing value as a function of the responding values at the neighboring gauges of this rain gauge. This function is expressed as (Yozgatligil *et al.*, 2012; Mohanty *et al.*, 2014):

$$P_{x,j} = \bar{P}_x \frac{\sum_{i=1}^m \frac{P_{i,j}}{\bar{P}_i}}{m} \quad (1)$$

where $P_{x,j}$ is the estimated 15-min precipitation of gauge x at time j ; \bar{P}_x is the mean annual precipitation of gauge x ; $P_{i,j}$ is the observed 15-min precipitation of gauge i at time j ; \bar{P}_i is the mean annual precipitation of gauge i ; and m is the number of the neighboring gauges of gauge x . The mean annual precipitations of the 57 gauges, obtained from NOAA-NCDC and der Leeden (1994), are given in Table 2.

For a rain gauge, its neighboring gauges (Table 3) were selected as those that are within a geographic distance of 50 km and have relatively fewer missing values. In the table, a rain gauge of interest is highlighted in red, while its neighboring gauges are highlighted in black. At a time when the precipitation at the rain gauge was filled, the neighboring gauges with observations were used in Eq. (1) and those without observations were excluded.

For each of the 57 rain gauges (Table 2 and Figure 2), the missing-filled 15-min precipitation time series was used to generate a dataset of annual maximum 15-min precipitation (designated $\tilde{X}_{15m,i}$ for description purpose, where subscript “15m” signifies the duration of 15 min; and $i = 1, 2, \dots, 57$, signifies the gauge). For a given observation year, the element value of $\tilde{X}_{15m,i}$ was computed as the maximum of the observed values (at gauge i) within this year. In addition, for each of the other eleven durations of longer than 15 min, the durational precipitation time series was formulated based on the missing-filled 15-min precipitation time series: the interval values of the durational time series was computed as accumulation (from beginning of the record) of the observed values of 15-min precipitation the duration apart. For instance, for the

duration of 30 min, the first value of the 30-min precipitation time series was computed as the summation of first two observed values of the corresponding 15-min precipitation time series, the second value of the 30-min precipitation time series was computed as the summation of third and fourth observed values of the 15-min precipitation time series, and so on. For the duration of 72 h, the first value of the 72-h precipitation time series was computed as the summation of first 288 ($= 72 \times 60 \div 15$) values of the 15-min precipitation time series. As a result, eleven more time series, which respectively have durations of 30 and 45 min and 1, 2, 3, 4, 6, 12, 24, 48 and 72 h, were formulated for the rain gauge. Further, for each of the eleven time series and for a given observation year, the annual maximum durational precipitation is computed. This generated another eleven datasets of annual maximum durational precipitation for gauge i , namely $\tilde{X}_{30m,i}$, $\tilde{X}_{45m,i}$, $\tilde{X}_{1h,i}$, $\tilde{X}_{2h,i}$, $\tilde{X}_{3h,i}$, $\tilde{X}_{4h,i}$, $\tilde{X}_{6h,i}$, $\tilde{X}_{12h,i}$, $\tilde{X}_{24h,i}$, $\tilde{X}_{48h,i}$, and $\tilde{X}_{72h,i}$.

Table 2. The 57 rain gauges and their climatic-physiographic zones.

Gauge Name	ID	Begin Date	End Date	Elevation (m)	Mean Annual Precipitation (mm) ^[1]	Divisions	Zone
Painter 2 W	446475	05/02/1971	09/30/2012	9.1	1121.79	CD1⊗PGD1	CPZ01
CPZ01Wakefield 1 NW	448800	05/31/1985	02/28/2013	34.4	1204.72	CD1⊗PGD1	
Williamsburg 2 N	449151	05/02/1971	02/28/2013	21.3	1236.35	CD1⊗PGD1	
Stony Creek 2 N	448129	05/02/1974	04/30/1985	32.0	1193.04	CD1⊗PGD2	CPZ02
Blackstone Water Wor	440778	05/03/1971	03/31/1974	128.0	1133.95	CD2⊗PGD2	CPZ04
Bremo Bluff	440993	07/31/1986	02/28/2013	68.6	1087.75	CD2⊗PGD2	
Camp Pickett	441322	03/31/1974	02/28/2013	100.6	1169.42	CD2⊗PGD2	
Columbia 2 SSE	441929	05/07/1971	05/31/1986	88.4	1000.32	CD2⊗PGD2	
Farmville 2 N	442941	07/31/2009	12/31/2012	137.2	1126.24	CD2⊗PGD2	
Fredericksburg 2	443200	08/31/1978	02/28/1993	36.6	1044.51	CD2⊗PGD2	
Fredericksburg National Park	443192	05/02/1971	08/31/1978	27.4	1044.51	CD2⊗PGD2	
John H Kerr Dam	444414	05/07/1971	02/28/2013	76.2	1103.50	CD2⊗PGD2	
Altavista	440166	12/31/1983	02/28/2013	161.2	1118.11	CD3⊗PGD2	CPZ05
Chatham	441614	05/06/1971	02/28/2013	198.4	1149.60	CD3⊗PGD2	
North Garden	446178	05/31/1971	02/29/1992	209.1	1129.46	CD3⊗PGD2	
Philpott Dam 2	446692	05/06/1971	05/31/2009	342.3	1278.38	CD3⊗PGD2	
Randolph 5 NNE	447025	05/12/1971	01/31/1984	107.0	1077.36	CD3⊗PGD2	
Rocky Mount	447338	05/06/1971	02/28/2013	400.8	1189.74	CD3⊗PGD2	
Woolwine 4 S	449272	12/31/1983	02/28/2013	457.2	1293.88	CD3⊗PGD2	
Bedford	440561	01/31/1996	02/28/2013	374.3	1122.68	CD3⊗PGD3	CPZ06
Montebello Fish Hatchery	445690	04/30/1971	08/31/2007	812.9	1125.29	CD3⊗PGD3	
Culpeper Riverside Coast Guard	442159	07/01/1979	12/31/2003	79.2	1046.62	CD4⊗PGD2	CPZ07
Elkwood 6 SE	442729	06/04/1972	06/02/1984	100.0	1045.29	CD4⊗PGD2	
Piedmont Research Station	446712	05/07/1971	02/28/2013	158.5	1112.90	CD4⊗PGD2	
Remington 2	447130	07/07/1979	02/28/1989	85.3	1120.14	CD4⊗PGD2	
Richardsville	447164	06/30/1984	04/30/1987	105.2	1044.08	CD4⊗PGD2	
The Plains 2 NNE	448396	05/01/1971	09/30/2004	161.5	1118.87	CD4⊗PGD2	
Big Meadows	440720	05/02/1971	07/31/1976	1079.0	1385.19	CD4⊗PGD3	CPZ08
Mount Weather	445851	05/02/1971	01/31/1987	505.7	1099.57	CD4⊗PGD3	
Edinburg	442663	06/30/1996	03/31/1999	282.9	896.11	CD4⊗PGD4	CPZ09
Front Royal	443229	01/01/1979	03/31/1990	283.5	1039.37	CD4⊗PGD4	
Star Tannery	448046	05/02/1972	01/31/2012	289.6	1023.62	CD4⊗PGD4	
Strasburg 2 ESE	448149	12/31/1978	04/30/1984	195.1	1068.64	CD4⊗PGD4	

Table 2. Continuous

Cobington Filter Plant	442044	12/31/1972	08/31/2011	374.9	952.75	CD5⊗PGD4	CPZ10
Dale Enterprise	442208	09/11/1978	01/31/2009	413.9	922.02	CD5⊗PGD4	
Gathright Dam	443310	12/31/1983	02/28/2013	539.5	986.54	CD5⊗PGD4	
Hot Springs	444128	09/04/1970	08/31/2011	681.5	1097.41	CD5⊗PGD4	
Lynnwood	445142	09/30/1983	12/01/1983	309.1	938.17	CD5⊗PGD4	
Mc Gaheysville 2 S	445423	04/30/1971	11/30/1983	331.9	1149.60	CD5⊗PGD4	
Millgap 2 NNW	445595	09/01/1976	02/28/2013	737.9	1124.71	CD5⊗PGD4	
Mustoe 1 SW	445880	06/30/1982	10/28/2007	725.4	1135.89	CD5⊗PGD4	
Staunton Water Treatment Plant	448062	12/31/1972	08/31/2007	51.5	989.96	CD5⊗PGD4	
Stuarts Draft	448172	05/01/1979	05/29/1984	442.0	1058.43	CD5⊗PGD4	
Williamsburg 2 S	449159	07/01/1978	08/31/2011	499.9	1029.32	CD5⊗PGD4	
Galax Water Plant	443272	04/01/1972	02/28/2013	719.3	1005.84	CD6⊗PGD3	CPZ11
Indian Valley	444246	04/30/1973	09/30/1993	823.0	1063.93	CD6⊗PGD3	
Trout Dale 3 SSE	448547	03/31/1974	02/28/2013	865.3	1077.98	CD6⊗PGD3	
Willis	449169	09/30/1993	02/28/2013	856.5	1144.78	CD6⊗PGD3	
Blacksburg National Weather	440766	03/31/2003	02/28/2013	604.1	1060.70	CD6⊗PGD4	CPZ12
Pulaski	446955	04/01/1972	02/28/2013	563.9	949.20	CD6⊗PGD4	
Staffordsville 3 ENE	448022	11/30/1993	02/28/2013	594.4	1000.25	CD6⊗PGD4	
White Gate	449060	12/31/1983	09/30/1993	563.9	965.88	CD6⊗PGD4	
Wytheville 1 S	449301	12/31/1983	02/28/2013	637.9	968.63	CD6⊗PGD4	
Davenport 2 NE	442269	12/31/1983	05/31/1986	488.0	1157.38	CD6⊗PGD5	CPZ13
Hurley 4 S	444180	03/31/1973	12/31/2009	331.6	1135.39	CD6⊗PGD5	
John Flannagan Lake	444410	12/31/1983	11/30/1991	445.0	1144.02	CD6⊗PGD5	
Wise 3 E	449215	12/31/1983	02/28/2013	776.9	1206.25	CD6⊗PGD5	

^[1] The black number is the average of the values from <https://www.ncdc.noaa.gov/data/climate-normals-deprecated/access/clim20/va> and <https://www.ncdc.noaa.gov/cdo-web/datatools/normals> and when both present the mean annual precipitations, whereas, it is the value from one of these two websites whichever presents the mean annual precipitation. On the other hand, the red number is from der Leeden (1994).

Table 3. Groups of the neighboring rain gauges (signified by their IDs) for filling missing values.^[1]

Group 01: 443229, 448149, 448046, 442663, 445851, 442208, 440720, 446712, 442159, 447164, 442729, 447130, 445423	Group 02: 445851, 448149, 448046, 443229	Group 03: 442663, 448149, 448046, 443229, 440720, 442208	Group 04: 445142, 445423, 442208, 440720, 448062	Group 05: 440720, 445142, 445423, 446712
Group 06: 448062, 448172, 445690, 445142, 445423, 446178	Group 07: 446178, 445142, 448172, 448062, 440993, 445423, 445690, 441929	Group 08: 445690, 446178, 448172, 448062, 449159	Group 09: 445595, 445880, 449159, 443310, 444128,	Group 10: 442044, 443310, 444128, 445595, 445880, 445690, 449159
Group 11: 440766, 446955, 448022, 449060, 444246, 449169, 449301, 443272	Group 12: 449301, 449060, 446955, 443272, 448547	Group 13: 444246, 449169, 440766, 446955, 449272	Group 14: 443272, 446955, 444246, 449169, 449301, 448547	Group 15: 446692, 449272, 444246, 449169, 447338
Group 16: 447338, 446692, 449272, 441614	Group 17: 441614, 440166, 447338, 446692	Group 18: 440561, 440166, 447338	Group 19: 440166, 440561, 441614, 447338, 447025	Group 20: 448547, 446955, 449301, 443272
Group 21: 447025, 440778, 444414, 440166, 442941	Group 22: 440778, 441322, 447025, 444414, 442941, 448129	Group 23: 448129, 440778, 441322, 448800, 444414, 449151	Group 24: 448800, 440778, 441322, 448129, 449151, 444414	Group 25: 449151, 446475, 448129, 448800, 440778, 441322
Group 26: 446475, 449151	Group 27: 442159, 442729, 443192, 443200, 447130, 447164, 446712	Group 28: 446712, 442159, 440720, 442729, 447164, 447130, 440993	Group 29: 444414, 440778, 447025, 441322	Group 30: 442941, 447025, 440993, 441322
Group 31: 440993, 441929, 442941, 446178, 446712	Group 32: 442269, 444410, 444180, 449215, 446955, 449301, 448547	Group 33: 448396, 448149, 447130, 443229, 445851, 442729, 448046		

^[1] In a given group, a rain gauge highlighted in red was filled by the other rain gauges of this group.

2.2.2 The RCMs predicted precipitation

The predicted historic (i.e., pre-2013) and future (i.e., 2038 ~ 2070) data on regional precipitation at a 3-h time interval and a 50-km spatial resolution were downloaded from the North American Regional Climate Change Assessment Program (NARCCAP) website <http://www.narccap.ucar.edu>. To date, NARCCAP has generated twelve different dynamically downscaled datasets (Table 4), and all twelve datasets of precipitation for the grids (Figure 3) that cover Virginia were used in this study. The time series of precipitation were extracted from the NARCCAP “.nc” files using a computer program written in r language by the project team. The extracted time series were stored in plain text files, which in turn were uploaded into Excel® spreadsheets for spatial and temporal downscaling.

Table 4. The twelve dynamically downscaled datasets by NARCCAP.

Dataset	Regional Climate Model (RCM)	General Circulation Model (GCM)
1	CRCM	CCSM
2		CGCM3
3	ECP2	GFDL
4		HadCM3
5	HRM3	GFDL
6		HadCM3
7	MM5I	CCSM
8		HadCM3
9	RCM3	CGCM3
10		GFDL
11	WRFG	CCSM
12		CGCM3

2.2.3 The watershed-level data

The National Hydrography Dataset (NHD) (i.e., hydrography) was downloaded from the USGS website <http://viewer.nationalmap.gov/viewer>. NHD is a comprehensive set of digital spatial data about surface water features (e.g., rivers) (USGS, 2001a, b). This study used the 8-digit hydrologic cataloging units (HUCs) or

watersheds presented by the NHD. Totally, there are 53 such HUCs in Virginia (Figure 4). The 8-digit HUCs were selected because the relevant data are publicly available and because primary water management projects and practices have been implemented at such a

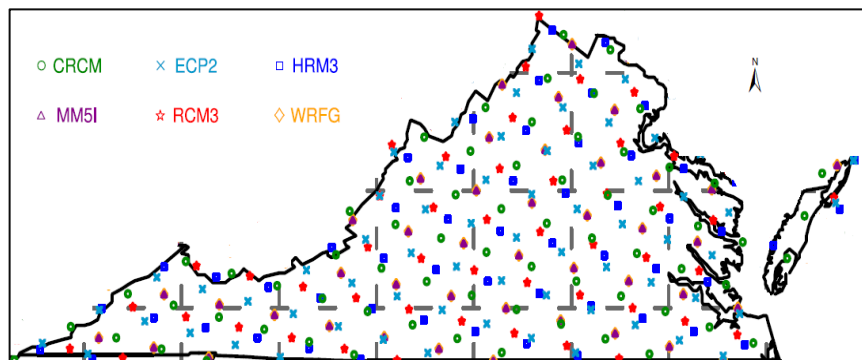


Figure 3. The centers of each 50-km grid cell for the six RCMs (not drawn to a scale). (Source: <http://www.narccap.ucar.edu/data/gridpoint-maps.html>)

spatial scale. The rain gauges within and adjacent to a HUC were used to calculate the areal precipitation, which in turn was used to develop the watershed-level IDF curves.

2.3 Methods

This subsection elaborates the methods for trend analysis, selection of best statistical distributions, development of historic IDF curves, spatial and temporal downscaling of the RCMs’ predictions, and development of probability-based IDF curves. In terms of practical

applications (Viessman and Lewis, 2003), this study chose twelve durations, including 15 min, 30 min, 45 min, 1, 2, 3, 4, 6, 12, 24, 48, and 72 h, and nine return periods, including 2-, 5-, 10-, 25-, 50-, 100-, 200-, 500-, and 1000-year, for the historic and next-generation IDF curves. Figure 5 shows the framework of the methods.

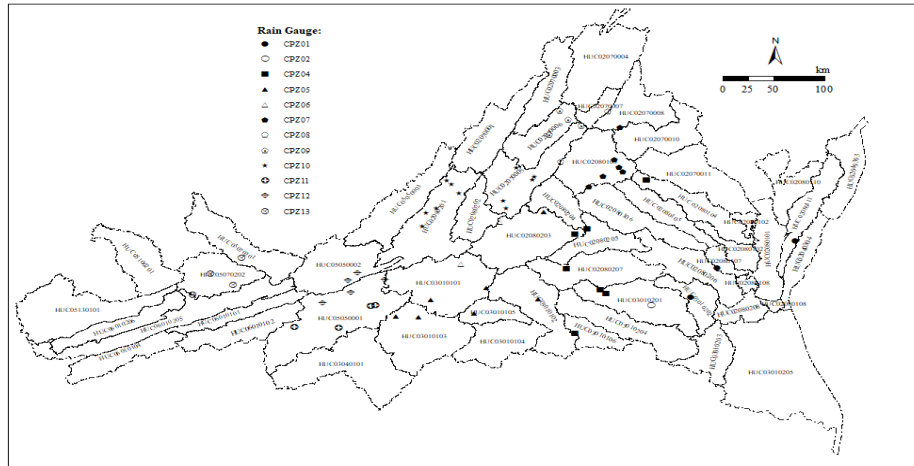


Figure 4. The 53 U.S. Geological Survey (USGS) 8-digit hydrologic cataloging units (HUCs) in Virginia, superimposed by the 57 rain gauges with 15-min rainfall data.

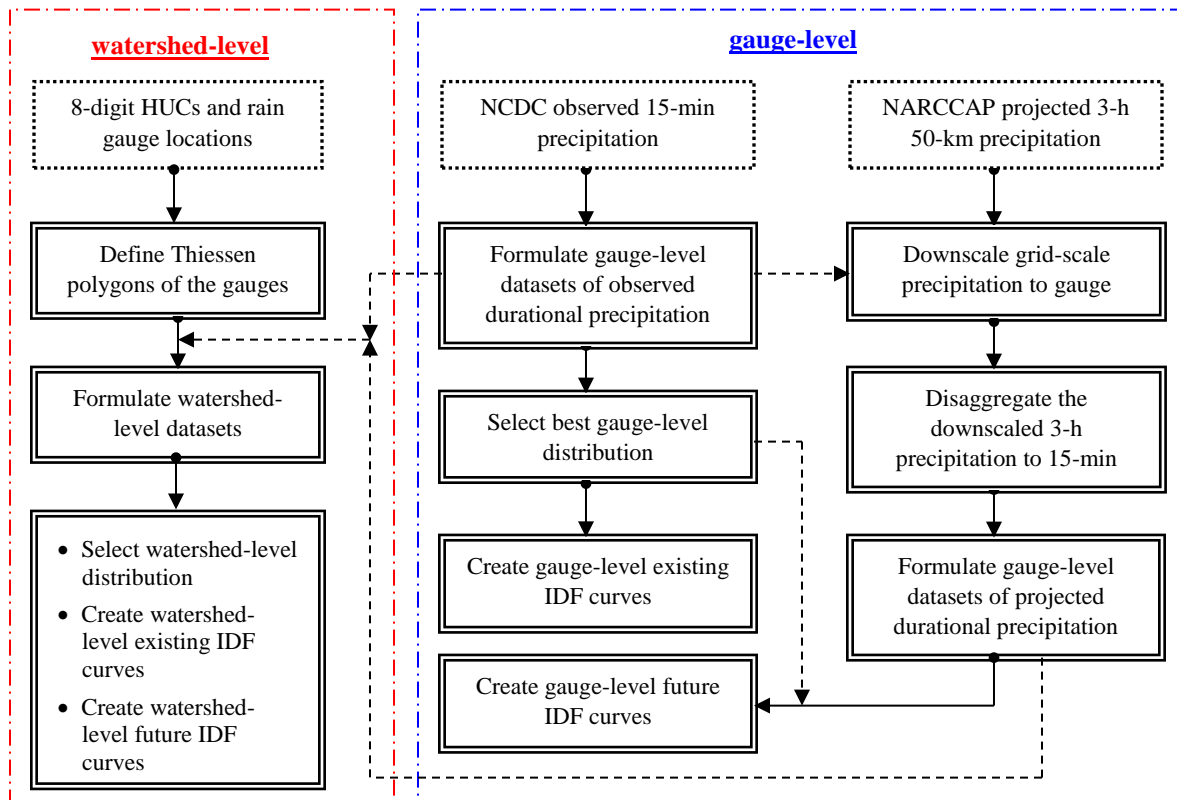


Figure 5. The sequential relationships among elements of the methods developed and used in this study. HUC: Hydrologic Cataloging Unit; IDF: intensity-duration-frequency; NCDC: National Climate Data Center; and NARCCAP: North American Regional Climate Change Assessment Program.

2.3.1 Detection of step changes and temporal trends

For the rain gauges with a record period of 30 years or longer, the twelve datasets of annual maximum durational precipitation were used to detect step change and trend using the approach

presented by Wang *et al.*, 2013, as shown in Figure 6. Herein, it was assumed that for a rain gauge, the step changes and/or trends (if any) are independent of duration. The approach was coded in VBA into computer programs, which in turn were run in Microsoft® Excel 2010.

For a given time series (i.e., dataset), the distribution-free cumulative sum (CUSUM) technique presented by McGilchrist and Woodyer (1975) was used to detect whether, and at which year, a

significant step (i.e., upward-to-downward or downward-to-upward) change occurred, at a significance level of $\alpha = 0.05$. The null hypothesis was that there was no step change (i.e., the mean value of the time series would be statistically independent of the

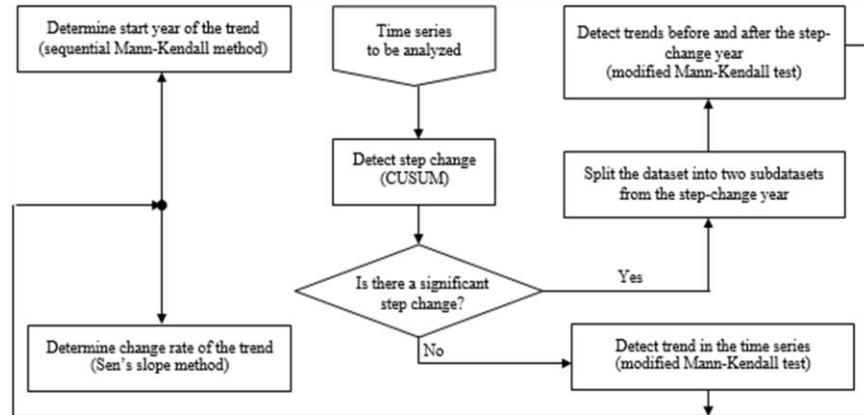


Figure 6. Schematic diagram of the approach to detect step change and trend. CUSUM is the distribution-free cumulative sum technique.

number of computational years). If no significant step change was detected, the modified Mann-Kendall (Mann, 1945; Kendall, 1970; Hirsch *et al.*, 1982; Hamed and Rao 1998) was applied to the entire dataset to determine whether a statistically significant ($\alpha = 0.05$) temporal (i.e., downward or upward) trend existed. Otherwise, the dataset was split into two, one for before and another for after the step-change year, and the modified Mann-Kendall test was applied independently to each subdataset to identify any trends. The sequential Mann-Kendall method (Taubenheim, 1989; Sneyers, 1990) was used to determine the year when a trend started and the Sen's slope (Sen, 1968) was computed and used to measure the rate of change of the trend.

The modified Mann-Kendall test took autocorrelation into account (Hamed and Rao, 1998) and was executed by the following six sequential steps: 1) compute the Sen's slope of the time series; 2) subtract the Sen's slope from the original values to obtain a trend-free time series of $\{x_1, x_2, \dots, x_N\}$ and then assign ranks to these new values; 3) compute autocorrelation coefficients, $\rho_s(i)$, $i = 1, 2, \dots, N-3$, using these ranks (Sen, 1968; Zetterqvist, 1991) and ensure the coefficients are statistically significant at $\alpha = 0.05$ based on t-test statistics; 4) compute the ratio of $\frac{N}{N_s}$ (Wang *et al.*, 2013); 5) compute variance $\text{var}^*(S)$; 5) compute the conventional Mann-

Kendall statistics for S (Mann, 1945; Kendall, 1970); and 6) compute the modified Mann-Kendall test statistics of Z^* . If Z^* was positive and greater than the standard normal $1-\alpha = 95^{\text{th}}$ percentile, a statistically significant upward trend was detected. In contrast, if Z^* was negative and smaller than the 95^{th} percentile, a statistically significant downward trend was detected. Otherwise, no significant trend was detected.

The sequential Mann-Kendall method (Sneyers, 1990) tests the null hypothesis that a stationary time series shows no beginning in developing a trend. It computes two statistics, one for the time series in progressive order (i.e., from the start to the end year) and the other for the

time series in retrograde order (i.e., from the end to the start year). When these two statistics are plotted versus year, the intersection between these two curves, from which onward one of these two statistics is either monotonically smaller or greater than the other, is judged to be the beginning of the trend (Figure 7). Otherwise, the trend is considered to extend unbroken throughout the entire period of the time series.

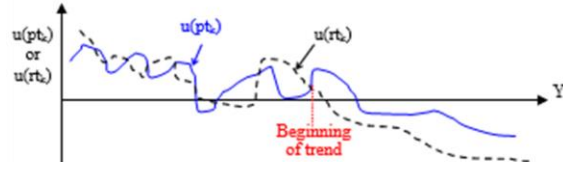


Figure 7. Illustration of the beginning of a trend. $u(pt_k)$ and $u(rt_k)$ are the progressive and retrograde statistics, respectively.

2.3.2 Selection of best statistical distributions

For each of the 57 rain gauges, when statistically significant (at a significance level of $\alpha = 0.05$) step changes and/or trends were detected, each of the twelve datasets might be subdivided into two or more subdatasets at the change and/or trend start years, depending on whether the dataset was non-homogenous in terms of the homogeneity test discussed in section 2.3.9. For each of the twelve datasets, it was sorted in descending order and then assigned consecutive ranks from one to n_i (the number of record years at station i). The empirical frequency at which a given durational precipitation is equaled or exceeded was computed using the Weibull formula (USDA-SCS, 1968; NOAA, 1986) as the ratio of rank to $(n_i + 1)$. Subsequently, three commonly used distributions, namely Gumbel (Gumbel, 1958), Fréchet (Fréchet, 1927), and Weibull (Weibull, 1951), were tentatively fitted to the Weibull positioning points for the whole record period as well as the periods of the subdatasets. Based on the goodness of fit as measured by visualization plot and Kolmogorov-Smirnov (i.e., K-S) test (Massey, 1951; Neter et al., 1996), a best distribution was selected. Herein, it was hypothesized that the best distribution is independent of step change, trend, and return period, but the best distribution can be different by gauge. On the other hand, for each of the rain gauges with a record period of shorter than 30 years, its twelve whole datasets were used to compute Weibull points, to which the three distributions were tentatively fitted to select a best distribution for this gauge. If the K-S test rejects all three distributions, in terms of the visualization plot, the distribution that is closest to the empirical Weibull points was judged to be best. Otherwise, the best distribution was the one that was most significant as indicated by the K-S test. The fitting of the distributions and the K-S tests were implemented by creating VBA programs in Microsoft® Excel 2010. As a result, a best distribution and a set of existing IDF curves were determined for each of the rain gauges.

The Gumbel distribution computes the chance for a rainfall (X_p) to be equaled or exceeded as (Gumbel, 1958):

$$P(x \geq X_p) = 1 - e^{-e^{-x}} \quad (2)$$

$$b = \frac{1}{0.7797 \cdot s} \cdot (X_p - \bar{x} + 0.45 \cdot s) \quad (3)$$

where \bar{x} and s , respectively, are the mean and standard deviation of observed rainfall extreme values for a duration of interest.

The Fréchet distribution computes the chance for a rainfall (X_p) to be equaled or exceeded as (Fréchet, 1927):

$$P(x \geq X_p) = 1 - e^{-\left(\frac{X_p - m}{S_s}\right)^\alpha} \quad (4)$$

where m , S_s , and α (> 1) are three parameters, and can be estimated by solving Equations (5) to (7) simultaneously.

$$\bar{x} = m + S_s \cdot \left[\Gamma\left(1 - \frac{1}{\alpha}\right) \right] \quad (5)$$

$$x_m = m + \frac{S_s}{\sqrt[4]{\ln(2)}} \quad (6)$$

$$s = (S_s)^2 \cdot \left\{ \Gamma\left(1 - \frac{2}{\alpha}\right) - \left[\Gamma\left(1 - \frac{1}{\alpha}\right) \right]^2 \right\} \quad (7)$$

where \bar{x} , x_m , and s , respectively, are the mean, median, and standard deviation of observed rainfall extreme values for a duration of interest; and $\Gamma(\cdot)$ is gamma function (Neter et al., 1996).

The Weibull distribution computes the chance for a rainfall (X_p) to be equaled or exceeded as (Weibull, 1951):

$$P(x \geq X_p) = e^{-\left(\frac{x}{\lambda}\right)^k} \quad (8)$$

where λ and k are two positive parameters and can be estimated by solving Equations (9) and (10) simultaneously.

$$\bar{x} = \lambda \cdot \left[\Gamma\left(1 + \frac{1}{k}\right) \right] \quad (9)$$

$$s = \lambda^2 \cdot \left\{ \Gamma\left(1 + \frac{2}{k}\right) - \left[\Gamma\left(1 + \frac{1}{k}\right) \right]^2 \right\} \quad (10)$$

where \bar{x} and s , respectively, are the mean and standard deviation of observed rainfall extreme values for a duration of interest.

The K-S test is based on an empirical distribution function (ECDF). Given N data points X_1, X_2, \dots, X_N that are sorted in ascending order (i.e., from smallest to largest), the ECDF is defined as:

$$F_n(x \leq X_i) = \frac{n_i}{N} \quad (11)$$

where n_i is the number of points less than X_i .

The null hypothesis is that the data follow a specified distribution (e.g., Gumbel, Fréchet, or Weibull), while the alternative hypothesis is that the data do not follow the specified distribution. Figure 8 is an example plot of the ECDF with a Gumbel cumulative distribution function for 100 normal random numbers. The K-S test is based on the maximum distance between these two curves (Massey, 1951).

The K-S test statistic is defined as:

$$D_n = \max |F_n(x \leq X_i) - F(x \leq X_i)| \quad (i = 1, 2, \dots, N) \quad (12)$$

where $F(\cdot)$ is the theoretical cumulative density function of the specified distribution.

The K-S goodness-of-fit is tested by using critical values of the Kolmogorov distribution. The null hypothesis is rejected at a significance level of $\alpha = 0.05$ if:

$$D_n > K_\alpha \quad (13)$$

where K_α can either be found from Table 5 or determined using the cumulative function of the Kolmogorov distribution expressed as (Wikipedia, 2014):

$$\Pr(K \leq K_\alpha) = 1 - \alpha = \frac{\sqrt{2\pi}}{K_\alpha} \cdot \sum_{j=1}^{\infty} e^{-\frac{(2j-1)^2 \cdot \pi^2}{8K_\alpha^2}} \quad (14)$$

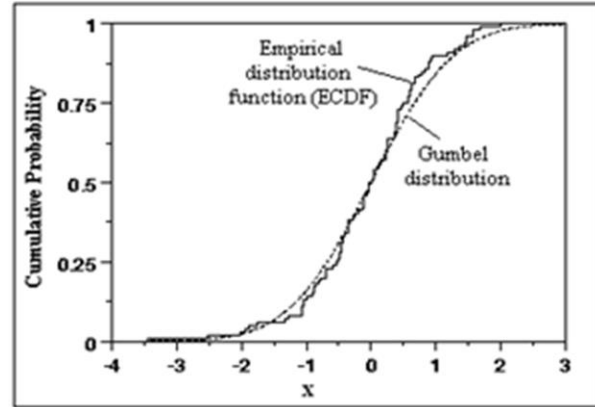


Figure 8. An example ECDF and Gumbel distribution.

Table 5. The critical value, K_α , of the Kolmogorov distribution.

Sample Size N	K_α	Sample Size N	K_α	Sample Size N	K_α	Sample Size N	K_α
1	0.975	11	0.39122	21	0.28724	31	0.23788
2	0.84189	12	0.37543	22	0.28087	32	0.23424
3	0.7076	13	0.36143	23	0.2749	33	0.23076
4	0.62394	14	0.3489	24	0.26931	34	0.22743
5	0.56328	15	0.3376	25	0.26404	35	0.22425
6	0.51926	16	0.32733	26	0.25907	36	0.22119
7	0.48342	17	0.31796	27	0.25438	37	0.21826
8	0.45427	18	0.30936	28	0.24993	38	0.21544
9	0.43001	19	0.30143	29	0.24571	39	0.21273
10	0.40925	20	0.29408	30	0.2417	40	0.21012

2.3.3 Development of gauge-level historic IDF curves

For each of the 57 rain gauges, the historic IDF curves were developed using the best statistical distribution. To consider the possible non-stationarity resulting from climate change, based on the trend analysis results, the time series of annual maximum precipitation might be subdivided into several subseries, each of which had invariant statistics of mean, median, and standard deviation. However, if the time series had a sample size of $N < 10$ years, it was not subdivided. The development was implemented using VBA programs in Excel[®] 2010. Subsequently, the IDF curves were visually compared with the NOAA Atlas 14 Point Precipitation Frequency Estimates downloaded at <https://hdsc.nws.noaa.gov/hdsc/pfds>.

2.3.4 Spatially downscaling of the RCMs' predictions

As shown in Figure 3, the centers of the 50-km grids are different for the six RCMs. For each RCM, its grid layer was overlaid with the layer of the rain gauges (Figure 2b) in ArcMap[®] to identify the four grids surrounding each gauge. Subsequently, the geographic distances from the

four grid centers to the rain gauge were calculated. At a given time, the RCM's predictions for the four grids were averaged using the inverses of the distances as the weights, resulting in a spatially-averaged 3-h prediction. In addition, for each of the 57 rain gauges, the observed (formulated) 3-h time series $\tilde{X}_{3h,i}$ was regressed on the synchronic spatially-averaged 3-h time series. That is, the regression was done for the record period of the gauge using the synchronically paired values of observed and spatially-averaged 3-h precipitation. Further, taking the spatially-averaged 3-h precipitations from 2038 to 2070, this regression equation was used to generate a 3-h precipitation time series at this gauge for this future period (i.e., downscale the projected precipitation). The regressions and computations were executed in Excel[®] 2010.

2.3.5 Disaggregating spatially-downscaled precipitation

For each of the 57 rain gauges and for each of the six RCMs, the two spatially-downscaled 3-h precipitation time series, one for the record period and another for the future period, were used to generate two datasets of annual maximum 3-h precipitation, namely $\tilde{Y}_{3h,i}$ and $\tilde{Z}_{3h,i}$, respectively.

To generate the annual maximum precipitation time series of 15, 30 and 45 min, and 1, 2 and 4 h (designated $\tilde{Y}_{15m,i}$, $\tilde{Y}_{30m,i}$, $\tilde{Y}_{45m,i}$, $\tilde{Y}_{1h,i}$, $\tilde{Y}_{2h,i}$, and $\tilde{Y}_{4h,i}$ for the record period, and $\tilde{Z}_{15m,i}$, $\tilde{Z}_{30m,i}$, $\tilde{Z}_{45m,i}$, $\tilde{Z}_{1h,i}$, $\tilde{Z}_{2h,i}$, and $\tilde{Z}_{4h,i}$ for the future period), $\tilde{X}_{15m,i}$, $\tilde{X}_{30m,i}$, $\tilde{X}_{45m,i}$, $\tilde{X}_{1h,i}$, $\tilde{X}_{2h,i}$, and $\tilde{X}_{4h,i}$ were separately regressed over $\tilde{X}_{3h,i}$ and then use $\tilde{Y}_{3h,i}$ and $\tilde{Z}_{3h,i}$ in the responding regression equations to get the responding time series. Herein, it was assumed that the regression equations were held regardless of the climatic conditions (Menabde *et al.*, 1999; Socolofsky *et al.*, 2001; Chang and Hiong, 2013; Mirhosseini *et al.*, 2013). The regressions were implemented by each of the climatic-physiographic zones shown in Figure 2. For example, to regress $\tilde{X}_{15m,i}$ over $\tilde{X}_{3h,i}$ for CPZ01 (Table 1), the time series of $\tilde{X}_{15m,i}$ at the three rain gauges within this zone were pooled together into one 15-min dataset, while the time series of $\tilde{X}_{3h,i}$ at these same three rain gauges were pooled together into one 3-h dataset. To capsule the datasets, if one value in the 3-h dataset corresponds to two or more values in the 15-min dataset, the arithmetic average, median, 75th percentile, and maximum of the multiple values were calculated, resulting in five capsulated datasets: one for 3-h and four for 15-min. The four capsulated 15-min datasets were separately regressed over the capsulated 3-h dataset. The regression equation with a largest coefficient of determination (R^2) was chosen as the relationship between $\tilde{X}_{15m,i}$ and $\tilde{X}_{3h,i}$, and adopted to generate $\tilde{Y}_{15m,i}$ and $\tilde{Z}_{15m,i}$. Both linear and nonlinear equations as well as piecewise regressions were tried to best fit the data.

On the other hand, to generate the annual maximum precipitation time series of 6, 12, 24, 48, and 72 h (designated $\tilde{Y}_{6h,i}$, $\tilde{Y}_{12h,i}$, $\tilde{Y}_{24h,i}$, $\tilde{Y}_{48h,i}$, and $\tilde{Y}_{72h,i}$ for the record period, and $\tilde{Z}_{6h,i}$, $\tilde{Z}_{12h,i}$, $\tilde{Z}_{24h,i}$, $\tilde{Z}_{48h,i}$, and $\tilde{Z}_{72h,i}$ for the future period), the accumulation procedure discussed in section 2.2.1 was applied to $\tilde{Y}_{3h,i}$ and $\tilde{Z}_{3h,i}$, respectively.

As a result, for each rain gauge and each RCM, twelve time series ($\tilde{Y}_{15m,i}$, $\tilde{Y}_{30m,i}$, $\tilde{Y}_{45m,i}$, $\tilde{Y}_{1h,i}$, $\tilde{Y}_{2h,i}$, $\tilde{Y}_{3h,i}$, $\tilde{Y}_{4h,i}$, $\tilde{Y}_{6h,i}$, $\tilde{Y}_{12h,i}$, $\tilde{Y}_{24h,i}$, $\tilde{Y}_{48h,i}$, and $\tilde{Y}_{72h,i}$) were generated for the record period and another twelve time series ($\tilde{Z}_{15m,i}$, $\tilde{Z}_{30m,i}$, $\tilde{Z}_{45m,i}$, $\tilde{Z}_{1h,i}$, $\tilde{Z}_{2h,i}$, $\tilde{Z}_{3h,i}$, $\tilde{Z}_{4h,i}$, $\tilde{Z}_{6h,i}$, $\tilde{Z}_{12h,i}$, $\tilde{Z}_{24h,i}$, $\tilde{Z}_{48h,i}$, and

$\tilde{Z}_{72h,i}$) were generated for the future period. Totally, 16,416 (= 57 gauges * 12 RCMs * 24 time series per gauge per RCM) datasets were generated. Again, all regressions and computations were executed in Excel® 2010

2.3.6 Development of gauge-level future IDF curves

To consider possible non-stationarity, the approach discussed in section 2.3.1 was used to detect any step changes and/or trends in \tilde{Y} and \tilde{Z} . Again, the null hypothesis was that for a rain gauge, the step changes and/or trends (if any) were independent of duration. If statistically significant step changes and/or trends were detected, each of the twenty-two \tilde{Y} and \tilde{Z} datasets might be subdivided into two or more subdatasets at the change and/or trend start years. Nevertheless, whether the dataset was subdivided was also dependent on the homogeneity test discussed in section 2.3.9. For each of the eleven \tilde{Y} datasets, it was sorted in descending order and then assigned consecutive ranks from one to n_i (the number of record years at gauge i). The empirical frequency at which a given durational precipitation is equaled or exceeded was computed using the Weibull formula as the ratio of rank to $(n_i + 1)$. Subsequently, the Fréchet, Weibull, and Gumbel distributions were tentatively fitted to the Weibull points for the whole record period as well as the periods of the subdatasets. Based on the goodness of fit, a best distribution was selected. Similarly, analyses of step changes and/or trends in \tilde{Z} were conducted and a best distribution was selected by gauge. Herein, the null hypothesis was that the best distributions selected using \tilde{Y} and \tilde{Z} were same as the one selected using \tilde{X} for a given rain gauge. Further, in terms of the best distribution (determined above) for this rain gauge, the datasets \tilde{Y} were used to create a set of IDF curves (designated \tilde{Y} IDF for description purpose), while the datasets \tilde{Z} were used to create another set of IDF curves (designated \tilde{Z} IDF for description purpose).

2.3.7 Development of gauge-level probability-based IDF curves

The above sequential analyses, including regression, downscaling, disaggregating, detection of step changes and trends, selection of best distribution, and creation of IDF curves, were repeated for each of the 16,416 datasets. As a result, for a given rain gauge, twelve sets of \tilde{Y} IDF curves and another twelve sets of \tilde{Z} IDF curves were generated. The twelve sets of \tilde{Y} IDF curves were compared with the historic IDF curves (created in section 2.3.3 using \tilde{X}) to determine the lower and upper bounds of bias correction factor by return period (Liew *et al.*, 2013) (Figure 9a). By

assuming a same distribution, the future IDF curves were determined as the average of the \tilde{Z} IDF

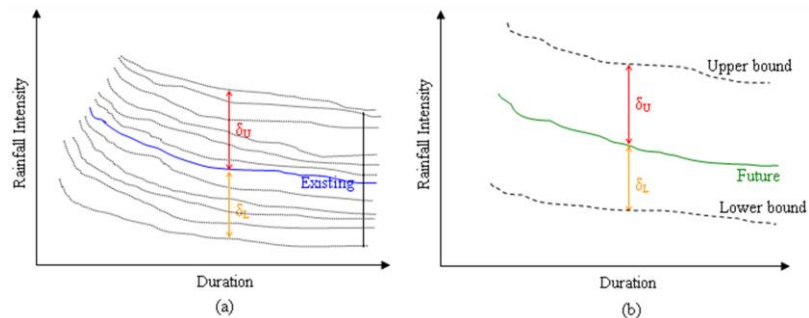


Figure 9. Illustration of the: (a) bias correction factors (δ_L and δ_U), and (b) future intensity-duration-frequency (IDF) curve and its range, for a given return period. In (a), the solid-blue line is based on \tilde{X} datasets, while the dot-black lines are based on \tilde{Y} datasets. In (b), the solid-green line (historic IDF curve) is the average of the twelve IDF curves based on \tilde{Z} datasets, and the dash-black lines are upper and lower bounds of the future IDF curve.

curves (created using the datasets of \tilde{Z}) as well as the lower and upper bounds (Figure 9b), providing a range of future rainfall intensity for a given duration and a return period. Herein, the null hypothesis was that the correction factors would be same regardless of climatic conditions. In addition, for a given duration (e.g., 1 hr) and a given return period (e.g., 50 year), the twelve values of the \tilde{Z} IDF curves were used to create a probability curve of the future IDF curve of this duration and this return period. Figure 10 illustrates a hypothetical example result of probability-based IDF curves for a given duration. To determine the future design rainfall intensity for a duration and a return period of interest, its mean, minimum, and maximum values can be found from Figure 9b, while the probabilities associated with these three values can be determined from Figure 10. Such additional range (from minimum to maximum) and probabilities can well represent uncertainties of future climate projections, allowing the use of future IDF curves with more confidence.

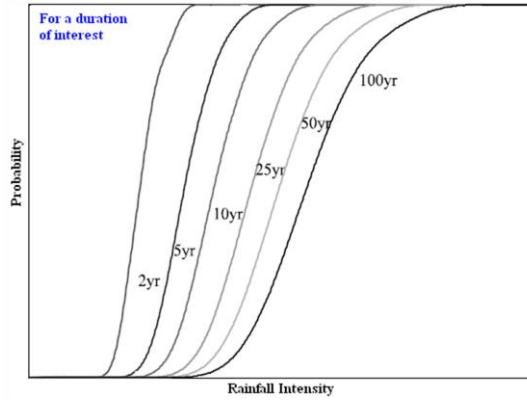


Figure 10. Hypothetical probability intensity-duration-frequency (IDF) curves at a rain gauge of interest for a given duration.

The probability curve was developed using the kernel density estimation (KDE) method (Silverman, 1998), a nonparametric way to estimate the probability density function of a random variable based on a finite (i.e., small-size) data sample. The KDE method has been widely used as a viable and flexible alternative to parametric methods in hydrology for estimating probability density function of hydrological variables (e.g., precipitation) (Lall *et al.*, 1996; Sharma *et al.*, 1997). The KDE method estimates the probability for a value x to occur, $p(x)$, as:

$$p(x) = \frac{1}{N \cdot h} \cdot \sum_{i=1}^n K\left(\frac{x - x_i}{h}\right) \quad (15)$$

where N is the sample size; h is the bandwidth (smoothing parameter); x_i is the i^{th} sample value; and $K(\)$ is the smooth kernel function satisfying $\int_{-\infty}^{\infty} K(y)dy = 1$.

2.3.8 Development of watershed-level probability-based IDF curves

This study used the 8-digit HUCs presented by the NHD in ArcMap[®] (Wang and Melesse, 2005) to delineate boundaries of the watersheds within the Virginian drainage area of Chesapeake Bay. For each watershed, the rain gauges that are within, or have a Euclidian distance of less than 50 km from, the watershed boundary were used to subdivide the watershed into Thiessen polygons (Viessman and Lewis, 2003). The number of polygons was equal to that of the gauges. Taking polygon-area-weighted averages formulated: 1) twelve observed datasets of annual maximum durational precipitation, designated $w\tilde{X}_{15m,j}$, $w\tilde{X}_{30m,j}$, $w\tilde{X}_{45m,j}$, $w\tilde{X}_{1h,j}$, $w\tilde{X}_{2h,j}$, $w\tilde{X}_{3h,j}$, $w\tilde{X}_{4h,j}$, $w\tilde{X}_{6h,j}$, $w\tilde{X}_{12h,j}$, $w\tilde{X}_{24h,j}$, $w\tilde{X}_{48h,j}$, and $w\tilde{X}_{72h,j}$ for description purpose, where j signifies the watershed; 2) twelve projected datasets of annual maximum durational precipitation for the record period, designated $w\tilde{Y}_{15m,j}$, $w\tilde{Y}_{30m,j}$, $w\tilde{Y}_{45m,j}$, $w\tilde{Y}_{1h,j}$, $w\tilde{Y}_{2h,j}$, $w\tilde{Y}_{3h,j}$, $w\tilde{Y}_{4h,j}$, $w\tilde{Y}_{6h,j}$, $w\tilde{Y}_{12h,j}$, $w\tilde{Y}_{24h,j}$, $w\tilde{Y}_{48h,j}$, and $w\tilde{Y}_{72h,j}$ for description purpose; and 3) twelve projected datasets of annual maximum

durational precipitation for the future period, designated $\tilde{WZ}_{15m,j}$, $\tilde{WZ}_{30m,j}$, $\tilde{WZ}_{45m,j}$, $\tilde{WZ}_{1h,j}$, $\tilde{WZ}_{2h,j}$, $\tilde{WZ}_{3h,j}$, $\tilde{WZ}_{4h,j}$, $\tilde{WZ}_{6h,j}$, $\tilde{WZ}_{12h,j}$, $\tilde{WZ}_{24h,j}$, $\tilde{WZ}_{48h,j}$, and $\tilde{WZ}_{72h,j}$ for description purpose. Any missing values for a gauge were filled using the corresponding values at another nearest station. Herein, the basic assumption was that polygon-area-weighted averages can represent areal precipitations of the watershed.

For each watershed, $\tilde{W\tilde{X}}$, $\tilde{W\tilde{Y}}$, and $\tilde{W\tilde{Z}}$ were analyzed using the procedures elaborated in sections 2.3.3, 2.3.6, and 2.3.7 for \tilde{X} , \tilde{Y} , and \tilde{Z} , respectively, resulting in the watershed-level IDF curves with additional ranges and probabilities, as with range-level IDF curves illustrated in Figures 9(b) and 10. The twelve datasets of $\tilde{W\tilde{X}}$ were used to compute Weibull points (NOAA, 1986) for the whole record period. Three distributions (i.e., Fréchet, Weibull, and Gumbel) were tentatively fitted to the Weibull points to select a best distribution for the watershed in terms of goodness of fit and to create a set of historic IDF curves. Herein, the null hypothesis was that the best distribution is independent of return period but can be different by watershed.

Subsequently, in terms of the best distribution for this watershed, the datasets $\tilde{W\tilde{Y}}$ were used to create a set of IDF curves, which in turn were compared with the historic IDF curves to determine lower and upper bounds of bias correction factor. In addition, a similar fitting analysis of $\tilde{W\tilde{Z}}$ was conducted and a best distribution was selected by watershed. Herein, the null hypothesis was that the best distributions selected using $\tilde{W\tilde{Z}}$ is same as the one selected using either $\tilde{W\tilde{X}}$ or $\tilde{W\tilde{Y}}$ for a given watershed. Using this best distribution, the future watershed-level IDF curves were determined as the averages of the IDF curves created using the datasets of $\tilde{W\tilde{Z}}$, plus lower and upper bounds. Moreover, for a given duration and a given return period, the twelve values of the $\tilde{W\tilde{Z}}$ -based IDF curves were used in the KED method (discussed in section 2.3.7) to create a probability curve of the future IDF curve of this duration and this return period. Again, such an additional range (from minimum to maximum) and probabilities can well represent uncertainties of future climate projections, allowing the use of future IDF curves with more confidence.

2.3.9 Homogeneity test of time series

The development of IDF curves requires that a time series be homogenous and independent. The requirement of independence can be reasonably assumed because the maximum durational precipitation in a year does not depend on the maximum duration precipitation in another year. However, the requirement of homogeneity would become invalid because of climate change. Herein, the homogeneity assures that the values of the time series are from a same population. That is, the mean and standard deviation can be estimated using any subsets of the time series with no difference from a statistical perspective. The homogeneity can be tested based on the cumulative deviations from the mean estimated using the entire time series (Buishand, 1982).

Given the time series of X_1, X_2, \dots, X_N , the cumulative deviations, S_k , are computed as:

$$S_k = \sum_{i=1}^k (X_i - \bar{X}) \quad k = 1, 2, \dots, N \quad (16)$$

where \bar{X} is the mean of the time series.

The test statistics, Q and R, are computed as:

$$Q = \max \left| \frac{S_k}{S_x} \right| \quad (17)$$

$$R = \left| \max \left(\frac{S_k}{S_x} \right) - \min \left(\frac{S_k}{S_x} \right) \right| \quad (18)$$

where S_x is the standard deviation of the time series.

The homogeneity of a time series is rejected when Q and R are larger than their critical values. Table 6 gives the critical values at a significance level of $\alpha = 0.05$. In this study, if the time series was found to be non-homogenous, it was iteratively subdivided into two or more subsets, each of which is homogenous. However, if the size of a subset is smaller than ten, this subset was pooled together with another subset to assure that the sample size of the pooled subset was larger than ten. In this regard, for the time series, if either Q or R is larger than the responding critical value but not both, it was judged to be homogenous. Subsequently, the IDF curves were developed using the subsets instead of the time series. Moreover, such an approach of homogeneity test and subdivision was applied to both the observed and derived time series.

Table 6. The critical values at a significance level of $\alpha = 0.05$ for test of homogeneity of time series.^[1]

Sample Size N	Critical Value of $\frac{Q}{\sqrt{N}}$	Critical Value of $\frac{R}{\sqrt{N}}$
10	1.14	1.28
20	1.22	1.43
30	1.24	1.50
40	1.26	1.53
50	1.27	1.55
100	1.29	1.62
∞	1.36	1.75

^[1] Source: Buishand (1982).

3. RESULTS AND DISCUSSION

3.1 The Step Changes and Temporal Trends

Among the 57 rain gauges, 25 of them were found to have a record period of 30 years or longer (Table 7). These gauges are located within ten climatic-physiographic zones in Virginia. This study used the observed data on precipitation at these gauges to detect any step changes and/or temporal trends. In this regard, the time series of $\tilde{X}_{15m,i}$, $\tilde{X}_{30m,i}$, $\tilde{X}_{45m,i}$, $\tilde{X}_{1h,i}$, $\tilde{X}_{2h,i}$, $\tilde{X}_{3h,i}$, $\tilde{X}_{4h,i}$, $\tilde{X}_{6h,i}$, $\tilde{X}_{12h,i}$, $\tilde{X}_{24h,i}$, $\tilde{X}_{48h,i}$, and $\tilde{X}_{72h,i}$ were divided by the responding durations (i.e., 15, 30 and 45 min, and 1, 2, 3, 4, 6, 12, 24, 48 and 72 h) to convert the annual maximum durational precipitations into the responding intensities in units of mm h^{-1} .

Figure 11 shows the summary statistics of the intensities by gauge. As expected, at a given rain gauge, the statistics for a shorter duration (e.g., 15 min) were smaller than those for a longer duration (e.g., 72 h). The smaller standard deviation for a longer duration indicated that the interannual variation of the annual maximum precipitations tended to become smaller with increase of duration, whereas, the smaller skewness coefficients for a longer duration implied that the distribution of the annual maximum precipitations tended to become normal with increase of duration. In addition, across the state, regardless of the durations, the rainfall intensity

and its interannual variation in the climatic divisions of Northern, Central Mountain, Western Piedmont, and Eastern Piedmont tended to be higher than those in the climatic divisions of Tidewater and Southwestern Mountain, as for example revealed by Figure 12, which shows the contours of the mean, maximum, and coefficient of variation (C_v) of the annual maximum 15-min rainfall intensity. Herein, C_v is defined as the ratio of the standard deviation to the mean and measures the overall variation of the annual maximum rainfall intensities around the mean. Such spatial patterns can mainly be attributed to the topographic variations (Figure 2a). The former three climatic divisions (especially the southwestern portions of the Northern and Western Piedmont divisions and the middle portion of the Central Mountain division) have a relatively higher elevation and larger gradient, which are favorable for cooling and condensing moist air to form heavy precipitation (Viessman and Lewis, 2003).

While no step change was detected, the annual maximum durational intensities exhibited a decreasing trend at most of the rain gauges except for seven gauges (Table 8). At two of these exceptional gauges, namely gauge 448062 and 443272, the intensities exhibited an increasing trend, while at the other five exceptional gauges, namely gauge 446475, 449151, 449272, 442208, and 444180, the intensities exhibited a decreasing trend for the durations of shorter than 6 h but an increasing trend for the durations of longer. Gauge 448062 is in a valley and gauge 443272 is located at a locally high-elevation leeward side of the mountains, implying that such locations tended to get more and more intense storm events. The five gauges with a mixing (i.e., decreasing and then increasing) trend are in the coastal plain (gauge 446475 and 449151) and at locations with a relatively highest elevation (gauge 449272, 442208, and 444180).

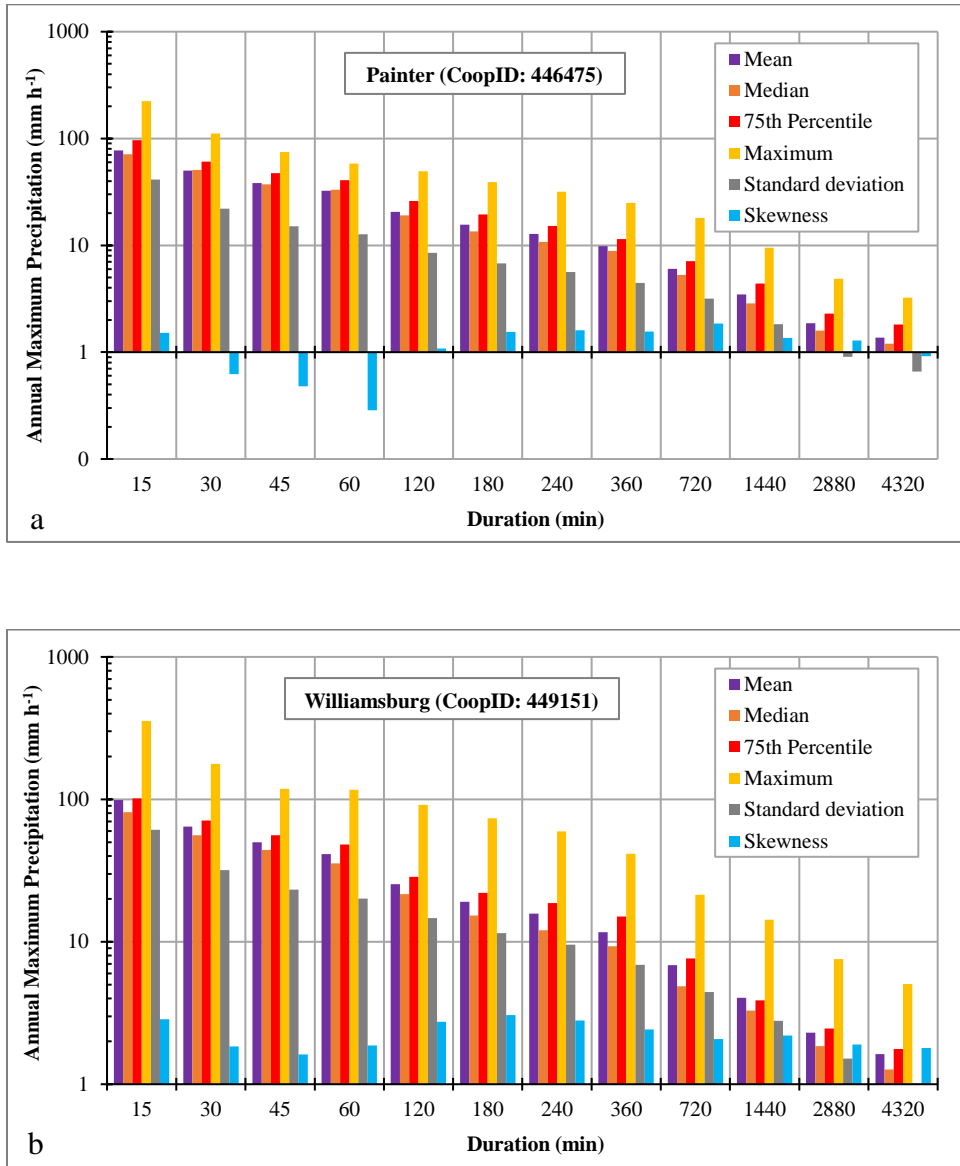
Table 7. The 25 rain gauges with a record period of 30 years or longer.

Gauge Name	ID	Begin Date	End Date	Elevation (m)	Mean Annual Precipitation (mm) ^[1]	Divisions	Zone
Painter 2 W	446475	05/02/1971	09/30/2012	9.1	1121.79	CD1@PGD1	CPZ01
Williamsburg 2 N	449151	05/02/1971	02/28/2013	21.3	1236.35	CD1@PGD1	
Camp Pickett	441322	03/31/1974	02/28/2013	100.6	1169.42	CD2@PGD2	CPZ04
John H Kerr Dam	444414	05/07/1971	02/28/2013	76.2	1103.50	CD2@PGD2	
Altavista	440166	12/31/1983	02/28/2013	161.2	1118.11	CD3@PGD2	CPZ05
Chatham	441614	05/06/1971	02/28/2013	198.4	1149.60	CD3@PGD2	
Philpott Dam 2	446692	05/06/1971	05/31/2009	342.3	1278.38	CD3@PGD2	
Rocky Mount	447338	05/06/1971	02/28/2013	400.8	1189.74	CD3@PGD2	
Woolwine 4 S	449272	12/31/1983	02/28/2013	457.2	1293.88	CD3@PGD2	
Montebello Fish Hatchery	445690	04/30/1971	08/31/2007	812.9	1125.29	CD3@PGD3	CPZ06
Piemont Research Station	446712	05/07/1971	02/28/2013	158.5	1112.90	CD4@PGD2	CPZ07
The Plains 2 NNE	448396	05/01/1971	09/30/2004	161.5	1118.87	CD4@PGD2	
Star Tannery	448046	05/02/1972	01/31/2012	289.6	1023.62	CD4@PGD4	CPZ09
Cobington Filter Plant	442044	12/31/1972	08/31/2011	374.9	952.75	CD5@PGD4	CPZ10
Dale Enterprise	442208	09/11/1978	01/31/2009	413.9	922.02	CD5@PGD4	
Gathright Dam	443310	12/31/1983	02/28/2013	539.5	986.54	CD5@PGD4	
Hot Springs	444128	09/04/1970	08/31/2011	681.5	1097.41	CD5@PGD4	
Millgap 2 NNW	445595	09/01/1976	02/28/2013	737.9	1124.71	CD5@PGD4	
Staunton Water Treatment Plant	448062	12/31/1972	08/31/2007	51.5	989.96	CD5@PGD4	
Williamsburg 2 S	449159	07/01/1978	08/31/2011	499.9	1029.32	CD5@PGD4	
Galax Water Plant	443272	04/01/1972	02/28/2013	719.3	1005.84	CD6@PGD3	CPZ11
Trout Dale 3 SSE	448547	03/31/1974	02/28/2013	865.3	1077.98	CD6@PGD3	

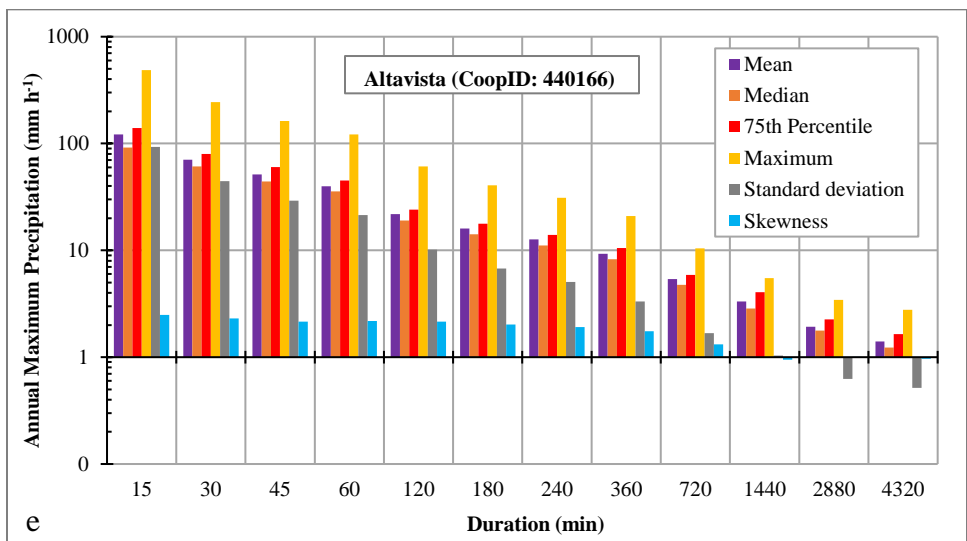
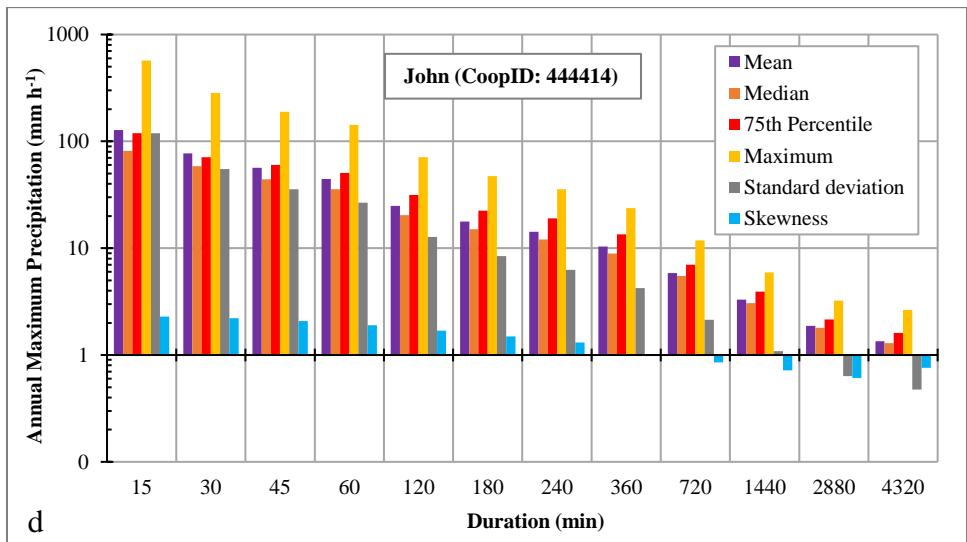
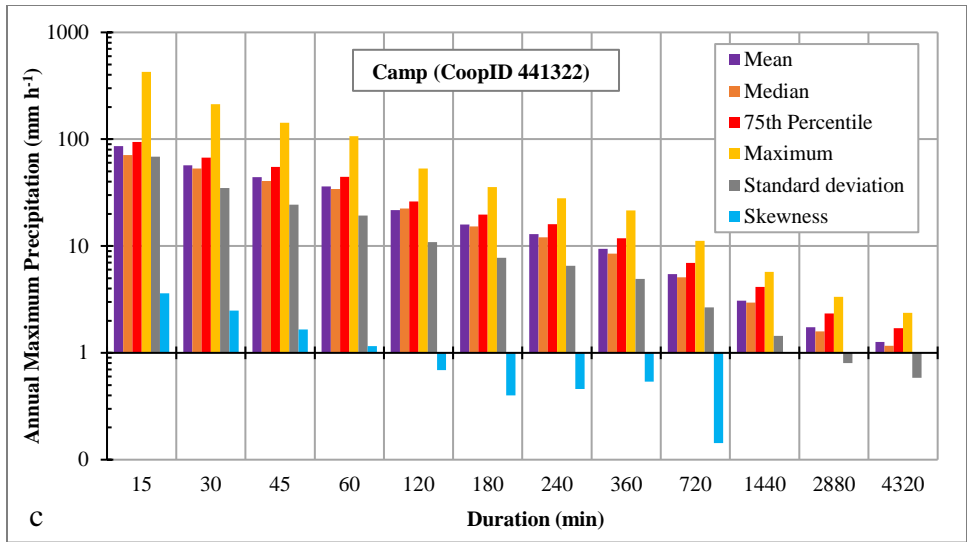
Table 7. Continuous

Pulaski	446955	04/01/1972	02/28/2013	563.9	949.20	CD6@PGD4	CPZ12
Hurley 4 S	444180	03/31/1973	12/31/2009	331.6	1135.39	CD6@PGD5	CPZ13
Wise 3 E	449215	12/31/1983	02/28/2013	776.9	1206.25	CD6@PGD5	

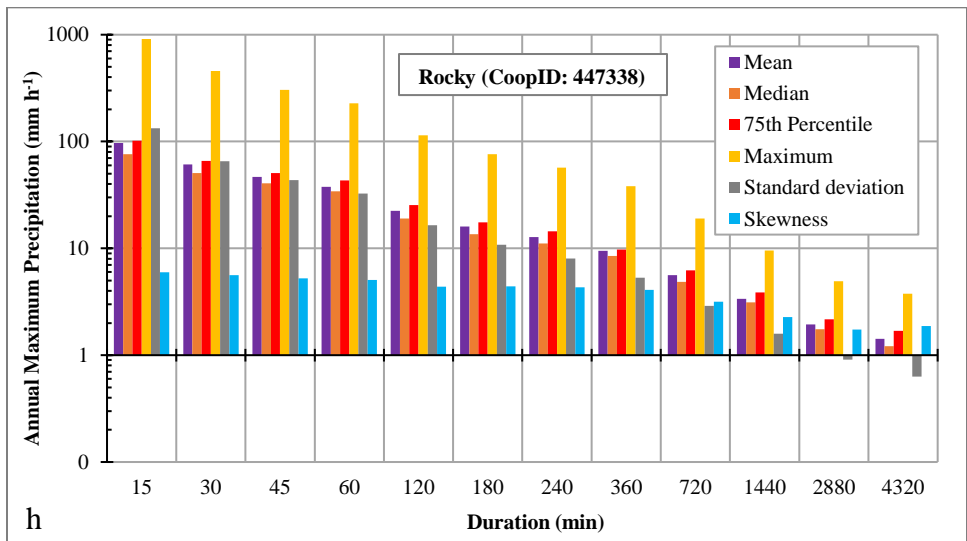
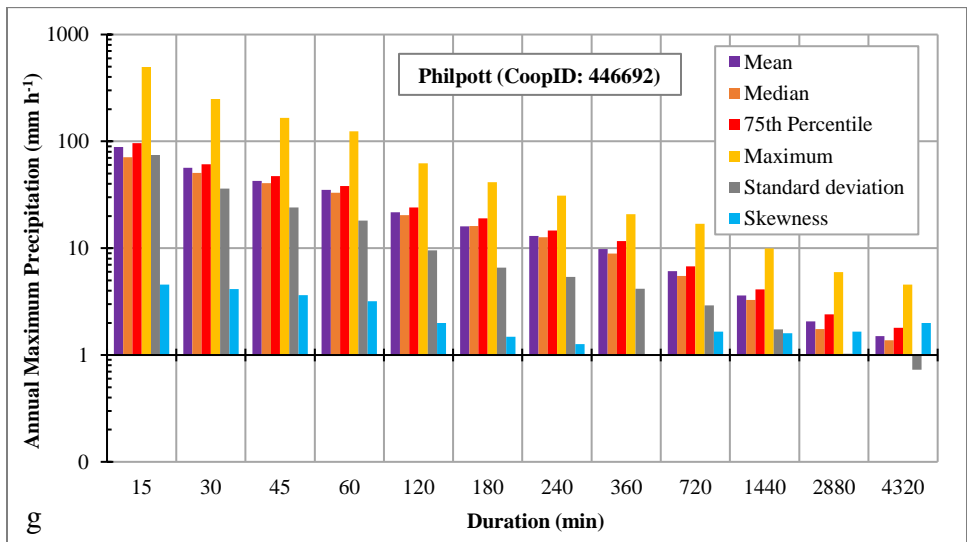
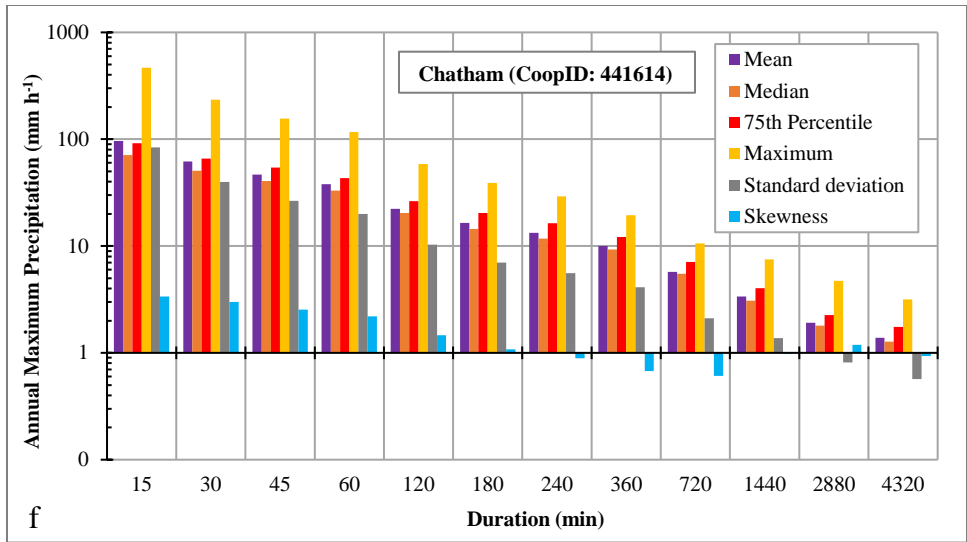
^[1] The black number is the average of the values from <https://www.ncei.noaa.gov/data/climate-normals-deprecated/access/clim20/va> and <https://www.ncdc.noaa.gov/cdo-web/datatools/normals> and when both present the mean annual precipitations, whereas, it is the value from one of the two websites whichever presents the mean annual precipitation. On the other hand, the red number is from der Leeden (1994).



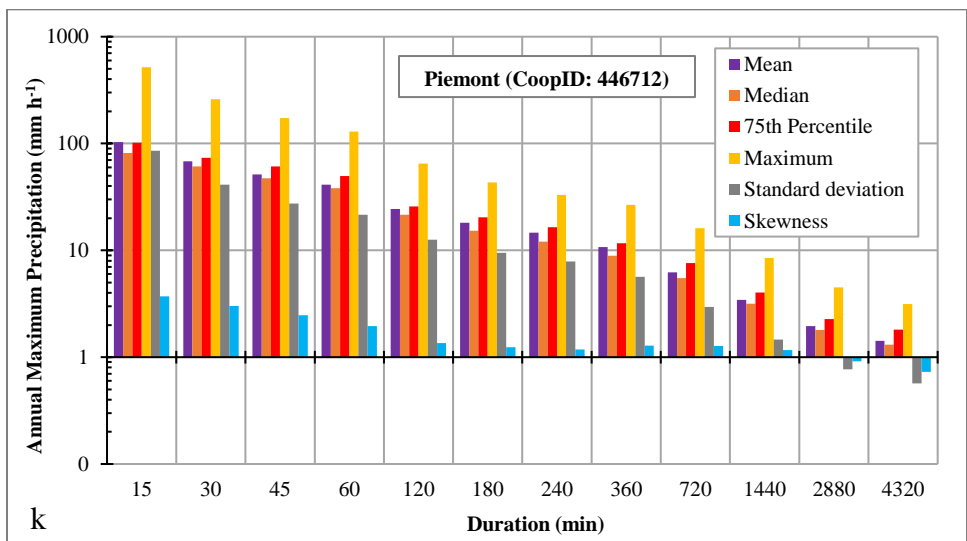
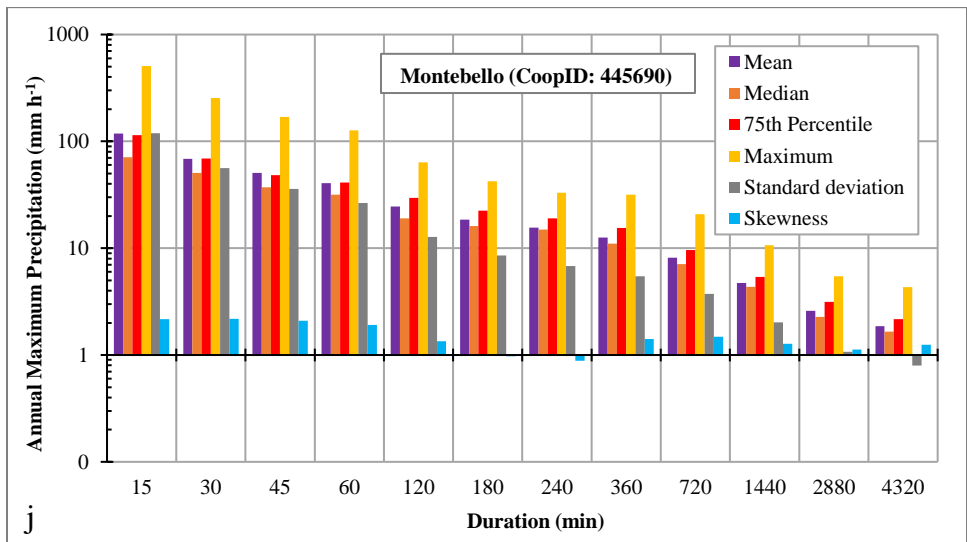
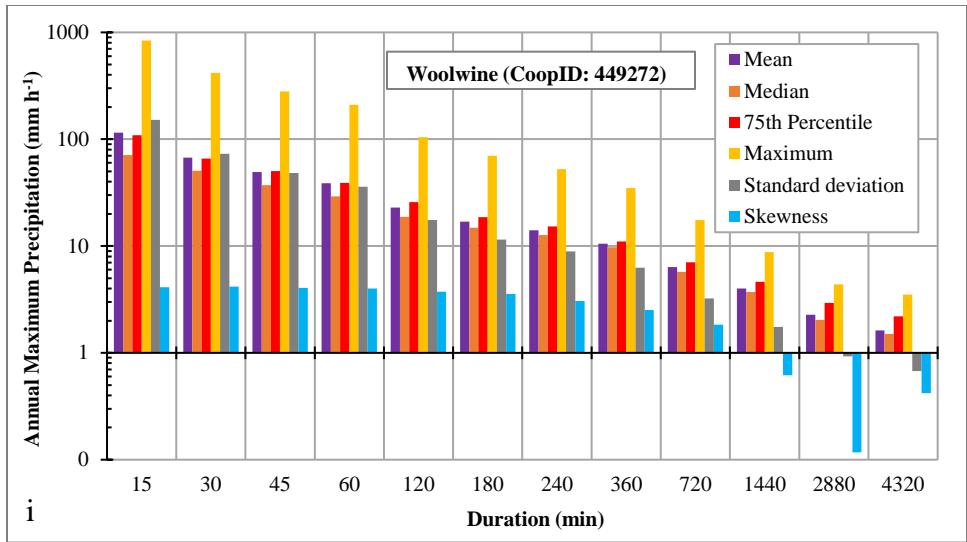
[Figure 11. The summary statistics of]]



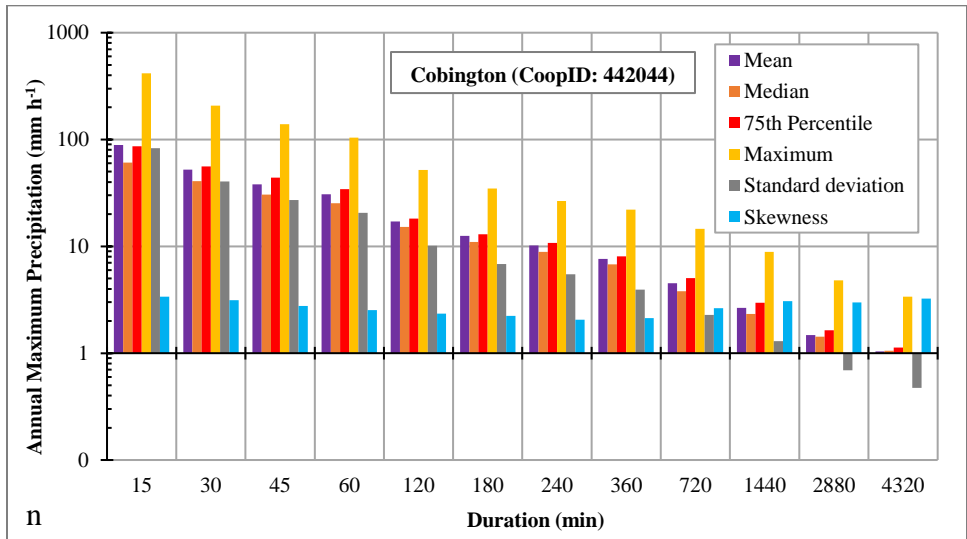
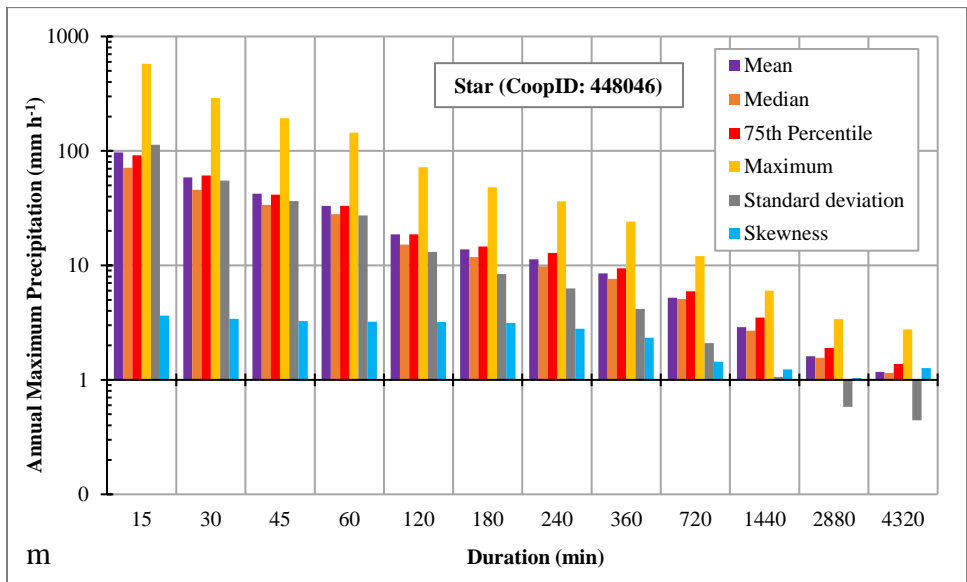
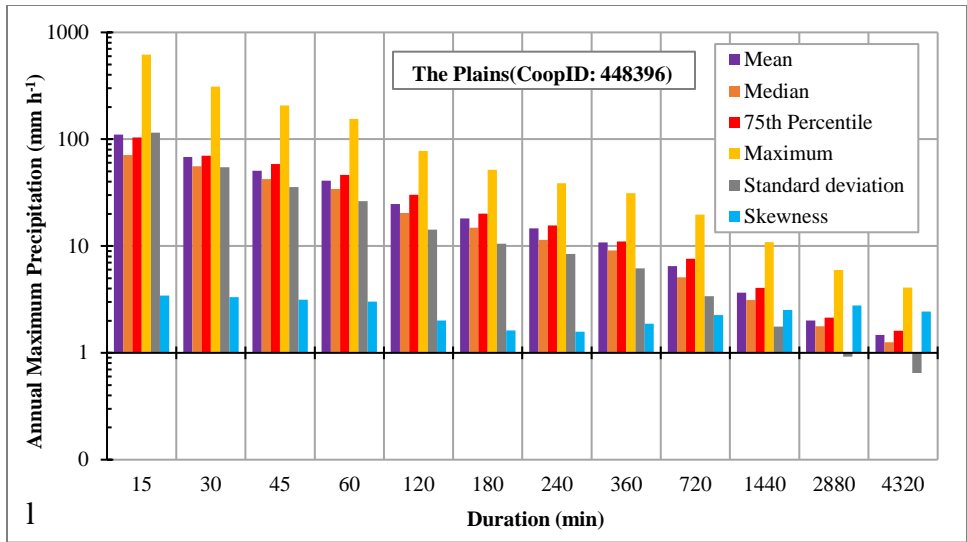
[Figure 11. The summary statistics of]



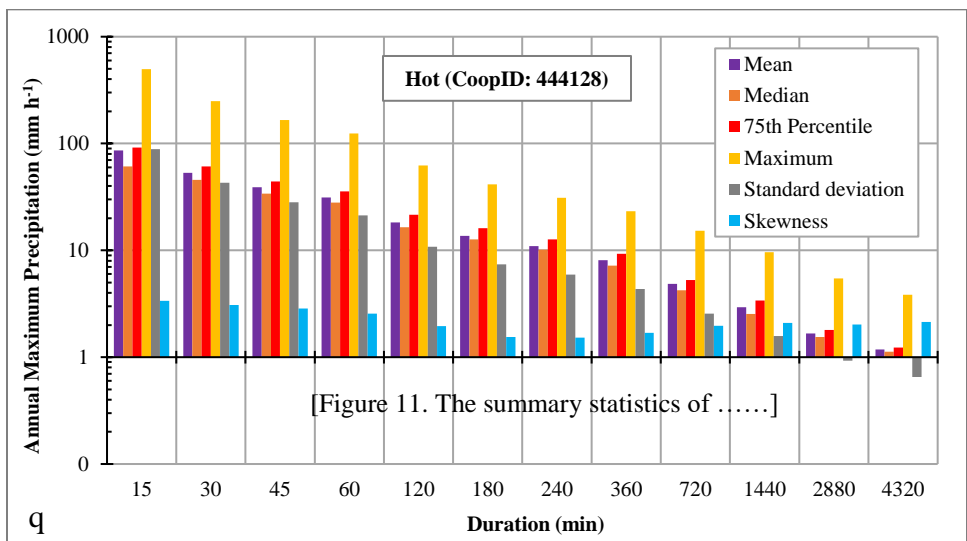
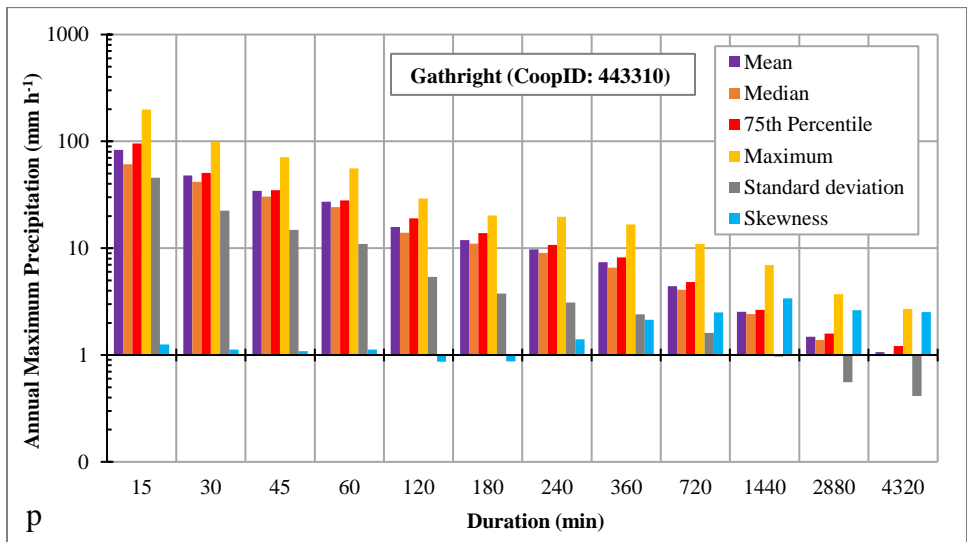
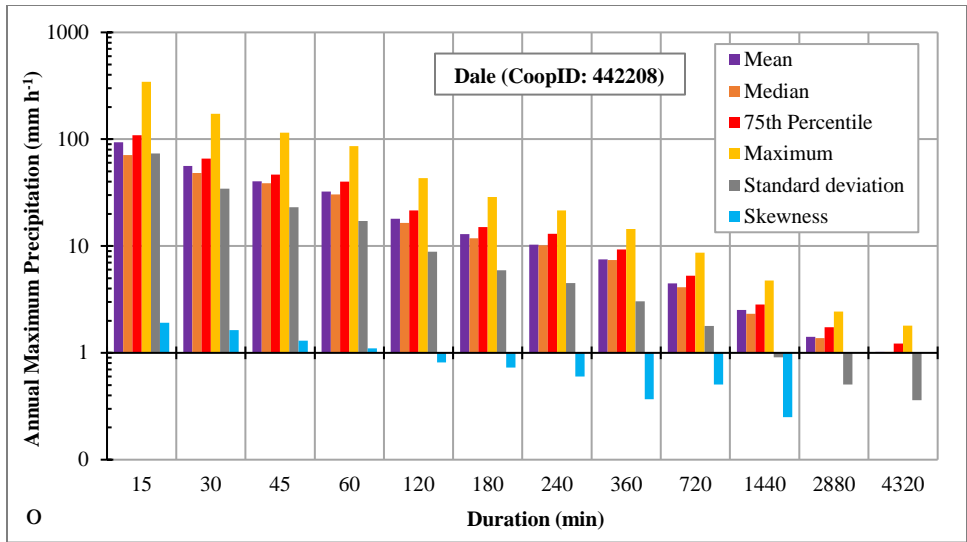
[Figure 11. The summary statistics of]



[Figure 11. The summary statistics of]

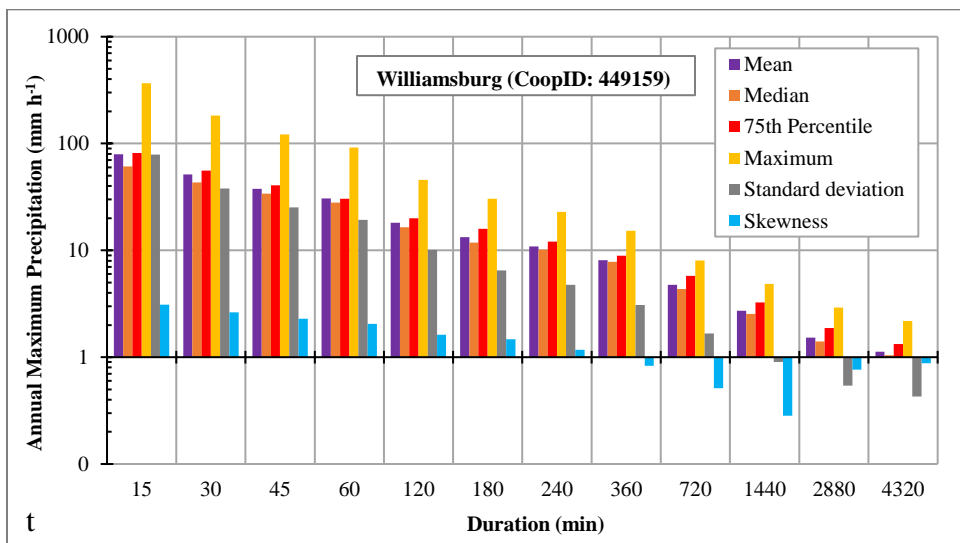
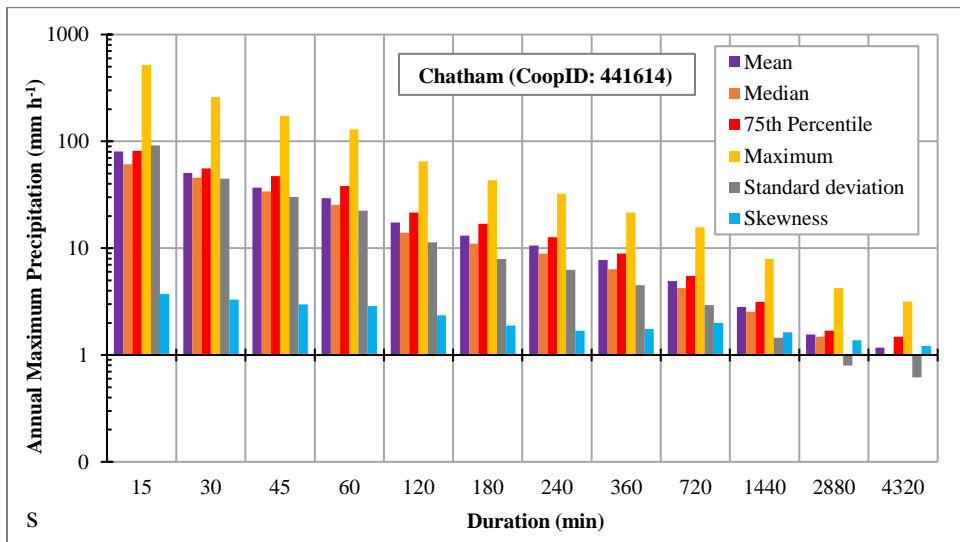
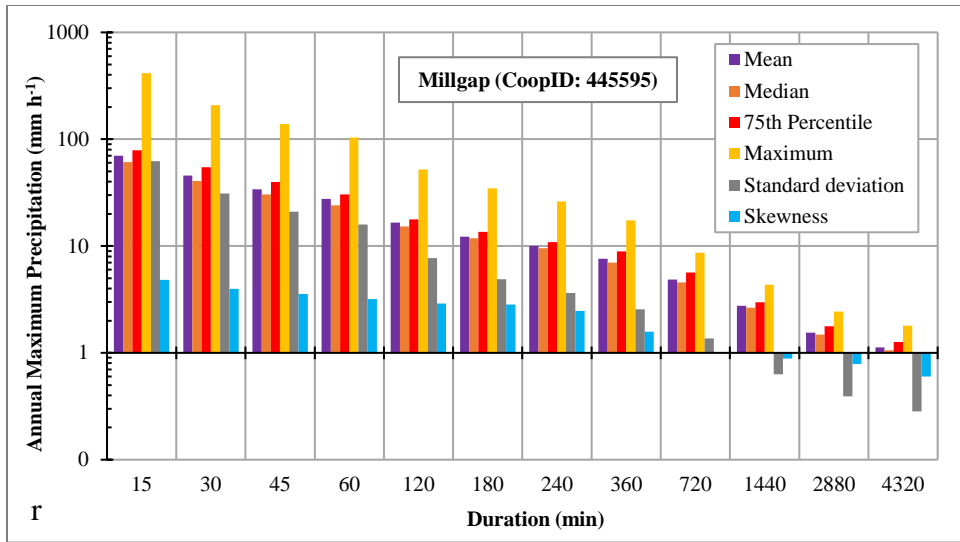


[Figure 11. The summary statistics of]

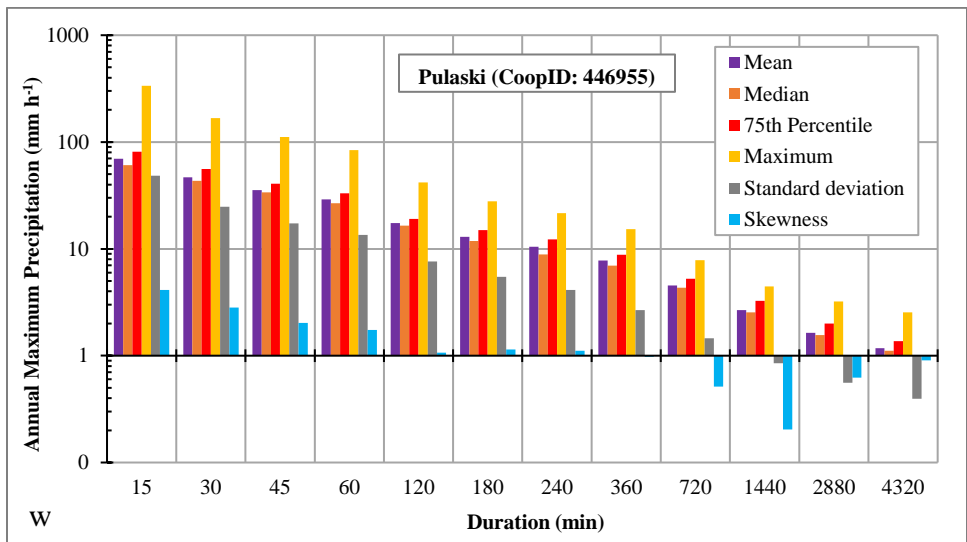
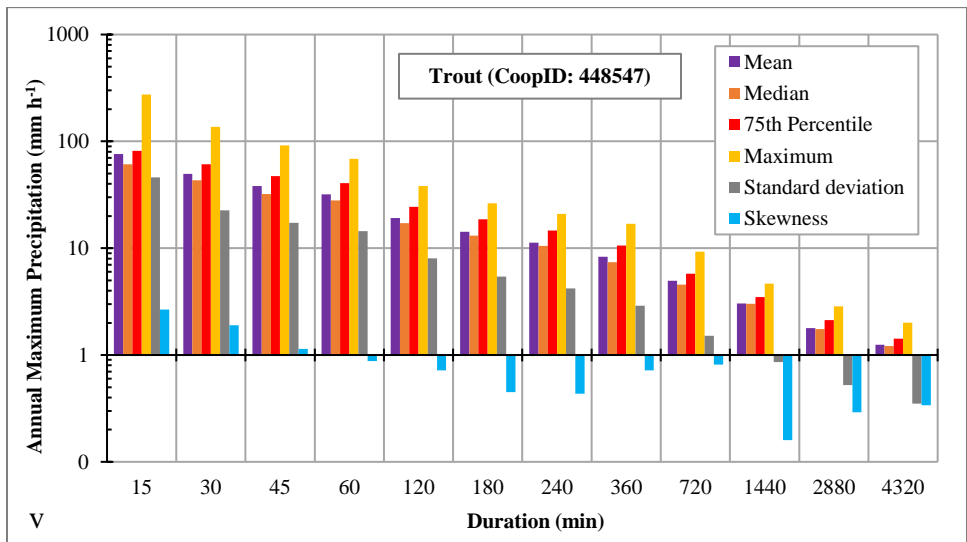
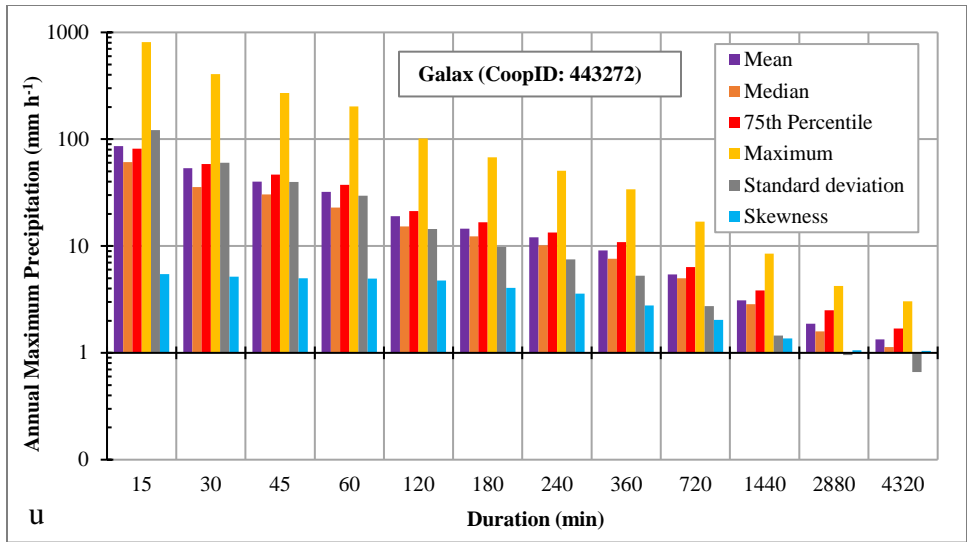


[Figure 11. The summary statistics of]

[Figure 11. The summary statistics of]



[Figure 11. The summary statistics of]



[Figure 11. The summary statistics of]

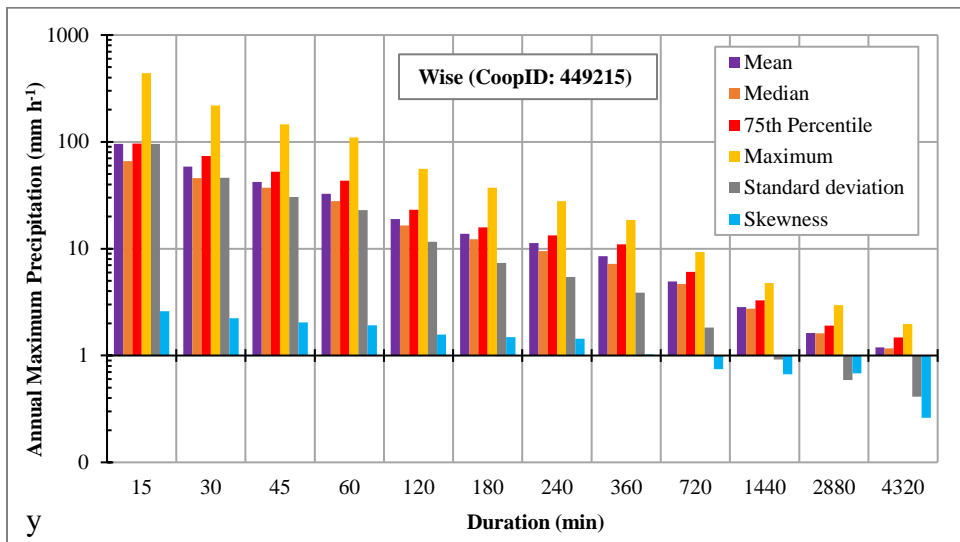
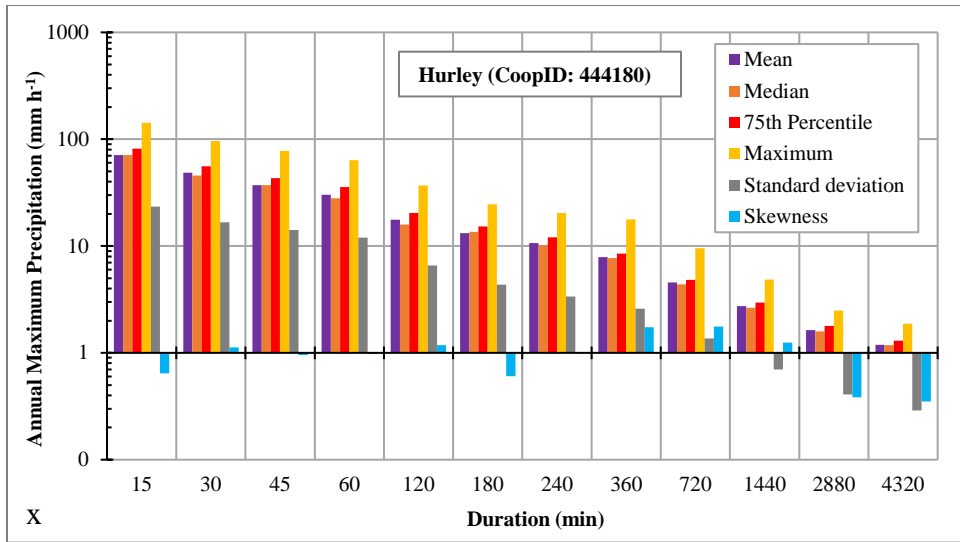
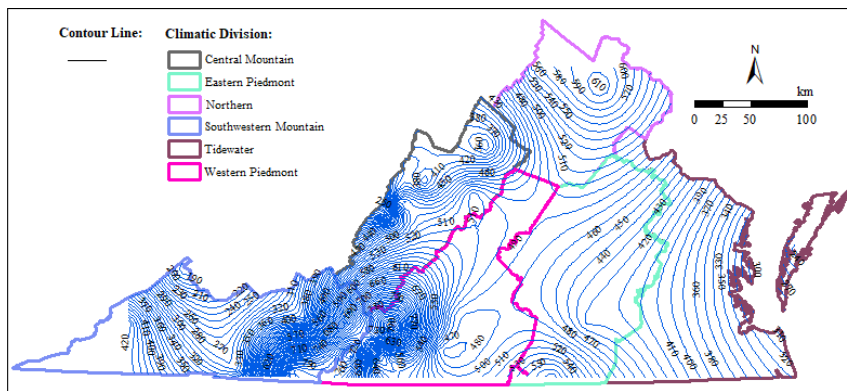


Figure 11. The summary statistics of the annual maximum durational precipitations by gauge.



(a)

[Figure 12. Contours of the: (a) maximum,]

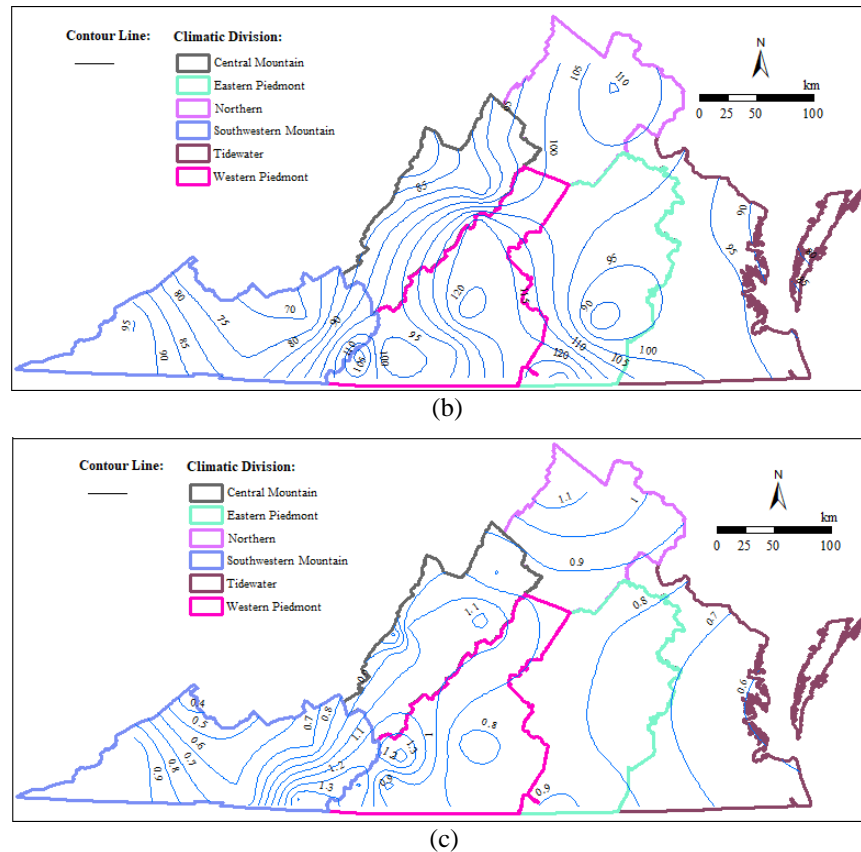


Figure 12. Contours of the: (a) maximum, (b) mean, and (c) coefficient of variation (C_v), of the historic annual maximum 15-min intensities. The maximum and mean are in mm h^{-1} , while the C_v is dimensionless.

However, not all the exhibited trends were significant at a significance level of $\alpha = 0.05$. Most of the significant trends occurred in two climatic divisions, namely Northern (CD4) and Central Mountain (CD5), specifically in the climatic-physiographic zones of CPZ07 (Northern-Piedmont), CPZ09 (Northern-Valley and Ridge), and CPZ10 (Central Mountain-Valley and Ridge) (Tables 2 and 7). Figure 13 shows the historic variations of annual maximum intensities for selected gauges and durations with a significant trend. The intensities in these zones had an annual decreasing rate of 0.01 mm h^{-1} for the duration of 72 h to 2.54 mm h^{-1} for the duration of 15 min. Overall, the decreasing rate for a shorter duration was larger than that for a longer duration. The few decreasing rates in the zones of CPZ04, CPZ05, CPZ06, and CPZ13 were also within this range (i.e., 0.01 to 2.54 mm h^{-1}), except for the decreasing rate at gauge 440166 in CPZ05 for the duration of 15 min, which was 4.40 mm h^{-1} . On the other hand, the only significant increasing rates occurred at gauge 449151 in CPZ01 were 0.02 to 0.3 mm h^{-1} for the durations of 12 and 48 h, respectively. Overall, the extreme rainfall intensities had been decreasing across the entire state of Virginia.

The above trend analysis results indicated that for a given duration, both the magnitude and interannual variation of annual maximum precipitation tended to decrease. This may imply that for a design storm of interest, the resulting peak discharge would be smaller, but the runoff volume would be larger, than those that are estimated using the rainfall intensity presented by a historic IDF curve that does not consider such trends. Consequently, the structures (e.g., culverts) that are controlled by a design peak discharge will likely be oversized, whereas, the structures (e.g., detention and retention ponds) that are controlled by a design runoff volume will probably

be undersized. Thus, although not all trends are significant at $\alpha = 0.05$, it is needed to develop next-generation probably-based IDF curves that consider the trends. Using such IDF curves to design and construct new structures and/or manage and operate existing structures will be crucial for engineering communities to guard against over- or under-committing resources.

Among the 300 time series at the 25 rain gauges, only seven time series at gauge 441322, 440166, 448046, and 443310 were found to be non-homogenous (Table 9). For gauge 441322, the non-homogenous time series had a duration of 72 h, whereas, for gauge 443310, the non-homogenous time series had a duration of 15 min. Gauge 440166 had three non-homogenous time series with durations of 15, 30, and 45 min, respectively, while gauge 448046 had two non-homogenous time series with durations of 12 and 24 h, respectively. Three non-homogenous time series, including the ones at gauge 441322, 440166 (45 min duration), and 448046 (12 h), were marginally significant because either Q or R was very close to its critical value. For some of the time series, the non-homogeneity was caused by the insignificant trend and/or temporal variation, for the others, however, the non-homogeneity might be attributed to the significant trend. Some significant trends could not switch the time series from being homogenous to non-homogenous (Table 8 versus Table 9). Through iterations, each of the seven non-homogenous time series was subdivided into two homogenous subsets (Table 10), which in turn were used to develop the IDF curves.

Table 8. Trends of the historic annual maximum precipitations at various durations with the p-values in bracket.^[1]

Rain Gauge ID	Mann-Kendall Statistics	Duration (min) ^[2]											
		15	30	45	60	120	180	240	360	720	1440	2880	4320
446475 (N = 39)	Step change year	None	None	none	None	none	none	none	none	none	none	none	none
	Sen's slope (mm h ⁻¹)	-0.68 (0.13)	0.00 (0.57)	-0.09 (0.51)	-0.12 (0.47)	-0.05 (0.66)	-0.05 (0.48)	-0.03 (0.61)	-0.02 (0.54)	0.01 (0.80)	0.02 (0.49)	0.01 (0.32)	0.01 (0.18)
449151 (N = 39)	Step change year	None	None	none	None	none	none	none	none	none	none	none	none
	Sen's slope (mm h ⁻¹)	0.00 (0.61)	-0.13 (0.56)	0.00 (1.00)	0.00 (0.82)	0.00 (0.95)	0.00 (0.79)	0.03 (0.66)	0.04 (0.38)	0.04 (0.07)	0.04 (0.05)	0.03 (0.04)	0.01 (0.08)
441322 (N = 36)	Step change year	None	None	none	None	none	none	none	none	none	none	none	none
	Sen's slope (mm h ⁻¹)	-1.02 (0.09)	-0.78 (0.03)	-0.62 (0.03)	-0.56 (0.02)	-0.27 (0.06)	-0.18 (0.08)	-0.13 (0.13)	-0.09 (0.15)	-0.06 (0.15)	-0.03 (0.27)	-0.01 (0.33)	-0.01 (0.24)
444414 (N = 38)	Step change year	None	None	none	None	none	none	none	none	none	none	none	none
	Sen's slope (mm h ⁻¹)	-1.13 (0.05)	-0.51 (0.15)	-0.31 (0.28)	-0.30 (0.16)	-0.18 (0.17)	-0.13 (0.17)	-0.08 (0.26)	-0.07 (0.16)	-0.02 (0.36)	-0.01 (0.37)	0.00 (0.69)	0.00 (0.89)
440166 (N = 30)	Step change year	None	None	none	None	none	none	none	none	none	none	none	none
	Sen's slope (mm h ⁻¹)	-4.40 (0.00)	-1.85 (0.00)	-1.13 (0.01)	-0.73 (0.01)	-0.25 (0.09)	-0.15 (0.19)	-0.10 (0.22)	-0.04 (0.51)	-0.05 (0.07)	-0.02 (0.22)	-0.01 (0.28)	-0.01 (0.26)
441614 (N = 42)	Step change year	None	None	none	None	none	none	none	none	none	none	none	none
	Sen's slope (mm h ⁻¹)	-0.34 (0.27)	-0.27 (0.24)	-0.27 (0.21)	-0.23 (0.15)	-0.15 (0.13)	-0.08 (0.22)	-0.06 (0.26)	-0.03 (0.55)	-0.04 (0.33)	-0.02 (0.39)	-0.01 (0.35)	-0.01 (0.40)
446692 (N = 39)	Step change year	None	None	None	None	none	none	none	none	none	none	none	none
	Sen's slope (mm h ⁻¹)	-0.75 (0.10)	-0.25 (0.27)	-0.18 (0.22)	-0.08 (0.49)	-0.08 (0.44)	-0.08 (0.28)	-0.05 (0.39)	-0.05 (0.32)	-0.04 (0.18)	-0.03 (0.13)	-0.02 (0.17)	-0.01 (0.24)
447338 (N = 42)	Step change year	None	None	None	None	none	none	none	none	none	none	none	none
	Sen's slope (mm h ⁻¹)	-0.78 (0.07)	-0.21 (0.41)	0.00 (0.93)	0.00 (0.90)	0.00 (0.99)	0.00 (0.97)	0.00 (0.85)	0.00 (0.86)	-0.01 (0.63)	0.00 (1.00)	0.00 (0.75)	0.00 (0.92)
449272 (N = 30)	Step change year	None	None	None	None	none	none	none	none	none	none	none	none
	Sen's slope (mm h ⁻¹)	-2.24 (0.05)	-1.13 (0.05)	-0.75 (0.05)	-0.51 (0.10)	-0.32 (0.08)	-0.15 (0.26)	-0.08 (0.49)	-0.03 (0.63)	0.00 (0.93)	0.03 (0.34)	0.02 (0.26)	0.01 (0.51)

Table 8. Continuous

445690	Step change year	None	None	None	None	none	none	none	none	none	none	none	none
(N = 36)	Sen's slope (mm h ⁻¹)	0.00 (0.56)	-0.27 (0.40)	-0.14 (0.56)	-0.20 (0.42)	-0.12 (0.31)	-0.17 (0.17)	-0.15 (0.16)	-0.12 (0.09)	-0.05 (0.28)	-0.02 (0.49)	-0.01 (0.32)	-0.01 (0.32)
446712	Step change year	None	None	None	None	none	none	none	none	none	none	none	none
(N = 39)	Sen's slope (mm h ⁻¹)	-1.13 (0.01)	-0.85 (0.01)	-0.61 (0.01)	-0.51 (0.01)	-0.33 (0.00)	-0.24 (0.00)	-0.16 (0.01)	-0.09 (0.04)	-0.07 (0.03)	-0.04 (0.03)	-0.02 (0.02)	-0.02 (0.02)
448396	Step change year	None	None	None	None	none	none	none	none	none	none	none	None
(N = 34)	Sen's slope (mm h ⁻¹)	-0.83 (0.22)	-0.55 (0.14)	-0.47 (0.17)	-0.39 (0.16)	-0.38 (0.10)	-0.27 (0.09)	-0.22 (0.07)	-0.14 (0.03)	-0.08 (0.06)	-0.03 (0.23)	-0.02 (0.04)	-0.02 (0.02)
448046	Step change year	None	None	None	None	none	none	none	none	none	none	none	none
(N = 40)	Sen's slope (mm h ⁻¹)	-1.07 (0.01)	-0.53 (0.08)	-0.33 (0.13)	-0.23 (0.08)	-0.18 (0.02)	-0.13 (0.02)	-0.13 (0.01)	-0.10 (0.01)	-0.07 (0.00)	-0.03 (0.02)	-0.02 (0.02)	-0.01 (0.04)
442044	Step change year	none	None	None	None	none	none	none	none	none	none	none	none
(N = 39)	Sen's slope (mm h ⁻¹)	-0.73 (0.04)	-0.49 (0.05)	-0.42 (0.05)	-0.33 (0.04)	-0.17 (0.03)	-0.11 (0.05)	-0.08 (0.13)	-0.06 (0.09)	-0.03 (0.06)	-0.02 (0.06)	-0.01 (0.06)	-0.01 (0.19)
442208	Step change year	none	None	None	None	none	none	none	none	none	none	none	none
(N = 30)	Sen's slope (mm h ⁻¹)	-2.54 (0.01)	-1.15 (0.02)	-0.75 (0.03)	-0.54 (0.06)	-0.20 (0.17)	-0.11 (0.32)	-0.04 (0.63)	0.00 (0.94)	0.02 (0.60)	0.00 (0.77)	0.01 (0.58)	0.01 (0.33)
443310	Step change year	none	none	None	None	None	none	none	none	none	none	none	none
(N = 30)	Sen's slope (mm h ⁻¹)	-2.26 (0.00)	-0.71 (0.02)	-0.35 (0.07)	-0.15 (0.13)	-0.15 (0.14)	-0.14 (0.08)	-0.08 (0.09)	-0.04 (0.14)	-0.02 (0.48)	0.00 (0.93)	0.00 (0.69)	0.00 (0.73)
444128	Step change year	none	none	None	None	None	none	none	none	none	none	none	none
(N = 36)	Sen's slope (mm h ⁻¹)	-0.56 (0.16)	-0.16 (0.48)	-0.16 (0.48)	-0.14 (0.51)	-0.08 (0.49)	-0.08 (0.27)	-0.05 (0.19)	-0.04 (0.35)	-0.02 (0.27)	-0.01 (0.35)	0.00 (0.53)	0.00 (0.85)
445595	Step change year	none	none	none	None	None	none	none	none	none	none	none	none
(N = 38)	Sen's slope (mm h ⁻¹)	0.00 (0.69)	-0.22 (0.40)	-0.23 (0.26)	-0.15 (0.35)	-0.07 (0.38)	-0.05 (0.30)	0.00 (0.70)	-0.03 (0.33)	-0.02 (0.26)	-0.02 (0.08)	-0.01 (0.08)	0.00 (0.32)
448062	Step change year	none	none	none	None	None	none	none	none	none	none	none	none
(N = 33)	Sen's slope (mm h ⁻¹)	0.00 (0.74)	0.00 (0.93)	0.00 (0.96)	0.00 (0.95)	0.00 (0.99)	0.00 (0.82)	0.01 (0.76)	0.05 (0.31)	0.03 (0.28)	0.02 (0.42)	0.01 (0.41)	0.00 (0.60)
449159	Step change year	none	none	none	None	None	none	none	none	none	none	none	none
(N = 30)	Sen's slope (mm h ⁻¹)	-0.44 (0.34)	-0.36 (0.30)	-0.24 (0.24)	-0.18 (0.30)	-0.13 (0.27)	-0.10 (0.30)	-0.08 (0.22)	-0.05 (0.29)	-0.02 (0.38)	-0.02 (0.33)	-0.01 (0.52)	0.00 (0.64)
443272	Step change year	none	none	none	None	None	none	none	none	none	none	none	none
(N = 42)	Sen's slope (mm h ⁻¹)	0.00 (0.38)	0.24 (0.22)	0.09 (0.56)	0.09 (0.43)	0.00 (0.70)	0.00 (0.66)	0.02 (0.63)	0.00 (0.69)	-0.01 (0.81)	0.00 (0.95)	0.01 (0.52)	0.00 (0.54)
448547	Step change year	none	none	none	None	None	none	none	none	none	none	none	none
(N = 40)	Sen's slope (mm h ⁻¹)	-0.52 (0.16)	-0.28 (0.12)	-0.19 (0.27)	-0.17 (0.27)	-0.13 (0.25)	-0.09 (0.25)	-0.07 (0.23)	-0.02 (0.43)	-0.02 (0.39)	0.00 (0.82)	0.00 (1.00)	0.00 (0.92)
446955	Step change year	none	none	none	None	None	none	none	none	none	none	none	none
(N = 42)	Sen's slope (mm h ⁻¹)	0.00 (0.82)	0.00 (0.62)	-0.09 (0.56)	-0.08 (0.51)	-0.06 (0.44)	0.00 (0.50)	0.00 (0.44)	0.00 (0.79)	-0.01 (0.63)	-0.01 (0.64)	-0.01 (0.35)	-0.01 (0.35)
444180	Step change year	none	none	none	None	None	none	none	none	none	none	none	none
(N = 34)	Sen's slope (mm h ⁻¹)	-0.62 (0.10)	0.00 (0.65)	0.00 (0.54)	-0.14 (0.43)	-0.08 (0.41)	-0.03 (0.54)	-0.01 (0.48)	-0.02 (0.48)	0.00 (0.71)	0.01 (0.21)	0.00 (0.80)	0.00 (0.85)
449215	Step change year	none	none	none	None	None	none	none	none	none	none	none	none
(N = 28)	Sen's slope (mm h ⁻¹)	-2.03 (0.05)	-0.91 (0.13)	-0.78 (0.15)	-0.58 (0.11)	-0.28 (0.24)	-0.12 (0.26)	-0.07 (0.44)	0.00 (0.89)	0.00 (0.87)	0.00 (1.00)	0.00 (0.74)	0.01 (0.54)

^[1] N: sample size. The details of Mann-Kendall test and its statistics (e.g., Sen's slope) can be found from Wang *et al.* (2013).

^[2] The number in bracket is the p-value. The Sen's slopes highlighted in bold red are significant at a significance level of $\alpha = 0.05$.

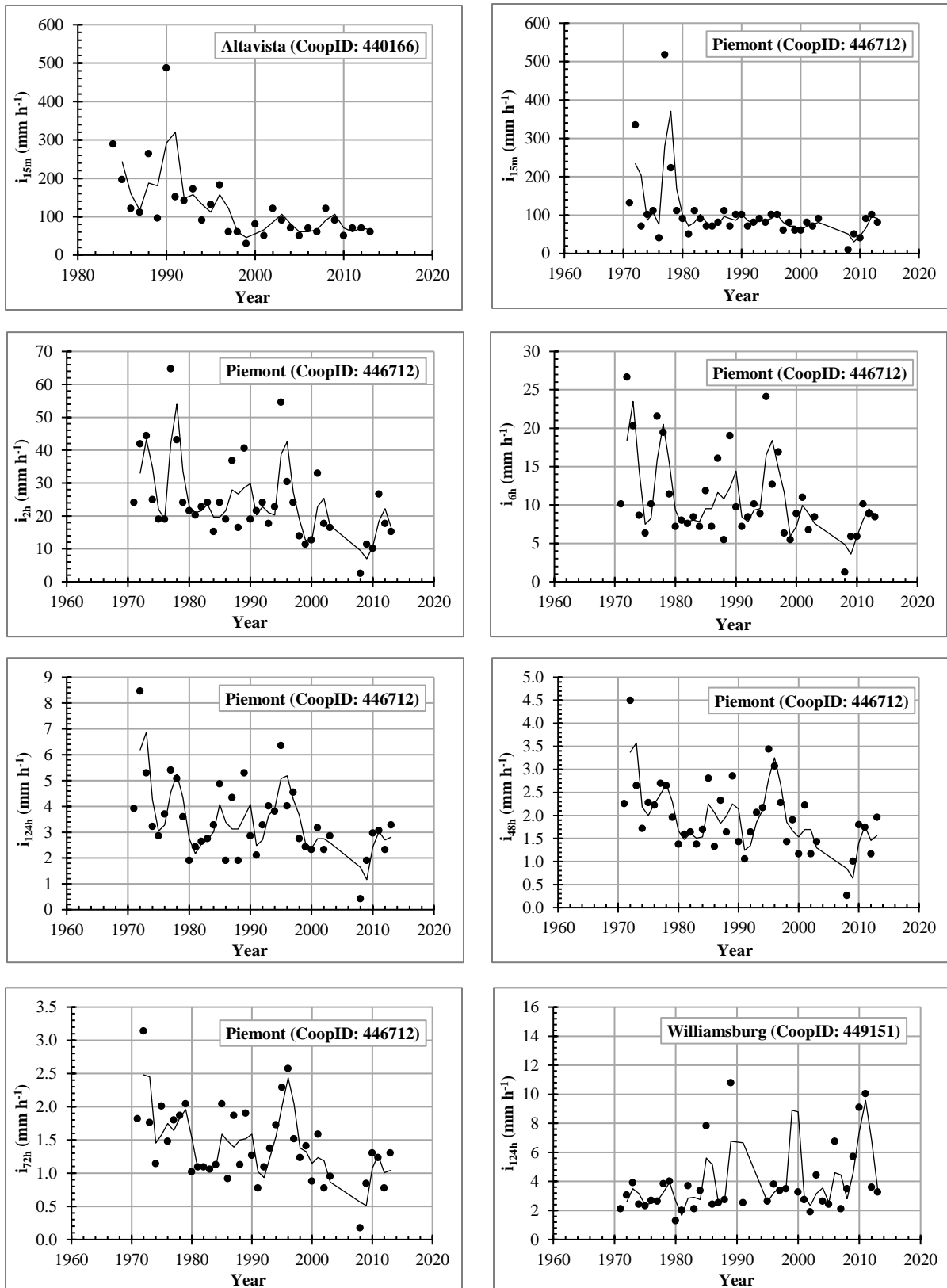


Figure 13. The typical significant trends of historic annual maximum durational precipitations as illustrated by those at three selected gauges (Cooperative Identification or CoopID 440166, 446712, and 449151). i signifies the intensity for the duration represented by the subscript.

Table 9. Homogeneity tests of the historic annual maximum precipitations at various durations.^[1]

Rain Gauge ID	Homogeneity Test Statistics	Duration (min) ^[2]												Critical Value at $\alpha = 0.05$ ^[3]
		15	30	45	60	120	180	240	360	720	1440	2880	4320	
446475 (N = 39)	Q/ \sqrt{N}	0.96	0.55	0.69	0.72	0.61	0.56	0.48	0.47	0.67	0.91	0.96	0.95	1.258
	R/ \sqrt{N}	0.98	0.91	1.06	1.09	0.96	0.83	0.80	0.93	1.06	1.12	1.20	1.23	1.527
449151 (N = 39)	Q/ \sqrt{N}	1.17	0.69	0.64	0.62	0.47	0.43	0.65	0.76	0.94	1.01	1.06	1.05	1.258
	R/ \sqrt{N}	1.36	0.96	1.01	0.98	0.72	0.76	0.74	0.83	1.02	1.08	1.13	1.14	1.527
441322 (N = 36)	Q/ \sqrt{N}	0.98	1.07	1.14	1.17	1.18	1.20	1.16	1.14	1.19	1.25	1.27	1.29	1.252
	R/ \sqrt{N}	1.09	1.25	1.35	1.39	1.36	1.36	1.36	1.35	1.39	1.47	1.51	1.53	1.518
444414 (N = 38)	Q/ \sqrt{N}	1.51	1.38	1.24	1.15	1.11	1.02	0.86	0.92	0.86	0.81	0.60	0.57	1.256
	R/ \sqrt{N}	1.51	1.38	1.24	1.18	1.18	1.13	0.96	0.99	0.95	0.94	1.01	0.97	1.524
440166 (N = 30)	Q/ \sqrt{N}	1.68	1.66	1.52	1.42	1.21	1.15	1.10	1.08	1.46	1.23	1.09	1.09	1.240
	R/ \sqrt{N}	1.68	1.66	1.52	1.42	1.25	1.20	1.15	1.12	1.47	1.43	1.24	1.30	1.500
441614 (N = 42)	Q/ \sqrt{N}	0.88	0.78	0.76	0.78	0.87	0.72	0.72	0.66	0.97	0.83	0.72	0.74	1.262
	R/ \sqrt{N}	0.91	0.79	0.83	0.88	0.92	0.74	0.72	0.69	0.97	0.89	0.88	0.98	1.534
446692 (N = 39)	Q/ \sqrt{N}	0.77	0.79	0.84	0.77	0.88	1.00	1.00	1.07	1.17	1.13	1.12	1.12	1.258
	R/ \sqrt{N}	1.08	1.14	1.21	1.25	1.08	1.20	1.19	1.19	1.21	1.20	1.19	1.17	1.527
447338 (N = 42)	Q/ \sqrt{N}	0.68	0.66	0.60	0.60	0.71	0.71	0.72	0.71	0.77	0.74	0.64	0.59	1.262
	R/ \sqrt{N}	0.99	1.03	1.03	1.07	1.32	1.36	1.42	1.39	1.29	1.25	1.08	1.05	1.534
449272 (N = 30)	Q/ \sqrt{N}	1.25	1.17	1.13	1.11	1.04	0.93	0.83	0.66	0.53	0.56	0.79	0.58	1.240
	R/ \sqrt{N}	1.25	1.17	1.13	1.11	1.07	0.96	0.86	0.76	0.74	0.89	1.00	1.02	1.500
445690 (N = 36)	Q/ \sqrt{N}	0.97	0.96	0.95	1.02	1.00	0.96	0.94	0.93	0.77	0.80	0.74	0.69	1.252
	R/ \sqrt{N}	1.78	1.79	1.79	1.77	1.48	1.20	1.09	0.94	0.86	0.90	0.81	0.79	1.518
446712 (N = 39)	Q/ \sqrt{N}	1.35	1.42	1.40	1.46	1.55	1.53	1.45	1.32	1.29	1.19	1.17	1.21	1.258
	R/ \sqrt{N}	1.35	1.20	1.18	1.21	1.33	1.34	1.28	1.19	1.27	1.24	1.27	1.29	1.527
448396 (N = 34)	Q/ \sqrt{N}	1.02	0.96	0.95	1.00	1.10	1.18	1.20	1.25	1.07	0.88	1.01	1.08	1.248
	R/ \sqrt{N}	1.24	1.24	1.16	1.14	1.21	1.31	1.31	1.33	1.15	0.97	1.05	1.15	1.512
448046 (N = 40)	Q/ \sqrt{N}	1.20	1.14	1.10	1.07	1.19	1.22	1.38	1.46	1.66	1.57	1.41	1.32	1.260
	R/ \sqrt{N}	1.40	1.35	1.34	1.31	1.33	1.33	1.45	1.46	1.66	1.57	1.41	1.32	1.530
442044 (N = 39)	Q/ \sqrt{N}	1.11	1.03	1.03	0.97	1.04	1.07	0.99	1.06	1.09	1.07	1.03	0.95	1.258
	R/ \sqrt{N}	1.27	1.24	1.30	1.24	1.26	1.27	1.23	1.28	1.26	1.27	1.19	1.15	1.527
442208 (N = 30)	Q/ \sqrt{N}	1.45	1.35	1.29	1.22	1.19	1.09	0.95	0.64	0.76	0.59	0.55	0.75	1.240
	R/ \sqrt{N}	1.45	1.38	1.34	1.29	1.30	1.36	1.35	1.27	1.11	0.91	0.84	0.99	1.500
443310 (N = 30)	Q/ \sqrt{N}	1.77	1.21	0.99	0.82	0.77	0.89	0.88	0.86	0.78	0.80	0.64	0.62	1.240
	R/ \sqrt{N}	1.77	1.21	0.99	0.83	0.77	0.89	0.88	0.86	0.87	0.88	0.91	0.90	1.500
444128 (N = 36)	Q/ \sqrt{N}	0.48	0.47	0.45	0.56	0.68	0.72	0.77	0.76	0.68	0.69	0.58	0.48	1.252
	R/ \sqrt{N}	0.89	0.86	0.89	1.04	1.07	1.02	0.98	0.91	0.92	0.91	0.88	0.80	1.518
445595 (N = 38)	Q/ \sqrt{N}	0.72	0.74	0.79	0.82	0.90	0.87	0.77	0.81	0.80	0.98	1.14	0.92	1.256
	R/ \sqrt{N}	0.90	0.89	0.92	0.92	1.01	0.97	0.88	0.95	0.89	0.98	1.14	1.15	1.524
448062 (N = 33)	Q/ \sqrt{N}	0.63	0.60	0.63	0.66	0.70	0.73	0.69	0.60	0.85	0.73	0.80	0.87	1.246
	R/ \sqrt{N}	0.87	0.92	0.98	1.02	1.16	1.21	1.20	1.13	1.35	1.22	1.31	1.37	1.509

Table 9. Continuous

449159	Q/ \sqrt{N}	1.01	0.98	0.95	0.81	0.71	0.70	0.75	0.58	0.57	0.71	0.47	0.41	1.240
(N = 30)	R/ \sqrt{N}	1.29	1.26	1.21	1.15	1.11	1.08	1.16	1.03	0.93	1.11	0.82	0.73	1.500
443272	Q/ \sqrt{N}	1.01	0.98	0.95	0.81	0.71	0.70	0.75	0.58	0.57	0.71	0.47	0.41	1.262
(N = 42)	R/ \sqrt{N}	1.29	1.26	1.21	1.15	1.11	1.08	1.16	1.03	0.93	1.11	0.82	0.73	1.534
448547	Q/ \sqrt{N}	1.10	1.15	1.00	0.98	0.91	0.88	0.86	0.73	0.73	0.71	0.78	0.59	1.260
(N = 40)	R/ \sqrt{N}	1.36	1.44	1.37	1.39	1.27	1.21	1.10	1.18	1.19	1.24	1.30	1.16	1.530
446955	Q/ \sqrt{N}	0.56	0.68	0.67	0.60	0.64	1.01	1.11	1.24	1.33	1.28	1.10	0.92	1.262
(N = 42)	R/ \sqrt{N}	0.88	0.97	0.92	0.92	0.84	1.13	1.20	1.32	1.51	1.47	1.52	1.62	1.534
444180	Q/ \sqrt{N}	1.19	1.01	0.85	0.80	0.73	0.91	0.73	0.55	0.55	0.80	0.66	0.53	1.248
(N = 34)	R/ \sqrt{N}	1.19	1.28	1.20	1.20	1.22	1.28	1.19	1.06	0.92	1.11	1.25	0.94	1.512
449215	Q/ \sqrt{N}	1.12	1.00	1.00	0.99	0.97	0.82	0.63	0.49	0.50	0.51	0.57	0.69	1.236
(N = 28)	R/ \sqrt{N}	1.15	1.10	1.10	1.07	1.04	0.86	0.68	0.66	0.84	0.93	1.07	1.16	1.486

^[1] N: sample size; Q: homogeneity test statistics by Eq. (17); and R: homogeneity test statistics by Eq. (18).

^[2] The red statistics is larger than the responding critical value listed in the last column of the table. The time series with the bold red statistics are non-homogenous at a significance level of $\alpha = 0.05$.

^[3] Linearly interpolated from Table 6,

Table 10. The homogenous subsets of the seven non-homogenous time series.^[1]

Rain Gauge ID	Duration	Time Series Subset	Record Year	Sample Size N	Homogeneity Test Statistics		Critical Value at $\alpha = 0.05$	
					Q/ \sqrt{N}	R/ \sqrt{N}	Q/ \sqrt{N}	R/ \sqrt{N}
441322	72 h	Time Series	1974 to 2014	36	1.29	1.53	1.252	1.518
		Subset 1	1974 to 1983	10	0.64	1.14	1.140	1.280
		Subset 2	1984 to 2014	26	1.44	1.45	1.232	1.472
440166	15 min	Time Series	1984 to 2013	30	1.68	1.68	1.240	1.500
		Subset 1	1984 to 1999	16	0.97	0.97	1.188	1.360
		Subset 2	2000 to 2013	14	0.58	0.81	1.172	1.340
	30 min	Time Series	1984 to 2013	30	1.66	1.66	1.240	1.500
		Subset 1	1984 to 1999	16	0.86	0.86	1.188	1.360
		Subset 2	2000 to 2013	14	0.76	0.81	1.172	1.340
45 min	Time Series	1984 to 2013	30	1.52	1.52	1.240	1.500	
	Subset 1	1984 to 1999	16	0.44	0.76	1.188	1.360	
	Subset 2	2000 to 2013	14	0.72	0.94	1.172	1.340	
448046	12 h	Time Series	1972 to 2011	40	1.32	1.82	1.260	1.530
		Subset 1	1972 to 1999	18	1.58	1.33	1.236	1.486
		Subset 2	2000 to 2011	12	0.92	1.11	1.156	1.310
	24 h	Time Series	1972 to 2011	40	1.27	1.75	1.260	1.530
		Subset 1	1972 to 1999	18	1.52	1.35	1.236	1.486
		Subset 2	2000 to 2011	12	0.87	1.16	1.156	1.310
443310	15 min	Time Series	1984 to 2013	30	1.77	1.77	1.240	1.500
		Subset 1	1984 to 1999	16	1.02	1.02	1.188	1.370
		Subset 2	2000 to 2013	14	0.66	1.14	1.240	1.500

^[1] Q: homogeneity test statistics by Eq. (17); and R: homogeneity test statistics by Eq. (18). The critical values are linearly interpolated from Table 6. The red statistics is larger than the responding critical value listed in the last column of the table. The time series with the bold red statistics are non-homogenous at a significance level of $\alpha = 0.05$.

3.2 The Gauge-Level Best Distributions and Historic IDF Curves

Based on the K-S tests and visualization plots, the best distributions (Table 11) for the rain gauges with a record period of more than three years were determined. For each of the seven gauges with a record period of three years or fewer, including gauge 440778, 442269, 442663, 442941, 443200, 445142, and 447164, its best distribution was assumed to be same as that of the geographically closed gauge in a same climatic-physiographic zone (Table 2). Herein, a same best distribution was assumed for gauge 440778 and 444414, 442269 and 444410, 442663 and 448149, 442941 and 448149, 443200 and 447164, 445142 and 442208, and 447164 and 442729. Table 11 lists the best distributions for the 57 rain gauges.

The K-S test results (see Appendix I) indicated that the time series at most of the rain gauges followed Gumbel and Weibull distributions. The time series at ten gauges, including gauge 440561, 440766, 441929, 442729, 443229, 444246, 448022, 448129, 448172, and 449060, followed all three distributions. For a given rain gauge, the time series of a duration followed either Gumbel and Weibull distributions only or all three distributions. For each of the distributions that were not significant at $\alpha = 0.05$, the summation of the values for D_n (Eq. 12) of the twelve durations was computed. The best distribution of this rain gauge was chosen as the one with a smallest value of the summation. As expected, the best distributions based on the K-S test results were consistent with those based on the visualization plots. Figure 14 shows the visualization plots for selected two rain gauges and eight durations.

The historic IDF curves for each of the gauges were created using its best distribution and are shown in Figure 15 and tabulated in Appendix II.

Table 11. The best distributions for the 57 rain gauges.^[1]

Rain Gauge ID	Best Distribution	Rain Gauge ID	Best Distribution	Rain Gauge ID	Best Distribution	Rain Gauge ID	Best Distribution
446475	Gumbel	446692	Gumbel	443229	Gumbel	444246	Gumbel
448800	Weibull	447025	Weibull	448046	Gumbel/Gumbel ^[2]	448547	Weibull
449151	Gumbel	447338	Gumbel	448149	Weibull	449169	Gumbel
448129	Weibull	449272	Gumbel	442044	Gumbel	440766	Gumbel
440778	Gumbel	440561	Gumbel	442208	Weibull	446955	Weibull
440993	Gumbel	445690	Weibull	443310	Weibull/Weibull ^[2]	448022	Gumbel
441322 ^[2]	Weibull/Gumbel	442159	Gumbel	444128	Gumbel	449060	Gumbel
441929	Gumbel	442729	Weibull	445142	Weibull	449301	Weibull
442941	Weibull	446712	Gumbel	445423	Gumbel	442269	Weibull
443192	Weibull	447130	Weibull	445595	Gumbel	444180	Gumbel
443200	Weibull	447164	Weibull	445880	Gumbel	444410	Weibull
444414	Gumbel	448396	Gumbel	448062	Gumbel	449215	Weibull
440166 ^[2]	Gumbel/Weibull	440720	Weibull	448172	Weibull		
441614	Gumbel	445851	Weibull	449159	Gumbel		
446178	Gumbel	442663	Weibull	443272	Gumbel		

^[1] The gauges in bold had a record period of three years or fewer. The best distribution for each of these gauges was assumed to be same as that of an adjacent gauge in a same climatic-physiographic zone.

^[2] As shown in Table 10, the time series for the gauge were non-homogenous and subdivided into two subsets, whose best distributions might be either same or different.

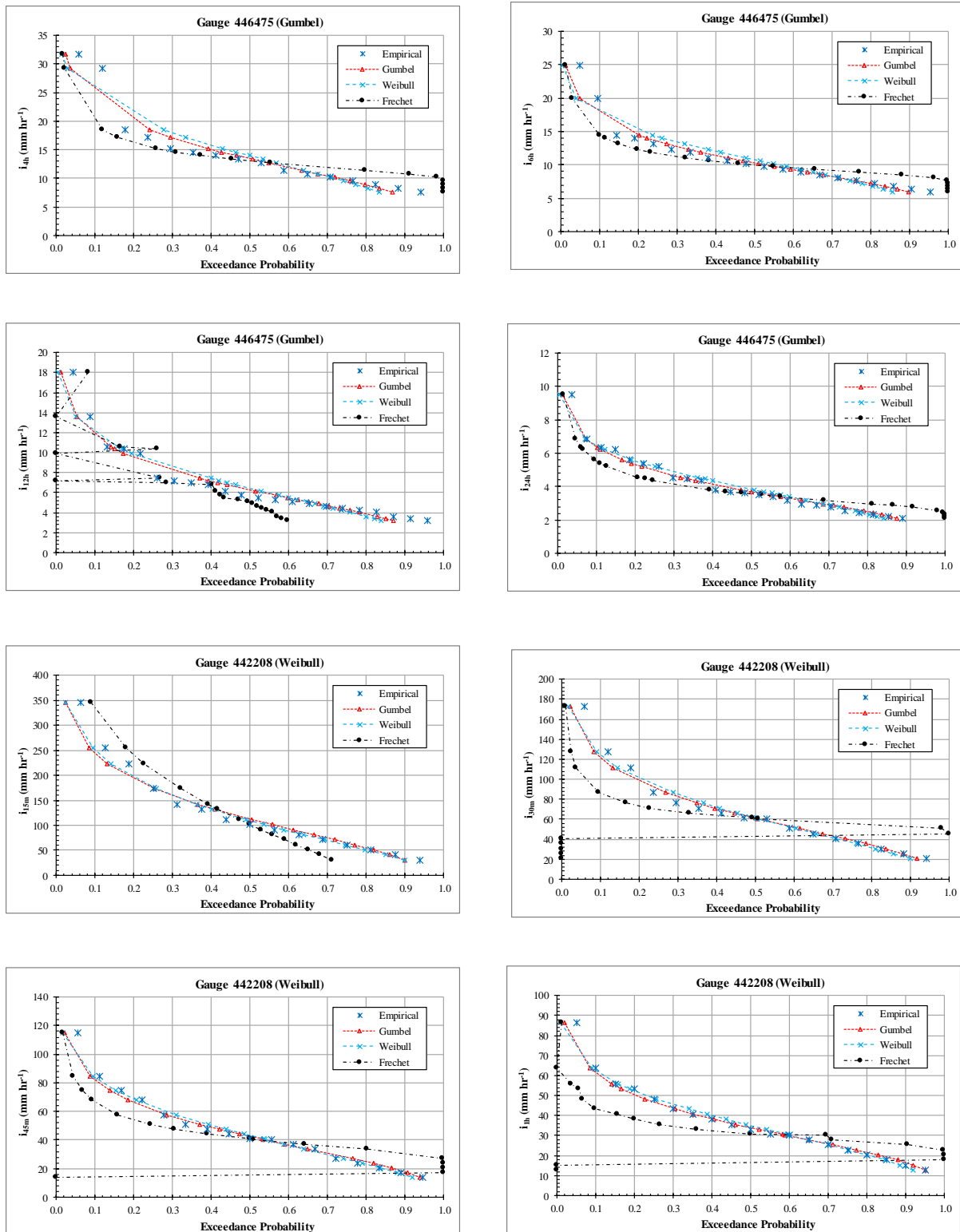
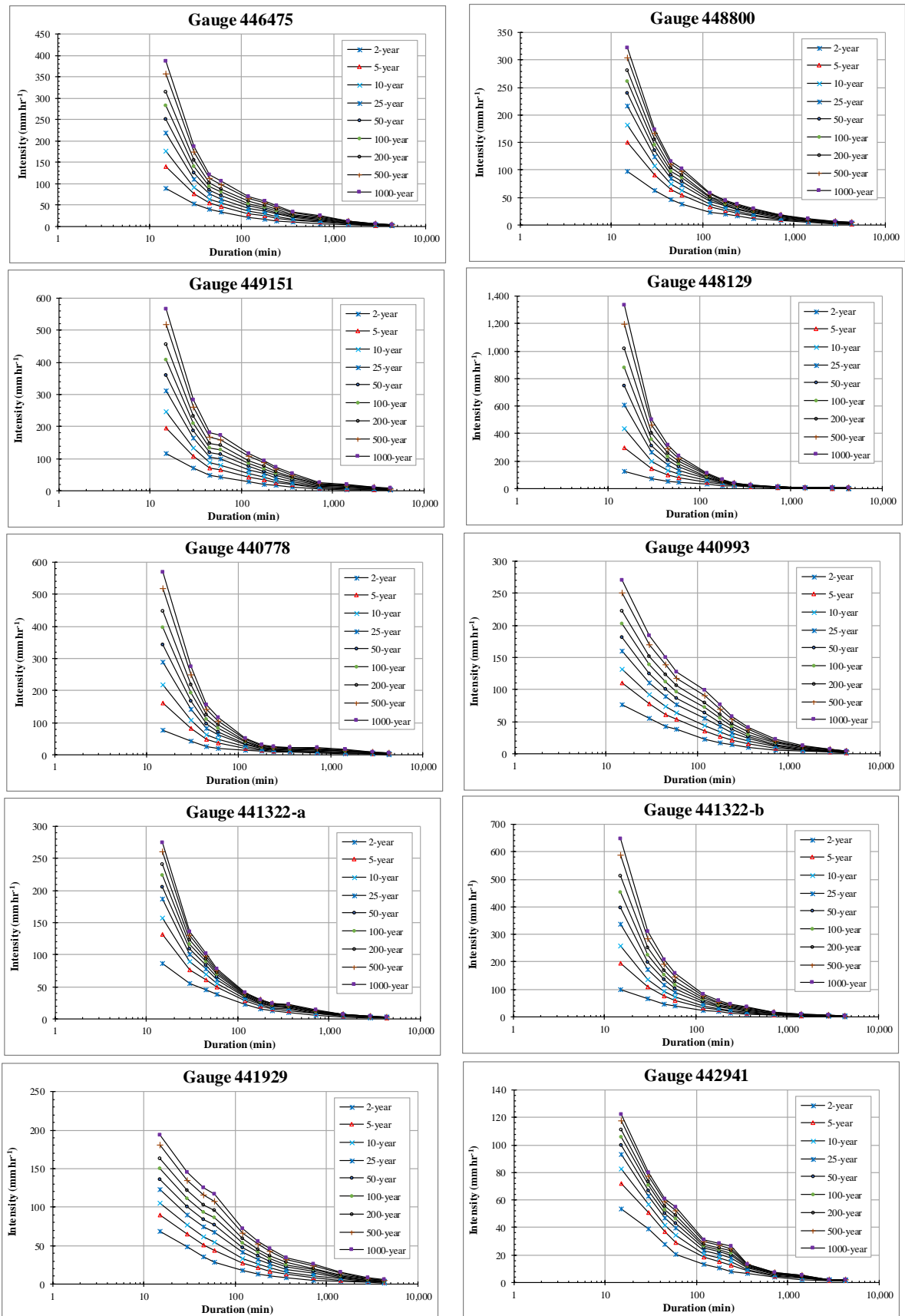
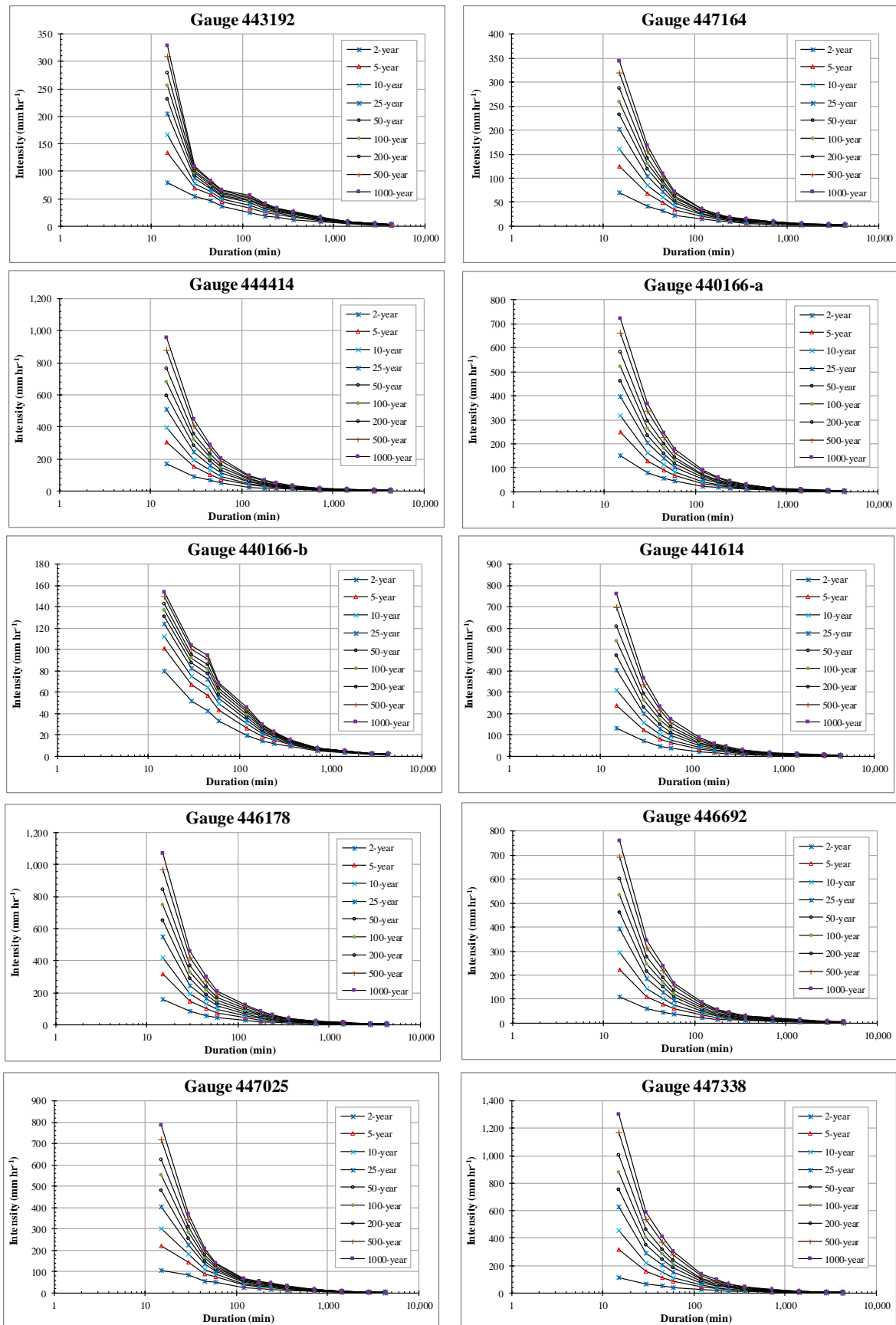


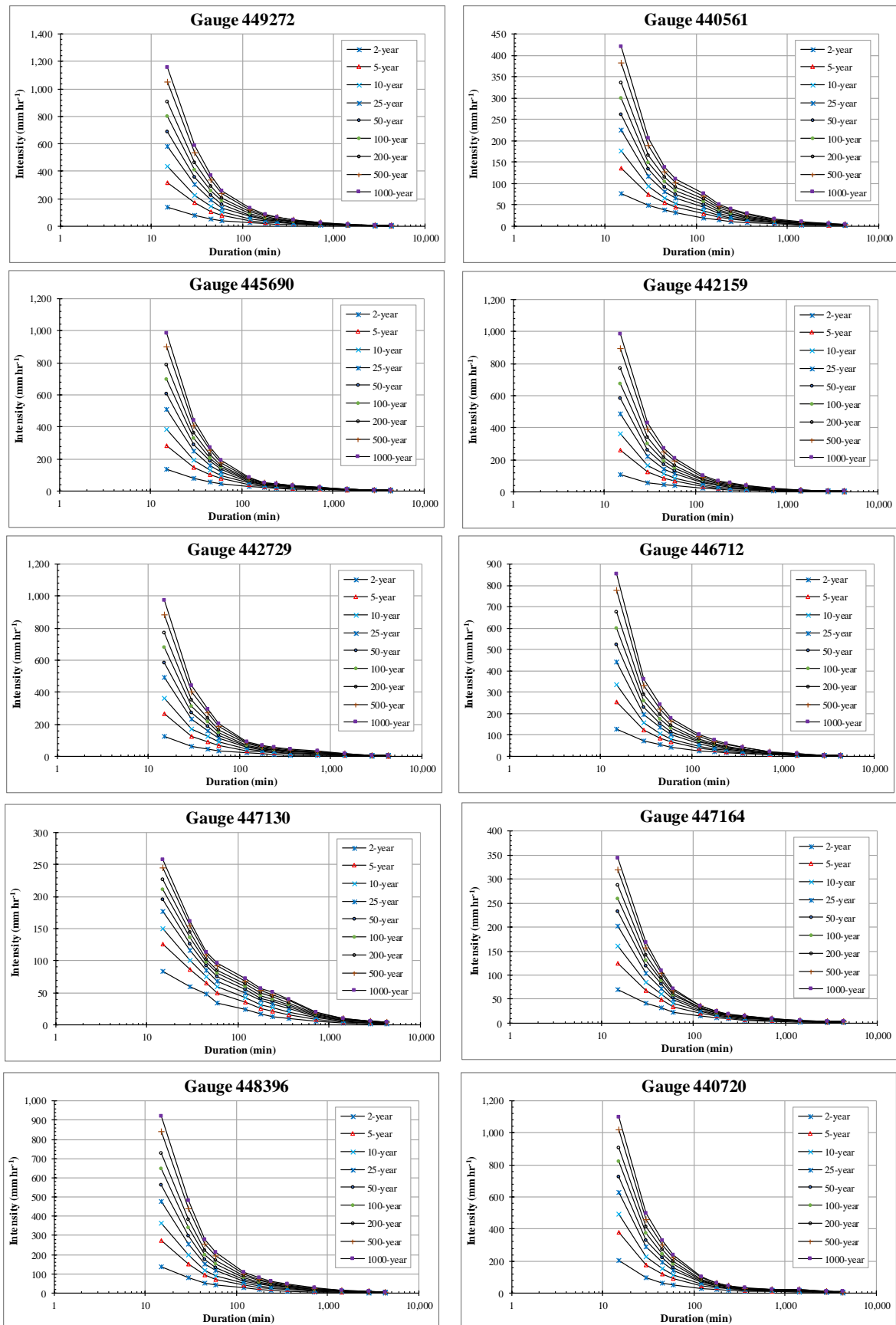
Figure 14. The visualization plots for selected two gauges and eight durations. i signifies the intensity for the duration represented by the subscript. The best distribution for gauge 446475 was determined to be Gumbel, whereas, the best distribution for gauge 442208 was determined to be Weibull.



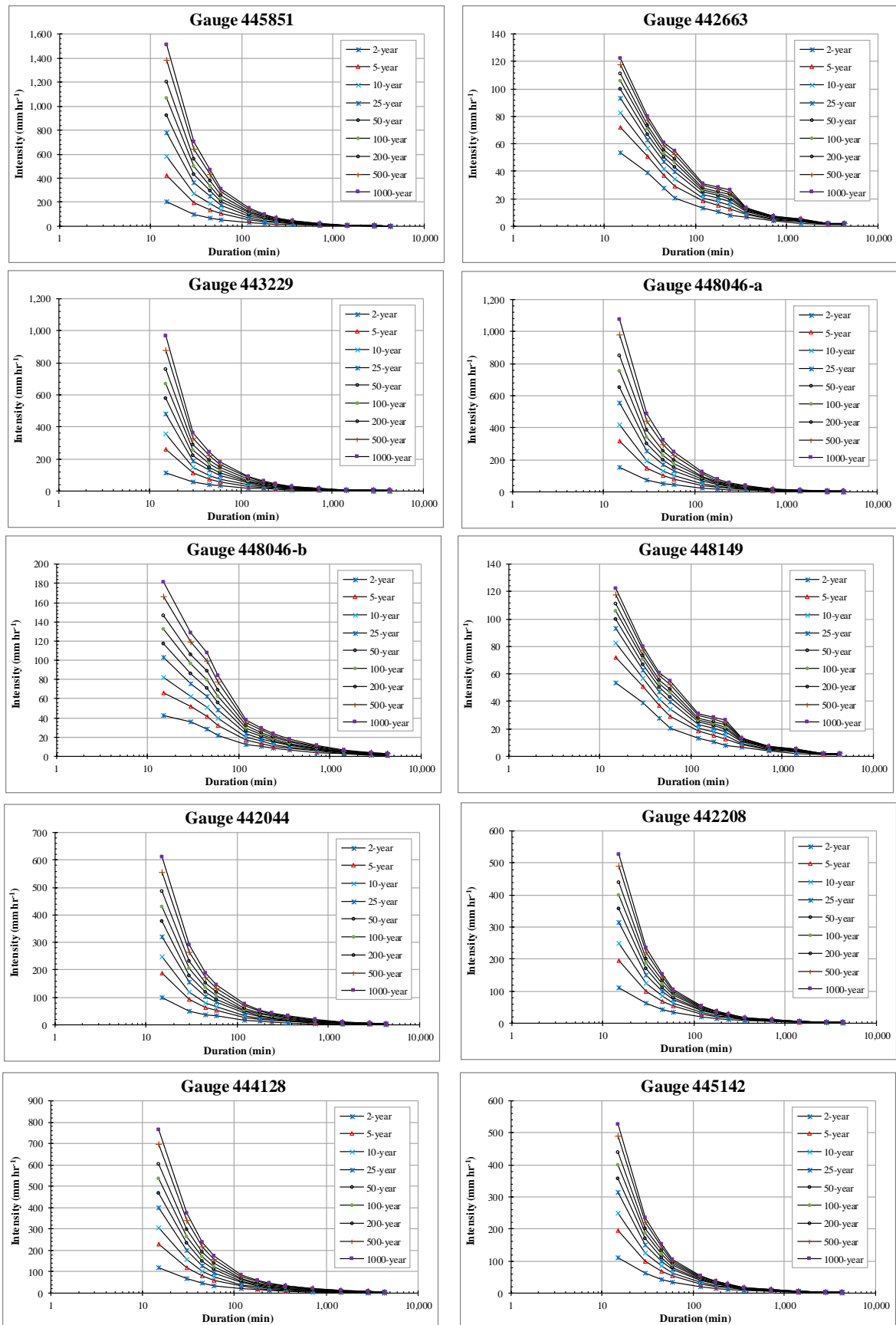
[Figure 15. The gauge-level historic intensity-duration-frequency (IDF) curves]



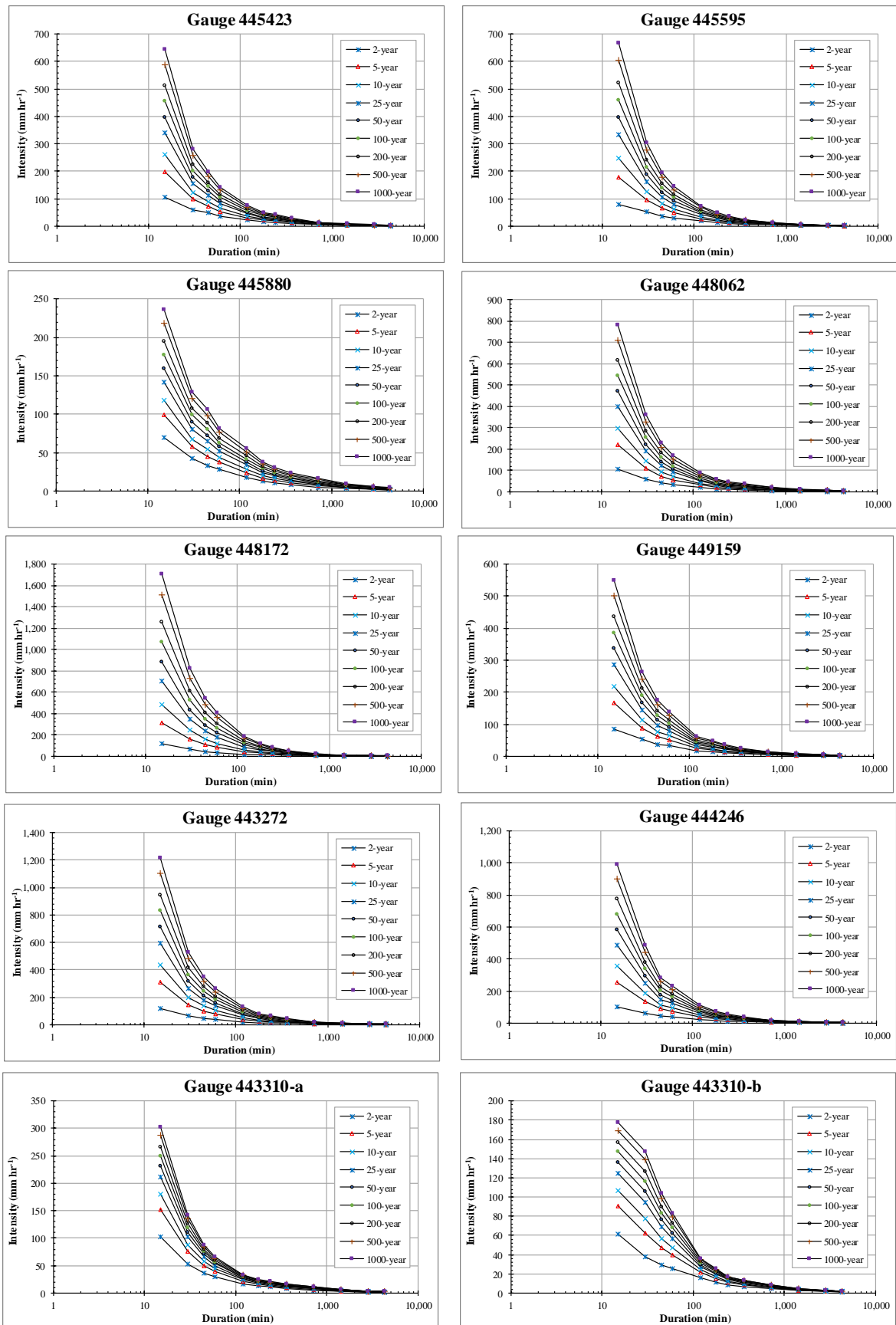
[Figure 15. The gauge-level historic intensity-duration-frequency (IDF) curves]



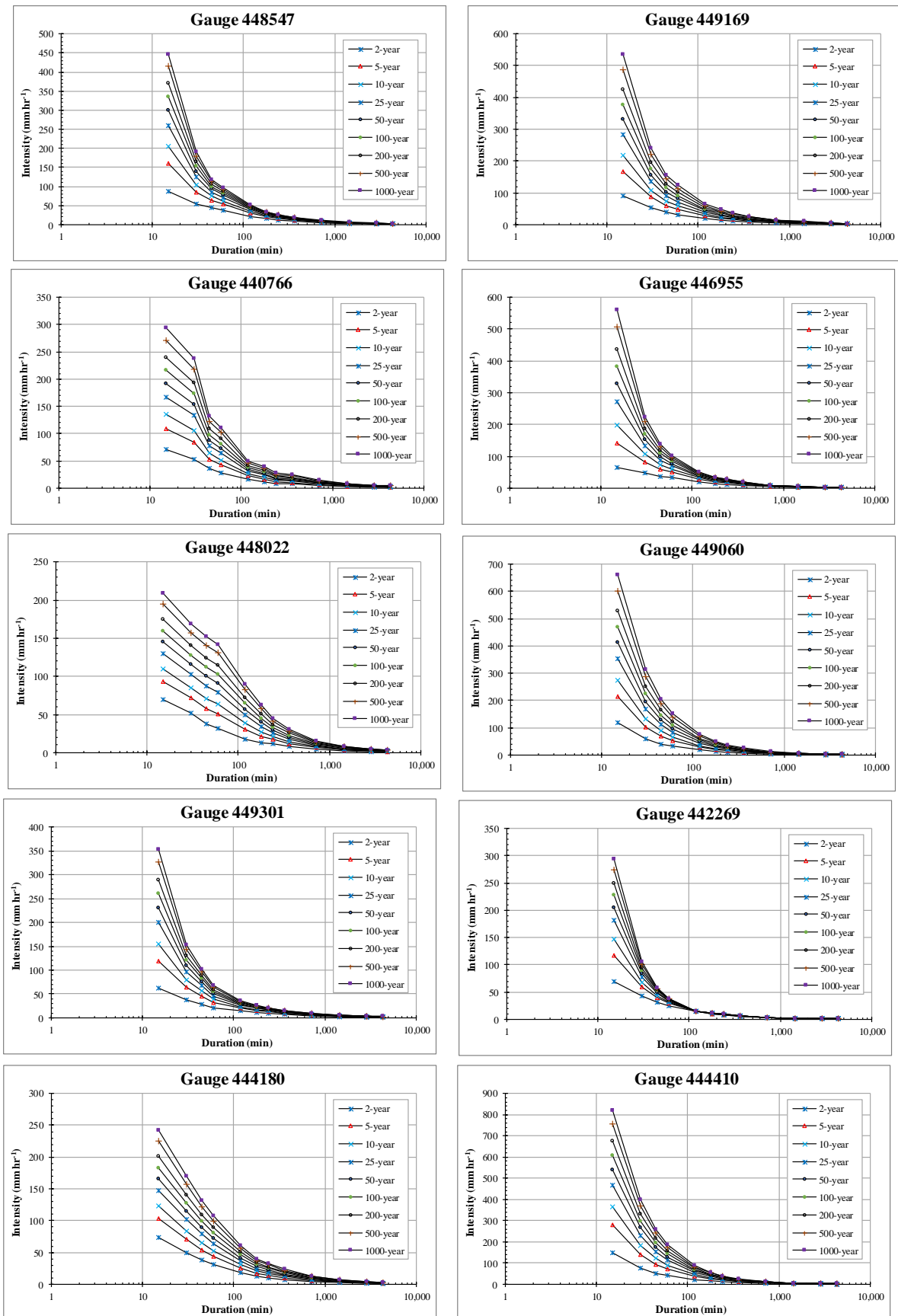
[Figure 15. The gauge-level historic intensity-duration-frequency (IDF) curves]



[Figure 15. The gauge-level historic intensity-duration-frequency (IDF) curves]



[Figure 15. The gauge-level historic intensity-duration-frequency (IDF) curves]



[Figure 15. The gauge-level historic intensity-duration-frequency (IDF) curves]

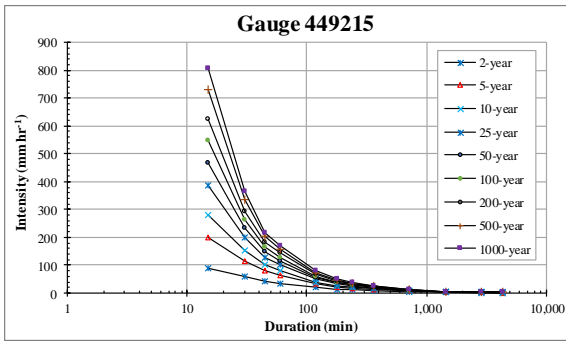


Figure 15. The gauge-level historic intensity-duration-frequency (IDF) curves for the 57 rain gauges. Because the time series at gauges 441322, 440166, 448046, and 443310 were non-homogenous, the IDF curves for these four gauges were created for the responding subsets and are signified by -a and -b, respectively.

A visual comparison (not shown to be concise) with the NOAA Atlas 14 Point Precipitation Frequency Estimates (PPFEs) (<https://hdsc.nws.noaa.gov/hdsc/pfds/index.html>) indicated that the ID curves (developed in this study and shown in Figure 15) and the PPFEs had a similar shape or pattern. In present, the PPFEs are available for 52 out of the 57 rain gauges. However, at each of the 52 rain gauges, for a given duration and a given return period, the intensity from the IDF curve tended to be larger than that from the responding PPFE curve. Overall, for a given return period, the discrepancies were smaller for a longer (> 1 h) than a shorter duration, whereas, for a given duration, the discrepancies were smaller for a lower than a higher return period. For a return period of 100-year or higher and a duration of 1 h or shorter, the intensities from the IDF curves were almost two to five times larger than those from the PPFEs. The largest discrepancy occurred for a return period of 1000-year and a duration of 15 min. One possible reason is that the data and/or distributions used in this study may be different from those used by NOAA. The actual reasons need to be investigated in a future study.

3.3 The Watershed-Level Historic IDF Curves

The Thiessen polygons of the 53 HUCs are shown in Figure 16, while the control rain gauge and area of each of the polygons are listed in Table 12. The IDF curves are shown in Figure 17 and tabulated in Appendix III.

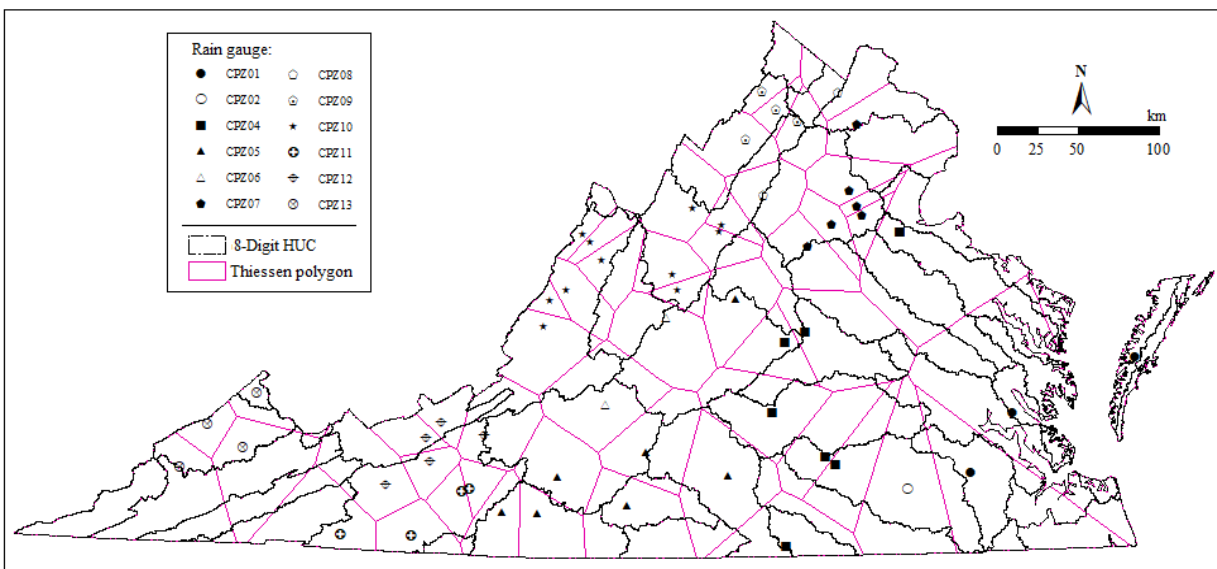


Figure 16. The Thiessen polygons of the 53 Virginian 8-digit Hydrologic Cataloging Units (HUCs).

Table 12. The control rain gauges, areas, and best statistical distributions of the Thiessen polygons.^[1]

HUC	Area	Best Distribution for the		HUC	Area	Best Distribution for the		HUC	Area	Best Distribution for the	
Gauge	(km ²)	Gauge	HUC	Gauge	(km ²)	Gauge	HUC	Gauge	(km ²)	Gauge	HUC
2040303	2716.3		Gumbel	2080108	592.9		Gumbel	3010201	4463.5		Weibull
446475	2716.3	Gumbel		446475	0.0	Gumbel		440778	501.0	Gumbel	
2040304	1961.3		Gumbel	449151	592.9	Gumbel		441322	933.0	Weibull/Gumbel	
446475	1941.8	Gumbel		2080110	2514.1		Gumbel	442941	23.5	Weibull	
449151	19.6	Gumbel		446475	2514.1	Gumbel		448129	2126.0	Weibull	
2070001	3831.5		Weibull	2080111	2786.8		Gumbel	448800	880.0	Weibull	
442208	1391.5	Weibull		446475	2786.8	Gumbel		3010202	1916.8		Weibull
442663	803.4	Weibull		2080201	5726.5		Gumbel	448129	129.7	Weibull	
445595	755.5	Gumbel		440561	716.1	Gumbel		448800	1781.7	Weibull	
445880	133.8	Gumbel		440766	614.4	Gumbel		449151	5.3	Gumbel	
448046	747.2	Gumbel/Gumbel		442044	2014.9	Gumbel		3010203	2329.7		Weibull
2070003	3120.0		Gumbel	443310	287.6	Weibull/Weibull		448129	197.7	Weibull	
442663	421.1	Weibull		444128	805.3	Gumbel		448800	2132.0	Weibull	
448046	2698.9	Gumbel/Gumbel		445595	302.0	Gumbel		3010204	4177.0		Weibull
2070004	5898.6		Weibull	445880	499.7	Gumbel		440778	284.6	Gumbel	
443229	14.9	Gumbel		448022	12.9	Gumbel		441322	540.7	Weibull/Gumbel	
445851	4397.7	Weibull		449159	473.5	Gumbel		442941	29.2	Weibull	
448046	1429.1	Gumbel/Gumbel		2080202	2169.9		Gumbel	444414	596.8	Gumbel	
448149	57.0	Weibull		440561	124.0	Gumbel		447025	331.7	Weibull	
2070005	4328.3		Weibull	442044	55.0	Gumbel		448129	2156.0	Weibull	
440720	580.2	Weibull		444128	237.8	Gumbel		448800	238.0	Weibull	
442208	1039.3	Weibull		445690	877.9	Weibull		3010205	11200.4		Weibull
442663	227.5	Weibull		445880	1.6	Gumbel		446475	100.9	Gumbel	
443229	277.7	Gumbel		448062	155.9	Gumbel		448800	10546.4	Weibull	
445142	439.2	Weibull		448172	21.6	Weibull		449151	553.1	Gumbel	
445423	370.6	Gumbel		449159	696.0	Gumbel		3040101	6362.7		Gumbel
445690	10.5	Weibull		2080203	5238.4		Gumbel	443272	3765.5	Gumbel	

Table 12. Continuous

445880	0.4	Gumbel	440166	404.5	Gumbel/Weibull	444246	16.4	Gumbel		
446178	16.8	Gumbel	440561	531.3	Gumbel	446692	78.7	Gumbel		
448062	935.8	Gumbel	440993	822.7	Gumbel	448547	1426.4	Weibull		
448149	36.5	Weibull	441929	29.3	Gumbel	449272	1075.8	Gumbel		
448172	390.5	Weibull	442941	463.1	Weibull	5050001	7622.3	Weibull		
449159	3.3	Gumbel	445690	1743.2	Weibull	440766	423.4	Gumbel		
2070006	2676.7		Weibull	446178	1108.6	Gumbel	443272	1306.9	Gumbel	
440720	39.7	Weibull	448172	135.7	Weibull	444246	706.7	Gumbel		
442208	755.9	Weibull	2080204	1988.5		Gumbel	446692	1.8	Gumbel	
442663	1157.6	Weibull	440720	18.7	Weibull	446955	648.8	Weibull		
443229	10.8	Gumbel	440993	132.0	Gumbel	447338	65.1	Gumbel		
445423	60.7	Gumbel	441929	242.6	Gumbel	448022	104.1	Gumbel		
448046	335.3	Gumbel/Gumbel	445142	343.5	Weibull	448547	2403.8	Weibull		
448149	316.7	Weibull	445423	105.3	Gumbel	449060	58.9	Gumbel		
2070007	911.0		Weibull	446178	874.0	Gumbel	449169	535.7	Gumbel	
443229	238.2	Gumbel	446712	270.9	Gumbel	449272	316.9	Gumbel		
445851	609.3	Weibull	448172	1.4	Weibull	449301	1050.2	Weibull		
448149	63.5	Weibull	2080205	2446.4		Gumbel	5050002	4349.9	Gumbel	
2070008	3206.1		Gumbel	440993	431.5	Gumbel	440766	199.4	Gumbel	
443229	53.7	Gumbel	441322	0.2	Weibull/Gumbel	446955	35.7	Weibull		
445851	1542.7	Weibull	441929	1651.9	Gumbel	448022	1954.2	Gumbel		
448396	1609.8	Gumbel	442941	362.9	Weibull	449060	1368.2	Gumbel		
2070010	3373.0		Gumbel	2080206	3732.7		Gumbel	449301	792.3	Weibull
442729	47.1	Weibull	440778	28.9	Gumbel	5050003	4258.6	Gumbel		
443200	576.7	Weibull	441322	76.9	Weibull/Gumbel	440766	50.4	Gumbel		
447130	394.1	Weibull	441929	355.5	Gumbel	442044	1212.2	Gumbel		
448396	2355.2	Gumbel	448129	189.2	Weibull	443310	1179.1	Weibull/Weibull		
2070011	4675.0		Weibull	448800	737.1	Weibull	444128	102.8	Gumbel	
442729	76.3	Weibull	449151	2345.1	Gumbel	445595	1186.6	Gumbel		

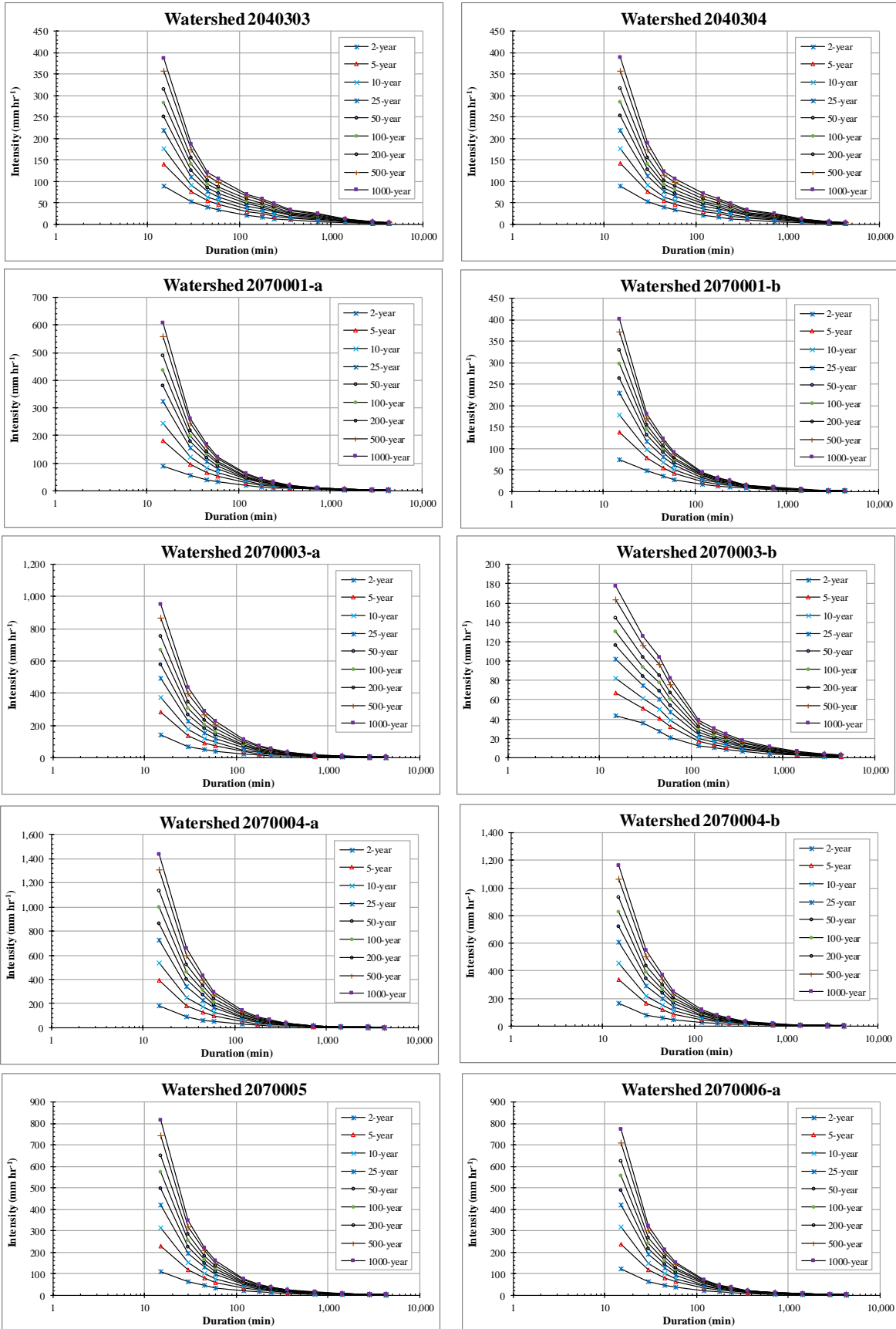
Table 12. Continuous

443200	3817.8	Weibull	2080207	4169.8		Weibull	448022	527.5	Gumbel	
446475	611.1	Gumbel	440778	1133.1	Gumbel		5070201	4029.0		Gumbel
447130	19.9	Weibull	440993	12.3	Gumbel		442269	72.3	Weibull	
447164	47.7	Weibull	441322	488.6	Weibull/Gumbel		444180	3719.1	Gumbel	
449151	102.1	Gumbel	441929	240.0	Gumbel		444410	122.0	Weibull	
2080101	3047.4		Gumbel	442941	1827.7	Weibull	449060	54.8	Gumbel	
446475	2315.1	Gumbel		447025	61.4	Weibull	449301	60.7	Weibull	
449151	732.3	Gumbel		448129	368.7	Weibull	5070202	3140.9		Weibull
2080102	1739.5		Gumbel	448800	38.0	Weibull	442269	741.6	Weibull	
446475	435.4	Gumbel		2080208	1309.1		Weibull	444180	444.6	Gumbel
449151	1304.1	Gumbel		448800	857.4	Weibull	444410	1405.2	Weibull	
2080103	4030.3		Weibull	449151	451.7	Gumbel	449215	549.5	Weibull	
440720	879.1	Weibull		3010101	5674.0		Gumbel	5100201	3428.1	Weibull
442159	620.5	Gumbel		440166	904.8	Gumbel/Weibull	444410	796.7	Weibull	
442663	5.9	Weibull		440561	1641.4	Gumbel	449215	2631.5	Weibull	
442729	199.5	Weibull		440766	930.3	Gumbel	5130101	6039.5		Weibull
443229	461.7	Gumbel		441614	373.4	Gumbel	449215	6039.5	Weibull	
445423	0.0	Gumbel		446692	23.9	Gumbel	6010101	1882.5		Weibull
446712	565.6	Gumbel		447338	1799.8	Gumbel	442269	651.0	Weibull	
447130	794.1	Weibull		449169	0.3	Gumbel	448547	309.2	Weibull	
447164	312.2	Weibull		3010102	4503.0		Weibull	449215	663.8	Weibull
448396	191.7	Gumbel		440166	920.4	Gumbel/Weibull	449301	258.5	Weibull	
2080104	2992.6		Weibull	442941	53.2	Weibull	6010102	3055.4		Weibull
443200	1698.0	Weibull		444414	1364.2	Gumbel	442269	240.8	Weibull	
446475	81.0	Gumbel		447025	2165.2	Weibull	448547	1685.6	Weibull	
447164	19.8	Weibull		3010103	5325.8		Gumbel	449215	1068.1	Weibull
449151	1193.8	Gumbel		441614	843.7	Gumbel	449301	60.9	Weibull	
2080105	2358.4		Weibull	446692	2777.0	Gumbel	6010104	2591.8		Weibull
442159	26.4	Gumbel		447338	36.9	Gumbel	449215	2591.8	Weibull	

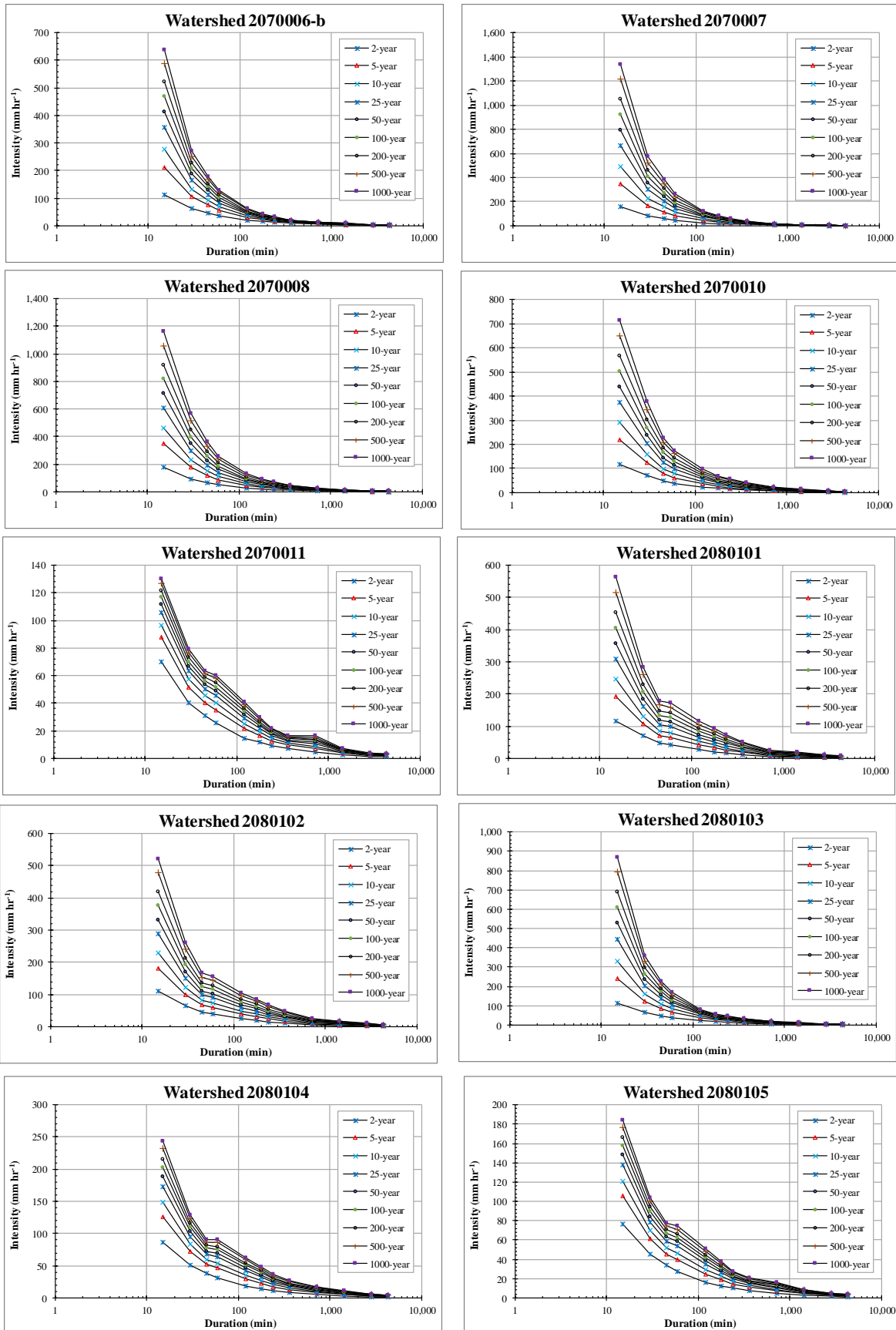
Table 12. Continuous

443200	1667.8	Weibull		449272	1668.2	Gumbel	6010205	5092.5		Weibull
447164	151.7	Weibull		3010104	3327.0		Gumbel	442269	1356.0	Weibull
449151	512.4	Gumbel		441614	2460.6	Gumbel		444180	15.5	Gumbel
2080106	3810.6		Gumbel	444414	445.5	Gumbel		448547	5.8	Weibull
441929	1125.6	Gumbel		447025	420.9	Weibull		449215	3505.2	Weibull
442159	222.1	Gumbel		3010105	1545.8		Gumbel	449301	210.0	Weibull
443200	764.8	Weibull		440166	189.4	Gumbel/Weibull	6010206	2452.7		Weibull
446712	923.5	Gumbel		441614	1039.4	Gumbel		449215	2452.7	Weibull
447164	13.7	Weibull		447025	317.0	Weibull				
449151	760.9	Gumbel		3010106	1533.4		Gumbel			
2080107	755.8		Gumbel	444414	1499.3	Gumbel				
449151	755.8	Gumbel		448129	34.1	Weibull				

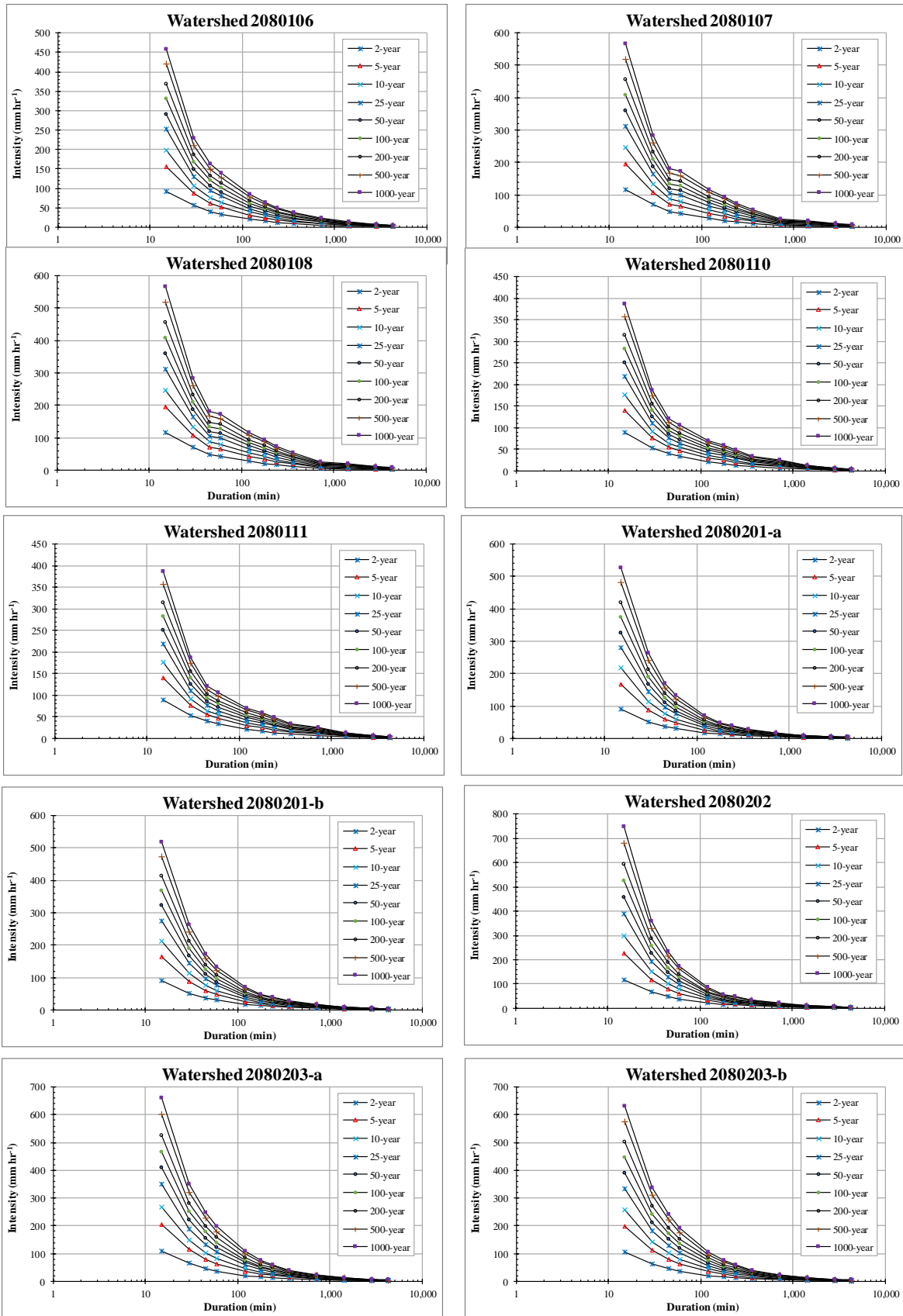
^[1] HUC: U.S. Geological Survey 8-digit Hydrologic Cataloging Unit. The best distribution for a HUC was assumed to be same as that of the gauge(s) controlling most of the HUC area.



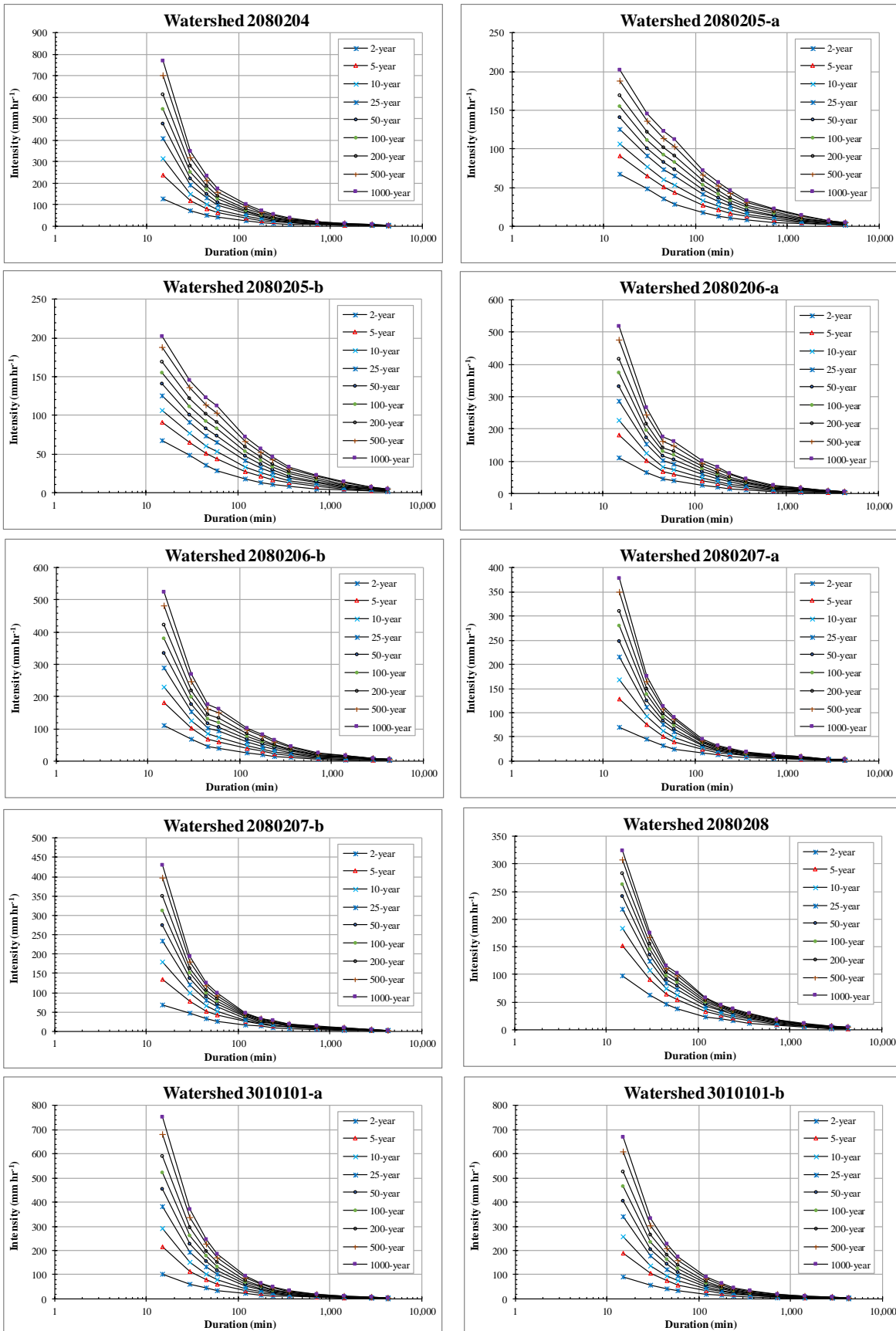
[Figure 17. The watershed-level historic intensity-duration-frequency (IDF) curves]



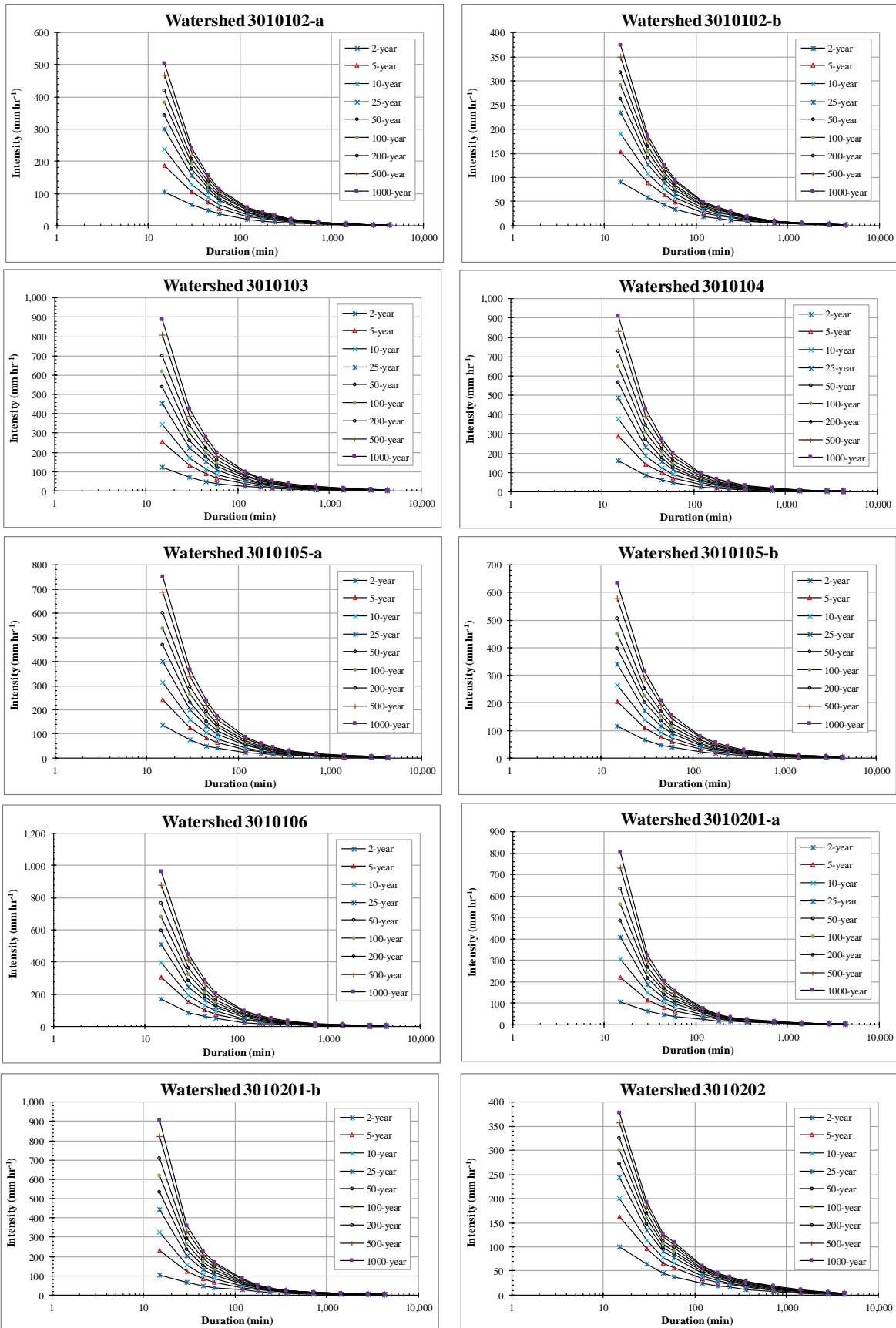
[Figure 17. The watershed-level historic intensity-duration-frequency (IDF) curves]



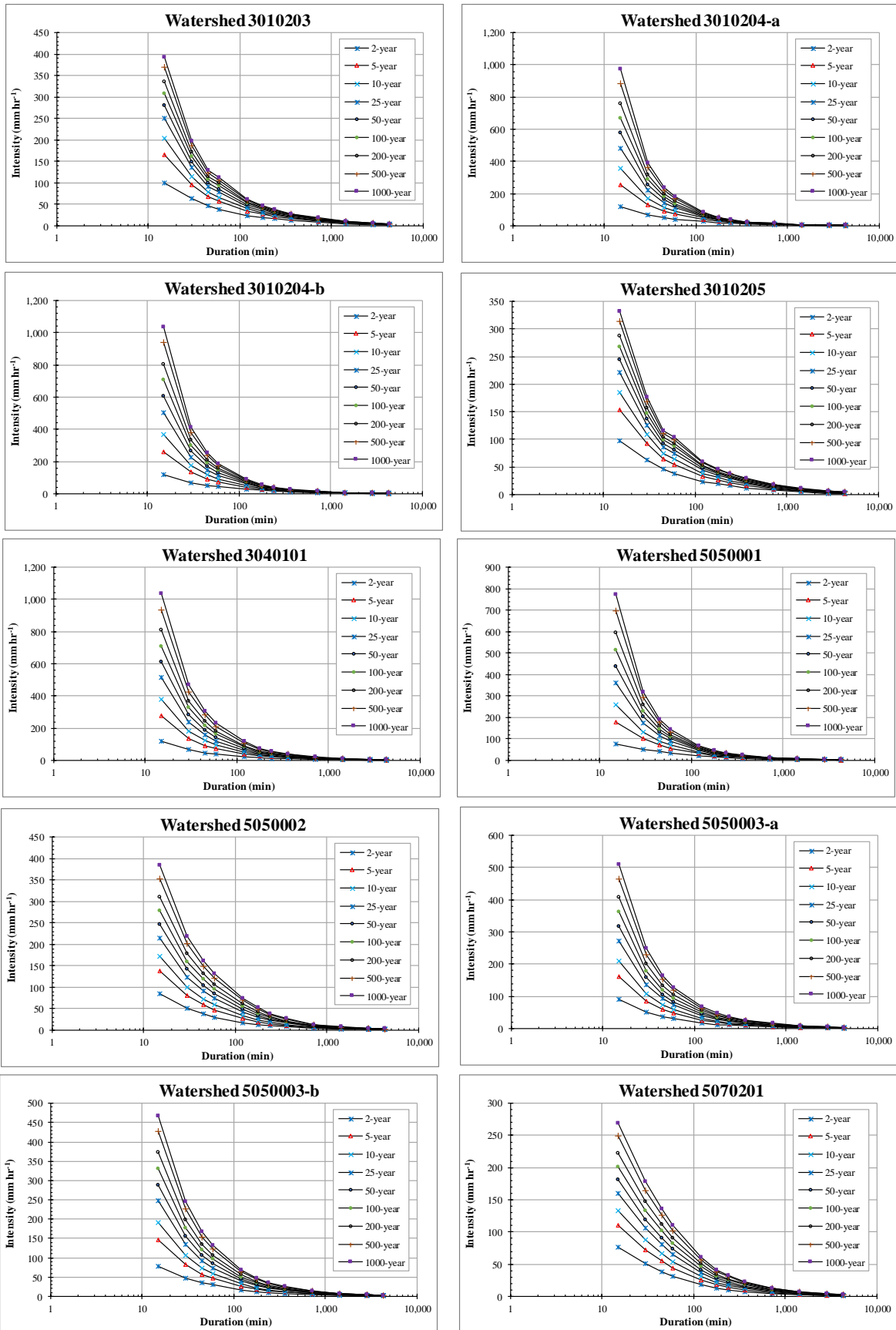
[Figure 17. The watershed-level historic intensity-duration-frequency (IDF) curves]



[Figure 17. The watershed-level historic intensity-duration-frequency (IDF) curves]



[Figure 17. The watershed-level historic intensity-duration-frequency (IDF) curves]



[Figure 17. The watershed-level historic intensity-duration-frequency (IDF) curves]

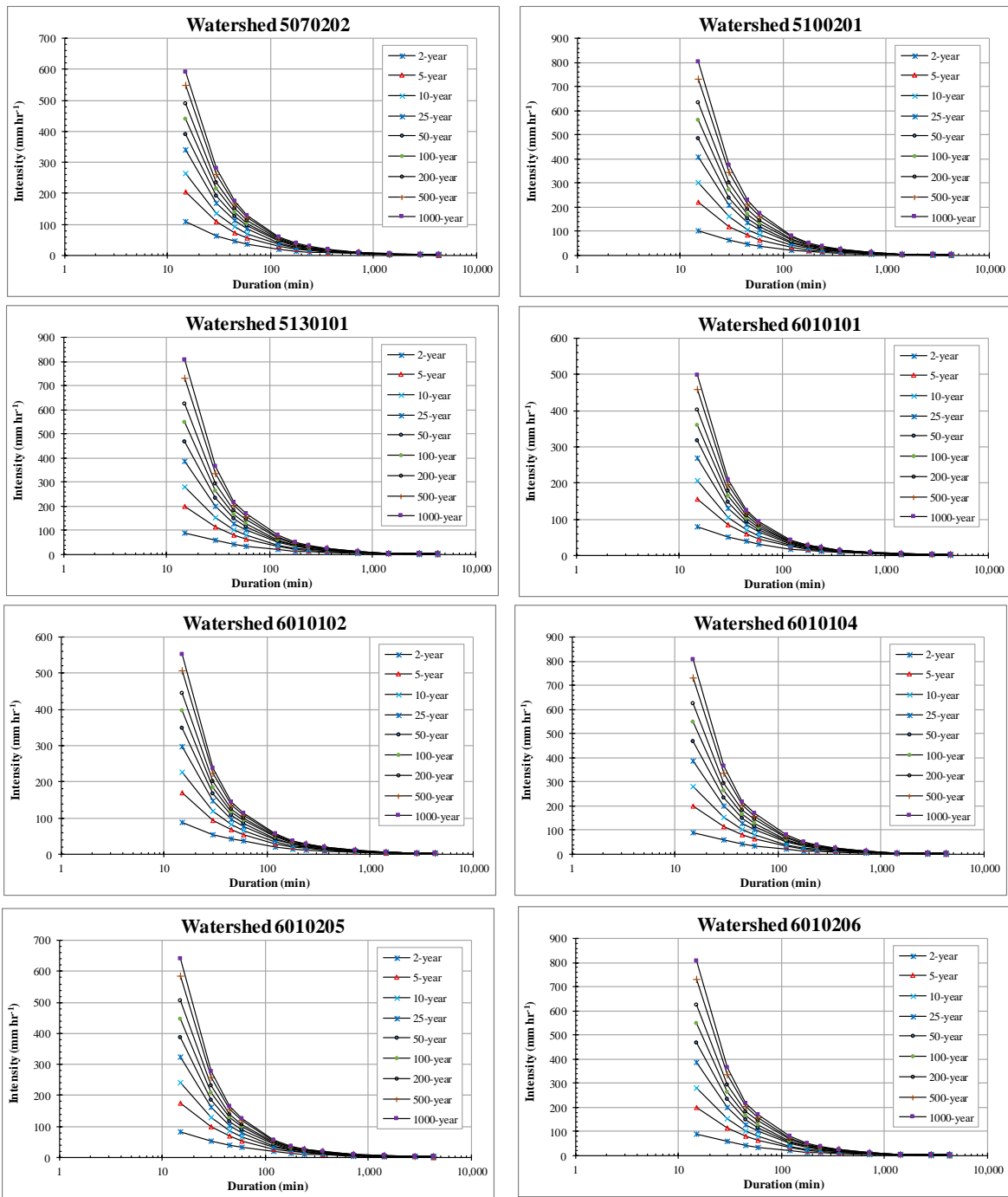


Figure 17. The watershed-level historic intensity-duration-frequency (IDF) curves for the 53 U.S. Geological Survey 8-digit Hydrologic Cataloging Units. Because the time series at gauges 441322, 440166, 448046, and 443310 were non-homogenous, the IDF curves for the HUCs controlled by these four gauges were created for the responding subsets and are signified by -a and -b, respectively.

3.4 Downscaling of the RCMs' Predictions

As discussed in section 2.3.4, downscaling of the RCMs' predictions was realized by four steps. First, the predicted 3-h precipitation at a rain gauge by an RCM (hereinafter referred to as RCM-predicted gauge precipitation) was computed as the inverse-distance-weighted average of the RCM's predictions for the four modeling grids surrounding the gauge. Second, the RCM-predicted gauge precipitation was corrected for possible errors in accordance with the observations at this same gauge, deriving the spatially-downscaled gauge precipitation. Third, the spatially-downscaled gauge precipitation was disaggregated to derive the 15-, 30- and 45-min and 1- and 2-h gauge precipitations. Fourth, the spatially-downscaled gauge precipitation for a longer duration of 6, 12, 24, 48, or 72 h was derived from that for the duration of 3 h (i.e., the result of the second step). Herein, to alleviate the burden of data processing, the annual maximum durational precipitations rather than the time series were downscaled. The basic assumption is that the extreme values are independent of the mathematical operations involved in the downscaling procedure.

The equations used in the second step (Table 13) were derived by regressing the observed annual maximum 3-h precipitations over the RCM-predicted annual maximum gauge 3-h precipitations for the historic period, whereas, the equations used in the third step (Table 14) were derived by regressing the observed annual maximum precipitations for a shorter or 4-h duration over those for the duration of 3 h. Both regressions were done by each of the climatic-physiographic zones (Figure 2b and Table 1). In this regard, the data at the rain gauges within a zone of interest (Table 2) were pooled together and then capsulated by excluding any abnormal and/or redundant values.

Table 13. The regression equations of RCM-predicted over observed annual maximum 3-h rainfall.

RCM	Zone	Regression Equation ^[1]	Coefficient of Determination (R ²)	
CRCM-CCSM	CPZ01	$P_{3h,obs} = 7.44(P_{3h,rcm}) - 44.76$	0.86	
	CPZ02	$P_{3h,obs} = 6.82(P_{3h,rcm}) - 34.60$	0.87	
	CPZ04	$P_{3h,obs} = 7.57(P_{3h,rcm}) - 45.09$	0.96	
	CPZ05	$P_{3h,obs} = 10.01(P_{3h,rcm}) - 64.51$	0.87	
	CPZ06	$P_{3h,obs} = 10.29(P_{3h,rcm}) - 61.20$	0.87	
	CPZ07	$P_{3h,obs} = 11.59(P_{3h,rcm}) - 96.41$	0.93	
	CPZ08	$P_{3h,obs} = 17.64(P_{3h,rcm}) - 153.41$	0.84	
	CPZ09		$P_{3h,obs} = 3.74(P_{3h,rcm}) - 7.66 \quad P_{3h,rcm} \leq 15.0 \text{ mm}$	0.95
			$P_{3h,obs} = 64.29(P_{3h,rcm}) - 930.36 \quad P_{3h,rcm} > 15.0 \text{ mm}$	0.92
	CPZ10	$P_{3h,obs} = 7.18(P_{3h,rcm}) - 42.31$	0.88	
	CPZ11	$P_{3h,obs} = 7.46(P_{3h,rcm}) - 37.43$	0.80	
	CPZ12	$P_{3h,obs} = 6.47(P_{3h,rcm}) - 35.77$	0.90	
	CPZ13	$P_{3h,obs} = 6.78(P_{3h,rcm}) - 42.87$	0.95	

^[1] $P_{3h,obs}$: observed annual maximum 3-h precipitation; $P_{3h,rcm}$: RCM-predicted annual maximum gauge 3-h precipitation.

Table 14. The regression equations of observed shorter-duration over 3-h annual maximum rainfall.

Zone	Duration	Regression Equation ^[1]	Coefficient of Determination (R ²)
CPZ01	15 min	$P_{15m,obs} = 1.76(P_{3h,obs})^{0.62}$	0.67
	30 min	$P_{30m,obs} = 1.54(P_{3h,obs})^{0.73}$	0.83
	45 min	$P_{45m,obs} = 1.45(P_{3h,obs})^{0.78}$	0.89
	1 h	$P_{1h,obs} = 1.22(P_{3h,obs})^{0.86}$	0.95
	2 h	$P_{2h,obs} = 1.04(P_{3h,obs})^{0.96}$	0.99
	4 h	$P_{4h,obs} = 1.07(P_{3h,obs})^{1.01}$	0.99
CPZ02	15 min	$P_{15m,obs} = 0.25(P_{3h,obs})^{1.14}$	0.89
	30 min	$P_{30m,obs} = 0.21(P_{3h,obs})^{1.25}$	0.70
	45 min	$P_{45m,obs} = 0.55(P_{3h,obs})^{1.04}$	0.71
	1 h	$P_{1h,obs} = 0.36(P_{3h,obs})^{1.18}$	0.84
	2 h	$P_{2h,obs} = 0.46(P_{3h,obs})^{1.17}$	0.96
	4 h	$P_{4h,obs} = 1.01(P_{3h,obs})^{1.01}$	0.99
CPZ04	15 min	$P_{15m,obs} = 1.08(P_{3h,obs})^{0.76}$	0.90
	30 min	$P_{30m,obs} = 1.03(P_{3h,obs})^{0.86}$	0.97
	45 min	$P_{45m,obs} = 1.05(P_{3h,obs})^{0.89}$	0.98
	1 h	$P_{1h,obs} = 1.01(P_{3h,obs})^{0.92}$	0.99
	2 h	$P_{2h,obs} = 1.00(P_{3h,obs})^{0.98}$	1.00
	4 h	$P_{4h,obs} = 1.16(P_{3h,obs})^{0.99}$	0.99
CPZ05	15 min	$P_{15m,obs} = 1.14(P_{3h,obs})^{0.75}$	0.62
	30 min	$P_{30m,obs} = 1.06(P_{3h,obs})^{0.83}$	0.74
	45 min	$P_{45m,obs} = 0.98(P_{3h,obs})^{0.89}$	0.85
	1 h	$P_{1h,obs} = 1.01(P_{3h,obs})^{0.91}$	0.87
	2 h	$P_{2h,obs} = 0.83(P_{3h,obs})^{1.02}$	0.99
	4 h	$P_{4h,obs} = 1.17(P_{3h,obs})^{0.98}$	0.99
CPZ06	15 min	$P_{15m,obs} = 0.58(P_{3h,obs})^{0.89}$	0.66
	30 min	$P_{30m,obs} = 0.84(P_{3h,obs})^{0.88}$	0.74
	45 min	$P_{45m,obs} = 1.04(P_{3h,obs})^{0.86}$	0.79
	1 h	$P_{1h,obs} = 0.99(P_{3h,obs})^{0.90}$	0.84
	2 h	$P_{2h,obs} = 0.92(P_{3h,obs})^{0.98}$	0.95
	4 h	$P_{4h,obs} = 1.25(P_{3h,obs})^{0.97}$	0.98
CPZ07	15 min	$P_{15m,obs} = 0.56(P_{3h,obs})^{0.93}$	0.64
	30 min	$P_{30m,obs} = 0.72(P_{3h,obs})^{0.94}$	0.78
	45 min	$P_{45m,obs} = 0.68(P_{3h,obs})^{0.99}$	0.88
	1 h	$P_{1h,obs} = 0.69(P_{3h,obs})^{1.01}$	0.91
	2 h	$P_{2h,obs} = 0.40(P_{3h,obs})^{1.18}$	0.94
	4 h	$P_{4h,obs} = 1.49(P_{3h,obs})^{0.93}$	0.98
CPZ08	15 min	$P_{15m,obs} = 1.26(P_{3h,obs})^{0.80}$	0.89
	30 min	$P_{30m,obs} = 1.13(P_{3h,obs})^{0.86}$	0.95
	45 min	$P_{45m,obs} = 1.17(P_{3h,obs})^{0.89}$	0.95
	1 h	$P_{1h,obs} = 1.17(P_{3h,obs})^{0.90}$	0.96
	2 h	$P_{2h,obs} = 1.06(P_{3h,obs})^{0.97}$	0.99

Table 14. Continuous

CPZ09	4 h	$P_{2h,obs} = 1.18(P_{3h,obs})^{0.99}$	0.95
	15 min	$P_{15m,obs} = 0.78(P_{3h,obs})^{0.85}$	0.55
	30 min	$P_{30m,obs} = 0.85(P_{3h,obs})^{0.91}$	0.63
	45 min	$P_{45m,obs} = 0.73(P_{3h,obs})^{0.98}$	0.72
	1 h	$P_{1h,obs} = 0.70(P_{3h,obs})^{1.01}$	0.76
	2 h	$P_{2h,obs} = 0.76(P_{3h,obs})^{1.03}$	0.94
	4 h	$P_{4h,obs} = 1.10(P_{3h,obs})^{1.01}$	0.94
CPZ10	15 min	$P_{15m,obs} = 1.14(P_{3h,obs})^{0.77}$	0.67
	30 min	$P_{30m,obs} = 0.79(P_{3h,obs})^{0.93}$	0.81
	45 min	$P_{45m,obs} = 0.81(P_{3h,obs})^{0.95}$	0.88
	1 h	$P_{1h,obs} = 0.77(P_{3h,obs})^{0.98}$	0.88
	2 h	$P_{2h,obs} = 0.63(P_{3h,obs})^{1.09}$	0.96
	4 h	$P_{4h,obs} = 1.18(P_{3h,obs})^{0.98}$	0.98
	CPZ11	15 min	$P_{15m,obs} = 0.65(P_{3h,obs})^{0.88}$
30 min		$P_{30m,obs} = 1.08(P_{3h,obs})^{0.83}$	0.80
45 min		$P_{45m,obs} = 1.06(P_{3h,obs})^{0.88}$	0.88
1 h		$P_{1h,obs} = 1.06(P_{3h,obs})^{0.90}$	0.91
2 h		$P_{2h,obs} = 1.17(P_{3h,obs})^{0.93}$	0.96
4 h		$P_{4h,obs} = 1.26(P_{3h,obs})^{0.96}$	0.96
CPZ12		15 min	$P_{15m,obs} = 0.56(P_{3h,obs})^{0.92}$
	30 min	$P_{30m,obs} = 0.82(P_{3h,obs})^{0.90}$	0.78
	45 min	$P_{45m,obs} = 0.67(P_{3h,obs})^{0.99}$	0.84
	1 h	$P_{1h,obs} = 0.69(P_{3h,obs})^{1.01}$	0.89
	2 h	$P_{2h,obs} = 0.69(P_{3h,obs})^{1.07}$	0.96
	4 h	$P_{4h,obs} = 1.42(P_{3h,obs})^{0.93}$	0.98
	CPZ13	15 min	$P_{15m,obs} = 0.65(P_{3h,obs})^{0.92}$
30 min		$P_{30m,obs} = 0.69(P_{3h,obs})^{0.98}$	0.82
45 min		$P_{45m,obs} = 0.59(P_{3h,obs})^{1.05}$	0.89
1 h		$P_{1h,obs} = 0.54(P_{3h,obs})^{1.10}$	0.91
2 h		$P_{2h,obs} = 0.84(P_{3h,obs})^{1.02}$	0.94
4 h		$P_{4h,obs} = 1.51(P_{3h,obs})^{0.91}$	0.98

^[1] $P_{15m,obs}$, $P_{30m,obs}$, $P_{45m,obs}$, $P_{1h,obs}$, $P_{2h,obs}$, $P_{3h,obs}$, and $P_{4h,obs}$ are the precipitations, in mm, for the durations signified by the subscripts.

The equations used in the fourth step (Table 15) were derived by regressing the RCM-predicted annual maximum gauge precipitations for a longer duration (i.e., 6, 12, 24, 48, or 72 h) over the RCM-predicted annual maximum gauge precipitations for one or more shorter durations spanning the entire RCM modeling period.

Table 15. The regression equations of RCM-predicted longer- over shorter-duration annual maximum rainfall.

Zone	Duration	Regression Equation ^[1]	Coefficient of Determination (R ²)
CPZ01	6 h	$P_{6h,obs} = 1.854 + 1.530(P_{3h,obs})$	0.84
	12 h	$P_{12h,obs} = 4.084 + 1.266(P_{6h,obs})$	0.78
	24 h	$P_{24h,obs} = 3.870 + 1.207(P_{12h,obs})$	0.68
	48 h	$P_{48h,obs} = -0.997 + 1.266(P_{24h,obs})$	0.77
	72 h	$P_{72h,obs} = 1.922 + 1.073(P_{48h,obs})$	0.92
CPZ02	6 h	$P_{6h,obs} = 1.535 + 1.534(P_{3h,obs})$	0.85
	12 h	$P_{12h,obs} = 6.953 + 1.144(P_{6h,obs})$	0.80
	24 h	$P_{24h,obs} = 7.177 + 1.099(P_{12h,obs})$	0.70
	48 h	$P_{48h,obs} = 4.560 + 1.116(P_{24h,obs})$	0.69
	72 h	$P_{72h,obs} = 2.907 + 1.051(P_{48h,obs})$	0.92
CPZ04	6 h	$P_{6h,obs} = 1.872 + 1.494(P_{3h,obs})$	0.73
	12 h	$P_{12h,obs} = 4.803 + 1.241(P_{6h,obs})$	0.78
	24 h	$P_{24h,obs} = 7.670 + 1.073(P_{12h,obs})$	0.68
	48 h	$P_{48h,obs} = 5.770 + 1.094(P_{24h,obs})$	0.68
	72 h	$P_{72h,obs} = 1.671 + 1.081(P_{48h,obs})$	0.89
CPZ05	6 h	$P_{6h,obs} = 0.740 + 1.602(P_{3h,obs})$	0.77
	12 h	$P_{12h,obs} = 2.557 + 1.362(P_{6h,obs})$	0.81
	24 h	$P_{24h,obs} = 8.552 + 1.067(P_{12h,obs})$	0.70
	48 h	$P_{48h,obs} = 8.935 + 1.023(P_{24h,obs})$	0.65
	72 h	$P_{72h,obs} = 5.039 + 1.018(P_{48h,obs})$	0.85
CPZ06	6 h	$P_{6h,obs} = -0.569 + 1.738(P_{3h,obs})$	0.82
	12 h	$P_{12h,obs} = 3.004 + 1.332(P_{6h,obs})$	0.82
	24 h	$P_{24h,obs} = 9.135 + 1.033(P_{12h,obs})$	0.65
	48 h	$P_{48h,obs} = 7.652 + 1.034(P_{24h,obs})$	0.62
	72 h	$P_{72h,obs} = 7.421 + 0.966(P_{48h,obs})$	0.80
CPZ07	6 h	$P_{6h,obs} = 0.867 + 1.554(P_{3h,obs})$	0.74
	12 h	$P_{12h,obs} = 3.896 + 1.295(P_{6h,obs})$	0.78
	24 h	$P_{24h,obs} = 6.300 + 1.140(P_{12h,obs})$	0.67
	48 h	$P_{48h,obs} = -3.961 + 1.340(P_{24h,obs})$	0.76
	72 h	$P_{72h,obs} = 0.945 + 1.115(P_{48h,obs})$	0.91
CPZ08	6 h	$P_{6h,obs} = 4.249 + 1.324(P_{3h,obs})$	0.74
	12 h	$P_{12h,obs} = 4.937 + 1.237(P_{6h,obs})$	0.70
	24 h	$P_{24h,obs} = 6.353 + 1.149(P_{12h,obs})$	0.62
	48 h	$P_{48h,obs} = -0.244 + 1.258(P_{24h,obs})$	0.67
	72 h	$P_{72h,obs} = 2.249 + 1.088(P_{48h,obs})$	0.88
CPZ09	6 h	$P_{6h,obs} = 5.306 + 1.226(P_{3h,obs})$	0.72
	12 h	$P_{12h,obs} = 3.697 + 1.302(P_{6h,obs})$	0.76
	24 h	$P_{24h,obs} = 7.544 + 1.109(P_{12h,obs})$	0.67
	48 h	$P_{48h,obs} = 2.952 + 1.182(P_{24h,obs})$	0.63
	72 h	$P_{72h,obs} = 3.862 + 1.062(P_{48h,obs})$	0.86

Table 15. Continuous

CPZ10	6 h	$P_{6h,obs} = 1.555 + 1.551(P_{3h,obs})$	0.83
	12 h	$P_{12h,obs} = 4.470 + 1.264(P_{6h,obs})$	0.80
	24 h	$P_{24h,obs} = 7.913 + 1.065(P_{12h,obs})$	0.68
	48 h	$P_{48h,obs} = 7.181 + 1.047(P_{24h,obs})$	0.61
	72 h	$P_{72h,obs} = 6.315 + 0.982(P_{48h,obs})$	0.82
CPZ11	6 h	$P_{6h,obs} = 0.574 + 1.650(P_{3h,obs})$	0.87
	12 h	$P_{12h,obs} = 1.922 + 1.388(P_{6h,obs})$	0.86
	24 h	$P_{24h,obs} = 2.939 + 1.257(P_{12h,obs})$	0.74
	48 h	$P_{48h,obs} = 3.291 + 1.177(P_{24h,obs})$	0.74
	72 h	$P_{72h,obs} = 1.818 + 1.091(P_{48h,obs})$	0.91
CPZ12	6 h	$P_{6h,obs} = 0.145 + 1.693(P_{3h,obs})$	0.87
	12 h	$P_{12h,obs} = 2.798 + 1.336(P_{6h,obs})$	0.86
	24 h	$P_{24h,obs} = 3.461 + 1.213(P_{12h,obs})$	0.79
	48 h	$P_{48h,obs} = 6.856 + 1.077(P_{24h,obs})$	0.72
	72 h	$P_{72h,obs} = 8.380 + 0.961(P_{48h,obs})$	0.85
CPZ13	6 h	$P_{6h,obs} = 4.140 + 1.381(P_{3h,obs})$	0.70
	12 h	$P_{12h,obs} = 6.500 + 1.200(P_{6h,obs})$	0.63
	24 h	$P_{24h,obs} = 2.287 + 1.263(P_{12h,obs})$	0.75
	48 h	$P_{48h,obs} = 2.502 + 1.145(P_{24h,obs})$	0.74
	72 h	$P_{72h,obs} = 3.048 + 1.062(P_{48h,obs})$	0.83

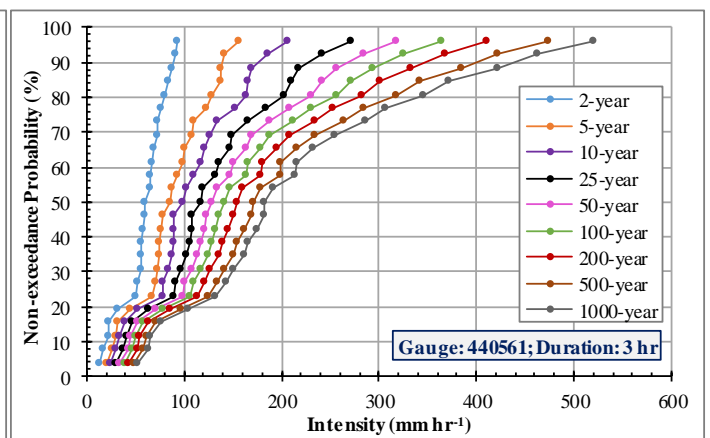
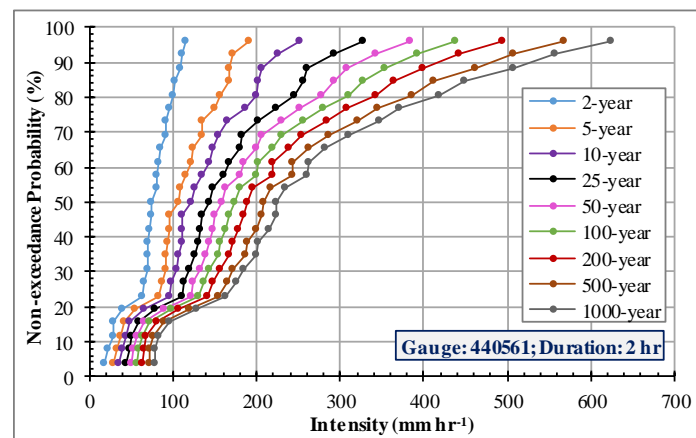
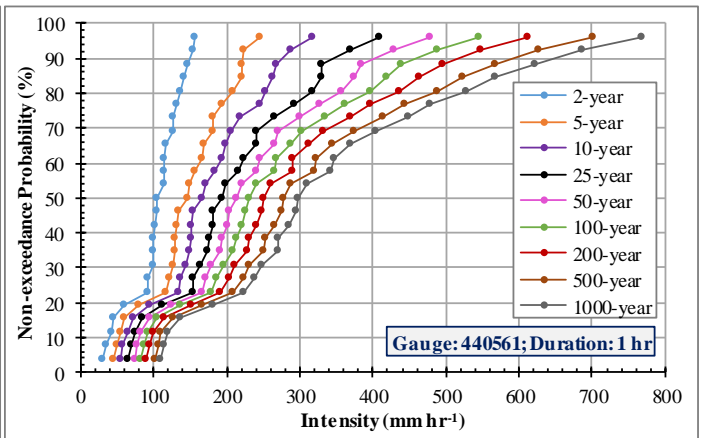
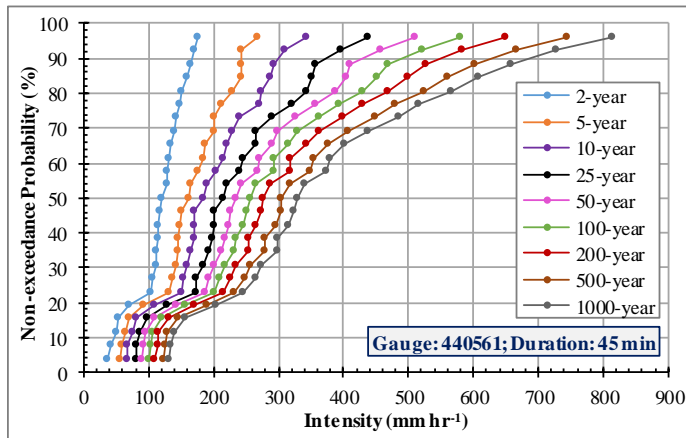
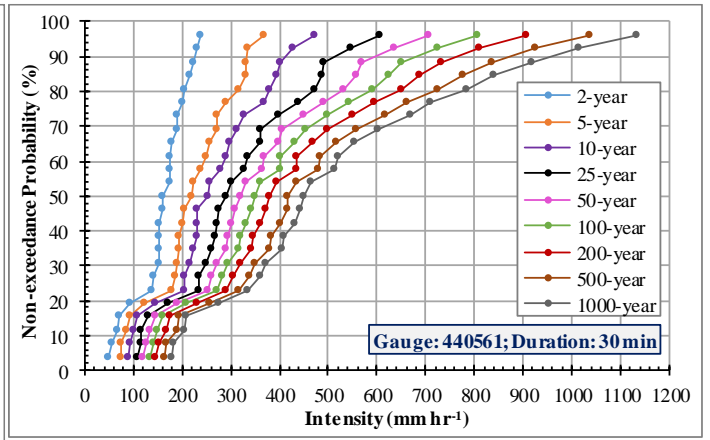
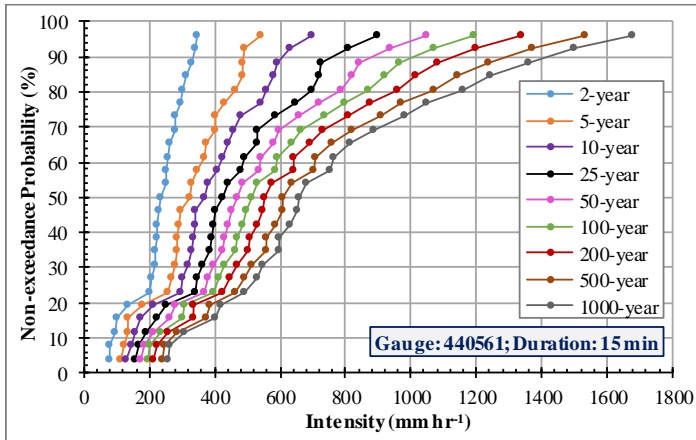
^[1] $P_{3h,obs}$, $P_{6h,obs}$, $P_{12h,obs}$, $P_{24h,obs}$, $P_{48h,obs}$, and $P_{72h,obs}$ are the precipitations, in mm, for the durations signified by the subscripts.

3.5 The Gauge-Level Probability-Based IDF Curves

Figures 18 through 25 show the probability-based IDF curves (tabulated in Appendix IV) for gauge 440561, 442044, 444128, 445690, 445880, 448062, 448172, and 449159, respectively. The curves' coefficients of variation, defined as the ratios of standard deviation to mean and used to measure the dispersion of an IDF curve, range from 0.27 to 0.60 (Table 16). Overall, while the dispersions of the IDF curves are not very different, for a given duration, the IDF curve for a higher return period tends to have a relatively greater dispersion than that for a lower return period, whereas, for a given return period, the IDF curve for a longer duration tends to have a relatively greater dispersion than that for a shorter duration, and vice versa.

Table 16. The dispersions of the probability-based intensity-duration-frequency (IDF) curves of eight gauges.

Duration	Return Period								
	2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year
15 min	0.27~0.37	0.27~0.38	0.28~0.41	0.29~0.44	0.30~0.45	0.31~0.47	0.32~0.48	0.33~0.49	0.34~0.50
30 min	0.32~0.38	0.33~0.40	0.33~0.41	0.32~0.44	0.32~0.46	0.32~0.47	0.32~0.48	0.33~0.49	0.33~0.50
45 min	0.33~0.38	0.33~0.40	0.32~0.42	0.32~0.44	0.32~0.45	0.32~0.46	0.32~0.48	0.32~0.49	0.32~0.50
1 h	0.34~0.39	0.35~0.41	0.34~0.43	0.34~0.45	0.34~0.47	0.34~0.48	0.34~0.50	0.34~0.51	0.34~0.52
2 h	0.37~0.42	0.39~0.45	0.38~0.48	0.38~0.52	0.38~0.54	0.38~0.56	0.38~0.58	0.39~0.59	0.39~0.60
3 h	0.35~0.43	0.37~0.44	0.39~0.47	0.39~0.51	0.39~0.53	0.40~0.54	0.40~0.55	0.40~0.57	0.41~0.58
4 h	0.35~0.43	0.38~0.45	0.40~0.48	0.40~0.51	0.40~0.53	0.40~0.55	0.41~0.56	0.41~0.57	0.42~0.58
6 h	0.35~0.43	0.38~0.45	0.40~0.48	0.40~0.51	0.40~0.53	0.40~0.55	0.41~0.56	0.41~0.57	0.42~0.58
12 h	0.35~0.43	0.38~0.45	0.40~0.48	0.40~0.51	0.40~0.53	0.40~0.55	0.41~0.56	0.41~0.58	0.42~0.58
24 h	0.34~0.42	0.37~0.44	0.39~0.47	0.39~0.51	0.39~0.53	0.40~0.54	0.40~0.56	0.41~0.57	0.41~0.58
48 h	0.33~0.41	0.36~0.43	0.39~0.47	0.39~0.50	0.39~0.52	0.39~0.54	0.40~0.55	0.40~0.57	0.41~0.58
72 h	0.32~0.40	0.36~0.43	0.38~0.46	0.38~0.50	0.39~0.52	0.39~0.53	0.39~0.55	0.40~0.56	0.41~0.57



[Figure 18. The probability-based intensity-duration-frequency (IDF) curves for gauge 440561]

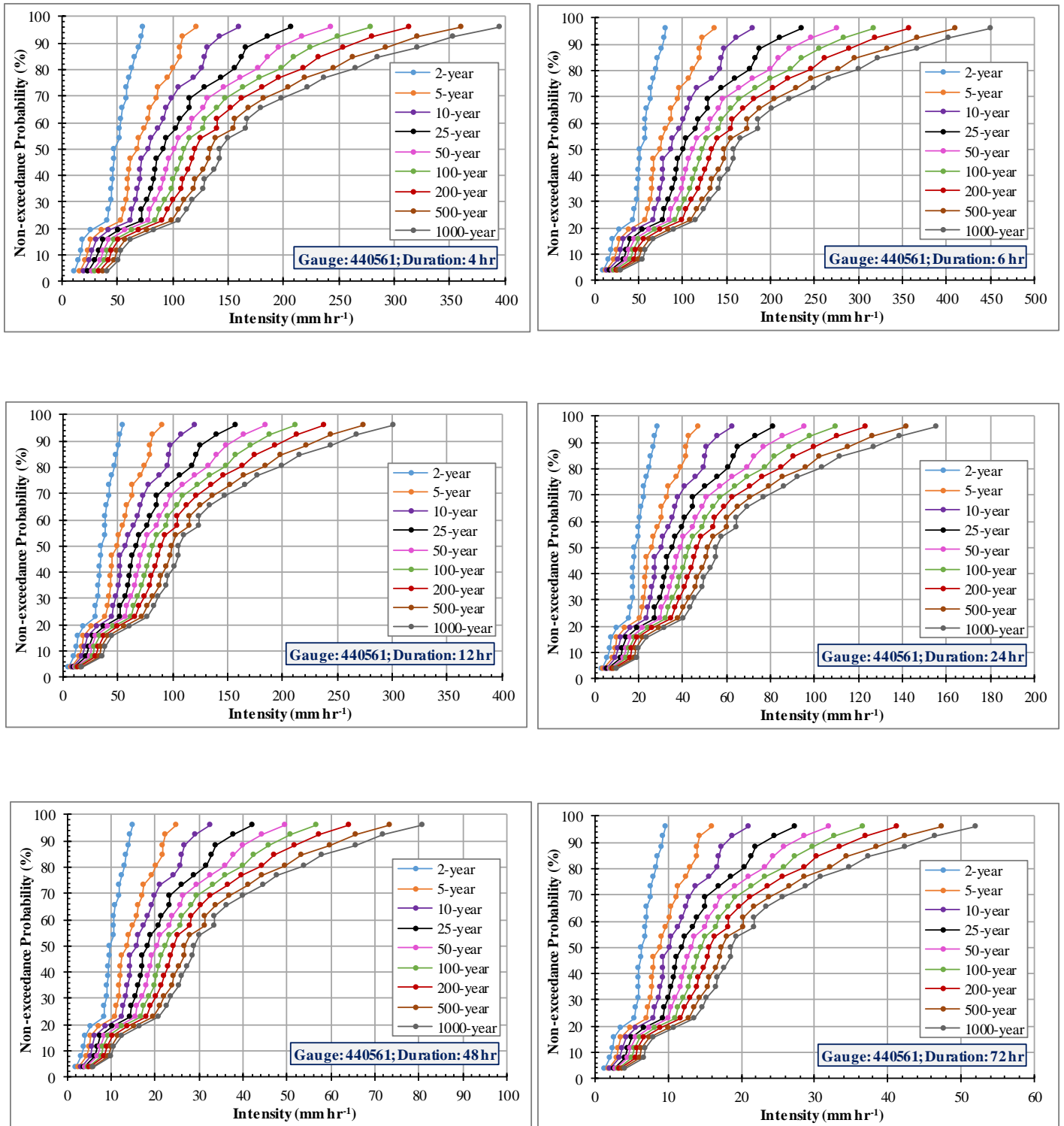
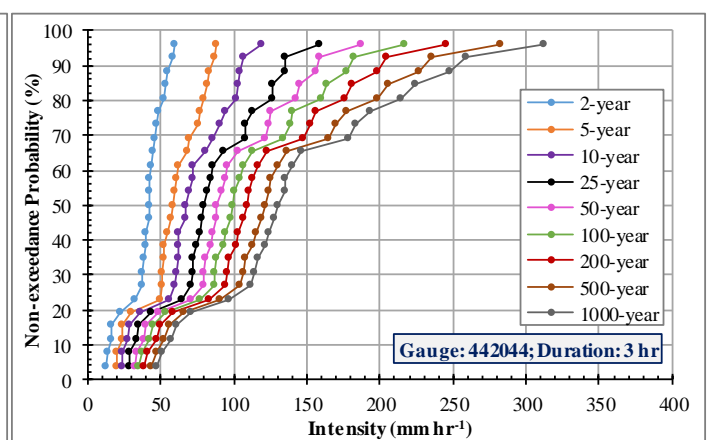
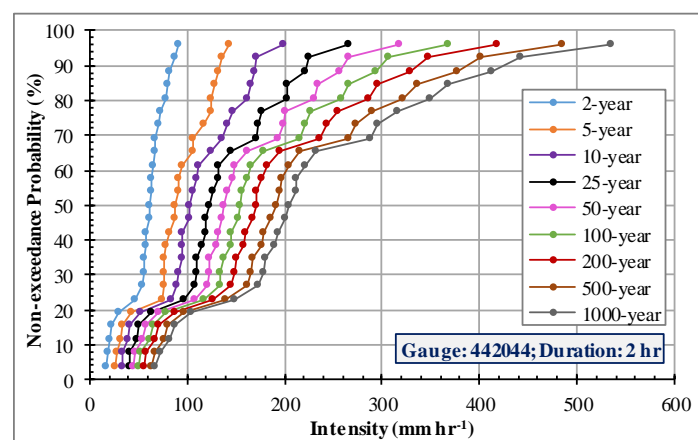
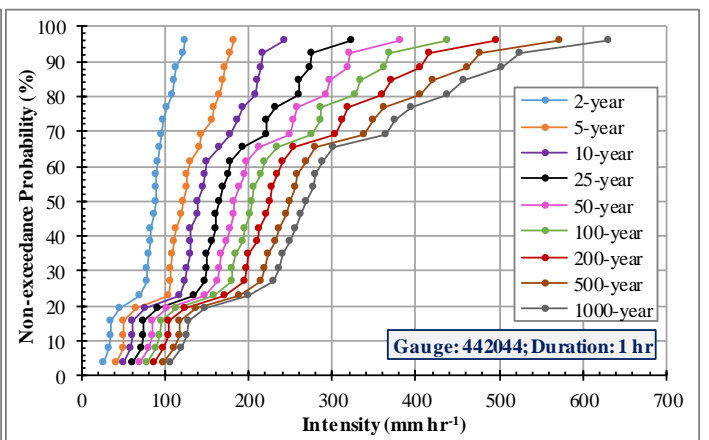
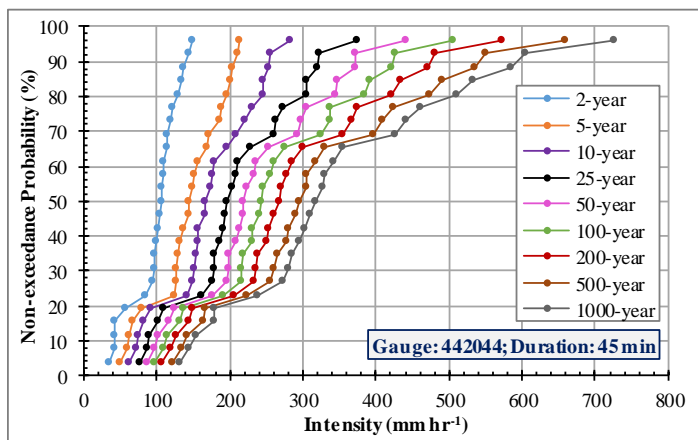
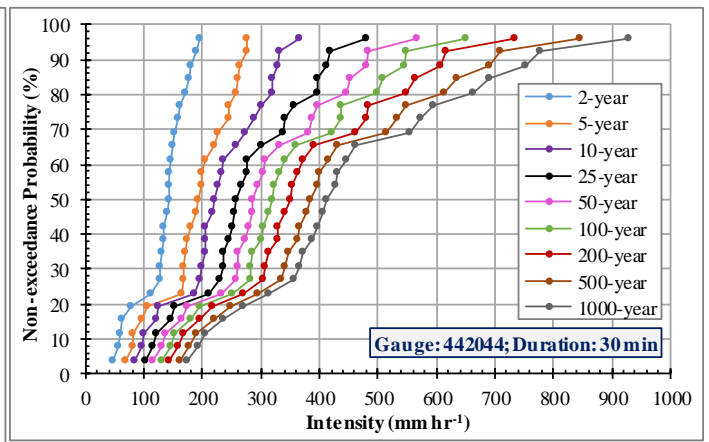
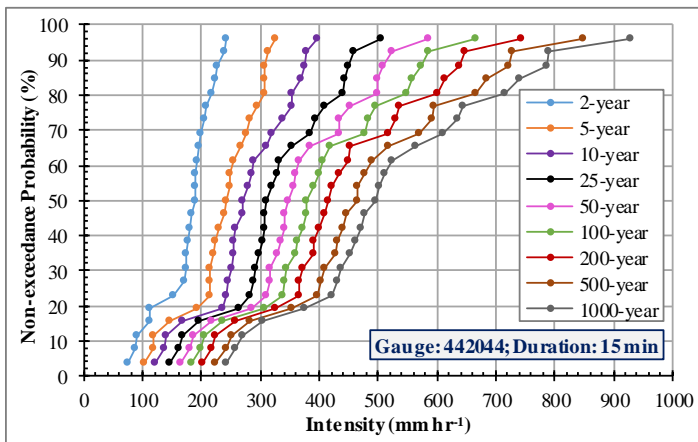


Figure 18. The probability-based intensity-duration-frequency (IDF) curves for gauge 440561.



[Figure 19. The probability-based intensity-duration-frequency (IDF) curves for gauge 442044]

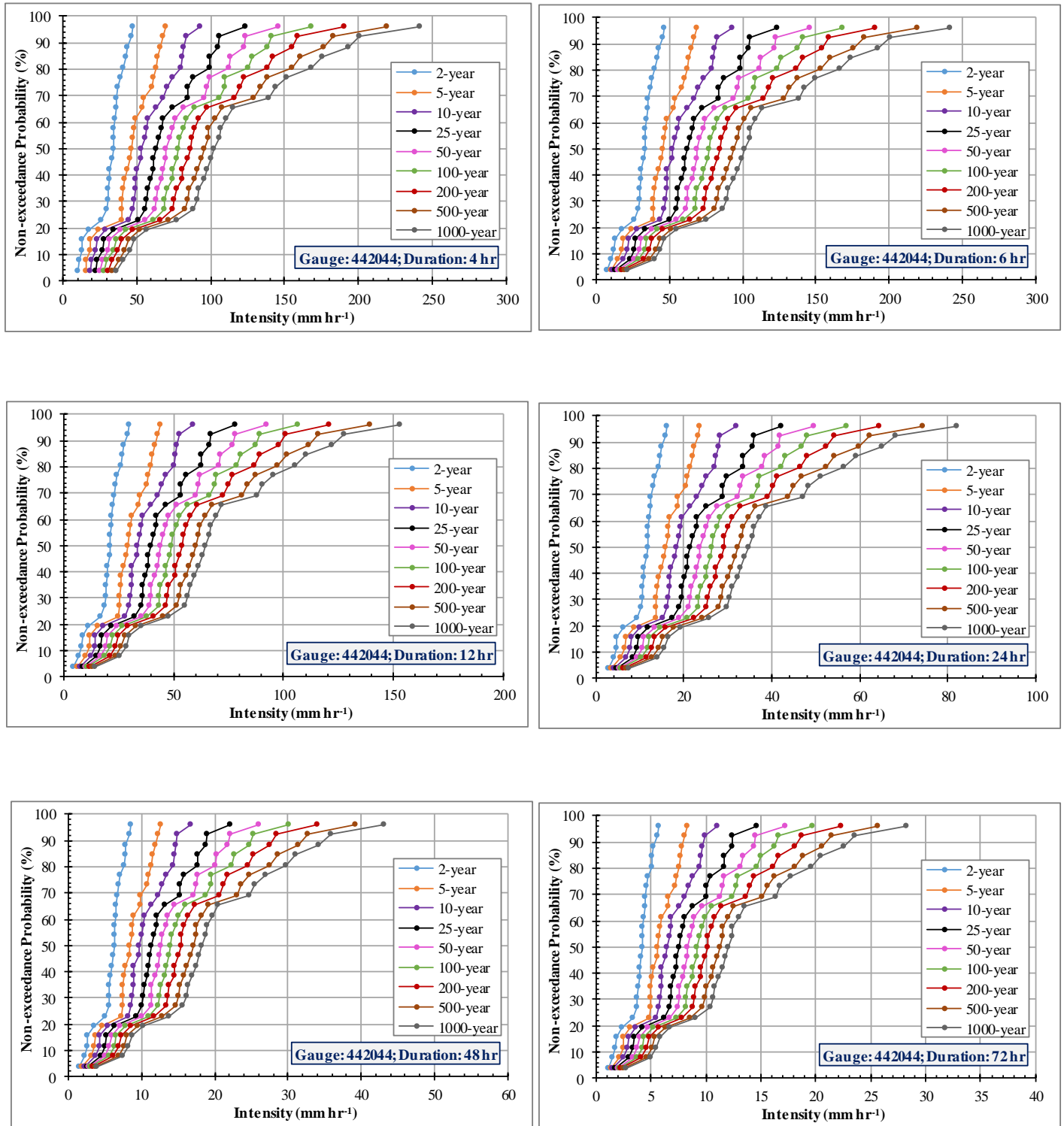
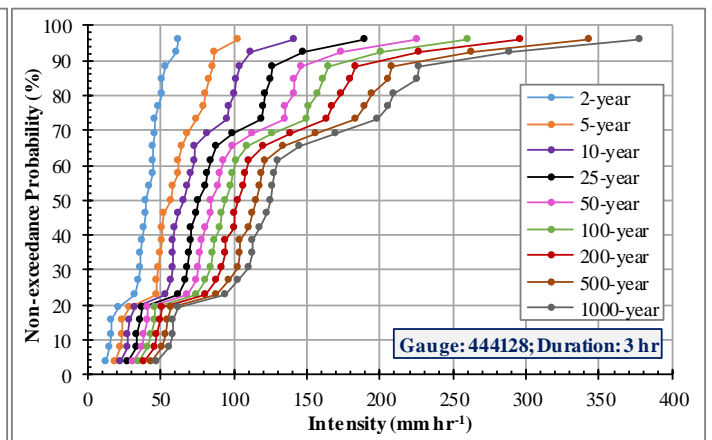
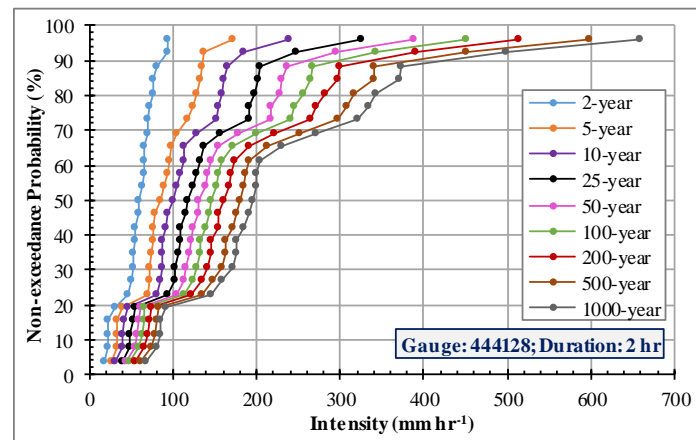
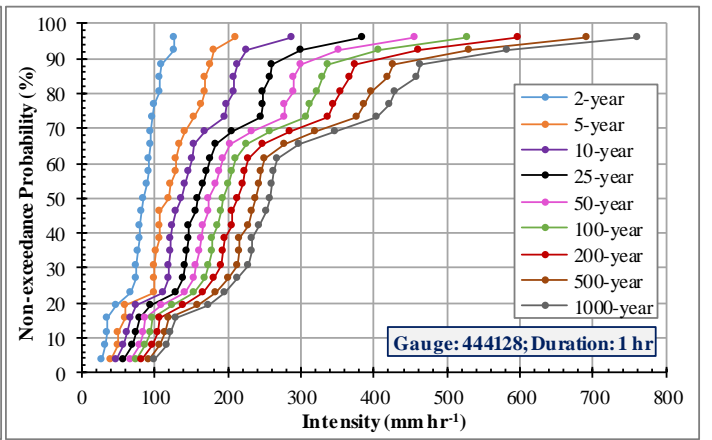
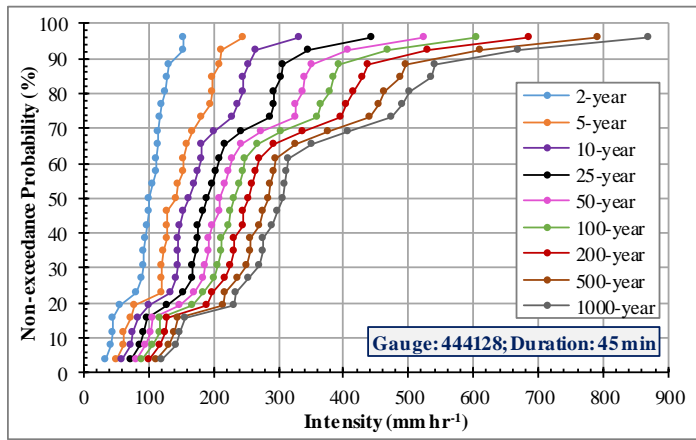
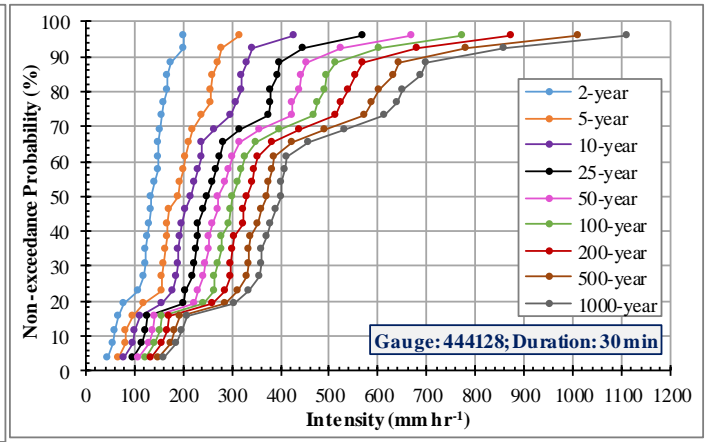
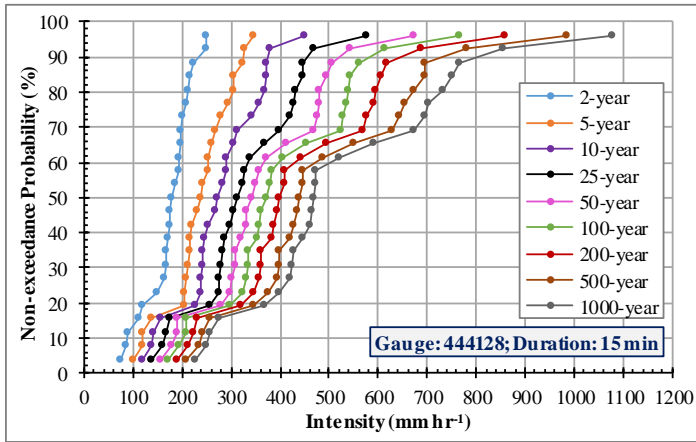


Figure 19. The probability-based intensity-duration-frequency (IDF) curves for gauge 442044.



[Figure 20. The probability-based intensity-duration-frequency (IDF) curves for gauge 444128]

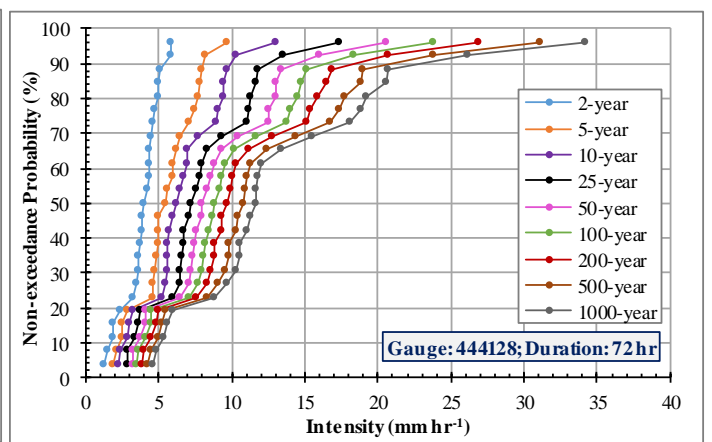
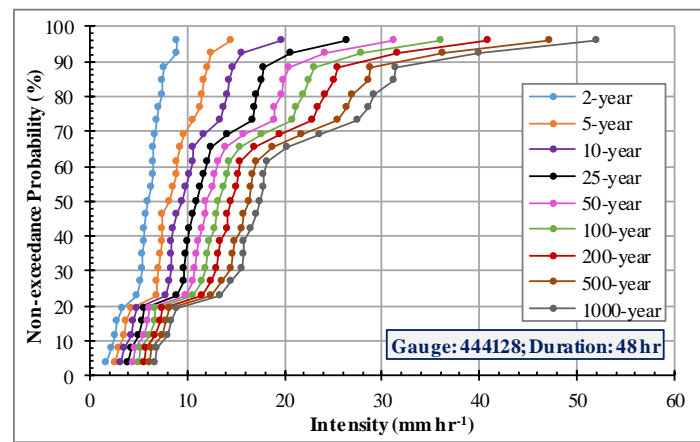
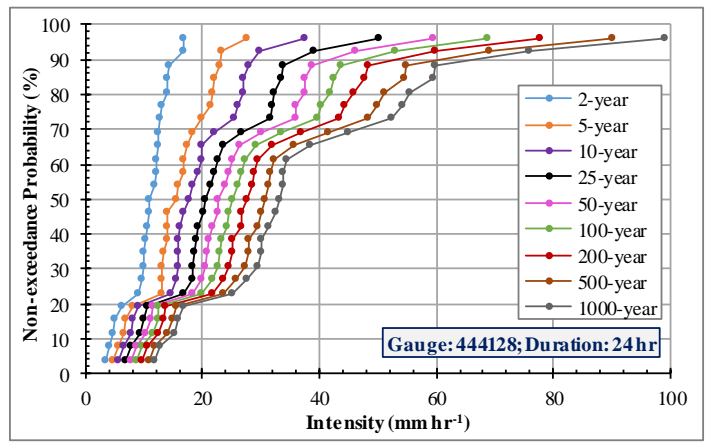
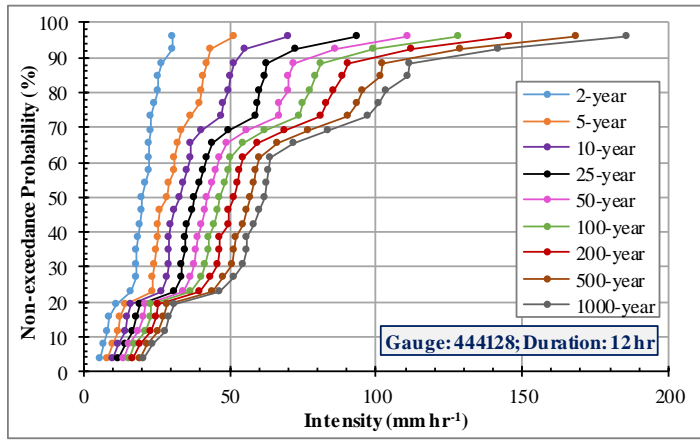
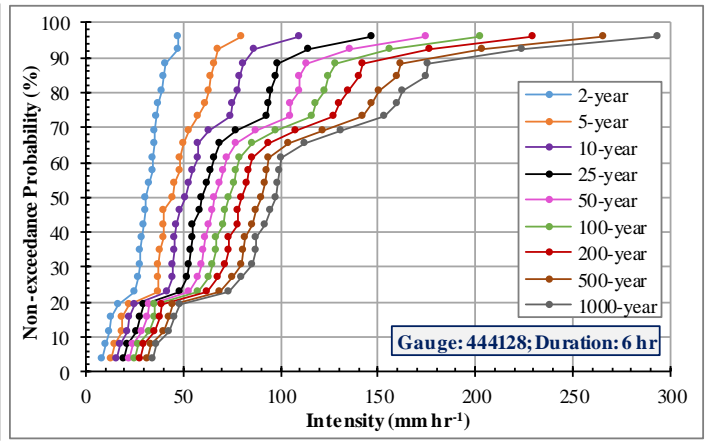
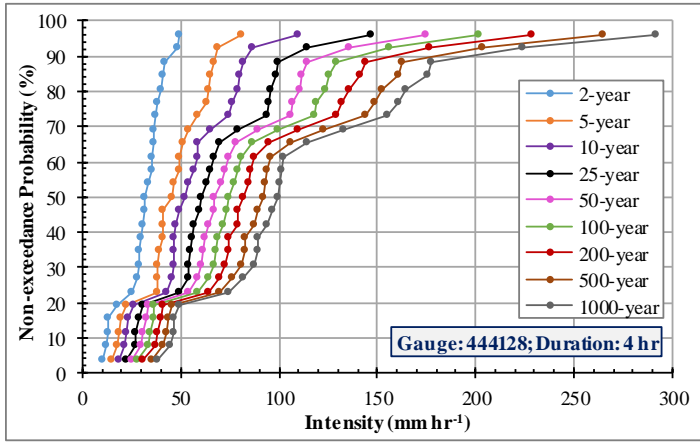
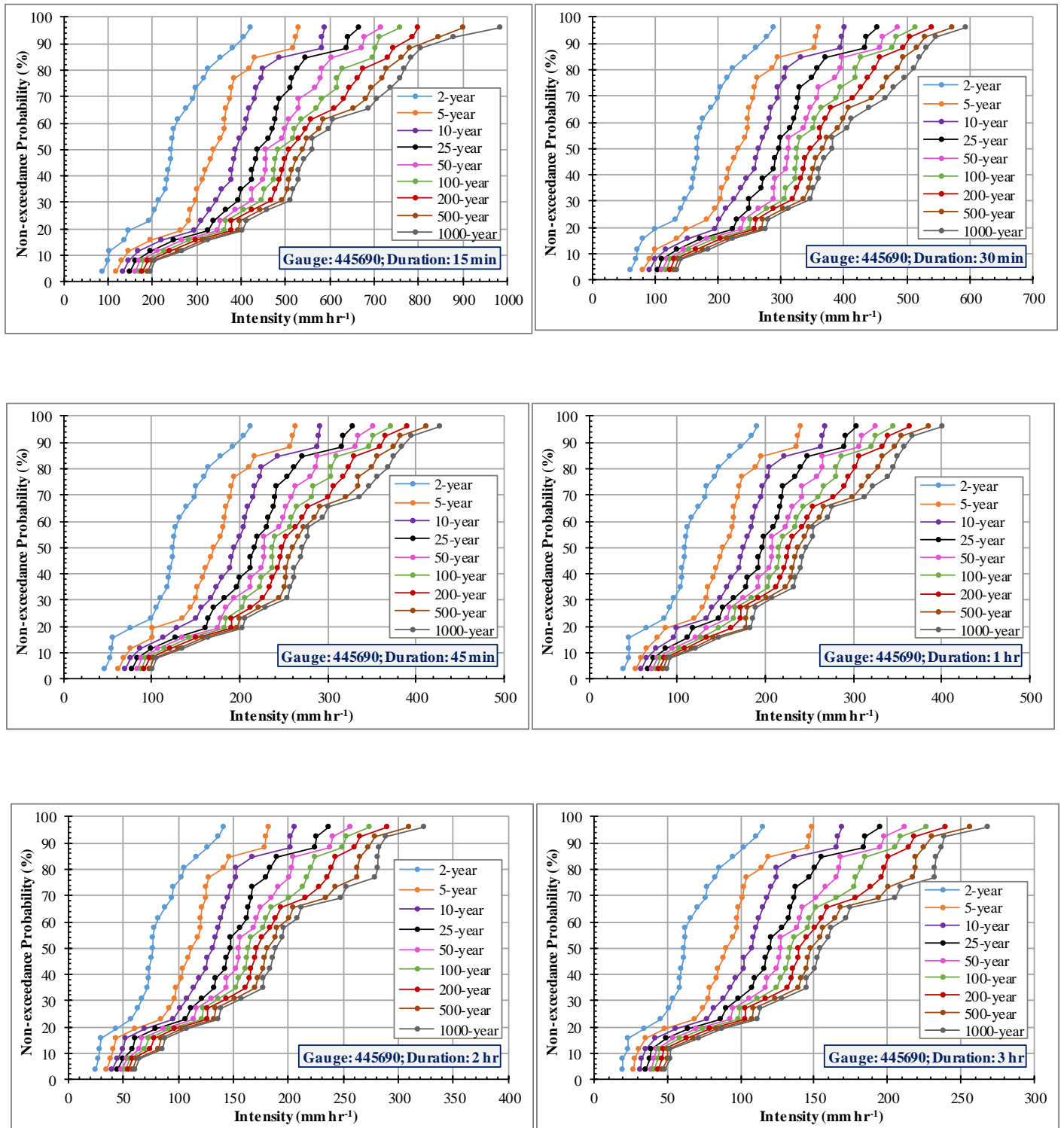


Figure 20. The probability-based intensity-duration-frequency (IDF) curves for gauge 444128.



[Figure 21. The probability-based intensity-duration-frequency (IDF) curves for gauge 445690]

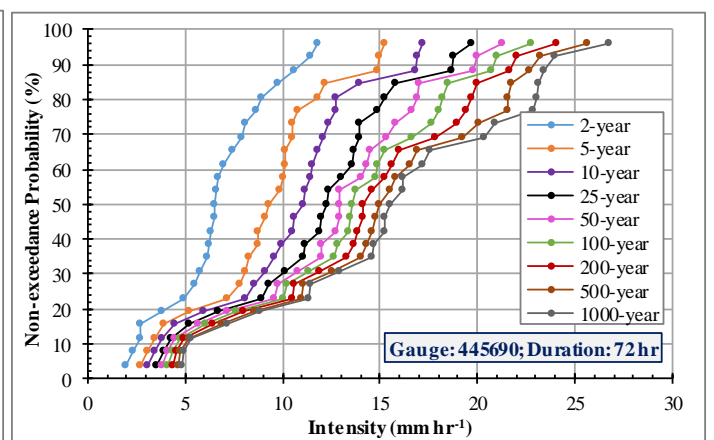
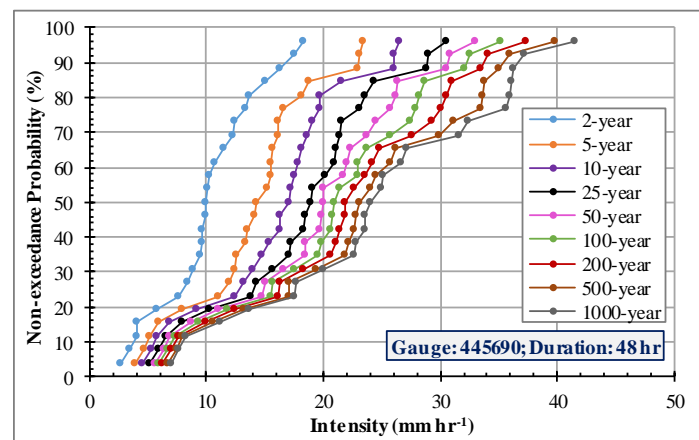
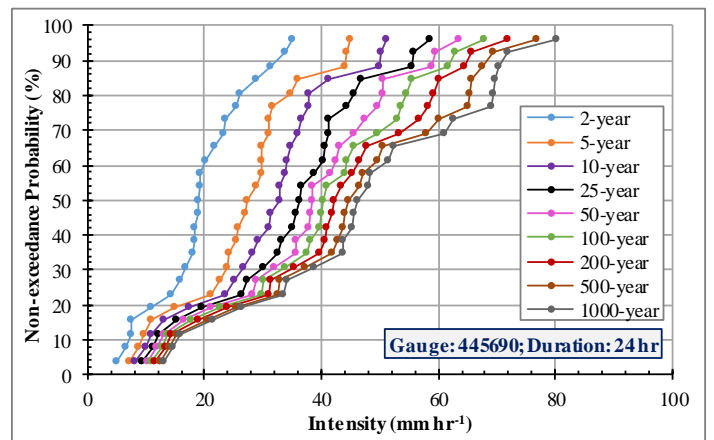
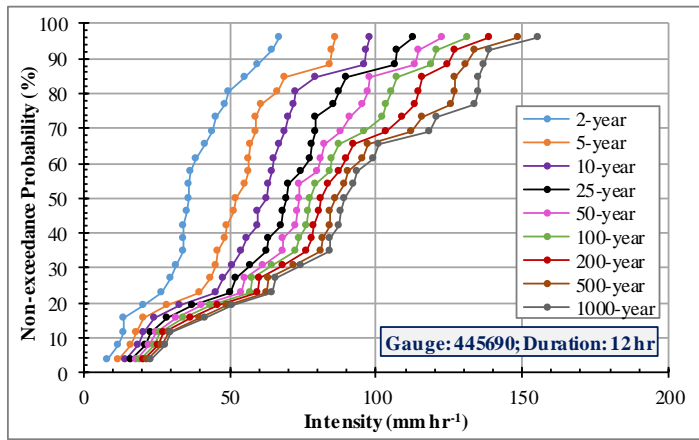
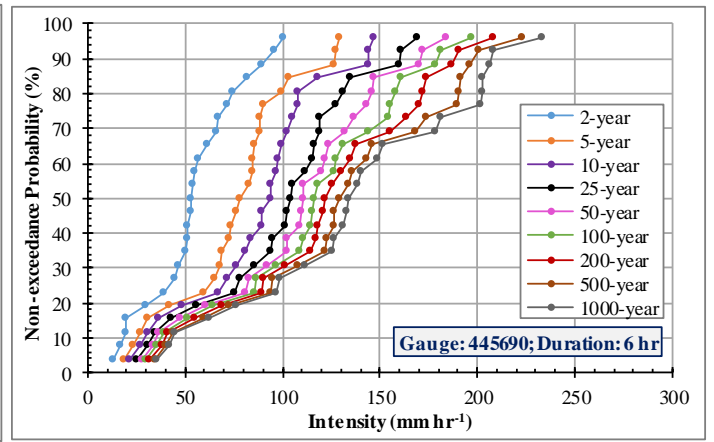
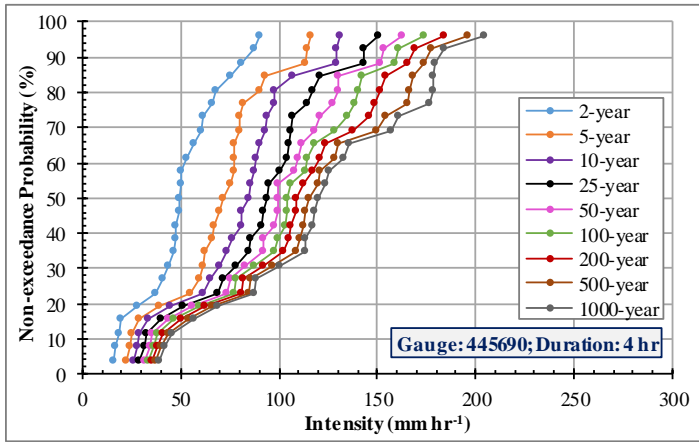
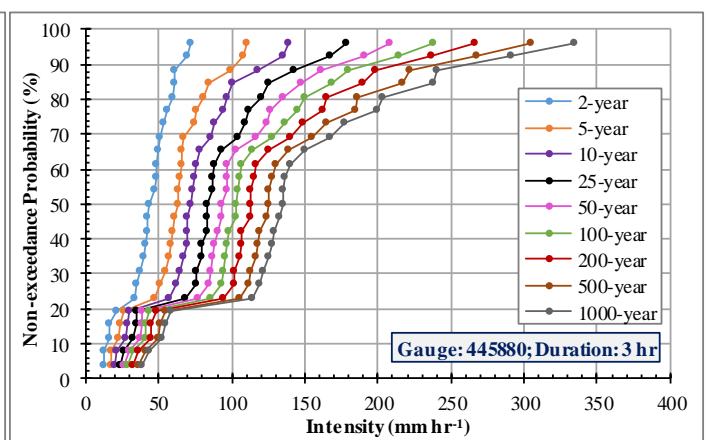
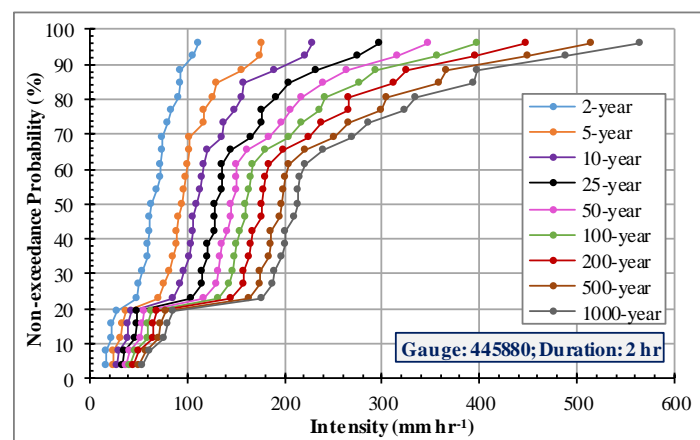
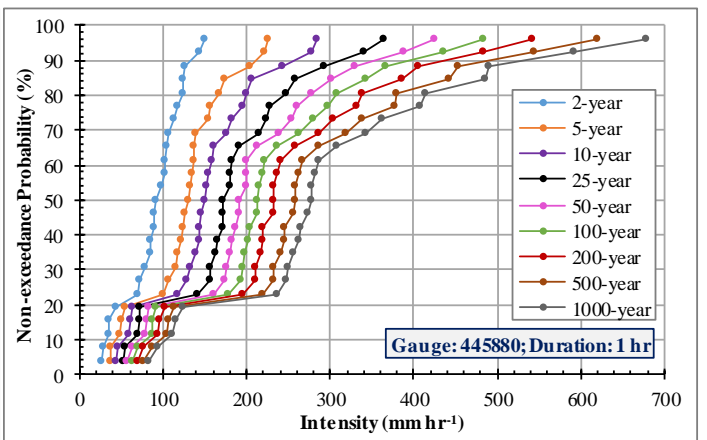
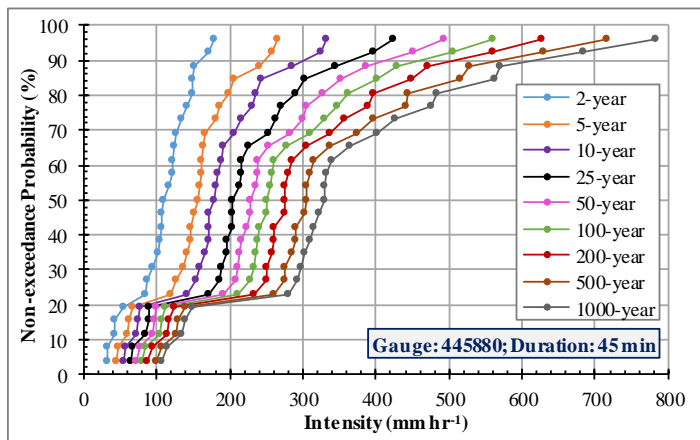
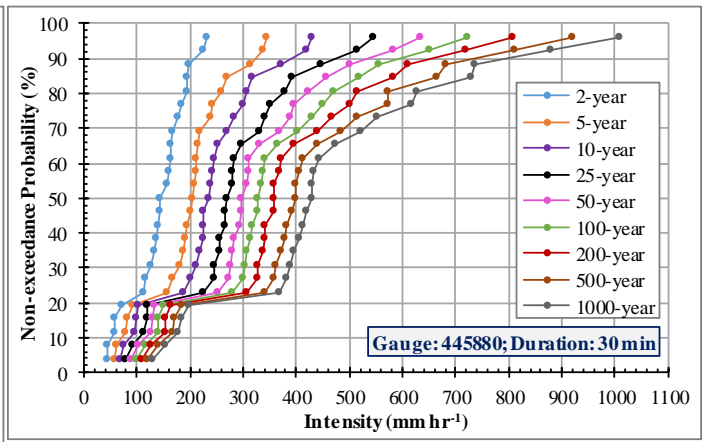
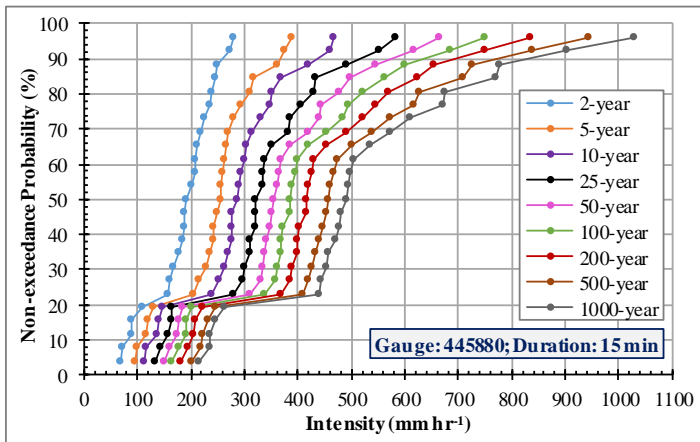


Figure 21. The probability-based intensity-duration-frequency (IDF) curves for gauge 445690.



[Figure 22. The probability-based intensity-duration-frequency (IDF) curves for gauge 445880]

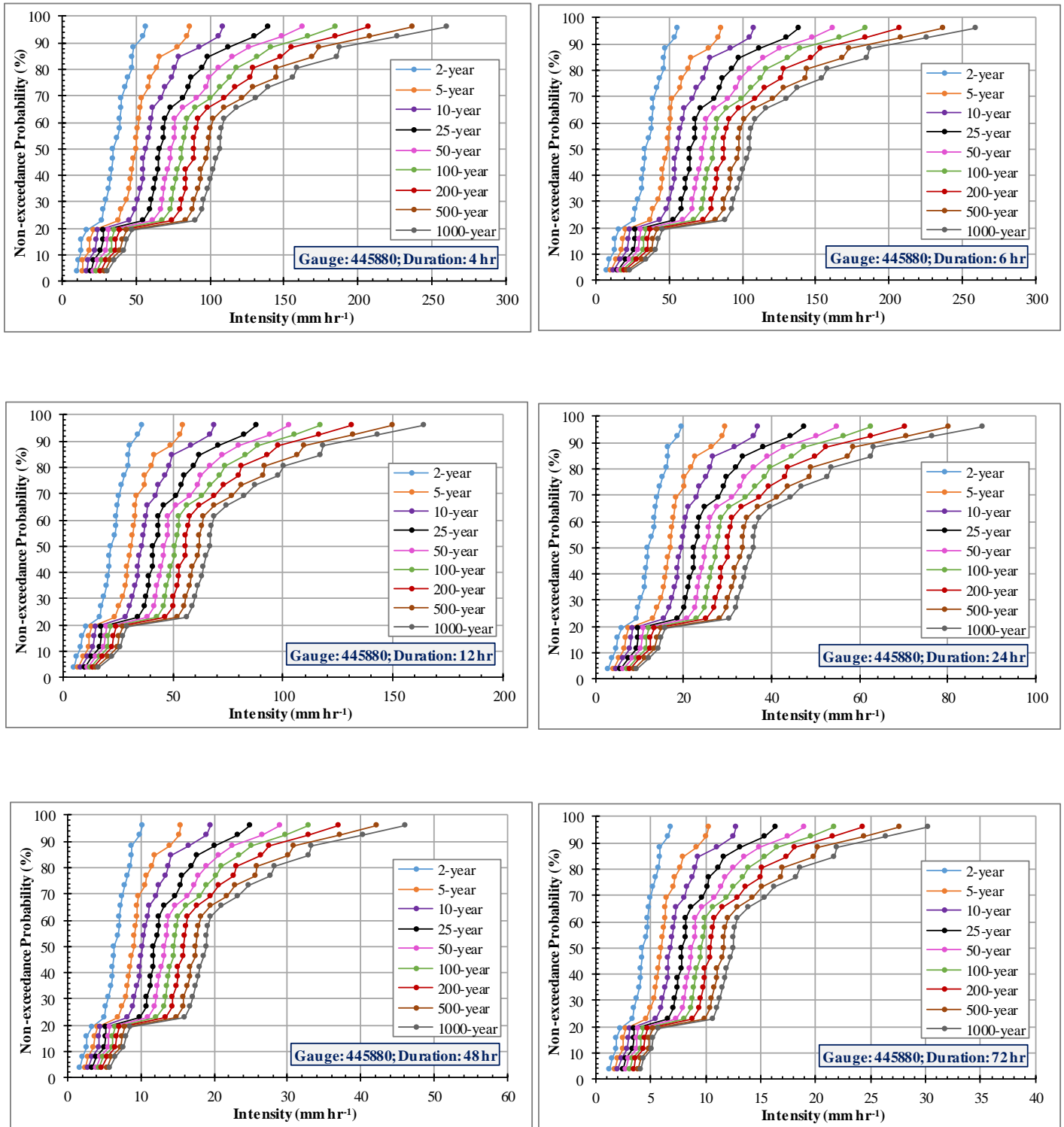
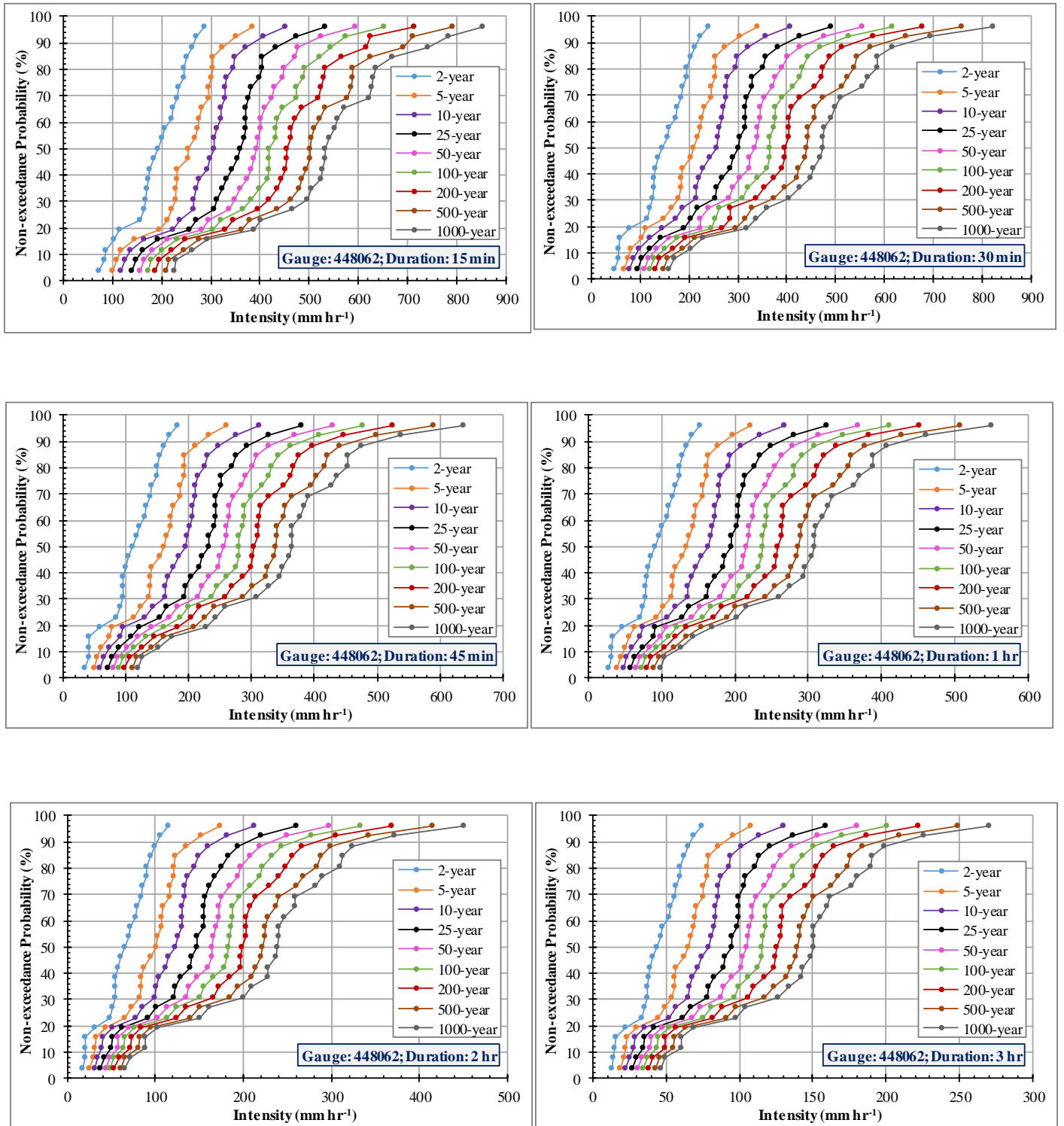


Figure 22. The probability-based intensity-duration-frequency (IDF) curves for gauge 445880.



[Figure 23. The probability-based intensity-duration-frequency (IDF) curves for gauge 448062]

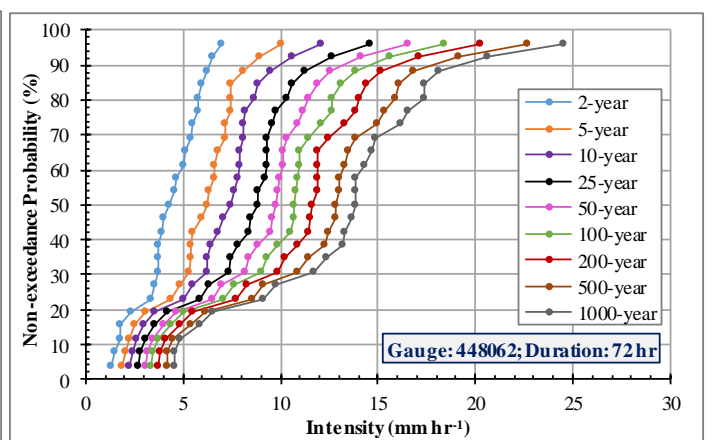
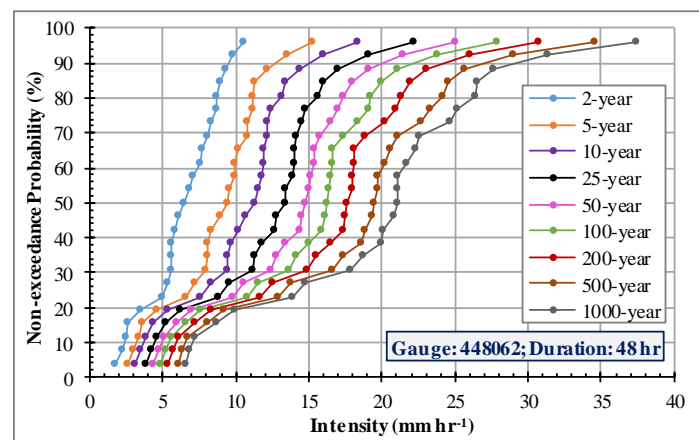
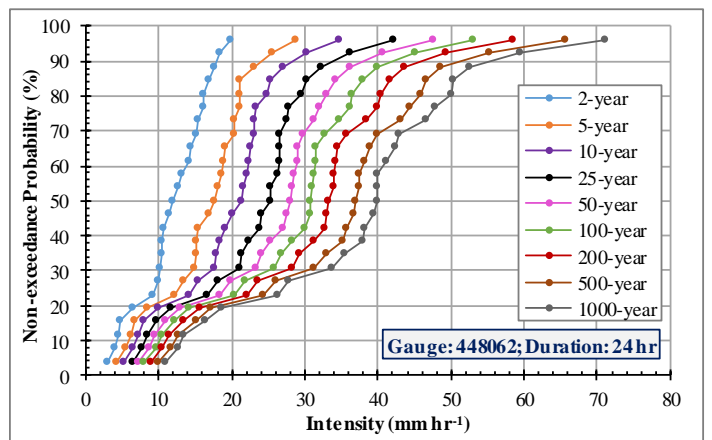
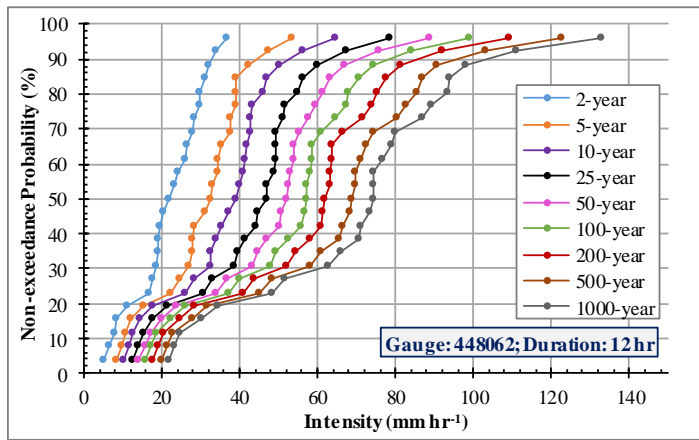
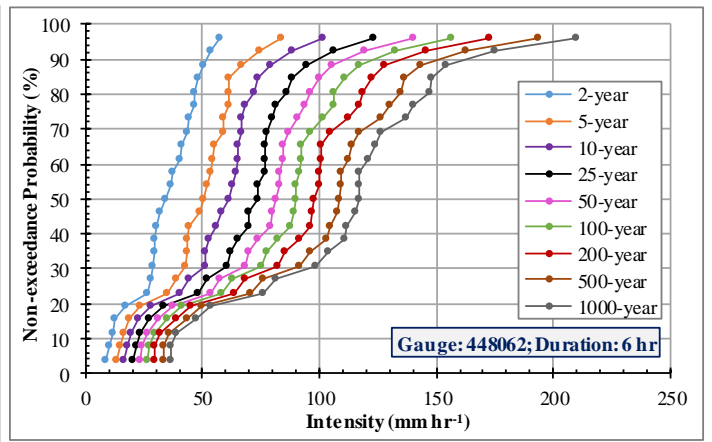
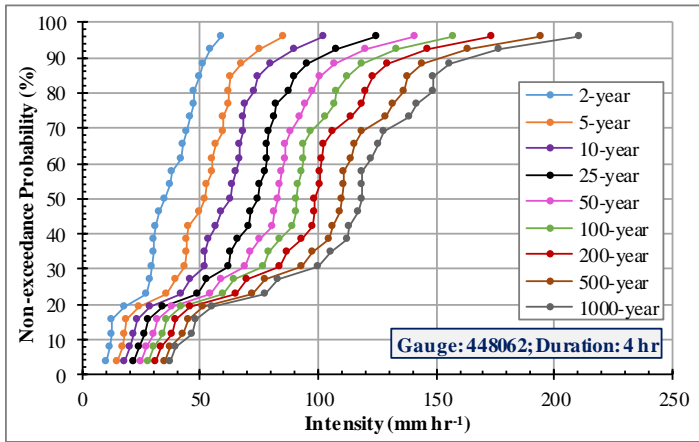
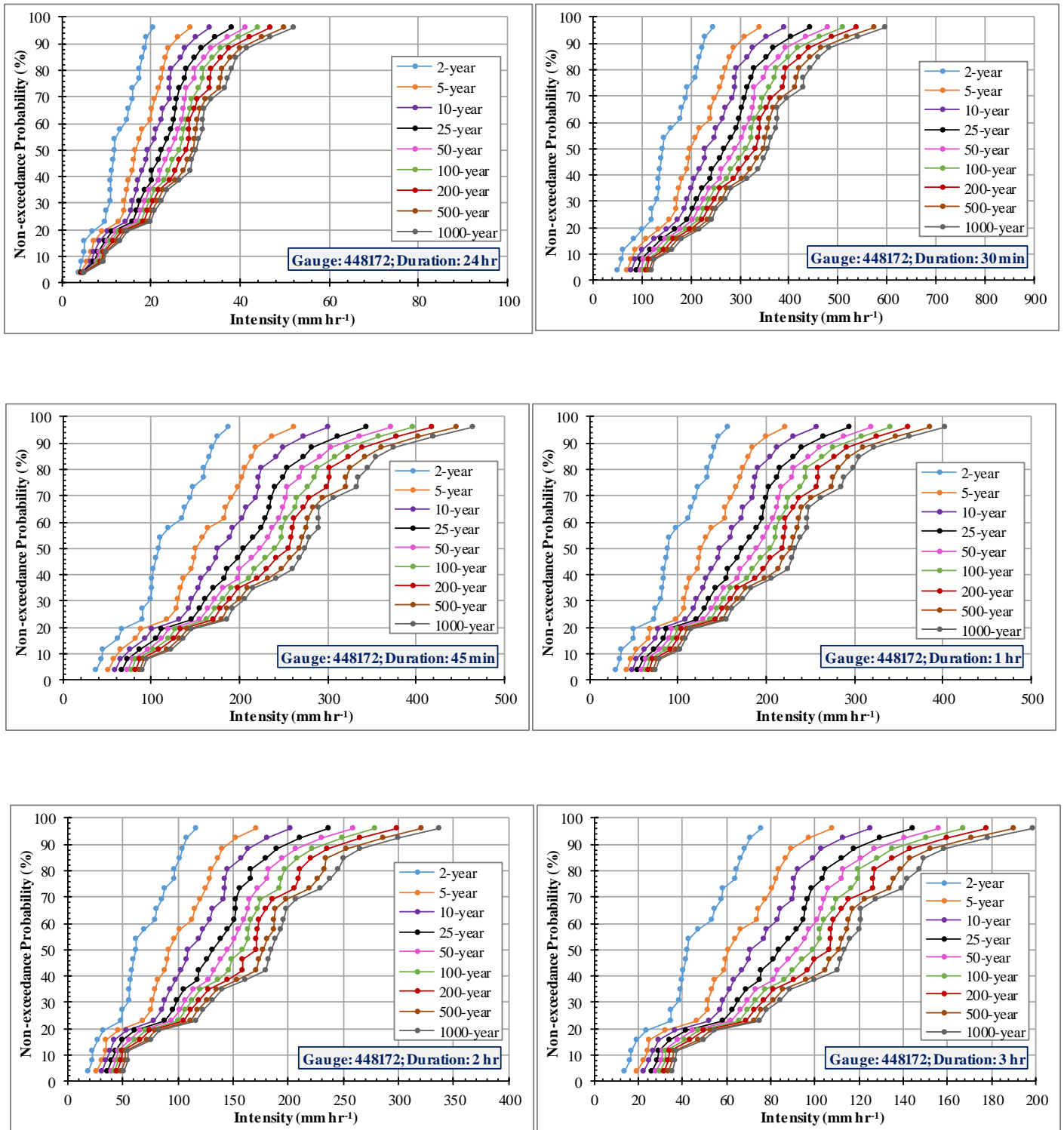


Figure 23. The probability-based intensity-duration-frequency (IDF) curves for gauge 448062.



[Figure 24. The probability-based intensity-duration-frequency (IDF) curves for gauge 448172]

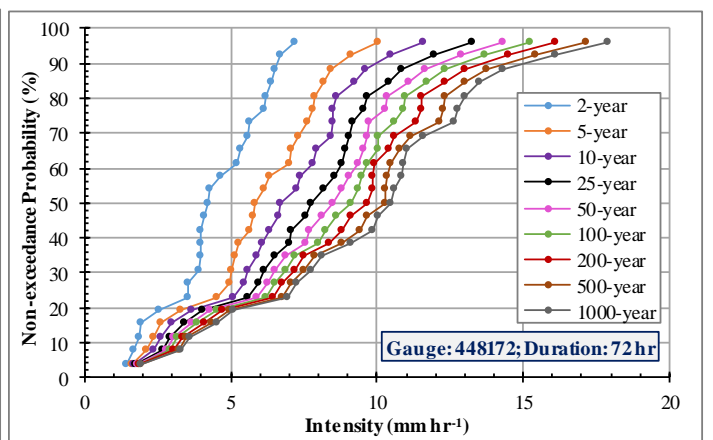
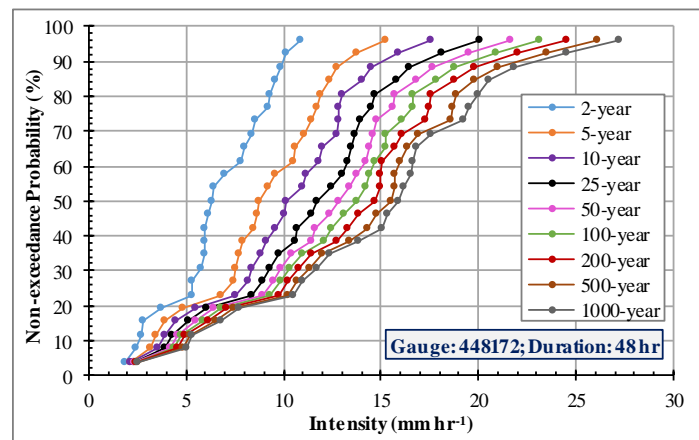
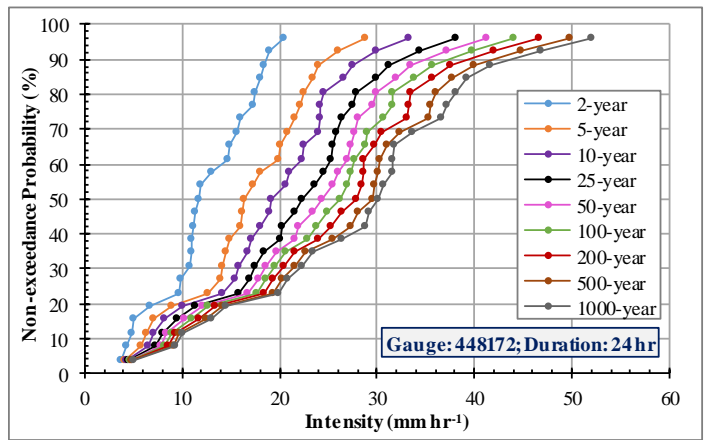
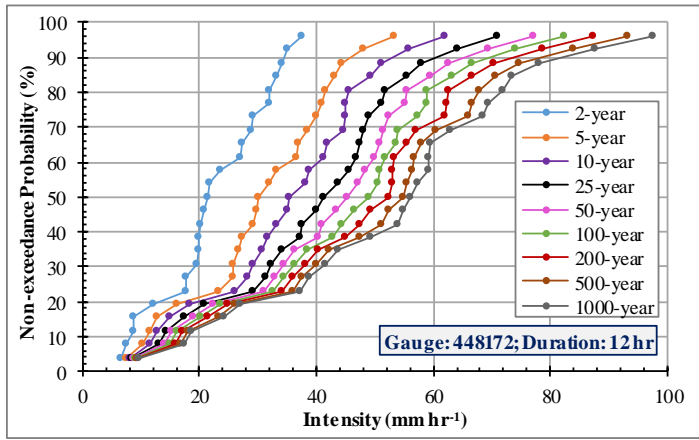
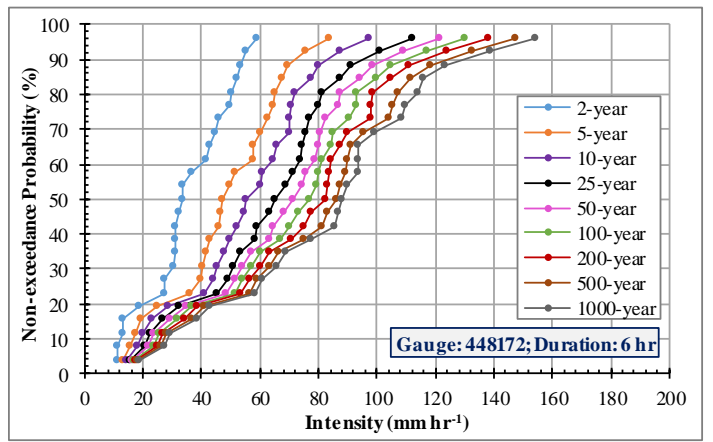
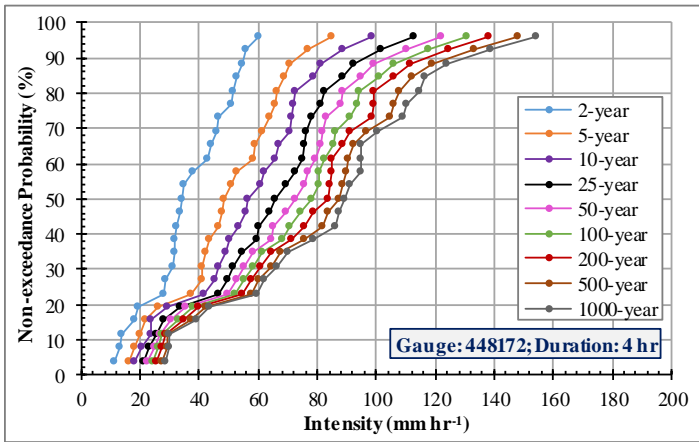
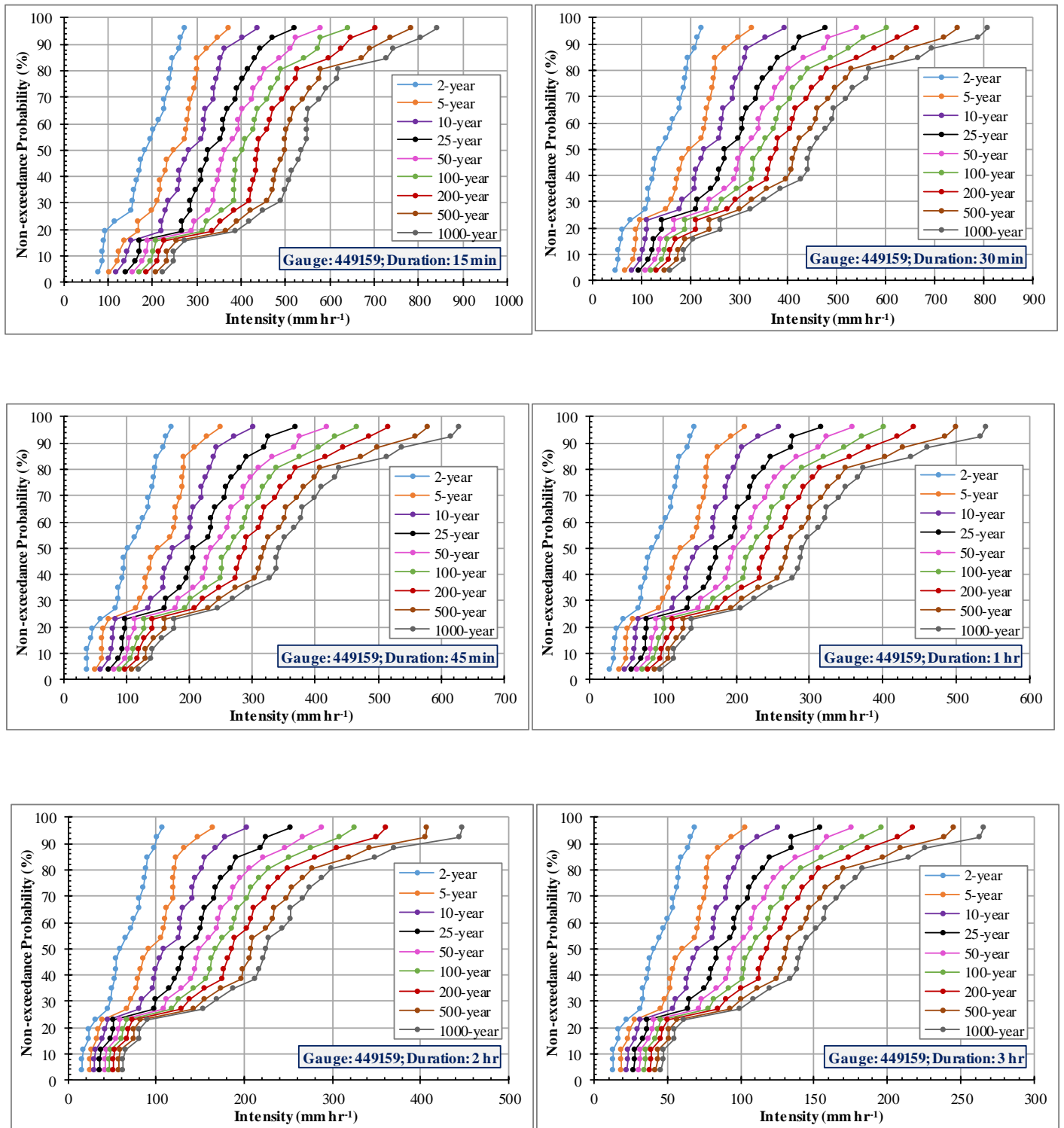


Figure 24. The probability-based intensity-duration-frequency (IDF) curves for gauge 448172.



[Figure 25. The probability-based intensity-duration-frequency (IDF) curves for gauge 449159]

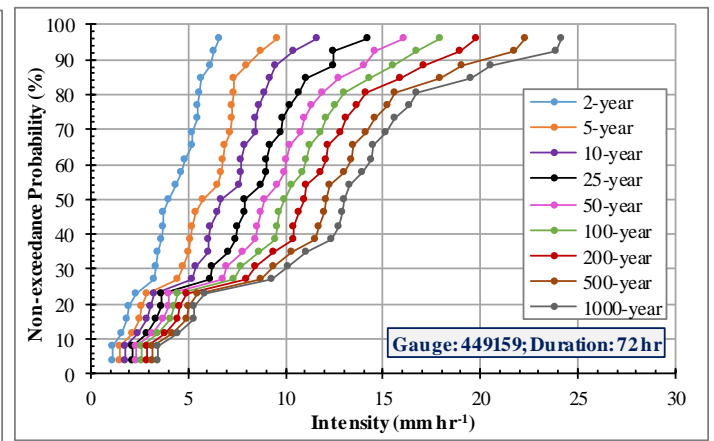
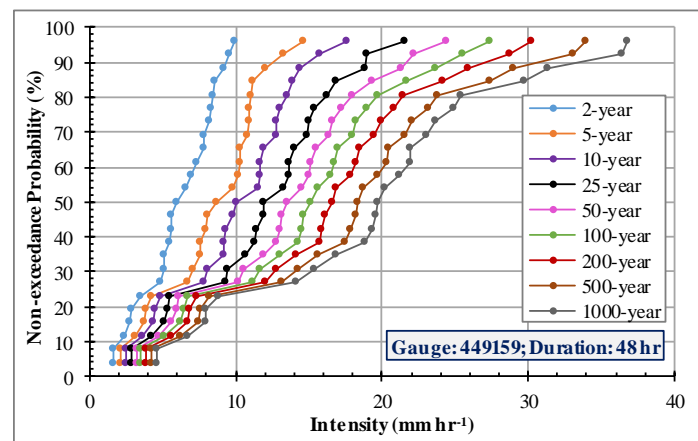
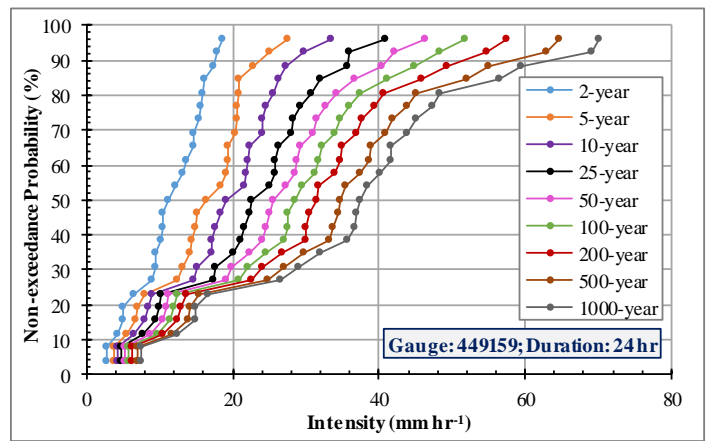
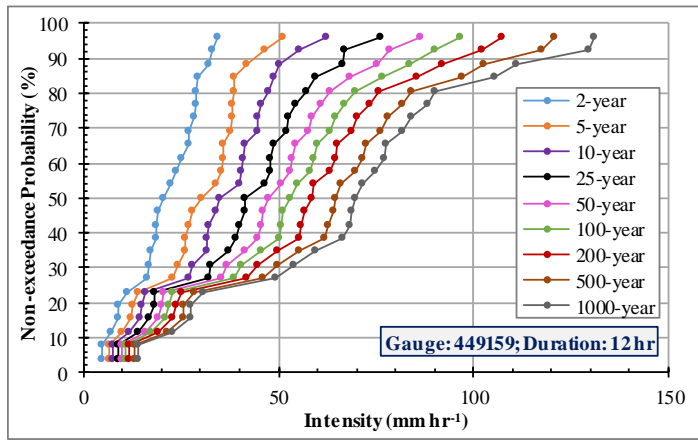
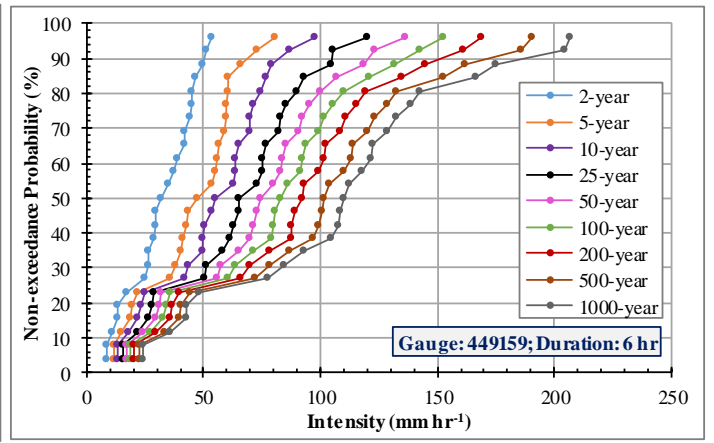
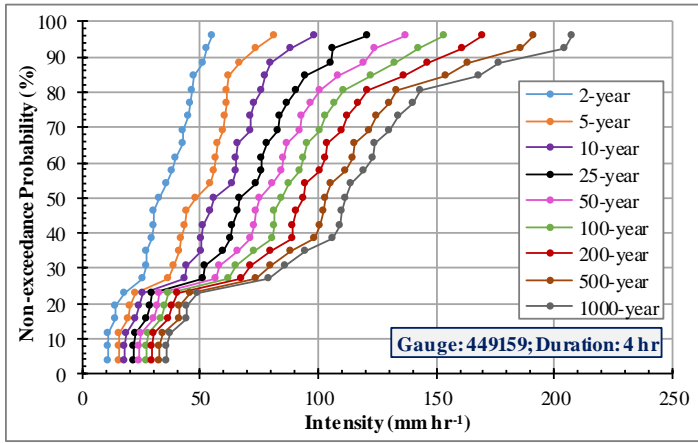


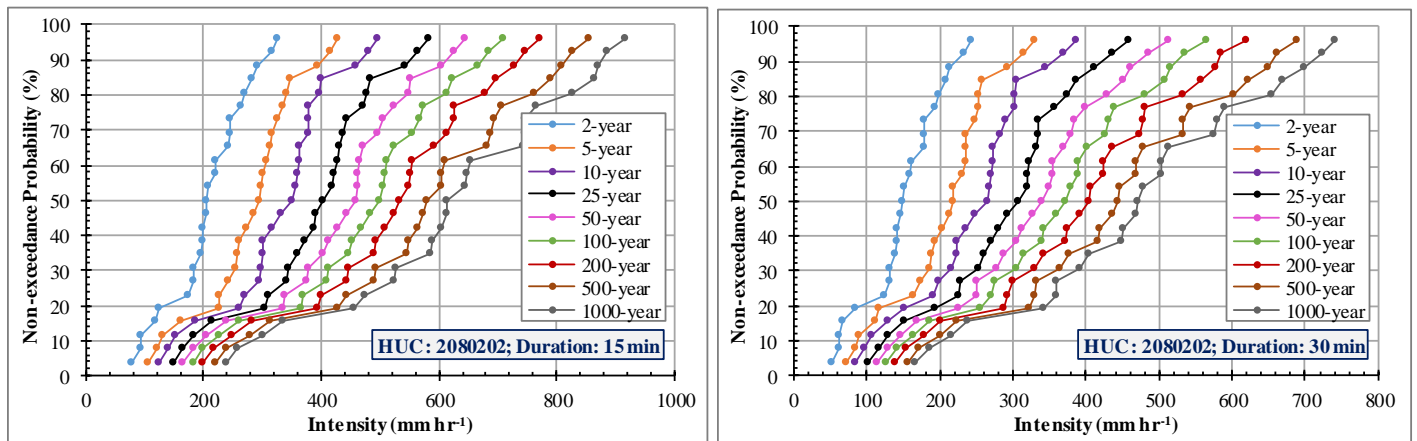
Figure 25. The probability-based intensity-duration-frequency (IDF) curves for gauge 449159.

3.6 The Watershed-Level Probability-Based IDF Curves

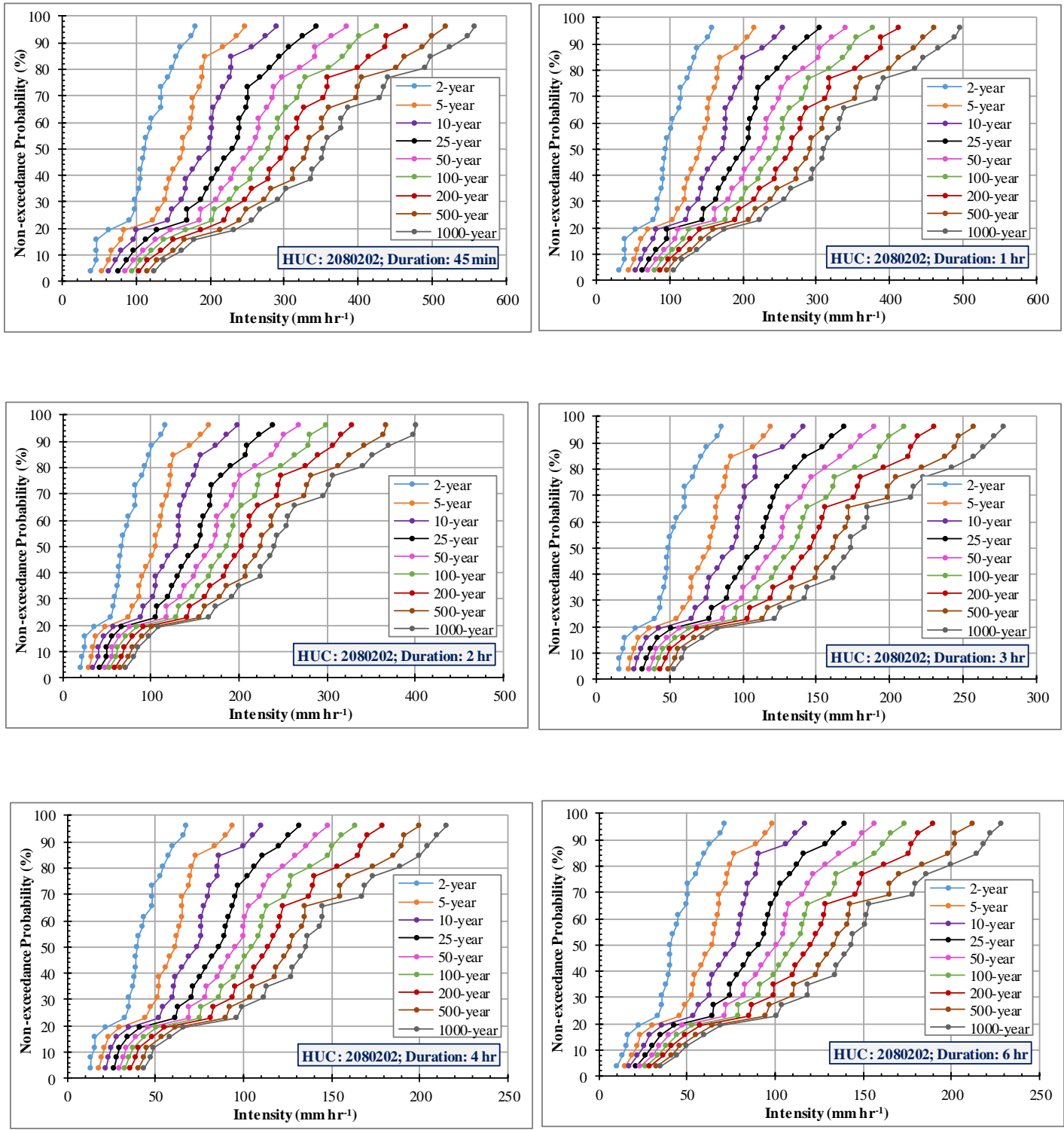
Figure 26 shows the probability-based IDF curves (tabulated in Appendix V) for HUC 2080202. This watershed was subdivided into eight polygons that are controlled by the gauges listed in section 3.5. The curves' coefficients of variation range from 0.30 to 0.42 (Table 17). The dispersions of the IDF curves are not very different. However, as expected, for a given duration and/or a given return period, the dispersion of the watershed-level IDF curve is less than those of the responding gauge-level IDF curves. This is because the watershed-level IDF curve represents the overall average of the rainfall intensities at the gauges, smoothing out the localized peaks and troughs

Table 17. The dispersions of the probability-based intensity-duration-frequency (IDF) curves of HUC 2080202.

Duration	Return Period								
	2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year
15 min	0.33	0.30	0.30	0.30	0.31	0.31	0.31	0.32	0.32
30 min	0.36	0.34	0.33	0.34	0.34	0.34	0.34	0.35	0.35
45 min	0.36	0.34	0.34	0.34	0.34	0.35	0.35	0.35	0.36
1 h	0.37	0.35	0.35	0.36	0.36	0.36	0.37	0.37	0.37
2 h	0.40	0.39	0.39	0.40	0.40	0.41	0.41	0.41	0.42
3 h	0.40	0.38	0.38	0.39	0.39	0.40	0.40	0.40	0.40
4 h	0.40	0.39	0.39	0.40	0.40	0.40	0.41	0.41	0.41
6 h	0.40	0.39	0.39	0.40	0.40	0.40	0.41	0.41	0.41
12 h	0.40	0.39	0.39	0.40	0.40	0.40	0.41	0.41	0.41
24 h	0.39	0.38	0.38	0.39	0.39	0.40	0.40	0.41	0.41
48 h	0.38	0.38	0.38	0.39	0.39	0.39	0.40	0.40	0.40
72 h	0.37	0.37	0.37	0.38	0.38	0.39	0.39	0.40	0.40



[Figure 26. The probability-based intensity-duration-frequency (IDF) curves for HUC 2080202]



[Figure 26. The probability-based intensity-duration-frequency (IDF) curves for HUC 2080202]

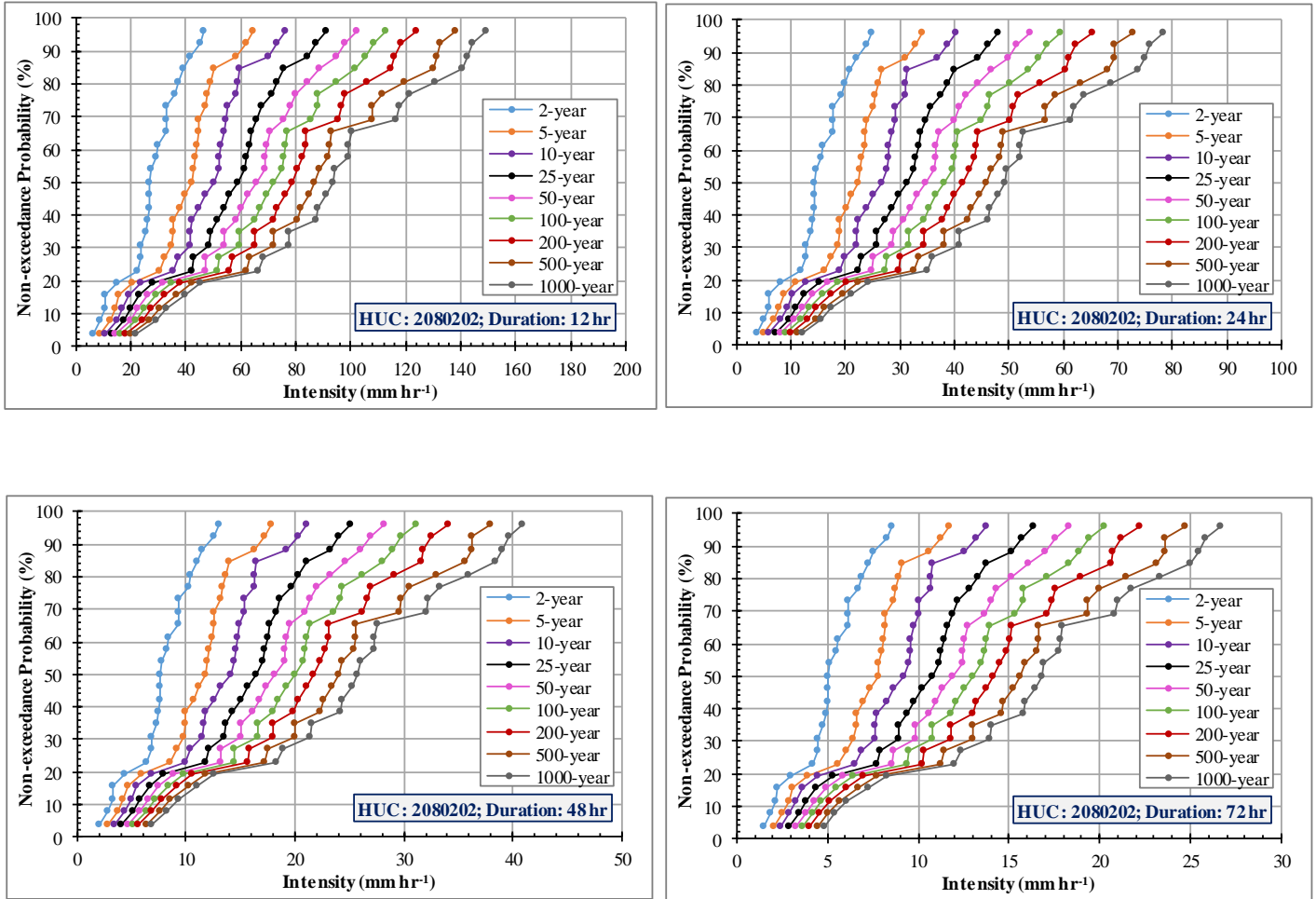


Figure 26. The probability-based intensity-duration-frequency (IDF) curves for HUC 2080202.

4. CONCLUSIONS AND IMPLICATIONS FOR FUTURE RESEARCH

This project developed an innovative approach for creating gauge- and watershed-level probability-based (i.e., next-generation) intensity-duration-frequency (IDF) curves. This approach consisted of a variety of methods, spreadsheets, and computer scripts for filling missing values of precipitation, detecting temporal trends and non-stationarities, selecting best statistical distributions, downscaling and disaggregating predictions of the RCM-GCM models, and creating probability-based IDF curves. It requires observed historical data on 15-min precipitation at various gauges and predicted historical and future 3-h time series by the RCM-GCM models. Subsequently, this approach was applied to the state of Virginia to create the historical and next-generation IDF curves for 57 gauges and 53 Virginia 8-digit watersheds. Such IDF curves consider the non-stationarity at temporal and spatial scales relevant to improving future DoD infrastructure planning processes and can be a useful tool for DoD to construct and/or manage its hydrology-influenced infrastructure in changing climate in guarding against over- or under-committing resources. The preliminary results indicate that the project objectives (i.e., proofs of concept) have been successfully achieved.

For the state of Virginia, the annual maximum durational intensities tended to decrease, but they did not experience any significant step change. The decreasing trends have caused the intensities at four gauges, but are expected to cause intensities at more gauges, to become non-stationary. The intensities tended to follow a normal distribution with increase of duration. Overall, the intensity for a longer duration had a smaller interannual variation than that for a shorter duration, implying that using a historic IDF curve, the structures that are controlled by a design peak discharge will likely be oversized, whereas, the structures that are controlled by a design runoff volume will probably be undersized. Regardless of the durations, the southwestern portions of the Northern and Western Piedmont divisions and the middle portion of the Central Mountain division tended to get more and more intense storm events in comparison with the coastal plain. In addition, the intensities at the gauges either follow a Gumbel or Weibull distribution, while the best distribution for a watershed might be assumed to be same as that for the control rain gauges, which account for most of the watershed drainage area. Based on these two types of distributions, the gauge- and watershed-level historic IDF curves were created. Further, the predictions of the 13 RCMs were spatially downscaled to the rain gauges and then temporally disaggregated into 15-min precipitations. However, limited by the project time, the probability based IDF curves were created for eight gauges and one watershed only.

Although this project fulfilled its initial objectives, a follow-on project will be crucial to make the probability-based IDF curves applicable in practice by pursuing the following issues that were raised during this project period.

First, the datasets on 15-min precipitation have a significant number of missing values. As glimpsed by a NOAA's senior hydro-meteorologist in an email communication, the number of missing values tended to become large for the record years after 2010 and some recorded time periods might be longer than 15 min. A follow-on research will enable us to scrutinize the accuracy of the recorded values by consulting relevant NOAA scientists. In addition, we will systematically compare the historical gauge-level IDF curves with the NOAA PPFs to elucidate the reasons for any noted discrepancies.

Second, this project developed regression equations using predictions by one RCM-GCM model. With the assumption that the equations were independent of the RCM-GCM models, this same set of equations were used to downscale and disaggregate the predictions made by each model. A follow-on research will enable us to validate such an assumption by comparing the regression equations to be developed using the predictions by the twelve RCM-GCM models. Also, we will develop methods to quantify uncertainties in the downscaled and disaggregated data and then incorporate the uncertainties into the creation of next-generation IDF curves.

Third, limited by time, this project created the probability-based IDF curves for eight gauges and one watershed only. A follow-on research will allow us to generate probability-based IDF curves (totaling 1210 sets) for all 57 gauges and 53 watersheds in Virginia. Also, we will apply this approach to other DoD concerned regions, such as Maryland.

Finally, A follow-on research will allow us to standardize the spreadsheets and computer scripts generated in this project to develop user-friendly software tools that can be used by others to create next-generation IDF curves for the regions of their interest.

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APPENDICES

I. The K-S Test Results for Selecting Best Distributions

Rain Gauge ID	Distribution & Critical Value	K-S Test Statistics for Duration (min)												Best Distribution	Gross		
		15	30	45	60	120	180	240	360	720	1440	2880	4320		Minimum	Sum	Maximum
446475	Gumbel	0.07	0.07	0.08	0.11	0.04	0.07	0.10	0.06	0.11	0.06	0.06	0.10	Gumbel	0.93	0.93	0.11
	Weibull	0.06	0.03	0.04	0.06	0.04	0.09	0.14	0.10	0.14	0.10	0.07	0.12			0.99	0.14
	Fréchet	0.30	9999.00	9999.00	9999.00	9999.00	0.21	0.28	0.25	9999.00	0.24	9999.00	0.23	59995.51	9999		
	Critical Value	0.38	0.34	0.35	0.33	0.29	0.33	0.33	0.29	0.28	0.26	0.26	0.26			3.7	0.38
448800	Gumbel	0.06	0.12	0.09	0.14	0.09	0.09	0.13	0.09	0.09	0.11	0.09	0.06	Weibull	1.01	1.16	0.14
	Weibull	0.06	0.08	0.06	0.10	0.07	0.06	0.09	0.07	0.12	0.10	0.11	0.09			1.01	0.12
	Fréchet	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	0.23	0.26	99990.49	9999		
	Critical Value	0.35	0.31	0.33	0.32	0.33	0.29	0.29	0.31	0.28	0.28	0.27	0.28			3.64	0.35
449151	Gumbel	0.09	0.08	0.04	0.04	0.06	0.09	0.08	0.07	0.13	0.20	0.13	0.16	Gumbel	1.17	1.17	0.2
	Weibull	0.08	0.06	0.06	0.06	0.09	0.10	0.10	0.08	0.17	0.18	0.12	0.15			1.25	0.18
	Fréchet	0.28	0.31	9999.00	0.17	9999.00	9999.00	9999.00	0.26	0.19	9999.00	9999.00	9999.00	69994.21	9999		
	Critical Value	0.34	0.31	0.32	0.29	0.28	0.29	0.26	0.26	0.30	0.25	0.25	0.24			3.39	0.34
448129	Gumbel	0.25	0.21	0.21	0.21	0.20	0.18	0.21	0.08	0.09	0.11	0.13	0.08	Weibull	1.89	1.96	0.25
	Weibull	0.21	0.16	0.17	0.18	0.18	0.19	0.24	0.13	0.10	0.11	0.11	0.11			1.89	0.24
	Fréchet	0.34	0.31	0.28	0.34	0.30	0.30	0.31	0.32	0.32	0.29	0.42	0.24	3.77	0.42		
	Critical Value	0.52	0.45	0.45	0.48	0.56	0.52	0.48	0.45	0.56	0.45	0.45	0.45			5.82	0.56
440778	Gumbel													Gumbel			
	Weibull																
	Fréchet																
	Critical Value																
440993	Gumbel	0.09	0.12	0.09	0.05	0.06	0.12	0.09	0.08	0.09	0.06	0.08	0.09	Gumbel	1.02	1.02	0.12
	Weibull	0.07	0.09	0.06	0.06	0.08	0.13	0.12	0.10	0.11	0.06	0.10	0.12			1.1	0.13
	Fréchet	0.38	9999.00	9999.00	9999.00	0.20	9999.00	0.25	0.23	9999.00	9999.00	0.27	0.16	59995.49	9999		
	Critical Value	0.43	0.35	0.35	0.31	0.32	0.32	0.31	0.32	0.31	0.29	0.28	0.29			3.88	0.43

Rain Gauge ID	Distribution & Critical Value	K-S Test Statistics for Duration (min)												Best Distribution	Gross		
		15	30	45	60	120	180	240	360	720	1440	2880	4320		Minimum	Sum	Maximum
441322	Gumbel	0.13	0.14	0.11	0.05	0.07	0.06	0.06	0.08	0.10	0.10	0.13	0.11	Gumbel	1.14	1.14	0.14
	Weibull	0.12	0.15	0.13	0.08	0.10	0.07	0.09	0.11	0.08	0.07	0.07	0.07			1.14	0.15
	Fréchet	0.25	9999.00	9999.00	0.32	0.30	9999.00	0.19	0.24	9999.00	9999.00	9999.00	9999.00			69994.3	9999
	Critical Value	0.35	0.33	0.33	0.32	0.30	0.29	0.29	0.28	0.26	0.25	0.28	0.26			3.54	0.35
441929	Gumbel	0.08	0.07	0.07	0.14	0.14	0.12	0.09	0.11	0.19	0.19	0.17	0.11	Gumbel	1.48	1.48	0.19
	Weibull	0.07	0.09	0.11	0.13	0.16	0.13	0.11	0.13	0.20	0.22	0.18	0.13			1.66	0.22
	Fréchet	0.34	0.34	0.23	0.34	0.29	0.28	0.28	0.26	0.22	0.32	0.32	0.25			3.47	0.34
	Critical Value	0.48	0.48	0.43	0.48	0.41	0.39	0.39	0.36	0.35	0.36	0.35	0.35			4.83	0.48
442941	Gumbel													Weibull			
	Weibull																
	Fréchet																
	Critical Value																
443192	Gumbel	0.17	0.09	0.17	0.08	0.10	0.13	0.09	0.10	0.15	0.13	0.12	0.13	Weibull	1.4	1.46	0.17
	Weibull	0.16	0.10	0.14	0.09	0.12	0.17	0.13	0.08	0.11	0.09	0.08	0.13			1.4	0.17
	Fréchet	0.25	0.40	0.29	0.33	0.22	0.22	0.15	0.26	9999.00	9999.00	0.15	0.26			20000.53	9999
	Critical Value	0.62	0.52	0.56	0.45	0.56	0.52	0.52	0.52	0.48	0.45	0.48	0.48			6.16	0.62
443200	Gumbel													Weibull			
	Weibull																
	Fréchet																
	Critical Value																
444414	Gumbel	0.16	0.14	0.08	0.06	0.05	0.06	0.08	0.08	0.04	0.07	0.07	0.06	Gumbel	0.95	0.95	0.16
	Weibull	0.12	0.12	0.07	0.06	0.07	0.07	0.07	0.09	0.08	0.09	0.09	0.09			1.02	0.12
	Fréchet	9999.00	9999.00	0.24	0.25	0.19	0.23	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00			79992.91	9999
	Critical Value	0.32	0.30	0.29	0.27	0.26	0.26	0.28	0.26	0.27	0.26	0.25	0.26			3.28	0.32

Rain Gauge ID	Distribution & Critical Value	K-S Test Statistics for Duration (min)												Best Distribution	Gross		
		15	30	45	60	120	180	240	360	720	1440	2880	4320		Minimum	Sum	Maximum
440166	Gumbel	0.07	0.06	0.05	0.08	0.07	0.07	0.07	0.07	0.09	0.10	0.07	0.10	Gumbel	0.9	0.9	0.1
	Weibull	0.07	0.08	0.06	0.11	0.10	0.12	0.12	0.14	0.12	0.13	0.09	0.10			1.24	0.14
	Fréchet	0.23	0.25	0.26	0.17	9999.00	0.23	9999.00	0.25	9999.00	0.18	0.18	9999.00			39997.75	9999
	Critical Value	0.31	0.30	0.29	0.29	0.31	0.29	0.29	0.29	0.30	0.30	0.28	0.28			3.53	0.31
441614	Gumbel	0.14	0.12	0.09	0.06	0.05	0.05	0.07	0.06	0.07	0.07	0.05	0.07	Gumbel	0.9	0.9	0.14
	Weibull	0.11	0.12	0.10	0.08	0.06	0.06	0.07	0.05	0.06	0.07	0.08	0.06			0.92	0.12
	Fréchet	0.27	0.28	0.23	0.28	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00			79993.06	9999
	Critical Value	0.34	0.33	0.31	0.29	0.29	0.29	0.28	0.28	0.26	0.25	0.24	0.25			3.41	0.34
446178	Gumbel	0.15	0.16	0.12	0.11	0.09	0.12	0.08	0.08	0.11	0.14	0.13	0.08	Gumbel	1.37	1.37	0.16
	Weibull	0.16	0.18	0.14	0.13	0.10	0.13	0.10	0.09	0.16	0.18	0.17	0.12			1.66	0.18
	Fréchet	0.36	0.34	0.26	0.27	0.24	0.29	0.29	9999.00	0.30	0.22	0.20	0.26			10002.03	9999
	Critical Value	0.43	0.38	0.36	0.34	0.38	0.35	0.33	0.32	0.31	0.32	0.32	0.33			4.17	0.43
446692	Gumbel	0.17	0.15	0.13	0.09	0.08	0.04	0.05	0.06	0.07	0.06	0.08	0.06	Gumbel	1.04	1.04	0.17
	Weibull	0.18	0.15	0.13	0.11	0.12	0.07	0.10	0.06	0.11	0.10	0.08	0.09			1.3	0.18
	Fréchet	0.32	0.20	0.20	0.21	0.24	0.30	9999.00	9999.00	0.28	0.21	9999.00	0.20			29999.16	9999
	Critical Value	0.39	0.35	0.36	0.33	0.33	0.30	0.30	0.28	0.28	0.26	0.26	0.25			3.69	0.39
447025	Gumbel	0.14	0.14	0.09	0.10	0.08	0.09	0.13	0.16	0.17	0.12	0.21	0.20	Weibull	1.38	1.63	0.21
	Weibull	0.12	0.12	0.06	0.09	0.09	0.06	0.11	0.16	0.14	0.10	0.17	0.16			1.38	0.17
	Fréchet	0.33	0.28	0.27	0.25	0.17	9999.00	0.24	0.31	0.34	0.37	0.39	9999.00			20000.95	9999
	Critical Value	0.41	0.48	0.41	0.43	0.41	0.39	0.43	0.43	0.39	0.41	0.39	0.41			4.99	0.48
447338	Gumbel	0.28	0.25	0.20	0.23	0.14	0.15	0.17	0.15	0.16	0.13	0.07	0.10	Gumbel	2.03	2.03	0.28
	Weibull	0.26	0.24	0.24	0.23	0.17	0.16	0.19	0.17	0.18	0.17	0.10	0.11			2.22	0.26
	Fréchet	0.34	0.13	0.12	0.06	0.06	0.21	0.13	0.28	9999.00	0.26	0.20	9999.00			19999.79	9999
	Critical Value	0.36	0.33	0.34	0.34	0.29	0.31	0.29	0.28	0.29	0.27	0.26	0.26			3.62	0.36

Rain Gauge ID	Distribution & Critical Value	K-S Test Statistics for Duration (min)												Best Distribution	Gross		
		15	30	45	60	120	180	240	360	720	1440	2880	4320		Minimum	Sum	Maximum
449272	Gumbel	0.21	0.21	0.24	0.19	0.14	0.17	0.17	0.17	0.13	0.06	0.12	0.10	Gumbel	1.91	1.91	0.24
	Weibull	0.20	0.21	0.23	0.20	0.17	0.20	0.17	0.20	0.17	0.12	0.12	0.08			2.07	0.23
	Fréchet	9999.00	0.33	0.32	9999.00	0.32	9999.00	0.31	9999.00	0.19	9999.00	9999.00	9999.00			69994.47	9999
	Critical Value	0.34	0.35	0.33	0.30	0.32	0.30	0.31	0.29	0.30	0.27	0.28	0.27			3.66	0.35
440561	Gumbel	0.11	0.06	0.06	0.10	0.06	0.09	0.08	0.09	0.07	0.11	0.10	0.09	Gumbel	1.02	1.02	0.11
	Weibull	0.10	0.08	0.05	0.11	0.09	0.12	0.12	0.11	0.12	0.14	0.15	0.10			1.29	0.15
	Fréchet	0.22	0.23	0.30	0.28	0.22	0.22	0.30	0.39	0.32	0.26	0.33	0.13			3.2	0.39
	Critical Value	0.43	0.39	0.38	0.39	0.38	0.36	0.36	0.39	0.36	0.34	0.36	0.34			4.48	0.43
445690	Gumbel	0.17	0.16	0.15	0.09	0.07	0.05	0.10	0.05	0.05	0.07	0.08	0.07	Weibull	1.08	1.11	0.17
	Weibull	0.13	0.13	0.13	0.08	0.06	0.04	0.07	0.06	0.08	0.10	0.10	0.10			1.08	0.13
	Fréchet	9999.00	0.32	9999.00	0.29	0.24	9999.00	9999.00	0.27	0.23	0.20	9999.00	0.20			49996.75	9999
	Critical Value	0.32	0.32	0.31	0.30	0.29	0.28	0.29	0.28	0.25	0.26	0.27	0.25			3.42	0.32
442159	Gumbel	0.26	0.20	0.16	0.12	0.11	0.11	0.11	0.13	0.06	0.13	0.09	0.08	Gumbel	1.56	1.56	0.26
	Weibull	0.25	0.19	0.15	0.13	0.14	0.14	0.13	0.16	0.08	0.08	0.07	0.09			1.61	0.25
	Fréchet	0.34	0.09	0.17	0.10	0.26	0.27	0.28	0.34	9999.00	9999.00	9999.00	0.30			29999.15	9999
	Critical Value	0.43	0.38	0.35	0.35	0.33	0.33	0.33	0.34	0.31	0.31	0.33	0.31			4.1	0.43
442729	Gumbel	0.12	0.18	0.16	0.13	0.14	0.16	0.13	0.18	0.19	0.22	0.19	0.18	Weibull	1.87	1.98	0.22
	Weibull	0.10	0.15	0.14	0.13	0.13	0.14	0.13	0.16	0.21	0.19	0.18	0.21			1.87	0.21
	Fréchet	0.32	0.35	0.34	0.31	0.33	0.32	0.33	0.37	0.39	0.34	0.32	0.35			4.07	0.39
	Critical Value	0.48	0.45	0.48	0.45	0.43	0.45	0.43	0.41	0.43	0.45	0.41	0.41			5.28	0.48
446712	Gumbel	0.18	0.14	0.11	0.06	0.08	0.07	0.14	0.11	0.07	0.06	0.04	0.08	Gumbel	1.14	1.14	0.18
	Weibull	0.14	0.14	0.13	0.07	0.08	0.08	0.14	0.11	0.08	0.10	0.09	0.06			1.22	0.14
	Fréchet	0.35	0.25	0.21	0.29	0.19	0.24	9999.00	9999.00	0.26	9999.00	9999.00	9999.00			49996.79	9999
	Critical Value	0.38	0.32	0.32	0.30	0.28	0.28	0.29	0.27	0.26	0.26	0.26	0.25			3.47	0.38

Rain Gauge ID	Distribution & Critical Value	K-S Test Statistics for Duration (min)												Best Distribution	Gross		
		15	30	45	60	120	180	240	360	720	1440	2880	4320		Minimum	Sum	Maximum
447130	Gumbel	0.07	0.19	0.19	0.15	0.11	0.07	0.10	0.11	0.08	0.10	0.10	0.12	Weibull	1.32	1.39	0.19
	Weibull	0.08	0.15	0.14	0.13	0.09	0.08	0.11	0.11	0.10	0.10	0.12	0.11			1.32	0.15
	Fréchet	0.40	9999.00	9999.00	9999.00	0.44	0.33	0.33	0.20	0.35	0.22	0.23	0.31		29999.81	9999	
	Critical Value	0.45	0.45	0.48	0.48	0.45	0.45	0.45	0.45	0.43	0.45	0.43	0.45		5.42	0.48	
447164	Gumbel													Weibull			
	Weibull																
	Fréchet																
	Critical Value																
448396	Gumbel	0.17	0.13	0.13	0.11	0.06	0.11	0.12	0.14	0.08	0.11	0.10	0.10	Gumbel	1.36	1.36	0.17
	Weibull	0.14	0.14	0.13	0.12	0.09	0.13	0.13	0.15	0.10	0.12	0.12	0.13			1.5	0.15
	Fréchet	0.33	0.33	0.14	0.26	0.26	0.18	0.24	0.28	9999.00	9999.00	0.25	9999.00		29999.27	9999	
	Critical Value	0.34	0.36	0.31	0.31	0.29	0.29	0.28	0.28	0.28	0.29	0.28	0.26		3.57	0.36	
440720	Gumbel	0.17	0.19	0.20	0.14	0.10	0.13	0.11	0.11	0.09	0.12	0.11	0.11	Weibull	1.44	1.58	0.2
	Weibull	0.14	0.16	0.17	0.12	0.10	0.11	0.09	0.13	0.09	0.11	0.11	0.11			1.44	0.17
	Fréchet	0.15	0.31	0.32	0.30	0.33	9999.00	0.26	0.16	0.37	0.13	0.22	0.22		10001.77	9999	
	Critical Value	0.62	0.56	0.56	0.56	0.56	0.56	0.56	0.62	0.56	0.62	0.56	0.56		6.9	0.62	
445851	Gumbel	0.19	0.19	0.19	0.15	0.11	0.13	0.14	0.14	0.14	0.11	0.08	0.08	Weibull	1.45	1.65	0.19
	Weibull	0.16	0.14	0.14	0.12	0.10	0.10	0.12	0.12	0.14	0.12	0.10	0.09			1.45	0.16
	Fréchet	0.38	0.36	0.36	0.35	0.30	0.34	0.21	0.26	9999.00	0.28	9999.00	0.33		20001.17	9999	
	Critical Value	0.39	0.36	0.38	0.35	0.35	0.35	0.36	0.36	0.35	0.36	0.35	0.35		4.31	0.39	
442663	Gumbel													Weibull			
	Weibull																
	Fréchet																
	Critical Value																

Rain Gauge ID	Distribution & Critical Value	K-S Test Statistics for Duration (min)												Best Distribution	Gross		
		15	30	45	60	120	180	240	360	720	1440	2880	4320		Minimum	Sum	Maximum
443229	Gumbel	0.22	0.18	0.16	0.15	0.17	0.12	0.14	0.12	0.10	0.09	0.12	0.12	Gumbel	1.69	1.69	0.22
	Weibull	0.13	0.16	0.14	0.13	0.17	0.14	0.16	0.16	0.16	0.15	0.12	0.08			1.7	0.17
	Fréchet	0.29	0.27	0.30	0.35	0.32	0.20	0.38	0.38	0.27	0.16	0.29	0.40			3.61	0.4
	Critical Value	0.56	0.43	0.43	0.43	0.43	0.48	0.45	0.45	0.45	0.45	0.45	0.43			5.44	0.56
448046	Gumbel	0.21	0.19	0.17	0.14	0.13	0.15	0.11	0.08	0.06	0.06	0.06	0.04	Gumbel	1.4	1.4	0.21
	Weibull	0.13	0.16	0.16	0.15	0.14	0.15	0.13	0.11	0.10	0.08	0.08	0.08			1.47	0.16
	Fréchet	0.35	0.34	0.32	9999.00	0.29	0.30	0.26	0.28	0.29	0.26	9999.00	9999.00			29999.69	9999
	Critical Value	0.35	0.34	0.33	0.35	0.33	0.32	0.30	0.29	0.29	0.28	0.27	0.26			3.71	0.35
448149	Gumbel	0.19	0.21	0.16	0.23	0.19	0.11	0.13	0.16	0.20	0.14	0.11	0.16	Weibull	1.72	1.99	0.23
	Weibull	0.13	0.14	0.12	0.18	0.14	0.12	0.15	0.18	0.19	0.10	0.11	0.16			1.72	0.19
	Fréchet	0.51	0.62	9999.00	0.29	9999.00	0.16	0.20	0.29	0.20	0.32	0.27	0.36			20001.22	9999
	Critical Value	0.71	0.62	0.62	0.71	0.62	0.62	0.62	0.56	0.56	0.56	0.56	0.62			7.38	0.71
442044	Gumbel	0.12	0.10	0.08	0.07	0.09	0.12	0.10	0.12	0.09	0.12	0.10	0.12	Gumbel	1.23	1.23	0.12
	Weibull	0.11	0.10	0.08	0.08	0.10	0.14	0.11	0.14	0.12	0.15	0.12	0.14			1.39	0.15
	Fréchet	0.24	0.25	0.30	0.11	0.26	0.29	0.28	0.18	0.29	9999.00	9999.00	9999.00			29999.2	9999
	Critical Value	0.36	0.34	0.32	0.32	0.31	0.31	0.29	0.29	0.29	0.26	0.26	0.27			3.62	0.36
442208	Gumbel	0.07	0.05	0.04	0.04	0.06	0.08	0.08	0.08	0.07	0.09	0.10	0.07	Weibull	0.81	0.83	0.1
	Weibull	0.05	0.07	0.06	0.04	0.09	0.07	0.07	0.06	0.08	0.08	0.06	0.08			0.81	0.09
	Fréchet	0.23	9999.00	0.27	0.25	0.20	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	0.27			69994.22	9999
	Critical Value	0.34	0.33	0.32	0.30	0.36	0.33	0.34	0.32	0.31	0.31	0.31	0.30			3.87	0.36
443310	Gumbel	0.11	0.12	0.12	0.13	0.10	0.08	0.04	0.08	0.10	0.14	0.12	0.11	Gumbel	1.25	1.25	0.14
	Weibull	0.09	0.12	0.16	0.17	0.07	0.10	0.11	0.14	0.16	0.18	0.15	0.13			1.58	0.18
	Fréchet	0.22	0.15	0.16	0.29	9999.00	9999.00	9999.00	0.30	9999.00	0.26	9999.00	0.25			49996.63	9999
	Critical Value	0.34	0.33	0.32	0.32	0.32	0.29	0.31	0.30	0.28	0.28	0.26	0.28			3.63	0.34

Rain Gauge ID	Distribution & Critical Value	K-S Test Statistics for Duration (min)												Best Distribution	Gross		
		15	30	45	60	120	180	240	360	720	1440	2880	4320		Minimum	Sum	Maximum
444128	Gumbel	0.15	0.14	0.10	0.09	0.06	0.06	0.08	0.14	0.10	0.11	0.12	0.15	Gumbel	1.3	1.3	0.15
	Weibull	0.10	0.13	0.11	0.10	0.09	0.09	0.12	0.17	0.14	0.14	0.15	0.17			1.51	0.17
	Fréchet	0.31	0.30	0.24	0.14	0.30	0.29	0.20	0.24	9999.00	0.26	9999.00	0.28			20000.56	9999
	Critical Value	0.35	0.35	0.33	0.32	0.31	0.30	0.30	0.31	0.31	0.28	0.27	0.28			3.71	0.35
445142	Gumbel													Weibull			
	Weibull																
	Fréchet																
	Critical Value																
445423	Gumbel	0.12	0.16	0.12	0.10	0.12	0.10	0.10	0.08	0.12	0.10	0.13	0.09	Gumbel	1.34	1.34	0.16
	Weibull	0.07	0.16	0.14	0.12	0.11	0.09	0.10	0.12	0.08	0.16	0.13	0.11			1.39	0.16
	Fréchet	0.27	0.27	0.22	0.27	9999.00	0.16	0.23	0.33	9999.00	0.25	0.38	0.13			20000.51	9999
	Critical Value	0.45	0.41	0.45	0.43	0.43	0.39	0.41	0.41	0.38	0.39	0.38	0.38			4.91	0.45
445595	Gumbel	0.23	0.18	0.12	0.10	0.07	0.14	0.08	0.07	0.07	0.10	0.10	0.07	Gumbel	1.33	1.33	0.23
	Weibull	0.16	0.16	0.12	0.12	0.09	0.18	0.13	0.07	0.08	0.12	0.07	0.06			1.36	0.18
	Fréchet	0.30	0.18	0.26	0.14	0.24	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00			69994.12	9999
	Critical Value	0.41	0.38	0.35	0.34	0.34	0.34	0.32	0.29	0.28	0.31	0.28	0.28			3.92	0.41
445880	Gumbel	0.11	0.11	0.09	0.11	0.09	0.06	0.05	0.09	0.06	0.09	0.12	0.14	Gumbel	1.12	1.12	0.14
	Weibull	0.06	0.06	0.08	0.09	0.08	0.06	0.07	0.10	0.11	0.14	0.16	0.19			1.2	0.19
	Fréchet	9999.00	9999.00	0.35	9999.00	9999.00	9999.00	0.25	9999.00	0.31	0.27	0.26	0.26			59995.7	9999
	Critical Value	0.41	0.39	0.41	0.39	0.38	0.35	0.38	0.33	0.33	0.31	0.32	0.31			4.31	0.41
448062	Gumbel	0.15	0.11	0.13	0.09	0.08	0.07	0.09	0.12	0.14	0.08	0.10	0.07	Gumbel	1.23	1.23	0.15
	Weibull	0.10	0.11	0.12	0.10	0.10	0.10	0.11	0.13	0.16	0.12	0.09	0.08			1.32	0.16
	Fréchet	0.33	0.16	0.31	0.27	9999.00	0.23	9999.00	0.31	9999.00	9999.00	0.24	9999.00			49996.85	9999
	Critical Value	0.36	0.34	0.32	0.31	0.33	0.32	0.32	0.32	0.29	0.28	0.33	0.30			3.82	0.36

Rain Gauge ID	Distribution & Critical Value	K-S Test Statistics for Duration (min)												Best Distribution	Gross		
		15	30	45	60	120	180	240	360	720	1440	2880	4320		Minimum	Sum	Maximum
448172	Gumbel	0.22	0.23	0.23	0.23	0.18	0.15	0.13	0.11	0.16	0.19	0.17	0.19	Weibull	1.72	2.19	0.23
	Weibull	0.14	0.16	0.16	0.16	0.12	0.10	0.11	0.10	0.15	0.18	0.17	0.17			1.72	0.18
	Fréchet	0.25	0.27	0.27	0.30	0.28	0.24	0.17	0.19	0.17	0.30	0.28	0.22			2.94	0.3
	Critical Value	0.56	0.56	0.56	0.56	0.56	0.56	0.62	0.56	0.56	0.56	0.56	0.56			6.78	0.62
449159	Gumbel	0.16	0.11	0.09	0.09	0.07	0.10	0.09	0.08	0.11	0.10	0.08	0.06	Gumbel	1.14	1.14	0.16
	Weibull	0.14	0.12	0.09	0.10	0.10	0.13	0.10	0.12	0.10	0.09	0.10	0.08			1.27	0.14
	Fréchet	0.27	0.25	0.21	0.19	0.36	0.29	0.25	0.19	9999.00	9999.00	9999.00	0.23			29999.24	9999
	Critical Value	0.41	0.39	0.38	0.38	0.36	0.34	0.34	0.35	0.33	0.32	0.33	0.29			4.22	0.41
443272	Gumbel	0.21	0.21	0.21	0.20	0.20	0.14	0.13	0.07	0.08	0.05	0.09	0.08	Gumbel	1.67	1.67	0.21
	Weibull	0.20	0.19	0.20	0.21	0.22	0.16	0.13	0.09	0.11	0.07	0.10	0.07			1.75	0.22
	Fréchet	0.35	0.20	0.18	0.15	0.23	0.26	9999.00	9999.00	0.25	0.23	9999.00	9999.00			39997.85	9999
	Critical Value	0.38	0.33	0.33	0.33	0.33	0.29	0.29	0.30	0.27	0.26	0.25	0.26			3.62	0.38
444246	Gumbel	0.22	0.21	0.17	0.15	0.08	0.10	0.09	0.14	0.09	0.12	0.14	0.09	Gumbel	1.6	1.6	0.22
	Weibull	0.16	0.22	0.16	0.13	0.10	0.13	0.10	0.16	0.14	0.15	0.14	0.12			1.71	0.22
	Fréchet	0.32	0.30	0.19	0.13	0.32	0.25	0.15	0.25	0.30	0.28	0.21	0.23			2.93	0.32
	Critical Value	0.39	0.39	0.34	0.36	0.34	0.33	0.35	0.34	0.32	0.34	0.34	0.32			4.16	0.39
448547	Gumbel	0.09	0.05	0.06	0.11	0.10	0.09	0.10	0.06	0.09	0.11	0.07	0.08	Weibull	0.82	1.01	0.11
	Weibull	0.08	0.08	0.03	0.07	0.07	0.06	0.07	0.06	0.06	0.08	0.08	0.08			0.82	0.08
	Fréchet	0.24	0.28	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00			99990.52	9999
	Critical Value	0.39	0.36	0.32	0.30	0.32	0.30	0.30	0.30	0.29	0.31	0.28	0.28			3.75	0.39
449169	Gumbel	0.14	0.10	0.07	0.11	0.10	0.11	0.07	0.16	0.11	0.09	0.11	0.12	Gumbel	1.29	1.29	0.16
	Weibull	0.10	0.11	0.10	0.14	0.12	0.15	0.08	0.09	0.10	0.13	0.06	0.11			1.29	0.15
	Fréchet	0.31	0.23	0.22	0.29	0.24	0.27	0.14	9999.00	9999.00	0.25	9999.00	0.12			29999.07	9999
	Critical Value	0.43	0.39	0.38	0.41	0.39	0.38	0.34	0.36	0.35	0.34	0.32	0.35			4.44	0.43

Rain Gauge ID	Distribution & Critical Value	K-S Test Statistics for Duration (min)												Best Distribution	Gross		
		15	30	45	60	120	180	240	360	720	1440	2880	4320		Minimum	Sum	Maximum
440766	Gumbel	0.11	0.12	0.11	0.09	0.07	0.11	0.08	0.11	0.07	0.14	0.08	0.08	Gumbel	1.17	1.17	0.14
	Weibull	0.13	0.12	0.14	0.12	0.09	0.08	0.08	0.09	0.09	0.14	0.08	0.09			1.25	0.14
	Fréchet	0.19	0.21	0.29	0.25	0.30	0.36	0.33	0.38	0.34	0.23	0.40	0.41			3.69	0.41
	Critical Value	0.52	0.62	0.52	0.52	0.43	0.45	0.45	0.48	0.43	0.45	0.41	0.41			5.69	0.62
446955	Gumbel	0.14	0.10	0.08	0.04	0.08	0.08	0.07	0.09	0.10	0.10	0.06	0.03	Weibull	0.95	0.97	0.14
	Weibull	0.12	0.11	0.10	0.05	0.05	0.06	0.09	0.07	0.10	0.06	0.06	0.08			0.95	0.12
	Fréchet	0.27	0.34	9999.00	0.26	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00			89991.87	9999
	Critical Value	0.38	0.35	0.34	0.34	0.31	0.31	0.33	0.31	0.30	0.28	0.28	0.28			3.81	0.38
448022	Gumbel	0.07	0.07	0.09	0.10	0.18	0.19	0.15	0.14	0.11	0.08	0.11	0.10	Gumbel	1.39	1.39	0.19
	Weibull	0.08	0.09	0.12	0.12	0.18	0.19	0.17	0.17	0.16	0.09	0.15	0.14			1.66	0.19
	Fréchet	0.28	0.30	0.28	0.27	0.31	0.14	0.31	0.25	0.25	0.20	0.24	0.15			2.98	0.31
	Critical Value	0.48	0.43	0.39	0.38	0.38	0.39	0.38	0.39	0.36	0.36	0.35	0.32			4.61	0.48
449060	Gumbel	0.09	0.10	0.12	0.13	0.19	0.20	0.11	0.08	0.10	0.12	0.10	0.14	Gumbel	1.48	1.48	0.2
	Weibull	0.07	0.09	0.12	0.13	0.20	0.21	0.15	0.11	0.17	0.08	0.09	0.13			1.55	0.21
	Fréchet	0.16	0.31	0.24	0.30	0.29	0.31	0.23	0.15	0.37	0.37	0.32	0.35			3.4	0.37
	Critical Value	0.43	0.41	0.41	0.41	0.43	0.45	0.45	0.48	0.45	0.45	0.45	0.48			5.3	0.48
449301	Gumbel	0.05	0.06	0.07	0.13	0.11	0.13	0.10	0.10	0.13	0.07	0.10	0.11	Weibull	0.86	1.16	0.13
	Weibull	0.07	0.05	0.06	0.10	0.07	0.07	0.05	0.06	0.08	0.05	0.10	0.10			0.86	0.1
	Fréchet	0.26	0.32	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00			99990.58	9999
	Critical Value	0.39	0.32	0.32	0.33	0.36	0.33	0.31	0.30	0.33	0.29	0.28	0.29			3.85	0.39
442269	Gumbel													Weibull			
Weibull																	
Fréchet																	
Critical Value																	

Rain Gauge ID	Distribution & Critical Value	K-S Test Statistics for Duration (min)												Best Distribution	Gross		
		15	30	45	60	120	180	240	360	720	1440	2880	4320		Minimum	Sum	Maximum
444180	Gumbel	0.12	0.07	0.07	0.09	0.09	0.07	0.09	0.05	0.08	0.08	0.07	0.08	Gumbel	0.96	0.96	0.12
	Weibull	0.07	0.07	0.05	0.07	0.09	0.06	0.09	0.09	0.13	0.11	0.08	0.09			1	0.13
	Fréchet	9999.00	0.27	9999.00	0.24	9999.00	9999.00	0.26	9999.00	0.26	9999.00	9999.00	9999.00			79993.03	9999
	Critical Value	0.39	0.35	0.35	0.33	0.33	0.30	0.32	0.29	0.30	0.30	0.30	0.28			3.84	0.39
444410	Gumbel	0.20	0.21	0.22	0.24	0.16	0.18	0.12	0.12	0.18	0.15	0.12	0.11	Weibull	1.66	2.01	0.24
	Weibull	0.16	0.18	0.19	0.21	0.13	0.15	0.10	0.10	0.15	0.10	0.11	0.08			1.66	0.21
	Fréchet	0.33	0.33	0.35	0.36	0.28	0.37	0.30	0.41	9999.00	0.37	0.12	0.35			10002.57	9999
	Critical Value	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.52	0.48	0.48	0.48	0.48			5.8	0.52
449215	Gumbel	0.10	0.10	0.10	0.10	0.07	0.05	0.06	0.06	0.08	0.09	0.10	0.12	Weibull	0.94	1.03	0.12
	Weibull	0.07	0.09	0.10	0.09	0.08	0.07	0.07	0.07	0.06	0.09	0.08	0.07			0.94	0.1
	Fréchet	0.25	0.23	9999.00	0.19	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00	9999.00			89991.67	9999
	Critical Value	0.33	0.34	0.33	0.35	0.32	0.32	0.32	0.31	0.30	0.29	0.30	0.28			3.79	0.35

II. Tabulated Gauge-Level Historical IDF Curves

Gauge 440166-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	168.93	112.16	142.24	15	150.51	249.63	315.26	398.17	459.69	520.75	581.58	661.85	722.51	
30	89.44	55.71	76.2	15	80.29	129.52	162.12	203.31	233.86	264.19	294.41	334.27	364.4	
45	63.43	37.15	54.19	14	57.33	90.16	111.9	139.36	159.74	179.96	200.11	226.69	246.79	
60	48.04	26.39	43.18	15	43.71	67.03	82.47	101.98	116.45	130.82	145.13	164.02	178.29	
120	25.16	12.97	22.61	14	23.03	34.49	42.08	51.67	58.78	65.84	72.88	82.16	89.17	
180	18.5	8.38	16.68	14	17.12	24.53	29.43	35.63	40.22	44.79	49.33	55.33	59.86	
240	14.24	6.1	12.89	15	13.24	18.63	22.2	26.71	30.05	33.37	36.68	41.05	44.35	
360	10.55	4.03	10.27	14	9.89	13.45	15.81	18.79	21	23.19	25.38	28.26	30.44	
720	6.06	1.95	5.5	15	5.74	7.46	8.6	10.05	11.12	12.18	13.23	14.63	15.68	
1440	3.74	1.2	3.27	14	3.54	4.6	5.31	6.19	6.85	7.5	8.15	9.01	9.66	
2880	2.18	0.7	1.91	14	2.07	2.68	3.09	3.61	3.99	4.38	4.76	5.26	5.63	
4320	1.53	0.62	1.47	15	1.43	1.98	2.34	2.8	3.14	3.47	3.81	4.25	4.59	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Gauge 440166-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	79.59	25.23	76.2	6	79.65	101.39	112.34	123.65	130.76	137.01	142.62	149.29	153.88	
30	52.07	17.12	55.88	8	51.99	66.85	74.39	82.2	87.13	91.47	95.38	100.03	103.23	
45	42.76	16.19	42.33	8	42.22	56.65	64.19	72.16	77.24	81.77	85.87	90.79	94.2	
60	33.53	11.66	33.02	10	33.35	43.58	48.82	54.3	57.77	60.84	63.62	66.92	69.21	
120	19.69	7.89	17.78	8	19.32	26.43	30.2	34.21	36.78	39.08	41.17	43.69	45.44	
180	14.56	4.9	13.55	10	14.52	18.79	20.96	23.23	24.66	25.92	27.06	28.41	29.34	
240	11.78	3.73	10.48	11	11.79	15	16.62	18.29	19.34	20.27	21.1	22.08	22.76	

360	8.93	2.38	7.83	10	9.01	10.99	11.96	12.95	13.56	14.09	14.56	15.12	15.51
720	4.73	1.16	4.45	9	4.78	5.73	6.19	6.66	6.94	7.19	7.41	7.67	7.85
1440	3.22	0.81	2.8	9	3.25	3.92	4.24	4.57	4.77	4.95	5.11	5.29	5.42
2880	1.72	0.41	1.77	10	1.74	2.07	2.24	2.4	2.5	2.58	2.66	2.75	2.81
4320	1.29	0.38	1.13	11	1.3	1.62	1.78	1.94	2.05	2.14	2.22	2.31	2.38
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Guague 440561					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	88.05	67.2	71.12	9	77.01	136.4	175.72	225.4	262.26	298.84	335.29	383.38	419.72	
30	53.11	30.76	45.72	11	48.06	75.24	93.24	115.98	132.85	149.6	166.28	188.29	204.93	
45	40.92	19.77	38.95	12	37.67	55.14	66.71	81.33	92.17	102.93	113.66	127.8	138.5	
60	33.48	15.44	27.94	11	30.94	44.59	53.62	65.04	73.51	81.91	90.29	101.33	109.69	
120	20.32	11.53	17.15	12	18.43	28.62	35.36	43.89	50.21	56.49	62.74	70.99	77.23	
180	15.11	7.4	14.39	13	13.89	20.43	24.76	30.23	34.29	38.32	42.34	47.63	51.63	
240	12.31	5.72	12.07	13	11.37	16.43	19.77	24	27.14	30.25	33.35	37.45	40.54	
360	9.5	4	8.89	11	8.84	12.38	14.72	17.68	19.87	22.05	24.22	27.08	29.24	
720	5.68	2.29	5.08	13	5.3	7.33	8.67	10.36	11.62	12.86	14.11	15.74	16.98	
1440	3.1	1.34	2.65	15	2.88	4.06	4.85	5.84	6.57	7.3	8.03	8.99	9.71	
2880	2.01	0.81	1.85	13	1.88	2.59	3.07	3.67	4.11	4.55	4.99	5.57	6.01	
4320	1.45	0.54	1.31	15	1.36	1.84	2.15	2.55	2.85	3.14	3.44	3.82	4.12	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Gauge 440720					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	246.38	181.44	198.12	4	206.34	381.1	494.67	631.35	727.7	819.5	907.6	1019.41	1101.02	
30	112.24	82.21	65.26	5	94.24	173.43	224.78	286.48	329.93	371.29	410.97	461.29	497.99	

45	75.5	54.19	43.51	5	63.97	116.2	149.76	189.88	218.02	244.73	270.29	302.63	326.17
60	57.89	39.8	38.95	5	49.96	88.32	112.53	141.14	161.04	179.83	197.72	220.24	236.57
120	32.62	17.38	28.96	5	30.51	46.92	56.35	66.87	73.88	80.3	86.27	93.6	98.79
180	23.08	10.96	23.41	5	22.1	32.28	37.92	44.08	48.12	51.78	55.15	59.26	62.14
240	18.91	8.07	17.78	5	18.41	25.77	29.73	33.98	36.73	39.2	41.46	44.18	46.09
360	12.6	5.53	11.43	4	12.22	17.29	20.03	23	24.92	26.65	28.23	30.15	31.49
720	8.93	4.33	8.26	5	8.52	12.55	14.8	17.27	18.89	20.36	21.72	23.37	24.54
1440	5.87	3.88	4.82	4	5.14	8.88	11.2	13.92	15.79	17.55	19.22	21.32	22.83
2880	3.29	2.08	2.54	5	2.93	4.93	6.15	7.56	8.53	9.43	10.28	11.35	12.11
4320	2.21	1.42	1.69	5	1.96	3.32	4.16	5.14	5.81	6.43	7.03	7.77	8.3
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 440766		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability											
		Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	2 0.5	5 0.2	10 0.1	25 0.04	50 0.02	100 0.01	200 0.005
15	77.89	43.9	66.04	6	70.68	109.48	135.16	167.62	191.69	215.59	239.4	270.82	294.56
30	58.42	36.51	45.72	4	52.42	84.69	106.05	133.04	153.07	172.94	192.75	218.87	238.62
45	38.95	18.89	35.56	6	35.85	52.54	63.59	77.56	87.92	98.2	108.45	121.97	132.18
60	30.9	16.1	27.94	6	28.26	42.48	51.9	63.81	72.64	81.4	90.13	101.66	110.36
120	17.78	6.41	16.51	9	16.73	22.39	26.14	30.88	34.4	37.89	41.36	45.95	49.42
180	13.12	5.26	12.7	8	12.26	16.9	19.98	23.87	26.76	29.62	32.47	36.24	39.08
240	9.53	3.58	9.21	8	8.94	12.11	14.2	16.85	18.81	20.76	22.7	25.26	27.2
360	8.04	3.35	8.04	7	7.49	10.45	12.41	14.89	16.72	18.55	20.37	22.76	24.57
720	4.99	1.97	4.45	9	4.67	6.41	7.56	9.02	10.1	11.17	12.24	13.65	14.71
1440	3	1.16	2.65	8	2.81	3.83	4.51	5.37	6.01	6.64	7.27	8.1	8.73
2880	1.85	0.77	1.83	10	1.72	2.4	2.85	3.42	3.85	4.27	4.68	5.23	5.65
4320	1.33	0.61	1.33	10	1.23	1.77	2.13	2.58	2.91	3.24	3.57	4.01	4.34
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 440778					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	91.44	96.92	40.64	3	75.52	161.17	217.88	289.53	342.69	395.45	448.02	517.38	569.8
30	49.11	45.53	25.4	3	41.63	81.87	108.51	142.17	167.14	191.93	216.62	249.2	273.83
45	29.63	25.55	18.63	4	25.43	48.01	62.96	81.85	95.86	109.77	123.63	141.92	155.73
60	22.86	18.89	15.24	4	19.76	36.45	47.5	61.47	71.83	82.11	92.36	105.88	116.09
120	14.29	7.58	11.43	4	13.05	19.74	24.18	29.78	33.94	38.07	42.18	47.6	51.7
180	11.22	3.87	9.74	4	10.58	14	16.27	19.13	21.25	23.36	25.46	28.23	30.32
240	9.31	3.2	8.89	3	8.78	11.61	13.48	15.85	17.61	19.35	21.08	23.37	25.1
360	7.51	3.08	6.77	4	7	9.73	11.53	13.81	15.49	17.17	18.84	21.05	22.71
720	5.14	3.46	4.04	4	4.57	7.63	9.65	12.21	14.11	15.99	17.87	20.35	22.22
1440	3.19	2.73	2.21	4	2.74	5.15	6.75	8.77	10.27	11.75	13.23	15.19	16.66
2880	1.73	1.38	1.32	4	1.5	2.72	3.53	4.55	5.31	6.06	6.81	7.79	8.54
4320	1.2	0.96	0.9	4	1.04	1.89	2.45	3.16	3.69	4.21	4.73	5.42	5.94
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 440993					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	82.41	38.17	81.28	9	76.14	109.87	132.21	160.43	181.36	202.14	222.84	250.16	270.8
30	59.15	25.17	58.42	14	55.02	77.26	91.99	110.59	124.4	138.1	151.75	169.77	183.38
45	45.24	21.28	42.34	14	41.75	60.55	73	88.73	100.41	111.99	123.53	138.76	150.27
60	41.06	17.52	39.37	18	38.18	53.67	63.92	76.87	86.48	96.02	105.52	118.06	127.53
120	24.43	15.02	22.86	17	21.96	35.24	44.03	55.13	63.37	71.54	79.69	90.44	98.56
180	18.38	11.67	16.93	17	16.46	26.78	33.6	42.23	48.63	54.99	61.32	69.67	75.98
240	14.85	8.74	12.39	18	13.41	21.14	26.25	32.71	37.51	42.27	47.01	53.26	57.99
360	11.48	5.94	10.16	17	10.5	15.75	19.23	23.62	26.88	30.11	33.33	37.58	40.8

720	6.46	3.14	5.4	18	5.94	8.72	10.56	12.88	14.6	16.31	18.01	20.26	21.96
1440	3.74	1.82	3.49	21	3.44	5.05	6.11	7.46	8.46	9.45	10.44	11.74	12.72
2880	2.22	1	1.99	22	2.06	2.94	3.52	4.26	4.81	5.36	5.9	6.61	7.16
4320	1.54	0.63	1.38	21	1.44	1.99	2.36	2.83	3.17	3.52	3.86	4.31	4.65
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 441322-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
					2	5	10	25	50	100	200	500	1000
Duration	\bar{x}	s	x_m	N	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)										
15	91.44	48.37	81.28	7	85.66	131.3	157.45	186.6	205.99	223.75	240.24	260.48	274.83
30	56.74	23.81	53.34	8	55.37	77.01	88.6	101.02	109.04	116.23	122.79	130.7	136.23
45	46.3	17.5	48.02	8	45.72	61.32	69.46	78.07	83.56	88.44	92.87	98.18	101.86
60	37.68	13.22	38.55	10	37.45	49.07	55.04	61.28	65.23	68.74	71.9	75.67	78.28
120	22.45	6.47	23.5	8	22.57	28.05	30.76	33.53	35.26	36.78	38.13	39.73	40.83
180	15.7	4.86	15.89	7	15.73	19.9	21.99	24.15	25.5	26.68	27.75	29.01	29.88
240	12.45	3.93	12.39	8	12.46	15.85	17.55	19.31	20.41	21.38	22.26	23.29	24
360	9.63	3.95	8.47	9	9.42	13	14.9	16.94	18.25	19.42	20.49	21.77	22.67
720	5.85	2.42	5.84	10	5.72	7.91	9.08	10.34	11.14	11.87	12.52	13.32	13.87
1440	3.28	1.3	3.28	9	3.22	4.39	5.01	5.67	6.09	6.46	6.8	7.22	7.5
2880	1.72	0.68	1.62	10	1.69	2.3	2.62	2.97	3.19	3.38	3.56	3.78	3.93
4320	1.36	0.6	1.2	9	1.32	1.87	2.17	2.49	2.7	2.89	3.06	3.27	3.42
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 441322-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
					2	5	10	25	50	100	200	500	1000
Duration	\bar{x}	s	x_m	N	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)										
15	116.38	107.46	91.44	11	98.73	193.7	256.57	336.02	394.95	453.45	511.74	588.64	646.76
30	74.51	47.52	63.5	12	66.71	108.7	136.51	171.64	197.7	223.57	249.34	283.35	309.05
45	51.36	31.8	42.34	12	46.14	74.24	92.85	116.36	133.8	151.11	168.36	191.11	208.31

60	42.59	23.35	35.56	13	38.76	59.39	73.05	90.31	103.12	115.83	128.5	145.21	157.84
120	25.48	11.75	22.23	16	23.55	33.93	40.81	49.5	55.94	62.34	68.71	77.12	83.47
180	19.53	7.88	19.05	16	18.24	25.2	29.81	35.64	39.96	44.25	48.52	54.16	58.42
240	15.16	6.31	12.7	15	14.12	19.7	23.39	28.06	31.52	34.95	38.38	42.89	46.3
360	10.95	4.95	9.31	15	10.14	14.51	17.41	21.07	23.78	26.48	29.16	32.7	35.38
720	6.3	2.35	5.93	19	5.91	7.99	9.37	11.1	12.39	13.67	14.95	16.63	17.9
1440	3.5	1.21	3.07	21	3.3	4.37	5.08	5.97	6.64	7.3	7.95	8.82	9.47
2880	2.03	0.67	1.91	17	1.92	2.51	2.9	3.4	3.77	4.13	4.5	4.97	5.34
4320	1.41	0.45	1.31	19	1.34	1.73	2	2.33	2.58	2.82	3.07	3.39	3.63
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 441614		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability												
		Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	2 0.5	5 0.2	10 0.1	25 0.04	50 0.02	100 0.01	200 0.005	500 0.002
15	149.69	124.05	111.76	15	129.32	238.94	311.53	403.24	471.27	538.8	606.09	694.86	761.95	
30	80.96	57.64	68.58	16	71.49	122.43	156.16	198.77	230.38	261.76	293.03	334.27	365.45	
45	54.19	36.66	45.72	18	48.17	80.57	102.02	129.12	149.23	169.18	189.07	215.3	235.13	
60	44.2	25.93	39.37	20	39.94	62.86	78.03	97.2	111.42	125.54	139.6	158.16	172.18	
120	24.73	12.65	22.86	21	22.65	33.83	41.23	50.59	57.52	64.41	71.27	80.32	87.17	
180	19.22	8.21	17.78	20	17.87	25.13	29.93	36	40.5	44.97	49.43	55.3	59.74	
240	15.18	6.14	14.29	22	14.17	19.6	23.19	27.73	31.1	34.44	37.77	42.16	45.48	
360	10.34	4.27	9.74	23	9.64	13.41	15.91	19.07	21.41	23.73	26.05	29.11	31.41	
720	6.3	2.21	5.93	27	5.94	7.89	9.18	10.82	12.03	13.23	14.43	16.01	17.21	
1440	3.64	1.47	3.39	29	3.4	4.7	5.56	6.64	7.45	8.25	9.05	10.1	10.9	
2880	1.97	0.89	1.78	30	1.82	2.61	3.13	3.79	4.28	4.76	5.24	5.88	6.36	
4320	1.47	0.6	1.41	29	1.37	1.9	2.25	2.7	3.03	3.35	3.68	4.11	4.43	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Gauge 441929					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	72.57	24.49	71.12	7	68.55	90.19	104.52	122.63	136.06	149.39	162.67	180.2	193.44
30	51.53	18.88	50.8	7	48.43	65.11	76.16	90.12	100.47	110.75	120.99	134.5	144.71
45	38.01	17.58	33.87	9	35.12	50.66	60.95	73.94	83.58	93.15	102.69	115.27	124.78
60	31.01	17.43	22.86	7	28.15	43.55	53.75	66.64	76.19	85.68	95.14	107.61	117.04
120	19.62	10.53	15.88	10	17.89	27.2	33.36	41.14	46.92	52.65	58.36	65.9	71.59
180	14.66	8.34	11.85	11	13.29	20.66	25.54	31.71	36.28	40.82	45.34	51.31	55.82
240	12.03	6.78	9.53	11	10.92	16.91	20.88	25.89	29.61	33.3	36.97	41.83	45.49
360	8.89	5.1	7.2	13	8.05	12.56	15.54	19.31	22.11	24.89	27.65	31.3	34.06
720	5.85	3.99	4.98	14	5.19	8.72	11.06	14.01	16.19	18.37	20.53	23.39	25.54
1440	3.41	2.4	2.75	13	3.02	5.14	6.54	8.32	9.63	10.94	12.24	13.96	15.26
2880	1.99	1.24	1.78	14	1.79	2.88	3.61	4.52	5.2	5.88	6.55	7.44	8.11
4320	1.48	0.81	1.26	14	1.35	2.06	2.54	3.14	3.58	4.02	4.46	5.04	5.48
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 442044					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	116.45	100.03	91.44	13	100.02	188.42	246.95	320.9	375.76	430.22	484.47	556.06	610.16
30	57.87	46.97	45.72	15	50.16	91.67	119.15	153.87	179.63	205.2	230.68	264.29	289.69
45	40.22	29.95	33.87	17	35.3	61.77	79.29	101.43	117.86	134.17	150.41	171.84	188.04
60	35.97	22.07	30.48	17	32.35	51.85	64.76	81.08	93.18	105.2	117.17	132.96	144.9
120	18.42	11.39	15.88	18	16.55	26.62	33.28	41.7	47.95	54.15	60.33	68.48	74.64
180	13.17	8.16	11.43	18	11.83	19.04	23.82	29.85	34.32	38.77	43.19	49.03	53.44
240	10.64	6.55	9.21	20	9.56	15.35	19.19	24.03	27.62	31.19	34.74	39.43	42.97
360	8.07	4.75	6.99	20	7.29	11.49	14.27	17.78	20.38	22.97	25.55	28.95	31.51

720	4.99	2.81	4.27	21	4.53	7.01	8.66	10.73	12.27	13.8	15.33	17.34	18.86
1440	2.8	1.5	2.6	25	2.55	3.88	4.76	5.87	6.69	7.51	8.32	9.39	10.2
2880	1.53	0.82	1.43	25	1.4	2.12	2.6	3.21	3.66	4.1	4.55	5.13	5.58
4320	1.08	0.58	1.01	24	0.98	1.5	1.84	2.27	2.58	2.9	3.21	3.63	3.94
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 442159					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	135.47	172.27	81.28	9	107.18	259.42	360.22	487.57	582.05	675.84	769.28	892.55	985.72	
30	70.7	73.15	53.34	12	58.69	123.33	166.13	220.21	260.33	300.15	339.83	392.18	431.74	
45	52.49	44.49	42.34	14	45.18	84.5	110.53	143.42	167.82	192.04	216.18	248.01	272.07	
60	43.72	33.33	35.56	14	38.25	67.7	87.2	111.84	130.12	148.27	166.35	190.2	208.22	
120	25	15.16	20.96	16	22.51	35.91	44.78	55.99	64.3	72.55	80.78	91.62	99.82	
180	16.88	10.34	13.97	16	15.18	24.32	30.37	38.01	43.68	49.31	54.92	62.32	67.91	
240	13.77	8.2	11.44	16	12.42	19.67	24.47	30.53	35.03	39.49	43.94	49.81	54.24	
360	10.89	5.93	9.74	15	9.92	15.16	18.63	23.01	26.26	29.49	32.71	36.95	40.16	
720	6.09	2.82	5.61	18	5.63	8.12	9.77	11.85	13.4	14.94	16.47	18.48	20.01	
1440	3.68	1.51	3.76	18	3.43	4.77	5.65	6.77	7.59	8.42	9.24	10.32	11.13	
2880	2	0.83	1.88	16	1.86	2.6	3.08	3.7	4.15	4.6	5.05	5.65	6.1	
4320	1.4	0.61	1.35	18	1.3	1.84	2.2	2.65	2.98	3.31	3.64	4.08	4.41	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Gauge 442208					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	127.34	88.56	101.6	15	109.37	194.74	248.87	313.04	357.77	400.06	440.37	491.21	528.1	
30	67.61	40.8	60.79	16	61.13	100.19	123.61	150.46	168.69	185.63	201.54	221.31	235.47	
45	46.8	26.7	40.64	17	43.01	68.44	83.39	100.3	111.69	122.21	132.03	144.17	152.82	

60	36.89	18.52	33.02	19	34.95	52.3	62.07	72.86	79.98	86.47	92.47	99.8	104.98
120	20.7	9.55	17.78	13	19.92	28.75	33.6	38.87	42.32	45.43	48.29	51.77	54.21
180	14.97	6.52	13.97	16	14.53	20.5	23.73	27.21	29.46	31.49	33.34	35.59	37.16
240	11.81	5.05	11.43	15	11.5	16.1	18.58	21.25	22.97	24.52	25.93	27.64	28.84
360	8.02	2.7	7.62	17	8	10.35	11.55	12.8	13.58	14.28	14.91	15.65	16.17
720	4.96	1.85	4.56	18	4.9	6.55	7.41	8.31	8.88	9.4	9.86	10.41	10.8
1440	2.82	0.92	2.7	18	2.82	3.61	4.02	4.44	4.7	4.93	5.14	5.39	5.56
2880	1.57	0.48	1.56	18	1.57	1.99	2.19	2.4	2.53	2.65	2.76	2.88	2.96
4320	1.12	0.32	1.09	19	1.13	1.4	1.53	1.67	1.75	1.83	1.89	1.97	2.03
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 442269		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability													
		Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	2	5	10	25	50	100	200	500	1000
						0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
		15	78.24	50.29	78.24	2	69.27	117.64	147.35	181.89	205.62	227.83	248.82	275.07	293.98
		30	43.94	18.33	43.94	2	42.91	59.55	68.45	77.98	84.13	89.64	94.67	100.73	104.96
		45	31.33	9.34	31.33	2	31.46	39.41	43.37	47.44	49.98	52.21	54.2	56.57	58.19
		60	24.64	5.39	24.64	2	24.96	29.3	31.36	33.43	34.69	35.78	36.75	37.88	38.65
		120	14.29	0.09	14.29	2	14.3	14.36	14.39	14.41	14.43	14.44	14.45	14.46	14.47
		180	9.99	0.6	9.99	2	10.07	10.49	10.68	10.85	10.95	11.04	11.12	11.2	11.26
		240	7.78	0.68	7.78	2	7.87	8.35	8.57	8.78	8.9	9.01	9.1	9.2	9.27
		360	5.36	0.39	5.36	2	5.41	5.69	5.81	5.93	5.99	6.05	6.1	6.16	6.2
		720	3.07	0.12	3.07	2	3.09	3.17	3.21	3.24	3.26	3.28	3.29	3.31	3.32
		1440	1.71	0.16	1.71	2	1.73	1.85	1.9	1.95	1.98	2	2.02	2.05	2.06
		2880	1.01	0	1.01	2	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
		4320	0.8	0.07	0.8	2	0.81	0.86	0.88	0.9	0.92	0.93	0.94	0.95	0.95
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Gauge 442663					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	54.19	21.15	60.96	3	53.33	72.3	82.29	92.87	99.65	105.7	111.19	117.78	122.37
30	39.37	13.36	43.18	4	39.23	50.89	56.85	63.05	66.97	70.43	73.55	77.26	79.83
45	27.94	10.48	30.48	4	27.61	36.94	41.8	46.93	50.2	53.11	55.75	58.91	61.1
60	21.17	9.62	25.4	3	20.42	29.29	34.14	39.41	42.84	45.93	48.77	52.22	54.64
120	13.65	5.33	14.61	4	13.43	18.21	20.73	23.4	25.11	26.63	28.02	29.68	30.84
180	10.8	5	9.74	4	10.39	15.01	17.55	20.32	22.13	23.77	25.27	27.09	28.38
240	8.74	4.59	7.64	4	8.2	12.53	15	17.75	19.58	21.26	22.81	24.72	26.07
360	6.49	2.27	5.36	5	6.45	8.45	9.47	10.54	11.22	11.82	12.36	13.01	13.45
720	3.77	1.22	3.18	5	3.77	4.82	5.36	5.91	6.26	6.56	6.84	7.17	7.39
1440	2.28	0.89	2.22	5	2.24	3.04	3.46	3.91	4.19	4.45	4.68	4.96	5.15
2880	1.29	0.29	1.22	5	1.31	1.54	1.65	1.76	1.83	1.89	1.95	2.01	2.05
4320	1.1	0.31	1.08	4	1.11	1.37	1.5	1.63	1.71	1.78	1.85	1.92	1.97
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 442729					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	165.46	148.36	101.6	7	124.02	263.9	363.81	491.23	585.07	677.2	767.89	885.93	974.01
30	80.01	68.47	48.26	8	61.8	126.87	172.24	229.27	270.81	311.28	350.86	402.05	440.03
45	58.06	47.15	33.87	7	46.24	91.36	122.03	159.98	187.29	213.69	239.33	272.27	296.56
60	43.18	32.75	31.75	8	35.65	67.16	87.92	113.1	130.97	148.06	164.52	185.48	200.83
120	23.12	15.47	16.51	9	20.17	35.07	44.37	55.29	62.85	69.95	76.7	85.17	91.3
180	17.24	11.64	11.86	8	14.99	26.2	33.23	41.49	47.22	52.62	57.75	64.19	68.85
240	13.57	9.09	9.53	9	11.83	20.59	26.06	32.48	36.92	41.1	45.07	50.06	53.66
360	9.59	7.12	6.14	10	8	14.86	19.33	24.73	28.54	32.18	35.67	40.1	43.35

720	6	5.06	3.6	9	4.68	9.49	12.83	17.01	20.04	22.98	25.86	29.57	32.32
1440	3.39	2.59	2.28	8	2.79	5.28	6.93	8.93	10.35	11.71	13.02	14.7	15.92
2880	1.72	1.23	1.3	10	1.46	2.65	3.41	4.31	4.95	5.55	6.13	6.86	7.4
4320	1.25	0.82	0.95	10	1.1	1.89	2.38	2.95	3.34	3.71	4.06	4.5	4.82
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 442941					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	54.19	21.15	60.96	3	53.33	72.3	82.29	92.87	99.65	105.7	111.19	117.78	122.37	
30	39.37	13.36	43.18	4	39.23	50.89	56.85	63.05	66.97	70.43	73.55	77.26	79.83	
45	27.94	10.48	30.48	4	27.61	36.94	41.8	46.93	50.2	53.11	55.75	58.91	61.1	
60	21.17	9.62	25.4	3	20.42	29.29	34.14	39.41	42.84	45.93	48.77	52.22	54.64	
120	13.65	5.33	14.61	4	13.43	18.21	20.73	23.4	25.11	26.63	28.02	29.68	30.84	
180	10.8	5	9.74	4	10.39	15.01	17.55	20.32	22.13	23.77	25.27	27.09	28.38	
240	8.74	4.59	7.64	4	8.2	12.53	15	17.75	19.58	21.26	22.81	24.72	26.07	
360	6.49	2.27	5.36	5	6.45	8.45	9.47	10.54	11.22	11.82	12.36	13.01	13.45	
720	3.77	1.22	3.18	5	3.77	4.82	5.36	5.91	6.26	6.56	6.84	7.17	7.39	
1440	2.28	0.89	2.22	5	2.24	3.04	3.46	3.91	4.19	4.45	4.68	4.96	5.15	
2880	1.29	0.29	1.22	5	1.31	1.54	1.65	1.76	1.83	1.89	1.95	2.01	2.05	
4320	1.1	0.31	1.08	4	1.11	1.37	1.5	1.63	1.71	1.78	1.85	1.92	1.97	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Gauge 443192					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	88.9	56.49	66.04	4	79.03	133.31	166.5	204.98	231.35	256	279.28	308.34	329.26	
30	54.19	18.36	50.8	6	54	70.03	78.21	86.72	92.1	96.85	101.13	106.23	109.75	
45	46.06	13.03	44.03	5	46.35	57.33	62.76	68.3	71.75	74.76	77.46	80.64	82.82	

60	35.56	10.52	34.29	8	35.72	44.66	49.11	53.68	56.53	59.02	61.26	63.91	65.73
120	24.89	9.57	21.59	5	24.54	33.09	37.58	42.33	45.36	48.07	50.52	53.47	55.52
180	18.21	7.22	15.67	6	17.89	24.39	27.82	31.46	33.8	35.89	37.79	40.07	41.66
240	16.73	5.47	15.25	6	16.71	21.45	23.86	26.35	27.91	29.3	30.54	32.02	33.04
360	12.35	4.58	11.65	6	12.22	16.28	18.4	20.63	22.05	23.31	24.45	25.82	26.77
720	7.44	2.9	7.41	7	7.32	9.92	11.29	12.74	13.67	14.5	15.25	16.15	16.78
1440	4.22	1.49	4.24	8	4.19	5.5	6.18	6.88	7.33	7.73	8.09	8.51	8.81
2880	2.15	0.88	1.91	7	2.1	2.9	3.32	3.78	4.07	4.33	4.57	4.85	5.05
4320	1.53	0.65	1.27	7	1.49	2.08	2.4	2.74	2.96	3.16	3.34	3.56	3.71
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 443200		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability											
		Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	2 0.5	5 0.2	10 0.1	25 0.04	50 0.02	100 0.01	200 0.005
15	60.96	10.16	60.96	3	61.84	69.68	73.31	76.88	79.03	80.88	82.5	84.39	85.66
30	35.56	8.8	40.64	3	35.93	43.17	46.68	50.21	52.39	54.29	55.97	57.95	59.3
45	28.22	8.52	27.09	3	28.32	35.59	39.22	42.95	45.29	47.34	49.17	51.35	52.84
60	23.71	8.92	22.86	3	23.42	31.37	35.51	39.88	42.67	45.16	47.41	50.1	51.97
120	13.55	6.39	12.7	3	12.99	18.92	22.2	25.77	28.12	30.24	32.19	34.57	36.24
180	10.72	4.26	10.16	3	10.53	14.36	16.39	18.54	19.93	21.16	22.28	23.63	24.57
240	8.26	2.91	7.62	3	8.21	10.77	12.08	13.46	14.33	15.11	15.8	16.64	17.21
360	6.35	2.36	5.93	3	6.28	8.38	9.47	10.62	11.35	12	12.59	13.3	13.79
720	4.37	2.65	3.18	3	3.95	6.48	8.01	9.76	10.95	12.05	13.09	14.38	15.31
1440	2.65	1.06	2.65	3	2.6	3.56	4.06	4.6	4.94	5.25	5.53	5.87	6.11
2880	1.45	0.57	1.69	3	1.43	1.94	2.21	2.49	2.68	2.84	2.99	3.17	3.29
4320	1.2	0.56	1.2	3	1.15	1.67	1.96	2.27	2.47	2.66	2.83	3.03	3.18
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 443229					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	138.18	168.42	71.12	5	110.52	259.36	357.9	482.41	574.78	666.47	757.82	878.34	969.43
30	68.3	59.19	50.8	9	58.58	110.89	145.52	189.28	221.74	253.96	286.07	328.43	360.44
45	47.04	39.4	33.87	9	40.57	75.39	98.44	127.57	149.18	170.63	192	220.19	241.5
60	35.84	29.69	25.4	9	30.96	57.2	74.57	96.52	112.81	128.97	145.07	166.32	182.38
120	19.05	14.34	13.97	9	16.69	29.37	37.76	48.36	56.22	64.03	71.81	82.07	89.83
180	16.39	9.41	13.94	7	14.84	23.16	28.67	35.62	40.78	45.91	51.01	57.74	62.83
240	12.14	6.67	10.79	8	11.04	16.94	20.84	25.77	29.43	33.06	36.68	41.45	45.06
360	8.73	4.26	8.05	8	8.03	11.8	14.29	17.44	19.77	22.09	24.4	27.45	29.76
720	5.29	1.93	4.87	8	4.97	6.68	7.81	9.23	10.29	11.34	12.39	13.77	14.82
1440	2.73	0.94	2.49	8	2.58	3.41	3.96	4.65	5.17	5.68	6.19	6.86	7.37
2880	1.55	0.53	1.51	8	1.46	1.93	2.24	2.63	2.92	3.21	3.5	3.88	4.17
4320	1.1	0.37	1.09	9	1.04	1.37	1.58	1.86	2.06	2.26	2.46	2.73	2.93
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 443272					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	155.79	215.28	86.36	12	120.43	310.68	436.65	595.8	713.87	831.07	947.84	1101.89	1218.32
30	81.6	90.79	63.5	16	66.69	146.92	200.05	267.17	316.96	366.38	415.63	480.6	529.7
45	58.21	59.59	45.72	16	48.42	101.09	135.95	180.01	212.69	245.13	277.45	320.09	352.32
60	45.56	44.03	36.83	16	38.33	77.24	103	135.55	159.7	183.67	207.55	239.06	262.87
120	25.16	21.42	20.96	16	21.64	40.57	53.1	68.94	80.69	92.35	103.97	119.3	130.88
180	17.75	12.78	15.24	21	15.65	26.95	34.42	43.87	50.88	57.84	64.77	73.91	80.83
240	14.9	9.73	13.02	20	13.3	21.9	27.59	34.79	40.12	45.42	50.7	57.66	62.92
360	11.3	6.91	10.16	19	10.17	16.27	20.31	25.42	29.21	32.97	36.72	41.67	45.4

720	6.18	3.13	5.61	24	5.67	8.43	10.26	12.58	14.29	16	17.7	19.94	21.63
1440	3.34	1.55	2.97	26	3.09	4.46	5.36	6.51	7.36	8.2	9.04	10.15	10.99
2880	2.13	1	1.91	29	1.97	2.85	3.43	4.17	4.72	5.27	5.81	6.52	7.07
4320	1.56	0.71	1.41	26	1.44	2.07	2.49	3.01	3.4	3.79	4.17	4.68	5.06
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 443310-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
					2	5	10	25	50	100	200	500	1000	
Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	107.95	53.31	93.98	12	102.61	152.42	180.34	211.07	231.31	249.73	266.73	287.48	302.12	
30	54.12	25.02	48.26	13	52.06	75.19	87.92	101.76	110.8	118.97	126.48	135.6	142	
45	36.98	15.35	33.87	15	36.14	50.06	57.5	65.45	70.58	75.18	79.37	84.43	87.95	
60	29.9	11.21	25.79	14	29.55	39.52	44.73	50.21	53.71	56.82	59.64	63.02	65.36	
120	17	5.59	16.77	14	16.98	21.83	24.29	26.84	28.45	29.87	31.14	32.66	33.71	
180	12.93	3.88	12.28	14	12.98	16.29	17.94	19.63	20.69	21.62	22.45	23.44	24.12	
240	10.9	3.36	10.32	14	10.93	13.8	15.25	16.73	17.67	18.48	19.22	20.09	20.69	
360	7.91	2.79	7.29	16	7.86	10.31	11.58	12.9	13.73	14.48	15.15	15.95	16.5	
720	4.84	1.99	4.66	13	4.74	6.54	7.5	8.52	9.18	9.78	10.31	10.96	11.42	
1440	2.63	1.2	2.38	16	2.54	3.64	4.25	4.91	5.34	5.72	6.08	6.51	6.81	
2880	1.48	0.64	1.27	16	1.44	2.02	2.34	2.68	2.9	3.1	3.28	3.5	3.65	
4320	1.12	0.51	0.94	14	1.08	1.55	1.81	2.09	2.27	2.43	2.58	2.77	2.9	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Gauge 443310-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
					2	5	10	25	50	100	200	500	1000	
Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	64.35	31.26	55.88	6	61.36	90.49	106.74	124.58	136.3	146.95	156.77	168.73	177.16	
30	42.09	25.52	35.56	7	38	62.44	77.12	93.97	105.42	116.06	126.06	138.49	147.4	
45	31.93	18.22	27.09	7	29.34	46.7	56.9	68.44	76.22	83.39	90.1	98.38	104.29	

60	27.52	14.67	24.13	6	25.73	39.59	47.55	56.43	62.35	67.78	72.81	79	83.39
120	16.03	6.26	14.61	8	15.78	21.39	24.35	27.48	29.49	31.28	32.9	34.86	36.22
180	11.38	4.42	10.16	9	11.21	15.17	17.25	19.45	20.87	22.13	23.27	24.64	25.6
240	8.8	2.85	8.26	7	8.8	11.26	12.51	13.8	14.61	15.33	15.97	16.74	17.27
360	6.89	2.21	6.35	7	6.89	8.8	9.76	10.76	11.39	11.94	12.43	13.02	13.43
720	4.3	1.34	4.13	12	4.31	5.46	6.04	6.63	7.01	7.33	7.63	7.98	8.22
1440	2.52	0.67	2.49	10	2.54	3.1	3.37	3.65	3.82	3.97	4.11	4.26	4.37
2880	1.46	0.5	1.46	12	1.45	1.89	2.11	2.35	2.5	2.63	2.74	2.88	2.98
4320	1.05	0.36	1.01	12	1.05	1.36	1.52	1.69	1.8	1.89	1.97	2.08	2.14
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 444128		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability													
		Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	2	5	10	25	50	100	200	500	1000
						0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
		15	138.61	126.81	96.52	14	117.78	229.85	304.05	397.8	467.34	536.38	605.16	695.91	764.49
		30	76.93	59.87	58.42	14	67.1	120.01	155.04	199.3	232.13	264.73	297.2	340.04	372.42
		45	51.86	37.24	42.34	16	45.74	78.65	100.44	127.97	148.4	168.67	188.87	215.52	235.66
		60	39.59	27.14	33.02	17	35.13	59.12	75	95.06	109.95	124.72	139.44	158.86	173.54
		120	23.57	12.41	20.96	18	21.53	32.5	39.76	48.93	55.74	62.5	69.23	78.11	84.82
		180	16.22	8.53	14.39	19	14.82	22.36	27.35	33.65	38.33	42.98	47.6	53.71	58.32
		240	13.07	6.77	11.43	19	11.96	17.94	21.9	26.91	30.62	34.31	37.98	42.82	46.48
		360	9.55	5.06	8.26	18	8.72	13.19	16.15	19.89	22.67	25.42	28.17	31.79	34.52
		720	5.85	3.01	4.98	18	5.36	8.02	9.78	12	13.65	15.29	16.92	19.08	20.71
		1440	3.56	1.64	3.13	22	3.29	4.74	5.7	6.91	7.81	8.7	9.59	10.77	11.65
		2880	1.92	0.98	1.62	24	1.76	2.63	3.2	3.92	4.46	4.99	5.53	6.23	6.76
		4320	1.35	0.71	1.16	23	1.23	1.86	2.28	2.8	3.19	3.58	3.96	4.47	4.85
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Gauge 444180					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	79.39	33.01	81.28	11	73.97	103.14	122.46	146.86	164.96	182.93	200.84	224.46	242.31
30	53.32	23.56	48.26	14	49.45	70.27	84.06	101.47	114.4	127.22	140	156.86	169.6
45	41.12	18.35	38.95	14	38.11	54.32	65.06	78.63	88.69	98.68	108.63	121.76	131.69
60	32.85	15.14	29.21	16	30.36	43.74	52.6	63.79	72.1	80.34	88.55	99.39	107.57
120	19.63	8.41	18.42	16	18.25	25.68	30.6	36.82	41.43	46.01	50.57	56.59	61.14
180	13.76	5.32	13.55	19	12.89	17.59	20.7	24.63	27.55	30.45	33.33	37.14	40.02
240	10.88	4.49	10.16	17	10.14	14.11	16.74	20.06	22.52	24.96	27.4	30.61	33.04
360	7.94	3.13	7.41	20	7.43	10.19	12.02	14.34	16.05	17.76	19.46	21.7	23.39
720	4.76	1.72	4.45	19	4.48	6	7	8.28	9.22	10.16	11.09	12.32	13.25
1440	2.81	0.89	2.65	19	2.66	3.45	3.97	4.63	5.12	5.6	6.08	6.72	7.2
2880	1.69	0.47	1.66	19	1.61	2.03	2.3	2.65	2.91	3.16	3.42	3.76	4.01
4320	1.24	0.33	1.23	23	1.19	1.48	1.67	1.91	2.1	2.28	2.45	2.69	2.87
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 444246					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	130.23	174.97	81.28	11	101.49	256.12	358.5	487.85	583.81	679.06	773.97	899.18	993.81
30	78.05	82.49	55.88	11	64.5	137.4	185.67	246.65	291.89	336.8	381.54	440.57	485.19
45	53.74	46.91	44.03	15	46.04	87.49	114.94	149.62	175.35	200.88	226.33	259.9	285.27
60	46.7	36.98	38.1	13	40.63	73.31	94.94	122.28	142.56	162.7	182.75	209.22	229.22
120	25.82	17.36	22.86	15	22.97	38.31	48.47	61.3	70.82	80.27	89.69	102.11	111.5
180	17.94	11.06	14.82	16	16.12	25.9	32.37	40.55	46.61	52.63	58.63	66.55	72.53
240	14.52	8.67	12.39	14	13.1	20.76	25.83	32.24	37	41.72	46.42	52.62	57.31
360	10.44	5.79	8.89	15	9.49	14.61	17.99	22.27	25.45	28.6	31.74	35.89	39.02

720	5.97	2.56	5.5	17	5.55	7.81	9.31	11.2	12.61	14	15.39	17.22	18.61
1440	3.37	1.4	2.86	15	3.14	4.38	5.2	6.23	7	7.76	8.52	9.52	10.28
2880	1.91	0.72	1.69	15	1.79	2.43	2.85	3.38	3.78	4.17	4.56	5.07	5.46
4320	1.34	0.42	1.2	17	1.27	1.64	1.89	2.2	2.43	2.66	2.89	3.19	3.41
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 444410					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	180.12	134.37	101.6	7	149.9	279.31	363.91	466.09	538.32	607.27	673.54	757.78	819.34
30	91.01	66.17	50.8	7	76.67	140.43	181.63	231.05	265.79	298.84	330.5	370.63	399.88
45	61.54	43.21	33.87	7	52.64	94.3	120.81	152.33	174.34	195.17	215.05	240.15	258.38
60	46.81	31.78	25.4	7	40.6	71.22	90.45	113.11	128.82	143.64	157.72	175.44	188.26
120	24.44	15.13	17.78	7	21.92	36.43	45.22	55.34	62.25	68.69	74.75	82.3	87.72
180	16.8	9.81	14.65	7	15.34	24.7	30.25	36.57	40.83	44.78	48.48	53.05	56.32
240	13.13	6.98	12.19	7	12.29	18.88	22.66	26.88	29.69	32.26	34.65	37.59	39.67
360	10.06	4.07	9.97	6	9.86	13.54	15.49	17.57	18.9	20.1	21.18	22.49	23.41
720	5.34	2.05	5.42	7	5.26	7.1	8.06	9.07	9.72	10.3	10.83	11.46	11.9
1440	2.88	0.91	2.71	7	2.88	3.67	4.06	4.47	4.72	4.95	5.15	5.39	5.56
2880	1.49	0.45	1.36	7	1.5	1.88	2.07	2.27	2.39	2.5	2.6	2.71	2.79
4320	1.04	0.35	0.98	7	1.04	1.34	1.5	1.66	1.76	1.85	1.93	2.03	2.1
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 444414					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	193.04	155.21	121.92	17	167.55	304.71	395.53	510.27	595.4	679.89	764.08	875.15	959.09
30	99.19	70.71	71.12	19	87.58	150.07	191.44	243.71	282.49	320.99	359.34	409.94	448.19
45	71.97	43.55	59.27	20	64.82	103.3	128.79	160.98	184.87	208.57	232.2	263.36	286.91

60	53.29	30.42	44.45	24	48.29	75.18	92.98	115.47	132.15	148.71	165.21	186.98	203.43
120	27.16	14.36	23.5	26	24.8	37.49	45.89	56.51	64.39	72.2	79.99	90.27	98.04
180	18.83	9.38	16.09	25	17.29	25.58	31.07	38	43.15	48.25	53.34	60.05	65.13
240	16.06	7.04	15.25	22	14.9	21.13	25.24	30.45	34.31	38.14	41.96	47	50.81
360	10.84	4.49	9.95	26	10.1	14.07	16.7	20.02	22.48	24.92	27.36	30.57	33
720	6.12	2.28	5.61	24	5.75	7.76	9.09	10.78	12.03	13.27	14.51	16.14	17.37
1440	3.26	1.13	3.07	25	3.07	4.07	4.73	5.57	6.19	6.8	7.42	8.23	8.84
2880	1.88	0.65	1.75	28	1.77	2.35	2.73	3.21	3.57	3.92	4.27	4.74	5.09
4320	1.42	0.5	1.32	27	1.34	1.78	2.07	2.44	2.72	2.99	3.26	3.62	3.89
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 445142		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability												
		Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	2 0.5	5 0.2	10 0.1	25 0.04	50 0.02	100 0.01	200 0.005	500 0.002
15	127.34	88.56	101.6	15	109.37	194.74	248.87	313.04	357.77	400.06	440.37	491.21	528.1	
30	67.61	40.8	60.79	16	61.13	100.19	123.61	150.46	168.69	185.63	201.54	221.31	235.47	
45	46.8	26.7	40.64	17	43.01	68.44	83.39	100.3	111.69	122.21	132.03	144.17	152.82	
60	36.89	18.52	33.02	19	34.95	52.3	62.07	72.86	79.98	86.47	92.47	99.8	104.98	
120	20.7	9.55	17.78	13	19.92	28.75	33.6	38.87	42.32	45.43	48.29	51.77	54.21	
180	14.97	6.52	13.97	16	14.53	20.5	23.73	27.21	29.46	31.49	33.34	35.59	37.16	
240	11.81	5.05	11.43	15	11.5	16.1	18.58	21.25	22.97	24.52	25.93	27.64	28.84	
360	8.02	2.7	7.62	17	8	10.35	11.55	12.8	13.58	14.28	14.91	15.65	16.17	
720	4.96	1.85	4.56	18	4.9	6.55	7.41	8.31	8.88	9.4	9.86	10.41	10.8	
1440	2.82	0.92	2.7	18	2.82	3.61	4.02	4.44	4.7	4.93	5.14	5.39	5.56	
2880	1.57	0.48	1.56	18	1.57	1.99	2.19	2.4	2.53	2.65	2.76	2.88	2.96	
4320	1.12	0.32	1.09	19	1.13	1.4	1.53	1.67	1.75	1.83	1.89	1.97	2.03	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Gauge 445423					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	123.19	105.65	86.36	8	105.84	199.21	261.02	339.13	397.07	454.59	511.89	587.5	644.63
30	66.04	43.5	53.34	10	58.9	97.34	122.79	154.95	178.81	202.49	226.08	257.21	280.74
45	52.49	29.19	45.72	8	47.7	73.49	90.57	112.15	128.16	144.05	159.88	180.77	196.56
60	38.99	20.87	33.02	9	35.56	54.01	66.22	81.65	93.09	104.45	115.77	130.71	142
120	23.23	10.47	24.33	9	21.51	30.76	36.89	44.63	50.37	56.07	61.75	69.24	74.91
180	16.25	7	14.39	11	15.1	21.29	25.38	30.56	34.4	38.21	42	47.01	50.8
240	13.85	5.74	13.07	10	12.91	17.98	21.34	25.58	28.73	31.85	34.97	39.08	42.18
360	10.09	3.91	9.8	10	9.45	12.9	15.19	18.08	20.23	22.35	24.48	27.27	29.39
720	5.48	1.83	5.48	12	5.18	6.8	7.87	9.22	10.22	11.22	12.21	13.52	14.51
1440	3.14	1.05	3.07	11	2.97	3.9	4.51	5.29	5.86	6.43	7	7.75	8.32
2880	1.82	0.59	1.77	12	1.72	2.24	2.59	3.03	3.35	3.67	3.99	4.41	4.73
4320	1.44	0.56	1.29	12	1.35	1.84	2.17	2.58	2.89	3.2	3.5	3.9	4.2
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 445595					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	96.52	115.47	66.04	10	77.56	179.6	247.16	332.53	395.86	458.72	521.35	603.98	666.43
30	59.27	49.6	48.26	12	51.12	94.96	123.98	160.65	187.85	214.85	241.76	277.25	304.08
45	41.85	31.06	35.56	14	36.75	64.2	82.37	105.33	122.37	139.28	156.12	178.35	195.15
60	33.37	22.65	27.94	15	29.65	49.67	62.92	79.66	92.09	104.42	116.7	132.91	145.16
120	19.86	10.94	16.51	15	18.06	27.73	34.13	42.22	48.22	54.18	60.11	67.94	73.86
180	13.76	6.9	12.7	15	12.63	18.72	22.76	27.86	31.65	35.4	39.15	44.08	47.82
240	11.14	4.75	10.8	17	10.36	14.56	17.34	20.85	23.45	26.04	28.62	32.02	34.58
360	8.3	3.08	8.28	20	7.79	10.52	12.32	14.6	16.28	17.96	19.63	21.84	23.5

720	5.25	1.53	5.1	23	5	6.35	7.25	8.38	9.22	10.05	10.88	11.97	12.8
1440	3.01	0.73	2.91	18	2.89	3.54	3.96	4.5	4.9	5.3	5.7	6.22	6.61
2880	1.63	0.46	1.62	22	1.55	1.96	2.23	2.57	2.82	3.07	3.32	3.65	3.9
4320	1.14	0.31	1.13	22	1.09	1.36	1.54	1.77	1.94	2.11	2.28	2.5	2.67
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 445690					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	178.1	153.17	111.76	17	137.15	282.59	384.27	512.26	605.58	696.58	785.64	900.89	986.47	
30	95.78	72.14	68.66	17	79.35	148.79	194.38	249.6	288.7	326.08	362.05	407.83	441.32	
45	65.57	45.48	46.59	18	56.38	100.22	127.99	160.88	183.8	205.46	226.1	252.12	271	
60	51.33	32.56	40.64	19	45.66	76.94	96.05	118.21	133.39	147.57	160.96	177.68	189.71	
120	28.57	15.1	27.31	20	26.77	41.02	49.17	58.27	64.32	69.86	75	81.32	85.79	
180	20.57	9.23	19.05	22	19.88	28.37	33	38.01	41.27	44.22	46.91	50.18	52.47	
240	17.61	8	15.88	20	16.99	24.36	28.4	32.77	35.63	38.2	40.56	43.43	45.44	
360	13.25	6.29	11.85	23	12.69	18.53	21.76	25.3	27.62	29.72	31.65	34.01	35.66	
720	8.69	4.02	7.73	28	8.36	12.08	14.12	16.35	17.8	19.11	20.32	21.79	22.82	
1440	5.09	2.28	4.45	25	4.92	7.02	8.16	9.4	10.2	10.93	11.59	12.4	12.96	
2880	2.78	1.23	2.57	24	2.69	3.82	4.43	5.1	5.53	5.91	6.27	6.7	7	
4320	1.99	0.84	1.75	28	1.94	2.7	3.11	3.55	3.84	4.09	4.33	4.61	4.8	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Gauge 445851					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	267.85	233.47	132.08	11	204.48	425.77	581.56	778.51	922.58	1063.38	1201.44	1380.44	1513.56	
30	125.05	108.89	76.2	13	95.52	198.75	271.39	363.19	430.32	495.92	560.24	643.61	705.61	
45	88.05	73.65	52.5	12	68.95	139.17	187.6	248.04	291.83	334.34	375.79	429.24	468.8	

60	65.13	50.35	44.45	14	53.26	101.65	133.8	173.02	200.95	227.74	253.61	286.63	310.85
120	34.21	24.57	26.04	14	28.98	52.66	67.88	86.08	98.84	110.96	122.56	137.23	147.92
180	23.35	16.24	19.48	14	20.05	35.71	45.64	57.4	65.61	73.36	80.76	90.08	96.84
240	18.96	11.99	15.88	13	16.88	28.4	35.43	43.57	49.15	54.35	59.27	65.4	69.81
360	13.3	7.59	11.01	13	12.22	19.45	23.7	28.51	31.75	34.74	37.53	40.98	43.44
720	6.96	3.48	5.61	14	6.6	9.86	11.69	13.71	15.05	16.26	17.38	18.76	19.72
1440	3.74	1.73	3.07	13	3.6	5.2	6.08	7.03	7.66	8.23	8.74	9.38	9.82
2880	2.01	0.76	1.88	14	1.98	2.66	3.02	3.39	3.63	3.84	4.03	4.26	4.42
4320	1.37	0.5	1.27	14	1.36	1.8	2.03	2.27	2.42	2.56	2.68	2.83	2.93
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 445880		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability											
		Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	2 0.5	5 0.2	10 0.1	25 0.04	50 0.02	100 0.01	200 0.005
15	75.18	32.55	76.2	10	69.83	98.6	117.65	141.71	159.56	177.28	194.94	218.23	235.83
30	45.72	16.85	45.72	11	42.95	57.84	67.7	80.16	89.4	98.57	107.71	119.77	128.88
45	34.88	14.46	33.87	10	32.51	45.28	53.74	64.43	72.37	80.24	88.08	98.43	106.25
60	30.02	10.52	30.48	11	28.29	37.59	43.74	51.52	57.29	63.02	68.72	76.25	81.94
120	18.52	7.37	18.42	12	17.31	23.82	28.13	33.58	37.63	41.64	45.64	50.91	54.9
180	13.31	5.04	13.13	14	12.48	16.94	19.89	23.61	26.38	29.12	31.85	35.46	38.19
240	11.54	3.85	11.12	12	10.91	14.31	16.56	19.41	21.52	23.62	25.7	28.46	30.54
360	8.41	2.99	7.83	16	7.92	10.56	12.31	14.52	16.16	17.79	19.41	21.55	23.17
720	5.35	2.19	4.87	16	4.99	6.93	8.21	9.83	11.03	12.22	13.41	14.97	16.16
1440	3.16	1.24	2.91	18	2.96	4.05	4.78	5.69	6.37	7.05	7.72	8.61	9.28
2880	1.81	0.8	1.59	17	1.68	2.39	2.85	3.45	3.88	4.32	4.75	5.33	5.76
4320	1.29	0.58	1.18	18	1.19	1.71	2.05	2.48	2.79	3.11	3.42	3.84	4.15
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 446178					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	187.4	178.39	101.6	9	158.1	315.75	420.13	552.01	649.85	746.96	843.72	971.38	1067.86
30	94.83	73.79	68.58	12	82.71	147.92	191.1	245.65	286.12	326.29	366.31	419.12	459.03
45	66.17	46.8	54.19	13	58.48	99.84	127.23	161.82	187.49	212.97	238.35	271.84	297.16
60	51.48	32.12	43.18	15	46.2	74.59	93.38	117.13	134.75	152.23	169.65	192.64	210.01
120	30.8	19.12	25.4	12	27.66	44.56	55.74	69.88	80.37	90.77	101.15	114.83	125.17
180	21.11	12.74	16.94	14	19.02	30.28	37.73	47.15	54.14	61.07	67.98	77.1	83.99
240	17.15	9.01	15.25	16	15.67	23.63	28.9	35.57	40.51	45.41	50.3	56.75	61.62
360	12.18	6	11.01	17	11.19	16.5	20.01	24.44	27.73	31	34.25	38.55	41.79
720	7.39	3.41	6.46	18	6.83	9.84	11.84	14.36	16.23	18.09	19.94	22.38	24.22
1440	4.37	1.99	3.81	17	4.04	5.8	6.97	8.44	9.53	10.61	11.69	13.12	14.19
2880	2.43	1.1	2.17	17	2.25	3.22	3.87	4.68	5.28	5.88	6.48	7.26	7.86
4320	1.84	0.79	1.68	16	1.71	2.41	2.87	3.45	3.89	4.32	4.75	5.31	5.74
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 446475					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	99.06	58.47	86.36	12	89.46	141.13	175.34	218.57	250.63	282.46	314.18	356.02	387.64
30	57.23	26.43	55.88	15	52.89	76.25	91.71	111.25	125.75	140.13	154.47	173.38	187.68
45	42.82	15.97	42.34	14	40.2	54.31	63.65	75.46	84.22	92.91	101.58	113	121.64
60	35.56	14.16	34.29	16	33.23	45.75	54.03	64.5	72.27	79.98	87.66	97.79	105.45
120	23.24	9.65	22.23	20	21.66	30.18	35.83	42.96	48.26	53.51	58.74	65.65	70.87
180	18.31	8.43	16.09	16	16.93	24.38	29.31	35.54	40.16	44.75	49.33	55.36	59.92
240	14.57	6.96	13.02	16	13.43	19.58	23.65	28.8	32.61	36.4	40.18	45.16	48.92
360	11.03	4.69	9.95	20	10.26	14.4	17.15	20.62	23.19	25.74	28.29	31.64	34.18

720	6.86	3.65	5.61	22	6.26	9.49	11.62	14.32	16.32	18.31	20.29	22.9	24.87
1440	3.99	1.83	3.55	26	3.69	5.31	6.38	7.73	8.73	9.73	10.72	12.03	13.02
2880	2.09	0.92	1.91	25	1.94	2.75	3.29	3.97	4.47	4.98	5.47	6.13	6.63
4320	1.52	0.65	1.31	27	1.41	1.99	2.37	2.85	3.21	3.56	3.91	4.38	4.73
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 446692					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	129.31	127.96	91.44	11	108.3	221.38	296.25	390.85	461.03	530.69	600.09	691.66	760.87	
30	70.39	55.29	58.42	14	61.31	110.17	142.52	183.4	213.72	243.82	273.81	313.38	343.28	
45	52.62	37.4	44.03	13	46.48	79.53	101.41	129.06	149.57	169.93	190.22	216.98	237.21	
60	42.23	25.41	36.83	16	38.06	60.51	75.38	94.17	108.1	121.93	135.72	153.9	167.64	
120	25	12.42	22.23	16	22.96	33.94	41.2	50.39	57.2	63.96	70.69	79.58	86.3	
180	17.78	7.98	16.09	19	16.47	23.52	28.19	34.09	38.47	42.81	47.14	52.85	57.17	
240	14.94	6.21	13.97	19	13.92	19.41	23.04	27.63	31.04	34.42	37.79	42.23	45.59	
360	10.97	4.03	10.37	22	10.31	13.87	16.23	19.21	21.42	23.61	25.8	28.68	30.86	
720	7.12	3.28	6.25	22	6.58	9.48	11.4	13.82	15.62	17.41	19.19	21.53	23.31	
1440	4.07	1.88	3.6	26	3.76	5.42	6.52	7.91	8.94	9.97	10.99	12.33	13.35	
2880	2.38	1.09	2.17	26	2.2	3.16	3.8	4.61	5.21	5.8	6.39	7.17	7.76	
4320	1.66	0.77	1.47	28	1.53	2.21	2.66	3.23	3.66	4.08	4.49	5.04	5.46	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Gauge 446712					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	151.55	142.53	96.52	12	128.14	254.1	337.5	442.87	521.04	598.63	675.94	777.93	855.02	
30	81.78	56.4	66.04	17	72.52	122.36	155.36	197.06	227.99	258.69	289.28	329.64	360.15	
45	59.3	36.63	50.8	17	53.28	85.66	107.09	134.17	154.26	174.2	194.07	220.28	240.09	

60	46.34	27	38.1	19	41.91	65.77	81.56	101.53	116.33	131.03	145.68	165	179.6
120	28.14	14.58	24.13	23	25.75	38.63	47.16	57.94	65.94	73.87	81.78	92.22	100.1
180	20.71	10.83	17.33	23	18.93	28.5	34.84	42.85	48.79	54.68	60.56	68.31	74.16
240	16.47	8.56	13	21	15.06	22.63	27.64	33.97	38.66	43.32	47.96	54.09	58.72
360	12.69	6.25	10.59	24	11.66	17.19	20.84	25.46	28.89	32.29	35.68	40.16	43.54
720	6.87	3.14	6.14	27	6.35	9.13	10.97	13.29	15.01	16.72	18.42	20.67	22.37
1440	3.85	1.48	3.6	25	3.61	4.91	5.78	6.87	7.69	8.49	9.3	10.35	11.15
2880	2.1	0.79	1.96	27	1.97	2.67	3.13	3.71	4.15	4.58	5.01	5.57	6
4320	1.52	0.56	1.41	29	1.43	1.92	2.25	2.66	2.97	3.28	3.58	3.98	4.28
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 446955		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability											
		Duration (min)	x _{bar} (mm h ⁻¹)	s (mm h ⁻¹)	x _m (mm h ⁻¹)	N	2 0.5	5 0.2	10 0.1	25 0.04	50 0.02	100 0.01	200 0.005
15	88.09	83.35	66.04	12	63.61	141.25	198.28	272.3	327.53	382.25	436.52	507.71	561.18
30	54.43	37.72	48.26	14	46.82	83.18	106.2	133.47	152.46	170.4	187.51	209.07	224.71
45	40.64	23.95	37.25	15	37.01	59.89	73.49	89	99.5	109.22	118.33	129.62	137.7
60	36.58	17.77	33.02	15	34.88	51.44	60.68	70.82	77.48	83.53	89.11	95.92	100.71
120	20.88	8.79	19.69	18	20.37	28.36	32.65	37.24	40.21	42.87	45.3	48.24	50.28
180	15.15	5.97	14.82	18	14.9	20.26	23.09	26.09	28.02	29.74	31.3	33.18	34.48
240	12.58	4.87	11.75	16	12.39	16.75	19.04	21.47	23.02	24.4	25.66	27.17	28.21
360	9.24	3.15	8.68	18	9.2	11.96	13.36	14.83	15.75	16.57	17.31	18.19	18.8
720	4.91	1.59	4.66	19	4.91	6.28	6.98	7.7	8.15	8.55	8.91	9.34	9.63
1440	2.89	0.86	2.81	22	2.9	3.63	4	4.37	4.61	4.81	4.99	5.21	5.36
2880	1.76	0.62	1.72	22	1.75	2.29	2.57	2.87	3.05	3.22	3.37	3.54	3.67
4320	1.22	0.45	1.13	23	1.21	1.61	1.81	2.03	2.17	2.29	2.41	2.54	2.63
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 447025					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	138.18	121.18	91.44	10	105.08	219.81	300.84	403.46	478.64	552.18	624.36	718.01	787.7
30	95.07	62.89	66.04	7	83.29	143.85	181.47	225.52	255.94	284.51	311.6	345.57	370.1
45	61.64	35.91	55.88	10	56.32	90.59	110.88	133.96	149.54	163.96	177.46	194.17	206.11
60	53.62	25.03	45.72	9	51.5	74.68	87.46	101.39	110.5	118.74	126.32	135.53	142
120	25.65	12.09	22.23	10	24.59	35.81	42.01	48.78	53.21	57.22	60.91	65.4	68.56
180	21.01	9.64	19.47	11	20.24	29.14	34.02	39.33	42.79	45.93	48.8	52.29	54.73
240	16.09	8.44	12.7	9	15.1	23.06	27.6	32.66	36.02	39.1	41.95	45.45	47.93
360	11.38	5.69	8.47	9	10.79	16.12	19.11	22.42	24.6	26.59	28.42	30.67	32.25
720	7.35	3.23	6.35	11	7.13	10.09	11.69	13.42	14.55	15.56	16.49	17.61	18.39
1440	3.84	1.7	3.71	10	3.72	5.28	6.13	7.04	7.64	8.17	8.66	9.26	9.67
2880	2.2	0.98	2.12	11	2.13	3.03	3.52	4.05	4.39	4.7	4.99	5.33	5.57
4320	1.59	0.69	1.68	10	1.54	2.18	2.52	2.88	3.12	3.34	3.53	3.77	3.93
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 447130					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	88.9	45.36	81.28	8	83.94	126.54	150.66	177.36	195.04	211.17	226.1	244.37	257.29
30	62.23	28.45	68.58	8	59.97	86.22	100.61	116.24	126.43	135.63	144.08	154.33	161.53
45	48.38	19.72	50.8	7	47.38	65.21	74.69	84.81	91.31	97.14	102.44	108.83	113.28
60	35.92	16.94	38.1	7	34.44	50.15	58.84	68.33	74.54	80.17	85.34	91.64	96.07
120	25.08	12.71	24.77	8	23.72	35.64	42.38	49.83	54.75	59.25	63.4	68.49	72.08
180	17.89	9.86	16.51	8	16.59	25.95	31.38	37.48	41.57	45.32	48.82	53.14	56.2
240	14.69	8.74	13.34	8	13.34	21.7	26.68	32.38	36.24	39.82	43.18	47.34	50.32
360	10.74	6.89	9.11	8	9.51	16.14	20.21	24.93	28.18	31.22	34.09	37.68	40.26

720	5.97	3.5	5.08	9	5.44	8.79	10.77	13.03	14.56	15.97	17.29	18.93	20.11
1440	3.36	1.77	2.77	8	3.15	4.82	5.77	6.84	7.55	8.19	8.79	9.53	10.05
2880	1.91	1.06	1.59	9	1.77	2.77	3.36	4.02	4.46	4.87	5.25	5.71	6.05
4320	1.49	0.78	1.31	8	1.4	2.13	2.55	3.02	3.33	3.61	3.88	4.2	4.43
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 447164					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	81.28	57.47	81.28	2	69.32	124.72	160.09	202.21	231.66	259.56	286.21	319.88	344.35	
30	45.72	28.74	45.72	2	40.79	68.39	85.2	104.63	117.93	130.34	142.04	156.64	167.14	
45	33.87	19.16	33.87	2	31.2	49.43	60.12	72.19	80.3	87.79	94.78	103.41	109.56	
60	23.71	12.53	17.78	3	22.22	34.04	40.81	48.35	53.37	57.97	62.24	67.48	71.19	
120	15.24	6.35	15.24	3	14.89	20.65	23.73	27.03	29.16	31.07	32.8	34.9	36.37	
180	10.72	4.34	11.85	3	10.51	14.43	16.51	18.72	20.15	21.43	22.59	23.98	24.96	
240	8.68	3.13	10.16	3	8.61	11.37	12.8	14.3	15.25	16.1	16.86	17.78	18.41	
360	5.72	2.69	5.72	2	5.49	7.98	9.36	10.86	11.85	12.74	13.56	14.56	15.26	
720	4.37	1.64	4.87	3	4.32	5.78	6.54	7.34	7.85	8.31	8.72	9.22	9.56	
1440	2.65	0.74	2.96	3	2.67	3.29	3.6	3.91	4.1	4.27	4.43	4.61	4.73	
2880	1.5	0.53	1.69	3	1.49	1.96	2.2	2.45	2.61	2.75	2.88	3.03	3.13	
4320	1.14	0.53	1.16	3	1.1	1.59	1.86	2.15	2.34	2.52	2.68	2.87	3.01	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Gauge 447338					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	150.06	232.76	91.44	13	111.83	317.53	453.72	625.8	753.45	880.17	1006.42	1172.98	1298.87	
30	80.66	103.29	55.97	16	63.7	154.98	215.41	291.77	348.42	404.65	460.68	534.59	590.46	
45	61.41	69.97	44.03	15	49.92	111.75	152.69	204.42	242.8	280.89	318.84	368.91	406.75	

60	46.57	52.08	35.56	15	38.02	84.04	114.51	153.02	181.58	209.93	238.18	275.45	303.62
120	26.97	21.99	21.59	21	23.36	42.79	55.66	71.92	83.98	95.95	107.87	123.61	135.5
180	19.43	15.59	16.09	18	16.87	30.65	39.77	51.29	59.84	68.33	76.79	87.94	96.38
240	14.89	10.91	12.39	20	13.1	22.74	29.12	37.19	43.17	49.11	55.03	62.84	68.74
360	11.23	6.79	9.53	22	10.11	16.12	20.09	25.11	28.83	32.53	36.21	41.07	44.74
720	6.45	3.77	5.5	21	5.83	9.16	11.37	14.16	16.22	18.28	20.32	23.02	25.06
1440	3.86	1.85	3.44	24	3.56	5.19	6.27	7.64	8.66	9.66	10.67	11.99	12.99
2880	2.21	1.02	1.96	25	2.04	2.94	3.54	4.29	4.85	5.41	5.96	6.69	7.24
4320	1.6	0.72	1.43	26	1.48	2.12	2.54	3.07	3.47	3.86	4.25	4.76	5.15
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 448022		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability											
		Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	2 0.5	5 0.2	10 0.1	25 0.04	50 0.02	100 0.01	200 0.005
15	74.02	27.33	71.12	7	69.53	93.68	109.68	129.88	144.87	159.75	174.57	194.13	208.91
30	55.32	23.06	50.8	9	51.53	71.91	85.4	102.45	115.1	127.65	140.16	156.66	169.13
45	41.87	22.32	37.25	11	38.2	57.93	70.99	87.49	99.73	111.88	123.99	139.96	152.03
60	34.93	21.72	29.21	12	31.36	50.56	63.27	79.32	91.24	103.06	114.84	130.38	142.13
120	20.43	14.12	17.78	12	18.11	30.59	38.85	49.29	57.03	64.72	72.38	82.48	90.12
180	14.16	9.81	11.85	11	12.55	21.22	26.96	34.21	39.59	44.93	50.25	57.27	62.58
240	12.23	6.67	11.12	12	11.13	17.03	20.93	25.86	29.52	33.15	36.77	41.54	45.15
360	8.58	4.57	7.62	11	7.83	11.87	14.54	17.92	20.43	22.91	25.39	28.66	31.14
720	4.9	2.09	4.45	13	4.56	6.4	7.63	9.17	10.32	11.46	12.59	14.09	15.22
1440	2.85	1.14	2.54	13	2.66	3.67	4.34	5.18	5.81	6.43	7.04	7.86	8.48
2880	1.76	0.69	1.51	14	1.65	2.26	2.66	3.17	3.55	3.92	4.3	4.79	5.17
4320	1.21	0.48	1.09	17	1.13	1.56	1.84	2.19	2.45	2.72	2.98	3.32	3.58
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 448046-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	183.73	181.31	116.84	12	153.95	314.18	420.27	554.31	653.75	752.45	850.8	980.54	1078.6
30	88.05	81.07	60.96	15	74.74	146.38	193.81	253.75	298.21	342.35	386.32	444.33	488.18
45	61.86	52.8	44.03	15	53.19	99.85	130.74	169.78	198.74	227.48	256.12	293.9	322.46
60	50.26	40.16	34.29	14	43.66	79.16	102.65	132.34	154.37	176.23	198.01	226.75	248.47
120	26.4	19.56	19.69	14	23.19	40.47	51.92	66.38	77.11	87.75	98.36	112.36	122.94
180	17.67	11.96	13.97	16	15.71	26.28	33.27	42.12	48.67	55.19	61.67	70.23	76.7
240	14.49	8.64	12.07	16	13.07	20.71	25.76	32.15	36.89	41.59	46.28	52.46	57.13
360	10.66	5.48	9.1	16	9.76	14.6	17.81	21.86	24.87	27.85	30.82	34.74	37.71
720	5.92	2.49	5.4	20	5.51	7.71	9.17	11.01	12.37	13.73	15.08	16.86	18.21
1440	3.13	1.28	2.75	19	2.92	4.05	4.8	5.75	6.45	7.15	7.84	8.76	9.45
2880	1.79	0.66	1.72	20	1.68	2.26	2.65	3.14	3.5	3.86	4.22	4.69	5.05
4320	1.25	0.5	1.16	21	1.17	1.61	1.9	2.27	2.55	2.82	3.09	3.45	3.72
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 448046-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	46.99	27.12	45.72	8	42.54	66.5	82.37	102.42	117.29	132.06	146.77	166.18	180.84
30	38.46	18.28	40.64	7	35.46	51.61	62.31	75.82	85.85	95.8	105.71	118.8	128.68
45	30.48	15.7	33.87	5	27.9	41.78	50.96	62.57	71.18	79.73	88.24	99.48	107.97
60	23.22	12.39	25.4	7	21.19	32.13	39.38	48.54	55.34	62.08	68.8	77.67	84.37
120	12.84	5.1	12.7	9	12	16.51	19.49	23.26	26.06	28.84	31.6	35.25	38.01
180	10.69	3.7	10.59	8	10.08	13.35	15.52	18.25	20.28	22.3	24.3	26.95	28.95
240	8.54	3	8.26	9	8.05	10.7	12.45	14.67	16.32	17.95	19.58	21.72	23.35
360	6.82	2.15	6.14	10	6.47	8.37	9.62	11.21	12.39	13.56	14.73	16.27	17.43
720	4.33	1.36	4.23	9	4.11	5.31	6.1	7.11	7.86	8.6	9.33	10.31	11.04

1440	2.45	0.8	2.43	11	2.32	3.03	3.49	4.09	4.52	4.96	5.39	5.97	6.4
2880	1.33	0.47	1.25	12	1.25	1.67	1.94	2.29	2.55	2.8	3.06	3.4	3.65
4320	1.01	0.41	0.92	11	0.94	1.3	1.54	1.85	2.07	2.3	2.52	2.81	3.03
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 448062					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	125.83	132.96	81.28	13	103.99	221.5	299.29	397.59	470.51	542.89	615.01	710.16	782.07
30	69.43	58.83	55.88	15	59.77	111.76	146.18	189.67	221.94	253.96	285.87	327.97	359.79
45	47.41	36.4	40.64	17	41.43	73.6	94.9	121.81	141.77	161.59	181.33	207.38	227.07
60	36.41	26.73	31.75	18	32.02	55.64	71.28	91.04	105.7	120.25	134.75	153.88	168.34
120	21.99	13.47	19.69	16	19.78	31.68	39.56	49.52	56.91	64.24	71.55	81.19	88.47
180	15.94	8.97	13.55	17	14.47	22.39	27.64	34.27	39.19	44.08	48.94	55.36	60.21
240	12.81	6.82	11.43	17	11.69	17.72	21.71	26.75	30.49	34.2	37.9	42.78	46.47
360	9.59	5.38	7.62	17	8.71	13.46	16.61	20.59	23.54	26.47	29.38	33.23	36.14
720	5.9	3.2	5.08	21	5.37	8.2	10.07	12.44	14.2	15.94	17.67	19.96	21.69
1440	3.22	1.54	2.91	22	2.97	4.33	5.23	6.37	7.21	8.05	8.89	9.99	10.82
2880	1.92	0.94	1.64	16	1.77	2.6	3.15	3.84	4.36	4.87	5.38	6.05	6.56
4320	1.39	0.64	1.27	19	1.28	1.85	2.22	2.7	3.05	3.4	3.74	4.2	4.55
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 448129					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	186.27	190.47	76.2	6	126.7	300.11	433.01	610.14	744.95	880.33	1016.2	1196.44	1333.21
30	91.44	78.23	60.96	8	70.64	144.99	196.83	261.97	309.42	355.64	400.85	459.32	502.7
45	63.92	50.51	45.72	8	51.68	100.14	132.66	172.58	201.15	228.64	255.25	289.32	314.37
60	51.89	38.99	35.56	7	43.04	80.57	105.19	134.99	156.08	176.23	195.62	220.29	238.33

120	33.02	19.41	21.59	5	30.09	48.63	59.64	72.19	80.68	88.54	95.9	105.03	111.55
180	22.16	10.99	16.94	6	21.05	31.32	37.09	43.44	47.63	51.44	54.96	59.25	62.28
240	17.06	7	13.97	7	16.69	23.03	26.41	30.01	32.33	34.41	36.3	38.58	40.17
360	12.33	3.97	11.65	8	12.33	15.76	17.49	19.29	20.42	21.41	22.3	23.36	24.1
720	6.86	2.17	6.35	5	6.87	8.73	9.68	10.65	11.26	11.8	12.28	12.85	13.24
1440	3.85	1.01	3.76	8	3.88	4.72	5.13	5.55	5.81	6.03	6.23	6.47	6.63
2880	2.14	0.68	2.04	8	2.14	2.73	3.02	3.33	3.52	3.69	3.84	4.02	4.14
4320	1.52	0.55	1.4	8	1.51	1.99	2.24	2.51	2.68	2.83	2.96	3.12	3.23
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 448149					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	54.19	21.15	60.96	3	53.33	72.3	82.29	92.87	99.65	105.7	111.19	117.78	122.37	
30	39.37	13.36	43.18	4	39.23	50.89	56.85	63.05	66.97	70.43	73.55	77.26	79.83	
45	27.94	10.48	30.48	4	27.61	36.94	41.8	46.93	50.2	53.11	55.75	58.91	61.1	
60	21.17	9.62	25.4	3	20.42	29.29	34.14	39.41	42.84	45.93	48.77	52.22	54.64	
120	13.65	5.33	14.61	4	13.43	18.21	20.73	23.4	25.11	26.63	28.02	29.68	30.84	
180	10.8	5	9.74	4	10.39	15.01	17.55	20.32	22.13	23.77	25.27	27.09	28.38	
240	8.74	4.59	7.64	4	8.2	12.53	15	17.75	19.58	21.26	22.81	24.72	26.07	
360	6.49	2.27	5.36	5	6.45	8.45	9.47	10.54	11.22	11.82	12.36	13.01	13.45	
720	3.77	1.22	3.18	5	3.77	4.82	5.36	5.91	6.26	6.56	6.84	7.17	7.39	
1440	2.28	0.89	2.22	5	2.24	3.04	3.46	3.91	4.19	4.45	4.68	4.96	5.15	
2880	1.29	0.29	1.22	5	1.31	1.54	1.65	1.76	1.83	1.89	1.95	2.01	2.05	
4320	1.1	0.31	1.08	4	1.11	1.37	1.5	1.63	1.71	1.78	1.85	1.92	1.97	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Gauge 448172					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	197.1	227.71	121.92	5	120.15	317.47	479.85	706.18	884.32	1067.39	1254.75	1508.21	1703.85
30	100.82	112.08	62.15	5	63.74	162.59	242.1	351.33	436.38	523.14	611.38	729.99	821.04
45	67.22	74.72	41.44	5	42.5	108.4	161.41	234.23	290.92	348.76	407.57	486.64	547.33
60	50.41	56.04	31.08	5	31.87	81.29	121.05	175.67	218.19	261.57	305.69	364.99	410.52
120	26.98	27.22	16.81	5	18.55	43.44	62.38	87.5	106.55	125.63	144.74	170.05	189.21
180	19.17	17.68	13.75	5	14.1	30.67	42.67	58.13	69.59	80.89	92.07	106.66	117.59
240	17.66	13.65	13.41	4	14.44	27.56	36.28	46.91	54.48	61.74	68.75	77.7	84.27
360	10.83	8.33	8.57	5	8.88	16.89	22.2	28.66	33.26	37.67	41.93	47.35	51.33
720	6.52	3.73	4.6	5	5.99	9.54	11.63	14	15.59	17.07	18.44	20.14	21.36
1440	3.61	1.71	2.64	5	3.46	5.05	5.92	6.88	7.51	8.08	8.61	9.25	9.7
2880	1.87	0.82	1.44	5	1.81	2.56	2.97	3.41	3.7	3.95	4.19	4.47	4.67
4320	1.42	0.65	1.16	5	1.37	1.97	2.3	2.65	2.89	3.1	3.29	3.53	3.69
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 448396					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	162.56	153.99	111.76	15	137.27	273.36	363.46	477.3	561.75	645.59	729.11	839.31	922.59
30	93.78	78.06	66.04	13	80.96	149.94	195.62	253.33	296.14	338.63	380.97	436.83	479.05
45	59.83	44.48	49.11	18	52.53	91.83	117.86	150.74	175.14	199.35	223.48	255.31	279.36
60	48.26	32.86	41.91	18	42.86	71.9	91.13	115.42	133.44	151.33	169.16	192.67	210.44
120	28.53	16.48	24.77	20	25.82	40.39	50.03	62.21	71.25	80.22	89.16	100.96	109.87
180	20.9	11.55	17.78	21	19	29.21	35.97	44.51	50.84	57.13	63.39	71.66	77.91
240	15.86	9.62	13.02	22	14.28	22.78	28.41	35.52	40.8	46.04	51.25	58.14	63.34
360	12.12	7.03	9.6	22	10.97	17.18	21.29	26.49	30.34	34.17	37.98	43.02	46.82
720	7.06	3.8	5.93	23	6.44	9.79	12.02	14.83	16.91	18.98	21.04	23.76	25.82

1440	4.01	2.06	3.28	21	3.67	5.49	6.7	8.22	9.35	10.47	11.59	13.06	14.18
2880	2.09	1.08	1.78	22	1.91	2.87	3.5	4.3	4.89	5.48	6.06	6.84	7.42
4320	1.49	0.7	1.34	27	1.38	1.99	2.4	2.92	3.3	3.69	4.07	4.57	4.94
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 448547					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	103.45	74.22	81.28	11	87.67	159.2	205.16	260.1	298.62	335.19	370.18	414.45	446.67
30	58.22	33.29	50.8	13	53.47	85.19	103.84	124.97	139.19	152.33	164.6	179.78	190.6
45	46.22	20.87	44.03	17	44.63	63.85	74.34	85.72	93.13	99.81	105.94	113.37	118.58
60	38.5	17.09	38.1	19	37.28	52.96	61.5	70.72	76.71	82.11	87.05	93.04	97.23
120	22.26	9.04	22.86	17	21.81	29.98	34.32	38.94	41.92	44.58	47.01	49.92	51.96
180	15.51	5.84	15.24	19	15.32	20.52	23.24	26.1	27.93	29.56	31.03	32.79	34.02
240	12.37	4.54	12.7	19	12.25	16.27	18.36	20.56	21.95	23.2	24.32	25.66	26.59
360	9.05	3.18	8.89	19	8.99	11.79	13.23	14.73	15.68	16.52	17.29	18.19	18.82
720	5.44	1.72	5.19	20	5.45	6.93	7.67	8.44	8.93	9.35	9.73	10.19	10.5
1440	3.17	0.92	3.13	18	3.19	3.97	4.35	4.75	4.99	5.21	5.4	5.63	5.79
2880	1.79	0.58	1.69	23	1.79	2.29	2.54	2.81	2.97	3.12	3.25	3.41	3.51
4320	1.29	0.39	1.27	22	1.29	1.63	1.79	1.96	2.07	2.17	2.25	2.35	2.42
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 448800					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	104.5	56.56	96.52	14	97.36	150.89	181.78	216.38	239.48	260.68	280.4	304.66	321.88
30	65.48	30.67	68.58	18	62.85	91.27	106.95	124.06	135.25	145.38	154.69	166.01	173.97
45	46.78	20.14	45.72	16	45.49	63.88	73.8	84.47	91.38	97.59	103.26	110.12	114.91
60	38.7	17.95	38.1	17	37.21	53.81	62.95	72.9	79.4	85.29	90.69	97.25	101.86

120	24.13	10.05	23.5	16	23.57	32.69	37.57	42.79	46.15	49.17	51.92	55.24	57.56
180	19.69	7.73	18.21	20	19.37	26.31	29.97	33.85	36.33	38.55	40.57	42.99	44.68
240	16.39	6.47	15.25	20	16.11	21.93	25	28.25	30.34	32.21	33.9	35.94	37.36
360	12.07	5.05	11.65	18	11.78	16.37	18.83	21.46	23.15	24.67	26.06	27.74	28.9
720	7.55	3.23	6.46	22	7.35	10.29	11.88	13.59	14.69	15.68	16.58	17.68	18.44
1440	4.33	1.88	4.19	22	4.21	5.93	6.85	7.86	8.5	9.09	9.62	10.27	10.72
2880	2.3	1.08	1.94	24	2.21	3.21	3.76	4.36	4.76	5.12	5.44	5.84	6.13
4320	1.66	0.76	1.48	23	1.6	2.3	2.69	3.1	3.38	3.62	3.85	4.12	4.31
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 449060					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	137.5	105.9	121.92	9	120.11	213.7	275.66	353.95	412.03	469.68	527.12	602.9	660.18	
30	66.95	49.92	55.88	10	58.75	102.87	132.08	168.98	196.36	223.54	250.61	286.34	313.33	
45	46.19	31.98	37.26	10	40.94	69.2	87.91	111.55	129.09	146.5	163.85	186.73	204.03	
60	35.26	23.45	27.94	10	31.41	52.13	65.85	83.19	96.05	108.82	121.54	138.32	151	
120	19.93	11.04	16.51	9	18.12	27.87	34.33	42.49	48.55	54.56	60.55	68.45	74.42	
180	14.1	7.45	11.43	8	12.88	19.46	23.82	29.33	33.41	37.47	41.51	46.84	50.87	
240	11.55	5.17	10.04	8	10.7	15.27	18.29	22.12	24.95	27.77	30.57	34.27	37.07	
360	8.51	3.31	8.04	7	7.97	10.89	12.83	15.28	17.09	18.89	20.69	23.06	24.85	
720	4.47	1.44	4.34	8	4.23	5.51	6.35	7.41	8.2	8.99	9.77	10.8	11.58	
1440	2.43	0.73	2.38	8	2.31	2.96	3.38	3.92	4.32	4.72	5.12	5.64	6.03	
2880	1.32	0.35	1.26	8	1.26	1.57	1.78	2.04	2.23	2.42	2.61	2.86	3.05	
4320	0.96	0.23	0.91	7	0.92	1.13	1.26	1.43	1.56	1.68	1.81	1.97	2.1	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Gauge 449151					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	131.4	88.19	101.6	15	116.92	194.85	246.45	311.65	360.02	408.03	455.86	518.97	566.67
30	77.33	41.87	68.58	18	70.45	107.46	131.95	162.91	185.87	208.67	231.38	261.34	283.98
45	52.59	25.96	47.41	17	48.33	71.27	86.46	105.65	119.89	134.02	148.1	166.68	180.72
60	45.72	25.94	39.37	20	41.46	64.38	79.56	98.74	112.97	127.09	141.16	159.72	173.75
120	29.71	17.54	26.67	23	26.83	42.33	52.59	65.56	75.18	84.73	94.24	106.79	116.28
180	22.34	14.65	19.47	21	19.93	32.88	41.45	52.28	60.32	68.29	76.24	86.72	94.65
240	17.44	11.34	13.97	26	15.58	25.6	32.23	40.62	46.84	53.01	59.16	67.28	73.41
360	13.36	7.89	11.01	25	12.06	19.04	23.65	29.49	33.81	38.11	42.39	48.03	52.3
720	7	3.6	6.14	19	6.41	9.59	11.7	14.36	16.33	18.29	20.24	22.82	24.77
1440	4.51	3.09	3.49	29	4	6.73	8.54	10.83	12.52	14.2	15.88	18.09	19.76
2880	2.54	1.72	1.83	28	2.26	3.78	4.78	6.06	7	7.94	8.87	10.1	11.03
4320	1.73	1.11	1.27	31	1.55	2.53	3.18	4	4.61	5.21	5.81	6.61	7.21
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 449159					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	100.58	90.93	76.2	10	85.65	166	219.21	286.43	336.3	385.8	435.12	500.19	549.37
30	59.11	41.29	50.8	11	52.33	88.82	112.98	143.5	166.15	188.63	211.02	240.57	262.9
45	41.77	27.26	35.56	12	37.29	61.38	77.33	97.49	112.44	127.28	142.06	161.57	176.31
60	36.2	20.95	31.75	12	32.76	51.27	63.53	79.02	90.51	101.91	113.28	128.27	139.6
120	17.88	9.03	16.51	13	16.4	24.38	29.66	36.34	41.29	46.2	51.1	57.56	62.45
180	14.17	6.83	12.7	15	13.05	19.08	23.08	28.13	31.88	35.59	39.3	44.19	47.88
240	11.73	4.8	10.16	15	10.94	15.18	17.99	21.54	24.17	26.79	29.39	32.82	35.42
360	9.1	3.07	8.26	14	8.6	11.31	13.11	15.37	17.06	18.73	20.39	22.59	24.25
720	5.21	1.75	4.97	16	4.92	6.47	7.49	8.79	9.75	10.7	11.65	12.9	13.85

1440	2.98	0.89	2.86	17	2.83	3.62	4.14	4.8	5.29	5.77	6.25	6.89	7.37
2880	1.73	0.57	1.61	16	1.64	2.14	2.47	2.9	3.21	3.52	3.83	4.24	4.54
4320	1.2	0.45	1.09	21	1.13	1.52	1.79	2.12	2.37	2.61	2.86	3.18	3.42
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 449169					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	103.86	87.37	71.12	9	89.51	166.72	217.84	282.44	330.35	377.92	425.31	487.83	535.08
30	60.96	36.49	50.8	11	54.97	87.21	108.57	135.54	155.55	175.42	195.21	221.32	241.06
45	44.31	22.62	38.95	12	40.6	60.59	73.82	90.54	102.95	115.26	127.53	143.72	155.95
60	35.05	17.91	29.21	10	32.11	47.94	58.42	71.66	81.48	91.23	100.94	113.76	123.45
120	21.13	8.97	17.78	11	19.66	27.58	32.83	39.46	44.38	49.27	54.13	60.55	65.4
180	14.61	6.57	12.28	12	13.53	19.34	23.18	28.04	31.64	35.22	38.78	43.48	47.04
240	12.03	4.72	10.8	15	11.25	15.43	18.19	21.68	24.27	26.84	29.4	32.77	35.33
360	9.41	3.36	10.16	13	8.86	11.83	13.79	16.28	18.12	19.95	21.77	24.18	25.99
720	5.44	2	5.4	14	5.11	6.88	8.05	9.53	10.62	11.71	12.8	14.23	15.31
1440	3.35	1.29	3.07	15	3.14	4.28	5.03	5.99	6.69	7.4	8.1	9.02	9.72
2880	1.9	0.67	1.85	17	1.79	2.38	2.77	3.27	3.64	4	4.37	4.84	5.21
4320	1.37	0.52	1.24	14	1.28	1.74	2.05	2.43	2.72	3	3.28	3.66	3.94
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 449215					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	124.14	119.12	86.36	16	88.73	199.28	281.1	387.79	467.69	547.02	625.88	729.51	807.5
30	72.98	58.25	55.88	15	58.68	114.52	152.17	198.52	231.75	263.78	294.83	334.63	363.92
45	51.75	36.41	45.72	16	44.23	79.33	101.69	128.28	146.86	164.45	181.24	202.44	217.84
60	40.91	28.62	34.29	14	35.05	62.64	80.18	101	115.53	129.28	142.39	158.94	170.95

120	21.16	13.47	19.05	17	18.8	31.74	39.66	48.85	55.15	61.04	66.6	73.54	78.54
180	15.45	8.52	14.39	17	14.33	22.41	27.1	32.38	35.91	39.16	42.19	45.92	48.57
240	12.07	6.51	10.99	17	11.26	17.41	20.96	24.94	27.59	30.02	32.28	35.06	37.04
360	9.34	4.38	9.1	18	8.96	13.02	15.26	17.71	19.31	20.76	22.09	23.71	24.84
720	5.26	2.03	5.08	19	5.18	7	7.95	8.96	9.61	10.18	10.71	11.33	11.77
1440	2.92	1.01	2.8	20	2.91	3.79	4.24	4.72	5.02	5.28	5.52	5.81	6
2880	1.72	0.65	1.64	19	1.7	2.28	2.58	2.9	3.1	3.29	3.45	3.65	3.78
4320	1.22	0.41	1.16	23	1.22	1.57	1.76	1.94	2.06	2.17	2.27	2.38	2.46
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

Gauge 449272					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration (min)	x _{bar} (mm h ⁻¹)	s (mm h ⁻¹)	x _m (mm h ⁻¹)	N	2	5	10	25	50	100	200	500	1000	
					0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	172.79	199.6	111.76	15	140.01	316.4	433.19	580.75	690.22	798.88	907.15	1049.98	1157.93	
30	97.28	99.34	68.58	14	80.97	168.76	226.88	300.32	354.8	408.88	462.77	533.85	587.58	
45	61.62	62.34	45.72	16	51.38	106.47	142.95	189.04	223.23	257.16	290.98	335.59	369.3	
60	46.4	43.09	35.56	19	39.32	77.4	102.62	134.47	158.1	181.56	204.93	235.77	259.07	
120	26.86	21.28	20.07	18	23.37	42.17	54.62	70.35	82.03	93.61	105.15	120.38	131.89	
180	18.94	13.64	15.24	19	16.7	28.75	36.73	46.82	54.3	61.73	69.12	78.88	86.26	
240	15.8	10.71	12.64	18	14.04	23.51	29.77	37.69	43.56	49.39	55.2	62.87	68.66	
360	11.43	7.12	9.53	20	10.26	16.55	20.72	25.98	29.89	33.76	37.63	42.72	46.57	
720	7	3.6	6.14	19	6.41	9.59	11.7	14.36	16.33	18.29	20.24	22.82	24.77	
1440	4.45	1.57	4.18	24	4.19	5.58	6.5	7.66	8.52	9.37	10.23	11.35	12.2	
2880	2.47	0.88	2.49	23	2.33	3.1	3.62	4.27	4.75	5.23	5.71	6.34	6.81	
4320	1.71	0.64	1.57	24	1.6	2.17	2.54	3.02	3.37	3.72	4.06	4.52	4.87	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Gauge 449301		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability											
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	76.01	57.68	71.12	11	62.74	118.24	154.8	199.17	230.65	260.76	289.77	326.72	353.77
30	42.46	26.48	40.64	17	37.99	63.4	78.83	96.64	108.81	120.15	130.85	144.17	153.75
45	31.54	17.92	30.48	17	29.02	46.08	56.09	67.42	75.03	82.06	88.63	96.74	102.52
60	22.75	11.82	21.59	16	21.4	32.52	38.86	45.9	50.58	54.85	58.81	63.66	67.09
120	14.76	6.36	15.24	13	14.35	20.16	23.29	26.66	28.85	30.81	32.6	34.77	36.29
180	11.47	4.53	11.81	16	11.27	15.35	17.5	19.78	21.24	22.55	23.73	25.16	26.15
240	9.11	3.71	8.86	18	8.92	12.28	14.06	15.96	17.19	18.28	19.28	20.48	21.31
360	6.63	2.67	6.35	19	6.5	8.91	10.19	11.55	12.42	13.2	13.91	14.77	15.37
720	3.81	1.51	3.81	16	3.74	5.1	5.82	6.58	7.07	7.51	7.9	8.38	8.71
1440	2.31	0.94	2.22	21	2.26	3.11	3.56	4.05	4.36	4.63	4.89	5.19	5.4
2880	1.4	0.61	1.38	23	1.36	1.92	2.22	2.54	2.76	2.95	3.12	3.33	3.48
4320	1.02	0.49	0.99	21	0.97	1.43	1.68	1.96	2.14	2.31	2.46	2.65	2.78
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

III. Tabulated Watershed-Level Historical IDF Curves

HUC 2040303					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	99.06	58.47	86.36	0	89.46	141.13	175.34	218.57	250.63	282.46	314.18	356.02	387.64	
30	57.23	26.43	55.88	0	52.89	76.25	91.71	111.25	125.75	140.13	154.47	173.38	187.68	
45	42.82	15.97	42.34	0	40.2	54.31	63.65	75.46	84.22	92.91	101.58	113	121.64	
60	35.56	14.16	34.29	0	33.23	45.75	54.03	64.5	72.27	79.98	87.66	97.79	105.45	
120	23.24	9.65	22.23	0	21.66	30.18	35.83	42.96	48.26	53.51	58.74	65.65	70.87	
180	18.31	8.43	16.09	0	16.93	24.38	29.31	35.54	40.16	44.75	49.33	55.36	59.92	
240	14.57	6.96	13.02	0	13.43	19.58	23.65	28.8	32.61	36.4	40.18	45.16	48.92	
360	11.03	4.69	9.95	0	10.26	14.4	17.15	20.62	23.19	25.74	28.29	31.64	34.18	
720	6.86	3.65	5.61	0	6.26	9.49	11.62	14.32	16.32	18.31	20.29	22.9	24.87	
1440	3.99	1.83	3.55	0	3.69	5.31	6.38	7.73	8.73	9.73	10.72	12.03	13.02	
2880	2.09	0.92	1.91	0	1.94	2.75	3.29	3.97	4.47	4.98	5.47	6.13	6.63	
4320	1.52	0.65	1.31	0	1.41	1.99	2.37	2.85	3.21	3.56	3.91	4.38	4.73	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

HUC 2040304					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	99.38	58.76	86.51	0	89.73	141.66	176.04	219.48	251.71	283.69	315.57	357.62	389.4	
30	57.44	26.58	56.01	0	53.07	76.56	92.12	111.77	126.34	140.81	155.23	174.25	188.63	
45	42.91	16.07	42.39	0	40.27	54.47	63.88	75.76	84.57	93.32	102.03	113.53	122.22	
60	35.66	14.27	34.34	0	33.32	45.93	54.28	64.83	72.65	80.42	88.16	98.37	106.09	
120	23.31	9.73	22.27	0	21.71	30.31	36	43.2	48.53	53.83	59.11	66.07	71.33	
180	18.35	8.49	16.12	0	16.96	24.46	29.43	35.7	40.36	44.98	49.59	55.66	60.25	
240	14.6	7	13.03	0	13.45	19.64	23.73	28.91	32.75	36.56	40.35	45.36	49.15	

360	11.05	4.72	9.96	0	10.27	14.45	17.21	20.7	23.29	25.86	28.42	31.79	34.35
720	6.86	3.65	5.62	0	6.26	9.49	11.62	14.32	16.32	18.31	20.29	22.9	24.87
1440	4	1.85	3.54	0	3.7	5.33	6.41	7.78	8.8	9.8	10.81	12.13	13.13
2880	2.09	0.93	1.91	0	1.94	2.76	3.3	3.99	4.5	5.01	5.51	6.18	6.68
4320	1.53	0.66	1.31	0	1.42	2	2.39	2.88	3.24	3.6	3.96	4.43	4.79
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2070001-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	115.1	95.86	88.15	0	90.37	181.81	244.74	323.19	379.96	435.05	488.73	557.91	609.09	
30	63.26	43.8	54.13	0	54.43	96.65	123.37	155.02	177.05	197.87	217.72	242.72	260.86	
45	44.39	28.82	37.93	0	39.16	66.89	83.99	103.92	117.64	130.49	142.65	157.88	168.85	
60	35.26	21.41	30.58	0	31.82	52.33	64.65	78.8	88.41	97.36	105.76	116.21	123.69	
120	20.09	10.82	17.26	0	18.74	28.97	34.87	41.47	45.87	49.91	53.66	58.28	61.55	
180	14.33	7.29	12.8	0	13.54	20.38	24.25	28.54	31.37	33.96	36.35	39.28	41.35	
240	11.55	5.55	10.62	0	11.04	16.2	19.07	22.22	24.28	26.15	27.88	29.98	31.46	
360	8.28	3.24	7.57	0	8.15	11.05	12.59	14.21	15.25	16.18	17.02	18.03	18.74	
720	4.97	1.79	4.55	0	4.93	6.51	7.33	8.18	8.73	9.21	9.65	10.17	10.53	
1440	2.82	0.96	2.66	0	2.81	3.65	4.08	4.52	4.8	5.05	5.28	5.55	5.73	
2880	1.58	0.48	1.53	0	1.58	2	2.2	2.41	2.54	2.66	2.76	2.89	2.97	
4320	1.15	0.36	1.11	0	1.15	1.46	1.62	1.78	1.88	1.97	2.05	2.14	2.2	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

HUC 2070001-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	88.43	65.79	74.28	0	73.69	137.06	178.43	228.37	263.65	297.32	329.66	370.77	400.8	

30	53.59	31.55	50.17	0	48.82	78.96	96.87	117.28	131.1	143.89	155.88	170.74	181.36
45	38.27	21.59	35.95	0	35.28	55.82	67.84	81.42	90.54	98.96	106.81	116.5	123.41
60	29.99	15.99	28.85	0	28.04	43.15	51.82	61.51	67.96	73.87	79.36	86.11	90.9
120	17.45	8	15.9	0	16.81	24.2	28.25	32.65	35.52	38.12	40.5	43.39	45.43
180	12.96	5.68	12.14	0	12.57	17.77	20.59	23.63	25.61	27.38	29.01	30.97	32.35
240	10.39	4.45	9.88	0	10.11	14.17	16.36	18.71	20.23	21.59	22.84	24.35	25.4
360	7.53	2.59	6.99	0	7.5	9.76	10.92	12.13	12.9	13.58	14.19	14.91	15.42
720	4.66	1.57	4.32	0	4.65	6.01	6.71	7.44	7.9	8.3	8.67	9.1	9.4
1440	2.69	0.87	2.6	0	2.69	3.44	3.82	4.22	4.46	4.68	4.88	5.11	5.27
2880	1.48	0.45	1.44	0	1.48	1.87	2.06	2.26	2.38	2.49	2.59	2.7	2.78
4320	1.11	0.34	1.06	0	1.11	1.4	1.55	1.7	1.79	1.88	1.95	2.04	2.1
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2070003-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
					2	5	10	25	50	100	200	500	1000
Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	166.24	159.69	109.3	0	140.01	281.14	374.57	492.63	580.21	667.15	753.76	868.04	954.4
30	81.48	71.93	58.56	0	69.67	133.23	175.32	228.5	267.95	307.11	346.12	397.59	436.5
45	57.28	47.09	42.2	0	49.55	91.16	118.71	153.53	179.35	204.99	230.53	264.23	289.7
60	46.33	36.04	33.09	0	40.41	72.26	93.35	119.99	139.76	159.38	178.93	204.72	224.21
120	24.68	17.64	19	0	21.78	37.37	47.69	60.73	70.41	80.01	89.58	102.2	111.74
180	16.75	11.02	13.4	0	14.94	24.68	31.13	39.27	45.32	51.32	57.29	65.18	71.14
240	13.71	8.09	11.47	0	12.38	19.53	24.26	30.25	34.68	39.09	43.47	49.26	53.64
360	10.1	5.05	8.6	0	9.27	13.73	16.69	20.42	23.19	25.94	28.68	32.29	35.02
720	5.63	2.32	5.1	0	5.25	7.3	8.66	10.37	11.64	12.91	14.17	15.83	17.08
1440	3.02	1.23	2.68	0	2.82	3.9	4.62	5.53	6.21	6.88	7.55	8.43	9.09
2880	1.73	0.61	1.65	0	1.63	2.17	2.53	2.98	3.31	3.64	3.97	4.41	4.74
4320	1.23	0.48	1.15	0	1.15	1.58	1.86	2.21	2.47	2.74	3	3.34	3.6
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2070003-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	47.96	26.31	47.78	0	43.64	66.89	82.28	101.73	116.16	130.49	144.76	163.59	177.82
30	38.59	17.62	40.98	0	35.7	51.27	61.58	74.6	84.27	93.86	103.42	116.03	125.56
45	30.14	15	33.41	0	27.68	40.93	49.71	60.8	69.03	77.19	85.33	96.06	104.17
60	22.95	12.02	25.4	0	20.98	31.6	38.63	47.52	54.11	60.65	67.17	75.77	82.28
120	12.95	5.13	12.96	0	12.11	16.64	19.64	23.44	26.25	29.04	31.82	35.5	38.27
180	10.7	3.88	10.47	0	10.06	13.49	15.76	18.63	20.76	22.87	24.98	27.75	29.85
240	8.57	3.21	8.18	0	8.04	10.88	12.76	15.13	16.89	18.64	20.38	22.68	24.41
360	6.77	2.17	6.03	0	6.41	8.33	9.6	11.21	12.4	13.58	14.75	16.31	17.48
720	4.25	1.34	4.09	0	4.03	5.21	6	6.99	7.72	8.45	9.18	10.14	10.86
1440	2.43	0.81	2.4	0	2.3	3.01	3.49	4.09	4.53	4.97	5.41	5.99	6.43
2880	1.32	0.45	1.24	0	1.25	1.64	1.91	2.24	2.49	2.73	2.98	3.3	3.54
4320	1.03	0.4	0.94	0	0.96	1.32	1.55	1.85	2.07	2.28	2.5	2.79	3
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2070004-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	245.08	218.62	127.55	0	184.33	390.66	537.64	724.8	862.46	997.49	1130.33	1303.09	1431.94
30	115.11	101.1	72.12	0	87.45	183.15	250.78	336.48	399.29	460.73	521.06	599.34	657.62
45	81.02	67.9	50.18	0	63.38	128.1	172.77	228.56	269	308.27	346.58	395.98	432.54
60	61.03	47.44	41.76	0	49.77	95.34	125.7	162.79	189.23	214.61	239.14	270.47	293.47
120	32.08	23.15	24.36	0	27.12	49.43	63.8	81	93.07	104.55	115.53	129.44	139.57
180	21.84	15.07	18.03	0	18.82	33.34	42.53	53.39	60.95	68.09	74.89	83.45	89.67
240	17.76	11.09	14.86	0	15.88	26.53	32.99	40.46	45.56	50.32	54.8	60.39	64.41
360	12.58	7.02	10.49	0	11.63	18.3	22.19	26.57	29.51	32.21	34.74	37.85	40.06
720	6.67	3.22	5.53	0	6.37	9.37	11.03	12.86	14.07	15.16	16.16	17.39	18.25

1440	3.58	1.61	2.98	0	3.46	4.94	5.75	6.62	7.19	7.71	8.18	8.75	9.15
2880	1.95	0.73	1.83	0	1.93	2.58	2.92	3.27	3.5	3.7	3.89	4.11	4.26
4320	1.34	0.5	1.24	0	1.32	1.77	2	2.24	2.4	2.54	2.66	2.81	2.92
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2070004-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	211.95	181.26	110.32	0	163.79	336.05	456.15	607.06	716.95	824.01	928.71	1064.1	1164.56
30	103.1	85.89	67.2	0	80.93	162.86	219.25	289.55	340.44	389.81	437.93	499.93	545.8
45	73.42	58.91	47.72	0	58.87	115.31	153.46	200.5	234.26	266.84	298.43	338.94	368.79
60	54.48	40.71	39.6	0	45.3	84.51	110.16	141.15	163.06	183.99	204.1	229.68	248.38
120	28.79	19.64	22.66	0	24.92	43.85	55.76	69.8	79.56	88.76	97.51	108.52	116.5
180	20.14	13.07	17.21	0	17.77	30.35	38.1	47.14	53.35	59.18	64.69	71.59	76.57
240	16.32	9.72	13.94	0	14.81	24.11	29.66	36	40.29	44.28	48.02	52.66	55.98
360	11.65	6.21	9.77	0	10.89	16.76	20.13	23.89	26.39	28.69	30.82	33.44	35.3
720	6.29	2.94	5.25	0	6.04	8.76	10.26	11.9	12.97	13.94	14.83	15.92	16.68
1440	3.41	1.5	2.91	0	3.31	4.68	5.43	6.23	6.75	7.22	7.65	8.18	8.54
2880	1.83	0.68	1.72	0	1.81	2.41	2.73	3.06	3.27	3.46	3.63	3.83	3.97
4320	1.28	0.48	1.18	0	1.26	1.69	1.91	2.15	2.3	2.43	2.55	2.7	2.8
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2070005					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	145.47	126.14	106.24	0	111.45	231.07	315.04	421	498.41	573.98	648.04	743.98	815.28
30	75.33	56.62	58.14	0	62.47	116.98	152.73	196.01	226.64	255.92	284.09	319.92	346.13
45	52.09	36.98	40.54	0	44.35	79.99	102.79	129.97	148.99	167.01	184.24	206.01	221.84

60	40.06	26.99	32.47	0	34.85	60.85	77.13	96.27	109.53	122.02	133.88	148.78	159.57
120	22.88	13.22	19.78	0	20.95	33.56	41	49.45	55.15	60.42	65.34	71.44	75.79
180	16.63	8.82	14.92	0	15.57	23.89	28.67	33.99	37.54	40.78	43.8	47.5	50.12
240	13.55	6.77	12.35	0	12.85	19.19	22.75	26.68	29.28	31.64	33.82	36.49	38.37
360	9.38	4.37	8.32	0	9.01	13.06	15.29	17.72	19.3	20.74	22.06	23.67	24.79
720	5.85	2.62	5.2	0	5.66	8.07	9.38	10.8	11.72	12.56	13.32	14.25	14.9
1440	3.39	1.54	3.02	0	3.27	4.69	5.47	6.31	6.86	7.35	7.81	8.36	8.75
2880	1.91	0.83	1.7	0	1.85	2.61	3.02	3.47	3.75	4.01	4.25	4.53	4.73
4320	1.38	0.59	1.24	0	1.34	1.88	2.17	2.48	2.68	2.86	3.03	3.23	3.37
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2070006-a		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability											
		Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	2 0.5	5 0.2	10 0.1	25 0.04	50 0.02	100 0.01	200 0.005
15	152.38	123.16	114.1	0	121.69	239.6	319.58	418.39	489.44	558.05	624.66	710.16	773.2
30	76.52	53.94	58.21	0	65.35	117.34	150.5	189.95	217.52	243.62	268.55	300.03	322.91
45	53.7	35.66	40.93	0	46.98	81.32	102.69	127.73	145.04	161.3	176.72	196.07	210.05
60	41.65	26.12	33.01	0	37.19	62.27	77.53	95.16	107.22	118.47	129.08	142.32	151.83
120	23.42	12.6	20.58	0	21.85	33.77	40.63	48.31	53.43	58.13	62.49	67.86	71.67
180	16.9	8.3	15.55	0	16.08	23.83	28.17	32.93	36.07	38.93	41.56	44.77	47.04
240	13.63	6.31	12.64	0	13.11	18.94	22.15	25.65	27.93	29.99	31.89	34.19	35.81
360	9.51	3.9	8.74	0	9.31	12.84	14.72	16.72	18.02	19.17	20.23	21.5	22.38
720	5.88	2.38	5.45	0	5.76	7.91	9.05	10.27	11.05	11.75	12.39	13.15	13.69
1440	3.46	1.57	3.12	0	3.34	4.79	5.58	6.43	6.99	7.5	7.96	8.52	8.92
2880	1.95	0.83	1.77	0	1.9	2.66	3.06	3.5	3.78	4.04	4.27	4.55	4.74
4320	1.39	0.6	1.25	0	1.35	1.9	2.2	2.51	2.72	2.91	3.07	3.28	3.42
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2070006-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	135.17	103.76	105.15	0	110.93	210.7	276.77	357.21	414.4	469.22	522.1	589.53	638.97
30	70.28	46.04	55.66	0	61.79	106.11	133.54	165.57	187.65	208.37	227.99	252.57	270.31
45	49.75	30.99	39.65	0	44.53	74.27	92.31	113.14	127.37	140.63	153.13	168.71	179.89
60	38.25	22.63	31.89	0	34.79	56.42	69.3	83.99	93.94	103.16	111.8	122.52	130.18
120	21.71	10.78	19.7	0	20.61	30.69	36.35	42.59	46.7	50.44	53.9	58.12	61.1
180	16.02	7.26	15.12	0	15.46	22.15	25.81	29.77	32.36	34.69	36.83	39.42	41.24
240	12.88	5.6	12.16	0	12.51	17.63	20.4	23.38	25.32	27.06	28.65	30.57	31.92
360	9.02	3.48	8.37	0	8.89	12	13.64	15.37	16.47	17.46	18.35	19.43	20.17
720	5.68	2.23	5.3	0	5.59	7.59	8.64	9.76	10.48	11.12	11.7	12.4	12.89
1440	3.37	1.51	3.08	0	3.26	4.65	5.4	6.22	6.76	7.24	7.68	8.21	8.58
2880	1.89	0.8	1.71	0	1.84	2.57	2.96	3.38	3.65	3.9	4.12	4.39	4.57
4320	1.37	0.59	1.22	0	1.33	1.87	2.16	2.47	2.68	2.86	3.02	3.23	3.37
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2070007					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	219.06	201.67	111.18	0	161.29	350.37	487.27	663.37	793.89	922.58	1049.74	1215.86	1340.22
30	104.24	89.24	67.26	0	80.5	165.3	224.45	298.79	352.95	405.71	457.33	524.08	573.61
45	73.14	60.29	46.09	0	57.77	115.36	154.79	203.79	239.18	273.46	306.82	349.75	381.47
60	54.41	42.11	38.14	0	44.47	84.94	111.84	144.66	168.04	190.47	212.14	239.79	260.08
120	28.81	20.56	22.08	0	24.47	44.29	56.99	72.16	82.78	92.85	102.49	114.67	123.53
180	20.65	13.67	17.35	0	18.09	31.25	39.43	49.01	55.63	61.84	67.73	75.12	80.46
240	16.47	10.08	13.97	0	14.83	24.49	30.31	37	41.56	45.8	49.79	54.76	58.32
360	11.63	6.35	9.84	0	10.81	16.83	20.31	24.22	26.83	29.23	31.46	34.21	36.16

720	6.3	2.92	5.25	0	6.06	8.76	10.25	11.86	12.92	13.88	14.75	15.82	16.57
1440	3.37	1.46	2.86	0	3.27	4.61	5.33	6.11	6.61	7.06	7.48	7.98	8.32
2880	1.84	0.66	1.74	0	1.83	2.41	2.71	3.02	3.22	3.4	3.56	3.75	3.89
4320	1.28	0.45	1.21	0	1.27	1.67	1.87	2.08	2.22	2.34	2.45	2.57	2.66
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2070008					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	212.82	192.47	120.86	0	181.21	351.3	463.92	606.21	711.77	816.55	920.94	1058.68	1162.77	
30	108.4	92.58	70.67	0	93.2	175.01	229.18	297.62	348.4	398.8	449.02	515.27	565.34	
45	73.2	58.43	50.48	0	63.6	115.24	149.43	192.62	224.67	256.48	288.17	329.99	361.59	
60	56.17	41.23	42.86	0	49.4	85.84	109.96	140.44	163.05	185.5	207.86	237.37	259.66	
120	31.1	20.34	25.2	0	27.76	45.73	57.64	72.67	83.83	94.9	105.93	120.49	131.49	
180	22	13.77	18.53	0	19.74	31.91	39.96	50.14	57.7	65.19	72.66	82.52	89.96	
240	17.29	10.71	14.36	0	15.53	25	31.26	39.18	45.05	50.88	56.69	64.36	70.15	
360	12.63	7.25	10.25	0	11.44	17.85	22.09	27.45	31.42	35.37	39.3	44.49	48.41	
720	6.98	3.62	5.76	0	6.39	9.58	11.7	14.38	16.36	18.33	20.3	22.89	24.85	
1440	3.86	1.89	3.17	0	3.55	5.22	6.33	7.72	8.76	9.79	10.81	12.17	13.19	
2880	2.04	0.91	1.82	0	1.89	2.69	3.23	3.9	4.4	4.89	5.39	6.04	6.53	
4320	1.43	0.6	1.3	0	1.33	1.86	2.21	2.66	2.99	3.31	3.64	4.07	4.39	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

HUC 2070010					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	136.62	116.63	99.37	0	117.47	220.54	288.78	375	438.96	502.46	565.72	649.18	712.26	
30	79.95	60.29	61.75	0	70.05	123.33	158.61	203.18	236.24	269.06	301.77	344.91	377.52	

45	53.06	35.47	45.33	0	47.23	78.58	99.33	125.56	145.01	164.32	183.56	208.94	228.13
60	42.55	26.91	38.07	0	38.13	61.91	77.66	97.55	112.31	126.96	141.56	160.81	175.37
120	25.49	14.3	22.59	0	23.14	35.78	44.15	54.72	62.56	70.35	78.1	88.33	96.07
180	18.75	10.11	16.25	0	17.09	26.02	31.94	39.41	44.96	50.46	55.95	63.18	68.65
240	14.39	8.36	12.08	0	13.02	20.41	25.3	31.48	36.06	40.61	45.15	51.13	55.65
360	10.93	6.21	8.86	0	9.91	15.4	19.03	23.62	27.03	30.41	33.78	38.22	41.58
720	6.46	3.58	5.33	0	5.87	9.04	11.13	13.78	15.74	17.69	19.63	22.19	24.13
1440	3.69	1.87	3.1	0	3.38	5.04	6.13	7.51	8.54	9.56	10.57	11.91	12.92
2880	1.95	0.99	1.73	0	1.79	2.66	3.24	3.97	4.52	5.06	5.59	6.3	6.84
4320	1.43	0.69	1.31	0	1.32	1.93	2.33	2.84	3.22	3.59	3.97	4.46	4.84
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2070011					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration (min)	x _{bar} (mm h ⁻¹)	s (mm h ⁻¹)	x _m (mm h ⁻¹)	N	2	5	10	25	50	100	200	500	1000
					0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	69.51	21.07	66.13	0	69.73	87.73	96.73	105.98	111.76	116.84	121.39	126.79	130.5
30	40.25	13.09	43.54	0	40.22	51.55	57.29	63.24	66.98	70.28	73.24	76.77	79.2
45	31.29	10.66	29.81	0	31.17	40.48	45.24	50.2	53.33	56.1	58.6	61.57	63.62
60	26.11	10.44	24.87	0	25.63	35.03	40.01	45.31	48.71	51.75	54.51	57.84	60.15
120	15.39	7.24	14.39	0	14.76	21.47	25.18	29.23	31.88	34.28	36.49	39.17	41.06
180	12.11	5.18	11.21	0	11.79	16.51	19.06	21.79	23.56	25.15	26.6	28.35	29.58
240	9.4	3.75	8.55	0	9.23	12.61	14.39	16.29	17.51	18.6	19.59	20.78	21.61
360	7.18	2.88	6.58	0	7.05	9.64	11.02	12.48	13.42	14.26	15.03	15.94	16.59
720	4.79	2.83	3.59	0	4.36	7.06	8.67	10.51	11.75	12.9	13.98	15.32	16.28
1440	2.88	1.23	2.78	0	2.8	3.93	4.53	5.18	5.6	5.97	6.32	6.73	7.02
2880	1.56	0.65	1.72	0	1.52	2.11	2.43	2.77	2.98	3.18	3.36	3.57	3.72
4320	1.25	0.59	1.21	0	1.2	1.75	2.05	2.38	2.6	2.79	2.97	3.19	3.35
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080101					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	130.77	87.61	101.3	0	116.38	193.81	245.07	309.84	357.89	405.58	453.1	515.79	563.18
30	76.93	41.57	68.33	0	70.1	106.84	131.16	161.89	184.69	207.32	229.87	259.62	282.1
45	52.4	25.77	47.31	0	48.17	70.94	86.02	105.07	119.2	133.23	147.21	165.65	179.59
60	45.52	25.71	39.27	0	41.3	64.02	79.06	98.07	112.17	126.17	140.11	158.51	172.41
120	29.58	17.38	26.58	0	26.73	42.08	52.25	65.1	74.63	84.1	93.52	105.96	115.36
180	22.26	14.53	19.41	0	19.87	32.71	41.22	51.96	59.93	67.84	75.72	86.12	93.97
240	17.38	11.26	13.95	0	15.53	25.48	32.07	40.39	46.57	52.7	58.81	66.86	72.95
360	13.31	7.83	10.99	0	12.02	18.94	23.53	29.31	33.61	37.87	42.12	47.72	51.96
720	7	3.6	6.13	0	6.41	9.59	11.7	14.36	16.33	18.29	20.24	22.82	24.77
1440	4.5	3.07	3.49	0	4	6.71	8.51	10.77	12.46	14.13	15.79	17.99	19.65
2880	2.53	1.71	1.83	0	2.25	3.76	4.76	6.03	6.96	7.89	8.82	10.05	10.97
4320	1.73	1.1	1.27	0	1.55	2.52	3.17	3.98	4.58	5.18	5.78	6.56	7.16
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080102					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	123.31	80.75	97.79	0	110.05	181.41	228.66	288.35	332.64	376.6	420.4	478.19	521.86
30	72.3	38.01	65.4	0	66.06	99.65	121.89	149.99	170.83	191.53	212.14	239.34	259.9
45	50.15	23.46	46.14	0	46.3	67.03	80.76	98.1	110.97	123.74	136.46	153.25	165.94
60	43.18	22.99	38.1	0	39.4	59.72	73.17	90.17	102.78	115.29	127.76	144.22	156.65
120	28.09	15.56	25.56	0	25.53	39.29	48.39	59.89	68.43	76.9	85.34	96.47	104.89
180	21.33	13.09	18.63	0	19.18	30.75	38.41	48.08	55.26	62.39	69.49	78.86	85.94
240	16.72	10.25	13.73	0	15.04	24.09	30.09	37.67	43.29	48.87	54.43	61.77	67.31
360	12.78	7.09	10.74	0	11.62	17.88	22.03	27.27	31.16	35.02	38.87	43.94	47.77
720	6.97	3.61	6.01	0	6.38	9.57	11.68	14.35	16.33	18.29	20.25	22.84	24.79

1440	4.38	2.78	3.5	0	3.92	6.38	8.01	10.06	11.59	13.1	14.61	16.6	18.1
2880	2.43	1.52	1.85	0	2.18	3.52	4.41	5.54	6.37	7.2	8.02	9.11	9.93
4320	1.68	1	1.28	0	1.52	2.4	2.98	3.72	4.27	4.82	5.36	6.07	6.62
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080103					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	151.51	133.48	110.17	0	114.88	241.16	330.54	443.91	527.05	608.44	688.37	792.14	869.42
30	78.95	58.84	60.18	0	65.74	122.4	159.44	204.15	235.75	265.91	294.9	331.75	358.67
45	56.18	38.16	43.71	0	48.72	85.49	108.58	135.79	154.68	172.47	189.4	210.68	226.09
60	43.35	28.51	34.71	0	38.06	65.51	82.52	102.41	116.13	129.01	141.21	156.5	167.54
120	25.74	14.37	22.61	0	23.8	37.45	45.41	54.38	60.39	65.94	71.11	77.48	82.02
180	18.63	9.99	16.9	0	17.4	26.84	32.27	38.35	42.4	46.11	49.56	53.8	56.81
240	14.95	7.87	13.22	0	14.02	21.44	25.69	30.41	33.56	36.44	39.1	42.38	44.7
360	10.83	5.74	9.4	0	10.14	15.56	18.66	22.13	24.43	26.54	28.5	30.91	32.62
720	6.61	3.29	5.93	0	6.27	9.35	11.08	12.99	14.24	15.39	16.44	17.74	18.65
1440	3.93	2.03	3.46	0	3.7	5.61	6.7	7.9	8.7	9.43	10.11	10.93	11.52
2880	2.18	1.12	1.89	0	2.06	3.11	3.71	4.37	4.81	5.21	5.58	6.03	6.35
4320	1.55	0.79	1.36	0	1.46	2.21	2.63	3.09	3.4	3.68	3.94	4.26	4.48
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080104					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	90.23	42.91	77.99	0	86.38	126.23	148.33	172.48	188.32	202.67	215.89	231.97	243.28
30	52.88	22.6	52.23	0	51.48	72.09	83.18	95.1	102.81	109.74	116.07	123.71	129.05
45	38.38	15.75	35.66	0	37.56	51.81	59.41	67.52	72.74	77.42	81.68	86.81	90.39

60	32.81	15.88	29.72	0	31.31	46.1	54.34	63.38	69.32	74.71	79.68	85.74	90
120	20.27	10.93	18.55	0	18.9	29.24	35.2	41.87	46.32	50.41	54.2	58.87	62.18
180	15.56	8.52	14.05	0	14.46	22.53	27.21	32.46	35.97	39.2	42.21	45.91	48.54
240	12.09	6.39	10.32	0	11.33	17.36	20.81	24.66	27.22	29.56	31.74	34.41	36.3
360	9.27	4.63	8.06	0	8.79	13.12	15.56	18.25	20.02	21.64	23.13	24.95	26.24
720	5.49	3.05	4.43	0	5.08	7.98	9.66	11.56	12.83	14	15.1	16.44	17.4
1440	3.43	1.89	3.01	0	3.18	4.97	6.01	7.18	7.97	8.69	9.36	10.19	10.77
2880	1.9	1.04	1.75	0	1.77	2.75	3.32	3.96	4.39	4.79	5.15	5.6	5.92
4320	1.42	0.78	1.23	0	1.32	2.06	2.49	2.97	3.29	3.59	3.86	4.2	4.44
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080105		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability											
Duration	\bar{x}	s	x_m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	78.41	31.98	71.32	0	76.79	105.7	121.08	137.49	148.05	157.5	166.11	176.47	183.69
30	45.68	17.99	47.18	0	44.91	61.08	69.6	78.65	84.45	89.63	94.33	99.99	103.92
45	34.15	13.4	32.11	0	33.59	45.62	51.96	58.69	63	66.84	70.34	74.54	77.45
60	28.71	13.12	26.26	0	27.67	39.78	46.41	53.61	58.31	62.56	66.45	71.18	74.49
120	17.3	8.91	15.99	0	16.3	24.68	29.44	34.72	38.21	41.41	44.37	47.99	50.56
180	13.32	6.59	12.34	0	12.66	18.82	22.27	26.07	28.58	30.86	32.96	35.53	37.35
240	10.34	4.82	9.21	0	9.93	14.4	16.86	19.54	21.29	22.87	24.33	26.1	27.35
360	7.88	3.62	7.06	0	7.59	10.93	12.77	14.76	16.06	17.24	18.32	19.63	20.55
720	4.96	2.79	3.96	0	4.58	7.23	8.78	10.53	11.71	12.79	13.8	15.05	15.94
1440	3.06	1.48	2.86	0	2.92	4.3	5.07	5.91	6.46	6.96	7.43	7.99	8.39
2880	1.69	0.82	1.72	0	1.61	2.38	2.8	3.27	3.58	3.86	4.11	4.43	4.65
4320	1.31	0.68	1.21	0	1.23	1.87	2.24	2.64	2.91	3.16	3.38	3.66	3.86
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080106					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	104.83	71.67	81.95	0	93.06	156.4	198.33	251.32	290.62	329.64	368.51	419.8	458.56
30	61.9	33.74	56.13	0	56.36	86.18	105.92	130.86	149.37	167.73	186.03	210.18	228.43
45	44.94	23.63	39.81	0	41.06	61.94	75.77	93.24	106.2	119.06	131.88	148.79	161.57
60	36.91	20.65	30.57	0	33.52	51.77	63.85	79.12	90.44	101.68	112.88	127.66	138.83
120	22.78	12.34	19.69	0	20.75	31.66	38.88	48	54.77	61.49	68.18	77.01	83.69
180	16.98	9.49	14.48	0	15.42	23.81	29.36	36.38	41.58	46.75	51.9	58.69	63.82
240	13.52	7.41	10.99	0	12.3	18.85	23.19	28.67	32.73	36.76	40.78	46.09	50.09
360	10.3	5.43	8.67	0	9.41	14.21	17.38	21.4	24.38	27.33	30.28	34.16	37.1
720	6.04	3.36	5.16	0	5.49	8.46	10.42	12.91	14.75	16.58	18.4	20.81	22.62
1440	3.6	1.99	3.14	0	3.27	5.03	6.2	7.67	8.76	9.84	10.92	12.35	13.42
2880	2.02	1.07	1.82	0	1.84	2.79	3.42	4.21	4.79	5.38	5.96	6.72	7.3
4320	1.48	0.75	1.29	0	1.36	2.02	2.46	3.01	3.42	3.83	4.24	4.78	5.18
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080107					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	131.4	88.19	101.6	0	116.92	194.85	246.45	311.65	360.02	408.03	455.86	518.97	566.67
30	77.33	41.87	68.58	0	70.45	107.46	131.95	162.91	185.87	208.67	231.38	261.34	283.98
45	52.59	25.96	47.41	0	48.33	71.27	86.46	105.65	119.89	134.02	148.1	166.68	180.72
60	45.72	25.94	39.37	0	41.46	64.38	79.56	98.74	112.97	127.09	141.16	159.72	173.75
120	29.71	17.54	26.67	0	26.83	42.33	52.59	65.56	75.18	84.73	94.24	106.79	116.28
180	22.34	14.65	19.47	0	19.93	32.88	41.45	52.28	60.32	68.29	76.24	86.72	94.65
240	17.44	11.34	13.97	0	15.58	25.6	32.23	40.62	46.84	53.01	59.16	67.28	73.41
360	13.36	7.89	11.01	0	12.06	19.04	23.65	29.49	33.81	38.11	42.39	48.03	52.3

720	7	3.6	6.14	0	6.41	9.59	11.7	14.36	16.33	18.29	20.24	22.82	24.77
1440	4.51	3.09	3.49	0	4	6.73	8.54	10.83	12.52	14.2	15.88	18.09	19.76
2880	2.54	1.72	1.83	0	2.26	3.78	4.78	6.06	7	7.94	8.87	10.1	11.03
4320	1.73	1.11	1.27	0	1.55	2.53	3.18	4	4.61	5.21	5.81	6.61	7.21
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080108					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	131.4	88.19	101.6	0	116.92	194.85	246.45	311.65	360.02	408.03	455.86	518.97	566.67	
30	77.33	41.87	68.58	0	70.45	107.46	131.95	162.91	185.87	208.67	231.38	261.34	283.98	
45	52.59	25.96	47.41	0	48.33	71.27	86.46	105.65	119.89	134.02	148.1	166.68	180.72	
60	45.72	25.94	39.37	0	41.46	64.38	79.56	98.74	112.97	127.09	141.16	159.72	173.75	
120	29.71	17.54	26.67	0	26.83	42.33	52.59	65.56	75.18	84.73	94.24	106.79	116.28	
180	22.34	14.65	19.47	0	19.93	32.88	41.45	52.28	60.32	68.29	76.24	86.72	94.65	
240	17.44	11.34	13.97	0	15.58	25.6	32.23	40.62	46.84	53.01	59.16	67.28	73.41	
360	13.36	7.89	11.01	0	12.06	19.04	23.65	29.49	33.81	38.11	42.39	48.03	52.3	
720	7	3.6	6.14	0	6.41	9.59	11.7	14.36	16.33	18.29	20.24	22.82	24.77	
1440	4.51	3.09	3.49	0	4	6.73	8.54	10.83	12.52	14.2	15.88	18.09	19.76	
2880	2.54	1.72	1.83	0	2.26	3.78	4.78	6.06	7	7.94	8.87	10.1	11.03	
4320	1.73	1.11	1.27	0	1.55	2.53	3.18	4	4.61	5.21	5.81	6.61	7.21	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

HUC 2080110					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	99.06	58.47	86.36	0	89.46	141.13	175.34	218.57	250.63	282.46	314.18	356.02	387.64	
30	57.23	26.43	55.88	0	52.89	76.25	91.71	111.25	125.75	140.13	154.47	173.38	187.68	

45	42.82	15.97	42.34	0	40.2	54.31	63.65	75.46	84.22	92.91	101.58	113	121.64
60	35.56	14.16	34.29	0	33.23	45.75	54.03	64.5	72.27	79.98	87.66	97.79	105.45
120	23.24	9.65	22.23	0	21.66	30.18	35.83	42.96	48.26	53.51	58.74	65.65	70.87
180	18.31	8.43	16.09	0	16.93	24.38	29.31	35.54	40.16	44.75	49.33	55.36	59.92
240	14.57	6.96	13.02	0	13.43	19.58	23.65	28.8	32.61	36.4	40.18	45.16	48.92
360	11.03	4.69	9.95	0	10.26	14.4	17.15	20.62	23.19	25.74	28.29	31.64	34.18
720	6.86	3.65	5.61	0	6.26	9.49	11.62	14.32	16.32	18.31	20.29	22.9	24.87
1440	3.99	1.83	3.55	0	3.69	5.31	6.38	7.73	8.73	9.73	10.72	12.03	13.02
2880	2.09	0.92	1.91	0	1.94	2.75	3.29	3.97	4.47	4.98	5.47	6.13	6.63
4320	1.52	0.65	1.31	0	1.41	1.99	2.37	2.85	3.21	3.56	3.91	4.38	4.73
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080111		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability												
		Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)			0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	99.06	58.47	86.36	0		89.46	141.13	175.34	218.57	250.63	282.46	314.18	356.02	387.64
30	57.23	26.43	55.88	0		52.89	76.25	91.71	111.25	125.75	140.13	154.47	173.38	187.68
45	42.82	15.97	42.34	0		40.2	54.31	63.65	75.46	84.22	92.91	101.58	113	121.64
60	35.56	14.16	34.29	0		33.23	45.75	54.03	64.5	72.27	79.98	87.66	97.79	105.45
120	23.24	9.65	22.23	0		21.66	30.18	35.83	42.96	48.26	53.51	58.74	65.65	70.87
180	18.31	8.43	16.09	0		16.93	24.38	29.31	35.54	40.16	44.75	49.33	55.36	59.92
240	14.57	6.96	13.02	0		13.43	19.58	23.65	28.8	32.61	36.4	40.18	45.16	48.92
360	11.03	4.69	9.95	0		10.26	14.4	17.15	20.62	23.19	25.74	28.29	31.64	34.18
720	6.86	3.65	5.61	0		6.26	9.49	11.62	14.32	16.32	18.31	20.29	22.9	24.87
1440	3.99	1.83	3.55	0		3.69	5.31	6.38	7.73	8.73	9.73	10.72	12.03	13.02
2880	2.09	0.92	1.91	0		1.94	2.75	3.29	3.97	4.47	4.98	5.47	6.13	6.63
4320	1.52	0.65	1.31	0		1.41	1.99	2.37	2.85	3.21	3.56	3.91	4.38	4.73
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

HUC 2080201-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	105.39	85.33	83.04	0	91.38	166.79	216.71	279.8	326.59	373.05	419.33	480.39	526.54	
30	58.93	41.52	48.2	0	52.11	88.8	113.1	143.79	166.56	189.17	211.69	241.4	263.86	
45	41.4	26.25	36.11	0	37.09	60.29	75.65	95.05	109.45	123.74	137.98	156.76	170.96	
60	34.68	19.7	29.98	0	31.44	48.85	60.38	74.94	85.75	96.47	107.16	121.26	131.91	
120	19.29	10.16	17.17	0	17.62	26.6	32.54	40.06	45.63	51.16	56.67	63.94	69.44	
180	13.95	7.15	12.72	0	12.78	19.09	23.28	28.56	32.49	36.38	40.26	45.37	49.24	
240	11.28	5.52	10.27	0	10.37	15.25	18.48	22.56	25.59	28.59	31.59	35.54	38.52	
360	8.58	4.07	7.78	0	7.91	11.51	13.89	16.9	19.13	21.35	23.55	26.47	28.67	
720	5.25	2.43	4.66	0	4.85	7	8.42	10.22	11.55	12.87	14.19	15.93	17.24	
1440	3.01	1.34	2.74	0	2.79	3.97	4.76	5.75	6.48	7.21	7.94	8.9	9.62	
2880	1.72	0.79	1.58	0	1.59	2.29	2.75	3.33	3.77	4.2	4.63	5.19	5.62	
4320	1.22	0.57	1.13	0	1.13	1.63	1.96	2.39	2.7	3.01	3.32	3.73	4.03	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

HUC 2080201-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	103.2	84.23	81.13	0	89.37	163.8	213.09	275.36	321.55	367.41	413.09	473.37	518.92	
30	58.33	41.54	47.56	0	51.51	88.22	112.52	143.23	166.02	188.63	211.16	240.89	263.35	
45	41.14	26.39	35.77	0	36.81	60.13	75.57	95.08	109.55	123.92	138.23	157.12	171.39	
60	34.56	19.87	29.9	0	31.3	48.86	60.48	75.17	86.07	96.89	107.66	121.88	132.63	
120	19.24	10.2	17.06	0	17.56	26.58	32.55	40.09	45.68	51.23	56.77	64.07	69.58	
180	13.87	7.17	12.61	0	12.69	19.03	23.22	28.52	32.46	36.36	40.25	45.38	49.26	
240	11.18	5.5	10.17	0	10.28	15.14	18.36	22.42	25.44	28.43	31.42	35.35	38.33	
360	8.52	4.04	7.73	0	7.86	11.43	13.79	16.78	18.99	21.19	23.38	26.27	28.46	
720	5.23	2.4	4.64	0	4.84	6.96	8.36	10.14	11.45	12.76	14.06	15.78	17.08	

1440	3.01	1.31	2.74	0	2.79	3.95	4.72	5.69	6.41	7.12	7.83	8.77	9.48
2880	1.72	0.78	1.59	0	1.59	2.28	2.74	3.31	3.74	4.17	4.59	5.15	5.57
4320	1.22	0.56	1.13	0	1.13	1.62	1.95	2.36	2.67	2.98	3.28	3.68	3.98
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080202					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	138.55	123.25	93.73	0	118.31	227.23	299.34	390.46	458.06	525.15	592	680.2	746.86
30	76.67	57.3	58.92	0	67.26	117.9	151.42	193.79	225.21	256.4	287.48	328.49	359.48
45	53.07	36.48	41.34	0	47.08	79.32	100.66	127.63	147.64	167.5	187.29	213.39	233.12
60	42.68	26.79	35.23	0	38.28	61.96	77.63	97.44	112.13	126.71	141.24	160.42	174.9
120	23.37	12.56	21.62	0	21.31	32.41	39.76	49.04	55.93	62.77	69.58	78.57	85.36
180	17.19	8.31	15.59	0	15.83	23.17	28.03	34.17	38.73	43.26	47.76	53.71	58.2
240	14.4	6.64	12.82	0	13.31	19.18	23.06	27.97	31.61	35.23	38.83	43.58	47.17
360	10.88	4.91	9.67	0	10.07	14.41	17.29	20.92	23.61	26.28	28.94	32.46	35.11
720	6.77	2.99	6.08	0	6.28	8.92	10.67	12.88	14.52	16.15	17.77	19.91	21.53
1440	3.93	1.63	3.51	0	3.66	5.1	6.06	7.26	8.16	9.04	9.93	11.09	11.98
2880	2.2	0.93	2.01	0	2.05	2.87	3.41	4.1	4.61	5.12	5.62	6.29	6.79
4320	1.56	0.66	1.39	0	1.45	2.03	2.42	2.91	3.27	3.63	3.99	4.46	4.82
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080203-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	128.2	108.04	95.81	0	110.46	205.94	269.15	349.02	408.28	467.09	525.69	603.01	661.44
30	73.98	56.24	58.05	0	64.74	114.44	147.35	188.93	219.77	250.39	280.9	321.14	351.56
45	51.95	39.78	39.63	0	45.42	80.57	103.85	133.26	155.07	176.73	198.31	226.77	248.29

60	41.03	31.51	30.08	0	35.86	63.7	82.14	105.43	122.71	139.87	156.96	179.51	196.55
120	23.59	16.95	18.27	0	20.81	35.79	45.7	58.23	67.53	76.76	85.95	98.08	107.25
180	17.23	11.78	13.92	0	15.3	25.71	32.6	41.31	47.77	54.18	60.57	69	75.37
240	14.73	9.24	11.86	0	13.21	21.38	26.78	33.62	38.68	43.71	48.73	55.34	60.33
360	10.25	6.23	8.55	0	9.23	14.73	18.38	22.98	26.4	29.79	33.17	37.63	41
720	6.36	3.65	5.14	0	5.76	8.99	11.12	13.82	15.82	17.81	19.79	22.4	24.37
1440	3.65	2.01	2.95	0	3.32	5.1	6.27	7.76	8.86	9.95	11.05	12.48	13.57
2880	2.05	1.04	1.76	0	1.88	2.8	3.41	4.18	4.75	5.31	5.88	6.62	7.18
4320	1.51	0.72	1.29	0	1.39	2.03	2.45	2.98	3.38	3.77	4.16	4.67	5.06
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080203-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration (min)	x _{bar} (mm h ⁻¹)	s (mm h ⁻¹)	x _m (mm h ⁻¹)	N	2	5	10	25	50	100	200	500	1000	
					0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	123.1	103.07	92.03	0	106.17	197.26	257.57	333.76	390.29	446.4	502.31	576.07	631.81	
30	71.84	54.03	56.89	0	62.97	110.71	142.33	182.27	211.9	241.32	270.62	309.29	338.51	
45	50.77	38.58	38.95	0	44.43	78.53	101.1	129.62	150.78	171.79	192.71	220.32	241.18	
60	40.2	30.67	29.5	0	35.16	62.27	80.21	102.89	119.71	136.4	153.04	174.99	191.57	
120	23.28	16.66	18	0	20.54	35.27	45.01	57.33	66.47	75.54	84.57	96.5	105.51	
180	17.01	11.59	13.74	0	15.11	25.35	32.13	40.7	47.06	53.36	59.65	67.95	74.21	
240	14.59	9.11	11.72	0	13.09	21.14	26.48	33.21	38.21	43.17	48.11	54.63	59.55	
360	10.16	6.14	8.41	0	9.15	14.58	18.17	22.71	26.08	29.42	32.75	37.14	40.46	
720	6.28	3.6	5.08	0	5.69	8.87	10.98	13.64	15.61	17.57	19.52	22.1	24.05	
1440	3.62	1.99	2.93	0	3.29	5.05	6.22	7.69	8.78	9.86	10.94	12.37	13.44	
2880	2.02	1.02	1.75	0	1.85	2.75	3.35	4.1	4.66	5.22	5.77	6.5	7.05	
4320	1.5	0.71	1.27	0	1.38	2.01	2.43	2.95	3.34	3.73	4.11	4.62	5	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

HUC 2080204					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	148.32	126.1	95.95	0	127.61	239.05	312.83	406.06	475.21	543.86	612.26	702.5	770.7
30	79.34	54.29	63.2	0	70.42	118.4	150.17	190.3	220.08	249.63	279.08	317.93	347.29
45	56.43	35.84	47.56	0	50.54	82.22	103.19	129.68	149.34	168.85	188.29	213.94	233.32
60	44.47	25.8	37.41	0	40.23	63.03	78.13	97.2	111.35	125.4	139.39	157.85	171.81
120	26.52	15.06	22.55	0	24.05	37.36	46.17	57.3	65.56	73.76	81.93	92.7	100.85
180	18.78	10.48	15.78	0	17.06	26.32	32.45	40.2	45.95	51.65	57.34	64.84	70.5
240	15.2	7.79	13.3	0	13.92	20.8	25.36	31.12	35.39	39.64	43.86	49.44	53.65
360	10.97	5.24	9.78	0	10.11	14.74	17.81	21.68	24.55	27.41	30.25	34	36.83
720	6.56	3.08	5.8	0	6.05	8.78	10.58	12.86	14.54	16.22	17.89	20.1	21.76
1440	3.82	1.75	3.41	0	3.53	5.08	6.1	7.4	8.36	9.31	10.26	11.51	12.46
2880	2.15	0.94	1.96	0	2	2.83	3.38	4.07	4.59	5.1	5.61	6.28	6.79
4320	1.59	0.66	1.45	0	1.48	2.06	2.45	2.94	3.3	3.66	4.02	4.49	4.85
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080205-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	71.58	26.41	71.41	0	67.24	90.58	106.03	125.56	140.04	154.42	168.75	187.65	201.93
30	51.07	19.17	51.01	0	47.92	64.86	76.08	90.25	100.77	111.2	121.6	135.32	145.69
45	37.79	17.18	34.86	0	34.97	50.15	60.2	72.9	82.33	91.68	101	113.29	122.58
60	31.32	16.28	26.15	0	28.65	43.03	52.56	64.59	73.52	82.39	91.22	102.87	111.67
120	19.58	10.55	16.92	0	17.85	27.17	33.34	41.14	46.93	52.67	58.39	65.94	71.65
180	14.74	8.43	12.43	0	13.36	20.81	25.74	31.97	36.59	41.18	45.76	51.79	56.35
240	12.04	6.8	9.75	0	10.92	16.93	20.91	25.94	29.67	33.37	37.06	41.92	45.6
360	8.99	4.83	7.45	0	8.2	12.47	15.29	18.86	21.51	24.14	26.76	30.22	32.83

720	5.65	3.43	4.78	0	5.09	8.12	10.12	12.66	14.54	16.41	18.27	20.72	22.58
1440	3.3	2.08	2.8	0	2.96	4.8	6.01	7.55	8.69	9.82	10.95	12.44	13.57
2880	1.93	1.06	1.73	0	1.76	2.69	3.31	4.1	4.68	5.25	5.83	6.59	7.16
4320	1.43	0.7	1.25	0	1.32	1.93	2.34	2.86	3.24	3.63	4.01	4.51	4.88
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080205-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	71.58	26.41	71.41	0	67.24	90.58	106.03	125.56	140.04	154.42	168.75	187.65	201.93	
30	51.07	19.17	51.01	0	47.92	64.86	76.08	90.25	100.77	111.2	121.6	135.32	145.69	
45	37.79	17.18	34.86	0	34.97	50.15	60.2	72.9	82.33	91.68	101	113.29	122.58	
60	31.32	16.28	26.15	0	28.65	43.03	52.56	64.59	73.52	82.39	91.22	102.87	111.67	
120	19.58	10.55	16.92	0	17.85	27.17	33.34	41.14	46.93	52.67	58.39	65.94	71.65	
180	14.74	8.43	12.43	0	13.36	20.81	25.74	31.97	36.59	41.18	45.76	51.79	56.35	
240	12.04	6.8	9.75	0	10.92	16.93	20.91	25.94	29.67	33.37	37.06	41.92	45.6	
360	8.99	4.83	7.45	0	8.2	12.47	15.29	18.86	21.51	24.14	26.76	30.22	32.83	
720	5.65	3.43	4.78	0	5.09	8.12	10.12	12.66	14.54	16.41	18.27	20.72	22.58	
1440	3.3	2.08	2.8	0	2.96	4.8	6.01	7.55	8.69	9.82	10.95	12.44	13.57	
2880	1.93	1.06	1.73	0	1.76	2.69	3.31	4.1	4.68	5.25	5.83	6.59	7.16	
4320	1.43	0.7	1.25	0	1.32	1.93	2.34	2.86	3.24	3.63	4.01	4.51	4.88	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

HUC 2080206-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	122.14	80.31	95.52	0	108.95	179.92	226.91	286.29	330.33	374.05	417.61	475.08	518.52	
30	72.6	38.97	65.85	0	66.2	100.64	123.44	152.25	173.62	194.84	215.98	243.86	264.94	

45	50.32	25.08	45.49	0	46.2	68.37	83.04	101.58	115.34	128.99	142.59	160.54	174.1
60	42.9	23.9	37.15	0	38.97	60.1	74.08	91.75	104.86	117.87	130.83	147.93	160.86
120	27.54	15.18	24.57	0	25.05	38.46	47.34	58.57	66.89	75.16	83.39	94.25	102.46
180	20.85	12.21	18.22	0	18.84	29.64	36.78	45.81	52.5	59.15	65.77	74.51	81.11
240	16.53	9.51	13.73	0	14.97	23.37	28.94	35.97	41.18	46.36	51.52	58.32	63.47
360	12.5	6.75	10.72	0	11.39	17.36	21.31	26.3	30	33.67	37.33	42.16	45.82
720	6.96	3.47	6.08	0	6.39	9.46	11.49	14.05	15.96	17.84	19.73	22.21	24.09
1440	4.3	2.64	3.56	0	3.87	6.2	7.74	9.7	11.14	12.58	14.01	15.9	17.33
2880	2.4	1.47	1.84	0	2.16	3.46	4.32	5.4	6.21	7.01	7.81	8.86	9.66
4320	1.67	0.97	1.31	0	1.51	2.37	2.94	3.65	4.18	4.71	5.24	5.93	6.46
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080206-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
					2	5	10	25	50	100	200	500	1000
Duration (min)	x _{bar} (mm h ⁻¹)	s (mm h ⁻¹)	x _m (mm h ⁻¹)	N	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	122.65	81.53	95.72	0	109.26	181.31	229.01	289.29	334	378.39	422.61	480.95	525.05
30	72.97	39.46	66.06	0	66.49	101.36	124.45	153.62	175.26	196.75	218.15	246.39	267.73
45	50.43	25.37	45.38	0	46.26	68.68	83.53	102.28	116.2	130.01	143.77	161.92	175.65
60	43	24.11	37.09	0	39.04	60.35	74.45	92.28	105.5	118.63	131.7	148.96	162
120	27.61	15.29	24.55	0	25.1	38.61	47.56	58.86	67.25	75.57	83.86	94.81	103.08
180	20.93	12.28	18.28	0	18.91	29.77	36.95	46.03	52.76	59.45	66.11	74.9	81.54
240	16.59	9.56	13.73	0	15.02	23.47	29.06	36.13	41.37	46.58	51.76	58.6	63.77
360	12.53	6.77	10.73	0	11.42	17.4	21.36	26.37	30.08	33.77	37.44	42.28	45.94
720	6.96	3.46	6.08	0	6.39	9.45	11.47	14.03	15.93	17.81	19.69	22.17	24.04
1440	4.31	2.64	3.55	0	3.88	6.21	7.75	9.71	11.15	12.59	14.02	15.91	17.34
2880	2.41	1.47	1.85	0	2.17	3.47	4.33	5.41	6.22	7.02	7.82	8.87	9.67
4320	1.67	0.97	1.31	0	1.51	2.37	2.94	3.65	4.18	4.71	5.24	5.93	6.46
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080207-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	83.19	61.94	60.59	0	69.3	128.95	167.92	214.96	248.2	279.92	310.4	349.14	377.45
30	50.47	30.3	42.16	0	45.7	74.7	92.06	111.92	125.4	137.92	149.67	164.27	174.72
45	35.03	19.84	31.4	0	32.26	51.14	62.21	74.72	83.13	90.89	98.14	107.08	113.46
60	27.54	15.93	25.39	0	25.21	40.41	49.38	59.57	66.44	72.79	78.74	86.09	91.34
120	17.22	7.79	15.69	0	16.62	23.8	27.72	31.97	34.74	37.24	39.53	42.31	44.26
180	12.97	5.51	11.46	0	12.64	17.66	20.35	23.25	25.12	26.8	28.34	30.19	31.49
240	10.45	4.56	9.36	0	10.14	14.32	16.58	19.01	20.59	22.01	23.31	24.88	25.98
360	7.93	3.09	6.89	0	7.81	10.58	12.03	13.58	14.57	15.45	16.25	17.21	17.88
720	4.88	2.27	4.19	0	4.69	6.79	7.95	9.21	10.03	10.78	11.46	12.3	12.88
1440	2.9	1.56	2.55	0	2.71	4.18	5.03	5.98	6.62	7.2	7.74	8.4	8.87
2880	1.6	0.74	1.42	0	1.54	2.22	2.6	3.01	3.28	3.52	3.74	4.01	4.2
4320	1.23	0.58	1.09	0	1.18	1.72	2.01	2.34	2.55	2.74	2.92	3.14	3.29
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080207-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	86.11	68.86	61.78	0	69.17	135.17	179.71	234.56	273.92	311.86	348.64	395.8	430.52
30	52.55	33.08	43.35	0	46.87	78.63	97.99	120.38	135.7	150	163.5	180.33	192.43
45	35.63	21.52	30.74	0	32.21	52.81	65.17	79.34	88.96	97.9	106.3	116.74	124.22
60	28.12	17.12	25.04	0	25.35	41.76	51.62	62.95	70.66	77.83	84.57	92.95	98.96
120	17.57	8.41	15.54	0	16.8	24.62	28.96	33.72	36.83	39.66	42.27	45.44	47.67
180	13.41	5.87	11.83	0	13.01	18.39	21.3	24.44	26.48	28.31	29.99	32.02	33.44
240	10.77	4.84	9.4	0	10.41	14.86	17.29	19.92	21.63	23.18	24.59	26.31	27.51
360	8.08	3.2	6.99	0	7.94	10.82	12.34	13.95	14.99	15.91	16.75	17.76	18.47
720	4.93	2.26	4.2	0	4.75	6.84	7.98	9.22	10.04	10.77	11.44	12.26	12.83

1440	2.92	1.55	2.53	0	2.73	4.2	5.04	5.97	6.6	7.17	7.7	8.35	8.81
2880	1.64	0.74	1.46	0	1.58	2.27	2.64	3.04	3.3	3.54	3.76	4.02	4.2
4320	1.24	0.56	1.11	0	1.2	1.71	1.99	2.3	2.5	2.68	2.84	3.04	3.18
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 2080208					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	104.79	56.9	96.57	0	97.56	151.43	182.55	217.43	240.73	262.12	282.02	306.51	323.9
30	65.6	30.79	68.58	0	62.94	91.48	107.24	124.44	135.69	145.87	155.24	166.63	174.64
45	46.84	20.2	45.74	0	45.54	63.99	73.95	84.66	91.6	97.83	103.53	110.42	115.23
60	38.77	18.04	38.11	0	37.25	53.95	63.15	73.17	79.72	85.65	91.09	97.71	102.36
120	24.19	10.13	23.53	0	23.61	32.81	37.74	43.02	46.43	49.48	52.27	55.63	57.97
180	19.71	7.81	18.22	0	19.37	26.39	30.1	34.04	36.57	38.83	40.88	43.35	45.07
240	16.4	6.53	15.23	0	16.11	21.98	25.09	28.4	30.52	32.41	34.14	36.21	37.65
360	12.08	5.08	11.64	0	11.78	16.4	18.88	21.53	23.25	24.79	26.19	27.88	29.06
720	7.55	3.24	6.45	0	7.35	10.3	11.9	13.61	14.72	15.71	16.62	17.72	18.49
1440	4.33	1.89	4.18	0	4.2	5.93	6.87	7.88	8.53	9.12	9.66	10.31	10.77
2880	2.31	1.08	1.93	0	2.22	3.22	3.77	4.37	4.77	5.12	5.45	5.85	6.13
4320	1.66	0.76	1.48	0	1.6	2.3	2.69	3.1	3.38	3.62	3.85	4.12	4.31
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3010101-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	123.18	127.06	90.83	0	102.31	214.6	288.94	382.88	452.56	521.73	590.65	681.58	750.3
30	70.42	60.56	55.39	0	60.47	113.99	149.43	194.2	227.41	260.38	293.23	336.57	369.32
45	51.61	39.51	42.9	0	45.12	80.04	103.16	132.36	154.03	175.54	196.97	225.25	246.62

60	40.27	29.65	33.58	0	35.4	61.6	78.95	100.87	117.13	133.27	149.36	170.57	186.61
120	23.1	14.32	19.72	0	20.75	33.4	41.78	52.37	60.22	68.02	75.79	86.03	93.78
180	16.98	9.86	15.25	0	15.36	24.07	29.84	37.13	42.54	47.91	53.26	60.31	65.64
240	13.18	7.11	11.99	0	12.01	18.3	22.46	27.71	31.61	35.48	39.34	44.43	48.27
360	10.04	4.8	9.23	0	9.25	13.49	16.3	19.85	22.48	25.1	27.7	31.13	33.73
720	5.92	2.65	5.24	0	5.48	7.83	9.38	11.34	12.79	14.23	15.67	17.57	19
1440	3.46	1.46	3.05	0	3.22	4.51	5.36	6.44	7.24	8.04	8.83	9.88	10.67
2880	2.07	0.86	1.89	0	1.93	2.69	3.19	3.83	4.3	4.77	5.23	5.85	6.31
4320	1.49	0.63	1.38	0	1.39	1.94	2.31	2.78	3.12	3.47	3.81	4.26	4.6
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3010101-b		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability													
		Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	2 0.5	5 0.2	10 0.1	25 0.04	50 0.02	100 0.01	200 0.005	500 0.002	1000 0.001
		15	108.94	113.2	80.3	0	90.35	190.39	256.62	340.31	402.39	464.02	525.42	606.43	667.65
		30	64.46	54.41	52.15	0	55.52	103.61	135.44	175.67	205.51	235.13	264.64	303.58	333.01
		45	48.31	36.16	41.01	0	42.37	74.33	95.48	122.22	142.05	161.73	181.35	207.22	226.78
		60	37.96	27.3	31.96	0	33.48	57.6	73.58	93.76	108.73	123.59	138.4	157.94	172.7
		120	22.22	13.51	18.95	0	20	31.94	39.85	49.83	57.24	64.6	71.93	81.59	88.9
		180	16.35	9.3	14.75	0	14.82	23.04	28.48	35.36	40.46	45.52	50.57	57.22	62.25
		240	12.79	6.73	11.6	0	11.68	17.63	21.57	26.55	30.24	33.9	37.55	42.37	46.01
		360	9.78	4.54	8.85	0	9.03	13.05	15.7	19.06	21.55	24.02	26.48	29.73	32.19
		720	5.71	2.53	5.07	0	5.29	7.53	9.01	10.88	12.27	13.65	15.02	16.83	18.2
		1440	3.38	1.4	2.98	0	3.15	4.39	5.21	6.24	7.01	7.77	8.53	9.53	10.29
		2880	2	0.81	1.87	0	1.87	2.58	3.06	3.66	4.1	4.54	4.98	5.56	6
		4320	1.45	0.59	1.33	0	1.35	1.87	2.22	2.66	2.98	3.3	3.62	4.04	4.36
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

HUC 3010102-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	122.85	84.64	97.75	0	105.92	187.5	239.03	299.98	342.38	382.41	420.55	468.58	503.4
30	70.99	41.98	59.91	0	64.58	104.7	128.58	155.83	174.27	191.37	207.4	227.27	241.48
45	50.19	27.21	45.47	0	46.74	72.5	87.37	104.04	115.16	125.38	134.88	146.57	154.87
60	38.39	20.08	36.15	0	36.05	54.97	65.77	77.79	85.77	93.07	99.83	108.14	114.02
120	20.78	9.96	19.37	0	19.86	29.13	34.27	39.91	43.61	46.96	50.05	53.81	56.46
180	15.54	7.3	13.85	0	14.91	21.68	25.41	29.49	32.16	34.58	36.8	39.5	41.4
240	12.52	5.91	11.2	0	12	17.48	20.52	23.83	26	27.96	29.77	31.97	33.51
360	8.97	3.55	7.92	0	8.81	12.01	13.69	15.48	16.63	17.66	18.59	19.71	20.49
720	5.22	1.84	4.62	0	5.19	6.8	7.64	8.51	9.06	9.55	9.99	10.52	10.88
1440	3.01	1.1	2.82	0	2.98	3.96	4.46	4.99	5.33	5.63	5.9	6.23	6.45
2880	1.73	0.54	1.6	0	1.73	2.2	2.43	2.67	2.82	2.95	3.07	3.21	3.31
4320	1.33	0.46	1.29	0	1.32	1.73	1.93	2.15	2.29	2.41	2.51	2.64	2.73
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3010102-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	101.86	64.21	82.23	0	90.8	152.47	190.06	233.56	263.33	291.14	317.37	350.09	373.63
30	62.21	32.91	55.13	0	58.27	89.33	107.12	126.95	140.15	152.24	163.45	177.22	186.99
45	45.33	22.28	42.69	0	43.13	63.93	75.57	88.38	96.81	104.47	111.55	120.18	126.26
60	34.98	16.62	33.77	0	33.49	48.93	57.48	66.83	72.96	78.52	83.63	89.85	94.23
120	19.5	8.77	18.24	0	18.84	26.91	31.31	36.08	39.19	41.99	44.55	47.66	49.85
180	14.61	6.49	13.11	0	14.14	20.1	23.34	26.85	29.12	31.17	33.05	35.33	36.92
240	11.94	5.35	10.63	0	11.54	16.46	19.14	22.05	23.94	25.64	27.2	29.09	30.42
360	8.59	3.16	7.35	0	8.5	11.31	12.76	14.29	15.27	16.13	16.91	17.85	18.5

720	4.91	1.66	4.37	0	4.89	6.34	7.08	7.85	8.34	8.76	9.15	9.61	9.93
1440	2.89	1.01	2.71	0	2.87	3.76	4.22	4.69	4.99	5.26	5.5	5.79	5.99
2880	1.62	0.47	1.56	0	1.63	2.03	2.22	2.43	2.55	2.66	2.76	2.88	2.96
4320	1.27	0.41	1.21	0	1.27	1.62	1.8	1.99	2.11	2.21	2.3	2.41	2.49
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3010103					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	146.3	150.51	101.02	0	121.58	254.59	342.66	453.93	536.47	618.41	700.05	807.75	889.16	
30	80.56	69.79	63.19	0	69.1	130.77	171.61	223.2	261.48	299.47	337.33	387.27	425.01	
45	55.75	45.32	44.83	0	48.31	88.36	114.87	148.38	173.23	197.91	222.49	254.92	279.43	
60	43.88	31.22	36.83	0	38.75	66.34	84.61	107.69	124.81	141.81	158.74	181.08	197.97	
120	25.56	15.3	21.64	0	23.05	36.57	45.52	56.83	65.22	73.55	81.85	92.8	101.07	
180	18.38	9.84	16.09	0	16.76	25.46	31.22	38.49	43.89	49.25	54.58	61.62	66.95	
240	15.25	7.64	13.59	0	14	20.75	25.22	30.87	35.06	39.21	43.36	48.83	52.96	
360	11.02	5.05	10	0	10.19	14.65	17.61	21.34	24.11	26.86	29.6	33.21	35.94	
720	6.95	3.21	6.16	0	6.42	9.26	11.14	13.51	15.27	17.02	18.76	21.06	22.79	
1440	4.12	1.72	3.74	0	3.84	5.36	6.36	7.64	8.58	9.52	10.45	11.68	12.61	
2880	2.34	0.99	2.21	0	2.18	3.05	3.63	4.36	4.91	5.45	5.98	6.69	7.23	
4320	1.65	0.7	1.49	0	1.54	2.15	2.56	3.08	3.46	3.85	4.23	4.73	5.1	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

HUC 3010104					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	182.49	147.68	119.27	0	158.24	288.75	375.16	484.33	565.33	645.72	725.83	831.51	911.38	
30	94.94	67.62	70.48	0	83.83	143.59	183.16	233.15	270.23	307.05	343.72	392.11	428.68	

45	67.76	41.88	56.11	0	60.88	97.89	122.4	153.36	176.33	199.13	221.84	251.81	274.46
60	51.19	29.33	43.29	0	46.37	72.29	89.45	111.14	127.22	143.19	159.1	180.09	195.95
120	26.58	13.95	23.34	0	24.29	36.62	44.78	55.09	62.74	70.34	77.9	87.89	95.43
180	18.94	9.11	16.51	0	17.44	25.49	30.83	37.56	42.56	47.52	52.46	58.98	63.9
240	15.86	6.85	15	0	14.74	20.79	24.8	29.86	33.62	37.35	41.06	45.96	49.67
360	10.73	4.45	9.89	0	10	13.93	16.54	19.83	22.27	24.69	27.1	30.29	32.69
720	6.17	2.27	5.69	0	5.8	7.8	9.13	10.81	12.05	13.29	14.52	16.15	17.37
1440	3.35	1.21	3.15	0	3.15	4.22	4.93	5.82	6.49	7.15	7.8	8.67	9.32
2880	1.91	0.71	1.76	0	1.79	2.42	2.84	3.36	3.75	4.14	4.52	5.03	5.41
4320	1.43	0.52	1.34	0	1.34	1.8	2.11	2.49	2.78	3.06	3.34	3.72	4
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3010105-a		s	x _m	N	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
					2	5	10	25	50	100	200	500	1000
Duration	x _{bar}	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
(min)	(mm h ⁻¹)												
15	154.01	121.28	118.59	0	134.09	241.27	312.23	401.89	468.41	534.43	600.22	687.01	752.6
30	83.06	57.25	70.31	0	73.66	124.25	157.75	200.07	231.47	262.64	293.69	334.66	365.62
45	56.39	36.77	47.78	0	50.35	82.85	104.36	131.54	151.71	171.73	191.67	217.98	237.87
60	45.18	26.03	40.31	0	40.91	63.91	79.14	98.38	112.66	126.83	140.95	159.58	173.65
120	24.84	12.72	22.79	0	22.75	33.99	41.43	50.84	57.81	64.74	71.64	80.74	87.62
180	19.07	8.27	17.54	0	17.71	25.02	29.86	35.97	40.51	45.01	49.5	55.41	59.89
240	14.98	6.16	13.95	0	13.97	19.41	23.02	27.57	30.95	34.3	37.64	42.05	45.38
360	10.4	4.23	9.85	0	9.71	13.44	15.92	19.05	21.37	23.67	25.96	28.99	31.28
720	6.25	2.16	5.84	0	5.9	7.8	9.07	10.66	11.85	13.03	14.2	15.74	16.91
1440	3.66	1.41	3.36	0	3.43	4.67	5.5	6.54	7.32	8.08	8.85	9.86	10.62
2880	2.02	0.85	1.81	0	1.88	2.63	3.13	3.76	4.22	4.69	5.15	5.76	6.22
4320	1.48	0.6	1.43	0	1.38	1.91	2.26	2.71	3.04	3.36	3.69	4.12	4.44
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3010105-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	133.4	101.22	103.35	0	116.78	206.23	265.45	340.28	395.8	450.9	505.8	578.24	632.98
30	74.44	48.34	65.62	0	66.5	109.22	137.5	173.24	199.75	226.07	252.29	286.88	313.03
45	51.63	31.93	45.04	0	46.39	74.6	93.29	116.89	134.4	151.79	169.11	191.95	209.22
60	41.83	22.63	37.97	0	38.11	58.11	71.35	88.08	100.49	112.81	125.09	141.28	153.52
120	23.58	11.55	21.68	0	21.68	31.89	38.65	47.19	53.52	59.81	66.07	74.34	80.59
180	18.16	7.46	16.82	0	16.93	23.53	27.89	33.41	37.5	41.56	45.61	50.94	54.98
240	14.41	5.61	13.39	0	13.49	18.45	21.73	25.88	28.95	32.01	35.05	39.06	42.1
360	10.03	3.85	9.29	0	9.4	12.8	15.05	17.9	20.01	22.11	24.19	26.95	29.03
720	5.95	1.98	5.59	0	5.62	7.37	8.53	10	11.08	12.16	13.23	14.65	15.72
1440	3.54	1.32	3.26	0	3.32	4.49	5.26	6.24	6.96	7.68	8.4	9.34	10.05
2880	1.92	0.78	1.78	0	1.79	2.48	2.94	3.51	3.94	4.37	4.79	5.35	5.77
4320	1.43	0.55	1.35	0	1.34	1.83	2.15	2.55	2.86	3.16	3.45	3.85	4.14
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3010106					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	192.89	155.99	120.9	0	167.27	305.13	396.4	511.72	597.27	682.19	766.8	878.43	962.79
30	99.01	70.88	70.89	0	87.37	150.01	191.48	243.88	282.76	321.34	359.79	410.51	448.84
45	71.79	43.7	58.96	0	64.61	103.23	128.8	161.11	185.08	208.87	232.57	263.84	287.48
60	53.26	30.61	44.25	0	48.23	75.28	93.19	115.82	132.61	149.28	165.88	187.78	204.34
120	27.29	14.47	23.45	0	24.91	37.7	46.17	56.87	64.8	72.68	80.53	90.88	98.71
180	18.9	9.42	16.11	0	17.35	25.68	31.19	38.15	43.32	48.45	53.56	60.3	65.39
240	16.09	7.04	15.22	0	14.93	21.16	25.27	30.48	34.34	38.17	41.99	47.03	50.84
360	10.87	4.48	9.99	0	10.13	14.09	16.71	20.03	22.48	24.92	27.35	30.56	32.98
720	6.13	2.28	5.63	0	5.76	7.77	9.1	10.79	12.04	13.28	14.52	16.15	17.38

1440	3.27	1.12	3.09	0	3.09	4.08	4.73	5.56	6.17	6.78	7.39	8.19	8.8
2880	1.89	0.65	1.75	0	1.78	2.36	2.74	3.22	3.58	3.93	4.28	4.75	5.1
4320	1.43	0.5	1.32	0	1.35	1.79	2.08	2.45	2.73	3	3.27	3.63	3.9
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3010201-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	138.99	122.98	77.2	0	105.09	221.34	303.81	408.55	485.44	560.76	634.78	730.93	802.57
30	74.04	53.47	56.78	0	62.56	114.09	147.29	187.04	214.96	241.48	266.87	299.03	322.45
45	52.82	34.61	43.08	0	46.44	79.76	100.37	124.46	141.06	156.64	171.39	189.87	203.21
60	42.9	27.04	34.35	0	38.24	64.21	80.04	98.36	110.9	122.6	133.65	147.43	157.34
120	26.85	13.46	21.19	0	25.45	38.05	45.15	52.98	58.15	62.86	67.22	72.54	76.29
180	19.03	8.24	16.12	0	18.49	26.02	30.09	34.47	37.31	39.86	42.19	45.01	46.99
240	15.05	5.81	13.29	0	14.83	20.03	22.76	25.65	27.49	29.14	30.64	32.43	33.68
360	11.14	4.07	10.4	0	11.03	14.64	16.51	18.47	19.72	20.83	21.83	23.03	23.87
720	6.58	2.57	5.99	0	6.48	8.78	9.99	11.28	12.11	12.84	13.51	14.31	14.87
1440	3.74	1.43	3.56	0	3.69	4.97	5.64	6.34	6.79	7.2	7.56	8	8.3
2880	2.03	0.84	1.85	0	1.98	2.75	3.15	3.59	3.87	4.12	4.35	4.62	4.81
4320	1.48	0.64	1.31	0	1.44	2.02	2.34	2.68	2.9	3.1	3.28	3.5	3.65
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3010201-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	144.2	135.33	79.32	0	104.74	231.05	323.44	443.02	532.07	620.16	707.44	821.78	907.57
30	77.76	58.42	58.91	0	64.5	120.74	157.62	202.26	233.86	264.05	293.1	330.05	357.08
45	53.88	37.6	41.89	0	46.21	82.45	105.47	132.78	151.83	169.84	187.03	208.7	224.43

60	43.92	29.16	33.73	0	38.42	66.51	83.98	104.46	118.6	131.9	144.51	160.33	171.76
120	27.49	14.56	20.92	0	25.74	39.49	47.36	56.14	61.99	67.34	72.31	78.41	82.73
180	19.83	8.87	16.78	0	19.18	27.33	31.77	36.58	39.71	42.53	45.11	48.24	50.43
240	15.61	6.31	13.35	0	15.3	21	24.02	27.24	29.31	31.17	32.85	34.88	36.29
360	11.42	4.28	10.58	0	11.29	15.09	17.08	19.17	20.51	21.7	22.77	24.06	24.96
720	6.67	2.56	6.01	0	6.58	8.86	10.06	11.33	12.14	12.87	13.52	14.31	14.86
1440	3.79	1.41	3.51	0	3.75	5	5.65	6.34	6.78	7.17	7.52	7.94	8.23
2880	2.1	0.83	1.91	0	2.06	2.81	3.2	3.62	3.89	4.13	4.35	4.61	4.79
4320	1.49	0.61	1.34	0	1.46	2.01	2.3	2.62	2.82	3	3.17	3.36	3.5
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3010202		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability											
Duration (min)	x _{bar} (mm h ⁻¹)	s (mm h ⁻¹)	x _m (mm h ⁻¹)	N	2	5	10	25	50	100	200	500	1000
					0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	110.11	65.71	95.16	0	99.9	162.75	200.28	243.19	272.28	299.27	324.6	356.03	378.53
30	67.27	33.92	68.06	0	63.68	95.47	113.4	133.21	146.3	158.24	169.27	182.76	192.29
45	47.95	22.21	45.72	0	46.11	66.65	77.96	90.26	98.29	105.56	112.24	120.35	126.04
60	39.61	19.4	37.93	0	37.71	55.81	65.94	77.06	84.38	91.04	97.18	104.66	109.94
120	24.75	10.71	23.37	0	24.05	33.84	39.13	44.82	48.5	51.82	54.85	58.51	61.08
180	19.86	7.97	18.12	0	19.49	26.67	30.48	34.53	37.13	39.46	41.57	44.12	45.89
240	16.43	6.52	15.16	0	16.14	22.01	25.11	28.4	30.51	32.4	34.12	36.18	37.61
360	12.09	4.98	11.64	0	11.83	16.34	18.74	21.31	22.97	24.45	25.8	27.43	28.56
720	7.51	3.16	6.45	0	7.33	10.2	11.74	13.39	14.46	15.42	16.29	17.34	18.08
1440	4.3	1.83	4.15	0	4.19	5.86	6.75	7.72	8.34	8.9	9.41	10.02	10.45
2880	2.29	1.05	1.94	0	2.21	3.18	3.71	4.29	4.66	5	5.32	5.7	5.96
4320	1.65	0.74	1.47	0	1.6	2.28	2.65	3.05	3.31	3.55	3.76	4.02	4.21
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3010203					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	111.44	67.92	94.8	0	100.45	165.53	204.69	249.67	280.28	308.75	335.51	368.8	392.66
30	67.68	34.71	67.93	0	63.84	96.45	114.95	135.46	149.04	161.44	172.92	186.98	196.92
45	48.23	22.72	45.72	0	46.25	67.32	78.97	91.68	100.01	107.55	114.48	122.92	128.85
60	39.82	19.74	37.88	0	37.82	56.28	66.63	78.04	85.56	92.4	98.72	106.43	111.87
120	24.88	10.85	23.33	0	24.15	34.08	39.46	45.25	49	52.38	55.47	59.21	61.83
180	19.9	8.01	18.1	0	19.52	26.74	30.57	34.65	37.27	39.62	41.75	44.31	46.1
240	16.44	6.52	15.14	0	16.15	22.02	25.12	28.41	30.52	32.41	34.12	36.18	37.62
360	12.09	4.96	11.65	0	11.83	16.32	18.71	21.27	22.91	24.38	25.72	27.34	28.47
720	7.5	3.14	6.45	0	7.32	10.17	11.7	13.34	14.39	15.34	16.2	17.24	17.97
1440	4.29	1.81	4.15	0	4.18	5.83	6.71	7.66	8.27	8.82	9.32	9.93	10.35
2880	2.29	1.04	1.94	0	2.21	3.17	3.69	4.26	4.63	4.97	5.27	5.65	5.91
4320	1.64	0.74	1.47	0	1.58	2.27	2.64	3.04	3.3	3.54	3.76	4.02	4.2
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3010204-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	159.1	146.35	83.23	0	117.21	254.45	353.77	481.5	576.15	669.46	761.65	882.07	972.21
30	83.61	63.5	59.72	0	68.98	130.08	170.35	219.22	253.9	287.08	319.05	359.76	389.58
45	59.04	40.37	46.81	0	51.06	89.97	114.47	143.39	163.48	182.43	200.46	223.16	239.61
60	47.44	30.55	36.71	0	41.97	71.36	89.42	110.43	124.87	138.38	151.16	167.15	178.66
120	28.31	14.99	21.53	0	26.51	40.66	48.77	57.81	63.82	69.33	74.44	80.72	85.17
180	19.79	9.15	16.41	0	19.04	27.5	32.15	37.21	40.52	43.51	46.25	49.59	51.93
240	15.62	6.42	13.53	0	15.28	21.09	24.19	27.5	29.63	31.54	33.28	35.37	36.83
360	11.31	4.17	10.36	0	11.19	14.89	16.82	18.84	20.12	21.27	22.3	23.54	24.4

720	6.56	2.44	6	0	6.49	8.66	9.78	10.97	11.73	12.4	13.01	13.74	14.25
1440	3.66	1.28	3.5	0	3.64	4.76	5.34	5.94	6.33	6.66	6.97	7.33	7.59
2880	2.03	0.77	1.89	0	2	2.69	3.05	3.43	3.67	3.89	4.08	4.32	4.48
4320	1.47	0.6	1.35	0	1.44	1.98	2.27	2.58	2.78	2.95	3.12	3.31	3.45
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3010204-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	162.32	154	84.54	0	116.98	260.33	365.78	502.77	605.06	706.43	807.03	939.02	1038.2	
30	85.91	66.57	61.03	0	70.17	134.14	176.68	228.61	265.62	301.13	335.42	379.2	411.34	
45	59.7	42.22	46.07	0	50.91	91.61	117.6	148.54	170.18	190.68	210.27	235.01	252.99	
60	48.08	31.86	36.33	0	42.09	72.78	91.85	114.19	129.62	144.12	157.87	175.11	187.57	
120	28.7	15.68	21.36	0	26.68	41.53	50.14	59.79	66.24	72.17	77.69	84.48	89.31	
180	20.28	9.54	16.82	0	19.45	28.3	33.18	38.52	42.01	45.17	48.08	51.62	54.11	
240	15.97	6.72	13.57	0	15.58	21.69	24.97	28.48	30.75	32.78	34.64	36.88	38.44	
360	11.48	4.3	10.47	0	11.35	15.17	17.17	19.27	20.61	21.8	22.88	24.18	25.08	
720	6.62	2.43	6.02	0	6.55	8.71	9.83	11	11.75	12.41	13.02	13.74	14.23	
1440	3.69	1.27	3.47	0	3.67	4.78	5.35	5.95	6.32	6.66	6.95	7.31	7.56	
2880	2.07	0.76	1.93	0	2.05	2.72	3.07	3.44	3.67	3.88	4.07	4.3	4.45	
4320	1.48	0.58	1.36	0	1.46	1.98	2.25	2.54	2.73	2.89	3.05	3.23	3.35	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

HUC 3010205					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	105.78	58.14	96.68	0	98.18	153.31	185.29	221.21	245.25	267.36	287.94	313.29	331.32	
30	65.99	31.19	68.47	0	63.24	92.18	108.2	125.69	137.15	147.53	157.08	168.69	176.86	

45	47.03	20.39	45.77	0	45.69	64.33	74.41	85.25	92.28	98.6	104.38	111.37	116.26
60	39.02	18.31	38.13	0	37.44	54.41	63.78	74.01	80.7	86.75	92.32	99.09	103.85
120	24.4	10.42	23.64	0	23.75	33.26	38.37	43.86	47.42	50.61	53.52	57.05	59.51
180	19.8	8.08	18.25	0	19.39	26.69	30.58	34.73	37.4	39.79	41.96	44.58	46.41
240	16.42	6.72	15.16	0	16.07	22.15	25.39	28.84	31.07	33.06	34.87	37.06	38.58
360	12.12	5.18	11.6	0	11.8	16.52	19.07	21.8	23.57	25.15	26.6	28.35	29.58
720	7.52	3.26	6.43	0	7.31	10.29	11.9	13.63	14.75	15.77	16.69	17.81	18.59
1440	4.34	1.94	4.14	0	4.2	5.98	6.95	8	8.69	9.3	9.87	10.55	11.03
2880	2.31	1.11	1.93	0	2.21	3.24	3.81	4.44	4.86	5.23	5.58	6	6.29
4320	1.66	0.77	1.47	0	1.6	2.31	2.7	3.13	3.41	3.66	3.89	4.17	4.37
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 3040101		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability											
Duration (min)	x _{bar} (mm h ⁻¹)	s (mm h ⁻¹)	x _m (mm h ⁻¹)	N	2	5	10	25	50	100	200	500	1000
					0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	146.53	179.82	89.57	0	117	275.91	381.13	514.06	612.68	710.58	808.11	936.79	1034.05
30	78.86	78.88	61.43	0	65.91	135.61	181.77	240.08	283.34	326.29	369.07	425.52	468.18
45	56.02	51.07	45.32	0	47.63	92.77	122.65	160.4	188.41	216.21	243.91	280.46	308.08
60	44.08	37.58	36.9	0	37.91	71.12	93.11	120.89	141.5	161.96	182.34	209.23	229.56
120	24.8	18.5	21.25	0	21.76	38.11	48.94	62.61	72.76	82.83	92.86	106.1	116.11
180	17.45	11.3	15.25	0	15.59	25.58	32.19	40.55	46.74	52.9	59.02	67.11	73.22
240	14.49	8.68	12.89	0	13.06	20.74	25.81	32.23	36.99	41.72	46.42	52.64	57.33
360	10.81	6.07	9.77	0	9.81	15.18	18.73	23.22	26.55	29.85	33.14	37.49	40.77
720	6.16	2.89	5.61	0	5.69	8.24	9.93	12.07	13.65	15.23	16.79	18.86	20.42
1440	3.5	1.41	3.21	0	3.27	4.51	5.34	6.38	7.16	7.92	8.69	9.7	10.46
2880	2.12	0.89	1.96	0	1.97	2.76	3.28	3.94	4.43	4.91	5.39	6.03	6.51
4320	1.53	0.63	1.41	0	1.43	1.98	2.35	2.82	3.16	3.51	3.85	4.3	4.64
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 5050001					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	111.58	111.67	79.43	0	77.22	179.6	257.13	359.69	437.32	514.97	592.64	695.35	773.07
30	63.62	50.89	52.37	0	51.1	99.87	132.79	173.34	202.43	230.48	257.67	292.53	318.2
45	46.65	32.05	40.97	0	40.27	71.16	90.65	113.68	129.7	144.81	159.21	177.33	190.47
60	37.8	24.38	33.66	0	33.42	56.88	71.3	88.09	99.62	110.43	120.64	133.42	142.63
120	21.8	12.1	20.26	0	20.18	31.67	38.35	45.88	50.92	55.56	59.89	65.22	69.02
180	15.48	7.84	14.27	0	14.64	21.99	26.15	30.74	33.78	36.55	39.11	42.25	44.46
240	12.55	6.03	11.74	0	11.99	17.6	20.72	24.14	26.38	28.41	30.29	32.57	34.18
360	9.32	4.23	8.79	0	8.99	12.89	15.02	17.34	18.84	20.2	21.45	22.97	24.03
720	5.38	2.13	5.05	0	5.29	7.2	8.21	9.29	9.98	10.59	11.15	11.82	12.29
1440	3.13	1.15	2.92	0	3.1	4.12	4.65	5.2	5.56	5.87	6.16	6.5	6.73
2880	1.84	0.71	1.74	0	1.81	2.45	2.78	3.13	3.36	3.56	3.74	3.96	4.12
4320	1.32	0.5	1.25	0	1.3	1.75	1.98	2.23	2.39	2.52	2.65	2.8	2.91
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 5050002					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	94.64	58.79	86.82	0	84.98	136.94	171.34	214.8	247.04	279.05	310.94	353.01	384.8
30	56.77	32.87	50.29	0	51.37	80.42	99.65	123.95	141.98	159.87	177.7	201.23	219
45	41.2	24.42	35.94	0	37.19	58.77	73.06	91.11	104.5	117.8	131.04	148.52	161.73
60	32.64	20.17	27.4	0	29.33	47.15	58.95	73.87	84.93	95.91	106.85	121.28	132.19
120	19.12	11.34	16.88	0	17.26	27.28	33.91	42.3	48.52	54.69	60.84	68.96	75.09
180	13.61	7.86	11.77	0	12.32	19.27	23.86	29.68	33.99	38.26	42.53	48.15	52.4
240	11.32	5.5	10.28	0	10.42	15.28	18.5	22.56	25.58	28.57	31.56	35.49	38.47
360	8.18	3.76	7.55	0	7.56	10.89	13.09	15.87	17.93	19.97	22.01	24.7	26.74
720	4.57	1.77	4.3	0	4.28	5.84	6.88	8.19	9.16	10.12	11.08	12.35	13.31

1440	2.63	0.97	2.44	0	2.47	3.33	3.9	4.61	5.14	5.67	6.2	6.89	7.42
2880	1.56	0.57	1.42	0	1.47	1.97	2.3	2.73	3.04	3.35	3.66	4.07	4.37
4320	1.11	0.41	1.03	0	1.04	1.4	1.64	1.95	2.17	2.4	2.62	2.91	3.13
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 5050003-a					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration (min)	x _{bar} (mm h ⁻¹)	s (mm h ⁻¹)	x _m (mm h ⁻¹)	N	2	5	10	25	50	100	200	500	1000	
					0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	103.37	82.38	82.37	0	89.84	162.64	210.84	271.75	316.93	361.77	406.46	465.41	509.96	
30	57.37	38.85	48.07	0	50.99	85.32	108.05	136.78	158.08	179.23	200.3	228.11	249.12	
45	40.25	25.32	34.98	0	36.09	58.47	73.28	92	105.89	119.67	133.41	151.53	165.22	
60	33.46	19.23	28.35	0	30.3	47.3	58.55	72.76	83.31	93.78	104.21	117.97	128.37	
120	18.79	9.96	16.66	0	17.15	25.96	31.78	39.15	44.61	50.03	55.43	62.56	67.95	
180	13.46	6.8	12.16	0	12.34	18.35	22.33	27.36	31.09	34.79	38.48	43.34	47.02	
240	11.09	5.15	10.25	0	10.24	14.8	17.81	21.62	24.44	27.24	30.04	33.72	36.51	
360	8.19	3.71	7.55	0	7.58	10.86	13.03	15.77	17.81	19.83	21.84	24.49	26.5	
720	5.03	2.13	4.65	0	4.68	6.56	7.81	9.38	10.55	11.71	12.87	14.39	15.54	
1440	2.84	1.16	2.63	0	2.65	3.67	4.35	5.21	5.85	6.48	7.11	7.94	8.57	
2880	1.58	0.66	1.46	0	1.47	2.05	2.44	2.93	3.29	3.65	4.01	4.48	4.84	
4320	1.14	0.47	1.04	0	1.06	1.48	1.75	2.1	2.36	2.61	2.87	3.21	3.46	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

HUC 5050003-b					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration (min)	x _{bar} (mm h ⁻¹)	s (mm h ⁻¹)	x _m (mm h ⁻¹)	N	2	5	10	25	50	100	200	500	1000	
					0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	91.29	76.27	71.82	0	78.76	146.17	190.79	247.18	289.01	330.53	371.9	426.48	467.73	
30	54.04	38.99	44.55	0	47.64	82.09	104.91	133.73	155.12	176.34	197.49	225.39	246.48	
45	38.85	26.11	33.11	0	34.56	57.64	72.91	92.22	106.54	120.75	134.91	153.6	167.72	

60	32.8	20.19	27.89	0	29.48	47.33	59.14	74.07	85.14	96.13	107.08	121.53	132.45
120	18.53	10.15	16.07	0	16.86	25.83	31.77	39.28	44.84	50.37	55.87	63.14	68.63
180	13.04	6.95	11.57	0	11.9	18.04	22.11	27.25	31.06	34.84	38.61	43.58	47.34
240	10.51	5.01	9.68	0	9.69	14.11	17.05	20.75	23.5	26.23	28.94	32.53	35.24
360	7.91	3.55	7.29	0	7.33	10.46	12.54	15.17	17.11	19.05	20.97	23.51	25.43
720	4.88	1.95	4.5	0	4.56	6.28	7.42	8.87	9.94	11	12.05	13.45	14.5
1440	2.81	1.01	2.66	0	2.64	3.54	4.13	4.87	5.43	5.98	6.53	7.25	7.79
2880	1.58	0.62	1.51	0	1.48	2.03	2.39	2.85	3.19	3.52	3.86	4.3	4.64
4320	1.11	0.43	1.06	0	1.04	1.42	1.67	1.99	2.22	2.46	2.69	3	3.23
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 5070201		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability											
Duration (min)	\bar{x} (mm h ⁻¹)	s (mm h ⁻¹)	x_m (mm h ⁻¹)	N	2	5	10	25	50	100	200	500	1000
					0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	83.16	37.75	82.24	0	76.96	110.32	132.41	160.32	181.02	201.57	222.05	249.06	269.48
30	54.32	25.16	48.25	0	50.19	72.42	87.14	105.74	119.54	133.24	146.89	164.89	178.5
45	41.49	19.12	38.5	0	38.35	55.25	66.43	80.57	91.06	101.46	111.84	125.52	135.86
60	33.01	15.54	28.88	0	30.46	44.19	53.28	64.77	73.29	81.75	90.18	101.3	109.71
120	19.61	8.47	18.25	0	18.22	25.7	30.66	36.92	41.57	46.18	50.77	56.83	61.41
180	13.75	5.39	13.46	0	12.86	17.63	20.78	24.77	27.72	30.66	33.58	37.44	40.35
240	10.87	4.49	10.16	0	10.13	14.1	16.73	20.05	22.51	24.95	27.39	30.6	33.03
360	7.95	3.1	7.44	0	7.44	10.18	11.99	14.29	15.99	17.67	19.36	21.57	23.25
720	4.73	1.69	4.44	0	4.45	5.95	6.93	8.18	9.11	10.03	10.95	12.16	13.07
1440	2.78	0.87	2.62	0	2.64	3.41	3.92	4.56	5.04	5.51	5.98	6.6	7.07
2880	1.67	0.46	1.63	0	1.59	2	2.27	2.61	2.86	3.11	3.36	3.69	3.94
4320	1.22	0.32	1.21	0	1.17	1.45	1.64	1.87	2.05	2.22	2.4	2.63	2.8
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 5070202					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	132.02	97.5	90.54	0	110.4	204.33	265.47	339.11	391.06	440.58	488.12	548.47	592.54
30	71.41	47.46	49.71	0	62.45	108.16	136.61	169.96	193	214.66	235.21	260.99	279.62
45	49.8	30.5	36.06	0	44.82	74.05	91.68	111.94	125.75	138.59	150.67	165.7	176.48
60	38.57	22.64	27.32	0	35.16	56.79	69.62	84.24	94.13	103.29	111.86	122.49	130.09
120	20.79	10.34	17.27	0	19.73	29.41	34.84	40.82	44.77	48.37	51.69	55.74	58.6
180	14.53	6.77	13.35	0	13.96	20.23	23.68	27.44	29.9	32.13	34.18	36.66	38.41
240	11.37	5.05	10.65	0	11.01	15.64	18.17	20.89	22.66	24.26	25.72	27.49	28.73
360	8.52	3.12	8.37	0	8.44	11.2	12.64	14.14	15.1	15.95	16.72	17.65	18.29
720	4.71	1.54	4.67	0	4.7	6.04	6.72	7.42	7.86	8.25	8.6	9.01	9.3
1440	2.6	0.75	2.48	0	2.61	3.25	3.56	3.89	4.09	4.26	4.42	4.6	4.73
2880	1.45	0.38	1.37	0	1.46	1.78	1.93	2.09	2.19	2.27	2.35	2.43	2.49
4320	1.04	0.29	1	0	1.05	1.29	1.41	1.53	1.61	1.68	1.74	1.81	1.85
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 5100201					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	137.15	122.66	89.9	0	102.98	218.68	301.22	406.4	483.81	559.77	634.53	731.79	804.35
30	77.17	60.09	54.7	0	62.87	120.59	159.07	206.1	239.64	271.86	302.99	342.76	371.96
45	54.03	37.99	42.97	0	46.19	82.81	106.14	133.88	153.25	171.59	189.1	211.2	227.26
60	42.28	29.35	32.22	0	36.34	64.63	82.56	103.8	118.6	132.59	145.92	162.73	174.93
120	21.92	13.85	18.75	0	19.52	32.83	40.94	50.34	56.78	62.79	68.46	75.54	80.63
180	15.76	8.82	14.45	0	14.56	22.94	27.83	33.35	37.05	40.46	43.64	47.56	50.35
240	12.32	6.61	11.27	0	11.5	17.75	21.35	25.37	28.05	30.51	32.79	35.6	37.59
360	9.51	4.31	9.3	0	9.18	13.15	15.32	17.67	19.21	20.59	21.86	23.4	24.48

720	5.28	2.04	5.16	0	5.2	7.03	7.99	9	9.65	10.23	10.75	11.38	11.82
1440	2.91	0.99	2.78	0	2.9	3.76	4.21	4.67	4.96	5.21	5.44	5.72	5.91
2880	1.66	0.61	1.58	0	1.64	2.18	2.47	2.76	2.95	3.12	3.27	3.45	3.57
4320	1.18	0.4	1.12	0	1.18	1.52	1.7	1.89	2.01	2.11	2.2	2.31	2.39
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 5130101					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	124.14	119.12	86.36	0	88.73	199.28	281.1	387.79	467.69	547.02	625.88	729.51	807.5	
30	72.98	58.25	55.88	0	58.68	114.52	152.17	198.52	231.75	263.78	294.83	334.63	363.92	
45	51.75	36.41	45.72	0	44.23	79.33	101.69	128.28	146.86	164.45	181.24	202.44	217.84	
60	40.91	28.62	34.29	0	35.05	62.64	80.18	101	115.53	129.28	142.39	158.94	170.95	
120	21.16	13.47	19.05	0	18.8	31.74	39.66	48.85	55.15	61.04	66.6	73.54	78.54	
180	15.45	8.52	14.39	0	14.33	22.41	27.1	32.38	35.91	39.16	42.19	45.92	48.57	
240	12.07	6.51	10.99	0	11.26	17.41	20.96	24.94	27.59	30.02	32.28	35.06	37.04	
360	9.34	4.38	9.1	0	8.96	13.02	15.26	17.71	19.31	20.76	22.09	23.71	24.84	
720	5.26	2.03	5.08	0	5.18	7	7.95	8.96	9.61	10.18	10.71	11.33	11.77	
1440	2.92	1.01	2.8	0	2.91	3.79	4.24	4.72	5.02	5.28	5.52	5.81	6	
2880	1.72	0.65	1.64	0	1.7	2.28	2.58	2.9	3.1	3.29	3.45	3.65	3.78	
4320	1.22	0.41	1.16	0	1.22	1.57	1.76	1.94	2.06	2.17	2.27	2.38	2.46	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

HUC 6010101					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000	
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	98.26	79.5	80.62	0	78.43	154.53	206.17	270	315.9	360.24	403.29	458.55	499.3	
30	56.32	35.98	48.82	0	49.97	84.56	105.76	130.37	147.26	163.06	177.98	196.62	210.05	

45	41	21.96	38.37	0	38.3	59.05	70.99	84.33	93.22	101.38	108.96	118.27	124.87
60	32.39	16.38	29.83	0	30.64	46	54.68	64.27	70.61	76.39	81.73	88.27	92.89
120	18.08	7.14	17.51	0	17.77	24.19	27.58	31.17	33.48	35.54	37.41	39.66	41.22
180	13.02	4.79	12.66	0	12.89	17.14	19.34	21.66	23.14	24.45	25.64	27.06	28.04
240	10.23	3.78	9.87	0	10.12	13.48	15.22	17.06	18.23	19.26	20.2	21.33	22.11
360	7.54	2.57	7.39	0	7.51	9.76	10.9	12.1	12.85	13.52	14.12	14.84	15.34
720	4.33	1.25	4.23	0	4.35	5.41	5.94	6.47	6.81	7.1	7.36	7.67	7.88
1440	2.46	0.69	2.4	0	2.48	3.06	3.34	3.64	3.82	3.98	4.12	4.29	4.4
2880	1.44	0.41	1.39	0	1.45	1.79	1.97	2.14	2.25	2.34	2.43	2.53	2.6
4320	1.06	0.3	1.03	0	1.07	1.32	1.44	1.57	1.65	1.72	1.78	1.86	1.91
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 6010102		s	x _m	N	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
					2	5	10	25	50	100	200	500	1000	
Duration	x _{bar}	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
(min)	(mm h ⁻¹)													
15	108.15	87.7	82.61	0	86.21	170.14	227.16	297.68	348.42	397.44	445.05	506.2	551.29	
30	61.94	40.7	51.83	0	54.4	93.58	117.86	146.24	165.81	184.17	201.58	223.39	239.13	
45	46.69	25.34	43.35	0	43.47	67.46	81.32	96.85	107.22	116.74	125.6	136.5	144.24	
60	37.94	20.09	35.38	0	35.53	54.49	65.36	77.47	85.53	92.92	99.77	108.19	114.15	
120	21.1	9.83	20.7	0	20.27	29.37	34.39	39.85	43.42	46.66	49.63	53.23	55.77	
180	14.97	6.34	14.46	0	14.59	20.36	23.46	26.79	28.94	30.87	32.63	34.76	36.24	
240	11.84	4.91	11.64	0	11.57	16.02	18.4	20.95	22.59	24.06	25.39	27.01	28.14	
360	8.81	3.37	8.63	0	8.69	11.7	13.28	14.94	16.01	16.96	17.82	18.85	19.57	
720	5.16	1.7	4.95	0	5.15	6.63	7.38	8.15	8.64	9.08	9.46	9.93	10.24	
1440	2.95	0.89	2.88	0	2.96	3.72	4.1	4.49	4.73	4.95	5.14	5.37	5.52	
2880	1.7	0.56	1.61	0	1.7	2.18	2.43	2.69	2.85	2.99	3.12	3.27	3.37	
4320	1.22	0.37	1.19	0	1.22	1.54	1.7	1.86	1.96	2.05	2.13	2.23	2.29	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

HUC 6010104					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	124.14	119.12	86.36	0	88.73	199.28	281.1	387.79	467.69	547.02	625.88	729.51	807.5
30	72.98	58.25	55.88	0	58.68	114.52	152.17	198.52	231.75	263.78	294.83	334.63	363.92
45	51.75	36.41	45.72	0	44.23	79.33	101.69	128.28	146.86	164.45	181.24	202.44	217.84
60	40.91	28.62	34.29	0	35.05	62.64	80.18	101	115.53	129.28	142.39	158.94	170.95
120	21.16	13.47	19.05	0	18.8	31.74	39.66	48.85	55.15	61.04	66.6	73.54	78.54
180	15.45	8.52	14.39	0	14.33	22.41	27.1	32.38	35.91	39.16	42.19	45.92	48.57
240	12.07	6.51	10.99	0	11.26	17.41	20.96	24.94	27.59	30.02	32.28	35.06	37.04
360	9.34	4.38	9.1	0	8.96	13.02	15.26	17.71	19.31	20.76	22.09	23.71	24.84
720	5.26	2.03	5.08	0	5.18	7	7.95	8.96	9.61	10.18	10.71	11.33	11.77
1440	2.92	1.01	2.8	0	2.91	3.79	4.24	4.72	5.02	5.28	5.52	5.81	6
2880	1.72	0.65	1.64	0	1.7	2.28	2.58	2.9	3.1	3.29	3.45	3.65	3.78
4320	1.22	0.41	1.16	0	1.22	1.57	1.76	1.94	2.06	2.17	2.27	2.38	2.46
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 6010205					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								
Duration	x _{bar}	s	x _m	N	2	5	10	25	50	100	200	500	1000
(min)	(mm h ⁻¹)	(mm h ⁻¹)	(mm h ⁻¹)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001
15	109.78	97.94	83.55	0	82.56	174.99	240.84	324.69	386.37	446.87	506.39	583.8	641.53
30	63.91	46.17	52.04	0	54	98.49	127.16	161.49	185.6	208.51	230.45	258.22	278.46
45	45.44	28.36	41.24	0	40.64	67.86	84.39	103.48	116.52	128.68	140.14	154.43	164.69
60	35.8	21.69	31.19	0	32.33	53.1	65.58	79.88	89.61	98.65	107.14	117.7	125.26
120	19.06	9.59	17.63	0	18.05	27.03	32.1	37.69	41.39	44.76	47.87	51.67	54.36
180	13.83	6.23	13.11	0	13.36	19.09	22.22	25.61	27.82	29.81	31.64	33.85	35.41
240	10.8	4.83	10.04	0	10.44	14.88	17.3	19.92	21.62	23.16	24.56	26.27	27.46
360	8.16	3.24	7.99	0	8.02	10.93	12.47	14.11	15.16	16.1	16.95	17.98	18.69
720	4.62	1.5	4.49	0	4.62	5.92	6.57	7.25	7.68	8.06	8.4	8.8	9.08

1440	2.57	0.78	2.49	0	2.58	3.24	3.58	3.92	4.13	4.32	4.49	4.69	4.83
2880	1.51	0.48	1.46	0	1.51	1.92	2.13	2.35	2.48	2.6	2.71	2.84	2.93
4320	1.1	0.32	1.06	0	1.11	1.38	1.51	1.65	1.74	1.81	1.88	1.96	2.01
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year

HUC 6010206					Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									
Duration (min)	x _{bar} (mm h ⁻¹)	s (mm h ⁻¹)	x _m (mm h ⁻¹)	N	2	5	10	25	50	100	200	500	1000	
					0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
15	124.14	119.12	86.36	0	88.73	199.28	281.1	387.79	467.69	547.02	625.88	729.51	807.5	
30	72.98	58.25	55.88	0	58.68	114.52	152.17	198.52	231.75	263.78	294.83	334.63	363.92	
45	51.75	36.41	45.72	0	44.23	79.33	101.69	128.28	146.86	164.45	181.24	202.44	217.84	
60	40.91	28.62	34.29	0	35.05	62.64	80.18	101	115.53	129.28	142.39	158.94	170.95	
120	21.16	13.47	19.05	0	18.8	31.74	39.66	48.85	55.15	61.04	66.6	73.54	78.54	
180	15.45	8.52	14.39	0	14.33	22.41	27.1	32.38	35.91	39.16	42.19	45.92	48.57	
240	12.07	6.51	10.99	0	11.26	17.41	20.96	24.94	27.59	30.02	32.28	35.06	37.04	
360	9.34	4.38	9.1	0	8.96	13.02	15.26	17.71	19.31	20.76	22.09	23.71	24.84	
720	5.26	2.03	5.08	0	5.18	7	7.95	8.96	9.61	10.18	10.71	11.33	11.77	
1440	2.92	1.01	2.8	0	2.91	3.79	4.24	4.72	5.02	5.28	5.52	5.81	6	
2880	1.72	0.65	1.64	0	1.7	2.28	2.58	2.9	3.1	3.29	3.45	3.65	3.78	
4320	1.22	0.41	1.16	0	1.22	1.57	1.76	1.94	2.06	2.17	2.27	2.38	2.46	
					2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

IV. Tabulated Probability-Based IDF Curves for the Eight Gauges

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	346.82	539.77	697.92	897.74	1045.98	1193.13	1339.74	1533.16	1679.34	RCM3-CGCM3 (future)
2	92.31	337.9	489.89	630.15	807.38	938.86	1069.37	1199.4	1370.95	1500.61	RCM3-GFDL (future)
3	88.46	326.76	487.26	590.27	722.9	841.73	962.23	1082.28	1240.67	1360.38	RCM3-GFDL (historical)
4	84.62	313.03	485.3	580.24	720.34	821.29	918.95	1016.26	1144.64	1241.66	HRM3-HadCM3 (historical)
5	80.77	300.91	460.98	556.7	697.72	784.87	871.38	957.57	1071.29	1157.23	HRM3-HadCM3 (future)
6	76.92	293.86	427.19	542.46	645.42	721.81	797.62	873.16	972.83	1048.15	HRM3-GFDL (future)
7	73.08	278.38	400.52	481.38	583.55	659.34	734.58	809.54	908.43	983.18	HRM3-GFDL (historical)
8	69.23	278.03	399.5	456.74	529.92	597.89	665.36	732.58	821.26	888.29	RCM3-CGCM3 (historical)
9	65.38	261.73	373.28	438.3	529.07	582.73	636	689.07	759.08	812	MM5I-HadCM3 (future)
10	61.54	256.27	365.79	425.87	492.31	541.59	590.52	640.31	710.79	764.07	WRF3-CGCM3 (historical)
11	57.69	253.97	348.78	406.41	479.23	533.26	586.88	639.26	703.58	752.18	WRF3-CGCM3 (future)
12	53.85	253.91	328.18	377.31	439.39	485.44	531.15	576.7	636.79	682.2	WRF3-CCSM (future)
13	50.00	232.86	322.89	368.55	426.26	469.06	511.55	553.89	610.22	658.12	MM5I-CCSM (historical)
14	46.15	231.59	296.19	339.12	402.01	450.58	498.8	546.84	609.74	651.95	MM5I-HadCM3 (historical)
15	42.31	224.43	291.9	338.12	398.78	443.04	486.97	530.75	588.5	632.14	WRF3-CCSM (historical)
16	38.46	223.56	284.91	336.53	391.1	430.4	469.41	508.28	559.56	598.31	ECP2-GFDL (future)
17	34.62	220.59	284.71	328	382.45	422.85	462.94	502.89	555.59	595.43	MM5I-CCSM (future)
18	30.77	219.82	279.43	316.42	363.16	397.83	432.24	466.54	511.78	545.97	ECP2-HadCM3 (historical)
19	26.92	206.43	270.66	301.26	343.59	378.54	413.23	447.8	493.41	527.87	ECP2-GFDL (historical)
20	23.08	202.86	259.18	296.47	339.94	368.63	397.1	425.48	462.91	491.2	ECP2-HadCM3 (future)
21	19.23	133.19	179.43	210.05	248.74	277.44	305.93	335.29	383.38	419.72	Observed
22	15.38	99.8	136.4	175.72	225.4	262.26	298.84	334.31	371.76	400.06	CRCM-CGCM3 (future)
23	11.54	94.56	135.37	158.92	188.68	210.75	232.66	254.5	283.3	305.07	CRCM-CGCM3 (historical)
24	7.69	79.05	123.78	143.13	167.58	185.72	203.72	221.66	245.32	263.21	CRCM-CCSM (future)
25	3.85	77.01	109.81	130.17	155.9	174.98	193.93	212.8	237.71	256.53	CRCM-CCSM (historical)
Gauge: 440561; Duration: 15 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	237.23	366.73	473.2	607.74	707.54	806.61	905.32	1035.55	1133.97	RCM3-CGCM3 (future)
2	92.31	231.19	333.14	427.57	546.9	635.41	723.28	810.82	926.32	1013.61	RCM3-GFDL (future)
3	88.46	223.59	331.98	401.42	490.92	569.58	650.65	731.43	838	918.54	RCM3-GFDL (historical)
4	84.62	214.42	330.58	394.71	487.91	557.32	623.23	688.9	775.54	841.02	HRM3-HadCM3 (historical)
5	80.77	205.9	314.4	377.81	473.97	532.76	591.13	649.28	726	783.98	HRM3-HadCM3 (future)
6	76.92	201.44	290.68	369.49	439.1	490.74	542.01	593.08	660.46	711.38	HRM3-GFDL (future)
7	73.08	190.86	273.45	328.14	397.23	448.49	499.37	550.06	616.94	667.49	HRM3-GFDL (historical)
8	69.23	190.5	272.98	311.76	361.17	407.2	452.88	498.4	558.46	603.84	RCM3-CGCM3 (historical)
9	65.38	179.6	255.24	299.13	360.75	397.09	433.17	469.12	516.54	552.38	MM5I-HadCM3 (future)
10	61.54	175.87	250.03	290.85	335.85	369.24	402.37	436.46	484.28	520.43	WRF3-CGCM3 (historical)
11	57.69	174.38	238.66	277.77	327.17	363.83	400.21	435.39	478.95	511.87	WRF3-CGCM3 (future)
12	53.85	174.35	224.71	258.03	300.13	331.36	362.37	393.26	434.01	464.81	WRF3-CCSM (future)
13	50.00	160.05	221.11	252.07	291.18	320.2	349	377.7	416.25	448.79	MM5I-CCSM (historical)
14	46.15	159.07	203.06	232.21	274.85	307.84	340.58	373.21	415.57	444.18	MM5I-HadCM3 (historical)
15	42.31	154.34	200.13	231.54	272.75	302.82	332.67	362.41	401.64	431.3	WRF3-CCSM (historical)
16	38.46	153.74	195.42	230.38	267.52	294.21	320.7	347.1	381.93	408.26	ECP2-GFDL (future)
17	34.62	151.68	195.19	224.73	261.76	289.23	316.5	343.67	379.51	406.6	MM5I-CCSM (future)
18	30.77	151.15	191.66	216.77	248.49	272.03	295.39	318.66	349.37	372.58	ECP2-HadCM3 (historical)
19	26.92	142.03	185.77	206.59	235.37	259.15	282.76	306.28	337.31	360.76	ECP2-GFDL (historical)
20	23.08	139.63	177.95	203.32	232.88	252.39	271.75	291.05	316.5	335.74	ECP2-HadCM3 (future)
21	19.23	92.09	123.68	144.6	171.03	190.64	210.1	229.49	255.07	274.41	CRCM-CGCM3 (future)
22	15.38	69.23	93.6	109.73	130.11	145.23	160.24	175.19	194.92	209.83	CRCM-CGCM3 (historical)
23	11.54	65.65	85.69	98.96	115.98	132.85	149.6	166.28	188.29	204.93	Observed
24	7.69	54.97	76.11	93.24	115.73	128.16	140.51	152.81	169.04	181.31	CRCM-CCSM (future)
25	3.85	48.06	75.24	90.11	107.79	120.91	133.93	146.91	164.02	176.96	CRCM-CCSM (historical)
Gauge: 440561; Duration: 30 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	174.73	266.5	342.45	438.43	509.63	580.3	650.72	743.62	813.83	RCM3-CGCM3 (future)
2	92.31	170.36	242.59	309.88	394.98	458.11	520.78	583.22	665.59	727.85	RCM3-GFDL (future)
3	88.46	164.8	242.53	292.24	356.38	410.56	468.3	525.84	601.76	659.13	RCM3-GFDL (historical)
4	84.62	158.35	241.47	287.52	352.38	403.96	451.19	498.25	560.34	607.26	HRM3-HadCM3 (historical)
5	80.77	151.77	230.2	273.95	344.29	386.41	428.21	469.86	524.81	566.34	HRM3-HadCM3 (future)
6	76.92	149.02	211.88	269.83	319.89	357.03	393.9	430.63	479.09	515.72	HRM3-GFDL (future)
7	73.08	141.23	200.67	240.03	289.75	326.64	363.26	399.74	447.87	484.25	HRM3-GFDL (historical)
8	69.23	140.81	200.62	228.61	264.09	297.3	330.26	363.1	406.43	439.18	RCM3-CGCM3 (historical)
9	65.38	133.12	187.84	219.32	263.97	290.2	316.24	342.18	376.41	402.28	MM5I-HadCM3 (future)
10	61.54	130.39	183.9	213.54	246.02	270.11	294.03	319.18	353.82	380	WRF3-CGCM3 (historical)
11	57.69	129.41	175.9	204.23	240.02	266.57	292.92	317.85	349.29	373.05	WRF3-CGCM3 (future)
12	53.85	129.4	165.82	189.93	220.4	243	265.43	287.79	317.28	339.57	WRF3-CCSM (future)
13	50.00	119	163.22	185.6	213.89	234.87	255.7	276.45	304.88	328.5	MM5I-CCSM (historical)
14	46.15	118.14	150.21	171.37	202.25	226.19	249.96	273.64	303.83	324.53	MM5I-HadCM3 (historical)
15	42.31	114.89	148.07	170.88	200.81	222.65	244.32	265.92	294.42	315.96	WRF3-CCSM (historical)
16	38.46	114.45	144.73	169.97	196.99	216.36	235.59	254.75	280.02	299.12	ECP2-GFDL (future)
17	34.62	112.88	144.42	166.07	193.03	213.03	232.89	252.67	278.77	298.49	MM5I-CCSM (future)
18	30.77	112.5	141.94	160.15	183.15	200.21	217.14	234.02	256.28	273.11	ECP2-HadCM3 (historical)
19	26.92	105.84	137.76	152.9	173.9	191.22	208.42	225.55	248.16	265.25	ECP2-GFDL (historical)
20	23.08	104.14	132.06	150.54	172.04	186.23	200.32	214.36	232.88	246.87	ECP2-HadCM3 (future)
21	19.23	69.31	92.51	107.88	127.29	141.69	155.99	170.23	189.03	203.23	CRCM-CGCM3 (future)
22	15.38	52.45	70.44	82.35	97.4	108.57	119.65	130.7	145.27	156.28	CRCM-CGCM3 (historical)
23	11.54	49.8	64.64	74.46	86.88	96.09	105.23	114.33	127.8	138.5	Observed
24	7.69	41.84	57.55	67.96	81.33	92.17	102.93	113.66	126.35	135.43	CRCM-CCSM (future)
25	3.85	37.67	55.14	66.71	81.1	90.85	100.53	110.18	122.9	132.51	CRCM-CCSM (historical)
Gauge: 440561; Duration: 45 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	156.68	245.52	318.09	409.8	477.82	545.35	612.63	701.39	768.48	RCM3-CGCM3 (future)
2	92.31	152.61	222.63	287.01	368.35	428.7	488.6	548.28	627.01	686.52	RCM3-GFDL (future)
3	88.46	147.56	220.99	268.21	328.94	384.42	439.76	494.9	567.65	622.63	RCM3-GFDL (historical)
4	84.62	141.22	220.15	263.57	328.66	373.98	418.7	463.25	522.03	566.46	HRM3-HadCM3 (historical)
5	80.77	135.9	208.86	253.51	317.36	357.27	396.89	436.36	488.44	527.79	HRM3-HadCM3 (future)
6	76.92	132.47	194.02	246.1	293.15	328.06	362.71	397.24	442.79	477.21	HRM3-GFDL (future)
7	73.08	125.47	181.27	218.21	264.89	299.52	333.89	368.14	413.32	447.47	HRM3-GFDL (historical)
8	69.23	125.39	180.66	206.77	240.26	271.28	302.06	332.74	373.2	403.79	RCM3-CGCM3 (historical)
9	65.38	117.86	168.7	198.46	239.77	264.25	288.54	312.75	344.69	368.83	MM5I-HadCM3 (future)
10	61.54	115.39	165.37	192.69	223	245.49	267.81	290.28	322.38	346.64	WRF3-CGCM3 (historical)
11	57.69	114.3	157.51	183.75	216.92	241.52	265.94	290.04	319.38	341.56	WRF3-CGCM3 (future)
12	53.85	114.27	148.11	170.49	198.78	219.76	240.59	261.34	288.72	309.42	WRF3-CCSM (future)
13	50.00	104.7	145.71	166.53	192.83	212.35	231.72	251.01	276.48	298.18	MM5I-CCSM (historical)
14	46.15	104.18	133.51	153.04	181.68	203.78	225.71	247.56	276.39	295.72	MM5I-HadCM3 (historical)
15	42.31	100.85	131.57	152.58	180.17	200.3	220.28	240.18	266.45	286.3	WRF3-CCSM (historical)
16	38.46	100.45	128.35	151.89	176.68	194.56	212.31	229.99	253.32	270.95	ECP2-GFDL (future)
17	34.62	99.13	128.32	147.93	172.67	191.02	209.24	227.38	251.33	269.42	MM5I-CCSM (future)
18	30.77	98.78	125.89	142.73	164	179.79	195.46	211.07	231.66	247.23	ECP2-HadCM3 (historical)
19	26.92	92.71	121.85	135.76	154.97	170.84	186.6	202.29	223	238.66	ECP2-GFDL (historical)
20	23.08	91.07	116.64	133.58	153.33	166.37	179.31	192.2	209.21	222.07	ECP2-HadCM3 (future)
21	19.23	59.52	80.43	94.28	111.77	124.74	137.63	150.46	167.39	180.19	CRCM-CGCM3 (future)
22	15.38	44.46	60.5	71.12	84.54	94.49	104.37	114.22	127.2	137.02	CRCM-CGCM3 (historical)
23	11.54	42.09	55.26	63.98	74.99	83.17	91.28	99.36	110.02	118.08	CRCM-CCSM (future)
24	7.69	35.13	48.95	58.1	69.67	78.24	86.76	95.24	106.43	114.89	CRCM-CCSM (historical)
25	3.85	30.94	44.59	53.62	65.04	73.51	81.91	90.29	101.33	109.69	Observed
Gauge: 440561; Duration: 1 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	114.93	190.42	250.58	326.58	382.97	438.94	494.7	568.27	623.88	RCM3-CGCM3 (future)
2	92.31	111.72	171.48	224.88	292.36	342.41	392.1	441.61	506.92	556.28	RCM3-GFDL (future)
3	88.46	107.96	167.36	206.1	261.36	307.9	354.09	400.12	460.85	506.74	RCM3-GFDL (historical)
4	84.62	102.43	167.01	202.07	255.5	292.15	328.53	364.77	412.59	448.73	HRM3-HadCM3 (historical)
5	80.77	99.57	156.79	198.62	245.93	278.47	310.77	342.95	385.41	417.5	HRM3-HadCM3 (future)
6	76.92	95.47	148.97	186.64	224.34	252.31	280.07	307.74	344.23	371.81	HRM3-GFDL (future)
7	73.08	90.82	134.98	164.54	201.88	229.58	257.08	284.47	320.62	347.94	HRM3-GFDL (historical)
8	69.23	90.34	133.58	154.21	181.24	205.78	230.13	254.39	286.4	310.59	RCM3-CGCM3 (historical)
9	65.38	84.28	124.09	148.18	180.27	199.6	218.79	237.91	263.13	282.2	MM5I-HadCM3 (future)
10	61.54	82.47	122	143.05	166.99	184.76	202.39	219.96	243.57	262.47	WRF3-CGCM3 (historical)
11	57.69	81.34	115.16	135.6	161.43	180.6	199.62	218.57	243.14	260.65	WRF3-CGCM3 (future)
12	53.85	81.24	107.76	125.26	147.36	163.76	180.04	196.26	217.65	233.82	WRF3-CCSM (future)
13	50.00	73.97	105.89	122.21	142.82	158.12	173.3	188.43	208.39	223.76	MM5I-CCSM (historical)
14	46.15	73.9	96.16	111.3	133.69	150.77	167.73	184.63	206.92	223.47	MM5I-HadCM3 (historical)
15	42.31	70.85	94.74	110.9	132.21	147.73	163.13	178.47	198.72	214.02	WRF3-CCSM (historical)
16	38.46	70.56	92.43	110.66	129.53	143.34	157.05	170.72	188.74	202.37	ECP2-GFDL (future)
17	34.62	69.74	92.05	107	125.89	139.9	153.81	167.67	185.96	199.77	MM5I-CCSM (future)
18	30.77	69.47	90.3	103.38	119.89	132.14	144.3	156.42	172.41	184.49	ECP2-HadCM3 (historical)
19	26.92	64.9	86.92	97.56	112.17	124.25	136.24	148.19	163.96	175.87	ECP2-GFDL (historical)
20	23.08	63.52	82.99	95.88	111	120.97	130.87	140.73	153.74	163.57	ECP2-HadCM3 (future)
21	19.23	40.06	55.47	65.67	78.57	88.13	97.62	107.08	119.56	129	CRCM-CGCM3 (future)
22	15.38	29.14	40.71	48.37	58.04	65.22	72.35	79.45	88.82	95.9	CRCM-CGCM3 (historical)
23	11.54	27.42	36.83	43.05	50.92	56.75	62.54	68.32	75.93	81.68	CRCM-CCSM (future)
24	7.69	22.6	32.31	38.74	46.86	52.89	58.87	64.83	72.7	78.64	CRCM-CCSM (historical)
25	3.85	18.43	28.62	35.36	43.89	50.21	56.49	62.74	70.99	77.23	Observed
Gauge: 440561; Duration: 2 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	93.37	156.92	207.26	270.86	318.04	364.87	411.54	473.1	519.63	RCM3-CGCM3 (future)
2	92.31	90.71	141.09	185.79	242.27	284.17	325.77	367.21	421.88	463.2	RCM3-GFDL (future)
3	88.46	87.66	137.06	169.4	216.72	255.75	294.48	333.07	383.99	422.47	RCM3-GFDL (historical)
4	84.62	82.97	136.84	165.99	210.54	241.06	271.36	301.54	341.37	371.47	HRM3-HadCM3 (historical)
5	80.77	80.89	128.11	164.12	202.54	229.66	256.57	283.39	318.77	345.51	HRM3-HadCM3 (future)
6	76.92	77.21	122.49	152.87	184.16	207.37	230.41	253.36	283.65	306.53	HRM3-GFDL (future)
7	73.08	73.57	110.09	134.6	165.58	188.56	211.37	234.1	264.08	286.74	HRM3-GFDL (historical)
8	69.23	73.06	108.73	125.78	148.25	168.54	188.68	208.74	235.21	255.22	RCM3-CGCM3 (historical)
9	65.38	68.03	100.88	120.91	147.32	163.3	179.16	194.97	215.82	231.58	MM51-HadCM3 (future)
10	61.54	66.58	99.26	116.55	136.35	151.03	165.61	180.14	199.3	214.86	WRFG-CGCM3 (historical)
11	57.69	65.57	93.47	110.32	131.6	147.39	163.07	178.68	199.28	213.79	WRFG-CGCM3 (future)
12	53.85	65.48	87.36	101.78	120	133.52	146.94	160.31	177.95	191.28	WRFG-CCSM (future)
13	50.00	59.62	85.82	99.29	116.31	128.94	141.47	153.95	170.43	182.88	MM51-HadCM3 (historical)
14	46.15	59.46	77.75	90.2	108.66	122.71	136.65	150.54	168.87	182.72	MM51-CCSM (historical)
15	42.31	56.94	76.6	89.87	107.38	120.13	132.78	145.38	162.01	174.58	WRFG-CCSM (historical)
16	38.46	56.7	74.75	89.73	105.17	116.52	127.79	139.02	153.83	165.03	ECP2-GFDL (future)
17	34.62	56.06	74.35	86.61	102.1	113.59	124.99	136.36	151.35	162.68	MM51-CCSM (future)
18	30.77	55.84	72.95	83.71	97.31	107.39	117.4	127.38	140.54	150.49	ECP2-HadCM3 (historical)
19	26.92	52.11	70.12	78.84	90.79	100.69	110.51	120.29	133.2	142.96	ECP2-GFDL (historical)
20	23.08	50.96	66.9	77.46	89.86	98.04	106.16	114.25	124.92	132.98	ECP2-HadCM3 (future)
21	19.23	31.84	44.37	52.66	63.13	70.9	78.62	86.3	96.44	104.11	CRCM-CGCM3 (future)
22	15.38	23.02	32.37	38.56	46.38	52.19	57.95	63.69	71.26	76.98	CRCM-CGCM3 (historical)
23	11.54	21.63	29.21	34.23	40.58	45.28	49.95	54.61	60.75	65.39	CRCM-CCSM (future)
24	7.69	17.76	25.56	30.73	37.26	42.1	46.91	51.7	58.02	62.79	CRCM-CCSM (historical)
25	3.85	13.89	20.43	24.76	30.23	34.29	38.32	42.34	47.63	51.63	Observed
Gauge: 440561; Duration: 3 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	73.74	121.32	159.35	207.39	243.04	278.42	313.67	360.17	395.32	RCM3-CGCM3 (future)
2	92.31	71.7	109.35	143.1	185.75	217.39	248.8	280.09	321.37	352.57	RCM3-GFDL (future)
3	88.46	69.29	106.95	131.48	165.98	195.37	224.55	253.62	291.96	320.95	RCM3-GFDL (historical)
4	84.62	65.82	106.7	128.94	162.78	186	209.05	232.01	262.31	285.21	HRM3-HadCM3 (historical)
5	80.77	63.89	100.32	126.36	156.72	177.33	197.79	218.17	245.06	265.39	HRM3-HadCM3 (future)
6	76.92	61.39	95.01	119.26	143.2	160.96	178.59	196.15	219.32	236.83	HRM3-GFDL (future)
7	73.08	58.37	86.44	105.21	128.92	146.51	163.97	181.36	204.31	221.65	HRM3-GFDL (historical)
8	69.23	58.1	85.63	98.75	115.89	131.49	146.97	162.39	182.75	198.13	RCM3-CGCM3 (historical)
9	65.38	54.24	79.59	94.86	115.32	127.62	139.83	151.99	168.03	180.16	MM5I-HadCM3 (future)
10	61.54	53.09	78.22	91.64	106.87	118.17	129.39	140.56	155.73	167.77	WRF3-CGCM3 (historical)
11	57.69	52.38	73.92	86.94	103.4	115.61	127.72	139.8	155.3	166.44	WRF3-CGCM3 (future)
12	53.85	52.33	69.21	80.35	94.43	104.87	115.23	125.56	139.19	149.48	WRF3-CCSM (future)
13	50.00	47.65	68.03	78.42	91.55	101.29	110.96	120.59	133.3	143.17	MM5I-CCSM (historical)
14	46.15	47.65	61.85	71.5	85.74	96.63	107.45	118.22	132.43	142.91	MM5I-HadCM3 (historical)
15	42.31	45.71	60.94	71.24	84.84	94.74	104.57	114.36	127.28	137.04	WRF3-CCSM (historical)
16	38.46	45.52	59.44	71.06	83.11	91.92	100.67	109.38	120.87	129.56	ECP2-GFDL (future)
17	34.62	44.99	59.23	68.78	80.85	89.8	98.68	107.53	119.21	128.04	MM5I-CCSM (future)
18	30.77	44.81	58.11	66.44	76.97	84.77	92.53	100.25	110.44	118.14	ECP2-HadCM3 (historical)
19	26.92	41.89	55.97	62.77	72.09	79.8	87.46	95.1	105.16	112.77	ECP2-GFDL (historical)
20	23.08	41.02	53.45	61.69	71.35	77.72	84.04	90.33	98.64	104.92	ECP2-HadCM3 (future)
21	19.23	25.97	35.86	42.41	50.68	56.82	62.91	68.98	76.99	83.04	CRCM-CGCM3 (future)
22	15.38	18.97	26.41	31.33	37.56	42.18	46.76	51.33	57.35	61.91	CRCM-CGCM3 (historical)
23	11.54	17.87	23.92	27.93	32.99	36.75	40.48	44.19	49.09	52.8	CRCM-CCSM (future)
24	7.69	14.74	21	25.15	30.39	34.28	38.14	41.99	47.06	50.89	CRCM-CCSM (historical)
25	3.85	11.37	16.43	19.77	24	27.14	30.25	33.35	37.45	40.54	Observed
Gauge: 440561; Duration: 4 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	81.04	136.27	180.01	235.28	276.28	316.98	357.53	411.03	451.46	RCM3-CGCM3 (future)
2	92.31	78.74	122.51	161.35	210.43	246.85	282.99	319	366.51	402.41	RCM3-GFDL (future)
3	88.46	76.08	119.01	147.11	188.23	222.14	255.8	289.34	333.59	367.03	RCM3-GFDL (historical)
4	84.62	72.01	118.82	144.15	182.86	209.39	235.71	261.94	296.55	322.7	HRM3-HadCM3 (historical)
5	80.77	70.2	111.24	142.52	175.91	199.47	222.85	246.16	276.9	300.13	HRM3-HadCM3 (future)
6	76.92	67	106.35	132.75	159.93	180.1	200.12	220.06	246.37	266.26	HRM3-GFDL (future)
7	73.08	63.84	95.57	116.87	143.79	163.76	183.58	203.33	229.38	249.07	HRM3-GFDL (historical)
8	69.23	63.39	94.39	109.2	128.75	146.38	163.89	181.32	204.33	221.72	RCM3-CGCM3 (historical)
9	65.38	59.02	87.56	104.98	127.92	141.81	155.59	169.33	187.45	201.14	MM5I-HadCM3 (future)
10	61.54	57.76	86.17	101.18	118.38	131.14	143.81	156.43	173.09	186.62	WRFG-CGCM3 (historical)
11	57.69	56.89	81.13	95.77	114.27	127.99	141.61	155.18	173.09	185.67	WRFG-CGCM3 (future)
12	53.85	56.81	75.82	88.35	104.19	115.94	127.6	139.22	154.55	166.13	WRFG-CCSM (future)
13	50.00	51.71	74.48	86.18	100.97	111.94	122.82	133.67	147.98	158.8	MM5I-HadCM3 (historical)
14	46.15	51.58	67.47	78.29	94.35	106.56	118.67	130.75	146.68	158.72	MM5I-CCSM (historical)
15	42.31	49.38	66.47	78	93.23	104.31	115.3	126.26	140.71	151.64	WRFG-CCSM (historical)
16	38.46	49.18	64.87	77.89	91.3	101.17	110.96	120.72	133.59	143.32	ECP2-GFDL (future)
17	34.62	48.62	64.51	75.16	88.62	98.6	108.51	118.38	131.4	141.25	MM5I-CCSM (future)
18	30.77	48.43	63.3	72.65	84.46	93.23	101.93	110.59	122.03	130.67	ECP2-HadCM3 (historical)
19	26.92	45.19	60.83	68.42	78.81	87.41	95.94	104.45	115.67	124.15	ECP2-GFDL (historical)
20	23.08	44.18	58.04	67.22	78	85.11	92.16	99.19	108.47	115.48	ECP2-HadCM3 (future)
21	19.23	27.58	38.46	45.66	54.76	61.51	68.21	74.89	83.7	90.36	CRCM-CGCM3 (future)
22	15.38	19.91	28.03	33.41	40.2	45.24	50.25	55.23	61.81	66.78	CRCM-CGCM3 (historical)
23	11.54	18.71	25.29	29.65	35.16	39.24	43.3	47.34	52.67	56.7	CRCM-CCSM (future)
24	7.69	15.34	22.12	26.61	32.28	36.48	40.66	44.82	50.31	54.46	CRCM-CCSM (historical)
25	3.85	8.84	12.38	14.72	17.68	19.87	22.05	24.22	27.08	29.24	Observed
Gauge: 440561; Duration: 6 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	54.22	91	120.14	156.95	184.25	211.36	238.36	273.99	300.92	RCM3-CGCM3 (future)	
2	92.31	52.69	81.85	107.72	140.41	164.66	188.74	212.72	244.37	268.28	RCM3-GFDL (future)	
3	88.46	50.92	79.5	98.23	125.62	148.2	170.62	192.96	222.43	244.7	RCM3-GFDL (historical)	
4	84.62	48.21	79.39	96.24	122.04	139.71	157.24	174.72	197.76	215.19	HRM3-HadCM3 (historical)	
5	80.77	47	74.33	95.17	117.4	133.09	148.66	164.18	184.65	200.13	HRM3-HadCM3 (future)	
6	76.92	44.87	71.08	88.66	106.77	120.2	133.53	146.81	164.34	177.58	HRM3-GFDL (future)	
7	73.08	42.77	63.9	78.09	96.01	109.31	122.52	135.67	153.02	166.14	HRM3-GFDL (historical)	
8	69.23	42.47	63.12	72.99	85.99	97.73	109.39	121	136.32	147.9	RCM3-CGCM3 (historical)	
9	65.38	39.56	58.57	70.16	85.46	94.71	103.9	113.05	125.12	134.24	MM5I-HadCM3 (future)	
10	61.54	38.71	57.63	67.64	79.1	87.6	96.04	104.45	115.54	124.53	WRFG-CGCM3 (historical)	
11	57.69	38.14	54.29	64.03	76.35	85.49	94.56	103.59	115.52	123.92	WRFG-CGCM3 (future)	
12	53.85	38.08	50.74	59.08	69.63	77.45	85.21	92.94	103.15	110.86	WRFG-CCSM (future)	
13	50.00	34.69	49.85	57.65	67.49	74.8	82.05	89.28	98.81	106.01	MM5I-HadCM3 (historical)	
14	46.15	34.6	45.19	52.39	63.07	71.2	79.27	87.3	97.91	105.93	MM5I-CCSM (historical)	
15	42.31	33.14	44.52	52.2	62.33	69.71	77.03	84.32	93.95	101.22	WRFG-CCSM (historical)	
16	38.46	33	43.44	52.11	61.06	67.63	74.15	80.65	89.22	95.7	ECP2-GFDL (future)	
17	34.62	32.63	43.22	50.31	59.27	65.92	72.52	79.09	87.76	94.32	MM5I-CCSM (future)	
18	30.77	32.51	42.41	48.63	56.5	62.33	68.12	73.9	81.51	87.26	ECP2-HadCM3 (historical)	
19	26.92	30.35	40.77	45.82	52.73	58.45	64.14	69.8	77.27	82.92	ECP2-GFDL (historical)	
20	23.08	29.68	38.9	45.01	52.2	56.93	61.63	66.31	72.49	77.15	ECP2-HadCM3 (future)	
21	19.23	18.61	25.86	30.66	36.72	41.22	45.68	50.13	56	60.43	CRCM-CGCM3 (future)	
22	15.38	13.51	18.92	22.5	27.03	30.39	33.72	37.04	41.42	44.73	CRCM-CGCM3 (historical)	
23	11.54	12.71	17.09	19.99	23.66	26.38	29.08	31.77	35.32	38	CRCM-CCSM (future)	
24	7.69	10.47	14.99	17.98	21.75	24.56	27.34	30.11	33.77	36.53	CRCM-CCSM (historical)	
25	3.85	5.3	7.33	8.67	10.36	11.62	12.86	14.11	15.74	16.98	Observed	
Gauge: 440561; Duration: 12 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	28.38	47.39	62.43	81.45	95.56	109.56	123.51	141.91	155.82	RCM3-CGCM3 (future)	
2	92.31	27.59	42.65	56.02	72.9	85.43	97.86	110.25	126.6	138.95	RCM3-GFDL (future)	
3	88.46	26.68	41.44	51.12	65.26	76.93	88.51	100.05	115.27	126.77	RCM3-GFDL (historical)	
4	84.62	25.28	41.38	50.09	63.42	72.55	81.61	90.63	102.54	111.54	HRM3-HadCM3 (historical)	
5	80.77	24.66	38.77	49.54	61.02	69.12	77.17	85.19	95.76	103.76	HRM3-HadCM3 (future)	
6	76.92	23.55	37.09	46.17	55.53	62.46	69.35	76.21	85.26	92.11	HRM3-GFDL (future)	
7	73.08	22.47	33.38	40.7	49.96	56.83	63.64	70.43	79.39	86.16	HRM3-GFDL (historical)	
8	69.23	22.31	32.98	38.07	44.8	50.86	56.88	62.88	70.8	76.78	RCM3-CGCM3 (historical)	
9	65.38	20.82	30.63	36.62	44.51	49.29	54.03	58.76	64.99	69.7	MM5I-HadCM3 (future)	
10	61.54	20.37	30.15	35.32	41.24	45.63	50	54.34	60.07	64.73	WRFG-CGCM3 (historical)	
11	57.69	20.08	28.42	33.46	39.83	44.55	49.24	53.91	60.07	64.4	WRFG-CGCM3 (future)	
12	53.85	20.05	26.59	30.9	36.35	40.4	44.41	48.41	53.68	57.67	WRFG-CCSM (future)	
13	50.00	18.3	26.13	30.16	35.24	39.02	42.76	46.49	51.42	55.14	MM5I-HadCM3 (historical)	
14	46.15	18.25	23.72	27.45	32.97	37.17	41.34	45.49	50.97	55.12	MM5I-CCSM (historical)	
15	42.31	17.5	23.38	27.35	32.59	36.4	40.18	43.95	48.92	52.68	WRFG-CCSM (historical)	
16	38.46	17.43	22.82	27.3	31.92	35.32	38.69	42.04	46.47	49.82	ECP2-GFDL (future)	
17	34.62	17.24	22.7	26.37	30.99	34.43	37.84	41.23	45.71	49.1	MM5I-CCSM (future)	
18	30.77	17.17	22.29	25.51	29.57	32.59	35.58	38.57	42.5	45.48	ECP2-HadCM3 (historical)	
19	26.92	16.05	21.44	24.05	27.61	30.56	33.5	36.42	40.28	43.19	ECP2-GFDL (historical)	
20	23.08	15.7	20.47	23.62	27.35	29.79	32.22	34.64	37.83	40.24	ECP2-HadCM3 (future)	
21	19.23	10	13.73	16.21	19.34	21.66	23.96	26.25	29.28	31.57	CRCM-CGCM3 (future)	
22	15.38	7.36	10.15	12	14.34	16.07	17.79	19.51	21.77	23.48	CRCM-CGCM3 (historical)	
23	11.54	6.94	9.2	10.7	12.59	14	15.39	16.78	18.61	20	CRCM-CCSM (future)	
24	7.69	5.79	8.12	9.66	11.62	13.06	14.5	15.93	17.82	19.25	CRCM-CCSM (historical)	
25	3.85	2.88	4.06	4.85	5.84	6.57	7.3	8.03	8.99	9.71	Observed	
Gauge: 440561; Duration: 24 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	14.84	24.66	32.44	42.27	49.57	56.81	64.02	73.54	80.73	RCM3-CGCM3 (future)
2	92.31	14.43	22.22	29.13	37.86	44.34	50.76	57.17	65.62	72.01	RCM3-GFDL (future)
3	88.46	13.96	21.59	26.59	33.9	39.94	45.92	51.89	59.76	65.71	RCM3-GFDL (historical)
4	84.62	13.23	21.56	26.06	32.95	37.66	42.35	47.01	53.16	57.82	HRM3-HadCM3 (historical)
5	80.77	12.91	20.21	25.77	31.71	35.9	40.05	44.2	49.67	53.8	HRM3-HadCM3 (future)
6	76.92	12.34	19.33	24.03	28.87	32.45	36.01	39.56	44.24	47.78	HRM3-GFDL (future)
7	73.08	11.78	17.42	21.2	25.98	29.53	33.05	36.56	41.19	44.69	HRM3-GFDL (historical)
8	69.23	11.7	17.21	19.84	23.32	26.46	29.57	32.67	36.77	39.86	RCM3-CGCM3 (historical)
9	65.38	10.92	16	19.09	23.17	25.64	28.09	30.53	33.75	36.18	MM5I-HadCM3 (future)
10	61.54	10.69	15.75	18.42	21.48	23.75	26.01	28.25	31.21	33.61	WRF3-CGCM3 (historical)
11	57.69	10.54	14.85	17.46	20.75	23.19	25.61	28.02	31.21	33.45	WRF3-CGCM3 (future)
12	53.85	10.53	13.91	16.14	18.96	21.05	23.12	25.19	27.91	29.97	WRF3-CCSM (future)
13	50.00	9.61	13.67	15.75	18.39	20.34	22.28	24.21	26.76	28.68	MM5I-HadCM3 (historical)
14	46.15	9.59	12.42	14.34	17.2	19.38	21.53	23.68	26.51	28.65	MM5I-CCSM (historical)
15	42.31	9.2	12.24	14.29	17	18.97	20.92	22.87	25.44	27.38	WRF3-CCSM (historical)
16	38.46	9.17	11.96	14.28	16.66	18.42	20.16	21.89	24.18	25.91	ECP2-GFDL (future)
17	34.62	9.07	11.9	13.8	16.19	17.97	19.73	21.49	23.81	25.56	MM5I-CCSM (future)
18	30.77	9.04	11.68	13.35	15.44	17	18.55	20.09	22.12	23.66	ECP2-HadCM3 (historical)
19	26.92	8.46	11.23	12.58	14.44	15.97	17.49	19	21	22.51	ECP2-GFDL (historical)
20	23.08	8.28	10.75	12.38	14.28	15.54	16.79	18.04	19.69	20.93	ECP2-HadCM3 (future)
21	19.23	5.33	7.27	8.55	10.17	11.37	12.56	13.75	15.31	16.5	CRCM-CGCM3 (future)
22	15.38	3.96	5.41	6.37	7.58	8.48	9.37	10.26	11.44	12.32	CRCM-CGCM3 (historical)
23	11.54	3.75	4.93	5.71	6.69	7.42	8.14	8.86	9.82	10.53	CRCM-CCSM (future)
24	7.69	3.16	4.36	5.15	6.16	6.91	7.65	8.38	9.36	10.09	CRCM-CCSM (historical)
25	3.85	1.88	2.59	3.07	3.67	4.11	4.55	4.99	5.57	6.01	Observed
Gauge: 440561; Duration: 48 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance		2	5	10	25	50	100	200	500		1000
	Probability (%)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002		0.001
1	96.15		9.66	15.98	20.99	27.32	32.01	36.67	41.31	47.44	52.07	RCM3-CGCM3 (future)
2	92.31		9.39	14.41	18.86	24.47	28.64	32.78	36.9	42.34	46.45	RCM3-GFDL (future)
3	88.46		9.09	14.01	17.23	21.93	25.81	29.67	33.51	38.57	42.4	RCM3-GFDL (historical)
4	84.62		8.62	13.99	16.89	21.32	24.36	27.38	30.38	34.35	37.34	HRM3-HadCM3 (historical)
5	80.77		8.41	13.11	16.7	20.53	23.22	25.9	28.57	32.09	34.75	HRM3-HadCM3 (future)
6	76.92		8.05	12.55	15.57	18.68	20.99	23.29	25.57	28.58	30.86	HRM3-GFDL (future)
7	73.08		7.69	11.32	13.76	16.84	19.13	21.4	23.66	26.65	28.9	HRM3-GFDL (historical)
8	69.23		7.64	11.19	12.88	15.11	17.13	19.13	21.13	23.76	25.75	RCM3-CGCM3 (historical)
9	65.38		7.14	10.41	12.39	15.03	16.62	18.2	19.77	21.84	23.41	MM5I-HadCM3 (future)
10	61.54		6.99	10.24	11.97	13.95	15.41	16.87	18.31	20.22	21.78	WRFG-CGCM3 (historical)
11	57.69		6.89	9.67	11.35	13.48	15.05	16.61	18.17	20.22	21.67	WRFG-CGCM3 (future)
12	53.85		6.88	9.05	10.49	12.3	13.64	14.98	16.3	18.06	19.38	WRFG-CCSM (future)
13	50.00		6.3	8.91	10.25	11.94	13.2	14.44	15.69	17.32	18.56	MM5I-CCSM (historical)
14	46.15		6.28	8.1	9.33	11.18	12.58	13.97	15.35	17.18	18.56	MM5I-CCSM (historical)
15	42.31		6.04	7.98	9.31	11.04	12.31	13.57	14.82	16.47	17.72	WRFG-CCSM (historical)
16	38.46		6.01	7.8	9.3	10.83	11.96	13.08	14.2	15.67	16.79	ECP2-GFDL (future)
17	34.62		5.94	7.76	8.97	10.51	11.65	12.78	13.91	15.4	16.53	MM5I-CCSM (future)
18	30.77		5.92	7.63	8.7	10.05	11.05	12.05	13.04	14.35	15.34	ECP2-HadCM3 (historical)
19	26.92		5.55	7.34	8.21	9.41	10.4	11.38	12.35	13.64	14.61	ECP2-GFDL (historical)
20	23.08		5.43	7.03	8.08	9.3	10.12	10.92	11.73	12.78	13.58	ECP2-HadCM3 (future)
21	19.23		3.54	4.78	5.61	6.65	7.43	8.19	8.96	9.97	10.73	CRCM-CGCM3 (future)
22	15.38		2.66	3.59	4.2	4.98	5.55	6.12	6.69	7.44	8.01	CRCM-CGCM3 (historical)
23	11.54		2.52	3.27	3.77	4.4	4.86	5.33	5.79	6.4	6.86	CRCM-CCSM (future)
24	7.69		2.14	2.91	3.43	4.08	4.56	5.04	5.52	6.15	6.62	CRCM-CCSM (historical)
25	3.85		1.36	1.84	2.15	2.55	2.85	3.14	3.44	3.82	4.12	Observed
Gauge: 440561; Duration: 72 hr			2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	242.72	324.83	397.26	505.44	585.7	665.37	744.75	849.47	928.61	RCM3-GFDL (historical)
2	92.31	238.99	311.63	379.19	459.67	522.32	584.5	646.45	728.19	789.96	RCM3-CGCM3 (future)
3	88.46	227.65	308.4	375.23	447.88	506.98	572.19	637.15	722.86	787.64	RCM3-CGCM3 (historical)
4	84.62	224.8	308.11	368.18	444.09	500.4	556.29	611.98	685.45	740.98	HRM3-HadCM3 (historical)
5	80.77	217.38	307.56	352.97	441.3	498.83	549.41	599.81	666.3	716.55	HRM3-GFDL (future)
6	76.92	207.46	294.11	352.75	410.34	452.9	495.14	537.23	594.98	643.28	RCM3-GFDL (future)
7	73.08	204.24	282.67	338.11	393.7	434.94	482.64	531.08	592.76	634.73	HRM3-HadCM3 (future)
8	69.23	198.94	276.33	319.03	385.05	434.03	475.88	516.67	570.49	611.16	WRFG-CGCM3 (future)
9	65.38	196.93	266.78	310.45	353.56	385.54	417.28	453.17	516.54	564.44	Observed
10	61.54	192.03	254.51	287.8	330.52	364.92	405.13	448.91	490.64	522.17	MM5I-HadCM3 (future)
11	57.69	189.9	247.46	284.16	329.86	361.06	399.07	433.09	477.97	511.89	MM5I-HadCM3 (historical)
12	53.85	188.79	246.92	278.69	318.82	356.92	392.03	422.89	464.62	501.55	MM5I-CCSM (historical)
13	50.00	187.86	241.37	270.79	311.19	348.6	378.71	415.75	463.6	494.37	WRFG-CCSM (future)
14	46.15	182.31	238.44	270.58	308.35	341.53	378.15	407.6	446.45	475.81	ECP2-HadCM3 (future)
15	42.31	180.07	229.33	256.18	307.96	341.32	371.22	401.02	440.32	470.03	WRFG-CGCM3 (historical)
16	38.46	176.83	222.19	255.3	304.08	335.53	362.91	390.18	430.17	460.77	WRFG-CCSM (historical)
17	34.62	173.53	219.32	253.59	297.13	328.17	358.98	389.67	426.16	453.35	HRM3-GFDL (historical)
18	30.77	172.18	215.14	249.64	290.09	316.38	344.59	372.69	409.78	437.8	ECP2-GFDL (historical)
19	26.92	170	213.85	245.03	287.95	315.26	340.23	366.32	402.87	430.5	MM5I-CCSM (future)
20	23.08	153.28	213.63	242.88	282.79	310.81	338.61	365.12	397.95	422.76	ECP2-GFDL (future)
21	19.23	113.21	191.06	236.21	264.47	285.43	306.24	326.97	354.32	374.99	ECP2-HadCM3 (historical)
22	15.38	112.8	146.09	167.85	195.35	215.76	236.01	256.18	282.8	302.92	CRCM-CGCM3 (future)
23	11.54	88.73	118.75	139.67	166.1	185.71	205.17	224.56	250.14	269.48	CRCM-CGCM3 (historical)
24	7.69	87.16	118.17	137.66	162.28	180.55	198.68	216.75	240.59	258.6	CRCM-CCSM (future)
25	3.85	73.44	102.72	122.11	146.61	164.79	182.83	200.81	224.52	242.45	CRCM-CCSM (historical)
Gauge: 442044; Duration: 15 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	194.86	276.34	366.94	481.42	566.34	650.64	734.64	845.45	929.2	RCM3-GFDL (historical)
2	92.31	190.74	275.91	332.46	418.24	481.89	549.4	617.82	708.1	776.32	RCM3-CGCM3 (historical)
3	88.46	179.55	264.56	329.57	411.54	480.72	545.06	608	691.04	753.8	RCM3-CGCM3 (future)
4	84.62	176.32	261.14	320.69	397.37	451.76	507.17	562.37	635.21	690.25	HRM3-HadCM3 (historical)
5	80.77	171.19	256.97	318.28	395.94	447.66	497.59	547.33	612.96	662.56	HRM3-GFDL (future)
6	76.92	162.01	244.56	300.82	356.22	397.32	438.12	484.41	548.02	596.08	RCM3-GFDL (future)
7	73.08	157.28	244.47	287.6	341.98	387.82	436.2	478.77	532.39	572.92	HRM3-HadCM3 (future)
8	69.23	152.12	225.73	273.36	339.07	382.32	422.37	462.27	514.91	554.69	WRF3-CGCM3 (future)
9	65.38	150.33	221.36	258.44	299.77	330.44	360.87	391.2	431.21	461.45	MM5I-HadCM3 (future)
10	61.54	146.27	204.25	235.35	275.98	308.19	340.17	372.03	414.07	445.84	MM5I-HadCM3 (historical)
11	57.69	143.94	198.18	232.55	274.64	303.79	332.73	361.56	399.59	431.3	MM5I-CCSM (historical)
12	53.85	142.81	197.41	227.39	265.27	293.37	321.27	352.66	397.45	428.34	WRF3-CCSM (future)
13	50.00	142.7	191.39	219.46	257.48	285.68	318.71	349.06	385.73	413.44	ECP2-HadCM3 (future)
14	46.15	139.49	189.38	218.57	252.92	284.63	313.67	341.56	378.36	406.17	WRF3-CGCM3 (historical)
15	42.31	134.53	180	205.1	250.31	278.4	303.69	329.6	367.12	395.47	WRF3-CCSM (historical)
16	38.46	132.98	174.42	204.7	243.86	272.62	301.16	328.89	362.14	387.27	HRM3-GFDL (historical)
17	34.62	129.14	171.32	204.04	235.9	260.71	286.7	312.59	346.74	372.56	ECP2-GFDL (historical)
18	30.77	128.09	167.68	199.25	234.54	259.05	282.03	307.64	341.48	367.05	MM5I-CCSM (future)
19	26.92	125.88	167.41	195.35	230.31	256.24	281.99	304.93	335.13	357.96	ECP2-GFDL (future)
20	23.08	112.1	165.47	185.95	211.84	231.04	250.1	269.09	294.14	313.07	ECP2-HadCM3 (historical)
21	19.23	77.3	104.8	123.01	151	173.38	195.59	217.72	246.92	268.98	Observed
22	15.38	60.91	96.97	120.84	146.02	163.08	180.03	196.9	219.17	236.01	CRCM-CGCM3 (future)
23	11.54	57.82	82.08	98.94	120.23	136.04	151.72	167.35	187.96	203.54	CRCM-CGCM3 (historical)
24	7.69	56.62	81.18	96.65	116.2	130.7	145.1	159.44	178.36	192.66	CRCM-CCSM (future)
25	3.85	46.34	68.65	83.42	102.08	115.92	129.66	143.35	161.41	175.06	CRCM-CCSM (historical)
Gauge: 442044; Duration: 30 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	148	212.75	283.86	373.7	440.36	506.52	572.44	659.4	725.13	RCM3-GFDL (historical)
2	92.31	144.76	211.02	255.72	322.7	373	426.88	480.56	551.39	604.92	RCM3-CGCM3 (historical)
3	88.46	136.06	202.71	252.75	318.72	372.39	421.71	470.85	535.68	584.68	RCM3-CGCM3 (future)
4	84.62	133.5	199.72	246.05	305.48	348.03	391.14	434.09	490.76	533.59	HRM3-HadCM3 (historical)
5	80.77	129.73	196.11	245.56	304.6	344.6	383.42	422.11	473.14	511.72	HRM3-GFDL (future)
6	76.92	122.64	187.65	230.11	273.07	304.94	336.58	373.73	423.26	460.69	RCM3-GFDL (future)
7	73.08	118.82	186.55	219.99	262.23	298.52	336.19	368.1	409.68	441.11	HRM3-HadCM3 (future)
8	69.23	114.82	171.77	209.39	260.56	293.57	324.67	355.67	396.56	427.46	WRF3-CGCM3 (future)
9	65.38	113.44	168.9	197.11	229.13	252.88	276.46	299.95	330.95	354.37	MM51-HadCM3 (future)
10	61.54	110.36	155.09	179.1	210.54	235.42	260.12	284.73	317.2	341.74	MM51-HadCM3 (historical)
11	57.69	108.52	150.45	177	209.44	231.95	254.29	276.55	305.92	330.07	MM51-CCSM (historical)
12	53.85	107.73	149.84	173.02	202.31	224.04	245.61	269.49	303.99	328.12	WRF3-CCSM (future)
13	50.00	107.55	145.09	166.85	196.2	217.98	243.33	267.1	295.45	316.88	ECP2-HadCM3 (future)
14	46.15	105.35	143.61	166.05	192.53	217.08	239.6	261.14	289.56	311.03	WRF3-CGCM3 (historical)
15	42.31	101.24	136.3	155.76	190.64	212.18	231.68	251.81	280.76	302.63	WRF3-CCSM (historical)
16	38.46	100.19	132.09	155.33	185.67	207.85	229.87	251.11	276.74	296.11	HRM3-GFDL (historical)
17	34.62	97.14	129.65	154.99	179.38	198.55	218.58	238.54	264.86	284.76	ECP2-GFDL (historical)
18	30.77	96.35	126.87	151.18	178.37	197.22	215.05	234.84	260.94	280.67	MM51-CCSM (future)
19	26.92	94.63	126.77	148.21	175.18	195.19	214.93	232.57	255.85	273.44	ECP2-GFDL (future)
20	23.08	84.16	125.07	140.84	160.77	175.56	190.24	204.86	224.15	238.73	ECP2-HadCM3 (historical)
21	19.23	57.53	78.48	92.35	109.88	122.88	135.79	148.65	165.62	178.58	Observed
22	15.38	42.78	66.01	81.63	101.37	116.02	130.55	145.03	164.14	178.44	CRCM-CGCM3 (future)
23	11.54	42.42	61.19	73.98	90.13	102.11	114.01	125.86	141.5	153.31	CRCM-CGCM3 (historical)
24	7.69	41.88	60.47	72.18	86.97	97.94	108.84	119.69	134.01	144.83	CRCM-CCSM (future)
25	3.85	34.16	50.95	62.07	76.11	86.53	96.88	107.18	120.78	131.06	CRCM-CCSM (historical)
Gauge: 442044; Duration: 45 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	123.59	181.43	243.78	322.55	380.98	438.99	496.78	573.03	630.66	RCM3-GFDL (historical)
2	92.31	120.75	178.09	217.69	275.95	321.73	368.95	415.99	478.06	524.96	RCM3-CGCM3 (historical)
3	88.46	113.23	171.57	214.18	274.17	319.17	362.08	404.82	461.22	503.84	RCM3-CGCM3 (future)
4	84.62	110.97	168.54	210.05	259.77	296.87	334.17	371.33	420.37	457.43	HRM3-HadCM3 (historical)
5	80.77	107.99	164.95	208.63	259.29	293.59	327.16	360.61	404.74	438.1	HRM3-GFDL (future)
6	76.92	101.93	159.3	194.22	231.2	258.63	286.96	319.47	362.38	394.8	RCM3-GFDL (future)
7	73.08	98.43	156.81	185.66	222.11	254.32	285.86	312.99	348.79	375.84	HRM3-HadCM3 (future)
8	69.23	94.99	143.87	177.12	221.44	249.16	276	302.75	338.04	364.7	WRFG-CGCM3 (future)
9	65.38	93.82	142.04	165.65	193.17	213.59	233.86	254.05	280.7	300.83	MM5I-HadCM3 (future)
10	61.54	91.24	129.46	150	176.98	198.28	219.42	240.48	268.27	289.27	MM5I-HadCM3 (historical)
11	57.69	89.64	125.56	148.28	175.96	195.22	214.33	233.37	258.5	278.78	MM5I-CCSM (historical)
12	53.85	89.06	125	144.87	169.98	188.61	207.09	227.12	256.54	277.49	WRFG-CCSM (future)
13	50.00	88.79	120.84	139.55	164.67	183.31	204.81	225.51	249.82	268.18	ECP2-HadCM3 (future)
14	46.15	87.27	119.67	138.72	161.32	182.43	201.81	220.24	244.55	262.93	WRFG-CGCM3 (historical)
15	42.31	83.39	113.29	130.07	159.88	178.09	194.73	212.13	236.86	255.55	WRFG-CCSM (historical)
16	38.46	82.66	109.85	129.52	155.62	174.57	193.39	211.31	233.19	249.72	HRM3-GFDL (historical)
17	34.62	79.96	107.71	129.48	150.02	166.49	183.58	200.61	223.07	240.05	ECP2-GFDL (historical)
18	30.77	79.3	105.42	126.07	149.28	165.23	180.68	197.58	219.88	236.73	MM5I-CCSM (future)
19	26.92	77.82	105.36	123.59	146.63	163.72	180.32	195.36	215.21	230.2	ECP2-GFDL (future)
20	23.08	69.08	103.69	117.13	134.11	146.71	159.21	171.67	188.11	200.53	ECP2-HadCM3 (historical)
21	19.23	46.61	64.17	75.79	90.48	101.38	112.2	122.97	137.19	147.94	CRCM-CGCM3 (future)
22	15.38	34.35	50.22	61.05	74.74	84.9	94.98	105.03	118.28	128.3	Observed
23	11.54	33.85	49.69	60.33	73.78	83.75	93.66	103.52	116.54	126.38	CRCM-CGCM3 (historical)
24	7.69	33.61	49.02	58.74	71.01	80.11	89.15	98.15	110.03	119.01	CRCM-CCSM (future)
25	3.85	27.28	41.11	50.27	61.84	70.42	78.94	87.43	98.63	107.09	CRCM-CCSM (historical)
Gauge: 442044; Duration: 1 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	90.42	144.01	198.24	266.76	317.59	368.04	418.31	484.64	534.76	RCM3-GFDL (historical)
2	92.31	87.93	135.39	171.13	224.23	265.55	306.57	347.44	401.36	442.12	RCM3-CGCM3 (historical)
3	88.46	81.76	132.16	168.52	220.36	256.89	293.15	329.27	376.93	412.95	RCM3-CGCM3 (future)
4	84.62	79.75	128.19	165.16	203.27	234.36	265.22	295.97	336.54	367.2	HRM3-HadCM3 (historical)
5	80.77	78.09	124.43	161.36	202.77	230.68	258.38	285.97	322.38	349.9	HRM3-GFDL (future)
6	76.92	73.3	123.77	147.49	177.47	200.17	227.3	254.34	290	316.96	RCM3-GFDL (future)
7	73.08	69.88	117.46	141.1	172.84	199.71	221.78	243.78	272.8	294.73	HRM3-HadCM3 (future)
8	69.23	67.1	106.83	135.99	170.96	193.12	215.11	237.03	265.94	287.79	WRFG-CGCM3 (future)
9	65.38	66.18	106.27	123.83	146.02	162.48	178.81	195.09	216.57	232.8	MM51-HadCM3 (future)
10	61.54	64.34	94.47	110.76	132.43	149.35	166.14	182.86	204.93	221.61	MM51-HadCM3 (historical)
11	57.69	62.95	91.59	109.63	131.33	146.59	161.75	176.84	196.76	211.82	MM51-CCSM (historical)
12	53.85	62.78	91.06	106.93	126.98	141.85	156.62	171.33	194.39	211.81	WRFG-CCSM (future)
13	50.00	62.2	87.43	102.55	122.48	137.27	153.85	171.33	190.74	205.4	ECP2-HadCM3 (future)
14	46.15	62.11	86.78	101.49	119.27	136.3	151.95	166.57	185.86	200.44	WRFG-CGCM3 (historical)
15	42.31	57.92	81.39	95.1	118.62	132.45	145.54	159.92	179.46	194.22	WRFG-CCSM (historical)
16	38.46	57.85	79.12	94.8	115.28	130.25	145.11	158.58	175.78	188.78	HRM3-GFDL (historical)
17	34.62	55.45	77.23	94.09	110.14	123.38	136.79	150.15	167.79	181.11	ECP2-GFDL (historical)
18	30.77	55	75.94	91.65	109.86	122.05	134.88	148.21	165.79	179.08	MM51-CCSM (future)
19	26.92	53.77	75.49	89.86	108.03	121.5	133.87	145.64	161.18	172.92	ECP2-GFDL (future)
20	23.08	47.46	73.78	84.27	97.54	107.38	117.14	126.87	139.71	149.41	ECP2-HadCM3 (historical)
21	19.23	30.48	43.4	51.95	62.76	70.78	78.74	86.67	97.13	105.04	CRCM-CGCM3 (future)
22	15.38	21.78	32.81	40.46	50.12	57.29	64.41	71.5	80.85	87.92	CRCM-CGCM3 (historical)
23	11.54	21.26	32.19	39.08	47.79	54.25	60.66	67.05	75.48	81.85	CRCM-CCSM (future)
24	7.69	19.13	27.57	33.16	40.8	46.73	52.62	58.48	66.22	72.06	CRCM-CCSM (historical)
25	3.85	16.93	26.49	32.81	40.22	45.46	50.66	55.84	62.67	67.83	Observed
Gauge: 442044; Duration: 2 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	59.46	88.54	119.51	158.64	187.67	216.49	245.2	283.07	311.7	RCM3-GFDL (historical)
2	92.31	58.04	86.28	106.08	134.88	158.17	181.62	204.98	235.8	259.1	RCM3-CGCM3 (historical)
3	88.46	54.34	83.29	104.03	134.55	156.24	177.45	198.57	226.45	247.51	RCM3-CGCM3 (future)
4	84.62	53.21	81.66	102.71	126.47	144.85	163.21	181.51	205.66	223.91	HRM3-HadCM3 (historical)
5	80.77	51.84	79.73	101.4	126.34	143.12	159.64	176.1	197.82	214.24	HRM3-GFDL (future)
6	76.92	48.87	77.51	94.09	112.23	125.69	140.07	156.09	177.23	193.21	RCM3-GFDL (future)
7	73.08	47.1	75.76	89.94	107.86	123.99	139.05	152.36	169.92	183.19	HRM3-HadCM3 (future)
8	69.23	45.41	69.34	85.95	107.79	121.16	134.35	147.5	164.85	177.96	WRF3-CGCM3 (future)
9	65.38	44.84	68.66	80.02	93.51	103.52	113.46	123.35	136.41	146.28	MM5I-HadCM3 (future)
10	61.54	43.6	62.26	72.29	85.51	95.92	106.26	116.55	130.13	140.4	MM5I-HadCM3 (historical)
11	57.69	42.8	60.38	71.48	84.97	94.38	103.72	113.02	125.29	135.11	MM5I-CCSM (historical)
12	53.85	42.56	60.09	69.81	82.09	91.2	100.24	109.92	124.26	134.57	WRF3-CCSM (future)
13	50.00	42.38	58.02	67.2	79.48	88.59	99.04	109.25	121.14	130.12	ECP2-HadCM3 (future)
14	46.15	41.77	57.48	66.75	77.78	88.13	97.63	106.64	118.53	127.51	WRF3-CGCM3 (historical)
15	42.31	39.74	54.33	62.58	77.13	85.97	94.09	102.66	114.74	123.87	WRF3-CCSM (historical)
16	38.46	39.45	52.71	62.31	75.06	84.32	93.51	102.18	112.86	120.93	HRM3-GFDL (historical)
17	34.62	38.1	51.63	62.24	72.23	80.3	88.63	96.94	107.89	116.17	ECP2-GFDL (historical)
18	30.77	37.79	50.58	60.58	71.9	79.65	87.26	95.51	106.39	114.62	MM5I-CCSM (future)
19	26.92	37.05	50.49	59.39	70.64	78.98	87.01	94.34	104.02	111.33	ECP2-GFDL (future)
20	23.08	32.86	49.63	56.18	64.45	70.59	76.68	82.75	90.76	96.81	ECP2-HadCM3 (historical)
21	19.23	21.97	30.43	36.04	43.12	48.37	53.59	58.79	65.64	70.82	CRCM-CGCM3 (future)
22	15.38	16.1	23.46	28.57	35.02	39.81	44.56	49.3	55.55	60.27	CRCM-CGCM3 (historical)
23	11.54	15.75	23.13	27.78	33.66	38.02	42.35	46.66	52.35	56.65	CRCM-CCSM (future)
24	7.69	13.9	19.66	23.69	29.21	33.3	37.36	41.41	46.74	50.78	CRCM-CCSM (historical)
25	3.85	12.73	19.33	23.48	28.3	31.87	35.42	38.96	43.62	47.15	Observed
Gauge: 442044; Duration: 3 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	47.35	69.51	93.39	123.57	145.96	168.18	190.32	219.53	241.61	RCM3-GFDL (historical)	
2	92.31	46.26	68.23	83.4	105.72	123.26	141.35	159.38	183.16	201.13	RCM3-CGCM3 (historical)	
3	88.46	43.38	65.73	82.06	105.04	122.27	138.71	155.08	176.69	193.02	RCM3-CGCM3 (future)	
4	84.62	42.52	64.57	80.47	99.53	113.73	128.02	142.26	161.04	175.24	HRM3-HadCM3 (historical)	
5	80.77	41.37	63.2	79.93	99.33	112.49	125.35	138.17	155.08	167.86	HRM3-GFDL (future)	
6	76.92	39.05	61.03	74.41	88.57	99.08	109.94	122.4	138.84	151.26	RCM3-GFDL (future)	
7	73.08	37.71	60.07	71.12	85.09	97.44	109.51	119.9	133.61	143.98	HRM3-HadCM3 (future)	
8	69.23	36.39	55.12	67.86	84.84	95.45	105.73	115.98	129.5	139.71	WRF3-CGCM3 (future)	
9	65.38	35.95	54.42	63.46	74.01	81.83	89.59	97.32	107.53	115.24	MM5I-HadCM3 (future)	
10	61.54	34.96	49.6	57.47	67.81	75.97	84.07	92.15	102.79	110.84	MM5I-HadCM3 (historical)	
11	57.69	34.34	48.11	56.81	67.41	74.79	82.11	89.4	99.03	106.79	MM5I-CCSM (historical)	
12	53.85	34.12	47.89	55.5	65.12	72.26	79.34	87	98.27	106.3	WRF3-CCSM (future)	
13	50.00	34.01	46.3	53.47	63.09	70.23	78.45	86.4	95.71	102.74	ECP2-HadCM3 (future)	
14	46.15	33.44	45.85	53.15	61.8	69.88	77.32	84.38	93.7	100.74	WRF3-CGCM3 (historical)	
15	42.31	31.94	43.41	49.83	61.24	68.23	74.6	81.27	90.75	97.91	WRF3-CCSM (historical)	
16	38.46	31.66	42.09	49.63	59.62	66.88	74.09	80.95	89.33	95.67	HRM3-GFDL (historical)	
17	34.62	30.63	41.27	49.6	57.49	63.8	70.34	76.87	85.48	91.99	ECP2-GFDL (historical)	
18	30.77	30.39	40.38	48.3	57.2	63.32	69.23	75.71	84.25	90.71	MM5I-CCSM (future)	
19	26.92	29.82	40.37	47.36	56.18	62.73	69.1	74.87	82.48	88.23	ECP2-GFDL (future)	
20	23.08	26.46	39.72	44.87	51.38	56.2	60.99	65.77	72.06	76.82	ECP2-HadCM3 (historical)	
21	19.23	17.85	24.58	29.03	34.65	38.83	42.97	47.1	52.54	56.66	CRCM-CGCM3 (future)	
22	15.38	13.17	19.03	23.11	28.27	32.09	35.88	39.66	44.65	48.42	CRCM-CGCM3 (historical)	
23	11.54	12.88	18.79	22.51	27.21	30.7	34.16	37.61	42.16	45.6	CRCM-CCSM (future)	
24	7.69	10.98	15.75	19.26	23.69	26.98	30.25	33.5	37.8	41.04	CRCM-CCSM (historical)	
25	3.85	10.44	15.44	18.4	22.13	24.9	27.65	30.39	34	36.73	Observed	
Gauge: 442044; Duration: 4 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	46.37	68.93	92.94	123.29	145.81	168.15	190.42	219.79	242	RCM3-GFDL (historical)	
2	92.31	45.26	67.16	82.52	104.85	122.91	141.1	159.21	183.11	201.18	RCM3-CGCM3 (historical)	
3	88.46	42.4	64.85	80.93	104.6	121.41	137.85	154.23	175.84	192.17	RCM3-CGCM3 (future)	
4	84.62	41.53	63.57	79.9	98.32	112.57	126.81	141	159.72	173.86	HRM3-HadCM3 (historical)	
5	80.77	40.45	62.08	78.88	98.22	111.23	124.04	136.8	153.64	166.36	HRM3-GFDL (future)	
6	76.92	38.16	60.36	73.22	87.29	97.72	108.88	121.31	137.7	150.09	RCM3-GFDL (future)	
7	73.08	36.79	59.02	70.02	83.92	96.41	108.08	118.4	132.02	142.31	HRM3-HadCM3 (future)	
8	69.23	35.47	54.03	66.91	83.85	94.23	104.46	114.66	128.11	138.28	WRF3-CGCM3 (future)	
9	65.38	35.03	53.5	62.31	72.77	80.53	88.23	95.91	106.04	113.69	MM5I-HadCM3 (future)	
10	61.54	34.07	48.54	56.32	66.58	74.65	82.66	90.65	101.18	109.14	MM5I-HadCM3 (historical)	
11	57.69	33.45	47.08	55.69	66.15	73.45	80.69	87.9	97.42	105.04	MM5I-CCSM (historical)	
12	53.85	33.26	46.86	54.39	63.92	70.98	77.99	85.5	96.63	104.61	WRF3-CCSM (future)	
13	50.00	33.13	45.25	52.37	61.9	68.96	77.07	84.98	94.19	101.16	ECP2-HadCM3 (future)	
14	46.15	32.65	44.84	52.02	60.58	68.6	75.97	82.96	92.17	99.14	WRF3-CGCM3 (historical)	
15	42.31	31.07	42.4	48.79	60.07	66.92	73.22	79.87	89.24	96.32	WRF3-CCSM (historical)	
16	38.46	30.84	41.13	48.58	58.46	65.64	72.77	79.5	87.78	94.03	HRM3-GFDL (historical)	
17	34.62	29.8	40.29	48.54	56.29	62.52	68.98	75.42	83.92	90.34	ECP2-GFDL (historical)	
18	30.77	29.56	39.48	47.24	56.01	62.04	67.91	74.31	82.74	89.12	MM5I-CCSM (future)	
19	26.92	28.99	39.41	46.31	55.03	61.49	67.75	73.44	80.95	86.62	ECP2-GFDL (future)	
20	23.08	25.74	38.75	43.82	50.24	55	59.73	64.43	70.65	75.34	ECP2-HadCM3 (historical)	
21	19.23	17.3	23.87	28.21	33.71	37.78	41.83	45.86	51.17	55.19	CRCM-CGCM3 (future)	
22	15.38	12.75	18.46	22.42	27.43	31.14	34.83	38.5	43.34	47	CRCM-CGCM3 (historical)	
23	11.54	12.48	18.19	21.8	26.35	29.73	33.08	36.42	40.83	44.16	CRCM-CCSM (future)	
24	7.69	10.14	15.25	18.63	22.9	26.07	29.22	32.36	36.49	39.62	CRCM-CCSM (historical)	
25	3.85	7.58	9.96	11.54	13.54	15.02	16.49	17.95	19.89	21.35	Observed	
Gauge: 442044; Duration: 6 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	29.68	43.93	59.11	78.29	92.52	106.64	120.71	139.27	153.3	RCM3-GFDL (historical)	
2	92.31	28.98	42.82	52.54	66.65	78.05	89.55	101	116.1	127.52	RCM3-CGCM3 (historical)	
3	88.46	27.17	41.37	51.52	66.48	77.12	87.51	97.86	111.53	121.85	RCM3-CGCM3 (future)	
4	84.62	26.62	40.56	50.87	62.51	71.54	80.54	89.51	101.35	110.29	HRM3-HadCM3 (historical)	
5	80.77	25.94	39.62	50.24	62.47	70.67	78.76	86.83	97.47	105.51	HRM3-GFDL (future)	
6	76.92	24.49	38.52	46.65	55.55	62.15	69.19	77.04	87.41	95.24	RCM3-GFDL (future)	
7	73.08	23.62	37.67	44.62	53.4	61.31	68.69	75.22	83.83	90.34	HRM3-HadCM3 (future)	
8	69.23	22.79	34.52	42.66	53.37	59.92	66.38	72.83	81.33	87.75	WRFG-CGCM3 (future)	
9	65.38	22.51	34.19	39.75	46.36	51.27	56.13	60.98	67.38	72.21	MM5I-HadCM3 (future)	
10	61.54	21.91	31.05	35.97	42.45	47.55	52.61	57.66	64.31	69.34	MM5I-HadCM3 (historical)	
11	57.69	21.51	30.13	35.57	42.19	46.8	51.38	55.94	61.96	66.72	MM5I-CCSM (historical)	
12	53.85	21.39	29.99	34.75	40.77	45.23	49.66	54.38	61.41	66.51	WRFG-CCSM (future)	
13	50.00	21.31	28.97	33.47	39.49	43.95	49.05	54.08	59.9	64.31	ECP2-HadCM3 (future)	
14	46.15	21.01	28.71	33.25	38.65	43.71	48.38	52.8	58.62	63.03	WRFG-CGCM3 (historical)	
15	42.31	20.02	27.17	31.2	38.32	42.66	46.64	50.84	56.75	61.23	WRFG-CCSM (historical)	
16	38.46	19.86	26.36	31.06	37.31	41.85	46.35	50.6	55.84	59.79	HRM3-GFDL (historical)	
17	34.62	19.21	25.84	31.05	35.95	39.88	43.97	48.03	53.4	57.46	ECP2-GFDL (historical)	
18	30.77	19.05	25.32	30.22	35.77	39.59	43.29	47.33	52.66	56.69	MM5I-CCSM (future)	
19	26.92	18.7	25.28	29.64	35.15	39.23	43.2	46.79	51.54	55.12	ECP2-GFDL (future)	
20	23.08	16.64	24.87	28.08	32.14	35.15	38.14	41.12	45.05	48.02	ECP2-HadCM3 (historical)	
21	19.23	11.3	15.44	18.19	21.66	24.23	26.78	29.33	32.68	35.22	CRCM-CGCM3 (future)	
22	15.38	8.43	12.04	14.54	17.71	20.06	22.39	24.71	27.77	30.08	CRCM-CGCM3 (historical)	
23	11.54	8.26	11.88	14.16	17.04	19.18	21.3	23.42	26.21	28.32	CRCM-CCSM (future)	
24	7.69	6.78	10.01	12.15	14.86	16.87	18.86	20.85	23.46	25.44	CRCM-CCSM (historical)	
25	3.85	4.66	6.29	7.37	8.74	9.76	10.76	11.77	13.09	14.09	Observed	
Gauge: 442044; Duration: 12 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	16.13	23.72	31.8	42.01	49.58	57.1	64.59	74.47	81.94	RCM3-GFDL (historical)
2	92.31	15.76	23.13	28.29	35.81	41.9	48.02	54.11	62.16	68.24	RCM3-CGCM3 (historical)
3	88.46	14.8	22.35	27.76	35.73	41.38	46.91	52.42	59.69	65.19	RCM3-CGCM3 (future)
4	84.62	14.51	21.93	27.42	33.62	38.43	43.22	48	54.31	59.07	HRM3-HadCM3 (historical)
5	80.77	14.14	21.41	27.08	33.6	37.96	42.27	46.57	52.24	56.52	HRM3-GFDL (future)
6	76.92	13.37	20.85	25.16	29.89	33.4	37.17	41.36	46.87	51.04	RCM3-GFDL (future)
7	73.08	12.9	20.39	24.1	28.78	32.98	36.89	40.36	44.94	48.4	HRM3-HadCM3 (future)
8	69.23	12.47	18.71	23.05	28.75	32.25	35.7	39.13	43.66	47.08	WRFG-CGCM3 (future)
9	65.38	12.32	18.54	21.5	25.02	27.63	30.22	32.8	36.21	38.78	MM5I-HadCM3 (future)
10	61.54	12	16.86	19.48	22.93	25.64	28.34	31.02	34.56	37.24	MM5I-HadCM3 (historical)
11	57.69	11.79	16.37	19.27	22.8	25.25	27.69	30.12	33.33	35.86	MM5I-CCSM (historical)
12	53.85	11.72	16.3	18.84	22.05	24.43	26.79	29.29	33.03	35.75	WRFG-CCSM (future)
13	50.00	11.68	15.76	18.15	21.35	23.72	26.46	29.15	32.25	34.6	ECP2-HadCM3 (future)
14	46.15	11.51	15.62	18.03	20.91	23.61	26.08	28.43	31.53	33.87	WRFG-CGCM3 (historical)
15	42.31	10.99	14.8	16.94	20.74	23.04	25.16	27.39	30.54	32.92	WRFG-CCSM (historical)
16	38.46	10.91	14.37	16.87	20.19	22.61	25	27.27	30.06	32.16	HRM3-GFDL (historical)
17	34.62	10.55	14.09	16.87	19.47	21.58	23.76	25.93	28.79	30.95	ECP2-GFDL (historical)
18	30.77	10.48	13.81	16.43	19.39	21.41	23.39	25.55	28.39	30.53	MM5I-CCSM (future)
19	26.92	10.29	13.8	16.12	19.05	21.23	23.33	25.25	27.77	29.68	ECP2-GFDL (future)
20	23.08	9.19	13.57	15.28	17.44	19.04	20.63	22.21	24.3	25.88	ECP2-HadCM3 (historical)
21	19.23	6.35	8.56	10.02	11.87	13.24	14.6	15.96	17.75	19.1	CRCM-CGCM3 (future)
22	15.38	4.82	6.74	8.07	9.76	11.01	12.25	13.49	15.12	16.35	CRCM-CGCM3 (historical)
23	11.54	4.73	6.65	7.86	9.39	10.53	11.65	12.78	14.26	15.38	CRCM-CCSM (future)
24	7.69	3.94	5.66	6.8	8.25	9.32	10.38	11.43	12.83	13.88	CRCM-CCSM (historical)
25	3.85	2.67	3.48	4.02	4.7	5.2	5.71	6.2	6.86	7.36	Observed
Gauge: 442044; Duration: 24 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	8.6	12.57	16.8	22.15	26.11	30.05	33.97	39.14	43.05	RCM3-GFDL (historical)	
2	92.31	8.4	12.27	14.96	18.89	22.07	25.27	28.46	32.67	35.85	RCM3-CGCM3 (historical)	
3	88.46	7.9	11.85	14.69	18.85	21.81	24.71	27.59	31.4	34.28	RCM3-CGCM3 (future)	
4	84.62	7.74	11.63	14.5	17.76	20.26	22.77	25.27	28.57	31.06	HRM3-HadCM3 (historical)	
5	80.77	7.55	11.36	14.32	17.73	20.04	22.3	24.55	27.52	29.76	HRM3-GFDL (future)	
6	76.92	7.15	11.06	13.32	15.8	17.63	19.62	21.81	24.7	26.89	RCM3-GFDL (future)	
7	73.08	6.91	10.82	12.76	15.21	17.42	19.46	21.28	23.67	25.48	HRM3-HadCM3 (future)	
8	69.23	6.68	9.94	12.22	15.21	17.02	18.82	20.62	22.99	24.78	WRFG-CGCM3 (future)	
9	65.38	6.59	9.86	11.4	13.24	14.6	15.96	17.31	19.09	20.44	MM5I-HadCM3 (future)	
10	61.54	6.43	8.97	10.34	12.15	13.57	14.98	16.39	18.24	19.64	MM5I-HadCM3 (historical)	
11	57.69	6.32	8.72	10.24	12.07	13.36	14.63	15.9	17.57	18.93	MM5I-CCSM (historical)	
12	53.85	6.29	8.68	10.01	11.69	12.93	14.17	15.49	17.45	18.84	WRFG-CCSM (future)	
13	50.00	6.27	8.4	9.65	11.33	12.57	14	15.4	17.03	18.25	ECP2-HadCM3 (future)	
14	46.15	6.18	8.32	9.59	11.1	12.51	13.81	15.04	16.67	17.89	WRFG-CGCM3 (historical)	
15	42.31	5.9	7.9	9.02	11.01	12.22	13.33	14.51	16.16	17.41	WRFG-CCSM (historical)	
16	38.46	5.86	7.67	8.98	10.73	12	13.26	14.44	15.9	17	HRM3-GFDL (historical)	
17	34.62	5.68	7.52	8.98	10.35	11.44	12.58	13.71	15.21	16.34	ECP2-GFDL (historical)	
18	30.77	5.63	7.38	8.75	10.29	11.37	12.4	13.53	15.02	16.15	MM5I-CCSM (future)	
19	26.92	5.54	7.38	8.59	10.13	11.27	12.37	13.38	14.7	15.7	ECP2-GFDL (future)	
20	23.08	4.96	7.25	8.15	9.28	10.12	10.95	11.78	12.87	13.7	ECP2-HadCM3 (historical)	
21	19.23	3.47	4.63	5.4	6.37	7.09	7.8	8.51	9.45	10.16	CRCM-CGCM3 (future)	
22	15.38	2.67	3.68	4.37	5.25	5.9	6.55	7.2	8.05	8.69	CRCM-CGCM3 (historical)	
23	11.54	2.62	3.63	4.27	5.08	5.68	6.27	6.86	7.64	8.23	CRCM-CCSM (future)	
24	7.69	2.21	3.11	3.71	4.46	5.02	5.58	6.13	6.86	7.41	CRCM-CCSM (historical)	
25	3.85	1.49	1.92	2.2	2.55	2.81	3.08	3.34	3.68	3.94	Observed	
Gauge: 442044; Duration: 48 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	5.71	8.31	11.08	14.58	17.17	19.75	22.31	25.7	28.26	RCM3-GFDL (historical)	
2	92.31	5.59	8.11	9.88	12.45	14.54	16.64	18.72	21.48	23.56	RCM3-CGCM3 (historical)	
3	88.46	5.25	7.84	9.7	12.43	14.36	16.26	18.14	20.63	22.52	RCM3-CGCM3 (future)	
4	84.62	5.15	7.7	9.58	11.7	13.36	15	16.64	18.8	20.44	HRM3-HadCM3 (historical)	
5	80.77	5.03	7.53	9.47	11.7	13.19	14.66	16.13	18.07	19.54	HRM3-GFDL (future)	
6	76.92	4.77	7.33	8.81	10.43	11.63	12.92	14.35	16.24	17.67	RCM3-GFDL (future)	
7	73.08	4.61	7.17	8.44	10.05	11.48	12.82	14.01	15.57	16.76	HRM3-HadCM3 (future)	
8	69.23	4.46	6.59	8.08	10.04	11.24	12.42	13.59	15.15	16.32	WRFG-CGCM3 (future)	
9	65.38	4.41	6.54	7.55	8.75	9.65	10.53	11.42	12.58	13.47	MM5I-HadCM3 (future)	
10	61.54	4.3	5.96	6.86	8.05	8.99	9.91	10.83	12.05	12.97	MM5I-HadCM3 (historical)	
11	57.69	4.23	5.8	6.8	7.99	8.83	9.66	10.49	11.58	12.46	MM5I-CCSM (historical)	
12	53.85	4.21	5.77	6.64	7.75	8.56	9.37	10.22	11.5	12.41	WRFG-CCSM (future)	
13	50.00	4.19	5.59	6.41	7.52	8.33	9.24	10.18	11.25	12.05	ECP2-HadCM3 (future)	
14	46.15	4.13	5.54	6.37	7.35	8.27	9.14	9.95	11.02	11.82	WRFG-CGCM3 (historical)	
15	42.31	3.96	5.26	5.99	7.29	8.08	8.8	9.58	10.66	11.47	WRFG-CCSM (historical)	
16	38.46	3.93	5.11	5.97	7.11	7.93	8.76	9.52	10.48	11.19	HRM3-GFDL (historical)	
17	34.62	3.81	5.02	5.97	6.86	7.58	8.33	9.07	10.05	10.79	ECP2-GFDL (historical)	
18	30.77	3.77	4.92	5.82	6.83	7.53	8.2	8.93	9.91	10.64	MM5I-CCSM (future)	
19	26.92	3.71	4.91	5.7	6.71	7.46	8.19	8.84	9.71	10.36	ECP2-GFDL (future)	
20	23.08	3.34	4.84	5.42	6.16	6.71	7.26	7.8	8.51	9.06	ECP2-HadCM3 (historical)	
21	19.23	2.36	3.12	3.62	4.26	4.73	5.2	5.66	6.28	6.74	CRCM-CGCM3 (future)	
22	15.38	1.83	2.49	2.95	3.52	3.95	4.38	4.8	5.36	5.78	CRCM-CGCM3 (historical)	
23	11.54	1.8	2.46	2.88	3.4	3.79	4.18	4.56	5.07	5.45	CRCM-CCSM (future)	
24	7.69	1.54	2.13	2.52	3.02	3.39	3.75	4.12	4.59	4.96	CRCM-CCSM (historical)	
25	3.85	1.07	1.35	1.54	1.77	1.95	2.12	2.3	2.53	2.7	Observed	
Gauge: 442044; Duration: 72 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)										
		2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	249.47	347.58	448.78	576.64	671.5	765.66	859.47	983.25	1076.79	RCM3-GFDL (historical)
2	92.31	249.29	327.87	379.77	469.56	542.48	614.87	687	782.15	854.06	RCM3-CGCM3 (historical)
3	88.46	221.53	322.86	371.57	446.15	504.05	561.51	618.77	695.91	764.49	Observed
4	84.62	217.45	306.35	371.25	445.35	494.01	542.3	605.16	694.31	751.4	RCM3-CGCM3 (future)
5	80.77	213.06	303.43	368.11	433.11	480.36	538.56	596.54	673.04	730.85	RCM3-GFDL (future)
6	76.92	207.3	293.45	357.65	426.16	478.77	536.38	590.42	653.9	701.88	HRM3-GFDL (future)
7	73.08	201.05	280.15	342.7	421.73	476.98	527.43	577.7	644.01	694.13	HRM3-HadCM3 (historical)
8	69.23	196.36	268.48	313.12	397.8	467.34	524.09	569.25	628.82	673.85	HRM3-HadCM3 (future)
9	65.38	195.47	261.69	304.05	369.53	411.38	452.91	494.3	548.9	590.17	WRF3-CGCM3 (future)
10	61.54	194.77	253.35	290.98	336.88	371.79	406.43	440.95	486.49	520.91	MM5I-HadCM3 (historical)
11	57.69	194.72	252.6	289.84	327.99	355.44	382.7	409.85	445.67	473.05	HRM3-GFDL (historical)
12	53.85	185.68	242.37	283.84	322.37	350.95	379.32	407.58	444.87	472.75	MM5I-HadCM3 (future)
13	50.00	179.65	238.21	273.43	312.66	341.77	370.66	399.44	437.42	468.36	WRF3-CGCM3 (historical)
14	46.15	175.94	229.85	266.97	303.32	330.28	361.9	394	436.35	466.12	ECP2-HadCM3 (future)
15	42.31	174.02	218.85	253.48	297.23	329.68	357.04	385.23	429.05	462.17	MM5I-CCSM (historical)
16	38.46	171.45	217.71	245.7	285.11	318.69	352.02	383.71	418.89	445.47	WRF3-CCSM (future)
17	34.62	166.55	217.14	242.91	281.77	308.54	335.1	362.66	399.27	426.93	WRF3-CCSM (historical)
18	30.77	166.03	211.24	241.17	279	307.05	334.91	361.57	396.49	422.89	MM5I-CCSM (future)
19	26.92	162.75	207.54	239.84	274.75	302.48	330.07	357.57	393.84	421.25	ECP2-GFDL (historical)
20	23.08	149.9	205.51	237.2	274.68	298.37	321.82	345.18	376	399.3	ECP2-GFDL (future)
21	19.23	117.78	204.02	228.06	256.55	277.69	298.67	319.57	347.15	368	ECP2-HadCM3 (historical)
22	15.38	112.83	137.98	154.63	175.67	191.28	209.48	229.59	256.13	276.18	CRCM-CGCM3 (historical)
23	11.54	90.6	119.85	141.54	168.96	189.29	206.77	222.21	242.57	257.97	CRCM-CGCM3 (future)
24	7.69	87.08	118.35	136.71	159.92	177.13	194.22	211.25	233.71	250.69	CRCM-CCSM (future)
25	3.85	73.92	100.19	117.59	139.57	155.87	172.06	188.18	209.46	225.53	CRCM-CCSM (historical)
Gauge: 444128; Duration: 15 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	201.06	317.94	428.06	567.19	670.41	772.86	874.95	1009.62	1111.41	RCM3-GFDL (historical)	
2	92.31	200.82	278.67	341.35	446.52	524.55	601.99	679.16	780.96	857.9	RCM3-CGCM3 (historical)	
3	88.46	174.74	272.65	330.06	397.7	454.88	511.65	568.2	642.82	699.21	RCM3-CGCM3 (future)	
4	84.62	169.12	259.6	320.61	395	443.17	496.35	554.63	631.53	689.64	RCM3-GFDL (future)	
5	80.77	167.46	258.12	320.21	380.3	437.86	490.98	538.62	601.47	648.97	HRM3-GFDL (future)	
6	76.92	159.92	254.97	308.1	378.93	425.01	474.43	523.68	588.65	637.75	HRM3-HadCM3 (historical)	
7	73.08	154.88	236.62	299.49	375.22	424.88	469.12	513.21	571.38	615.33	HRM3-HadCM3 (future)	
8	69.23	151.62	219.87	262.9	317.27	357.6	397.64	437.52	490.15	529.92	WRFG-CGCM3 (future)	
9	65.38	150.1	211.15	238.98	283.56	316.71	349.61	382.4	425.65	458.34	MM51-HadCM3 (historical)	
10	61.54	148.93	203.52	238.88	274.14	300.22	326.11	351.91	385.94	411.67	MM51-HadCM3 (future)	
11	57.69	148.34	202.85	231.26	267.17	293.81	320.25	346.6	381.35	407.62	HRM3-GFDL (historical)	
12	53.85	141.66	193	222.18	259.05	286.4	313.55	340.6	376.29	403.26	ECP2-HadCM3 (future)	
13	50.00	134.4	188.31	214.76	248.2	273.19	302.8	332.29	371.21	400.62	WRFG-CGCM3 (historical)	
14	46.15	132.4	171.35	203.16	243.37	273	297.61	322.41	362.17	392.22	MM51-CCSM (historical)	
15	42.31	129.35	169.44	195.98	231.56	262.03	292.28	322.14	354.5	378.96	WRFG-CCSM (future)	
16	38.46	126.84	168.99	191.89	229.51	254.39	279.08	303.69	340.04	372.42	Observed	
17	34.62	123.29	163.95	191.43	226.15	251.91	277.48	302.96	336.57	361.97	WRFG-CCSM (historical)	
18	30.77	122.44	160.46	190.48	221.78	247.18	272.38	297.49	336.15	360.68	MM51-CCSM (future)	
19	26.92	119.55	157.98	187.55	220.83	242.29	264.73	297.2	330.63	355.67	ECP2-GFDL (historical)	
20	23.08	108.88	157.82	178.33	204.24	232.13	263.6	284.83	312.84	334.01	ECP2-GFDL (future)	
21	19.23	76.69	120.01	155.04	199.3	223.46	242.54	261.55	286.64	305.59	ECP2-HadCM3 (historical)	
22	15.38	67.1	97.44	111.18	128.54	141.42	155.27	171.47	192.86	209.02	CRCM-CGCM3 (historical)	
23	11.54	59.11	83.04	100.52	122.61	139	154.2	166.94	183.74	196.44	CRCM-CGCM3 (future)	
24	7.69	56.63	81.38	96.13	114.76	128.58	142.3	155.96	174	187.63	CRCM-CCSM (future)	
25	3.85	46.49	66.5	79.75	96.48	108.9	121.23	133.51	149.71	161.95	CRCM-CCSM (historical)	
Gauge: 444128; Duration: 30 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	152.77	245.77	332.5	442.09	523.38	604.08	684.48	790.55	870.72	RCM3-GFDL (historical)
2	92.31	152.58	213.15	264	346.67	408	468.87	529.52	609.54	670.02	RCM3-CGCM3 (historical)
3	88.46	132.43	208.35	253.13	305.94	350.42	394.57	438.56	496.59	540.46	RCM3-CGCM3 (future)
4	84.62	127.92	198.57	245.98	303.65	341.12	383.49	428.93	488.88	534.19	RCM3-GFDL (future)
5	80.77	126.86	198.53	245.27	291.93	337.88	378.32	415.39	464.28	501.24	HRM3-GFDL (future)
6	76.92	120.84	194.76	236.02	291.93	326.85	365.24	403.5	453.97	492.12	HRM3-HadCM3 (historical)
7	73.08	117.03	180.97	229.99	288.17	326.54	360.9	395.13	440.29	474.42	HRM3-HadCM3 (future)
8	69.23	114.78	167.42	200.78	242.93	274.21	305.25	336.17	376.98	407.82	WRF3-CGCM3 (future)
9	65.38	113.3	160.44	182	216.57	242.22	267.69	293.05	326.52	351.82	MM5I-HadCM3 (historical)
10	61.54	112.36	154.63	181.97	209.18	229.36	249.39	269.35	295.69	315.59	MM5I-HadCM3 (future)
11	57.69	111.91	153.97	175.91	203.63	224.19	244.6	264.93	291.76	312.04	HRM3-GFDL (historical)
12	53.85	106.93	146.42	168.97	197.46	218.6	239.58	260.48	288.06	308.91	ECP2-HadCM3 (future)
13	50.00	101.17	142.7	163.1	188.86	208.22	231.03	253.76	283.75	306.42	WRF3-CGCM3 (historical)
14	46.15	99.76	129.72	154.25	185.23	207.97	226.95	245.96	276.56	299.68	MM5I-CCSM (historical)
15	42.31	97.28	128.21	148.69	176.06	199.5	222.78	245.85	270.79	289.64	WRF3-CCSM (future)
16	38.46	95.34	127.77	145.39	174.57	193.76	212.82	231.8	256.99	276.56	WRF3-CCSM (historical)
17	34.62	92.69	123.98	145.15	171.91	191.76	211.46	231.09	256.85	275.78	MM5I-CCSM (future)
18	30.77	92	121.29	144.45	168.5	188.06	207.46	226.8	252.31	271.59	ECP2-GFDL (historical)
19	26.92	89.79	119.44	142.15	167.65	184.17	200.56	216.89	238.44	254.72	ECP2-GFDL (future)
20	23.08	81.66	119.18	134.96	154.89	169.69	184.37	199	218.3	235.66	Observed
21	19.23	57.04	78.65	100.44	127.97	148.4	168.67	188.87	215.52	232.88	ECP2-HadCM3 (historical)
22	15.38	45.74	72.81	83.26	96.45	106.24	116.69	128.98	145.2	157.45	CRCM-CGCM3 (historical)
23	11.54	43.74	61.91	75.17	91.92	104.35	115.96	125.64	138.42	148.07	CRCM-CGCM3 (future)
24	7.69	41.89	60.62	71.8	85.92	96.39	106.79	117.15	130.82	141.15	CRCM-CCSM (future)
25	3.85	34.25	49.32	59.29	71.9	81.25	90.53	99.78	111.98	121.2	CRCM-CCSM (historical)
Gauge: 444128; Duration: 45 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	127.66	210.89	287.34	383.95	455.61	526.75	597.62	691.13	761.8	RCM3-GFDL (historical)
2	92.31	127.49	179.9	226.69	299.35	353.26	406.77	460.08	530.42	583.58	RCM3-CGCM3 (historical)
3	88.46	110.24	175.6	214.49	260.44	298.91	337.09	375.14	425.33	463.26	RCM3-CGCM3 (future)
4	84.62	106.16	169.18	208.59	258.18	290.6	328.56	368.01	420.06	459.4	RCM3-GFDL (future)
5	80.77	105.56	167.55	207.45	249.08	288.97	322.78	354.84	397.14	429.11	HRM3-GFDL (future)
6	76.92	100.14	164.04	199.66	247.7	278.06	311.2	344.23	387.79	420.72	HRM3-HadCM3 (historical)
7	73.08	96.98	152.76	195.31	244.67	277.56	307.19	336.72	375.68	405.12	HRM3-HadCM3 (future)
8	69.23	95.41	140.36	169.08	205.37	232.3	259.02	285.65	320.78	347.33	WRF3-CGCM3 (future)
9	65.38	93.74	134.05	152.68	182.35	204.36	226.21	247.97	276.69	298.4	MM5I-HadCM3 (historical)
10	61.54	92.89	129.2	152.53	175.87	193.18	210.37	227.49	250.08	267.16	MM5I-HadCM3 (future)
11	57.69	92.51	128.46	147.21	170.91	188.48	205.93	223.32	246.25	263.59	HRM3-GFDL (historical)
12	53.85	88.49	122.06	141.38	165.78	183.88	201.85	219.76	243.38	261.23	ECP2-HadCM3 (future)
13	50.00	83.35	118.78	136.18	158.16	174.8	194.27	213.67	239.26	258.6	WRF3-CGCM3 (historical)
14	46.15	82.32	107.83	128.75	155.19	174.46	190.65	206.77	232.79	252.47	MM5I-CCSM (historical)
15	42.31	80.06	106.5	124	147.27	167.22	187.02	206.76	228.05	244.12	WRF3-CCSM (future)
16	38.46	78.38	105.99	120.98	146.12	162.53	178.82	195.05	216.46	232.98	WRF3-CCSM (historical)
17	34.62	76.23	102.87	120.93	143.74	160.67	177.47	194.21	216.29	232.64	MM5I-CCSM (future)
18	30.77	75.6	100.56	120.37	140.78	157.44	173.97	190.45	212.18	228.6	ECP2-GFDL (historical)
19	26.92	73.72	99.09	118.33	139.92	153.98	167.92	181.82	200.15	214.01	ECP2-GFDL (future)
20	23.08	66.94	98.66	112.09	129.06	141.64	154.14	166.59	183.01	195.42	ECP2-HadCM3 (historical)
21	19.23	46.15	59.33	75	95.06	109.95	124.72	139.44	158.86	173.54	Observed
22	15.38	35.13	59.12	68.05	79.07	87.25	95.92	106.16	119.66	129.86	CRCM-CGCM3 (historical)
23	11.54	35.13	50.31	61.35	75.3	85.65	95.37	103.46	114.13	122.19	CRCM-CGCM3 (future)
24	7.69	33.63	49.17	58.46	70.2	78.91	87.55	96.16	107.53	116.12	CRCM-CCSM (future)
25	3.85	27.32	39.73	47.95	58.33	66.03	73.67	81.29	91.33	98.93	CRCM-CCSM (historical)
Gauge: 444128; Duration: 1 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	93.6	171.3	239.15	324.88	388.48	451.61	514.5	597.49	660.2	RCM3-GFDL (historical)
2	92.31	93.44	136.79	184.5	248.33	295.68	342.69	389.52	451.3	498	RCM3-CGCM3 (historical)
3	88.46	79.74	133.98	165.39	204.24	236.03	267.59	299.02	340.6	373.57	RCM3-GFDL (future)
4	84.62	76.26	132.76	161.4	201.52	230.71	263.9	296.97	340.5	371.85	RCM3-CGCM3 (future)
5	80.77	75.83	127.48	158.79	197.27	228.32	254.92	281.43	316.4	342.83	HRM3-GFDL (future)
6	76.92	71.16	123.84	153.04	191.68	217.3	244.46	271.53	307.24	334.23	HRM3-HadCM3 (historical)
7	73.08	68.95	116.52	152.19	189.93	216.08	240.3	264.44	296.27	320.33	HRM3-HadCM3 (future)
8	69.23	68.83	104.16	127.48	156.94	178.79	200.49	222.1	250.62	272.17	WRF3-CGCM3 (future)
9	65.38	66.25	98.17	113.51	137.3	154.95	172.47	189.92	212.95	230.36	MM5I-HadCM3 (historical)
10	61.54	65.44	94.68	112.96	131.65	145.51	159.28	172.99	191.08	204.75	MM5I-HadCM3 (future)
11	57.69	65.16	93.55	108.37	127.09	140.98	154.77	168.51	186.64	200.34	HRM3-GFDL (historical)
12	53.85	62.64	88.68	104.06	123.49	137.91	152.22	166.48	185.3	199.52	ECP2-HadCM3 (future)
13	50.00	57.99	85.78	99.44	116.69	130.15	145.44	160.68	180.78	195.97	WRF3-CGCM3 (historical)
14	46.15	57.68	77.54	93.98	114.74	129.5	142.2	154.86	174.84	190.16	MM5I-CCSM (historical)
15	42.31	55.45	76.35	90.18	108.26	123.8	139.21	154.57	171.56	184.19	WRF3-CCSM (future)
16	38.46	54.09	75.55	87.62	107.67	120.64	133.51	146.34	163.27	176.06	MM5I-CCSM (future)
17	34.62	52.72	73.47	87.33	105.49	118.75	131.92	145.03	162.34	175.41	WRF3-CCSM (historical)
18	30.77	52.1	71.63	87.19	103.02	116.02	128.92	141.78	158.74	171.55	ECP2-GFDL (historical)
19	26.92	50.69	70.76	85.5	101.88	112.79	123.61	134.39	148.62	159.37	ECP2-GFDL (future)
20	23.08	45.73	69.86	80.29	93.48	103.27	112.98	122.66	135.42	145.07	ECP2-HadCM3 (historical)
21	19.23	30.06	39.65	46	54.02	59.97	66.1	73.46	83.17	90.51	CRCM-CGCM3 (historical)
22	15.38	22.28	33.29	41.23	51.27	58.71	65.87	71.76	79.52	85.39	CRCM-CGCM3 (future)
23	11.54	21.53	32.5	39.76	48.93	55.74	62.5	69.23	78.11	84.82	Observed
24	7.69	21.3	32.31	38.95	47.34	53.56	59.74	65.9	74.02	80.16	CRCM-CCSM (future)
25	3.85	16.92	25.48	31.15	38.32	43.63	48.9	54.16	61.1	66.34	CRCM-CCSM (historical)
Gauge: 444128; Duration: 2 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance		2	5	10	25	50	100	200	500		1000
	Probability (%)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002		0.001
1	96.15		61.44	103.34	141.45	189.61	225.34	260.8	296.13	342.74	377.97	RCM3-GFDL (historical)
2	92.31		61.36	87.16	111.13	147.29	174.11	200.74	227.27	262.27	288.72	RCM3-CGCM3 (historical)
3	88.46		52.92	84.99	104.18	126.91	145.84	164.64	183.37	208.08	226.76	RCM3-CGCM3 (future)
4	84.62		50.85	82.51	101.38	125.7	141.66	160.78	180.24	205.93	225.34	RCM3-GFDL (future)
5	80.77		50.66	81.17	100.64	121.56	141.24	157.5	173.28	194.11	209.85	HRM3-GFDL (future)
6	76.92		47.92	79.37	96.89	120.4	135.43	151.72	167.96	189.37	205.56	HRM3-HadCM3 (historical)
7	73.08		46.42	74.02	95.02	119.01	135.07	149.63	164.13	183.27	197.73	HRM3-HadCM3 (future)
8	69.23		45.77	67.7	81.79	99.59	112.79	125.9	138.96	156.2	169.22	WRFG-CGCM3 (future)
9	65.38		44.81	64.51	73.68	88.2	98.98	109.68	120.34	134.4	145.02	MM51-HadCM3 (historical)
10	61.54		44.39	62.18	73.55	84.97	93.44	101.85	110.23	121.29	129.64	MM51-HadCM3 (future)
11	57.69		44.2	61.75	70.91	82.48	91.06	99.58	108.07	119.27	127.73	HRM3-GFDL (historical)
12	53.85		42.31	58.65	68.1	80.03	88.88	97.67	106.42	117.97	126.7	ECP2-HadCM3 (future)
13	50.00		39.73	57.01	65.5	76.22	84.38	93.87	103.33	115.81	125.25	WRFG-CGCM3 (historical)
14	46.15		39.29	51.72	61.92	74.82	84.17	92.06	99.93	112.58	122.17	MM51-CCSM (historical)
15	42.31		38.13	51.04	59.59	70.93	80.65	90.29	99.9	110.3	118.15	WRFG-CCSM (future)
16	38.46		37.32	50.75	58.08	70.39	78.4	86.36	94.28	104.74	112.73	WRFG-CCSM (historical)
17	34.62		36.31	49.28	58.05	69.21	77.46	85.66	93.82	104.59	112.64	MM51-CCSM (future)
18	30.77		35.98	48.15	57.83	67.75	75.87	83.92	91.95	102.54	110.55	ECP2-GFDL (historical)
19	26.92		35.07	47.46	56.81	67.27	74.11	80.9	87.66	96.58	103.33	ECP2-GFDL (future)
20	23.08		31.8	47.19	53.72	61.98	68.11	74.19	80.25	88.24	94.28	ECP2-HadCM3 (historical)
21	19.23		21.74	28.08	32.27	37.57	41.51	45.67	50.58	57.07	61.97	CRCM-CGCM3 (historical)
22	15.38		16.47	23.77	29.07	35.77	40.74	45.41	49.3	54.43	58.32	Observed
23	11.54		15.76	23.2	27.65	33.65	38.33	42.98	47.6	53.71	58.31	CRCM-CGCM3 (future)
24	7.69		14.82	22.36	27.35	33.27	37.45	41.59	45.72	51.16	55.28	CRCM-CCSM (future)
25	3.85		12.75	18.66	22.58	27.52	31.19	34.83	38.46	43.25	46.87	CRCM-CCSM (historical)
Gauge: 444128; Duration: 3 hr			2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	48.91	80.8	110.09	147.1	174.55	201.81	228.96	264.78	291.86	RCM3-GFDL (historical)
2	92.31	48.84	68.93	86.85	114.69	135.35	155.85	176.28	203.23	223.59	RCM3-CGCM3 (historical)
3	88.46	42.24	67.28	82.18	99.78	114.52	129.14	143.72	162.95	177.48	RCM3-CGCM3 (future)
4	84.62	40.67	64.82	79.91	98.92	111.35	125.86	140.97	160.91	175.98	RCM3-GFDL (future)
5	80.77	40.45	64.19	79.48	95.41	110.69	123.68	135.96	152.17	164.42	HRM3-GFDL (future)
6	76.92	38.36	62.85	76.49	94.91	106.52	119.22	131.87	148.56	161.17	HRM3-HadCM3 (historical)
7	73.08	37.15	58.52	74.82	93.73	106.35	117.7	129.02	143.94	155.23	HRM3-HadCM3 (future)
8	69.23	36.56	53.77	64.78	78.69	89	99.24	109.44	122.91	133.08	WRF3-CGCM3 (future)
9	65.38	35.92	51.37	58.49	69.85	78.28	86.65	94.99	105.99	114.3	MM5I-HadCM3 (historical)
10	61.54	35.58	49.5	58.45	67.39	74.03	80.61	87.18	95.84	102.38	MM5I-HadCM3 (future)
11	57.69	35.44	49.22	56.4	65.48	72.21	78.9	85.56	94.35	100.99	HRM3-GFDL (historical)
12	53.85	33.89	46.76	54.16	63.52	70.45	77.34	84.2	93.25	100.1	ECP2-HadCM3 (future)
13	50.00	31.93	45.51	52.17	60.59	66.98	74.43	81.86	91.67	99.08	WRF3-CGCM3 (historical)
14	46.15	31.54	41.32	49.33	59.46	66.84	73.04	79.22	89.19	96.73	MM5I-CCSM (historical)
15	42.31	30.67	40.8	47.5	56.42	64.07	71.66	79.22	87.37	93.53	WRF3-CCSM (future)
16	38.46	30.03	40.6	46.34	55.97	62.26	68.5	74.71	82.91	89.24	WRF3-CCSM (historical)
17	34.62	29.21	39.4	46.32	55.06	61.54	67.98	74.39	82.85	89.11	MM5I-CCSM (future)
18	30.77	28.96	38.54	46.12	53.95	60.33	66.67	72.99	81.31	87.61	ECP2-GFDL (historical)
19	26.92	28.25	37.96	45.35	53.59	58.97	64.31	69.63	76.65	81.96	ECP2-GFDL (future)
20	23.08	25.64	37.79	42.94	49.44	54.26	59.04	63.81	70.1	74.85	ECP2-HadCM3 (historical)
21	19.23	17.68	22.73	26.07	30.29	33.42	36.75	40.67	45.84	49.75	CRCM-CGCM3 (historical)
22	15.38	13.46	19.27	23.5	28.85	32.81	36.53	39.63	43.71	46.8	CRCM-CGCM3 (future)
23	11.54	12.88	18.83	22.39	26.91	30.62	34.31	37.98	42.82	46.48	Observed
24	7.69	11.96	17.94	21.9	26.89	30.22	33.53	36.83	41.18	44.47	CRCM-CCSM (future)
25	3.85	10.47	15.22	18.37	22.35	25.3	28.23	31.14	34.99	37.9	CRCM-CCSM (historical)
Gauge: 444128; Duration: 4 hr		2- year	5- year	10- year	25- year	50- year	100-year	200-year	500-year	1000-year	

Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	2	5	10	25	50	100	200	500	1000	
	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
96.15	47.9	80.4	109.96	147.31	175.02	202.52	229.92	266.07	293.4	RCM3-GFDL (historical)
92.31	47.84	67.85	86.44	114.49	135.29	155.94	176.51	203.65	224.17	RCM3-CGCM3 (historical)
88.46	41.3	66.17	81.06	98.67	113.35	127.92	142.44	161.6	176.08	RCM3-CGCM3 (future)
84.62	39.69	64.25	78.87	97.74	110.12	124.94	140.03	159.95	175	RCM3-GFDL (future)
80.77	39.55	63.21	78.31	94.52	109.78	122.41	134.65	150.8	163.01	HRM3-GFDL (future)
76.92	37.43	61.81	75.39	93.64	105.28	117.91	130.5	147.11	159.66	HRM3-HadCM3 (historical)
73.08	36.25	57.66	73.95	92.55	105.02	116.31	127.56	142.4	153.61	HRM3-HadCM3 (future)
69.23	35.75	52.76	63.69	77.5	87.74	97.91	108.05	121.41	131.52	WRF3-CGCM3 (future)
65.38	35.01	50.28	57.39	68.66	77.02	85.31	93.58	104.49	112.73	MM5I-HadCM3 (historical)
61.54	34.68	48.48	57.29	66.15	72.72	79.24	85.74	94.31	100.79	MM5I-HadCM3 (future)
57.69	34.53	48.15	55.26	64.23	70.89	77.5	84.08	92.77	99.34	HRM3-GFDL (historical)
53.85	33.07	45.75	53.07	62.33	69.2	76.01	82.8	91.76	98.53	ECP2-HadCM3 (future)
50.00	31.07	44.47	51.04	59.35	65.68	73.04	80.37	90.05	97.36	WRF3-CGCM3 (historical)
46.15	30.73	40.36	48.27	58.26	65.52	71.64	77.73	87.56	94.99	MM5I-CCSM (historical)
42.31	29.83	39.84	46.47	55.26	62.8	70.28	77.73	85.78	91.86	WRF3-CCSM (future)
38.46	29.2	39.62	45.3	54.85	61.06	67.23	73.37	81.48	87.68	WRF3-CCSM (historical)
34.62	28.41	38.48	45.28	53.93	60.33	66.69	73.02	81.37	87.61	MM5I-CCSM (future)
30.77	28.16	37.6	45.11	52.8	59.1	65.35	71.58	79.79	86	ECP2-GFDL (historical)
26.92	27.45	37.07	44.32	52.42	57.73	62.99	68.24	75.16	80.39	ECP2-GFDL (future)
23.08	24.92	36.86	41.93	48.34	53.1	57.82	62.52	68.72	73.41	ECP2-HadCM3 (historical)
19.23	17.12	22.03	25.28	29.39	32.44	35.66	39.47	44.49	48.29	CRCM-CGCM3 (historical)
15.38	13.03	18.69	22.8	27.99	31.84	35.47	38.49	42.46	45.47	CRCM-CGCM3 (future)
11.54	12.49	18.25	21.7	26.06	29.29	32.51	35.71	39.93	43.12	CRCM-CCSM (future)
7.69	10.15	14.73	17.77	21.61	24.45	27.28	30.09	33.81	36.62	CRCM-CCSM (historical)
3.85	8.72	13.19	16.15	19.89	22.67	25.42	28.17	31.79	34.52	Observed
	2- year	5- year	10- year	25- year	50- year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	30.65	51.18	69.87	93.47	110.98	128.37	145.69	168.53	185.8	RCM3-GFDL (historical)
2	92.31	30.61	43.25	55	72.72	85.87	98.92	111.92	129.07	142.04	RCM3-CGCM3 (historical)
3	88.46	26.47	42.19	51.59	62.73	72.01	81.22	90.4	102.51	111.66	RCM3-CGCM3 (future)
4	84.62	25.46	40.98	50.22	62.14	69.96	79.34	88.88	101.46	110.98	RCM3-GFDL (future)
5	80.77	25.37	40.32	49.86	60.11	69.76	77.72	85.45	95.66	103.37	HRM3-GFDL (future)
6	76.92	24.02	39.44	48.02	59.56	66.91	74.9	82.85	93.35	101.29	HRM3-HadCM3 (historical)
7	73.08	23.28	36.82	47.11	58.86	66.75	73.88	80.99	90.38	97.47	HRM3-HadCM3 (future)
8	69.23	22.97	33.71	40.61	49.34	55.81	62.23	68.63	77.08	83.46	WRF3-CGCM3 (future)
9	65.38	22.5	32.15	36.64	43.76	49.04	54.29	59.51	66.4	71.61	MM5I-HadCM3 (historical)
10	61.54	22.29	31.01	36.58	42.17	46.32	50.45	54.55	59.97	64.06	MM5I-HadCM3 (future)
11	57.69	22.2	30.8	35.29	40.96	45.16	49.34	53.5	58.99	63.14	HRM3-GFDL (historical)
12	53.85	21.27	29.28	33.91	39.76	44.1	48.4	52.69	58.35	62.63	ECP2-HadCM3 (future)
13	50.00	20.01	28.49	32.65	37.9	41.89	46.55	51.19	57.31	61.93	WRF3-CGCM3 (historical)
14	46.15	19.79	25.88	30.88	37.21	41.8	45.67	49.53	55.7	60.39	MM5I-CCSM (historical)
15	42.31	19.22	25.55	29.74	35.29	40.05	44.78	49.48	54.62	58.46	WRF3-CCSM (future)
16	38.46	18.82	25.41	28.99	35.03	38.96	42.86	46.74	51.87	55.76	WRF3-CCSM (historical)
17	34.62	18.33	24.68	28.98	34.44	38.49	42.5	46.5	51.77	55.74	MM5I-CCSM (future)
18	30.77	18.17	24.14	28.87	33.74	37.71	41.66	45.59	50.78	54.7	ECP2-GFDL (historical)
19	26.92	17.73	23.8	28.38	33.5	36.85	40.18	43.49	47.86	51.17	ECP2-GFDL (future)
20	23.08	16.12	23.66	26.87	30.92	33.93	36.91	39.88	43.8	46.77	ECP2-HadCM3 (historical)
21	19.23	11.19	14.3	16.36	18.96	20.9	22.92	25.33	28.5	30.9	CRCM-CGCM3 (historical)
22	15.38	8.61	12.18	14.78	18.06	20.5	22.81	24.72	27.24	29.14	CRCM-CGCM3 (future)
23	11.54	8.26	11.9	14.09	16.84	18.89	20.92	22.94	25.61	27.63	CRCM-CCSM (future)
24	7.69	6.79	9.69	11.61	14.03	15.83	17.62	19.4	21.74	23.52	CRCM-CCSM (historical)
25	3.85	5.36	8.02	9.78	12	13.65	15.29	16.92	19.08	20.71	Observed
Gauge: 444128; Duration: 12 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	16.65	27.58	37.53	50.1	59.42	68.67	77.9	90.06	99.25	RCM3-GFDL (historical)	
2	92.31	16.63	23.36	29.62	39.05	46.05	52.99	59.92	69.05	75.95	RCM3-CGCM3 (historical)	
3	88.46	14.43	22.8	27.8	33.74	38.68	43.58	48.47	54.92	59.79	RCM3-CGCM3 (future)	
4	84.62	13.89	22.15	27.07	33.41	37.58	42.59	47.67	54.38	59.45	RCM3-GFDL (future)	
5	80.77	13.84	21.8	26.89	32.35	37.49	41.71	45.82	51.26	55.36	HRM3-GFDL (future)	
6	76.92	13.12	21.33	25.9	32.05	35.96	40.21	44.44	50.03	54.26	HRM3-HadCM3 (historical)	
7	73.08	12.73	19.94	25.42	31.67	35.87	39.67	43.46	48.46	52.23	HRM3-HadCM3 (future)	
8	69.23	12.56	18.29	21.97	26.62	30.07	33.49	36.9	41.4	44.8	WRF3-CGCM3 (future)	
9	65.38	12.31	17.45	19.84	23.64	26.45	29.24	32.02	35.7	38.47	MM5I-HadCM3 (historical)	
10	61.54	12.2	16.84	19.81	22.79	25	27.19	29.38	32.26	34.44	MM5I-HadCM3 (future)	
11	57.69	12.15	16.73	19.11	22.13	24.37	26.59	28.8	31.72	33.93	HRM3-GFDL (historical)	
12	53.85	11.66	15.92	18.38	21.49	23.8	26.1	28.38	31.39	33.67	ECP2-HadCM3 (future)	
13	50.00	10.99	15.49	17.7	20.5	22.64	25.11	27.58	30.84	33.3	WRF3-CGCM3 (historical)	
14	46.15	10.87	14.11	16.78	20.14	22.57	24.63	26.68	29.97	32.47	MM5I-CCSM (historical)	
15	42.31	10.56	13.93	16.16	19.11	21.65	24.16	26.67	29.38	31.43	WRF3-CCSM (future)	
16	38.46	10.35	13.86	15.78	18.98	21.07	23.14	25.21	27.93	30.05	WRF3-CCSM (historical)	
17	34.62	10.09	13.48	15.76	18.68	20.84	22.98	25.11	27.92	29.99	MM5I-CCSM (future)	
18	30.77	10	13.18	15.7	18.29	20.41	22.51	24.6	27.36	29.45	ECP2-GFDL (historical)	
19	26.92	9.77	12.99	15.44	18.16	19.95	21.71	23.48	25.8	27.56	ECP2-GFDL (future)	
20	23.08	8.91	12.93	14.64	16.8	18.4	19.99	21.57	23.66	25.24	ECP2-HadCM3 (historical)	
21	19.23	6.29	7.95	9.04	10.42	11.45	12.52	13.8	15.49	16.77	CRCM-CGCM3 (historical)	
22	15.38	4.91	6.82	8.2	9.94	11.24	12.47	13.48	14.82	15.83	CRCM-CGCM3 (future)	
23	11.54	4.73	6.67	7.84	9.31	10.4	11.48	12.56	13.99	15.06	CRCM-CCSM (future)	
24	7.69	3.94	5.49	6.51	7.81	8.77	9.72	10.67	11.92	12.87	CRCM-CCSM (historical)	
25	3.85	3.29	4.74	5.7	6.91	7.81	8.7	9.59	10.77	11.65	Observed	
Gauge: 444128; Duration: 24 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	8.87	14.59	19.8	26.38	31.26	36.11	40.93	47.3	52.12	RCM3-GFDL (historical)	
2	92.31	8.85	12.38	15.65	20.59	24.26	27.89	31.52	36.3	39.91	RCM3-CGCM3 (historical)	
3	88.46	7.7	12.08	14.71	17.82	20.41	22.98	25.54	28.91	31.47	RCM3-CGCM3 (future)	
4	84.62	7.42	11.75	14.33	17.65	19.84	22.43	25.09	28.59	31.24	RCM3-GFDL (future)	
5	80.77	7.39	11.57	14.21	17.08	19.76	22	24.16	27.01	29.16	HRM3-GFDL (future)	
6	76.92	7.02	11.31	13.71	16.91	18.97	21.2	23.42	26.34	28.56	HRM3-HadCM3 (historical)	
7	73.08	6.81	10.59	13.45	16.73	18.91	20.9	22.88	25.49	27.46	HRM3-HadCM3 (future)	
8	69.23	6.73	9.72	11.64	14.07	15.88	17.67	19.45	21.81	23.59	WRF3-CGCM3 (future)	
9	65.38	6.6	9.29	10.54	12.52	13.99	15.45	16.9	18.82	20.27	MM5I-HadCM3 (historical)	
10	61.54	6.54	8.97	10.52	12.08	13.24	14.39	15.53	17.04	18.18	MM5I-HadCM3 (future)	
11	57.69	6.51	8.91	10.16	11.74	12.92	14.08	15.24	16.77	17.93	HRM3-GFDL (historical)	
12	53.85	6.26	8.49	9.78	11.42	12.63	13.83	15.03	16.61	17.81	ECP2-HadCM3 (future)	
13	50.00	5.9	8.26	9.42	10.89	11.99	13.29	14.58	16.28	17.57	WRF3-CGCM3 (historical)	
14	46.15	5.84	7.53	8.92	10.68	11.97	13.05	14.12	15.85	17.15	MM5I-CCSM (historical)	
15	42.31	5.68	7.45	8.62	10.16	11.48	12.8	14.11	15.54	16.61	WRF3-CCSM (future)	
16	38.46	5.57	7.4	8.41	10.1	11.19	12.28	13.37	14.8	15.89	WRF3-CCSM (historical)	
17	34.62	5.43	7.2	8.4	9.93	11.06	12.18	13.3	14.77	15.88	MM5I-CCSM (future)	
18	30.77	5.38	7.05	8.37	9.73	10.84	11.94	13.03	14.48	15.57	ECP2-GFDL (historical)	
19	26.92	5.27	6.95	8.24	9.65	10.59	11.51	12.43	13.65	14.57	ECP2-GFDL (future)	
20	23.08	4.81	6.92	7.82	8.95	9.79	10.62	11.45	12.54	13.37	ECP2-HadCM3 (historical)	
21	19.23	3.44	4.31	4.88	5.6	6.14	6.72	7.39	8.28	8.95	CRCM-CGCM3 (historical)	
22	15.38	2.72	3.72	4.45	5.36	6.04	6.67	7.21	7.91	8.44	CRCM-CGCM3 (future)	
23	11.54	2.63	3.64	4.25	5.02	5.59	6.15	6.72	7.46	8.02	CRCM-CCSM (future)	
24	7.69	2.21	3.01	3.55	4.22	4.72	5.21	5.71	6.36	6.85	CRCM-CCSM (historical)	
25	3.85	1.76	2.63	3.2	3.92	4.46	4.99	5.53	6.23	6.76	Observed	
Gauge: 444128; Duration: 48 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h^{-1}) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	5.89	9.64	13.06	17.37	20.56	23.74	26.9	31.07	34.22	RCM3-GFDL (historical)
2	92.31	5.89	8.19	10.33	13.56	15.96	18.34	20.71	23.84	26.2	RCM3-CGCM3 (historical)
3	88.46	5.13	8	9.71	11.76	13.45	15.13	16.81	19.02	20.69	RCM3-CGCM3 (future)
4	84.62	4.94	7.77	9.47	11.63	13.06	14.78	16.52	18.82	20.55	RCM3-GFDL (future)
5	80.77	4.93	7.66	9.4	11.27	13.03	14.48	15.89	17.75	19.15	HRM3-GFDL (future)
6	76.92	4.68	7.5	9.07	11.16	12.52	13.98	15.43	17.35	18.8	HRM3-HadCM3 (historical)
7	73.08	4.55	7.02	8.9	11.05	12.48	13.78	15.07	16.78	18.08	HRM3-HadCM3 (future)
8	69.23	4.49	6.45	7.7	9.29	10.47	11.64	12.81	14.35	15.51	WRF3-CGCM3 (future)
9	65.38	4.4	6.16	6.99	8.29	9.25	10.21	11.17	12.42	13.38	MM5I-HadCM3 (historical)
10	61.54	4.36	5.96	6.97	7.99	8.75	9.5	10.25	11.23	11.98	MM5I-HadCM3 (future)
11	57.69	4.35	5.92	6.74	7.77	8.54	9.3	10.06	11.06	11.82	HRM3-GFDL (historical)
12	53.85	4.18	5.64	6.48	7.54	8.33	9.12	9.9	10.93	11.71	ECP2-HadCM3 (future)
13	50.00	3.95	5.5	6.26	7.22	7.94	8.79	9.64	10.76	11.6	WRF3-CGCM3 (historical)
14	46.15	3.91	5.02	5.94	7.09	7.93	8.64	9.34	10.44	11.3	MM5I-CCSM (historical)
15	42.31	3.8	4.96	5.73	6.73	7.6	8.46	9.31	10.27	10.98	WRF3-CCSM (future)
16	38.46	3.74	4.94	5.6	6.7	7.42	8.13	8.84	9.78	10.5	WRF3-CCSM (historical)
17	34.62	3.64	4.81	5.59	6.6	7.34	8.07	8.81	9.77	10.49	MM5I-CCSM (future)
18	30.77	3.62	4.7	5.56	6.45	7.17	7.89	8.61	9.55	10.26	ECP2-GFDL (historical)
19	26.92	3.53	4.64	5.47	6.42	7.03	7.64	8.25	9.05	9.66	ECP2-GFDL (future)
20	23.08	3.24	4.62	5.2	5.94	6.49	7.04	7.58	8.29	8.84	ECP2-HadCM3 (historical)
21	19.23	2.34	2.91	3.28	3.76	4.11	4.48	4.92	5.5	5.94	CRCM-CGCM3 (historical)
22	15.38	1.87	2.52	3	3.6	4.04	4.46	4.8	5.26	5.61	CRCM-CGCM3 (future)
23	11.54	1.81	2.47	2.87	3.37	3.74	4.11	4.48	4.97	5.34	CRCM-CCSM (future)
24	7.69	1.54	2.07	2.42	2.87	3.2	3.58	3.96	4.47	4.85	Observed
25	3.85	1.23	1.86	2.28	2.8	3.19	3.52	3.85	4.28	4.6	CRCM-CCSM (historical)
Gauge: 444128; Duration: 72 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	421.84	529.5	589.86	666.18	715.08	758.73	798.37	900.89	986.47	Observed
2	92.31	407.49	522.85	583.23	641.88	680.01	713.64	785.64	845.99	879.12	HRM3-HadCM3 (historical)
3	88.46	381.4	517.91	581.3	638.4	672.9	703.18	743.87	779.82	804.61	HRM3-HadCM3 (future)
4	84.62	354.58	431.88	487.32	545.6	605.58	696.58	730.29	762.41	784.48	HRM3-GFDL (future)
5	80.77	325.09	419.08	449.94	527.66	582.68	629.18	674.05	729.01	767.89	RCM3-CGCM3 (historical)
6	76.92	314.95	385.09	447.58	513.78	580.72	616.39	661.93	717.84	757.49	RCM3-GFDL (future)
7	73.08	296.11	377.45	433.33	512.26	567.33	615.63	645.44	694.06	738.53	RCM3-GFDL (historical)
8	69.23	291.64	375.36	430.6	485.43	530.43	582.02	631.98	681.1	705.83	HRM3-GFDL (historical)
9	65.38	274.84	365.06	416.85	480.86	528.84	571.27	608.87	654.66	686.9	RCM3-CGCM3 (future)
10	61.54	256.99	362.77	411.89	478.02	508	534.51	558.4	586.88	606.56	WRF3-CGCM3 (historical)
11	57.69	248.13	361.2	407.64	471.6	499.83	520.26	545.43	575.55	596.43	WRF3-CCSM (future)
12	53.85	244.23	354.21	398.04	461.11	492.43	516.27	530.84	547.91	560.41	MM5I-CCSM (future)
13	50.00	242.03	337.82	387.36	438.07	456.82	484.05	509.2	539.4	559.52	MM5I-HadCM3 (future)
14	46.15	241.51	331.1	384.27	434.13	456.63	476.34	497.38	523.82	542.11	WRF3-CCSM (historical)
15	42.31	235.37	318.14	379.48	425.31	456.35	475.25	493.96	514.8	530.35	MM5I-CCSM (historical)
16	38.46	233.18	313.88	376.83	423.08	450.73	473.12	487.59	508.83	529.1	MM5I-HadCM3 (historical)
17	34.62	229.94	299.66	357.36	398.41	424.45	452.44	477.99	504.6	516.19	WRF3-CGCM3 (future)
18	30.77	215.41	296.21	344.81	393.19	424.42	447.53	468.37	493.26	510.48	ECP2-GFDL (future)
19	26.92	205.14	285.19	329.89	364.84	386.87	406.32	423.81	444.63	458.99	ECP2-HadCM3 (future)
20	23.08	191.37	282.59	310.67	336.57	352.63	366.65	379.43	398.18	411.12	ECP2-GFDL (historical)
21	19.23	145.02	264.65	294.92	326.36	346.18	363.68	379.14	393.88	403.96	ECP2-HadCM3 (historical)
22	15.38	137.15	195.1	221.32	249.03	266.73	282.5	296.8	313.95	325.86	CRCM-CGCM3 (future)
23	11.54	101.92	145.28	168.9	194.47	211.09	226.09	239.83	256.47	268.14	CRCM-CGCM3 (historical)
24	7.69	100.49	130.46	145.77	161.71	171.78	180.69	188.71	198.27	204.87	CRCM-CCSM (future)
25	3.85	87.2	117.22	132.93	149.53	160.13	169.57	178.13	188.4	195.53	CRCM-CCSM (historical)
Gauge: 445690; Duration: 15 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	288.14	360.68	401.07	452.2	484.91	514.09	540.56	572.35	594.44	HRM3-HadCM3 (historical)
2	92.31	278.45	356.23	396.8	436.27	461.87	484.44	504.71	528.81	545.42	HRM3-HadCM3 (future)
3	88.46	260.9	352.78	395.56	433.86	457.01	477.32	495.49	517.01	531.79	HRM3-GFDL (future)
4	84.62	242.67	294.81	332.13	371.3	396.2	426.93	456.92	493.62	519.55	RCM3-CGCM3 (historical)
5	80.77	222.74	286.19	306.99	358.95	394.5	418.31	448.51	485.8	512.22	RCM3-GFDL (future)
6	76.92	215.83	263.25	305.2	349.47	385.32	418.11	438.29	468.14	497.56	RCM3-GFDL (historical)
7	73.08	203.08	258.12	295.51	330.58	360.77	393.87	427.02	462.18	478.74	HRM3-GFDL (historical)
8	69.23	200.05	256.6	293.96	327.8	358.53	388.13	413.3	443.93	465.47	RCM3-CGCM3 (future)
9	65.38	188.66	249.71	284.49	325.92	346.1	363.94	380.01	407.83	441.32	Observed
10	61.54	176.53	248.14	281.32	320.41	340.57	354.3	371.23	399.15	412.37	WRF3-CGCM3 (historical)
11	57.69	170.65	246.99	278.52	314.5	335.58	351.62	362.05	391.47	405.49	WRF3-CCSM (future)
12	53.85	167.9	242.31	271.93	299.05	311.7	329.67	361.41	372.88	380.91	MM5I-CCSM (future)
13	50.00	166.39	231.28	264.16	296.25	311.4	326.08	346.56	366.83	380.68	MM5I-HadCM3 (future)
14	46.15	166.12	226.68	259.42	290.18	311.06	324.66	338.89	356.67	368.97	WRF3-CCSM (historical)
15	42.31	162	217.91	257.53	288.84	307.48	323.99	336.51	350.52	360.61	MM5I-CCSM (historical)
16	38.46	160.35	214.89	244.4	272.08	289.61	322.68	332.44	346.17	360.13	MM5I-HadCM3 (historical)
17	34.62	158.16	205.37	235.86	268.46	289.48	308.31	325.48	343.89	351.7	WRF3-CGCM3 (future)
18	30.77	148.31	203.07	225.84	249.6	288.7	305.15	319.16	335.89	347.46	ECP2-GFDL (future)
19	26.92	141.27	195.59	212.83	249.44	264.3	277.41	289.19	303.21	312.87	ECP2-HadCM3 (future)
20	23.08	132.24	181.67	202.18	230.32	241.17	250.63	259.3	271.95	280.67	ECP2-GFDL (historical)
21	19.23	100.28	148.79	194.38	223.45	236.85	248.67	259.05	268.98	275.78	ECP2-HadCM3 (historical)
22	15.38	79.35	134.38	152.19	170.98	182.96	193.64	203.3	214.89	222.93	CRCM-CGCM3 (future)
23	11.54	70.8	100.36	116.42	133.75	145	155.14	164.42	175.65	183.52	CRCM-CGCM3 (historical)
24	7.69	69.76	90.27	100.72	111.58	118.44	124.5	129.96	136.45	140.94	CRCM-CCSM (future)
25	3.85	60.61	81.23	91.99	103.35	110.6	117.05	122.89	129.9	134.76	CRCM-CCSM (historical)
Gauge: 445690; Duration: 30 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	211.63	263.45	291.92	328.05	351.11	371.64	390.25	412.54	428.02	HRM3-HadCM3 (historical)
2	92.31	204.66	260.27	289.16	317.18	335.33	351.31	365.65	382.67	394.39	HRM3-HadCM3 (future)
3	88.46	192.15	257.68	288.27	315.47	331.88	346.26	359.11	374.32	384.76	HRM3-GFDL (future)
4	84.62	178.91	216.24	242.84	270.67	288.32	309.37	330.45	356.17	374.32	RCM3-CGCM3 (historical)
5	80.77	164.6	210.11	224.98	261.44	286.54	303.96	324.22	350.32	368.77	RCM3-GFDL (future)
6	76.92	159.54	193.65	223.35	254.55	279.83	302.89	318.08	335.36	355.62	RCM3-GFDL (historical)
7	73.08	150.35	189.99	216.34	241.36	262.74	284.01	306.97	334.95	346.62	HRM3-GFDL (historical)
8	69.23	148.16	188.75	215.66	239.83	259.45	282.08	299.84	321.4	336.54	RCM3-CGCM3 (future)
9	65.38	139.93	183.89	208.6	238.49	252.89	265.59	277.02	290.62	300	WRF3-CGCM3 (historical)
10	61.54	131.12	182.73	206.54	232.85	248.92	258.61	270.64	285.01	294.95	WRF3-CCSM (future)
11	57.69	127.04	181.82	204.64	230.25	245.28	256.79	263.76	271.91	277.45	MM5I-HadCM3 (future)
12	53.85	124.89	178.48	199.76	219.37	228.42	240.8	252.8	267.17	277.15	MM5I-CCSM (future)
13	50.00	123.78	170.62	193.38	217.14	227.94	237.38	247.64	260.3	271	Observed
14	46.15	123.69	167.25	190.84	212.68	227.56	237.02	245.81	255.77	269.05	WRF3-CCSM (historical)
15	42.31	120.79	160.93	189.36	211.91	225.23	236.28	243.25	252.27	262.59	MM5I-HadCM3 (historical)
16	38.46	119.35	158.54	179.92	199.72	212.23	225.41	237.6	252.12	262.5	MM5I-CCSM (historical)
17	34.62	117.78	151.86	173.73	197.03	212.01	223.29	233.26	251.43	257.01	WRF3-CGCM3 (future)
18	30.77	110.66	150.23	166.61	183.54	194.18	205.46	226.1	245.15	253.36	ECP2-GFDL (future)
19	26.92	105.46	144.8	157.2	169.77	183.8	203.55	211.97	221.96	228.85	ECP2-HadCM3 (future)
20	23.08	99.38	134.77	149.58	164.9	177.54	184.31	190.64	199.7	205.95	ECP2-GFDL (historical)
21	19.23	75.46	100.34	127.99	160.88	174.53	183.02	190.34	197.43	202.28	ECP2-HadCM3 (historical)
22	15.38	56.38	100.22	113.26	126.84	135.49	143.17	150.13	158.45	164.22	CRCM-CGCM3 (future)
23	11.54	53.75	75.4	87.07	99.61	107.73	115.03	121.69	129.75	135.38	CRCM-CGCM3 (historical)
24	7.69	52.93	68.03	75.69	83.64	88.64	93.06	97.03	101.75	105.01	CRCM-CCSM (future)
25	3.85	46.11	61.4	69.35	77.72	83.05	87.79	92.07	97.21	100.76	CRCM-CCSM (historical)
Gauge: 445690; Duration: 45 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	190.83	240.2	268.06	303.25	325.82	345.99	364.33	386.37	401.71	HRM3-HadCM3 (historical)	
2	92.31	184.26	237.13	264.88	291.82	309.37	324.85	338.78	355.36	366.79	HRM3-HadCM3 (future)	
3	88.46	172.28	234.94	263.97	290.26	306.14	320.08	332.58	347.39	357.56	HRM3-GFDL (future)	
4	84.62	160.09	195.5	220.94	247.73	264.8	286.54	307.28	332.71	350.72	RCM3-CGCM3 (historical)	
5	80.77	146.6	189.62	203.77	239.69	264.16	280.8	301.88	327.78	346.17	RCM3-GFDL (future)	
6	76.92	142.02	174.06	202.83	233.41	258.13	279.98	293.72	318.01	338.79	RCM3-GFDL (historical)	
7	73.08	133.42	170.57	196.35	220.24	241.06	265.78	289.05	310.17	321.58	HRM3-GFDL (historical)	
8	69.23	131.38	169.66	194.89	217.96	240.96	259.78	277.13	298.28	313.18	RCM3-CGCM3 (future)	
9	65.38	123.73	164.93	188.72	216.63	230.38	242.56	253.53	266.62	275.67	WRFG-CGCM3 (historical)	
10	61.54	115.6	163.89	186.36	214.5	226.67	236.09	247.65	261.51	271.11	WRFG-CCSM (future)	
11	57.69	111.49	163.21	184.38	208.93	223.31	234.22	240.92	248.77	254.72	MM5I-CCSM (future)	
12	53.85	109.78	160	180.05	198.32	206.92	219.59	231.15	245.05	254.11	MM5I-HadCM3 (future)	
13	50.00	108.79	152.48	175.52	196.59	206.91	215.97	225.55	237.69	246.09	WRFG-CCSM (historical)	
14	46.15	108.5	149.44	171.52	192.6	206.86	215.39	224.07	233.65	241.01	MM5I-CCSM (historical)	
15	42.31	105.66	143.53	170.37	191.48	204.15	214.38	221.02	231.1	240.22	MM5I-HadCM3 (historical)	
16	38.46	104.78	141.65	161.48	180.29	192.28	205.15	216.9	228.82	234.14	WRFG-CGCM3 (future)	
17	34.62	103.3	135.11	155.77	177.94	192.24	202.84	212.42	223.86	231.79	ECP2-GFDL (future)	
18	30.77	96.68	133.52	148.9	164.9	174.99	183.9	191.93	201.48	208.08	ECP2-HadCM3 (future)	
19	26.92	92.04	128.51	140.16	152.01	159.36	165.79	171.55	180.14	189.71	Observed	
20	23.08	85.55	119.12	132.92	147.28	156.34	164.34	171.52	178.28	186.06	ECP2-GFDL (historical)	
21	19.23	64.81	87.52	99.45	118.21	133.39	147.57	160.96	177.68	182.9	ECP2-HadCM3 (historical)	
22	15.38	45.66	76.94	96.05	112.08	120.15	127.35	133.89	141.72	147.17	CRCM-CGCM3 (future)	
23	11.54	45.35	64.98	75.72	87.36	94.95	101.8	108.09	115.71	121.05	CRCM-CGCM3 (historical)	
24	7.69	44.73	58.27	65.2	72.42	76.99	81.03	84.68	89.02	92.03	CRCM-CCSM (future)	
25	3.85	38.76	52.27	59.36	66.85	71.64	75.91	79.79	84.43	87.66	CRCM-CCSM (historical)	
Gauge: 445690; Duration: 1 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	141.44	182	206.1	236.34	255.94	273.58	289.71	309.23	322.88	HRM3-HadCM3 (historical)
2	92.31	136.15	179.43	202.59	225.19	240.05	253.23	265.13	279.36	289.21	HRM3-HadCM3 (future)
3	88.46	126.19	178.04	201.78	223.96	237.42	249.3	259.98	272.69	282.3	RCM3-GFDL (historical)
4	84.62	116.83	145.67	166.77	189.28	204.77	224.23	242.43	264.93	281.46	HRM3-GFDL (future)
5	80.77	105.96	140.81	152.47	183.71	203.75	220.43	239.09	262.37	280.99	RCM3-CGCM3 (historical)
6	76.92	102.58	128.18	152.44	179.11	200.54	216.7	234.93	262.25	278.83	RCM3-GFDL (future)
7	73.08	95.76	125.3	147.5	167.32	190.42	213.19	228.49	242.69	252.58	HRM3-GFDL (historical)
8	69.23	94.14	124.92	145.1	166.36	184.95	201.12	216.14	234.59	247.69	RCM3-CGCM3 (future)
9	65.38	88.16	120.91	140.87	164.19	174.32	184.45	193.63	204.62	212.25	WRF3-CGCM3 (historical)
10	61.54	81.89	120.2	138.28	162.94	171.44	179.33	189.01	200.66	208.78	WRF3-CCSM (future)
11	57.69	78.17	119.85	136.43	156.79	168.69	177.75	183.36	189.96	196.33	MM51-CCSM (future)
12	53.85	77.28	117.2	133.36	147.73	155.9	166.57	176.31	188.09	194.46	MM51-HadCM3 (future)
13	50.00	76.56	111.01	131.91	146.97	155.53	163.06	170.7	180.83	187.87	WRF3-CCSM (historical)
14	46.15	76.03	108.75	126.33	144.05	154.74	162.27	169.83	177.88	185.45	MM51-CCSM (historical)
15	42.31	73.6	104.1	125.75	142.58	152.99	160.86	166.3	176.99	183.42	MM51-HadCM3 (historical)
16	38.46	73.55	102.94	118.63	134.05	144.28	155.06	164.96	172.73	177.12	WRF3-CGCM3 (future)
17	34.62	72.42	97.49	114.18	132.38	143.93	152.76	160.77	170.41	177.11	ECP2-GFDL (future)
18	30.77	67.21	96.16	108.48	121.42	129.66	136.97	143.59	151.51	157	ECP2-HadCM3 (future)
19	26.92	63.9	92.27	101.58	111.14	117.11	122.35	127.04	133.74	138.58	ECP2-GFDL (historical)
20	23.08	57.44	84.86	95.73	107.16	114.44	120.9	126.74	132.6	136.42	ECP2-HadCM3 (historical)
21	19.23	43.55	60.73	69.96	79.85	86.24	91.98	97.22	103.54	107.95	CRCM-CGCM3 (future)
22	15.38	29.39	44.01	52.26	61.36	67.37	72.85	77.92	84.11	88.49	CRCM-CGCM3 (historical)
23	11.54	29.12	41.02	49.17	58.27	64.32	69.86	75	81.32	85.79	Observed
24	7.69	26.77	38.97	44.11	49.54	52.99	56.07	58.86	62.2	64.52	CRCM-CCSM (future)
25	3.85	24.96	34.51	39.61	45.06	48.57	51.71	54.57	58.03	60.44	CRCM-CCSM (historical)
Gauge: 445690; Duration: 2 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	115.18	149.03	169.38	194.9	211.48	226.43	240.13	256.72	268.34	HRM3-HadCM3 (historical)
2	92.31	110.78	146.87	166.29	185.23	197.73	208.83	218.86	230.87	239.19	HRM3-HadCM3 (future)
3	88.46	102.45	145.79	165.58	184.23	195.55	205.56	214.57	225.29	237.01	RCM3-GFDL (historical)
4	84.62	94.78	118.79	136.45	155.33	168.65	185.11	200.54	219.71	233.34	RCM3-CGCM3 (historical)
5	80.77	85.75	114.74	124.6	150.87	167.51	182.13	197.99	219.67	232.7	HRM3-GFDL (future)
6	76.92	83	104.21	124.45	147.13	165.26	178.42	195.96	217.73	231.89	RCM3-GFDL (future)
7	73.08	77.35	101.83	120.51	137.13	157.65	177.21	188.37	200.36	208.73	HRM3-GFDL (historical)
8	69.23	76.02	101.55	118.29	137.08	151.98	165.62	178.33	193.97	205.09	RCM3-CGCM3 (future)
9	65.38	71.09	98.2	114.93	134.27	142.69	151.17	158.86	168.08	174.49	WRF3-CGCM3 (historical)
10	61.54	65.94	97.63	112.66	133.17	140.34	146.96	155.07	164.85	171.68	WRF3-CCSM (future)
11	57.69	62.77	97.36	111.07	128.1	138.05	145.63	150.34	155.88	161.5	MM5I-CCSM (future)
12	53.85	62.12	95.16	108.59	120.48	127.52	136.46	144.65	154.56	159.66	MM5I-HadCM3 (future)
13	50.00	61.54	90	107.8	119.96	127.11	133.42	139.74	148.22	154.12	WRF3-CCSM (historical)
14	46.15	61.04	88.16	102.72	117.59	126.32	132.69	139.1	145.85	152.49	MM5I-CCSM (historical)
15	42.31	59.12	84.32	102.31	116.25	124.93	131.42	135.96	145.36	150.5	MM5I-HadCM3 (historical)
16	38.46	58.94	83.39	96.4	109.27	117.88	126.92	135.24	141.33	145.38	ECP2-GFDL (future)
17	34.62	58.16	78.85	92.73	107.92	117.53	124.93	131.65	139.74	145	WRF3-CGCM3 (future)
18	30.77	53.85	77.74	87.96	98.72	105.58	111.69	117.22	123.84	128.44	ECP2-HadCM3 (future)
19	26.92	51.19	74.55	82.27	90.22	95.19	99.57	103.48	108.96	113	ECP2-GFDL (historical)
20	23.08	45.58	68.42	77.4	86.87	92.9	98.27	103.13	108.13	111.32	ECP2-HadCM3 (historical)
21	19.23	34.61	48.65	56.23	64.38	69.67	74.42	78.76	84	87.67	CRCM-CGCM3 (future)
22	15.38	23.12	35.04	41.81	49.33	54.31	58.86	63.08	68.24	71.9	CRCM-CGCM3 (historical)
23	11.54	22.95	30.93	35.12	39.54	42.37	44.89	47.18	50.18	52.47	Observed
24	7.69	19.88	28.37	33	38.01	41.27	44.22	46.91	49.92	51.83	CRCM-CCSM (future)
25	3.85	19.63	27.31	31.43	35.84	38.69	41.25	43.58	46.39	48.35	CRCM-CCSM (historical)
Gauge: 445690; Duration: 3 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	90.64	116.31	131.47	150.5	162.82	173.9	184.02	196.26	204.81	HRM3-HadCM3 (historical)
2	92.31	87.28	114.68	129.32	143.57	152.93	161.24	168.73	177.69	183.88	HRM3-HadCM3 (future)
3	88.46	80.99	113.78	128.8	142.81	151.3	158.78	165.51	173.52	179.04	HRM3-GFDL (future)
4	84.62	75.01	93.29	106.63	120.83	130.47	142.69	154.11	168.21	178.26	RCM3-CGCM3 (historical)
5	80.77	68.12	90.21	97.57	117.22	129.95	140.22	151.92	166.43	178.25	RCM3-GFDL (historical)
6	76.92	65.94	82.21	97.53	114.27	127.74	138.11	148.81	165.87	176.8	RCM3-GFDL (future)
7	73.08	61.61	80.39	94.35	106.89	121.05	135.26	145.53	154.46	160.67	HRM3-GFDL (historical)
8	69.23	60.59	80.12	92.93	106	118	128.18	137.63	149.22	157.44	RCM3-CGCM3 (future)
9	65.38	56.78	77.59	90.19	105	111.43	117.83	123.62	130.56	135.37	WRFG-CGCM3 (historical)
10	61.54	52.78	77.13	88.61	104.23	109.58	114.58	120.7	128.05	133.17	WRFG-CCSM (future)
11	57.69	50.46	76.89	87.45	100.33	107.86	113.57	117.11	121.27	125.2	MM5I-CCSM (future)
12	53.85	49.85	75.21	85.47	94.61	99.7	106.43	112.58	120.01	124.11	MM5I-HadCM3 (future)
13	50.00	49.38	71.3	84.39	94.08	99.49	104.25	109.09	115.48	119.92	WRFG-CCSM (historical)
14	46.15	49.07	69.85	81.02	92.21	99.05	103.76	108.53	113.61	118.29	MM5I-CCSM (historical)
15	42.31	47.51	66.89	80.63	91.31	97.89	102.92	106.37	112.96	117.1	MM5I-HadCM3 (historical)
16	38.46	47.48	66.14	76.1	85.86	92.32	99.12	105.37	110.44	113.22	WRFG-CGCM3 (future)
17	34.62	46.74	62.69	73.28	84.8	92.11	97.68	102.74	108.82	113.05	ECP2-GFDL (future)
18	30.77	43.42	61.84	69.66	77.86	83.08	87.7	91.89	96.89	100.36	ECP2-HadCM3 (future)
19	26.92	41.29	59.36	65.28	71.34	75.13	78.45	81.42	85.69	88.76	ECP2-GFDL (historical)
20	23.08	37.28	54.66	61.57	68.84	73.45	77.55	81.26	84.94	87.36	ECP2-HadCM3 (historical)
21	19.23	28.25	39.24	45.13	51.42	55.49	59.13	62.46	66.46	69.26	CRCM-CGCM3 (future)
22	15.38	19.15	28.52	33.78	39.58	43.4	46.88	50.1	54.02	56.79	CRCM-CGCM3 (historical)
23	11.54	18.96	25.29	28.59	32.77	35.63	38.2	40.56	43.43	45.44	Observed
24	7.69	16.99	24.36	28.4	32.07	34.28	36.25	38.03	40.16	41.64	CRCM-CCSM (future)
25	3.85	16.28	22.44	25.72	29.22	31.48	33.5	35.33	37.55	39.09	CRCM-CCSM (historical)
Gauge: 445690; Duration: 4 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	99.99	129.41	147.1	169.29	183.71	196.72	208.63	223.06	233.17	HRM3-HadCM3 (historical)
2	92.31	96.17	127.54	144.41	160.89	171.76	181.41	190.14	200.58	207.81	HRM3-HadCM3 (future)
3	88.46	88.92	126.59	143.81	160.01	169.85	178.55	186.39	195.72	206.11	RCM3-GFDL (historical)
4	84.62	82.27	103.13	118.49	134.91	146.5	160.82	174.25	191.02	202.8	RCM3-CGCM3 (historical)
5	80.77	74.41	99.62	108.19	131.03	145.5	158.25	172.06	190.9	202.16	HRM3-GFDL (future)
6	76.92	72.02	90.47	108.07	127.79	143.57	155	170.33	189.25	201.58	RCM3-GFDL (future)
7	73.08	67.11	88.39	104.63	119.09	136.97	154	163.65	174.08	181.37	HRM3-GFDL (historical)
8	69.23	65.96	88.15	102.71	119.05	132	143.88	154.93	168.55	178.22	RCM3-CGCM3 (future)
9	65.38	61.67	85.23	99.78	116.61	123.95	131.33	138.02	146.05	151.63	WRFG-CGCM3 (historical)
10	61.54	57.19	84.76	97.81	115.67	121.89	127.64	134.71	143.22	149.16	WRFG-CCSM (future)
11	57.69	54.44	84.5	96.43	111.24	119.89	126.5	130.59	135.41	140.32	MM5I-CCSM (future)
12	53.85	53.88	82.59	94.29	104.61	110.74	118.52	125.65	134.27	138.7	MM5I-HadCM3 (future)
13	50.00	53.37	78.11	93.58	104.17	110.4	115.89	121.38	128.76	133.9	WRFG-CCSM (historical)
14	46.15	52.94	76.51	89.18	102.11	109.69	115.25	120.83	126.7	132.53	MM5I-CCSM (historical)
15	42.31	51.28	73.18	88.82	100.95	108.5	114.13	118.09	126.32	130.75	MM5I-HadCM3 (historical)
16	38.46	51.11	72.34	83.69	94.88	102.39	110.26	117.5	122.76	126.3	ECP2-GFDL (future)
17	34.62	50.44	68.43	80.5	93.72	102.07	108.5	114.35	121.39	125.95	WRFG-CGCM3 (future)
18	30.77	46.69	67.46	76.34	85.7	91.67	96.98	101.79	107.55	111.55	ECP2-HadCM3 (future)
19	26.92	44.38	64.69	71.41	78.32	82.65	86.45	89.86	94.62	98.14	ECP2-GFDL (historical)
20	23.08	39.49	59.36	67.17	75.4	80.65	85.32	89.55	93.9	96.68	ECP2-HadCM3 (historical)
21	19.23	29.96	42.18	48.78	55.88	60.48	64.62	68.4	72.98	76.18	CRCM-CGCM3 (future)
22	15.38	19.99	30.35	36.25	42.79	47.14	51.11	54.79	59.3	62.49	CRCM-CGCM3 (historical)
23	11.54	19.84	26.78	30.42	34.28	36.74	38.94	40.94	43.33	44.99	CRCM-CCSM (future)
24	7.69	16.96	23.64	27.22	31.06	33.55	35.77	37.81	40.26	41.97	CRCM-CCSM (historical)
25	3.85	12.69	18.53	21.76	25.3	27.62	29.72	31.65	34.01	35.66	Observed
Gauge: 445690; Duration: 6 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance		2	5	10	25	50	100	200	500		1000
	Probability (%)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002		0.001
1	96.15		66.86	86.45	98.21	112.95	122.53	131.17	139.08	148.65	155.36	HRM3-HadCM3 (historical)
2	92.31		64.32	85.2	96.43	107.38	114.6	121.01	126.81	133.74	138.55	HRM3-HadCM3 (future)
3	88.46		59.5	84.57	96.02	106.8	113.35	119.13	124.33	130.53	136.92	RCM3-GFDL (historical)
4	84.62		55.05	68.94	79.14	90.04	97.69	107.18	116.07	127.08	134.95	RCM3-CGCM3 (historical)
5	80.77		49.83	66.59	72.29	87.44	97.07	105.46	114.6	126.98	134.81	HRM3-GFDL (future)
6	76.92		48.23	60.51	72.2	85.29	95.74	103.36	113.34	125.97	134.12	RCM3-GFDL (future)
7	73.08		44.97	59.12	69.93	79.49	91.31	102.56	109.1	116.02	120.84	HRM3-GFDL (historical)
8	69.23		44.2	58.98	68.65	79.46	88.05	95.9	103.22	112.22	118.61	RCM3-CGCM3 (future)
9	65.38		41.35	57.02	66.69	77.88	82.74	87.63	92.07	97.39	101.08	WRFG-CGCM3 (historical)
10	61.54		38.37	56.7	65.37	77.24	81.39	85.16	89.84	95.48	99.41	WRFG-CCSM (future)
11	57.69		36.55	56.56	64.46	74.29	80.02	84.45	87.17	90.36	93.49	MM5I-CCSM (future)
12	53.85		36.16	55.28	63.03	69.9	73.91	79.07	83.78	89.49	92.55	MM5I-HadCM3 (future)
13	50.00		35.82	52.28	62.58	69.6	73.73	77.37	80.98	85.87	89.27	WRFG-CCSM (historical)
14	46.15		35.55	51.21	59.63	68.19	73.27	76.92	80.65	84.54	88.28	MM5I-CCSM (historical)
15	42.31		34.42	48.99	59.38	67.44	72.45	76.22	78.84	84.18	87.22	MM5I-HadCM3 (historical)
16	38.46		34.33	48.49	55.97	63.4	68.35	73.56	78.35	81.94	84.21	ECP2-GFDL (future)
17	34.62		33.86	45.83	53.85	62.61	68.17	72.43	76.3	80.97	84.06	WRFG-CGCM3 (future)
18	30.77		31.38	45.18	51.08	57.28	61.24	64.76	67.94	71.76	74.4	ECP2-HadCM3 (future)
19	26.92		29.83	43.33	47.79	52.37	55.24	57.76	60.02	63.16	65.48	ECP2-GFDL (historical)
20	23.08		26.6	39.79	44.97	50.43	53.91	57	59.8	62.69	64.53	ECP2-HadCM3 (historical)
21	19.23		20.23	28.35	32.73	37.42	40.46	43.2	45.69	48.71	50.81	CRCM-CGCM3 (future)
22	15.38		13.6	20.48	24.38	28.69	31.54	34.14	36.55	39.49	41.57	CRCM-CGCM3 (historical)
23	11.54		13.49	18.1	20.5	23.05	24.67	26.12	27.43	29	30.09	CRCM-CCSM (future)
24	7.69		11.57	16	18.36	20.89	22.52	23.98	25.31	26.92	28.03	CRCM-CCSM (historical)
25	3.85		8.36	12.08	14.12	16.35	17.8	19.11	20.32	21.79	22.82	Observed
Gauge: 445690; Duration: 12 hr			2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance		2	5	10	25	50	100	200	500		1000
	Probability (%)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002		0.001
1	96.15		34.94	45.03	51.08	58.64	63.54	67.95	71.99	76.88	80.3	HRM3-HadCM3 (historical)
2	92.31		33.63	44.39	50.16	55.78	59.48	62.77	65.73	69.28	71.74	HRM3-HadCM3 (future)
3	88.46		31.16	44.08	49.95	55.48	58.84	61.8	64.47	67.64	70.22	RCM3-GFDL (historical)
4	84.62		28.83	36	41.24	46.83	50.65	55.46	59.96	65.53	69.83	HRM3-GFDL (future)
5	80.77		26.16	34.78	37.71	45.44	50.42	54.56	59.18	65.25	69.51	RCM3-CGCM3 (historical)
6	76.92		25.31	31.65	37.67	44.32	49.63	53.64	58.4	64.92	69.03	RCM3-GFDL (future)
7	73.08		23.64	30.92	36.49	41.34	47.3	52.98	56.57	60.1	62.55	HRM3-GFDL (historical)
8	69.23		23.23	30.89	35.82	41.31	45.7	49.69	53.39	57.95	61.18	RCM3-CGCM3 (future)
9	65.38		21.77	29.85	34.81	40.59	43.04	45.53	47.8	50.51	52.39	WRF3-CGCM3 (historical)
10	61.54		20.23	29.67	34.13	40.23	42.39	44.24	46.63	49.5	51.5	WRF3-CCSM (future)
11	57.69		19.33	29.64	33.66	38.69	41.62	43.96	45.35	47	48.37	MM5I-CCSM (future)
12	53.85		19.1	28.97	32.91	36.45	38.44	41.06	43.46	46.35	48.12	MM5I-HadCM3 (future)
13	50.00		18.91	27.39	32.73	36.28	38.39	40.25	42.05	44.53	46.26	WRF3-CCSM (historical)
14	46.15		18.8	26.85	31.16	35.53	38.18	39.98	41.92	43.91	45.62	MM5I-CCSM (historical)
15	42.31		18.18	25.69	31.03	35.15	37.7	39.69	41.03	43.55	45.27	MM5I-HadCM3 (historical)
16	38.46		18.17	25.52	29.27	33.06	35.55	38.19	40.61	42.61	43.7	WRF3-CGCM3 (future)
17	34.62		17.9	24.08	28.17	32.63	35.49	37.65	39.62	41.99	43.64	ECP2-GFDL (future)
18	30.77		16.64	23.73	26.75	29.92	31.93	33.72	35.34	37.27	38.61	ECP2-HadCM3 (future)
19	26.92		15.82	22.76	25.05	27.39	28.86	30.14	31.3	32.83	34.01	ECP2-GFDL (historical)
20	23.08		14.21	20.94	23.59	26.37	28.14	29.71	31.13	32.66	33.59	ECP2-HadCM3 (historical)
21	19.23		10.87	15.03	17.25	19.62	21.15	22.52	23.77	25.27	26.32	CRCM-CGCM3 (future)
22	15.38		7.46	10.99	12.96	15.12	16.54	17.83	19.01	20.46	21.48	CRCM-CGCM3 (historical)
23	11.54		7.37	9.73	10.94	12.22	13.03	13.75	14.4	15.18	15.72	CRCM-CCSM (future)
24	7.69		6.39	8.66	9.85	11.12	11.93	12.65	13.31	14.09	14.64	CRCM-CCSM (historical)
25	3.85		4.92	7.02	8.16	9.4	10.2	10.93	11.59	12.4	12.96	Observed
Gauge: 445690; Duration: 24 hr			2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	18.23	23.44	26.56	30.44	32.96	35.23	37.3	39.8	41.55	HRM3-HadCM3 (historical)	
2	92.31	17.56	23.11	26.08	28.97	30.88	32.56	34.08	35.9	37.16	HRM3-HadCM3 (future)	
3	88.46	16.29	22.95	25.98	28.82	30.54	32.07	33.44	35.06	36.19	HRM3-GFDL (future)	
4	84.62	15.06	18.78	21.47	24.34	26.27	28.72	31.01	33.84	36.08	RCM3-GFDL (historical)	
5	80.77	13.7	18.14	19.65	23.61	26.19	28.24	30.58	33.58	35.86	RCM3-CGCM3 (historical)	
6	76.92	13.26	16.52	19.63	23.02	25.73	27.83	30.12	33.49	35.57	RCM3-GFDL (future)	
7	73.08	12.39	16.15	19.02	21.49	24.5	27.38	29.33	31.14	32.4	HRM3-GFDL (historical)	
8	69.23	12.18	16.14	18.67	21.45	23.71	25.74	27.63	29.94	31.58	RCM3-CGCM3 (future)	
9	65.38	11.43	15.6	18.15	21.13	22.38	23.66	24.82	26.21	27.17	WRFG-CGCM3 (historical)	
10	61.54	10.63	15.51	17.8	20.94	22.06	22.99	24.21	25.68	26.7	WRFG-CCSM (future)	
11	57.69	10.18	15.5	17.55	20.14	21.65	22.87	23.59	24.43	25.08	MM5I-CCSM (future)	
12	53.85	10.05	15.15	17.17	18.99	20.01	21.35	22.57	24.05	25.01	MM5I-HadCM3 (future)	
13	50.00	9.95	14.32	17.08	18.89	19.97	20.93	21.83	23.09	23.97	WRFG-CCSM (historical)	
14	46.15	9.9	14.05	16.25	18.51	19.87	20.77	21.78	22.8	23.62	MM5I-CCSM (historical)	
15	42.31	9.6	13.44	16.2	18.3	19.61	20.65	21.33	22.57	23.5	MM5I-HadCM3 (historical)	
16	38.46	9.57	13.38	15.27	17.21	18.49	19.84	21.07	22.14	22.7	WRFG-CGCM3 (future)	
17	34.62	9.43	12.62	14.72	17	18.45	19.56	20.56	21.77	22.61	ECP2-GFDL (future)	
18	30.77	8.78	12.43	13.97	15.6	16.63	17.54	18.36	19.35	20.03	ECP2-HadCM3 (future)	
19	26.92	8.35	11.93	13.11	14.32	15.07	15.73	16.32	17.05	17.65	ECP2-GFDL (historical)	
20	23.08	7.54	10.98	12.34	13.76	14.66	15.46	16.19	17.01	17.49	ECP2-HadCM3 (historical)	
21	19.23	5.8	7.94	9.08	10.29	11.07	11.77	12.4	13.17	13.7	CRCM-CGCM3 (future)	
22	15.38	4.03	5.85	6.85	7.94	8.65	9.3	9.89	10.61	11.12	CRCM-CGCM3 (historical)	
23	11.54	3.98	5.19	5.81	6.45	6.86	7.22	7.55	7.94	8.21	CRCM-CCSM (future)	
24	7.69	3.48	4.65	5.25	5.89	6.3	6.66	6.99	7.38	7.65	CRCM-CCSM (historical)	
25	3.85	2.69	3.82	4.43	5.1	5.53	5.91	6.27	6.7	7	Observed	
Gauge: 445690; Duration: 48 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	11.85	15.2	17.21	19.7	21.31	22.76	24.09	25.69	26.81	HRM3-HadCM3 (historical)	
2	92.31	11.41	14.99	16.9	18.75	19.97	21.05	22.03	23.19	24	HRM3-HadCM3 (future)	
3	88.46	10.6	14.89	16.82	18.66	19.77	20.75	21.62	22.67	23.39	HRM3-GFDL (future)	
4	84.62	9.81	12.2	13.93	15.77	16.97	18.53	19.99	21.78	23.18	RCM3-GFDL (historical)	
5	80.77	8.93	11.79	12.75	15.28	16.95	18.23	19.72	21.6	23.06	RCM3-CGCM3 (historical)	
6	76.92	8.64	10.74	12.74	14.91	16.63	18.01	19.41	21.57	22.89	RCM3-GFDL (future)	
7	73.08	8.09	10.51	12.35	13.91	15.84	17.67	18.97	20.12	20.92	HRM3-GFDL (historical)	
8	69.23	7.95	10.5	12.11	13.9	15.32	16.62	17.81	19.28	20.32	RCM3-CGCM3 (future)	
9	65.38	7.48	10.15	11.78	13.7	14.48	15.29	16.03	16.91	17.53	WRF3-CGCM3 (historical)	
10	61.54	6.96	10.1	11.56	13.56	14.3	14.87	15.65	16.58	17.23	WRF3-CCSM (future)	
11	57.69	6.67	10.08	11.41	13.06	14.01	14.82	15.27	15.81	16.18	MM5I-HadCM3 (future)	
12	53.85	6.59	9.86	11.15	12.33	12.95	13.78	14.56	15.49	16.14	MM5I-CCSM (future)	
13	50.00	6.52	9.33	11.11	12.26	12.94	13.56	14.12	14.93	15.49	WRF3-CCSM (historical)	
14	46.15	6.49	9.15	10.57	11.99	12.9	13.45	14.11	14.75	15.23	MM5I-CCSM (historical)	
15	42.31	6.29	8.76	10.52	11.88	12.71	13.39	13.84	14.57	15.2	MM5I-HadCM3 (historical)	
16	38.46	6.27	8.74	9.93	11.17	11.98	12.84	13.62	14.36	14.71	WRF3-CGCM3 (future)	
17	34.62	6.18	8.24	9.58	11.04	11.96	12.66	13.3	14.07	14.6	ECP2-GFDL (future)	
18	30.77	5.77	8.11	9.1	10.13	10.79	11.37	11.9	12.52	12.96	ECP2-HadCM3 (future)	
19	26.92	5.49	7.78	8.53	9.29	9.77	10.19	10.56	11.06	11.44	ECP2-GFDL (historical)	
20	23.08	4.97	7.18	8.05	8.96	9.54	10.05	10.51	11.01	11.31	ECP2-HadCM3 (historical)	
21	19.23	3.85	5.22	5.94	6.71	7.2	7.64	8.04	8.52	8.85	CRCM-CGCM3 (future)	
22	15.38	2.72	3.88	4.51	5.19	5.64	6.04	6.4	6.85	7.16	CRCM-CGCM3 (historical)	
23	11.54	2.67	3.45	3.84	4.25	4.51	4.73	4.94	5.18	5.35	CRCM-CCSM (future)	
24	7.69	2.35	3.09	3.47	3.87	4.13	4.35	4.55	4.79	4.96	CRCM-CCSM (historical)	
25	3.85	1.94	2.7	3.11	3.55	3.84	4.09	4.33	4.61	4.8	Observed	
Gauge: 445690; Duration: 72 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	280.97	389.02	466.9	581.2	665.99	750.15	834.01	944.64	1028.25	RCM3-CGCM3 (future)
2	92.31	272.98	376.45	460.56	550.96	618.02	684.58	750.9	838.4	904.52	HRM3-GFDL (future)
3	88.46	248.47	360.52	418.47	491.7	546.02	599.94	653.67	724.55	778.12	HRM3-HadCM3 (future)
4	84.62	244.17	318.53	367.76	433.84	497.7	561.08	624.23	707.55	770.52	RCM3-GFDL (historical)
5	80.77	239.82	311.11	352.58	429.96	476.11	521.91	567.55	627.76	673.27	HRM3-GFDL (historical)
6	76.92	234.28	293.11	347.77	404.98	443.86	493.47	546.92	617.44	670.74	RCM3-GFDL (future)
7	73.08	226.74	279.64	332.07	385.77	439.82	482.44	520.89	571.61	609.94	HRM3-HadCM3 (historical)
8	69.23	216.83	270.4	312.91	381.29	417.81	454.05	490.17	537.81	573.82	WRF3-CGCM3 (future)
9	65.38	212.57	265.8	303.08	350.19	385.13	419.82	454.39	499.98	534.45	MM5I-HadCM3 (historical)
10	61.54	209.58	261.98	299.31	336.04	366.71	398.47	430.63	473.05	505.12	WRF3-CGCM3 (historical)
11	57.69	209.49	258.49	294.7	335.84	366.19	397.16	427.49	467.5	497.75	WRF3-CCSM (future)
12	53.85	202.75	255.25	289.84	333.67	362.94	389.84	418.32	460.71	492.75	ECP2-HadCM3 (future)
13	50.00	190.64	255.15	286.07	321.45	353.94	386.19	416.64	458.24	490.25	WRF3-CCSM (historical)
14	46.15	188.39	250.33	277.66	320.92	351.55	383.77	415.88	451.99	480.1	MM5I-CCSM (historical)
15	42.31	187.21	242.99	277.32	319.09	346.77	372.44	401	446.05	478.72	MM5I-HadCM3 (future)
16	38.46	183.17	240.7	275.33	311.41	339.76	369.89	399.9	439.51	469.44	ECP2-GFDL (historical)
17	34.62	176.75	236.12	268.5	309.41	336.71	366.86	398	431.74	457.23	ECP2-GFDL (future)
18	30.77	168.16	230.25	261.42	300.8	332.59	361.82	387.91	426.03	454.84	MM5I-CCSM (future)
19	26.92	159.06	214.69	251.53	298.06	330.01	359.01	386.83	419.84	444.78	ECP2-HadCM3 (historical)
20	23.08	156.17	205.09	237.48	278.41	308.77	338.91	368.94	408.55	438.49	RCM3-CGCM3 (historical)
21	19.23	108.37	130.63	145.36	164.49	183.36	202.08	220.74	245.36	263.96	CRCM-CGCM3 (historical)
22	15.38	89.69	118.93	139.06	163.98	177.79	191.56	208.3	230.38	247.07	CRCM-CCSM (future)
23	11.54	88.53	116.96	135.02	157.83	174.76	191.49	205.15	223.17	236.79	CRCM-CGCM3 (future)
24	7.69	71.14	98.6	117.65	141.71	159.56	177.28	194.94	218.23	235.83	Observed
25	3.85	69.83	96.36	113.05	134.14	149.79	165.32	180.8	201.21	216.64	CRCM-CCSM (historical)
Gauge: 445880; Duration: 15 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	232.94	345.09	429.35	547.03	634.33	720.99	807.33	921.24	1007.33	RCM3-CGCM3 (future)
2	92.31	224.16	336.21	419.35	513.17	582.77	651.86	720.7	811.52	880.16	HRM3-GFDL (future)
3	88.46	199.32	312.83	371.54	445.72	500.76	555.38	609.81	681.61	735.88	HRM3-HadCM3 (future)
4	84.62	195.77	268.94	317.39	391.3	455.11	518.45	581.56	664.82	727.75	RCM3-GFDL (historical)
5	80.77	195.54	260.51	305.28	378.6	424.02	469.09	514	573.26	625.77	RCM3-GFDL (future)
6	76.92	185.28	243.45	301.02	352.21	395.9	449.3	502.51	572.71	618.04	HRM3-GFDL (historical)
7	73.08	177.79	237.2	281.96	342.1	390.18	427.88	465.43	514.98	552.43	HRM3-HadCM3 (historical)
8	69.23	168.45	219.59	269.57	330.62	366.72	402.55	438.25	485.35	520.95	WRFG-CGCM3 (future)
9	65.38	164.9	216.07	251.75	296.83	330.27	363.47	396.54	440.18	473.16	MM5I-HadCM3 (historical)
10	61.54	162.18	212.17	247.27	282.24	310.58	341.14	371.58	411.75	442.1	WRFG-CGCM3 (historical)
11	57.69	161.76	211.45	242.26	281.2	310.09	338.76	367.33	405.02	433.51	WRFG-CCSM (future)
12	53.85	155.85	207.94	238.3	279.79	308.18	333.93	359.58	398.71	428.83	ECP2-HadCM3 (future)
13	50.00	144.77	205.46	234.09	267.77	298.31	328.64	358.85	398.4	428.75	WRFG-CCSM (historical)
14	46.15	142.6	199.86	226.59	267.13	297.27	327.81	358.25	393.43	419.01	MM5I-HadCM3 (future)
15	42.31	141.49	194	225.08	266.49	291.64	315.97	340.58	380.23	411.48	MM5I-CCSM (historical)
16	38.46	137.91	192.18	225.01	256.95	284.28	312.48	340.21	377.65	405.66	ECP2-GFDL (historical)
17	34.62	134.38	187.27	217.58	255.87	280.6	307.56	338.89	372.19	396.36	ECP2-GFDL (future)
18	30.77	125.48	181.27	209.97	246.24	276.11	304.06	327.45	361.58	388.11	MM5I-CCSM (future)
19	26.92	116.86	167.92	201.72	244.43	273.15	299.86	326.47	358.3	381.61	ECP2-HadCM3 (historical)
20	23.08	114.16	158.17	187.31	224.13	251.44	278.55	305.56	341.2	368.13	RCM3-CGCM3 (historical)
21	19.23	72.97	91.18	103.24	118.75	133.93	148.99	164.01	183.82	198.79	CRCM-CGCM3 (historical)
22	15.38	58.34	82.09	98.28	118.47	129.78	141	154.04	171.86	185.33	CRCM-CCSM (future)
23	11.54	57.62	80.35	94.91	113.32	126.98	140.53	152.18	166.93	178.07	CRCM-CGCM3 (future)
24	7.69	44.46	63.31	75.79	91.56	103.25	114.87	126.44	141.7	153.24	CRCM-CCSM (historical)
25	3.85	42.95	57.84	67.7	80.16	89.4	98.57	107.71	119.77	128.88	Observed
Gauge: 445880; Duration: 30 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	177.64	265.42	331.71	423.73	492	559.77	627.29	716.37	783.69	RCM3-CGCM3 (future)
2	92.31	170.73	258.87	323.54	396.97	451.45	505.52	559.4	630.48	684.2	HRM3-GFDL (future)
3	88.46	151.34	239.9	285.69	343.56	386.48	429.09	471.55	527.56	569.89	HRM3-HadCM3 (future)
4	84.62	148.87	205.54	243.19	301.57	351.29	400.64	449.8	514.67	563.7	RCM3-GFDL (historical)
5	80.77	148.66	198.86	234.55	290.78	326.07	361.11	396.02	442.67	483.98	RCM3-GFDL (future)
6	76.92	140.43	185.66	230.32	270.07	305	346.58	388.01	442.08	476.88	HRM3-GFDL (historical)
7	73.08	134.6	181.51	215.61	263.11	299.56	328.83	358	396.48	425.56	HRM3-HadCM3 (historical)
8	69.23	127.39	166.98	206.65	253.45	281.52	309.38	337.14	373.76	401.44	WRFG-CGCM3 (future)
9	65.38	124.68	164.34	191.98	226.89	252.8	278.51	304.13	337.92	363.47	MM5I-HadCM3 (historical)
10	61.54	122.6	161.96	188.41	215.49	237.4	261.04	284.59	315.66	339.14	WRFG-CGCM3 (historical)
11	57.69	122.22	160.66	184.48	214.58	236.9	259.07	281.15	310.28	332.3	WRFG-CCSM (future)
12	53.85	117.71	157.94	181.49	213.59	235.58	255.52	275.39	305.44	328.87	WRFG-CCSM (historical)
13	50.00	109.18	156.08	178.17	204.24	227.85	251.29	274.64	305.4	328.73	ECP2-HadCM3 (future)
14	46.15	107.49	151.64	172.41	203.73	227.15	250.79	274.33	301.6	321.41	MM5I-HadCM3 (future)
15	42.31	106.65	147.22	171.25	203.35	222.69	241.51	260.39	290.74	314.82	MM5I-CCSM (historical)
16	38.46	103.9	145.85	171.12	195.73	216.91	238.69	260.26	289.01	310.64	ECP2-GFDL (historical)
17	34.62	101.4	142	165.4	194.98	213.99	234.74	258.89	285	303.69	ECP2-GFDL (future)
18	30.77	94.46	137.32	159.45	187.41	210.5	232.11	250.17	276.32	296.77	MM5I-CCSM (future)
19	26.92	87.78	127.12	153.17	186.08	208.15	228.74	249.26	273.99	292	ECP2-HadCM3 (historical)
20	23.08	85.69	119.52	141.92	170.22	191.21	212.05	232.82	260.21	280.91	RCM3-CGCM3 (historical)
21	19.23	54.2	68.03	77.19	88.96	100.47	111.89	123.27	138.28	149.63	CRCM-CGCM3 (historical)
22	15.38	43.16	61.18	73.45	88.76	97.34	105.86	115.72	129.23	139.44	CRCM-CCSM (future)
23	11.54	42.63	59.84	70.89	84.85	95.2	105.48	114.35	125.55	134.01	CRCM-CGCM3 (future)
24	7.69	32.73	46.89	56.27	68.12	76.92	85.64	94.34	105.81	114.48	CRCM-CCSM (historical)
25	3.85	32.51	45.28	53.74	64.43	72.37	80.24	88.08	98.43	106.25	Observed
Gauge: 445880; Duration: 45 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	149.27	225.9	284.22	364.46	423.99	483.08	541.95	619.63	678.33	RCM3-CGCM3 (future)
2	92.31	143.18	220.71	276.63	340.74	388.29	435.5	482.53	544.58	591.47	HRM3-GFDL (future)
3	88.46	126.34	203.27	243.05	293.31	330.6	367.62	404.5	453.15	489.92	HRM3-HadCM3 (future)
4	84.62	124.79	173.25	205.79	257.49	300.61	343.41	386.05	442.32	484.84	RCM3-GFDL (historical)
5	80.77	124.11	167.33	199.37	246.9	277.4	307.67	337.84	379.5	415.29	RCM3-GFDL (future)
6	76.92	116.91	156.02	194.47	228.76	260.24	296.26	332.15	377.63	407.71	HRM3-GFDL (historical)
7	73.08	111.87	153.37	181.91	223.94	254.19	279.44	304.6	337.79	362.87	HRM3-HadCM3 (historical)
8	69.23	105.69	139.68	175.03	214.62	238.89	262.98	286.98	318.65	342.58	WRFG-CGCM3 (future)
9	65.38	103.43	137.54	161.28	191.28	213.54	235.63	257.64	286.68	308.63	MM5I-HadCM3 (historical)
10	61.54	101.68	136.31	158.1	181.36	200.14	220.41	240.61	267.26	287.4	WRFG-CGCM3 (historical)
11	57.69	101.29	134.26	154.66	180.45	199.58	218.57	237.49	262.45	281.31	WRFG-CCSM (future)
12	53.85	97.48	131.89	152.18	179.71	198.62	215.75	232.82	258.54	278.68	WRFG-CCSM (historical)
13	50.00	90.21	130.39	149.23	171.65	191.88	211.95	231.96	258.35	278.29	ECP2-HadCM3 (future)
14	46.15	88.76	126.45	144.38	171.14	191.42	211.69	231.89	255.34	272.36	MM5I-HadCM3 (future)
15	42.31	88.04	122.81	143.46	170.99	187.4	203.53	219.61	245.2	265.73	MM5I-CCSM (historical)
16	38.46	85.71	121.67	143.11	164.16	182.4	201.03	219.6	244.09	262.61	ECP2-GFDL (historical)
17	34.62	83.89	118.29	138.32	163.62	179.77	197.43	218.03	240.82	256.85	ECP2-GFDL (future)
18	30.77	77.83	114.23	133.11	156.97	176.76	195.27	210.72	232.83	250.28	MM5I-CCSM (future)
19	26.92	72.09	105.65	127.87	155.94	174.66	192.23	209.74	231.09	246.49	ECP2-HadCM3 (historical)
20	23.08	70.31	99.06	118.09	142.14	159.98	177.69	195.33	218.61	236.2	RCM3-CGCM3 (historical)
21	19.23	43.79	55.33	62.97	72.79	82.36	91.87	101.34	113.83	123.28	CRCM-CGCM3 (historical)
22	15.38	34.65	49.66	59.88	72.62	79.79	86.9	95.03	106.27	114.77	CRCM-CCSM (future)
23	11.54	34.23	48.53	57.73	69.34	77.96	86.51	93.98	103.33	110.39	CRCM-CGCM3 (future)
24	7.69	28.29	37.71	45.41	55.14	62.36	69.52	76.66	86.07	93.19	CRCM-CCSM (historical)
25	3.85	26.08	37.59	43.74	51.52	57.29	63.02	68.72	76.25	81.94	Observed
Gauge: 445880; Duration: 1 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	111.72	177.22	228.59	296.96	347.68	398.03	448.19	514.37	564.38	RCM3-CGCM3 (future)
2	92.31	106.37	174.48	220.59	275.38	316.03	356.38	396.59	449.63	489.72	HRM3-GFDL (future)
3	88.46	92.75	156.73	190.08	232.21	263.47	294.49	325.4	366.19	397.01	HRM3-HadCM3 (future)
4	84.62	92.25	131.1	157.87	204.41	240.44	276.2	311.83	358.84	394.37	RCM3-GFDL (historical)
5	80.77	90.67	125.76	155.85	191.69	216.78	241.69	266.5	305.15	334.92	RCM3-GFDL (future)
6	76.92	84.51	117.41	147.94	175.96	205.97	235.92	265.77	299.24	323.98	HRM3-GFDL (historical)
7	73.08	80.35	116.73	138.07	175.79	196.76	217.39	237.96	265.08	285.59	HRM3-HadCM3 (historical)
8	69.23	75.43	102.9	135.1	165.02	185.02	204.87	224.64	250.73	270.45	WRF3-CGCM3 (future)
9	65.38	73.79	102.74	120.48	144.64	162.57	180.37	198.1	221.49	239.17	MM5I-HadCM3 (historical)
10	61.54	72.46	101.35	117.56	136.28	151.35	167.59	183.77	205.12	221.25	WRF3-CGCM3 (historical)
11	57.69	71.97	98.34	114.61	135.15	150.39	165.52	180.59	200.48	215.51	WRF3-CCSM (future)
12	53.85	69.12	96.37	112.94	134.99	150.17	163.96	177.7	198.32	214.46	WRF3-CCSM (historical)
13	50.00	63.44	95.48	110.24	128.34	144.54	160.78	176.97	197.43	213.33	ECP2-HadCM3 (future)
14	46.15	62.28	91.89	106.61	128.17	144.46	160.46	176.4	195.83	209.53	MM5I-HadCM3 (future)
15	42.31	61.71	89.42	106.11	127.76	140.76	153.66	166.52	185.53	201.5	MM5I-CCSM (historical)
16	38.46	59.92	88.65	105.08	121.74	136.58	151.36	166.1	185.4	200.22	ECP2-GFDL (historical)
17	34.62	59.36	85.71	101.6	121.68	134.1	147.93	164.08	183.48	196.29	ECP2-GFDL (future)
18	30.77	54.27	82.31	97.13	115.85	131.72	146.37	158.6	175.4	189.1	MM5I-CCSM (future)
19	26.92	49.63	75.95	93.37	115.39	129.74	143.53	157.27	174.73	186.92	ECP2-HadCM3 (historical)
20	23.08	48.21	70.44	85.16	103.76	117.56	131.26	144.91	162.91	176.52	RCM3-CGCM3 (historical)
21	19.23	28.32	36.66	42.19	49.33	56.2	63.01	69.8	78.76	85.53	CRCM-CGCM3 (historical)
22	15.38	21.92	32.75	40.07	49.16	54.34	59.48	65.23	73.3	79.39	CRCM-CCSM (future)
23	11.54	21.68	31.88	38.47	46.8	52.99	59.12	64.6	71.36	76.46	CRCM-CGCM3 (future)
24	7.69	17.31	24	29.26	35.89	40.82	45.71	50.58	57	61.86	CRCM-CCSM (historical)
25	3.85	16.07	23.82	28.13	33.58	37.63	41.64	45.64	50.91	54.9	Observed
Gauge: 445880; Duration: 2 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	72.11	110.06	139.1	178.82	208.28	237.53	266.66	305.11	334.16	RCM3-CGCM3 (future)
2	92.31	69.08	107.67	135.18	166.92	190.48	213.85	237.14	267.87	291.09	HRM3-GFDL (future)
3	88.46	60.77	98.74	118.37	143.18	161.59	179.86	198.06	222.08	240.23	HRM3-HadCM3 (future)
4	84.62	60.2	83.86	99.86	125.71	146.98	168.08	189.11	216.85	237.82	RCM3-GFDL (historical)
5	80.77	59.69	80.91	97.05	120.08	135.08	149.97	164.8	185.78	203.42	RCM3-GFDL (future)
6	76.92	56.12	75.36	94.24	111.09	127.01	144.76	162.45	184.38	199.17	HRM3-GFDL (historical)
7	73.08	53.65	74.37	88.1	109.12	123.59	136	148.36	164.67	176.99	HRM3-HadCM3 (historical)
8	69.23	50.63	67.27	85.01	104.2	116.14	127.99	139.79	155.37	167.15	WRF3-CGCM3 (future)
9	65.38	49.54	66.26	77.9	92.6	103.51	114.34	125.13	139.36	150.12	MM5I-HadCM3 (historical)
10	61.54	48.68	65.93	76.3	87.7	96.89	106.81	116.7	129.75	139.61	WRF3-CGCM3 (historical)
11	57.69	48.48	64.61	74.6	87.21	96.57	105.85	115.11	127.31	136.54	WRF3-CCSM (future)
12	53.85	46.64	63.45	73.41	86.89	96.15	104.55	112.91	125.5	135.36	WRF3-CCSM (historical)
13	50.00	43.1	62.75	71.94	82.91	92.8	102.62	112.45	125.3	135.05	ECP2-HadCM3 (future)
14	46.15	42.39	60.77	69.58	82.67	92.64	102.56	112.39	123.95	132.29	MM5I-HadCM3 (future)
15	42.31	42.03	59.03	69.16	82.64	90.62	98.52	106.39	118.69	128.7	MM5I-CCSM (historical)
16	38.46	40.9	58.5	68.91	79.19	88.15	97.26	106.33	118.3	127.35	ECP2-GFDL (historical)
17	34.62	40.1	56.82	66.61	78.97	86.82	95.4	105.44	116.78	124.63	ECP2-GFDL (future)
18	30.77	37.11	54.8	64.01	75.65	85.32	94.39	101.94	112.65	121.17	MM5I-CCSM (future)
19	26.92	34.3	50.66	61.49	75.17	84.28	92.85	101.39	111.89	119.41	ECP2-HadCM3 (historical)
20	23.08	33.43	47.41	56.67	68.36	77.04	85.65	94.23	105.55	114.11	RCM3-CGCM3 (historical)
21	19.23	20.6	26.15	29.82	34.55	39.14	43.71	48.25	54.25	58.78	CRCM-CGCM3 (historical)
22	15.38	16.23	23.45	28.35	34.47	37.91	41.33	45.21	50.61	54.68	CRCM-CCSM (future)
23	11.54	16.04	22.9	27.31	32.88	37.02	41.12	44.74	49.23	52.63	CRCM-CGCM3 (future)
24	7.69	12.48	17.69	21.34	25.96	29.39	32.79	36.18	40.66	44.04	CRCM-CCSM (historical)
25	3.85	12.16	16.94	19.89	23.61	26.38	29.12	31.85	35.46	38.19	Observed
Gauge: 445880; Duration: 3 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	57.18	86.54	108.89	139.63	162.43	185.07	207.62	237.37	259.86	RCM3-CGCM3 (future)
2	92.31	54.85	84.56	105.98	130.54	148.76	166.84	184.86	208.63	226.6	HRM3-GFDL (future)
3	88.46	48.4	77.87	93.12	112.37	126.66	140.84	154.97	173.61	187.7	HRM3-HadCM3 (future)
4	84.62	47.81	66.38	78.84	98.64	115.16	131.56	147.9	169.45	185.74	RCM3-GFDL (historical)
5	80.77	47.55	64.11	76.37	94.59	106.27	117.86	129.42	145.39	159.1	RCM3-GFDL (future)
6	76.92	44.8	59.78	74.5	87.64	99.7	113.5	127.25	144.66	156.18	HRM3-GFDL (historical)
7	73.08	42.86	58.75	69.69	85.79	97.39	107.06	116.7	129.41	139.03	HRM3-HadCM3 (historical)
8	69.23	40.49	53.52	67.05	82.22	91.52	100.75	109.94	122.07	131.24	WRF3-CGCM3 (future)
9	65.38	39.63	52.7	61.8	73.29	81.82	90.29	98.72	109.85	118.26	MM5I-HadCM3 (historical)
10	61.54	38.96	52.22	60.57	69.49	76.68	84.45	92.19	102.4	110.12	WRF3-CGCM3 (historical)
11	57.69	38.81	51.43	59.25	69.13	76.45	83.73	90.97	100.53	107.76	WRF3-CCSM (future)
12	53.85	37.35	50.53	58.31	68.86	76.1	82.67	89.21	99.06	106.78	WRF3-CCSM (historical)
13	50.00	34.56	49.96	57.18	65.76	73.51	81.2	88.87	98.98	106.62	ECP2-HadCM3 (future)
14	46.15	34.01	48.45	55.31	65.58	73.34	81.11	88.85	97.84	104.36	MM5I-HadCM3 (future)
15	42.31	33.73	47.05	54.97	65.52	71.81	77.99	84.16	93.95	101.82	MM5I-CCSM (historical)
16	38.46	32.84	46.62	54.83	62.9	69.87	77	84.11	93.5	100.59	ECP2-GFDL (historical)
17	34.62	32.13	45.31	52.98	62.68	68.88	75.65	83.54	92.28	98.43	ECP2-GFDL (future)
18	30.77	29.82	43.76	50.99	60.13	67.73	74.82	80.74	89.19	95.87	MM5I-CCSM (future)
19	26.92	27.62	40.48	48.99	59.75	66.91	73.64	80.34	88.55	94.45	ECP2-HadCM3 (historical)
20	23.08	26.93	37.95	45.24	54.45	61.28	68.06	74.82	83.74	90.48	RCM3-CGCM3 (historical)
21	19.23	16.77	21.19	24.11	27.88	31.55	35.19	38.82	43.61	47.23	CRCM-CGCM3 (historical)
22	15.38	13.27	19.02	22.94	27.81	30.55	33.27	36.41	40.72	43.97	CRCM-CCSM (future)
23	11.54	13.11	18.59	22.11	26.56	29.87	33.14	35.99	39.56	42.27	CRCM-CGCM3 (future)
24	7.69	10.91	14.45	17.4	21.12	23.89	26.63	29.36	32.97	35.7	CRCM-CCSM (historical)
25	3.85	9.99	14.31	16.56	19.41	21.52	23.62	25.7	28.46	30.54	Observed
Gauge: 445880; Duration: 4 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h^{-1}) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	56.18	85.61	108.13	138.93	161.78	184.46	207.05	236.87	259.4	RCM3-CGCM3 (future)
2	92.31	53.83	83.75	105.09	129.71	147.97	166.1	184.17	208	226.01	HRM3-GFDL (future)
3	88.46	47.38	76.82	92.05	111.28	125.55	139.72	153.83	172.45	186.52	HRM3-HadCM3 (future)
4	84.62	46.94	65.29	77.7	97.76	114.25	130.62	146.93	168.45	184.71	RCM3-GFDL (historical)
5	80.77	46.55	62.99	75.53	93.38	105.01	116.56	128.06	144.33	158.01	RCM3-GFDL (future)
6	76.92	43.79	58.71	73.33	86.4	98.75	112.52	126.24	143.24	154.71	HRM3-GFDL (historical)
7	73.08	41.87	57.94	68.58	84.88	96.09	105.71	115.29	127.94	137.49	HRM3-HadCM3 (historical)
8	69.23	39.52	52.44	66.18	81.06	90.32	99.51	108.66	120.74	129.87	WRF3-CGCM3 (future)
9	65.38	38.68	51.63	60.66	72.06	80.51	88.91	97.27	108.31	116.65	MM5I-HadCM3 (historical)
10	61.54	38.01	51.39	59.43	68.28	75.41	83.1	90.77	100.89	108.54	WRF3-CGCM3 (historical)
11	57.69	37.85	50.37	58.11	67.89	75.15	82.35	89.53	98.99	106.15	WRF3-CCSM (future)
12	53.85	36.43	49.46	57.2	67.65	74.83	81.35	87.83	97.59	105.24	WRF3-CCSM (historical)
13	50.00	33.68	48.92	56.05	64.57	72.25	79.86	87.47	97.46	105.03	ECP2-HadCM3 (future)
14	46.15	33.13	47.38	54.23	64.36	72.11	79.8	87.45	96.39	102.86	MM5I-HadCM3 (future)
15	42.31	32.85	46.05	53.9	64.35	70.53	76.66	82.76	92.33	100.1	MM5I-CCSM (historical)
16	38.46	31.98	45.62	53.7	61.67	68.6	75.66	82.7	91.98	98.99	ECP2-GFDL (historical)
17	34.62	31.36	44.31	51.9	61.49	67.59	74.26	82.05	90.81	96.9	ECP2-GFDL (future)
18	30.77	29.04	42.76	49.9	58.92	66.45	73.47	79.32	87.6	94.19	MM5I-CCSM (future)
19	26.92	26.86	39.55	47.95	58.57	65.61	72.25	78.87	87.04	92.87	ECP2-HadCM3 (historical)
20	23.08	26.18	37.03	44.21	53.28	60.01	66.69	73.34	82.12	88.76	RCM3-CGCM3 (historical)
21	19.23	16.23	20.53	23.38	27.06	30.62	34.16	37.68	42.34	45.85	CRCM-CGCM3 (historical)
22	15.38	12.85	18.45	22.25	26.98	29.65	32.31	35.33	39.52	42.68	CRCM-CCSM (future)
23	11.54	12.7	18.02	21.44	25.77	28.98	32.16	34.95	38.43	41.07	CRCM-CGCM3 (future)
24	7.69	9.69	13.98	16.82	20.4	23.06	25.7	28.33	31.8	34.43	CRCM-CCSM (historical)
25	3.85	7.92	10.56	12.31	14.52	16.16	17.79	19.41	21.55	23.17	Observed
Gauge: 445880; Duration: 6 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	35.87	54.48	68.71	88.18	102.62	116.95	131.23	150.07	164.31	RCM3-CGCM3 (future)	
2	92.31	34.39	53.3	66.79	82.35	93.9	105.36	116.78	131.84	143.22	HRM3-GFDL (future)	
3	88.46	30.32	48.93	58.55	70.71	79.73	88.69	97.61	109.38	118.28	HRM3-HadCM3 (future)	
4	84.62	30.04	41.64	49.48	62.14	72.56	82.91	93.21	106.81	117.09	RCM3-GFDL (historical)	
5	80.77	29.79	40.19	48.1	59.4	66.75	74.05	81.33	91.58	100.22	RCM3-GFDL (future)	
6	76.92	28.05	37.48	46.72	54.98	62.78	71.48	80.14	90.92	98.18	HRM3-GFDL (historical)	
7	73.08	26.83	36.98	43.72	54.01	61.11	67.19	73.25	81.24	87.28	HRM3-HadCM3 (historical)	
8	69.23	25.35	33.51	42.2	51.61	57.46	63.27	69.06	76.69	82.46	WRFG-CGCM3 (future)	
9	65.38	24.82	33.02	38.72	45.93	51.28	56.58	61.87	68.85	74.12	MM5I-HadCM3 (historical)	
10	61.54	24.4	32.85	37.93	43.52	48.01	52.87	57.71	64.11	68.93	WRFG-CGCM3 (historical)	
11	57.69	24.29	32.21	37.1	43.28	47.86	52.41	56.95	62.93	67.45	WRFG-CCSM (future)	
12	53.85	23.39	31.64	36.51	43.11	47.67	51.78	55.88	62.03	66.85	WRFG-CCSM (historical)	
13	50.00	21.66	31.29	35.8	41.18	46.03	50.84	55.63	61.96	66.74	ECP2-HadCM3 (future)	
14	46.15	21.31	30.32	34.64	41.05	45.93	50.79	55.63	61.29	65.38	MM5I-HadCM3 (future)	
15	42.31	21.13	29.47	34.43	41.03	44.95	48.82	52.68	58.7	63.61	MM5I-CCSM (historical)	
16	38.46	20.58	29.21	34.31	39.35	43.74	48.2	52.65	58.52	62.95	ECP2-GFDL (historical)	
17	34.62	20.19	28.38	33.18	39.24	43.09	47.29	52.21	57.77	61.61	ECP2-GFDL (future)	
18	30.77	18.73	27.4	31.91	37.61	42.35	46.8	50.5	55.73	59.9	MM5I-CCSM (future)	
19	26.92	17.35	25.37	30.67	37.38	41.84	46.03	50.22	55.38	59.07	ECP2-HadCM3 (historical)	
20	23.08	16.92	23.77	28.3	34.03	38.28	42.5	46.7	52.25	56.44	RCM3-CGCM3 (historical)	
21	19.23	10.63	13.36	15.16	17.47	19.72	21.96	24.19	27.13	29.36	CRCM-CGCM3 (historical)	
22	15.38	8.49	12.03	14.43	17.44	19.12	20.8	22.68	25.32	27.31	CRCM-CCSM (future)	
23	11.54	8.4	11.75	13.91	16.64	18.67	20.67	22.47	24.68	26.34	CRCM-CGCM3 (future)	
24	7.69	6.5	9.21	11.01	13.27	14.96	16.63	18.29	20.49	22.15	CRCM-CCSM (historical)	
25	3.85	4.99	6.93	8.21	9.83	11.03	12.22	13.41	14.97	16.16	Observed	
Gauge: 445880; Duration: 12 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	19.43	29.34	36.92	47.29	54.97	62.61	70.21	80.24	87.83	RCM3-CGCM3 (future)	
2	92.31	18.64	28.72	35.89	44.18	50.33	56.43	62.51	70.54	76.6	HRM3-GFDL (future)	
3	88.46	16.47	26.38	31.51	37.98	42.79	47.56	52.31	58.58	63.32	HRM3-HadCM3 (future)	
4	84.62	16.33	22.51	26.68	33.42	38.97	44.48	49.97	57.21	62.69	RCM3-GFDL (historical)	
5	80.77	16.2	21.73	25.94	31.96	35.88	39.77	43.64	49.1	53.7	RCM3-GFDL (future)	
6	76.92	15.27	20.29	25.21	29.61	33.76	38.39	43.01	48.75	52.61	HRM3-GFDL (historical)	
7	73.08	14.62	20.02	23.61	29.09	32.87	36.11	39.34	43.6	46.82	HRM3-HadCM3 (historical)	
8	69.23	13.83	18.17	22.8	27.81	30.92	34.02	37.1	41.16	44.23	WRFG-CGCM3 (future)	
9	65.38	13.54	17.9	20.94	24.78	27.62	30.45	33.26	36.98	39.79	MM5I-HadCM3 (historical)	
10	61.54	13.32	17.82	20.52	23.5	25.91	28.5	31.08	34.49	37.06	WRFG-CGCM3 (historical)	
11	57.69	13.26	17.47	20.08	23.37	25.81	28.23	30.64	33.83	36.23	WRFG-CCSM (future)	
12	53.85	12.79	17.18	19.78	23.3	25.7	27.89	30.07	33.38	35.95	WRFG-CCSM (historical)	
13	50.00	11.87	16.99	19.39	22.27	24.85	27.41	29.97	33.34	35.89	ECP2-HadCM3 (future)	
14	46.15	11.68	16.47	18.78	22.2	24.8	27.39	29.97	32.95	35.12	MM5I-HadCM3 (future)	
15	42.31	11.58	16.03	18.67	22.19	24.27	26.34	28.39	31.59	34.2	MM5I-CCSM (historical)	
16	38.46	11.29	15.88	18.6	21.28	23.63	26.01	28.38	31.51	33.87	ECP2-GFDL (historical)	
17	34.62	11.08	15.44	18	21.23	23.27	25.51	28.13	31.11	33.16	ECP2-GFDL (future)	
18	30.77	10.3	14.92	17.32	20.36	22.88	25.25	27.22	30.02	32.25	MM5I-CCSM (future)	
19	26.92	9.57	13.84	16.66	20.23	22.61	24.85	27.08	29.81	31.78	ECP2-HadCM3 (historical)	
20	23.08	9.34	12.99	15.41	18.46	20.73	22.97	25.21	28.17	30.4	RCM3-CGCM3 (historical)	
21	19.23	5.99	7.44	8.4	9.64	10.84	12.03	13.22	14.78	15.97	CRCM-CGCM3 (historical)	
22	15.38	4.86	6.74	8.02	9.61	10.51	11.4	12.43	13.84	14.9	CRCM-CCSM (future)	
23	11.54	4.8	6.6	7.75	9.21	10.29	11.36	12.29	13.47	14.35	CRCM-CGCM3 (future)	
24	7.69	3.79	5.23	6.19	7.39	8.29	9.17	10.06	11.22	12.11	CRCM-CCSM (historical)	
25	3.85	2.96	4.05	4.78	5.69	6.37	7.05	7.72	8.61	9.28	Observed	
Gauge: 445880; Duration: 24 hr		2- year	5- year	10- year	25- year	50- year	100-year	200-year	500-year	1000-year		

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance		2	5	10	25	50	100	200	500		1000
	Probability (%)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002		0.001
1	96.15		10.33	15.51	19.48	24.9	28.93	32.92	36.9	42.16	46.13	RCM3-CGCM3 (future)
2	92.31		9.91	15.18	18.95	23.29	26.51	29.7	32.89	37.09	40.26	HRM3-GFDL (future)
3	88.46		8.78	13.96	16.64	20.02	22.53	25.03	27.51	30.79	33.26	HRM3-HadCM3 (future)
4	84.62		8.69	11.93	14.12	17.65	20.56	23.44	26.32	30.11	32.98	RCM3-GFDL (historical)
5	80.77		8.63	11.53	13.73	16.88	18.94	20.97	23	25.87	28.28	RCM3-GFDL (future)
6	76.92		8.14	10.77	13.35	15.65	17.83	20.26	22.68	25.68	27.7	HRM3-GFDL (historical)
7	73.08		7.8	10.63	12.5	15.39	17.35	19.05	20.73	22.96	24.64	HRM3-HadCM3 (historical)
8	69.23		7.38	9.67	12.09	14.7	16.33	17.95	19.56	21.68	23.29	WRFG-CGCM3 (future)
9	65.38		7.24	9.53	11.12	13.13	14.62	16.1	17.58	19.52	20.99	MM5I-HadCM3 (historical)
10	61.54		7.12	9.48	10.9	12.46	13.7	15.06	16.41	18.19	19.54	WRFG-CGCM3 (historical)
11	57.69		7.1	9.3	10.66	12.38	13.66	14.93	16.19	17.86	19.12	WRFG-CCSM (future)
12	53.85		6.84	9.13	10.5	12.34	13.62	14.77	15.91	17.61	18.96	WRFG-CCSM (historical)
13	50.00		6.36	9.04	10.29	11.79	13.14	14.48	15.83	17.57	18.9	ECP2-HadCM3 (future)
14	46.15		6.26	8.78	9.97	11.76	13.12	14.48	15.81	17.42	18.56	MM5I-HadCM3 (future)
15	42.31		6.21	8.53	9.92	11.76	12.84	13.92	15.02	16.69	18.06	MM5I-CCSM (historical)
16	38.46		6.06	8.46	9.89	11.29	12.53	13.77	14.99	16.65	17.89	ECP2-GFDL (historical)
17	34.62		5.95	8.24	9.58	11.27	12.34	13.51	14.88	16.41	17.48	ECP2-GFDL (future)
18	30.77		5.54	7.96	9.21	10.8	12.13	13.37	14.4	15.86	17.02	MM5I-CCSM (future)
19	26.92		5.15	7.39	8.87	10.74	11.98	13.15	14.32	15.76	16.79	ECP2-HadCM3 (historical)
20	23.08		5.04	6.94	8.21	9.8	10.99	12.17	13.34	14.88	16.05	RCM3-CGCM3 (historical)
21	19.23		3.29	4.05	4.55	5.19	5.81	6.43	7.04	7.86	8.48	CRCM-CGCM3 (historical)
22	15.38		2.69	3.67	4.34	5.18	5.66	6.13	6.65	7.39	7.94	CRCM-CCSM (future)
23	11.54		2.66	3.6	4.2	4.97	5.53	6.09	6.59	7.21	7.67	CRCM-CGCM3 (future)
24	7.69		2.13	2.88	3.38	4.01	4.47	4.94	5.4	6.01	6.47	CRCM-CCSM (historical)
25	3.85		1.68	2.39	2.85	3.45	3.88	4.32	4.75	5.33	5.76	Observed
Gauge: 445880; Duration: 48 hr			2- year	5- year	10- year	25- year	50- year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	6.85	10.24	12.83	16.38	19.01	21.63	24.23	27.66	30.26	RCM3-CGCM3 (future)	
2	92.31	6.58	10.02	12.49	15.33	17.43	19.53	21.61	24.36	26.43	HRM3-GFDL (future)	
3	88.46	5.83	9.23	10.98	13.2	14.85	16.48	18.11	20.25	21.88	HRM3-HadCM3 (future)	
4	84.62	5.78	7.9	9.34	11.64	13.55	15.43	17.32	19.8	21.68	RCM3-GFDL (historical)	
5	80.77	5.74	7.64	9.08	11.15	12.49	13.83	15.15	17.03	18.61	RCM3-GFDL (future)	
6	76.92	5.42	7.14	8.83	10.34	11.77	13.36	14.94	16.91	18.23	HRM3-GFDL (historical)	
7	73.08	5.19	7.05	8.28	10.17	11.46	12.57	13.68	15.14	16.24	HRM3-HadCM3 (historical)	
8	69.23	4.93	6.41	8.01	9.73	10.8	11.86	12.91	14.31	15.36	WRFG-CGCM3 (future)	
9	65.38	4.83	6.32	7.36	8.68	9.65	10.62	11.59	12.86	13.83	MM5I-HadCM3 (historical)	
10	61.54	4.75	6.3	7.22	8.24	9.07	9.95	10.84	12	12.89	WRFG-CGCM3 (historical)	
11	57.69	4.74	6.18	7.08	8.21	9.05	9.88	10.71	11.8	12.63	WRFG-CCSM (future)	
12	53.85	4.57	6.08	6.97	8.17	9	9.75	10.5	11.62	12.51	WRFG-CCSM (historical)	
13	50.00	4.26	6.01	6.84	7.81	8.69	9.57	10.46	11.6	12.47	ECP2-HadCM3 (future)	
14	46.15	4.19	5.83	6.62	7.8	8.69	9.57	10.44	11.48	12.23	MM5I-HadCM3 (future)	
15	42.31	4.15	5.68	6.59	7.79	8.51	9.22	9.92	11.04	11.93	MM5I-CCSM (historical)	
16	38.46	4.06	5.63	6.56	7.47	8.29	9.11	9.92	10.99	11.8	ECP2-GFDL (historical)	
17	34.62	3.98	5.48	6.36	7.47	8.15	8.95	9.85	10.85	11.56	ECP2-GFDL (future)	
18	30.77	3.72	5.3	6.13	7.17	8.04	8.83	9.5	10.49	11.25	MM5I-CCSM (future)	
19	26.92	3.47	4.93	5.91	7.13	7.95	8.71	9.48	10.39	11.06	ECP2-HadCM3 (historical)	
20	23.08	3.39	4.64	5.47	6.52	7.3	8.07	8.84	9.86	10.63	RCM3-CGCM3 (historical)	
21	19.23	2.24	2.73	3.06	3.48	3.89	4.3	4.71	5.25	5.65	CRCM-CGCM3 (historical)	
22	15.38	1.85	2.49	2.93	3.47	3.78	4.09	4.43	4.9	5.27	CRCM-CCSM (future)	
23	11.54	1.83	2.44	2.83	3.33	3.7	4.06	4.39	4.79	5.09	CRCM-CGCM3 (future)	
24	7.69	1.49	1.98	2.31	2.72	3.03	3.34	3.64	4.04	4.34	CRCM-CCSM (historical)	
25	3.85	1.19	1.71	2.05	2.48	2.79	3.11	3.42	3.84	4.15	Observed	
Gauge: 445880; Duration: 72 hr		2- year	5- year	10- year	25- year	50- year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	287.53	385.53	450.41	532.39	593.2	653.57	713.72	793.07	853.04	HRM3-GFDL (future)	
2	92.31	271.28	352.75	406.7	474.85	525.42	575.61	625.61	710.16	782.07	Observed	
3	88.46	262.36	324.09	371.86	432.21	476.99	542.89	615.01	691.59	741.45	HRM3-HadCM3 (future)	
4	84.62	251.94	304.29	348.21	405	470.51	521.43	565.72	624.14	668.29	HRM3-HadCM3 (historical)	
5	80.77	246.28	303.28	347.1	404.99	447.95	490.59	533.07	589.12	637.03	RCM3-GFDL (future)	
6	76.92	246.28	301.27	332.05	397.59	447.11	488.92	530.58	588.04	631.48	HRM3-GFDL (historical)	
7	73.08	235.41	295.83	328.64	383.04	428.36	474.11	523.23	585.54	627.07	WRFG-CGCM3 (historical)	
8	69.23	232.06	295.83	328.64	375.14	424.81	473.34	518.16	577.29	621.99	RCM3-CGCM3 (future)	
9	65.38	224.19	280.7	321.95	371.75	409.46	446.89	484.19	533.39	570.57	WRFG-CCSM (future)	
10	61.54	219.94	276.54	320.92	370.1	400.85	434.42	471.93	521.4	558.8	WRFG-CCSM (historical)	
11	57.69	206.2	273.6	311.19	370.1	400.85	431.38	461.79	509.96	551.06	RCM3-GFDL (historical)	
12	53.85	200.57	267.3	308.18	367.13	396.78	431.38	461.79	504.34	541.38	MM5I-CCSM (future)	
13	50.00	192.09	255.19	307.75	358.87	393.16	419.71	455.58	501.92	532.24	ECP2-HadCM3 (future)	
14	46.15	183.45	252.62	299.29	354.98	387.46	418.99	455.32	501.92	532.24	ECP2-HadCM3 (future)	
15	42.31	175.15	232.41	292.69	343.33	380.89	418.18	451.84	494.22	526.25	MM5I-HadCM3 (historical)	
16	38.46	172.29	230.68	275.14	331.32	372.99	414.36	444.73	485.78	523.39	MM5I-CCSM (historical)	
17	34.62	171.15	230.2	270.89	322.3	360.44	398.3	436.02	478.68	504.34	MM5I-HadCM3 (future)	
18	30.77	168.75	227.72	265.17	312.49	347.6	382.44	417.16	462.97	497.59	RCM3-CGCM3 (historical)	
19	26.92	163.52	221.5	264.83	305.78	336.17	366.33	396.37	436.02	465.98	ECP2-GFDL (future)	
20	23.08	156.26	212.16	238.56	271.92	296.67	321.23	345.7	377.99	402.39	ECP2-HadCM3 (historical)	
21	19.23	113.72	196.14	222.55	255.91	280.66	305.23	329.71	362.01	386.41	ECP2-GFDL (historical)	
22	15.38	103.99	144.99	165.69	191.84	211.25	230.51	249.7	275.02	294.15	CRCM-CGCM3 (future)	
23	11.54	86.97	117.49	137.7	163.24	182.18	200.98	219.72	244.43	263.12	CRCM-CGCM3 (historical)	
24	7.69	85.1	110.19	126.8	147.79	163.36	178.81	194.21	214.53	229.88	CRCM-CCSM (future)	
25	3.85	73.65	99.96	117.38	139.39	155.71	171.92	188.07	209.37	225.47	CRCM-CCSM (historical)	
Gauge: 448062; Duration: 15 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	238.93	339.86	406.69	491.12	553.76	615.93	677.88	759.61	821.38	HRM3-GFDL (future)
2	92.31	222.26	304.12	358.32	426.8	477.6	528.03	578.27	644.56	694.66	HRM3-HadCM3 (future)
3	88.46	211.79	274.45	321.75	381.52	425.85	469.86	513.71	571.56	615.28	HRM3-HadCM3 (historical)
4	84.62	203.01	253.19	299.43	357.86	401.2	444.23	487.09	543.65	586.87	RCM3-GFDL (future)
5	80.77	196.63	252.83	296.13	350.92	391.57	431.91	474.69	538.58	586.39	HRM3-GFDL (historical)
6	76.92	196.63	252.77	279.99	328.69	377.66	426.26	472.11	525.14	565.23	WRF3-CGCM3 (historical)
7	73.08	187.28	244.6	276.37	328.32	371.34	414.04	456.58	512.71	555.13	RCM3-CGCM3 (future)
8	69.23	183.35	244.6	276.37	318.04	354.26	390.22	426.04	473.31	509.03	WRF3-CCSM (future)
9	65.38	175.66	230.56	270.33	316.5	346.27	375.82	410.03	458.53	498.62	RCM3-GFDL (historical)
10	61.54	172.2	226.3	269.21	316.5	346.27	375.82	405.47	456.65	491.88	WRF3-CCSM (historical)
11	57.69	159.63	224.44	262.69	314.32	339.78	374.69	405.27	444.12	475.99	MM5I-CCSM (future)
12	53.85	155.12	217.21	259.82	303.49	339.22	365.26	405.27	444.12	473.47	ECP2-HadCM3 (future)
13	50.00	146.54	210.45	255.33	302.19	333.61	365.06	395.88	441.05	473.47	ECP2-HadCM3 (future)
14	46.15	138.06	203.63	241.43	289.19	324.9	364.8	394.82	436.89	467.88	MM5I-HadCM3 (historical)
15	42.31	131.55	186.04	229.42	284.23	324.62	359.78	390.24	423.47	455.62	MM5I-CCSM (historical)
16	38.46	127.85	183.98	220.7	268.53	304.01	339.24	374.33	420.63	448.58	MM5I-HadCM3 (future)
17	34.62	127.7	182.84	214.38	257.32	289.51	321.47	353.31	395.31	427.06	RCM3-CGCM3 (historical)
18	30.77	125.66	179.57	213.92	252.79	281.29	309.57	337.76	374.94	403.04	ECP2-GFDL (future)
19	26.92	120.52	164.14	188.17	218.53	241.06	263.42	285.87	327.97	359.79	Observed
20	23.08	113.83	149.3	172.79	202.46	224.48	253.96	285.69	315.08	337.29	ECP2-HadCM3 (historical)
21	19.23	77.62	111.76	146.18	189.67	221.94	246.33	268.1	296.83	318.53	ECP2-GFDL (historical)
22	15.38	59.77	103.84	121.2	143.13	159.4	175.56	191.65	212.88	228.93	CRCM-CGCM3 (future)
23	11.54	56.2	81.53	98.3	119.49	135.21	150.81	166.35	186.86	202.36	CRCM-CGCM3 (historical)
24	7.69	54.77	74.57	87.67	104.23	116.52	128.71	140.86	156.89	169.01	CRCM-CCSM (future)
25	3.85	46.39	66.16	79.24	95.78	108.05	120.23	132.36	148.37	160.47	CRCM-CCSM (historical)
Gauge: 448062; Duration: 30 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	182.25	261.15	313.39	379.39	428.35	476.96	525.38	589.27	637.56	HRM3-GFDL (future)
2	92.31	169.22	233.01	275.25	328.61	368.2	407.5	446.65	498.3	537.34	HRM3-HadCM3 (future)
3	88.46	160.93	209.82	246.61	293.1	327.59	361.82	395.92	440.92	474.93	HRM3-HadCM3 (historical)
4	84.62	154.25	193.42	229.48	275.05	308.85	342.4	375.83	419.93	453.26	HRM3-GFDL (historical)
5	80.77	149.21	192.84	226.46	268.94	300.46	331.74	365.95	415.64	453.19	RCM3-GFDL (future)
6	76.92	149.21	192.8	213.89	252.41	290.49	328.29	362.9	404.02	435.1	WRF3-CGCM3 (historical)
7	73.08	142.06	186.42	211.05	251.29	284.58	317.62	350.54	393.97	426.79	RCM3-CGCM3 (future)
8	69.23	138.96	186.42	211.05	243.37	271.44	299.3	327.06	363.68	391.36	WRF3-CCSM (future)
9	65.38	132.98	175.59	206.42	242.18	265.27	288.19	314.28	353.07	384.21	RCM3-GFDL (historical)
10	61.54	130.36	172.25	205.53	242.18	265.27	288.19	311.87	350.32	377.57	WRF3-CCSM (historical)
11	57.69	120.69	170.91	201.08	240.55	260.33	286.96	311.02	341.15	365.26	MM5I-CCSM (future)
12	53.85	117.27	165.2	198.26	231.91	259.54	280.63	311.02	341.15	363.92	ECP2-HadCM3 (future)
13	50.00	110.58	160.45	194.67	231.11	255.48	279.96	303.78	338.25	363.92	ECP2-HadCM3 (future)
14	46.15	104	154.71	183.93	220.85	249.29	279.68	302.52	335.58	359.62	MM5I-HadCM3 (historical)
15	42.31	99.09	141.45	175.14	217.71	248.24	275.43	299.52	325.32	349.33	MM5I-CCSM (historical)
16	38.46	96.14	139.48	167.93	204.86	232.26	259.46	286.56	322.31	344.83	MM5I-HadCM3 (future)
17	34.62	96.1	138.7	162.97	195.98	220.78	245.4	269.94	302.3	326.77	RCM3-CGCM3 (historical)
18	30.77	94.55	136.07	162.54	192.65	214.67	236.53	258.31	287.04	308.75	ECP2-GFDL (future)
19	26.92	90.56	124.07	142.57	165.94	183.27	200.48	217.63	240.25	257.34	ECP2-HadCM3 (historical)
20	23.08	85.4	112.63	130.66	153.43	170.33	187.1	203.81	225.86	242.53	ECP2-GFDL (historical)
21	19.23	57.77	77.75	94.9	121.81	141.77	161.59	181.33	207.38	227.07	Observed
22	15.38	41.54	73.6	90.98	107.69	120.09	132.4	144.67	160.85	173.07	CRCM-CGCM3 (future)
23	11.54	41.43	60.81	73.57	89.7	101.66	113.53	125.36	140.97	152.77	CRCM-CGCM3 (historical)
24	7.69	40.46	55.42	65.33	77.84	87.13	96.34	105.53	117.64	126.8	CRCM-CCSM (future)
25	3.85	34.18	49.04	58.88	71.32	80.54	89.7	98.82	110.86	119.96	CRCM-CCSM (historical)
Gauge: 448062; Duration: 45 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	153.19	221.94	267.46	324.97	367.63	409.98	452.18	507.85	549.92	HRM3-GFDL (future)
2	92.31	141.85	197.17	233.8	280.07	314.4	348.48	382.44	427.23	461.09	HRM3-HadCM3 (future)
3	88.46	134.47	176.95	208.76	248.97	278.79	308.4	337.89	376.81	406.22	HRM3-HadCM3 (historical)
4	84.62	128.89	162.97	194.28	233.85	263.2	292.34	321.37	359.67	388.61	HRM3-GFDL (historical)
5	80.77	124.44	162.13	191.06	227.62	254.74	281.66	312.51	355.48	387.96	RCM3-GFDL (future)
6	76.92	124.44	161.96	180.17	214.33	247.26	279.95	308.48	343.87	370.61	WRF3-CGCM3 (historical)
7	73.08	118.43	156.47	177.69	212.27	240.83	269.19	297.44	334.71	362.88	RCM3-CGCM3 (future)
8	69.23	115.67	156.47	177.69	205.52	229.65	253.61	277.48	308.97	332.78	WRF3-CCSM (future)
9	65.38	110.52	147.23	173.77	204.49	224.37	244.11	265.97	300.96	327.83	RCM3-GFDL (historical)
10	61.54	108.34	144.33	172.98	204.49	224.37	244.11	265.4	296.86	320.2	WRF3-CCSM (historical)
11	57.69	100.09	143.29	169.93	203.17	220.23	242.56	263.77	289.71	309.78	MM5I-CCSM (future)
12	53.85	97.27	138.23	166.71	195.39	219.07	238.44	263.77	289.71	309.32	ECP2-HadCM3 (future)
13	50.00	91.46	134.8	163.49	195	215.98	237.16	257.56	286.63	309.32	ECP2-HadCM3 (future)
14	46.15	85.78	129.29	154.34	185.99	211.39	236.81	255.99	284.94	305.64	MM5I-HadCM3 (historical)
15	42.31	81.74	118.33	147.41	184.14	209.47	232.77	254.04	276.3	295.78	MM5I-CCSM (historical)
16	38.46	79.17	116.17	140.63	172.22	195.65	218.91	242.09	272.67	293.13	MM5I-HadCM3 (future)
17	34.62	79.08	115.62	136.28	164.33	185.49	206.48	227.4	255.01	275.87	RCM3-CGCM3 (historical)
18	30.77	77.86	113.25	135.82	161.7	180.55	199.27	217.92	242.52	261.12	ECP2-GFDL (future)
19	26.92	74.42	102.86	118.61	138.5	153.26	167.91	182.51	201.76	216.32	ECP2-HadCM3 (historical)
20	23.08	70.01	93.09	108.36	127.67	141.99	156.2	170.36	189.05	203.17	ECP2-GFDL (historical)
21	19.23	46.79	63.53	74.62	91.04	105.7	120.25	134.75	153.88	168.34	Observed
22	15.38	33.3	55.64	71.28	88.63	99.02	109.34	119.62	133.18	143.43	CRCM-CGCM3 (future)
23	11.54	32.41	49.43	60.11	73.6	83.61	93.55	103.44	116.5	126.37	CRCM-CGCM3 (historical)
24	7.69	32.02	44.82	53.04	63.42	71.12	78.76	86.38	96.42	104.02	CRCM-CCSM (future)
25	3.85	27.27	39.48	47.57	57.79	65.37	72.89	80.39	90.28	97.75	CRCM-CCSM (historical)
Gauge: 448062; Duration: 1 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year									
	Non-exceedance Probability (%)	2		5		10		25		50		100		200		500		1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001										
1	96.15	114.78	173.1	211.72	260.51	296.7	332.63	368.42	415.65	451.34	HRM3-GFDL (future)									
2	92.31	105.18	151.29	181.82	220.39	249	277.41	305.71	343.04	371.26	HRM3-HadCM3 (future)									
3	88.46	98.5	134.11	160.37	193.54	218.15	242.58	266.91	299.02	323.29	HRM3-HadCM3 (historical)									
4	84.62	94.46	123.23	149.47	182.64	207.24	231.66	256	288.1	312.36	HRM3-GFDL (historical)									
5	80.77	90.5	121.47	144.92	174.55	196.53	220.95	247.86	283.36	310.19	RCM3-GFDL (future)									
6	76.92	90.5	120.96	135.83	166.73	193.94	218.35	240.09	268.77	290.45	WRF3-CGCM3 (historical)									
7	73.08	86.05	116.51	133.73	161.66	184.57	207.31	229.97	259.87	282.46	RCM3-CGCM3 (future)									
8	69.23	83.58	116.51	133.73	156.34	175.85	195.2	214.49	239.93	259.17	WRF3-CCSM (future)									
9	65.38	79.37	109.25	130.77	155.49	171.63	187.65	207.91	237.06	259.1	RCM3-GFDL (historical)									
10	61.54	77.83	106.81	130.06	155.49	171.63	187.65	203.75	228.4	247.02	WRF3-CCSM (historical)									
11	57.69	71.38	106.33	130.05	154.63	168.57	185.81	203.61	224.67	240.59	ECP2-HadCM3 (future)									
12	53.85	69.41	101.82	124.98	147.93	166.32	185.07	203.61	224.67	240.59	ECP2-HadCM3 (future)									
13	50.00	64.58	101.03	121.97	147.43	164.96	182.41	198.71	220.93	239	MM5I-CCSM (future)									
14	46.15	59.95	94.81	114.82	141.29	163.63	181.87	196.19	220.5	237.72	MM5I-HadCM3 (historical)									
15	42.31	57.18	87.33	111.17	140.1	158.86	177.48	196.03	214.38	228.13	MM5I-HadCM3 (future)									
16	38.46	55.06	84.12	103.9	128.96	147.55	166.01	184.39	208.65	226.99	MM5I-CCSM (historical)									
17	34.62	54.71	84.06	100.12	121.88	138.47	154.95	171.36	193.02	209.38	RCM3-CGCM3 (historical)									
18	30.77	54.1	81.8	99.51	120.34	135.34	150.23	165.06	184.64	199.43	ECP2-GFDL (future)									
19	26.92	51.33	73.23	85.49	100.99	112.49	123.9	135.26	150.26	161.6	ECP2-HadCM3 (historical)									
20	23.08	47.86	65.53	77.23	92.02	102.99	113.87	124.72	139.03	149.85	ECP2-GFDL (historical)									
21	19.23	30.58	42.91	51.08	61.4	69.06	76.66	84.23	94.22	101.77	CRCM-CGCM3 (future)									
22	15.38	20.98	32.78	40.6	50.48	57.8	65.08	72.32	81.88	89.11	CRCM-CGCM3 (historical)									
23	11.54	20.36	31.68	39.56	49.52	56.91	64.24	71.55	81.19	88.47	Observed									
24	7.69	19.78	29.12	34.92	42.25	47.68	53.08	58.45	65.54	70.9	CRCM-CCSM (future)									
25	3.85	16.89	25.26	30.8	37.81	43	48.15	53.29	60.07	65.19	CRCM-CCSM (historical)									
Gauge: 448062; Duration: 2 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year										

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	74.02	108.02	130.54	158.98	180.09	201.03	221.91	249.44	270.25	HRM3-GFDL (future)
2	92.31	68.41	95.69	113.74	136.56	153.49	170.29	187.03	209.12	225.81	HRM3-HadCM3 (future)
3	88.46	64.71	85.69	101.35	121.15	135.83	150.4	164.92	184.08	198.56	HRM3-HadCM3 (historical)
4	84.62	62.03	78.86	94.31	113.84	128.32	142.7	157.03	175.93	190.21	HRM3-GFDL (historical)
5	80.77	59.81	78.35	92.54	110.47	123.78	136.99	152.59	173.74	189.72	RCM3-GFDL (future)
6	76.92	59.81	78.21	87.15	104.26	120.47	136.56	150.15	167.51	180.63	WRF3-CGCM3 (historical)
7	73.08	56.91	75.53	85.94	102.89	116.87	130.76	144.59	162.84	176.63	RCM3-CGCM3 (future)
8	69.23	55.52	75.53	85.94	99.59	111.43	123.17	134.88	150.32	161.99	WRF3-CCSM (future)
9	65.38	53	71.02	84.04	99.09	108.84	118.53	129.27	146.75	159.96	RCM3-GFDL (historical)
10	61.54	51.95	69.59	83.64	99.09	108.84	118.53	129.07	144.17	155.59	WRF3-CCSM (historical)
11	57.69	47.93	69.12	82.41	98.45	106.83	117.62	128.18	140.91	150.53	ECP2-HadCM3 (future)
12	53.85	46.58	66.59	80.57	94.55	106.12	116.03	128.18	140.91	150.53	ECP2-HadCM3 (future)
13	50.00	43.72	65.12	78.94	94.44	104.74	115.15	125.14	139.19	150.51	MM5I-CCSM (future)
14	46.15	40.93	62.23	74.48	89.96	102.73	114.96	124.2	138.57	148.72	MM5I-HadCM3 (historical)
15	42.31	39	57	71.29	89.34	101.44	112.84	123.44	134.37	143.6	MM5I-CCSM (historical)
16	38.46	37.73	55.78	67.78	83.22	94.67	106.04	117.36	132.3	142.64	MM5I-HadCM3 (future)
17	34.62	37.67	55.56	65.62	79.27	89.58	99.82	110.02	123.49	133.66	RCM3-CGCM3 (historical)
18	30.77	37.11	54.35	65.36	78.05	87.27	96.42	105.54	117.57	126.66	ECP2-GFDL (future)
19	26.92	35.42	49.25	56.92	66.62	73.81	80.94	88.05	97.44	104.53	ECP2-HadCM3 (historical)
20	23.08	33.27	44.47	51.89	61.27	68.22	75.12	82	91.08	97.93	ECP2-GFDL (historical)
21	19.23	22.05	30.13	35.47	42.23	47.24	52.22	57.18	63.72	68.66	CRCM-CGCM3 (future)
22	15.38	15.6	23.36	28.51	35.01	39.83	44.61	49.38	55.67	60.42	CRCM-CGCM3 (historical)
23	11.54	15.17	22.39	27.64	34.27	39.19	44.08	48.94	55.36	60.21	Observed
24	7.69	14.47	21.1	25.02	29.98	33.66	37.32	40.96	45.76	49.39	CRCM-CCSM (future)
25	3.85	12.73	18.54	22.39	27.26	30.87	34.45	38.02	42.73	46.29	CRCM-CCSM (historical)
Gauge: 448062; Duration: 3 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	58.69	85.03	102.47	124.5	140.85	157.07	173.24	194.57	210.68	HRM3-GFDL (future)	
2	92.31	54.35	75.54	89.57	107.3	120.45	133.51	146.52	163.68	176.65	HRM3-HadCM3 (future)	
3	88.46	51.52	67.79	79.99	95.39	106.82	118.17	129.47	144.39	155.66	HRM3-HadCM3 (historical)	
4	84.62	49.38	62.43	74.42	89.58	100.82	111.98	123.1	137.77	148.86	HRM3-GFDL (historical)	
5	80.77	47.67	62.11	73.19	87.19	97.58	107.89	119.73	136.19	148.63	RCM3-GFDL (future)	
6	76.92	47.67	62.06	69.03	82.11	94.73	107.25	118.16	131.72	141.96	WRFG-CGCM3 (historical)	
7	73.08	45.37	59.95	68.07	81.32	92.27	103.13	113.95	128.23	139.02	RCM3-CGCM3 (future)	
8	69.23	44.31	59.95	68.07	78.74	87.98	97.16	106.31	118.37	127.49	WRFG-CCSM (future)	
9	65.38	42.34	56.41	66.57	78.34	85.96	93.52	101.91	115.32	125.61	RCM3-GFDL (historical)	
10	61.54	41.51	55.3	66.27	78.34	85.96	93.52	101.69	113.75	122.69	WRFG-CCSM (historical)	
11	57.69	38.34	54.9	65.1	77.84	84.38	92.94	101.05	110.99	118.67	MM5I-CCSM (future)	
12	53.85	37.26	52.96	63.88	74.87	83.94	91.36	101.05	110.99	118.51	ECP2-HadCM3 (future)	
13	50.00	35.04	51.64	62.64	74.71	82.75	90.87	98.69	109.8	118.51	ECP2-HadCM3 (future)	
14	46.15	32.87	49.53	59.13	71.25	81	90.73	98.07	109.18	117.11	MM5I-HadCM3 (historical)	
15	42.31	31.31	45.34	56.48	70.56	80.24	89.17	97.34	105.87	113.32	MM5I-CCSM (historical)	
16	38.46	30.33	44.51	53.88	65.98	74.96	83.87	92.75	104.46	112.31	MM5I-HadCM3 (future)	
17	34.62	30.3	44.3	52.21	62.97	71.07	79.12	87.14	97.71	105.71	RCM3-CGCM3 (historical)	
18	30.77	29.83	43.39	52.04	61.95	69.17	76.34	83.48	92.91	100.03	ECP2-GFDL (future)	
19	26.92	28.51	39.41	45.44	53.06	58.72	64.33	69.92	77.3	82.88	ECP2-HadCM3 (historical)	
20	23.08	26.83	35.67	41.52	48.91	54.39	59.84	65.26	72.42	77.83	ECP2-GFDL (historical)	
21	19.23	17.93	24.34	28.59	33.96	37.94	41.89	45.83	51.03	54.95	CRCM-CGCM3 (future)	
22	15.38	12.76	18.94	23.03	28.2	32.03	35.84	39.63	44.63	48.41	CRCM-CGCM3 (historical)	
23	11.54	12.42	17.72	21.71	26.75	30.49	34.2	37.9	42.78	46.47	Observed	
24	7.69	11.69	17.17	20.32	24.3	27.25	30.18	33.09	36.94	39.85	CRCM-CCSM (future)	
25	3.85	10.45	15.13	18.22	22.13	25.03	27.91	30.78	34.57	37.43	CRCM-CCSM (historical)	
Gauge: 448062; Duration: 4 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)		Intensity (mm h^{-1}) for the Return Period or Exceedance Probability								Data Source for 1000-year									
	Non-exceedance Probability (%)	2		5		10		25		50		100		200		500		1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001										
1	96.15	57.66	84.03	101.49	123.55	139.92	156.16	172.35	193.7	209.84	HRM3-GFDL (future)									
2	92.31	53.31	74.46	88.47	106.16	119.29	132.32	145.3	162.43	175.38	HRM3-HadCM3 (future)									
3	88.46	50.44	66.71	78.85	94.2	105.59	116.89	128.15	143.01	154.23	HRM3-HadCM3 (historical)									
4	84.62	48.36	61.42	73.4	88.54	99.77	110.92	122.03	136.68	147.76	HRM3-GFDL (historical)									
5	80.77	46.64	61.01	72.02	85.93	96.24	106.48	118.59	134.99	147.39	RCM3-GFDL (future)									
6	76.92	46.64	60.92	67.85	81.11	93.68	106.16	116.68	130.15	140.32	WRF3-CGCM3 (historical)									
7	73.08	44.39	58.83	66.9	80.05	90.89	101.66	112.39	126.54	137.23	RCM3-CGCM3 (future)									
8	69.23	43.32	58.83	66.9	77.49	86.67	95.78	104.86	116.83	125.88	WRF3-CCSM (future)									
9	65.38	41.36	55.33	65.43	77.1	84.67	92.18	100.52	114.08	124.32	RCM3-GFDL (historical)									
10	61.54	40.55	54.23	65.12	77.1	84.67	92.18	100.35	112.06	120.92	WRF3-CCSM (historical)									
11	57.69	37.43	53.86	64.17	76.61	83.11	91.47	99.66	109.53	117	ECP2-HadCM3 (future)									
12	53.85	36.38	51.9	62.75	73.58	82.56	90.25	99.66	109.53	117	ECP2-HadCM3 (future)									
13	50.00	34.16	50.76	61.48	73.51	81.49	89.56	97.32	108.2	116.98	MM5I-CCSM (future)									
14	46.15	32	48.51	58.02	70.02	79.94	89.42	96.58	107.74	115.61	MM5I-HadCM3 (historical)									
15	42.31	30.5	44.47	55.55	69.55	78.93	87.77	95.99	104.47	111.6	MM5I-CCSM (historical)									
16	38.46	29.52	43.52	52.81	64.78	73.66	82.47	91.26	102.84	110.88	MM5I-HadCM3 (future)									
17	34.62	29.47	43.34	51.14	61.74	69.74	77.68	85.6	96.04	103.93	RCM3-CGCM3 (historical)									
18	30.77	29.03	42.42	50.95	60.77	67.92	75.01	82.08	91.4	98.45	ECP2-GFDL (future)									
19	26.92	27.73	38.45	44.39	51.91	57.48	63.01	68.52	75.79	81.29	ECP2-HadCM3 (historical)									
20	23.08	26.07	34.75	40.5	47.77	53.16	58.51	63.85	70.88	76.2	ECP2-GFDL (historical)									
21	19.23	17.36	23.62	27.77	33.01	36.9	40.76	44.61	49.68	53.51	CRCM-CGCM3 (future)									
22	15.38	12.35	18.37	22.35	27.39	31.12	34.83	38.52	43.4	47.08	CRCM-CGCM3 (historical)									
23	11.54	12.02	16.63	19.68	23.53	26.39	29.22	32.05	35.78	38.59	CRCM-CCSM (future)									
24	7.69	10.13	14.64	17.62	21.39	24.19	26.97	29.73	33.38	36.14	Observed									
25	3.85	8.71	13.46	16.61	20.59	23.54	26.47	29.38	33.23	36.14	Observed									
Gauge: 448062; Duration: 6 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year										

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	36.81	53.48	64.51	78.46	88.8	99.07	109.3	122.79	132.99	HRM3-GFDL (future)	
2	92.31	34.07	47.43	56.28	67.47	75.76	84	92.2	103.03	111.21	HRM3-HadCM3 (future)	
3	88.46	32.25	42.53	50.21	59.91	67.1	74.24	81.36	90.75	97.84	HRM3-HadCM3 (historical)	
4	84.62	30.94	39.19	46.76	56.33	63.42	70.47	77.49	86.75	93.75	HRM3-GFDL (historical)	
5	80.77	29.85	38.93	45.89	54.68	61.2	67.68	75.32	85.69	93.52	RCM3-GFDL (future)	
6	76.92	29.85	38.87	43.25	51.64	59.58	67.46	74.13	82.63	89.06	WRFG-CGCM3 (historical)	
7	73.08	28.43	37.55	42.65	50.96	57.82	64.62	71.4	80.34	87.1	RCM3-CGCM3 (future)	
8	69.23	27.75	37.55	42.65	49.35	55.15	60.91	66.64	74.21	79.93	WRFG-CCSM (future)	
9	65.38	26.51	35.34	41.72	49.1	53.88	58.63	63.9	72.47	78.94	RCM3-GFDL (historical)	
10	61.54	26	34.64	41.53	49.1	53.88	58.63	63.81	71.22	76.81	WRFG-CCSM (historical)	
11	57.69	24.03	34.41	40.93	48.79	52.9	58.2	63.36	69.6	74.31	ECP2-HadCM3 (future)	
12	53.85	23.37	33.18	40.02	46.88	52.56	57.41	63.36	69.6	74.31	ECP2-HadCM3 (future)	
13	50.00	21.97	32.45	39.23	46.82	51.87	56.97	61.87	68.74	74.29	MM5I-CCSM (future)	
14	46.15	20.6	31.03	37.04	44.62	50.89	56.88	61.4	68.45	73.43	MM5I-HadCM3 (historical)	
15	42.31	19.65	28.47	35.48	44.33	50.25	55.83	61.04	66.4	70.89	MM5I-CCSM (historical)	
16	38.46	19.04	27.88	33.75	41.31	46.92	52.49	58.04	65.36	70.45	MM5I-HadCM3 (future)	
17	34.62	19	27.76	32.7	39.39	44.45	49.47	54.47	61.07	66.06	RCM3-CGCM3 (historical)	
18	30.77	18.72	27.18	32.58	38.79	43.31	47.8	52.27	58.16	62.62	ECP2-GFDL (future)	
19	26.92	17.89	24.67	28.43	33.17	36.69	40.19	43.67	48.26	51.74	ECP2-HadCM3 (historical)	
20	23.08	16.84	22.33	25.96	30.55	33.96	37.34	40.71	45.15	48.51	ECP2-GFDL (historical)	
21	19.23	11.34	15.3	17.92	21.24	23.69	26.13	28.56	31.77	34.19	CRCM-CGCM3 (future)	
22	15.38	8.18	11.99	14.51	17.7	20.06	22.41	24.75	27.83	30.16	CRCM-CGCM3 (historical)	
23	11.54	7.97	10.88	12.8	15.23	17.04	18.83	20.61	22.97	24.75	CRCM-CCSM (future)	
24	7.69	6.77	9.62	11.5	13.88	15.65	17.4	19.15	21.45	23.19	CRCM-CCSM (historical)	
25	3.85	5.37	8.2	10.07	12.44	14.2	15.94	17.67	19.96	21.69	Observed	
Gauge: 448062; Duration: 12 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	19.93	28.81	34.68	42.11	47.62	53.08	58.53	65.72	71.15	HRM3-GFDL (future)
2	92.31	18.47	25.59	30.3	36.26	40.67	45.06	49.43	55.19	59.55	HRM3-HadCM3 (future)
3	88.46	17.5	22.98	27.07	32.24	36.07	39.88	43.67	48.67	52.45	HRM3-HadCM3 (historical)
4	84.62	16.8	21.2	25.23	30.32	34.1	37.85	41.59	46.52	50.25	HRM3-GFDL (historical)
5	80.77	16.22	21.06	24.77	29.45	32.92	36.37	40.44	45.96	50.13	RCM3-GFDL (future)
6	76.92	16.22	21.03	23.37	27.83	32.06	36.25	39.8	44.33	47.75	WRFG-CGCM3 (historical)
7	73.08	15.47	20.33	23.04	27.47	31.12	34.74	38.35	43.11	46.71	RCM3-CGCM3 (future)
8	69.23	15.11	20.33	23.04	26.61	29.7	32.76	35.82	39.85	42.89	WRFG-CCSM (future)
9	65.38	14.45	19.15	22.55	26.48	29.02	31.55	34.35	38.9	42.35	RCM3-GFDL (historical)
10	61.54	14.17	18.78	22.44	26.48	29.02	31.55	34.3	38.25	41.23	WRFG-CCSM (historical)
11	57.69	13.13	18.65	22.12	26.32	28.5	31.31	34.07	37.39	39.92	MM51-CCSM (future)
12	53.85	12.77	17.99	21.64	25.29	28.31	30.89	34.07	37.39	39.9	ECP2-HadCM3 (future)
13	50.00	12.02	17.61	21.22	25.27	27.95	30.68	33.28	36.96	39.9	ECP2-HadCM3 (future)
14	46.15	11.3	16.86	20.06	24.1	27.42	30.62	33.04	36.78	39.43	MM51-HadCM3 (historical)
15	42.31	10.79	15.49	19.22	23.93	27.1	30.08	32.84	35.7	38.09	MM51-CCSM (historical)
16	38.46	10.46	15.18	18.3	22.33	25.32	28.29	31.24	35.14	37.85	MM51-HadCM3 (future)
17	34.62	10.45	15.11	17.75	21.31	24	26.67	29.33	32.85	35.5	RCM3-CGCM3 (historical)
18	30.77	10.29	14.8	17.68	20.99	23.4	25.79	28.17	31.31	33.69	ECP2-GFDL (future)
19	26.92	9.86	13.47	15.47	18	19.88	21.74	23.59	26.04	27.89	ECP2-HadCM3 (historical)
20	23.08	9.3	12.22	14.16	16.61	18.42	20.22	22.02	24.39	26.18	ECP2-GFDL (historical)
21	19.23	6.37	8.47	9.86	11.62	12.93	14.23	15.52	17.22	18.51	CRCM-CGCM3 (future)
22	15.38	4.68	6.71	8.05	9.74	11	12.24	13.49	15.12	16.36	CRCM-CGCM3 (historical)
23	11.54	4.57	6.12	7.14	8.44	9.4	10.35	11.3	12.55	13.5	CRCM-CCSM (future)
24	7.69	3.94	5.46	6.46	7.74	8.68	9.62	10.55	11.78	12.71	CRCM-CCSM (historical)
25	3.85	2.97	4.33	5.23	6.37	7.21	8.05	8.89	9.99	10.82	Observed
Gauge: 448062; Duration: 24 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h^{-1}) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	10.58	15.23	18.31	22.19	25.08	27.94	30.79	34.55	37.4	HRM3-GFDL (future)
2	92.31	9.82	13.54	16.01	19.13	21.44	23.74	26.03	29.04	31.32	HRM3-HadCM3 (future)
3	88.46	9.32	12.18	14.32	17.03	19.04	21.03	23.02	25.63	27.61	HRM3-HadCM3 (historical)
4	84.62	8.95	11.25	13.36	16.03	18.01	19.97	21.93	24.52	26.47	HRM3-GFDL (historical)
5	80.77	8.64	11.17	13.11	15.56	17.37	19.17	21.32	24.21	26.39	RCM3-GFDL (future)
6	76.92	8.64	11.16	12.39	14.72	16.93	19.13	20.97	23.34	25.13	WRF3-CGCM3 (historical)
7	73.08	8.25	10.79	12.21	14.53	16.44	18.34	20.23	22.72	24.6	RCM3-CGCM3 (future)
8	69.23	8.06	10.79	12.21	14.08	15.7	17.3	18.9	21.01	22.6	WRF3-CCSM (future)
9	65.38	7.71	10.17	11.95	14.01	15.34	16.67	18.15	20.54	22.34	RCM3-GFDL (historical)
10	61.54	7.57	9.97	11.9	14.01	15.34	16.67	18.09	20.15	21.7	WRF3-CCSM (historical)
11	57.69	7.02	9.91	11.73	13.93	15.08	16.52	17.98	19.72	21.04	ECP2-HadCM3 (future)
12	53.85	6.84	9.56	11.47	13.38	14.96	16.34	17.98	19.72	21.04	ECP2-HadCM3 (future)
13	50.00	6.44	9.37	11.25	13.36	14.77	16.22	17.55	19.48	21.03	MM5I-CCSM (future)
14	46.15	6.06	8.97	10.64	12.76	14.52	16.16	17.43	19.38	20.77	MM5I-HadCM3 (historical)
15	42.31	5.8	8.26	10.22	12.69	14.32	15.88	17.35	18.85	20.08	MM5I-CCSM (historical)
16	38.46	5.63	8.09	9.73	11.84	13.4	14.95	16.5	18.54	19.98	MM5I-HadCM3 (future)
17	34.62	5.62	8.06	9.44	11.3	12.71	14.11	15.51	17.34	18.73	RCM3-CGCM3 (historical)
18	30.77	5.54	7.9	9.4	11.14	12.4	13.65	14.9	16.55	17.79	ECP2-GFDL (future)
19	26.92	5.31	7.2	8.25	9.57	10.55	11.52	12.5	13.78	14.74	ECP2-HadCM3 (historical)
20	23.08	5.02	6.54	7.56	8.84	9.78	10.73	11.66	12.9	13.84	ECP2-GFDL (historical)
21	19.23	3.48	4.59	5.32	6.24	6.93	7.61	8.29	9.18	9.86	CRCM-CGCM3 (future)
22	15.38	2.6	3.66	4.37	5.25	5.91	6.56	7.21	8.07	8.72	CRCM-CGCM3 (historical)
23	11.54	2.54	3.35	3.89	4.57	5.07	5.58	6.07	6.73	7.23	CRCM-CCSM (future)
24	7.69	2.21	3.01	3.53	4.2	4.69	5.18	5.67	6.32	6.8	CRCM-CCSM (historical)
25	3.85	1.77	2.6	3.15	3.84	4.36	4.87	5.38	6.05	6.56	Observed
Gauge: 448062; Duration: 48 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	7.02	10.06	12.07	14.62	16.5	18.38	20.24	22.71	24.57	HRM3-GFDL (future)	
2	92.31	6.52	8.96	10.57	12.61	14.13	15.63	17.13	19.1	20.59	HRM3-HadCM3 (future)	
3	88.46	6.19	8.06	9.46	11.22	12.54	13.84	15.13	16.84	18.14	HRM3-HadCM3 (historical)	
4	84.62	5.95	7.45	8.83	10.57	11.87	13.15	14.43	16.12	17.4	HRM3-GFDL (historical)	
5	80.77	5.75	7.4	8.67	10.28	11.47	12.65	14.04	15.94	17.37	RCM3-GFDL (future)	
6	76.92	5.75	7.4	8.2	9.72	11.17	12.61	13.82	15.38	16.55	WRFG-CGCM3 (historical)	
7	73.08	5.48	7.15	8.08	9.6	10.85	12.09	13.33	14.96	16.19	RCM3-CGCM3 (future)	
8	69.23	5.36	7.15	8.08	9.3	10.36	11.41	12.46	13.84	14.89	WRFG-CCSM (future)	
9	65.38	5.13	6.75	7.91	9.26	10.13	11	11.94	13.5	14.68	RCM3-GFDL (historical)	
10	61.54	5.04	6.62	7.88	9.26	10.13	11	11.94	13.3	14.32	WRFG-CCSM (historical)	
11	57.69	4.68	6.58	7.77	9.21	9.96	10.92	11.86	13	13.86	ECP2-HadCM3 (future)	
12	53.85	4.56	6.35	7.6	8.85	9.89	10.76	11.86	13	13.86	ECP2-HadCM3 (future)	
13	50.00	4.3	6.22	7.46	8.84	9.77	10.71	11.59	12.83	13.84	MM51-CCSM (future)	
14	46.15	4.05	5.96	7.05	8.43	9.57	10.68	11.49	12.79	13.7	MM51-HadCM3 (historical)	
15	42.31	3.89	5.49	6.76	8.38	9.46	10.48	11.45	12.43	13.25	MM51-CCSM (historical)	
16	38.46	3.77	5.38	6.46	7.84	8.87	9.89	10.9	12.24	13.17	MM51-HadCM3 (future)	
17	34.62	3.77	5.37	6.26	7.48	8.41	9.32	10.23	11.43	12.34	RCM3-CGCM3 (historical)	
18	30.77	3.71	5.26	6.24	7.37	8.19	9.01	9.82	10.89	11.7	ECP2-GFDL (future)	
19	26.92	3.56	4.8	5.49	6.35	6.99	7.63	8.26	9.1	9.73	ECP2-HadCM3 (historical)	
20	23.08	3.37	4.37	5.03	5.87	6.49	7.1	7.72	8.53	9.14	ECP2-GFDL (historical)	
21	19.23	2.37	3.09	3.57	4.18	4.63	5.07	5.52	6.1	6.55	CRCM-CGCM3 (future)	
22	15.38	1.79	2.49	2.95	3.53	3.97	4.4	4.83	5.39	5.82	CRCM-CGCM3 (historical)	
23	11.54	1.75	2.28	2.63	3.08	3.41	3.73	4.06	4.49	4.81	CRCM-CCSM (future)	
24	7.69	1.53	2.05	2.4	2.84	3.16	3.48	3.8	4.22	4.55	Observed	
25	3.85	1.28	1.85	2.22	2.7	3.05	3.4	3.74	4.2	4.54	CRCM-CCSM (historical)	
Gauge: 448062; Duration: 72 hr		2- year	5- year	10- year	25- year	50- year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	298.63	388.1	433.84	481.49	511.61	538.24	562.23	590.84	610.59	HRM3-GFDL (future)
2	92.31	281.6	358.11	400.17	443.97	471.64	496.11	518.15	544.42	562.57	HRM3-HadCM3 (future)
3	88.46	275.79	335.68	372.07	409.67	433.29	454.09	472.76	494.93	510.2	HRM3-HadCM3 (historical)
4	84.62	269.19	330.46	365.2	400.99	423.42	443.15	460.84	481.82	496.25	WRF3-CGCM3 (historical)
5	80.77	263.5	321.28	342.84	376.6	397.77	416.38	433.08	452.89	466.52	WRF3-CCSM (future)
6	76.92	261.22	317.55	340.66	365.25	386.51	405.24	422.06	442.05	459.82	RCM3-GFDL (future)
7	73.08	244.85	310.08	339.8	363.8	377.99	391.1	413.59	440.8	455.82	HRM3-GFDL (historical)
8	69.23	241.37	298.72	331.43	358.09	373.42	391.06	406.96	425.79	440.16	Observed
9	65.38	233.96	291.52	321.32	353.33	369.19	390.28	401.16	423.91	438.75	WRF3-CCSM (historical)
10	61.54	228.61	290.29	315.88	340.51	366.39	381.04	400.53	413.91	422.58	WRF3-CGCM3 (future)
11	57.69	207.22	267.35	297.94	338.93	359.55	378.73	387.14	402.29	415.36	MM5I-CCSM (future)
12	53.85	194.26	262.14	297.77	335.45	355.72	368.96	383.34	396.92	410.8	MM5I-CCSM (historical)
13	50.00	193.58	256.95	296.48	329.7	349.74	367.42	380.74	395.72	404.06	MM5I-HadCM3 (historical)
14	46.15	191.7	248.81	278.57	313.6	335.99	355.94	374.02	394.59	403.55	MM5I-HadCM3 (future)
15	42.31	187.19	245.44	277.99	308.36	327.55	344.52	359.8	378.02	390.6	RCM3-CGCM3 (future)
16	38.46	183.53	241.89	265.92	290.55	305.93	319.41	331.99	350.38	363.13	RCM3-GFDL (historical)
17	34.62	182.53	229.9	250.9	280.51	299.63	316.62	331.48	345.76	355.57	ECP2-GFDL (future)
18	30.77	182.22	221.92	250.48	272.27	285.53	297.13	307.47	319.67	328.03	ECP2-HadCM3 (future)
19	26.92	177.84	220.28	241.27	262.7	276.05	287.73	298.17	310.5	318.95	RCM3-CGCM3 (historical)
20	23.08	166.93	218.8	236.33	253.99	264.88	274.34	282.74	292.61	299.35	ECP2-HadCM3 (historical)
21	19.23	164.7	203.07	221.97	241.25	253.23	263.71	273.06	284.11	291.68	ECP2-GFDL (historical)
22	15.38	121.23	152.58	168.25	184.37	194.45	203.31	211.24	220.65	227.11	CRCM-CGCM3 (future)
23	11.54	93.95	124.22	139.88	156.32	166.76	176.02	184.4	194.41	201.35	CRCM-CGCM3 (historical)
24	7.69	91.46	114.74	126.36	138.28	145.73	152.27	158.13	165.07	169.83	CRCM-CCSM (future)
25	3.85	80.33	104.59	117	129.95	138.14	145.38	151.91	159.69	165.07	CRCM-CCSM (historical)
Gauge: 448172; Duration: 15 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	245.59	340.15	390.67	444.69	479.52	510.73	539.19	573.49	597.42	HRM3-GFDL (future)
2	92.31	229.73	308.65	354.32	403.14	434.6	462.79	488.47	519.44	541.04	HRM3-HadCM3 (future)
3	88.46	223.11	285.95	325.35	367.1	393.83	417.68	439.33	465.33	483.4	HRM3-HadCM3 (historical)
4	84.62	217.51	279.36	315.73	354.02	378.42	400.11	419.75	443.26	459.57	WRF3-CGCM3 (historical)
5	80.77	211.07	269.94	293.69	329.97	353.13	373.74	392.41	419.97	443.68	RCM3-GFDL (future)
6	76.92	209.49	266.11	289.93	323.59	348.08	369.98	389.91	414.79	430.58	HRM3-GFDL (historical)
7	73.08	193.46	259.3	289.1	314.13	330.25	359.44	386.59	413.88	430.32	WRF3-CCSM (future)
8	69.23	190.33	249.68	285.47	308.25	329.15	344.88	362.16	382.86	397.24	WRF3-CCSM (historical)
9	65.38	182.18	240.96	270.86	304.41	325.82	342.25	353.93	367.71	377.13	WRF3-CGCM3 (future)
10	61.54	178.24	239.07	266.38	298.44	319.98	330.13	339.69	360.71	375.36	MM5I-CCSM (future)
11	57.69	157.98	216.92	250.79	292.57	308.99	323.43	339.11	357.35	374.55	MM5I-CCSM (historical)
12	53.85	145.44	208.23	248.23	281.59	303.04	322.23	336.38	351.75	362.32	MM5I-HadCM3 (historical)
13	50.00	143.73	198.93	229.82	266.73	290.89	312.77	332.89	349.63	356.78	MM5I-HadCM3 (future)
14	46.15	139.93	195.99	228.41	259.93	280.24	298.45	315.04	335.04	348.99	RCM3-CGCM3 (future)
15	42.31	135.89	192.82	217.38	243.17	261.08	280.89	299.13	321.31	336.92	RCM3-GFDL (historical)
16	38.46	134.76	180.88	205.84	239.21	259.58	274.14	287.32	303.07	313.99	ECP2-GFDL (future)
17	34.62	134.45	175.29	201.74	223.43	237.11	249.19	260.07	273.03	281.97	ECP2-HadCM3 (future)
18	30.77	131.69	171.27	191.52	212.61	225.95	237.74	248.37	261.04	269.8	RCM3-CGCM3 (historical)
19	26.92	120.13	170.23	187.34	204.91	215.88	225.51	234.13	244.33	251.34	ECP2-HadCM3 (historical)
20	23.08	120	155.35	173.37	192.11	203.94	214.4	223.81	235.02	242.76	ECP2-GFDL (historical)
21	19.23	99.74	132.91	150.17	168.34	179.91	190.19	199.5	210.65	218.38	Observed
22	15.38	82.78	110.14	124.36	139.31	148.83	157.29	164.95	174.11	180.47	CRCM-CGCM3 (future)
23	11.54	60.33	86.53	100.86	116.41	126.55	135.7	144.09	154.27	161.42	CRCM-CGCM3 (historical)
24	7.69	58.93	77.98	87.85	98.21	104.79	110.63	115.91	122.23	126.6	CRCM-CCSM (future)
25	3.85	50.5	69.45	79.52	90.27	97.18	103.36	108.99	115.77	120.5	CRCM-CCSM (historical)
Gauge: 448172; Duration: 30 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	187	261.11	300.93	343.66	371.28	396.07	418.7	446.03	465.12	HRM3-GFDL (future)
2	92.31	174.77	236.45	272.37	310.91	335.8	358.15	378.54	403.16	420.35	HRM3-HadCM3 (future)
3	88.46	169.53	218.72	249.69	282.62	303.75	322.63	339.8	360.45	374.82	HRM3-HadCM3 (historical)
4	84.62	165.27	213.47	241.94	272	291.18	308.27	323.76	342.32	355.21	WRF3-CGCM3 (historical)
5	80.77	160.18	206.13	224.81	253.31	271.54	287.78	302.52	326.07	345.05	RCM3-GFDL (future)
6	76.92	159.02	203.12	221.73	248.87	268.29	285.69	301.54	320.65	333.98	HRM3-GFDL (historical)
7	73.08	146.58	197.88	221.11	240.68	254.54	277.76	299.4	320.21	332.51	WRF3-CCSM (future)
8	69.23	144.16	190.55	218.74	236.11	252.44	264.97	278.57	294.88	306.22	WRF3-CCSM (historical)
9	65.38	137.74	183.64	206.92	233.19	249.99	262.73	271.9	282.73	290.14	WRF3-CGCM3 (future)
10	61.54	134.82	182.09	203.54	229.32	245.3	253.27	261.18	277.76	289.33	MM5I-CCSM (future)
11	57.69	119.15	164.92	191.69	224.1	237.02	248.39	260.32	275.46	289.07	MM5I-CCSM (historical)
12	53.85	109.48	158.26	189.36	215.49	232.33	247.42	258.6	270.73	279.08	MM5I-HadCM3 (historical)
13	50.00	108.18	150.96	175.1	204.02	223.01	240.24	256.12	268.59	274.21	MM5I-HadCM3 (future)
14	46.15	105.28	148.69	173.94	198.59	214.51	228.81	241.86	257.61	268.62	RCM3-CGCM3 (future)
15	42.31	102.19	146.27	165.44	185.65	200.48	216.22	230.74	248.44	260.92	RCM3-GFDL (historical)
16	38.46	101.24	137	156.81	183.15	198.52	209.98	220.35	232.78	241.4	ECP2-GFDL (future)
17	34.62	100.84	132.83	153.23	170.15	180.85	190.31	198.84	209	216.03	ECP2-HadCM3 (future)
18	30.77	98.98	129.52	145.21	161.6	171.98	181.18	189.47	199.37	206.22	RCM3-CGCM3 (historical)
19	26.92	90	128.75	142.04	155.71	164.26	171.78	178.51	186.49	191.98	ECP2-HadCM3 (historical)
20	23.08	89.89	117.24	131.2	145.74	154.94	163.08	170.42	179.17	185.22	ECP2-GFDL (historical)
21	19.23	66.5	88.62	100.13	112.24	119.95	126.81	133.02	140.45	145.61	Observed
22	15.38	61.58	82.52	93.45	104.98	112.34	118.89	124.82	131.93	136.87	CRCM-CGCM3 (future)
23	11.54	44.52	64.55	75.59	87.62	95.49	102.62	109.16	117.12	122.71	CRCM-CGCM3 (historical)
24	7.69	43.53	57.99	65.52	73.43	78.47	82.96	87.01	91.87	95.24	CRCM-CCSM (future)
25	3.85	37.19	51.49	59.13	67.29	72.56	77.28	81.58	86.76	90.38	CRCM-CCSM (historical)
Gauge: 448172; Duration: 45 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	156.73	221.53	256.64	294.5	319.06	341.17	361.4	385.87	403	HRM3-GFDL (future)
2	92.31	146.3	199.98	231.56	265.59	287.67	307.53	325.7	347.68	363.06	HRM3-HadCM3 (future)
3	88.46	141.65	184.6	211.81	240.88	259.61	276.39	291.67	310.09	322.94	HRM3-HadCM3 (historical)
4	84.62	138.11	179.91	204.76	231.11	247.98	263.04	276.71	293.13	304.55	WRF3-CGCM3 (historical)
5	80.77	133.59	173.52	189.97	214.98	231.03	245.38	258.91	281.66	298.81	RCM3-GFDL (future)
6	76.92	132.69	170.91	187.13	211.86	229.16	244.7	258.42	276.07	288.07	HRM3-GFDL (historical)
7	73.08	121.94	166.44	186.58	203.68	217.42	238.19	257.62	274.09	285.01	WRF3-CCSM (future)
8	69.23	119.89	160.29	185.14	199.68	213.98	225.13	237.09	251.47	261.49	WRF3-CCSM (historical)
9	65.38	114.21	154.12	174.3	197.24	211.97	223	231.05	240.57	247.39	MM5I-CCSM (historical)
10	61.54	111.89	152.71	171.49	194.96	207.73	214.71	222.18	236.83	247.09	WRF3-CGCM3 (future)
11	57.69	98.46	137.93	161.65	189.51	200.86	210.87	220.9	235.29	247.06	MM5I-CCSM (future)
12	53.85	90.21	132.31	159.18	182.02	196.79	210.06	219.87	230.58	237.97	MM5I-HadCM3 (historical)
13	50.00	89.11	125.9	146.94	172.24	188.93	204.12	218.15	228.15	233.09	MM5I-HadCM3 (future)
14	46.15	86.68	123.99	145.83	167.32	181.26	193.81	205.28	219.17	228.89	RCM3-CGCM3 (future)
15	42.31	84.08	121.95	138.62	156.28	170.29	184.35	197.37	213.3	224.56	RCM3-GFDL (historical)
16	38.46	83.16	113.92	131.58	154.87	167.57	177.64	186.78	197.76	205.38	ECP2-GFDL (future)
17	34.62	82.61	110.53	127.95	142.64	151.95	160.21	167.66	176.57	182.73	ECP2-HadCM3 (future)
18	30.77	81.35	107.46	120.95	135.11	144.1	152.08	159.29	167.91	173.87	RCM3-CGCM3 (historical)
19	26.92	73.76	106.84	118.3	130.13	137.56	144.09	149.96	156.92	161.71	ECP2-HadCM3 (historical)
20	23.08	73.37	96.98	108.95	121.47	129.42	136.47	142.83	150.42	155.68	ECP2-GFDL (historical)
21	19.23	49.87	67.52	76.82	86.67	92.97	98.6	103.7	109.83	114.1	CRCM-CGCM3 (future)
22	15.38	49.85	66.46	75.09	84.17	89.95	95.1	99.75	105.33	109.19	Observed
23	11.54	35.6	52.46	61.86	72.18	78.96	85.12	90.79	97.71	102.58	CRCM-CGCM3 (historical)
24	7.69	34.86	46.92	53.23	59.9	64.17	67.97	71.41	75.54	78.41	CRCM-CCSM (future)
25	3.85	29.64	41.47	47.84	54.68	59.1	63.07	66.7	71.08	74.14	CRCM-CCSM (historical)
Gauge: 448172; Duration: 1 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	115.98	171.48	202.49	236.56	258.98	279.35	298.13	321.05	337.2	HRM3-GFDL (future)
2	92.31	107.81	153.04	180.64	210.94	230.86	248.97	265.66	286.02	300.37	HRM3-HadCM3 (future)
3	88.46	103.63	140.2	163.96	189.82	206.71	221.98	236.02	253.06	265.03	HRM3-HadCM3 (historical)
4	84.62	101.09	135.85	157.04	179.84	194.61	207.89	220.03	234.7	250.13	RCM3-GFDL (future)
5	80.77	97.01	130.56	144.91	166.65	182.24	196.69	210.46	233.49	244.96	WRFG-CGCM3 (historical)
6	76.92	96.6	128.33	142.2	166.34	180.79	193.52	210.03	226.31	237.79	HRM3-GFDL (historical)
7	73.08	87.79	124.79	142.03	156.16	172.75	192.1	205.19	219.31	229.21	WRFG-CCSM (future)
8	69.23	86.2	120.26	141.64	152.85	165.03	175.24	185.73	198.44	207.34	WRFG-CCSM (historical)
9	65.38	81.08	114.71	131.44	152.16	163.77	172.84	179.84	188.15	198.11	MM5I-CCSM (historical)
10	61.54	79.87	113.29	129.52	151.04	159.77	165.81	173.86	187.08	196.08	MM5I-CCSM (future)
11	57.69	69.13	101.28	122.35	145.11	155.03	163.85	171.82	186.9	193.87	WRFG-CGCM3 (future)
12	53.85	62.64	96.9	119.15	138.69	151.52	163.15	171.61	181.38	188	MM5I-HadCM3 (historical)
13	50.00	61.85	91.49	109.3	131.03	145.62	159.06	171.18	177.5	184.41	RCM3-GFDL (historical)
14	46.15	60.06	90.03	108.06	126.26	138.24	149.13	159.17	173.51	181.82	MM5I-HadCM3 (future)
15	42.31	58.12	88.54	102.58	118.79	132.91	146	158.28	171.41	180.05	RCM3-CGCM3 (future)
16	38.46	57.06	81.95	97.94	117.71	127.53	136.37	144.45	154.24	161.08	ECP2-GFDL (future)
17	34.62	56.05	79.69	93.52	105.82	113.71	120.77	127.18	134.88	140.25	ECP2-HadCM3 (future)
18	30.77	56	76.64	87.54	99.14	106.58	113.24	119.29	126.57	131.64	RCM3-CGCM3 (historical)
19	26.92	50.25	76.3	85.65	95.44	101.65	107.15	112.11	118.04	122.14	ECP2-HadCM3 (historical)
20	23.08	49.05	68.39	77.97	88.15	94.67	100.49	105.78	112.14	116.57	ECP2-GFDL (historical)
21	19.23	32.46	45.76	52.96	60.71	65.73	70.25	74.38	79.38	82.87	CRCM-CGCM3 (future)
22	15.38	26.9	34.8	42.02	50.27	55.8	60.89	65.63	71.48	75.64	CRCM-CGCM3 (historical)
23	11.54	22.11	34.69	38.83	43.02	45.66	48	50.1	52.6	54.45	CRCM-CCSM (future)
24	7.69	21.82	30.5	35.17	40.19	43.43	46.34	49	52.2	54.33	Observed
25	3.85	18.26	26.53	31.09	36.07	39.33	42.27	44.98	48.28	50.6	CRCM-CCSM (historical)
Gauge: 448172; Duration: 2 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	75.58	107.7	125.19	144.12	156.44	167.54	177.71	190.04	198.67	HRM3-GFDL (future)	
2	92.31	70.49	97.02	112.73	129.72	140.77	150.73	159.85	170.9	178.64	HRM3-HadCM3 (future)	
3	88.46	68.16	89.43	102.96	117.48	126.85	135.26	142.93	152.2	158.66	HRM3-HadCM3 (historical)	
4	84.62	66.46	87.06	99.37	112.46	120.86	128.37	135.19	143.39	149.1	WRFG-CGCM3 (historical)	
5	80.77	64.19	83.91	92.11	104.54	112.54	119.71	126.86	138.57	147.27	RCM3-GFDL (future)	
6	76.92	63.78	82.63	90.64	103.21	111.89	119.7	126.42	135.51	141.58	HRM3-GFDL (historical)	
7	73.08	58.51	80.45	90.37	98.84	106.17	116.62	126.22	134.06	139.53	WRFG-CCSM (future)	
8	69.23	57.5	77.48	89.85	96.86	103.95	109.54	115.49	122.66	127.66	WRFG-CCSM (historical)	
9	65.38	54.67	74.38	84.32	95.69	103	108.43	112.43	117.16	120.98	MM5I-CCSM (historical)	
10	61.54	53.6	73.66	82.98	94.9	100.85	104.32	108.19	115.5	120.61	MM5I-CCSM (future)	
11	57.69	47.03	66.41	78.26	91.92	97.56	102.54	107.39	114.92	120.41	WRFG-CGCM3 (future)	
12	53.85	43	63.69	76.9	88.22	95.55	102.16	107.03	112.37	116.06	MM5I-HadCM3 (historical)	
13	50.00	42.47	60.5	70.92	83.46	91.76	99.34	106.34	110.99	113.45	MM5I-HadCM3 (future)	
14	46.15	41.3	59.58	70.33	80.95	87.86	94.09	99.8	106.72	111.57	RCM3-CGCM3 (future)	
15	42.31	40.05	58.59	66.83	75.58	82.85	89.92	96.48	104.53	110.23	RCM3-GFDL (historical)	
16	38.46	39.56	54.64	63.49	75.12	81.2	86.21	90.77	96.25	100.06	ECP2-GFDL (future)	
17	34.62	39.22	53.04	61.55	68.79	73.4	77.49	81.18	85.6	88.67	ECP2-HadCM3 (future)	
18	30.77	38.72	51.46	58.08	65.03	69.46	73.39	76.95	81.2	84.16	RCM3-CGCM3 (historical)	
19	26.92	35.03	51.18	56.81	62.64	66.3	69.53	72.42	75.87	78.24	ECP2-HadCM3 (historical)	
20	23.08	34.75	46.35	52.21	58.36	62.26	65.73	68.87	72.61	75.21	ECP2-GFDL (historical)	
21	19.23	23.49	32.03	36.55	41.36	44.44	47.19	49.69	52.7	54.79	CRCM-CGCM3 (future)	
22	15.38	19.22	24.78	29.37	34.42	37.75	40.78	43.59	47.01	49.42	CRCM-CGCM3 (historical)	
23	11.54	16.63	24.26	26.79	29.39	31.02	32.45	33.97	35.98	37.38	CRCM-CCSM (future)	
24	7.69	16.3	22.09	25.14	28.37	30.44	32.29	33.74	35.26	36.31	Observed	
25	3.85	13.82	19.47	22.53	25.82	27.95	29.87	31.62	33.75	35.23	CRCM-CCSM (historical)	
Gauge: 448172; Duration: 3 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	60.05	84.88	98.33	112.84	122.25	130.73	138.48	147.85	154.42	HRM3-GFDL (future)
2	92.31	56.05	76.62	88.71	101.75	110.21	117.82	124.77	133.19	139.08	HRM3-HadCM3 (future)
3	88.46	54.27	70.72	81.14	92.28	99.45	105.88	111.73	118.79	123.71	HRM3-HadCM3 (historical)
4	84.62	52.91	68.92	78.45	88.54	95.01	100.78	106.02	112.31	116.69	WRF3-CGCM3 (historical)
5	80.77	51.18	66.48	72.78	82.37	88.52	94.02	99.19	107.92	114.49	RCM3-GFDL (future)
6	76.92	50.83	65.47	71.68	81.16	87.79	93.75	99.01	105.77	110.36	HRM3-GFDL (historical)
7	73.08	46.72	63.76	71.48	78.02	83.31	91.26	98.71	105.02	109.2	WRF3-CCSM (future)
8	69.23	45.93	61.41	70.93	76.5	81.96	86.27	90.86	96.37	100.21	WRF3-CCSM (historical)
9	65.38	43.75	59.05	66.79	75.58	81.23	85.42	88.5	92.14	94.76	MM5I-CCSM (historical)
10	61.54	42.87	58.51	65.71	74.7	79.59	82.26	85.13	90.74	94.66	MM5I-CCSM (future)
11	57.69	37.71	52.84	61.94	72.61	76.96	80.8	84.63	90.13	94.64	WRF3-CGCM3 (future)
12	53.85	34.56	50.7	60.98	69.73	75.4	80.48	84.25	88.35	91.18	MM5I-HadCM3 (historical)
13	50.00	34.15	48.24	56.29	65.98	72.37	78.19	83.56	87.41	89.3	MM5I-HadCM3 (future)
14	46.15	33.21	47.5	55.87	64.1	69.44	74.24	78.64	83.95	87.67	RCM3-CGCM3 (future)
15	42.31	32.21	46.71	53.1	59.86	65.25	70.64	75.63	81.73	86.05	RCM3-GFDL (historical)
16	38.46	31.86	43.64	50.41	59.34	64.19	68.05	71.55	75.75	78.68	ECP2-GFDL (future)
17	34.62	31.65	42.35	49.02	54.64	58.21	61.37	64.22	67.63	69.99	ECP2-HadCM3 (future)
18	30.77	31.17	41.17	46.33	51.75	55.2	58.25	61.01	64.31	66.59	RCM3-CGCM3 (historical)
19	26.92	28.26	40.93	45.32	49.86	52.7	55.21	57.46	60.12	61.96	ECP2-HadCM3 (historical)
20	23.08	28.11	37.15	41.74	46.53	49.58	52.27	54.71	57.62	59.63	ECP2-GFDL (historical)
21	19.23	19.1	25.87	29.43	33.2	35.61	37.77	39.72	42.07	43.71	CRCM-CGCM3 (future)
22	15.38	17.83	21.6	23.71	27.67	30.27	32.63	34.81	37.46	39.33	CRCM-CGCM3 (historical)
23	11.54	13.64	20.1	23.43	25.29	26.44	27.44	28.33	29.38	30.09	Observed
24	7.69	13.36	17.97	20.39	22.95	24.58	26.03	27.35	28.93	30.03	CRCM-CCSM (future)
25	3.85	11.35	15.88	18.32	20.94	22.63	24.15	25.54	27.22	28.39	CRCM-CCSM (historical)
Gauge: 448172; Duration: 4 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance		2	5	10	25	50	100	200	500		1000
	Probability (%)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002		0.001
1	96.15		58.9	83.79	97.33	111.98	121.5	130.09	137.95	147.47	154.14	HRM3-GFDL (future)
2	92.31		54.93	75.51	87.67	100.81	109.35	117.04	124.09	132.62	138.59	HRM3-HadCM3 (future)
3	88.46		53.15	69.62	80.09	91.3	98.54	105.03	110.96	118.1	123.09	HRM3-HadCM3 (historical)
4	84.62		51.81	67.78	77.3	87.42	93.91	99.71	104.97	111.3	115.71	WRFG-CGCM3 (historical)
5	80.77		50.08	65.34	71.67	81.29	87.47	93	98.51	107.42	114.1	RCM3-GFDL (future)
6	76.92		49.75	64.34	70.54	80.26	86.96	92.99	98.07	105.19	109.87	HRM3-GFDL (historical)
7	73.08		45.65	62.65	70.35	76.88	82.48	90.53	98.03	104.08	108.3	WRFG-CCSM (future)
8	69.23		44.88	60.35	69.93	75.37	80.83	85.1	89.7	95.22	99.07	WRFG-CCSM (historical)
9	65.38		42.68	57.95	65.63	74.41	80.06	84.29	87.38	91.04	93.79	MM5I-CCSM (historical)
10	61.54		41.85	57.39	64.6	73.79	78.46	81.14	84.04	89.67	93.61	MM5I-CCSM (future)
11	57.69		36.76	51.77	60.95	71.51	75.87	79.72	83.52	89.13	93.55	WRFG-CGCM3 (future)
12	53.85		33.63	49.68	59.89	68.63	74.29	79.38	83.19	87.31	90.16	MM5I-HadCM3 (historical)
13	50.00		33.22	47.19	55.23	64.91	71.31	77.14	82.54	86.31	88.21	MM5I-HadCM3 (future)
14	46.15		32.31	46.48	54.79	63	68.33	73.13	77.53	82.86	86.6	RCM3-CGCM3 (future)
15	42.31		31.33	45.71	52.08	58.84	64.43	69.87	74.92	81.11	85.49	RCM3-GFDL (historical)
16	38.46		30.97	42.64	49.5	58.47	63.17	67.04	70.55	74.78	77.71	ECP2-GFDL (future)
17	34.62		30.72	41.42	47.99	53.59	57.14	60.3	63.15	66.56	68.92	ECP2-HadCM3 (future)
18	30.77		30.31	40.18	45.29	50.67	54.08	57.12	59.86	63.14	65.42	RCM3-CGCM3 (historical)
19	26.92		27.45	39.96	44.31	48.81	51.64	54.13	56.37	59.03	60.86	ECP2-HadCM3 (historical)
20	23.08		27.24	36.21	40.74	45.48	48.5	51.17	53.58	56.47	58.47	ECP2-GFDL (historical)
21	19.23		18.49	25.11	28.6	32.29	34.66	36.78	38.7	41	42.61	CRCM-CGCM3 (future)
22	15.38		13.2	19.5	23.02	26.89	29.43	31.75	33.88	36.48	38.31	CRCM-CGCM3 (historical)
23	11.54		12.92	17.4	19.74	22.22	23.8	25.21	26.49	28.03	29.09	CRCM-CCSM (future)
24	7.69		11.01	15.37	17.72	20.23	21.86	23.32	24.65	26.25	27.38	CRCM-CCSM (historical)
25	3.85		10.93	13.24	14.36	15.49	16.19	16.8	17.34	17.98	18.42	Observed
Gauge: 448172; Duration: 6 hr			2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	37.64	53.35	61.88	71.08	77.06	82.44	87.37	93.33	97.51	HRM3-GFDL (future)
2	92.31	35.1	48.1	55.75	63.99	69.35	74.16	78.57	83.91	87.64	HRM3-HadCM3 (future)
3	88.46	34	44.39	50.98	58.02	62.56	66.63	70.34	74.81	77.93	HRM3-HadCM3 (historical)
4	84.62	33.13	43.22	49.21	55.56	59.63	63.26	66.55	70.51	73.27	WRFG-CGCM3 (historical)
5	80.77	32.06	41.67	45.65	51.69	55.56	59.02	62.43	67.77	71.9	RCM3-GFDL (future)
6	76.92	31.85	41.03	44.93	51.02	55.21	58.99	62.16	66.6	69.52	HRM3-GFDL (historical)
7	73.08	29.27	39.98	44.82	48.92	52.3	57.3	61.98	65.95	68.58	WRFG-CCSM (future)
8	69.23	28.75	38.53	44.54	47.98	51.41	54.06	56.93	60.38	62.79	WRFG-CCSM (historical)
9	65.38	27.39	37	41.85	47.36	50.89	53.58	55.52	57.81	59.39	WRFG-CGCM3 (future)
10	61.54	26.86	36.66	41.19	46.89	49.92	51.61	53.31	56.82	59.27	MM5I-CCSM (future)
11	57.69	23.65	33.11	38.87	45.53	48.27	50.69	53.1	56.34	59.22	MM5I-CCSM (historical)
12	53.85	21.65	31.81	38.21	43.68	47.22	50.41	52.86	55.44	57.23	MM5I-HadCM3 (historical)
13	50.00	21.41	30.22	35.26	41.3	45.28	48.91	52.25	54.85	56.05	MM5I-HadCM3 (future)
14	46.15	20.82	29.77	34.98	40.12	43.45	46.44	49.18	52.5	54.82	RCM3-CGCM3 (future)
15	42.31	20.19	29.26	33.26	37.49	40.92	44.29	47.42	51.24	53.94	RCM3-GFDL (historical)
16	38.46	20	27.33	31.63	37.22	40.2	42.61	44.8	47.43	49.25	ECP2-GFDL (future)
17	34.62	19.85	26.57	30.68	34.19	36.41	38.38	40.16	42.28	43.75	ECP2-HadCM3 (future)
18	30.77	19.56	25.78	28.99	32.35	34.48	36.38	38.09	40.13	41.54	RCM3-CGCM3 (historical)
19	26.92	17.75	25.62	28.35	31.17	32.94	34.5	35.89	37.55	38.69	ECP2-HadCM3 (historical)
20	23.08	17.65	23.27	26.11	29.08	30.96	32.62	34.13	35.92	37.17	ECP2-GFDL (historical)
21	19.23	12.1	16.26	18.43	20.73	22.2	23.5	24.69	26.11	27.09	CRCM-CGCM3 (future)
22	15.38	8.75	12.71	14.89	17.27	18.83	20.24	21.54	23.11	24.22	CRCM-CGCM3 (historical)
23	11.54	8.57	11.37	12.83	14.36	15.34	16.21	16.99	17.93	18.58	CRCM-CCSM (future)
24	7.69	7.36	10.1	11.55	13.09	14.09	14.97	15.78	16.76	17.43	CRCM-CCSM (historical)
25	3.85	6.61	7.59	8.05	8.5	8.77	9.01	9.22	9.46	9.63	Observed
Gauge: 448172; Duration: 12 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	20.41	28.75	33.26	38.11	41.26	44.09	46.67	49.8	51.99	HRM3-GFDL (future)	
2	92.31	19.03	25.96	30	34.35	37.17	39.71	42.02	44.82	46.77	HRM3-HadCM3 (future)	
3	88.46	18.47	23.97	27.45	31.16	33.55	35.68	37.63	39.97	41.6	HRM3-HadCM3 (historical)	
4	84.62	17.99	23.36	26.52	29.87	32.01	33.91	35.64	37.72	39.16	WRFG-CGCM3 (historical)	
5	80.77	17.43	22.52	24.62	27.8	29.84	31.65	33.41	36.03	38.16	RCM3-GFDL (future)	
6	76.92	17.32	22.18	24.24	27.44	29.63	31.61	33.3	35.58	37.1	HRM3-GFDL (historical)	
7	73.08	15.94	21.63	24.19	26.35	28.03	30.62	33.04	35.29	36.66	WRFG-CCSM (future)	
8	69.23	15.67	20.86	24.03	25.86	27.65	29.01	30.51	32.31	33.57	WRFG-CCSM (historical)	
9	65.38	14.95	20.04	22.59	25.49	27.35	28.8	29.82	31.02	31.85	WRFG-CGCM3 (future)	
10	61.54	14.66	19.86	22.25	25.21	26.89	27.78	28.57	30.39	31.67	MM5I-CCSM (future)	
11	57.69	12.95	17.97	21.02	24.54	25.98	27.25	28.56	30.08	31.57	MM5I-CCSM (historical)	
12	53.85	11.9	17.31	20.66	23.53	25.38	27.05	28.39	29.75	30.68	MM5I-HadCM3 (historical)	
13	50.00	11.77	16.43	19.09	22.25	24.33	26.22	27.96	29.49	30.12	MM5I-HadCM3 (future)	
14	46.15	11.44	16.2	18.94	21.63	23.36	24.92	26.35	28.06	29.26	RCM3-CGCM3 (future)	
15	42.31	11.1	15.92	18.02	20.23	22.01	23.76	25.37	27.34	28.73	RCM3-GFDL (historical)	
16	38.46	11.02	14.89	17.16	20.08	21.64	22.9	24.04	25.4	26.35	ECP2-GFDL (future)	
17	34.62	10.96	14.51	16.65	18.49	19.65	20.68	21.61	22.71	23.47	ECP2-HadCM3 (future)	
18	30.77	10.76	14.05	15.74	17.5	18.61	19.6	20.48	21.54	22.28	RCM3-CGCM3 (historical)	
19	26.92	9.8	13.98	15.41	16.89	17.81	18.62	19.35	20.21	20.8	ECP2-HadCM3 (historical)	
20	23.08	9.77	12.72	14.21	15.76	16.74	17.6	18.38	19.31	19.96	ECP2-GFDL (historical)	
21	19.23	6.8	8.99	10.13	11.32	12.07	12.74	13.35	14.08	14.58	CRCM-CGCM3 (future)	
22	15.38	5.03	7.12	8.25	9.48	10.27	10.98	11.64	12.43	12.98	CRCM-CGCM3 (historical)	
23	11.54	4.92	6.4	7.15	7.94	8.44	8.88	9.28	9.75	10.08	CRCM-CCSM (future)	
24	7.69	4.28	5.71	6.46	7.24	7.74	8.19	8.59	9.07	9.4	CRCM-CCSM (historical)	
25	3.85	3.66	4.1	4.3	4.5	4.62	4.72	4.81	4.91	4.98	Observed	
Gauge: 448172; Duration: 24 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance		2	5	10	25	50	100	200	500		1000
	Probability (%)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002		0.001
1	96.15		10.85	15.2	17.55	20.06	21.69	23.16	24.49	26.11	27.24	HRM3-GFDL (future)
2	92.31		10.11	13.75	15.85	18.1	19.56	20.87	22.06	23.51	24.51	HRM3-HadCM3 (future)
3	88.46		9.84	12.71	14.52	16.44	17.68	18.78	19.78	20.99	21.83	HRM3-HadCM3 (historical)
4	84.62		9.57	12.38	14.02	15.76	16.86	17.85	18.74	19.81	20.55	WRFG-CGCM3 (historical)
5	80.77		9.29	11.93	13.03	14.68	15.73	16.67	17.58	18.86	19.94	RCM3-GFDL (future)
6	76.92		9.23	11.76	12.83	14.49	15.63	16.65	17.52	18.7	19.48	HRM3-GFDL (historical)
7	73.08		8.51	11.48	12.8	13.93	14.77	16.1	17.33	18.55	19.26	WRFG-CCSM (future)
8	69.23		8.36	11.08	12.73	13.68	14.61	15.27	16.04	16.96	17.61	WRFG-CCSM (historical)
9	65.38		7.99	10.64	11.96	13.46	14.42	15.2	15.73	16.36	16.79	WRFG-CGCM3 (future)
10	61.54		7.84	10.55	11.79	13.32	14.21	14.67	15.08	15.95	16.6	MM5I-CCSM (future)
11	57.69		6.94	9.56	11.16	12.98	13.73	14.38	15.01	15.75	16.5	MM5I-CCSM (historical)
12	53.85		6.39	9.23	10.95	12.43	13.38	14.24	14.97	15.68	16.16	MM5I-HadCM3 (historical)
13	50.00		6.32	8.75	10.13	11.75	12.82	13.78	14.67	15.56	15.89	MM5I-HadCM3 (future)
14	46.15		6.14	8.64	10.05	11.44	12.33	13.13	13.87	14.75	15.36	RCM3-CGCM3 (future)
15	42.31		5.97	8.49	9.58	10.72	11.6	12.49	13.32	14.32	15.02	RCM3-GFDL (historical)
16	38.46		5.94	7.94	9.12	10.62	11.45	12.1	12.69	13.39	13.88	ECP2-GFDL (future)
17	34.62		5.91	7.75	8.85	9.8	10.4	10.93	11.4	11.97	12.36	ECP2-HadCM3 (future)
18	30.77		5.8	7.51	8.38	9.29	9.86	10.36	10.82	11.36	11.74	RCM3-CGCM3 (historical)
19	26.92		5.29	7.46	8.21	8.97	9.45	9.87	10.24	10.69	10.99	ECP2-HadCM3 (historical)
20	23.08		5.29	6.81	7.58	8.38	8.89	9.33	9.73	10.21	10.54	ECP2-GFDL (historical)
21	19.23		3.72	4.86	5.45	6.06	6.44	6.78	7.09	7.46	7.72	CRCM-CGCM3 (future)
22	15.38		2.8	3.88	4.46	5.08	5.47	5.83	6.16	6.55	6.82	CRCM-CGCM3 (historical)
23	11.54		2.73	3.49	3.87	4.27	4.52	4.74	4.94	5.18	5.34	CRCM-CCSM (future)
24	7.69		2.41	3.14	3.52	3.92	4.17	4.39	4.59	4.82	4.99	CRCM-CCSM (historical)
25	3.85		1.9	2.1	2.19	2.29	2.34	2.39	2.43	2.48	2.51	Observed
Gauge: 448172; Duration: 48 hr			2- year	5- year	10- year	25- year	50- year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	7.2	10.05	11.58	13.23	14.29	15.24	16.11	17.16	17.89	HRM3-GFDL (future)	
2	92.31	6.71	9.09	10.46	11.93	12.87	13.72	14.49	15.43	16.08	HRM3-HadCM3 (future)	
3	88.46	6.54	8.4	9.58	10.83	11.63	12.34	12.99	13.78	14.32	HRM3-HadCM3 (historical)	
4	84.62	6.36	8.19	9.26	10.39	11.11	11.74	12.32	13.01	13.49	WRFG-CGCM3 (historical)	
5	80.77	6.17	7.9	8.61	9.68	10.36	10.97	11.53	12.33	13.03	RCM3-GFDL (future)	
6	76.92	6.14	7.79	8.49	9.54	10.28	10.93	11.52	12.25	12.75	HRM3-GFDL (historical)	
7	73.08	5.67	7.6	8.47	9.2	9.71	10.57	11.36	12.17	12.63	WRFG-CCSM (future)	
8	69.23	5.57	7.33	8.4	9.03	9.65	10.07	10.58	11.18	11.59	WRFG-CCSM (historical)	
9	65.38	5.33	7.06	7.92	8.9	9.52	10.03	10.38	10.78	11.06	WRFG-CGCM3 (future)	
10	61.54	5.23	7	7.8	8.78	9.38	9.68	9.94	10.47	10.89	MM5I-CCSM (future)	
11	57.69	4.64	6.35	7.39	8.57	9.05	9.48	9.87	10.35	10.84	MM5I-CCSM (historical)	
12	53.85	4.28	6.14	7.25	8.21	8.82	9.37	9.86	10.31	10.62	MM5I-HadCM3 (historical)	
13	50.00	4.23	5.81	6.72	7.77	8.46	9.09	9.66	10.26	10.47	MM5I-HadCM3 (future)	
14	46.15	4.11	5.75	6.65	7.55	8.12	8.64	9.11	9.67	10.06	RCM3-CGCM3 (future)	
15	42.31	4	5.64	6.35	7.09	7.67	8.25	8.77	9.42	9.87	RCM3-GFDL (historical)	
16	38.46	3.98	5.29	6.06	7.03	7.56	7.98	8.36	8.81	9.12	ECP2-GFDL (future)	
17	34.62	3.98	5.17	5.88	6.49	6.88	7.22	7.53	7.9	8.15	ECP2-HadCM3 (future)	
18	30.77	3.88	5	5.57	6.16	6.54	6.87	7.16	7.52	7.76	RCM3-CGCM3 (historical)	
19	26.92	3.56	4.98	5.46	5.95	6.26	6.53	6.77	7.05	7.25	ECP2-HadCM3 (historical)	
20	23.08	3.56	4.55	5.06	5.58	5.9	6.19	6.45	6.76	6.97	ECP2-GFDL (historical)	
21	19.23	2.53	3.27	3.65	4.04	4.29	4.51	4.7	4.94	5.1	CRCM-CGCM3 (future)	
22	15.38	1.92	2.63	3	3.39	3.65	3.87	4.08	4.33	4.5	CRCM-CGCM3 (historical)	
23	11.54	1.88	2.38	2.63	2.89	3.05	3.19	3.32	3.47	3.57	CRCM-CCSM (future)	
24	7.69	1.67	2.14	2.39	2.64	2.8	2.94	3.06	3.21	3.31	CRCM-CCSM (historical)	
25	3.85	1.44	1.61	1.69	1.76	1.81	1.85	1.88	1.92	1.95	Observed	
Gauge: 448172; Duration: 72 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	272.1	371	436.48	519.21	580.59	641.51	702.21	782.3	842.82	HRM3-GFDL (future)
2	92.31	263.59	346.6	401.56	471	522.52	579.11	647.04	736.67	804.41	RCM3-GFDL (historical)
3	88.46	259.69	321.34	362.16	442.23	510.92	573.65	624.6	691.82	742.62	HRM3-HadCM3 (future)
4	84.62	243.82	301.46	353.79	429.81	486.22	542.2	597.98	671.58	727.2	RCM3-CGCM3 (future)
5	80.77	241.15	301.27	349.63	413.73	451.99	489.97	527.81	578.61	619.39	HRM3-GFDL (historical)
6	76.92	237.56	298.82	345.58	401.33	442.69	483.74	524.64	577.73	615.46	WRFG-CGCM3 (future)
7	73.08	234.82	293.61	339.38	390.62	428.64	466.38	503.98	553.58	591.07	HRM3-HadCM3 (historical)
8	69.23	226.51	286.03	339.31	387.37	423.03	458.42	493.68	540.2	575.36	WRFG-CCSM (future)
9	65.38	226.19	282.79	320.26	367.6	402.72	437.59	472.32	518.15	552.78	MM5I-HadCM3 (historical)
10	61.54	213.69	280.21	315.76	360.68	394.16	429.8	465.31	512.16	549.37	Observed
11	57.69	202.73	276.35	315.74	358.25	394	427.08	460.03	503.51	549.37	Observed
12	53.85	196.12	271.55	309.85	353.28	381.13	408.77	440.51	500.19	547.57	WRFG-CCSM (historical)
13	50.00	182.18	247.1	280.85	325.13	363.83	402.24	436.32	500.19	536.38	WRFG-CGCM3 (historical)
14	46.15	172.56	231.68	272.96	323.5	355.14	388.68	435.12	491	529.17	MM5I-CCSM (historical)
15	42.31	169.32	228.45	259.21	311.45	350.21	386.55	435.12	477.59	515.81	RCM3-CGCM3 (historical)
16	38.46	165.66	218.48	259.09	309.8	347.61	385.8	427.02	472.66	509.18	RCM3-GFDL (future)
17	34.62	157.55	217.86	258.82	297.8	336.3	385.8	422.55	471.89	500.12	MM5I-HadCM3 (future)
18	30.77	155.4	209.97	234.73	286.43	336.3	385.15	417.84	459.12	490.32	MM5I-CCSM (future)
19	26.92	151.05	197.32	227.96	286.43	326.52	355.02	383.42	420.89	449.21	ECP2-HadCM3 (future)
20	23.08	114.45	166	219.21	266.67	295.39	323.89	352.29	389.76	418.08	ECP2-GFDL (historical)
21	19.23	93.35	166	219.21	266.03	289.24	312.29	335.25	365.54	388.43	ECP2-HadCM3 (historical)
22	15.38	91.53	137.37	152.55	171.73	189.11	208.38	227.58	252.91	272.06	CRCM-CGCM3 (historical)
23	11.54	85.65	122.81	143.52	169.69	185.96	200.08	214.15	232.71	248.74	CRCM-CCSM (future)
24	7.69	85.65	120.27	138.1	160.63	177.34	193.93	210.45	232.26	246.74	CRCM-CGCM3 (future)
25	3.85	77.01	102.12	118.74	139.75	155.33	170.79	186.2	206.53	221.9	CRCM-CCSM (historical)
Gauge: 449159; Duration: 15 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	223.81	325.22	392.36	477.2	540.13	602.6	664.84	746.96	809.02	HRM3-GFDL (future)	
2	92.31	214.86	298.05	353.12	422.71	483.56	554.65	625.47	718.92	789.54	RCM3-GFDL (historical)	
3	88.46	209.75	271.6	315.41	411.94	474.34	525.58	576.64	644	694.91	HRM3-HadCM3 (future)	
4	84.62	194.57	251.13	312.55	378.08	432.72	486.95	540.99	612.27	666.15	RCM3-CGCM3 (future)	
5	80.77	191.52	250.57	304.44	364.29	402.68	440.78	478.74	528.83	566.68	WRFG-CGCM3 (future)	
6	76.92	188.79	248.36	293.87	347.88	387.94	427.71	467.33	519.61	559.11	HRM3-GFDL (historical)	
7	73.08	186.57	246.15	287.8	337.64	374.61	411.31	447.87	496.11	532.57	HRM3-HadCM3 (historical)	
8	69.23	177.95	239	287.65	334.5	369.26	403.75	438.13	483.48	517.75	WRFG-CCSM (future)	
9	65.38	177.74	234.77	268.97	314.89	348.95	382.76	416.45	460.9	494.49	MM51-HadCM3 (historical)	
10	61.54	165.96	232.63	264.13	307.51	341.64	376.33	410.9	456.51	490.97	WRFG-CCSM (historical)	
11	57.69	158.11	229.8	263.39	306.69	339.68	371.62	403.45	445.43	477.16	WRFG-CGCM3 (historical)	
12	53.85	149.72	222.28	259.57	299.57	326.4	353.04	379.58	424.48	459.86	MM51-CCSM (historical)	
13	50.00	136.93	197.68	229.44	270.71	306.59	342.19	377.67	414.6	446.4	RCM3-GFDL (future)	
14	46.15	128.05	184.08	222.35	269.57	299.34	329.67	364.87	411.31	441.74	RCM3-CGCM3 (historical)	
15	42.31	126.28	179.69	210.79	258.76	294.35	328.89	361.07	407.02	441.06	MM51-HadCM3 (future)	
16	38.46	123.6	172.82	208.6	256.07	291.28	326.24	358.33	397.18	426.53	MM51-CCSM (future)	
17	34.62	115.47	171.03	208	243.76	270.3	296.64	322.88	357.5	383.66	ECP2-HadCM3 (future)	
18	30.77	114.28	161.81	184.16	214.11	240.11	265.92	291.64	325.57	351.21	ECP2-GFDL (historical)	
19	26.92	109.42	151.32	179.06	212.4	233.35	254.14	274.86	302.2	322.86	ECP2-HadCM3 (historical)	
20	23.08	77.97	96.68	112.98	143.5	166.15	188.63	211.02	240.57	262.9	Observed	
21	19.23	61.19	88.82	112.98	143.5	166.15	188.63	211.02	240.57	262.9	Observed	
22	15.38	59.97	88.82	109.07	124.72	139.19	154.84	170.43	191	206.54	CRCM-CGCM3 (historical)	
23	11.54	52.33	85.37	102.18	123.43	136.33	147.85	159.34	174.49	186.65	CRCM-CCSM (future)	
24	7.69	52.33	82.93	97.32	115.51	129	142.39	155.74	173.34	185.94	CRCM-CGCM3 (future)	
25	3.85	48.81	67.79	80.36	96.24	108.02	119.72	131.37	146.74	158.36	CRCM-CCSM (historical)	
Gauge: 449159; Duration: 30 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	170.5	249.75	302.21	368.51	417.69	466.5	515.14	579.31	627.8	HRM3-GFDL (future)
2	92.31	163.49	228.29	271.2	325.41	375.09	430.79	486.29	559.51	614.85	RCM3-GFDL (historical)
3	88.46	159.39	207.58	243.33	318.97	365.63	405.55	445.32	497.8	537.46	HRM3-HadCM3 (future)
4	84.62	147.64	191.59	239.49	290.34	332.73	374.81	416.73	472.04	513.84	RCM3-CGCM3 (future)
5	80.77	145.24	191.11	233.2	279.8	309.71	339.4	368.97	408	437.49	WRF3-CGCM3 (future)
6	76.92	143.19	189.42	224.75	266.65	297.73	328.58	359.32	399.87	430.52	HRM3-GFDL (historical)
7	73.08	141.51	187.98	220.02	258.7	287.39	315.86	344.24	381.67	409.96	HRM3-HadCM3 (historical)
8	69.23	134.77	183.46	219.89	256.26	283.24	310.02	336.7	371.9	398.5	WRF3-CCSM (future)
9	65.38	134.61	178.75	205.38	240.99	267.42	293.65	319.78	354.26	380.32	MM5I-HadCM3 (historical)
10	61.54	125.51	177.19	201.59	235.22	261.85	288.77	315.6	350.99	377.74	WRF3-CCSM (historical)
11	57.69	119.68	174.97	200.94	234.72	260.17	284.93	309.6	342.16	366.76	WRF3-CGCM3 (historical)
12	53.85	112.98	169.22	198.16	228.97	249.77	270.42	290.98	325.08	352.37	MM5I-CCSM (historical)
13	50.00	103.13	150.05	174.6	206.46	234.13	261.6	288.97	318.12	342.57	RCM3-GFDL (future)
14	46.15	96.28	139.63	169.15	205.61	228.62	252.32	279.53	315.43	338.63	MM5I-HadCM3 (future)
15	42.31	95.03	136.1	160.4	197.49	225.01	251.46	275.84	311.21	337.95	RCM3-CGCM3 (historical)
16	38.46	93.04	131.05	158.47	195.01	222.12	249.03	274.21	304.23	326.92	MM5I-CCSM (future)
17	34.62	86.71	129.55	157.92	185.5	205.95	226.26	246.49	273.18	293.36	ECP2-HadCM3 (future)
18	30.77	85.86	122.23	139.42	162.57	182.57	202.43	222.21	248.31	268.03	ECP2-GFDL (historical)
19	26.92	82.04	114.27	135.61	161.13	177.24	193.23	209.16	230.17	246.06	ECP2-HadCM3 (historical)
20	23.08	58.01	72.21	81.62	97.49	112.44	127.28	142.06	161.57	176.31	Observed
21	19.23	45.31	63.68	77.33	97.49	112.44	127.28	142.06	161.57	176.31	Observed
22	15.38	44.4	61.79	77.33	93.5	104.54	116.42	128.26	143.87	155.67	CRCM-CGCM3 (historical)
23	11.54	37.29	61.38	76.45	92.58	102.31	111.06	119.77	131.27	140.42	CRCM-CCSM (future)
24	7.69	37.29	61.38	72.7	86.49	96.72	106.87	116.99	130.33	139.96	CRCM-CGCM3 (future)
25	3.85	35.99	50.27	59.72	71.67	80.53	89.33	98.09	109.66	118.4	CRCM-CCSM (historical)
Gauge: 449159; Duration: 45 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	143.06	212.07	257.76	315.49	358.32	400.83	443.18	499.07	541.3	HRM3-GFDL (future)
2	92.31	136.92	193.09	230.28	277.27	323.38	372.11	420.65	484.7	533.11	RCM3-GFDL (historical)
3	88.46	133.23	175	208.13	274.3	312.13	346.73	381.21	426.69	461.07	HRM3-HadCM3 (future)
4	84.62	123.14	161.08	202.66	246.51	283.04	319.3	355.42	403.08	439.1	RCM3-CGCM3 (future)
5	80.77	121	160.61	197.28	237.61	263.53	289.26	314.9	348.73	374.3	WRF3-CGCM3 (future)
6	76.92	119.33	159.17	189.64	225.73	252.51	279.09	305.57	340.5	366.91	HRM3-GFDL (historical)
7	73.08	117.93	158.31	185.54	218.87	243.59	268.13	292.59	324.85	349.23	HRM3-HadCM3 (historical)
8	69.23	112.06	155.77	185.43	216.78	240.04	263.13	286.13	316.48	339.42	WRF3-CCSM (future)
9	65.38	111.93	149.83	172.89	203.57	226.33	248.92	271.43	301.13	323.58	MM5I-HadCM3 (historical)
10	61.54	104.14	148.61	169.58	198.53	221.7	244.92	268.06	298.58	321.64	WRF3-CCSM (historical)
11	57.69	99.45	146.67	168.92	198.31	220.01	241.32	262.57	290.59	311.77	WRF3-CGCM3 (historical)
12	53.85	93.45	141.83	166.78	193.03	210.92	228.68	246.37	274.87	298.19	MM5I-CCSM (historical)
13	50.00	85.05	125.21	146.24	173.5	197.15	220.63	244.01	269.72	290.48	RCM3-GFDL (future)
14	46.15	79.2	116.39	141.62	172.81	192.52	213.13	236.45	267.22	287.36	MM5I-HadCM3 (future)
15	42.31	78.29	113.2	134.35	166.14	189.72	212.08	232.33	262.45	285.21	RCM3-CGCM3 (historical)
16	38.46	76.67	109.19	132.38	163.5	186.58	209.5	231.58	257.3	276.73	MM5I-CCSM (future)
17	34.62	71.19	107.75	131.83	155.38	172.85	190.19	207.46	230.25	247.48	ECP2-HadCM3 (future)
18	30.77	70.56	101.26	115.86	135.7	152.71	169.6	186.43	208.63	225.4	ECP2-GFDL (historical)
19	26.92	67.21	94.62	112.77	134.32	148	161.59	175.13	192.99	206.49	ECP2-HadCM3 (historical)
20	23.08	46.96	58.8	66.64	79.02	90.51	101.91	113.28	128.27	139.6	Observed
21	19.23	36.42	51.77	63.53	79.02	90.51	101.91	113.28	128.27	139.6	Observed
22	15.38	35.69	51.27	63.53	76.55	85.83	95.74	105.6	118.62	128.46	CRCM-CGCM3 (historical)
23	11.54	32.76	51.27	62.41	75.86	83.9	91.19	98.46	108.05	115.62	CRCM-CCSM (future)
24	7.69	32.76	50.14	59.23	70.71	79.23	87.68	96.11	107.22	115.3	CRCM-CGCM3 (future)
25	3.85	28.76	40.51	48.29	58.12	65.42	72.66	79.87	89.39	96.58	CRCM-CCSM (historical)
Gauge: 449159; Duration: 1 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	106.45	164.93	203.65	252.56	288.86	324.88	360.77	408.12	447.43	RCM3-GFDL (historical)
2	92.31	101.2	147.93	178.87	224.05	266.42	308.47	350.37	405.65	443.91	HRM3-GFDL (future)
3	88.46	97.69	132.45	166.94	217.96	246.96	275.75	304.43	342.27	370.87	HRM3-HadCM3 (future)
4	84.62	89.57	121.74	155.46	191.34	221.11	250.65	280.09	318.92	348.27	RCM3-CGCM3 (future)
5	80.77	87.67	120.69	151.22	184.54	206.11	227.52	248.85	277	298.27	WRF3-CGCM3 (future)
6	76.92	86.59	120.13	143.93	173.29	195.08	216.7	238.25	266.67	288.15	HRM3-GFDL (historical)
7	73.08	85.59	119.47	140.54	167.69	187.84	207.83	227.75	254.04	273.9	HRM3-HadCM3 (historical)
8	69.23	80.64	119.05	140.36	165.93	184.89	203.72	222.47	247.22	265.92	WRF3-CCSM (future)
9	65.38	80.58	110.97	130.12	155.06	173.56	191.92	210.22	234.35	252.6	MM5I-HadCM3 (historical)
10	61.54	74.36	110.39	127.27	151.21	170.29	189.24	208.11	233.02	251.84	WRF3-CCSM (historical)
11	57.69	71.51	108.69	126.4	150.74	168.16	185.44	202.66	225.38	242.55	WRF3-CGCM3 (historical)
12	53.85	65.94	105.12	125.48	145.9	160.36	174.72	189.02	209.67	228.08	MM5I-CCSM (historical)
13	50.00	59.38	91.27	108.04	129.64	148.31	166.84	185.31	207.89	224.17	RCM3-GFDL (future)
14	46.15	54.79	84.56	104.48	129.23	144.95	162.36	181	205.58	222.15	MM5I-HadCM3 (future)
15	42.31	54.48	81.53	99.41	124.81	143.65	160.55	176.09	198.51	216.28	RCM3-CGCM3 (historical)
16	38.46	53.47	79.3	96.93	121.23	139.26	157.15	174.98	196.6	212.1	MM5I-CCSM (future)
17	34.62	48.94	77.7	96.19	114.72	128.46	142.11	155.7	173.63	187.19	ECP2-HadCM3 (future)
18	30.77	48.65	71.85	83.14	98.94	112.14	125.24	138.3	155.52	168.54	ECP2-GFDL (historical)
19	26.92	45.79	67.06	81.14	97.41	107.99	118.5	128.97	142.78	153.22	ECP2-HadCM3 (historical)
20	23.08	30.63	39.18	44.85	52	58.9	66.05	73.17	82.56	89.66	CRCM-CGCM3 (historical)
21	19.23	23.16	34.31	41.99	51.7	57.31	62.58	67.83	74.76	80	CRCM-CGCM3 (future)
22	15.38	22.7	33.01	39.52	47.76	53.87	59.93	65.98	73.95	79.97	CRCM-CCSM (future)
23	11.54	17.88	25.96	31.32	38.08	43.1	48.08	53.04	59.59	64.54	CRCM-CCSM (historical)
24	7.69	16.4	24.38	29.66	36.34	41.29	46.2	51.1	57.56	62.45	Observed
25	3.85	16.4	24.38	29.66	36.34	41.29	46.2	51.1	57.56	62.45	Observed
Gauge: 449159; Duration: 2 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	69.04	103.17	125.76	154.32	175.5	196.52	217.47	245.11	265.99	HRM3-GFDL (future)
2	92.31	65.99	93.68	112.01	135.18	158.92	183.09	207.17	238.93	262.94	RCM3-GFDL (historical)
3	88.46	64.12	84.71	101.76	134.58	152.36	169.41	186.41	208.83	225.77	HRM3-HadCM3 (future)
4	84.62	59.18	77.84	98.35	119.9	137.83	155.63	173.37	196.77	214.45	RCM3-CGCM3 (future)
5	80.77	58.11	77.59	95.72	115.57	128.35	141.04	153.67	170.35	182.95	WRFG-CGCM3 (future)
6	76.92	57.32	76.89	91.86	109.58	122.73	135.78	148.78	165.93	178.9	HRM3-GFDL (historical)
7	73.08	56.65	76.59	89.84	106.21	118.35	130.41	142.42	158.26	170.23	HRM3-HadCM3 (historical)
8	69.23	53.76	75.79	89.78	105.17	116.6	127.94	139.24	154.14	165.41	WRFG-CCSM (future)
9	65.38	53.69	72.24	83.61	98.67	109.85	120.94	131.98	146.56	157.58	MM5I-HadCM3 (historical)
10	61.54	49.88	71.7	81.97	96.17	107.63	119.03	130.4	145.39	156.72	WRFG-CCSM (historical)
11	57.69	47.69	70.73	81.6	96.14	106.71	117.17	127.59	141.33	151.72	WRFG-CGCM3 (historical)
12	53.85	44.66	68.39	80.65	93.42	102.19	110.9	119.57	133.29	144.67	MM5I-CCSM (historical)
13	50.00	40.58	60.2	70.49	83.8	95.35	106.81	118.23	131.01	141.16	RCM3-GFDL (future)
14	46.15	37.72	55.93	68.24	83.48	93.12	103.32	114.73	129.79	139.66	MM5I-HadCM3 (future)
15	42.31	37.32	54.31	64.77	80.32	91.86	102.69	112.41	127.09	138.18	RCM3-CGCM3 (historical)
16	38.46	36.56	52.46	63.71	78.87	90.12	101.28	112.23	124.81	134.32	MM5I-CCSM (future)
17	34.62	33.86	51.71	63.4	74.89	83.41	91.87	100.3	111.42	119.83	ECP2-HadCM3 (future)
18	30.77	33.58	48.44	55.55	65.25	73.53	81.75	89.95	100.75	108.92	ECP2-GFDL (historical)
19	26.92	31.91	45.25	54.09	64.52	71.18	77.79	84.37	93.06	99.63	ECP2-HadCM3 (historical)
20	23.08	22.12	27.81	31.58	36.34	40.81	45.56	50.3	56.55	61.27	CRCM-CGCM3 (historical)
21	19.23	17.09	24.46	29.57	36.02	39.87	43.38	46.87	51.48	55.08	CRCM-CCSM (future)
22	15.38	16.75	23.67	28.03	33.54	37.62	41.68	45.72	51.05	54.97	CRCM-CGCM3 (future)
23	11.54	13.43	19.08	23.08	28.13	31.88	35.59	39.3	44.19	47.88	Observed
24	7.69	13.05	19.08	23.08	28.13	31.88	35.59	39.3	44.19	47.88	Observed
25	3.85	13.05	19.02	22.73	27.41	30.88	34.33	37.76	42.29	45.71	CRCM-CCSM (historical)
Gauge: 449159; Duration: 3 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	54.81	81.25	98.75	120.87	137.28	153.57	169.8	191.21	207.39	HRM3-GFDL (future)
2	92.31	52.46	73.98	88.23	106.23	123.9	142.57	161.17	185.71	204.25	RCM3-GFDL (historical)
3	88.46	51.04	67.04	79.75	105.1	119.58	132.84	146.05	163.47	176.64	HRM3-HadCM3 (future)
4	84.62	47.17	61.7	77.64	94.43	108.42	122.31	136.14	154.4	168.2	RCM3-CGCM3 (future)
5	80.77	46.36	61.53	75.57	91.02	100.96	110.82	120.64	133.6	143.39	WRFG-CGCM3 (future)
6	76.92	45.71	60.98	72.65	86.47	96.73	106.91	117.05	130.43	140.55	HRM3-GFDL (historical)
7	73.08	45.18	60.64	71.08	83.85	93.32	102.72	112.09	124.45	133.79	HRM3-HadCM3 (historical)
8	69.23	42.94	59.68	71.04	83.05	91.97	100.81	109.63	121.25	130.04	WRFG-CCSM (future)
9	65.38	42.89	57.4	66.24	78	86.72	95.37	104	115.38	123.98	MM5I-HadCM3 (historical)
10	61.54	39.9	56.94	64.97	76.06	84.94	93.83	102.7	114.39	123.23	WRFG-CCSM (historical)
11	57.69	38.1	56.19	64.72	75.98	84.29	92.45	100.59	111.32	119.43	WRFG-CGCM3 (historical)
12	53.85	35.8	54.34	63.9	73.96	80.81	87.62	94.4	105.3	114.24	MM5I-CCSM (historical)
13	50.00	32.59	47.97	56.02	66.47	75.53	84.52	93.48	103.34	111.27	RCM3-GFDL (future)
14	46.15	30.34	44.59	54.25	66.2	73.76	81.64	90.58	102.36	110.1	MM5I-HadCM3 (future)
15	42.31	29.99	43.37	51.47	63.64	72.68	81.25	89.02	100.57	109.29	RCM3-CGCM3 (historical)
16	38.46	29.38	41.83	50.72	62.65	71.49	80.28	88.72	98.58	106.02	MM5I-CCSM (future)
17	34.62	27.28	41.29	50.51	59.53	66.22	72.86	79.48	88.21	94.8	ECP2-HadCM3 (future)
18	30.77	27.03	38.79	44.38	51.98	58.5	64.96	71.41	79.91	86.33	ECP2-GFDL (historical)
19	26.92	25.75	36.25	43.2	51.45	56.69	61.9	67.08	73.92	79.09	ECP2-HadCM3 (historical)
20	23.08	17.99	22.53	25.54	29.34	32.89	36.68	40.46	45.45	49.22	CRCM-CGCM3 (historical)
21	19.23	13.95	19.83	23.91	29.07	32.15	34.95	37.74	41.42	44.3	CRCM-CCSM (future)
22	15.38	13.68	19.21	22.69	27.09	30.35	33.59	36.82	41.08	44.2	CRCM-CGCM3 (future)
23	11.54	11.01	15.51	18.49	22.25	25.05	27.82	30.58	34.22	36.97	CRCM-CCSM (historical)
24	7.69	10.94	15.18	17.99	21.54	24.17	26.79	29.39	32.82	35.42	Observed
25	3.85	10.94	15.18	17.99	21.54	24.17	26.79	29.39	32.82	35.42	Observed
Gauge: 449159; Duration: 4 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	53.79	80.26	97.78	119.92	136.35	152.66	168.9	190.33	206.53	HRM3-GFDL (future)
2	92.31	51.44	72.91	87.12	105.08	123.52	142.27	160.94	185.58	204.2	RCM3-GFDL (historical)
3	88.46	49.98	65.95	79.19	104.64	118.4	131.62	144.8	162.18	175.32	HRM3-HadCM3 (future)
4	84.62	46.15	60.63	76.52	93.24	107.15	120.96	134.71	152.86	166.58	RCM3-CGCM3 (future)
5	80.77	45.33	60.42	74.49	89.88	99.79	109.63	119.43	132.36	142.14	WRFG-CGCM3 (future)
6	76.92	44.71	59.88	71.5	85.25	95.44	105.56	115.65	128.95	139	HRM3-GFDL (historical)
7	73.08	44.2	59.66	69.93	82.62	92.04	101.39	110.7	122.99	132.27	HRM3-HadCM3 (historical)
8	69.23	41.94	59.04	69.87	81.81	90.67	99.46	108.22	119.78	128.51	WRFG-CCSM (future)
9	65.38	41.91	56.29	65.11	76.79	85.46	94.06	102.63	113.94	122.48	MM5I-HadCM3 (historical)
10	61.54	38.94	55.87	63.83	74.84	83.71	92.55	101.36	112.98	121.76	WRFG-CCSM (historical)
11	57.69	37.25	55.11	63.55	74.8	83.02	91.13	99.21	109.87	117.93	WRFG-CGCM3 (historical)
12	53.85	34.9	53.29	62.8	72.71	79.52	86.27	92.99	103.6	112.43	MM5I-CCSM (historical)
13	50.00	31.72	46.95	54.92	65.24	74.19	83.07	91.92	101.86	109.7	RCM3-GFDL (future)
14	46.15	29.51	43.62	53.17	65	72.47	80.36	89.21	100.88	108.57	MM5I-HadCM3 (future)
15	42.31	29.2	42.37	50.48	62.54	71.48	79.89	87.41	98.79	107.39	RCM3-CGCM3 (historical)
16	38.46	28.62	40.94	49.65	61.41	70.13	78.78	87.29	97.04	104.41	MM5I-CCSM (future)
17	34.62	26.52	40.35	49.42	58.33	64.94	71.5	78.03	86.66	93.17	ECP2-HadCM3 (future)
18	30.77	26.3	37.83	43.34	50.86	57.29	63.66	70.01	78.39	84.73	ECP2-GFDL (historical)
19	26.92	25.01	35.36	42.21	50.29	55.45	60.58	65.68	72.41	77.5	ECP2-HadCM3 (historical)
20	23.08	17.42	21.83	24.75	28.44	31.9	35.59	39.26	44.1	47.76	CRCM-CGCM3 (historical)
21	19.23	13.51	19.22	23.18	28.19	31.18	33.89	36.6	40.17	42.99	CRCM-CCSM (future)
22	15.38	13.24	18.62	22	26.27	29.44	32.59	35.73	39.86	42.87	CRCM-CGCM3 (future)
23	11.54	10.67	15.01	17.89	21.52	24.21	26.88	29.54	33.06	35.71	CRCM-CCSM (historical)
24	7.69	8.6	11.31	13.11	15.37	17.06	18.73	20.39	22.59	24.25	Observed
25	3.85	8.6	11.31	13.11	15.37	17.06	18.73	20.39	22.59	24.25	Observed
Gauge: 449159; Duration: 6 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance		2	5	10	25	50	100	200	500		1000
	Probability (%)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002		0.001
1	96.15		34.37	51.1	62.18	76.17	86.55	96.86	107.13	120.67	130.91	HRM3-GFDL (future)
2	92.31		32.88	46.44	55.43	66.77	78.44	90.29	102.09	117.66	129.43	RCM3-GFDL (historical)
3	88.46		31.96	42.06	50.42	66.51	75.19	83.55	91.87	102.86	111.16	HRM3-HadCM3 (future)
4	84.62		29.54	38.68	48.74	59.3	68.1	76.82	85.52	96.99	105.66	RCM3-CGCM3 (future)
5	80.77		29.02	38.57	47.45	57.18	63.44	69.66	75.86	84.03	90.2	WRFG-CGCM3 (future)
6	76.92		28.63	38.22	45.56	54.25	60.69	67.09	73.46	81.87	88.22	HRM3-GFDL (historical)
7	73.08		28.3	38.07	44.57	52.59	58.54	64.44	70.33	78.09	83.96	HRM3-HadCM3 (historical)
8	69.23		26.88	37.69	44.54	52.09	57.69	63.25	68.78	76.09	81.61	WRFG-CCSM (future)
9	65.38		26.85	35.95	41.51	48.89	54.36	59.79	65.21	72.35	77.75	MM5I-HadCM3 (historical)
10	61.54		24.98	35.67	40.71	47.66	53.29	58.88	64.45	71.8	77.36	WRFG-CCSM (historical)
11	57.69		23.91	35.2	40.54	47.66	52.82	57.95	63.05	69.78	74.87	WRFG-CGCM3 (historical)
12	53.85		22.42	34.06	40.07	46.33	50.63	54.9	59.15	65.87	71.46	MM5I-CCSM (historical)
13	50.00		20.42	30.04	35.09	41.61	47.27	52.89	58.49	64.76	69.72	RCM3-GFDL (future)
14	46.15		19.02	27.95	33.98	41.46	46.19	51.17	56.76	64.14	69.01	MM5I-HadCM3 (future)
15	42.31		18.83	27.15	32.28	39.9	45.56	50.88	55.62	62.81	68.24	RCM3-CGCM3 (historical)
16	38.46		18.46	26.25	31.75	39.18	44.69	50.16	55.55	61.72	66.38	MM5I-CCSM (future)
17	34.62		17.14	25.87	31.61	37.24	41.42	45.57	49.71	55.16	59.28	ECP2-HadCM3 (future)
18	30.77		16.99	24.28	27.76	32.51	36.57	40.6	44.62	49.91	53.91	ECP2-GFDL (historical)
19	26.92		16.17	22.71	27.04	32.16	35.42	38.66	41.89	46.15	49.37	ECP2-HadCM3 (historical)
20	23.08		11.38	14.17	16.02	18.36	20.54	22.87	25.19	28.25	30.56	CRCM-CGCM3 (historical)
21	19.23		8.91	12.52	15.02	18.19	20.09	21.81	23.53	25.79	27.52	CRCM-CCSM (future)
22	15.38		8.74	12.14	14.27	16.97	18.97	20.96	22.94	25.55	27.5	CRCM-CGCM3 (future)
23	11.54		7.12	9.86	11.67	13.97	15.67	17.35	19.04	21.25	22.93	CRCM-CCSM (historical)
24	7.69		4.92	6.47	7.49	8.79	9.75	10.7	11.65	12.9	13.85	Observed
25	3.85		4.92	6.47	7.49	8.79	9.75	10.7	11.65	12.9	13.85	Observed
Gauge: 449159; Duration: 12 hr			2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	18.63	27.54	33.44	40.89	46.42	51.91	57.38	64.59	70.04	HRM3-GFDL (future)
2	92.31	17.84	25.07	29.85	35.9	42.11	48.41	54.7	63	69.26	RCM3-GFDL (historical)
3	88.46	17.35	22.72	27.18	35.75	40.39	44.84	49.28	55.13	59.55	HRM3-HadCM3 (future)
4	84.62	16.06	20.93	26.28	31.89	36.57	41.22	45.84	51.95	56.56	RCM3-CGCM3 (future)
5	80.77	15.79	20.86	25.59	30.78	34.11	37.42	40.72	45.07	48.36	WRFG-CGCM3 (future)
6	76.92	15.58	20.69	24.58	29.2	32.63	36.03	39.42	43.9	47.28	HRM3-GFDL (historical)
7	73.08	15.4	20.6	24.07	28.34	31.51	34.66	37.8	41.93	45.06	HRM3-HadCM3 (historical)
8	69.23	14.65	20.4	24.05	28.07	31.05	34.01	36.96	40.86	43.8	WRFG-CCSM (future)
9	65.38	14.63	19.47	22.44	26.37	29.29	32.19	35.07	38.88	41.76	MM5I-HadCM3 (historical)
10	61.54	13.63	19.33	22.01	25.71	28.71	31.69	34.65	38.57	41.53	WRFG-CCSM (historical)
11	57.69	13.06	19.07	21.91	25.71	28.46	31.19	33.9	37.49	40.2	WRFG-CGCM3 (historical)
12	53.85	12.28	18.47	21.67	24.99	27.28	29.55	31.81	35.39	38.36	MM5I-CCSM (historical)
13	50.00	11.2	16.33	19.02	22.48	25.49	28.48	31.46	34.8	37.45	RCM3-GFDL (future)
14	46.15	10.46	15.21	18.42	22.41	24.93	27.57	30.55	34.48	37.05	MM5I-HadCM3 (future)
15	42.31	10.36	14.79	17.51	21.57	24.58	27.43	29.94	33.77	36.67	RCM3-CGCM3 (historical)
16	38.46	10.16	14.3	17.24	21.19	24.13	27.04	29.92	33.2	35.68	MM5I-CCSM (future)
17	34.62	9.45	14.11	17.17	20.17	22.39	24.61	26.81	29.71	31.91	ECP2-HadCM3 (future)
18	30.77	9.38	13.26	15.12	17.64	19.8	21.95	24.09	26.91	29.04	ECP2-GFDL (historical)
19	26.92	8.94	12.42	14.73	17.46	19.2	20.92	22.64	24.91	26.63	ECP2-HadCM3 (historical)
20	23.08	6.39	7.88	8.86	10.1	11.27	12.51	13.75	15.38	16.61	CRCM-CGCM3 (historical)
21	19.23	5.07	7	8.33	10.02	11.03	11.94	12.85	14.05	14.97	CRCM-CCSM (future)
22	15.38	4.99	6.79	7.92	9.36	10.42	11.48	12.53	13.92	14.96	CRCM-CGCM3 (future)
23	11.54	4.12	5.58	6.54	7.76	8.67	9.57	10.46	11.64	12.53	CRCM-CCSM (historical)
24	7.69	2.83	3.62	4.14	4.8	5.29	5.77	6.25	6.89	7.37	Observed
25	3.85	2.83	3.62	4.14	4.8	5.29	5.77	6.25	6.89	7.37	Observed
Gauge: 449159; Duration: 24 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	9.9	14.57	17.66	21.56	24.46	27.33	30.2	33.97	36.83	HRM3-GFDL (future)	
2	92.31	9.49	13.27	15.77	18.94	22.2	25.5	28.79	33.14	36.42	RCM3-GFDL (historical)	
3	88.46	9.24	12.05	14.38	18.87	21.29	23.62	25.94	29	31.31	HRM3-HadCM3 (future)	
4	84.62	8.55	11.1	13.91	16.86	19.31	21.74	24.17	27.36	29.78	RCM3-CGCM3 (future)	
5	80.77	8.41	11.07	13.55	16.26	18	19.73	21.46	23.74	25.46	WRFG-CGCM3 (future)	
6	76.92	8.3	10.97	13.02	15.43	17.23	19.01	20.78	23.12	24.89	HRM3-GFDL (historical)	
7	73.08	8.21	10.94	12.74	14.97	16.63	18.27	19.91	22.07	23.71	HRM3-HadCM3 (historical)	
8	69.23	7.82	10.83	12.74	14.85	16.41	17.96	19.51	21.55	23.09	WRFG-CCSM (future)	
9	65.38	7.81	10.35	11.9	13.95	15.48	16.99	18.5	20.49	21.99	MM5I-HadCM3 (historical)	
10	61.54	7.29	10.27	11.67	13.61	15.17	16.73	18.28	20.33	21.88	WRFG-CCSM (historical)	
11	57.69	6.99	10.14	11.63	13.61	15.04	16.47	17.89	19.76	21.18	WRFG-CGCM3 (historical)	
12	53.85	6.58	9.82	11.49	13.25	14.45	15.64	16.83	18.7	20.25	MM5I-CCSM (historical)	
13	50.00	6.01	8.7	10.1	11.93	13.51	15.07	16.64	18.39	19.74	RCM3-GFDL (future)	
14	46.15	5.63	8.11	9.8	11.88	13.19	14.57	16.13	18.18	19.58	MM5I-HadCM3 (future)	
15	42.31	5.57	7.89	9.31	11.44	13.01	14.5	15.82	17.83	19.34	RCM3-CGCM3 (historical)	
16	38.46	5.46	7.63	9.17	11.24	12.78	14.3	15.8	17.52	18.82	MM5I-CCSM (future)	
17	34.62	5.1	7.53	9.13	10.69	11.86	13.01	14.16	15.68	16.82	ECP2-HadCM3 (future)	
18	30.77	5.06	7.09	8.07	9.38	10.51	11.63	12.75	14.22	15.34	ECP2-GFDL (historical)	
19	26.92	4.83	6.65	7.86	9.29	10.2	11.11	12.01	13.2	14.09	ECP2-HadCM3 (historical)	
20	23.08	3.5	4.27	4.79	5.44	6.03	6.68	7.33	8.18	8.82	CRCM-CGCM3 (historical)	
21	19.23	2.8	3.81	4.5	5.38	5.92	6.4	6.88	7.51	8	CRCM-CCSM (future)	
22	15.38	2.75	3.7	4.3	5.05	5.61	6.17	6.72	7.45	7.98	CRCM-CGCM3 (future)	
23	11.54	2.31	3.07	3.57	4.21	4.68	5.15	5.61	6.23	6.69	CRCM-CCSM (historical)	
24	7.69	1.64	2.14	2.47	2.9	3.21	3.52	3.83	4.24	4.54	Observed	
25	3.85	1.64	2.14	2.47	2.9	3.21	3.52	3.83	4.24	4.54	Observed	
Gauge: 449159; Duration: 48 hr		2- year	5- year	10- year	25- year	50- year	100-year	200-year	500-year	1000-year		

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	6.57	9.62	11.64	14.19	16.08	17.96	19.83	22.3	24.17	HRM3-GFDL (future)	
2	92.31	6.3	8.77	10.41	12.48	14.61	16.77	18.93	21.77	23.91	RCM3-GFDL (historical)	
3	88.46	6.13	7.97	9.5	12.43	14.02	15.54	17.06	19.07	20.58	HRM3-HadCM3 (future)	
4	84.62	5.69	7.36	9.18	11.11	12.71	14.3	15.88	17.97	19.55	RCM3-CGCM3 (future)	
5	80.77	5.6	7.34	8.95	10.72	11.86	12.99	14.12	15.61	16.74	WRF3-CGCM3 (future)	
6	76.92	5.52	7.27	8.61	10.19	11.37	12.53	13.69	15.22	16.38	HRM3-GFDL (historical)	
7	73.08	5.47	7.24	8.43	9.9	10.98	12.06	13.13	14.55	15.62	HRM3-HadCM3 (historical)	
8	69.23	5.21	7.18	8.43	9.8	10.82	11.83	12.84	14.17	15.18	WRF3-CCSM (future)	
9	65.38	5.2	6.86	7.87	9.22	10.22	11.21	12.2	13.5	14.48	MM51-HadCM3 (historical)	
10	61.54	4.86	6.81	7.73	9.01	10.02	11.04	12.05	13.39	14.4	WRF3-CCSM (historical)	
11	57.69	4.66	6.73	7.7	8.99	9.95	10.89	11.82	13.05	13.98	WRF3-CGCM3 (historical)	
12	53.85	4.39	6.52	7.61	8.75	9.54	10.32	11.09	12.3	13.32	MM51-CCSM (historical)	
13	50.00	4.02	5.78	6.7	7.88	8.91	9.94	10.96	12.11	13.01	RCM3-GFDL (future)	
14	46.15	3.77	5.39	6.49	7.86	8.72	9.63	10.65	11.99	12.89	MM51-HadCM3 (future)	
15	42.31	3.73	5.25	6.18	7.57	8.6	9.57	10.43	11.74	12.73	RCM3-CGCM3 (historical)	
16	38.46	3.67	5.08	6.09	7.44	8.44	9.44	10.43	11.55	12.4	MM51-CCSM (future)	
17	34.62	3.42	5.02	6.06	7.09	7.85	8.61	9.36	10.36	11.11	ECP2-HadCM3 (future)	
18	30.77	3.4	4.73	5.37	6.23	6.97	7.7	8.44	9.4	10.13	ECP2-GFDL (historical)	
19	26.92	3.25	4.44	5.23	6.18	6.78	7.37	7.96	8.74	9.33	ECP2-HadCM3 (historical)	
20	23.08	2.37	2.89	3.23	3.66	4.04	4.47	4.89	5.45	5.87	CRCM-CGCM3 (historical)	
21	19.23	1.92	2.58	3.04	3.61	3.97	4.29	4.6	5.02	5.34	CRCM-CCSM (future)	
22	15.38	1.89	2.51	2.9	3.4	3.77	4.13	4.5	4.97	5.33	CRCM-CGCM3 (future)	
23	11.54	1.6	2.1	2.43	2.86	3.17	3.48	3.79	4.2	4.5	CRCM-CCSM (historical)	
24	7.69	1.13	1.52	1.79	2.12	2.37	2.61	2.86	3.18	3.42	Observed	
25	3.85	1.13	1.52	1.79	2.12	2.37	2.61	2.86	3.18	3.42	Observed	
Gauge: 449159; Duration: 72 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

V. Tabulated Probability-Based IDF Curves for HUC 2080202

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	325.43	428.03	495.95	581.78	645.44	708.64	771.61	854.69	917.47	HRM3-GFDL (future)	
2	92.31	316.23	415.04	480.46	563.12	624.44	685.31	745.96	825.97	886.44	HRM3-HadCM3 (future)	
3	88.46	292.19	392.53	458.95	542.88	605.15	666.95	728.53	809.78	871.18	HRM3-HadCM3 (historical)	
4	84.62	282.91	346.13	401.28	483.36	550.74	623.37	695.74	791.22	863.38	RCM3-GFDL (historical)	
5	80.77	269.32	340.35	395.66	477.57	548.42	613	677.35	762.24	826.4	RCM3-CGCM3 (future)	
6	76.92	262.83	334.07	378.93	470.97	522.66	573.98	625.89	705.4	765.49	RCM3-GFDL (future)	
7	73.08	243.79	326.24	378.38	444.2	505.14	565.62	625.11	692.56	746.86	Observed	
8	69.23	243.75	314.92	376.94	436.7	495.52	553.92	612.1	688.85	746.86	Observed	
9	65.38	243.05	313.23	362.06	431.11	471.29	525.15	592	680.2	743.54	HRM3-GFDL (historical)	
10	61.54	221.41	307.83	362.04	426.43	465.74	511.18	553.26	610.89	654.44	WRF3-CGCM3 (historical)	
11	57.69	219.43	300.87	359.69	421.58	462.08	509.58	550.92	605.08	648.02	WRF3-CCSM (future)	
12	53.85	208.71	297.04	357.4	418.4	461.95	505.18	548.25	603.35	642.98	WRF3-CGCM3 (future)	
13	50.00	204.27	294.64	350.22	403.79	458.06	497.47	532.72	579.24	614.39	MM51-HadCM3 (future)	
14	46.15	203.14	286.17	330.35	390.46	443.53	482.98	522.28	574.13	613.32	MM51-HadCM3 (historical)	
15	42.31	199.85	274.27	317.68	386.19	427.6	468.72	509.68	563.72	604.57	WRF3-CCSM (historical)	
16	38.46	198.85	260.06	300.15	372.53	413.22	453.6	493.85	546.94	588.38	MM51-CCSM (historical)	
17	34.62	195.19	258.67	299.34	358.83	402.37	445.58	488.64	545.45	587.06	MM51-CCSM (future)	
18	30.77	183.55	253.7	296.99	343.65	378.27	412.63	446.87	492.04	526.17	ECP2-HadCM3 (future)	
19	26.92	182.96	240.52	295.44	341.9	376.36	410.57	444.66	489.63	523.61	ECP2-GFDL (future)	
20	23.08	173.83	227.23	270.54	308.46	336.6	367.7	399.56	441.58	473.35	ECP2-GFDL (historical)	
21	19.23	124.7	225.74	260.1	303.52	335.73	364.52	392.35	429.06	456.81	ECP2-HadCM3 (historical)	
22	15.38	118.31	160.92	184.91	215.21	237.69	260	282.24	311.57	333.74	CRCM-CGCM3 (future)	
23	11.54	93.53	129.37	153.09	183.07	205.31	227.38	249.38	278.4	300.33	CRCM-CGCM3 (historical)	
24	7.69	93.1	121.53	140.35	164.13	181.78	199.29	216.74	239.76	257.16	CRCM-CCSM (future)	
25	3.85	78.8	106.41	124.69	147.78	164.91	181.92	198.87	221.22	238.12	CRCM-CCSM (historical)	
HUC: 2080202; Duration: 15 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	242.08	328.66	385.98	458.41	512.14	565.48	618.62	688.72	741.71	HRM3-GFDL (future)	
2	92.31	234.29	314.88	368.24	435.65	485.67	535.31	584.77	660.47	723.17	RCM3-GFDL (historical)	
3	88.46	213.91	292.81	345.05	411.05	460.01	514.63	577.51	650.03	699.35	HRM3-HadCM3 (future)	
4	84.62	207.62	258.69	303.74	387.94	451.52	508.62	557.04	620.93	669.22	HRM3-HadCM3 (historical)	
5	80.77	199.57	253.71	302.41	374.94	427.75	480.18	532.41	601.32	653.41	RCM3-CGCM3 (future)	
6	76.92	192.65	253.36	302.23	357.66	398.65	439.33	479.86	542.14	589.64	RCM3-GFDL (future)	
7	73.08	179.37	247.4	289.56	335.67	383.84	431.65	479.29	533.89	580.37	RCM3-CGCM3 (historical)	
8	69.23	178.36	235.34	283.65	334.86	378.97	425.76	472.38	533.34	573.76	HRM3-GFDL (historical)	
9	65.38	177.93	234.44	272.39	331.83	368.46	401.82	435.05	478.9	512.03	WRFG-CGCM3 (future)	
10	61.54	162.29	234.4	271.86	321.91	354.21	389.02	423.71	469.47	504.06	WRFG-CGCM3 (historical)	
11	57.69	159.55	230.35	270.73	319.21	353.94	388.42	422.77	468.09	502.34	WRFG-CCSM (future)	
12	53.85	150.73	219.34	268.29	319.14	350.3	378.48	406.55	446.56	478.38	MM51-HadCM3 (historical)	
13	50.00	147.98	218	264.77	308.26	340.53	372.55	404.46	443.59	471.59	MM51-HadCM3 (future)	
14	46.15	145.57	213.16	248.65	293.49	326.76	359.78	392.69	436.1	468.9	WRFG-CCSM (historical)	
15	42.31	142.04	202.29	236.43	279.57	311.57	343.34	374.99	417.78	451.8	MM51-CCSM (historical)	
16	38.46	141.73	192.5	223.41	269.91	304.41	338.65	372.77	416.74	448.3	MM51-CCSM (future)	
17	34.62	139.27	188.18	221.98	259.22	286.85	314.28	341.61	377.66	404.9	ECP2-HadCM3 (future)	
18	30.77	131.95	186.61	216.4	252.05	278.49	304.74	330.9	365.4	391.48	ECP2-GFDL (future)	
19	26.92	131.02	174.56	197.92	227.44	250.21	275.33	300.36	333.37	359.48	Observed	
20	23.08	123.02	163.8	190.79	224.91	249.34	271.08	292.74	328.49	358.33	ECP2-GFDL (historical)	
21	19.23	85.58	117.9	151.42	193.79	225.21	256.4	287.48	321.31	342.91	ECP2-HadCM3 (historical)	
22	15.38	67.26	112.22	129.85	152.13	168.66	185.07	201.42	222.99	239.29	CRCM-CGCM3 (future)	
23	11.54	62.91	89.61	107.28	129.62	146.18	162.63	179.02	200.64	216.97	CRCM-CGCM3 (historical)	
24	7.69	62.6	83.79	97.82	115.55	128.7	141.76	154.77	171.93	184.9	CRCM-CCSM (future)	
25	3.85	52.2	72.15	85.36	102.04	114.42	126.71	138.95	155.1	167.31	CRCM-CCSM (historical)	
HUC: 2080202; Duration: 30 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year
	Non-exceedance Probability (%)	2	5	10	25	50	100	200	500	1000	
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	181.04	246.41	289.69	344.38	384.95	425.21	465.34	518.27	558.28	HRM3-GFDL (future)
2	92.31	175.15	235.6	275.63	326.2	363.72	400.96	438.07	500.12	547.71	RCM3-GFDL (historical)
3	88.46	159.71	218.42	257.29	306.4	342.83	389.43	437.16	487.02	524.02	HRM3-HadCM3 (future)
4	84.62	155.25	193.48	228.22	293.27	341.53	378.99	415.03	462.56	498.49	HRM3-HadCM3 (historical)
5	80.77	149.63	190.56	227.92	281.37	321.03	360.4	399.62	451.36	490.47	RCM3-CGCM3 (future)
6	76.92	144.14	189.46	226.15	267.42	298.04	328.43	358.72	404.78	440.24	RCM3-GFDL (future)
7	73.08	134.56	185.61	217.66	251.89	286.61	322.3	357.86	399.79	434.64	RCM3-CGCM3 (historical)
8	69.23	133.61	176.74	212.11	250.66	283.66	318.74	353.69	398.67	428.86	HRM3-GFDL (historical)
9	65.38	133.18	176.52	204.3	248.33	277.29	302.5	327.62	360.76	385.81	WRF3-CGCM3 (future)
10	61.54	121.7	175.5	203.52	240.73	265.44	291.29	317.23	351.5	377.41	WRF3-CGCM3 (historical)
11	57.69	119.54	172.69	202.19	239.4	265.19	291.26	317.05	351.02	376.7	WRF3-CCSM (future)
12	53.85	112.88	163.83	200.7	238.92	261.96	283.03	304.03	335.25	359.17	MM5I-HadCM3 (historical)
13	50.00	110.93	163	198.57	231.27	255.53	279.61	303.6	331.73	352.67	MM5I-HadCM3 (future)
14	46.15	108.91	159.82	186.49	220.19	245.19	270	294.73	327.34	351.99	WRF3-CCSM (historical)
15	42.31	106.06	151.47	177.02	209.31	233.26	257.03	280.72	313.22	338.74	MM5I-CCSM (historical)
16	38.46	105.89	144.38	167.39	202.28	228.16	253.85	279.45	311.97	335.59	MM5I-CCSM (future)
17	34.62	104.21	140.65	166.53	194.51	215.27	235.88	256.41	283.49	303.96	ECP2-HadCM3 (future)
18	30.77	98.98	139.78	161.67	188.23	207.93	227.48	246.96	272.67	292.1	ECP2-GFDL (future)
19	26.92	98.08	130.59	148.07	170.14	187.49	206.33	225.11	249.89	268.61	ECP2-GFDL (historical)
20	23.08	92.05	122.65	142.91	168.5	186.52	202.77	218.97	240.34	256.49	ECP2-HadCM3 (historical)
21	19.23	64.03	83.85	100.66	127.63	147.64	167.5	187.29	213.39	233.12	Observed
22	15.38	47.11	79.32	96.97	113.55	125.86	138.07	150.23	166.28	178.42	CRCM-CGCM3 (future)
23	11.54	47.08	67.07	80.29	96.99	109.38	121.68	133.93	150.1	162.31	CRCM-CGCM3 (historical)
24	7.69	46.9	62.79	73.31	86.6	96.46	106.25	116	128.87	138.59	CRCM-CCSM (future)
25	3.85	39.09	54.03	63.92	76.41	85.68	94.88	104.05	116.14	125.28	CRCM-CCSM (historical)
HUC: 2080202; Duration: 45 min		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	157.48	216.21	255.09	304.23	340.68	376.86	412.91	460.47	496.41	HRM3-GFDL (future)	
2	92.31	152.18	206.62	242.66	288.2	321.99	355.52	388.94	445.17	488.02	RCM3-GFDL (historical)	
3	88.46	138.49	191.72	226.97	271.5	304.54	345.49	388.47	433.02	466.33	HRM3-HadCM3 (future)	
4	84.62	134.05	168.53	200.33	258.91	302.36	337.34	370.01	413.12	445.7	HRM3-HadCM3 (historical)	
5	80.77	128.68	165.09	199.17	247.02	282.52	317.75	352.85	399.17	434.17	RCM3-CGCM3 (future)	
6	76.92	124.15	164.73	197.9	235.02	262.56	289.9	317.5	359.77	391.72	RCM3-GFDL (future)	
7	73.08	115.2	161.31	189.2	220.9	253.3	285.46	317.13	354.19	385.45	RCM3-CGCM3 (historical)	
8	69.23	114.52	153.98	185.05	219.66	250.03	281.49	312.84	353.06	380.22	HRM3-GFDL (historical)	
9	65.38	114.32	152.66	177.46	218.34	242.25	264.68	287.03	316.51	338.8	WRFG-CGCM3 (future)	
10	61.54	104.11	152.11	177.23	210.71	232.21	255.5	278.7	309.3	332.44	WRFG-CGCM3 (historical)	
11	57.69	102.04	149.34	177.14	208.8	232.05	255.13	278.12	308.45	331.38	WRFG-CCSM (future)	
12	53.85	96.19	142.67	175.61	208.76	229.76	248.66	267.49	294.14	315.45	MM5I-HadCM3 (historical)	
13	50.00	94.32	141.8	172.39	201.52	223.13	244.58	265.95	292.34	311.11	MM5I-HadCM3 (future)	
14	46.15	92.76	137.86	161.58	191.54	213.77	235.83	257.82	286.82	308.74	WRFG-CCSM (historical)	
15	42.31	90.73	130.56	153.32	182.07	203.4	224.57	245.66	273.67	296.26	MM5I-CCSM (historical)	
16	38.46	90.47	123.92	144.63	175.5	198.41	221.14	243.79	273.49	294.52	MM5I-CCSM (future)	
17	34.62	88.59	121.07	143.52	168.29	186.66	204.9	223.07	247.04	265.16	ECP2-HadCM3 (future)	
18	30.77	83.96	120.2	139.81	163.49	181.05	198.49	215.86	238.78	256.11	ECP2-GFDL (future)	
19	26.92	83.29	111.95	127.41	146.95	161.91	178.49	195.02	216.81	233.29	ECP2-GFDL (historical)	
20	23.08	77.95	104.87	122.69	145.21	161.45	175.83	190.17	209.08	223.38	ECP2-HadCM3 (historical)	
21	19.23	53.5	70.84	82.33	97.44	112.13	126.71	141.24	160.42	174.9	Observed	
22	15.38	38.88	61.96	77.63	96.84	107.61	118.29	128.94	142.99	153.61	CRCM-CGCM3 (future)	
23	11.54	38.65	56.14	67.57	82.01	92.72	103.35	113.94	127.92	138.48	CRCM-CGCM3 (historical)	
24	7.69	38.28	52.26	61.27	72.66	81.1	89.49	97.84	108.86	117.19	CRCM-CCSM (future)	
25	3.85	32.08	44.76	53.15	63.75	71.61	79.42	87.2	97.46	105.22	CRCM-CCSM (historical)	
HUC: 2080202; Duration: 1 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	116.74	165.42	197.65	238.37	268.58	298.56	328.44	367.85	400.85	RCM3-GFDL (historical)	
2	92.31	112.38	156.94	186.45	223.73	251.39	280.18	316.57	364.57	397.64	HRM3-GFDL (future)	
3	88.46	101.28	144.71	173.47	209.81	243.66	278.85	306.2	342.29	369.56	HRM3-HadCM3 (future)	
4	84.62	97.33	125.55	157.28	206.87	236.76	263.52	290.18	325.35	351.93	HRM3-HadCM3 (historical)	
5	80.77	93.28	122.75	151.4	190.1	218.8	247.3	275.69	313.14	341.45	RCM3-CGCM3 (future)	
6	76.92	89.78	121.97	149.23	179.15	201.34	223.37	247.33	281.53	307.37	RCM3-GFDL (future)	
7	73.08	82.74	120.78	142.26	169.18	195.39	221.4	245.32	276.91	302.18	RCM3-CGCM3 (historical)	
8	69.23	82.04	118.03	138.28	167.05	192.68	218.12	243.47	274.29	296.17	HRM3-GFDL (historical)	
9	65.38	82	112.55	133.85	166.9	185.19	203.34	221.42	245.28	263.31	WRFG-CGCM3 (future)	
10	61.54	74.52	112.06	132.5	158.89	175.76	194.27	212.72	237.06	255.45	WRFG-CGCM3 (historical)	
11	57.69	72.38	109.88	132.28	157.22	175.72	194.08	212.38	236.51	254.76	WRFG-CCSM (future)	
12	53.85	67.8	105.89	131.96	157.1	174.18	189.36	204.48	225.69	242.73	MM51-HadCM3 (historical)	
13	50.00	66.31	105.16	128.32	151.61	168.89	186.05	203.14	224.44	239.51	MM51-HadCM3 (future)	
14	46.15	65.03	100.77	119.56	143.31	160.93	178.41	195.83	218.82	236.19	WRFG-CCSM (historical)	
15	42.31	63.87	94.86	112.78	135.41	152.21	168.88	185.49	207.4	224.54	MM51-CCSM (historical)	
16	38.46	63.65	89.51	105.99	130.12	148.03	165.8	183.51	206.88	223.96	MM51-CCSM (future)	
17	34.62	61.74	87.07	104.87	124.27	138.67	152.96	167.2	185.98	200.18	ECP2-HadCM3 (future)	
18	30.77	58.75	86.88	101.67	120.1	133.78	147.36	160.89	178.74	192.22	ECP2-GFDL (future)	
19	26.92	58.03	79.84	91.82	106.96	118.36	131.11	143.82	160.59	173.26	ECP2-GFDL (historical)	
20	23.08	53.77	74.48	88.19	105.51	118.19	129.34	140.45	155.1	166.18	ECP2-HadCM3 (historical)	
21	19.23	35.53	48.3	56.75	67.43	75.36	83.23	91.06	101.4	109.22	CRCM-CGCM3 (future)	
22	15.38	25.08	37.63	45.94	56.43	64.22	71.95	79.65	89.82	97.5	CRCM-CGCM3 (historical)	
23	11.54	24.86	34.6	41.05	49.19	55.93	62.77	69.58	78.57	85.36	Observed	
24	7.69	21.31	32.41	39.76	49.04	55.24	61.24	67.21	75.1	81.06	CRCM-CCSM (future)	
25	3.85	20.34	29.12	34.94	42.29	47.74	53.15	58.54	65.65	71.03	CRCM-CCSM (historical)	
HUC: 2080202; Duration: 2 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	85.82	119.07	141.09	168.91	189.55	210.04	230.45	257.37	277.73	HRM3-GFDL (future)	
2	92.31	82.85	114.21	134.97	161.2	180.66	199.97	219.22	246.9	271.04	RCM3-GFDL (historical)	
3	88.46	75.32	106.89	127.79	154.2	173.79	193.23	214.96	244.61	263.79	HRM3-HadCM3 (future)	
4	84.62	72.04	92.07	109.09	141.96	166.44	190.74	212.61	238.17	257.49	HRM3-HadCM3 (historical)	
5	80.77	68.24	89.7	108.96	135.99	156.17	176.21	196.18	222.52	242.43	RCM3-CGCM3 (future)	
6	76.92	66.37	88.42	108.77	130.59	146.54	162.37	180.08	204.7	223.31	RCM3-GFDL (future)	
7	73.08	60.67	87.23	101.79	123.81	142.68	161.42	178.14	198.95	216.82	RCM3-CGCM3 (historical)	
8	69.23	60.51	82.84	101.39	121.19	139.33	157.33	175.27	198.93	214.68	HRM3-GFDL (historical)	
9	65.38	60.5	82.16	98.37	118.67	131.2	143.63	156.02	172.37	184.72	WRF3-CGCM3 (future)	
10	61.54	54.7	81.74	96.74	116.16	127.71	140.95	154.14	171.54	184.69	WRF3-CGCM3 (historical)	
11	57.69	53.47	80.06	96.39	114.37	127.11	139.83	152.86	170.06	183.05	WRF3-CCSM (future)	
12	53.85	50.32	78.24	95.8	113.56	126.74	137.99	148.83	163.13	173.93	MM5I-HadCM3 (future)	
13	50.00	48.98	77.39	93.01	109.37	121.51	133.56	145.56	161.4	173.36	MM5I-HadCM3 (historical)	
14	46.15	48.58	73.53	86.8	103.58	116.02	128.37	140.68	156.92	169.19	WRF3-CCSM (historical)	
15	42.31	48.17	69.79	82.68	98.97	111.05	123.04	134.99	150.76	162.67	MM5I-CCSM (future)	
16	38.46	47.83	65.43	77.53	94.74	107.51	120.18	132.81	149.47	162.06	MM5I-CCSM (historical)	
17	34.62	46.21	64.79	76.32	90.08	100.28	110.41	120.51	133.83	143.89	ECP2-HadCM3 (future)	
18	30.77	43.39	63.91	75.52	89.08	99.13	109.12	119.07	132.19	142.11	ECP2-GFDL (future)	
19	26.92	43.34	59.32	68	78.96	87.09	95.73	104.83	116.83	125.9	ECP2-GFDL (historical)	
20	23.08	40.38	55.2	65.01	77.41	86.6	95.17	103.21	113.82	121.84	ECP2-HadCM3 (historical)	
21	19.23	27.06	36.68	43.04	51.09	57.05	62.98	68.88	76.66	82.55	CRCM-CGCM3 (future)	
22	15.38	19.2	28.45	34.58	42.32	48.06	53.76	59.44	66.93	72.6	CRCM-CGCM3 (historical)	
23	11.54	19.01	26.15	30.88	36.85	41.29	45.68	50.07	55.85	60.22	CRCM-CCSM (future)	
24	7.69	15.83	23.17	28.03	34.17	38.73	43.26	47.76	53.71	58.2	Observed	
25	3.85	15.67	22.22	26.56	32.04	36.1	40.13	44.15	49.46	53.46	CRCM-CCSM (historical)	
HUC: 2080202; Duration: 3 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	67.81	93.39	110.33	131.73	147.61	163.37	179.07	199.79	215.45	HRM3-GFDL (future)	
2	92.31	65.51	89.65	105.63	125.82	140.8	155.66	170.48	190.98	209.49	RCM3-GFDL (historical)	
3	88.46	59.69	83.93	99.98	120.25	135.3	150.23	166.47	190.02	204.79	HRM3-HadCM3 (future)	
4	84.62	57.24	72.64	85.78	110.48	129.26	147.9	165.11	184.74	199.57	HRM3-HadCM3 (historical)	
5	80.77	54.31	70.89	85.46	106.49	122.09	137.57	152.99	173.35	188.73	RCM3-CGCM3 (future)	
6	76.92	52.8	69.96	85.17	102.38	114.69	126.91	140.28	159.26	173.61	RCM3-GFDL (future)	
7	73.08	48.38	68.82	80.31	96.89	111.44	125.89	139.09	155.15	168.92	RCM3-CGCM3 (historical)	
8	69.23	48.29	65.14	79.92	95.01	109.03	122.94	136.81	155.1	167.29	HRM3-GFDL (historical)	
9	65.38	48.29	65.06	77.28	93.4	103.1	112.74	122.34	135.01	144.61	WRF3-CGCM3 (historical)	
10	61.54	43.69	64.77	76.12	91.34	100.4	110.67	120.91	134.41	144.58	WRF3-CGCM3 (future)	
11	57.69	42.8	63.46	76.1	90.05	99.81	109.85	119.97	133.31	143.4	WRF3-CCSM (future)	
12	53.85	40.33	61.76	75.68	89.47	99.7	108.21	116.59	127.63	135.99	MM51-HadCM3 (future)	
13	50.00	39.31	61.16	73.5	86.18	95.59	104.94	114.24	126.52	135.8	MM51-HadCM3 (historical)	
14	46.15	38.98	58.4	68.73	81.77	91.45	101.06	110.64	123.27	132.81	WRF3-CCSM (historical)	
15	42.31	38.57	55.47	65.49	78.15	87.55	96.87	106.16	118.42	127.69	MM51-CCSM (future)	
16	38.46	38.31	52.13	61.5	74.92	84.87	94.75	104.6	117.58	127.4	MM51-CCSM (historical)	
17	34.62	37.14	51.59	60.62	71.35	79.3	87.2	95.07	105.46	113.31	ECP2-HadCM3 (future)	
18	30.77	34.88	50.88	59.94	70.49	78.31	86.08	93.82	104.03	111.75	ECP2-GFDL (future)	
19	26.92	34.84	47.36	54.13	62.69	69.03	75.92	83.04	92.45	99.55	ECP2-GFDL (historical)	
20	23.08	32.54	44.15	51.84	61.56	68.76	75.33	81.61	89.89	96.14	ECP2-HadCM3 (historical)	
21	19.23	22.03	29.63	34.66	41.02	45.73	50.42	55.08	61.23	65.89	CRCM-CGCM3 (future)	
22	15.38	15.76	23.12	27.98	34.14	38.7	43.23	47.74	53.69	58.19	CRCM-CGCM3 (historical)	
23	11.54	15.62	21.32	25.09	29.86	33.4	36.91	40.41	45.03	48.51	CRCM-CCSM (future)	
24	7.69	13.31	19.18	23.06	27.97	31.61	35.23	38.83	43.58	47.17	Observed	
25	3.85	12.93	18.21	21.7	26.11	29.39	32.64	35.87	40.15	43.38	CRCM-CCSM (historical)	
HUC: 2080202; Duration: 4 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	71.26	98.55	116.62	139.45	156.38	173.19	189.94	212.04	228.74	HRM3-GFDL (future)	
2	92.31	68.82	94.74	111.89	133.57	149.65	165.61	181.51	202.49	221.9	RCM3-GFDL (historical)	
3	88.46	62.69	89.01	106.44	128.47	144.81	161.02	177.18	202.17	218.35	HRM3-HadCM3 (future)	
4	84.62	59.81	76.4	90.53	116.41	136.42	156.28	176.07	198.5	214.61	HRM3-HadCM3 (historical)	
5	80.77	56.41	74.44	89.82	112.27	128.93	145.46	161.94	183.67	200.09	RCM3-CGCM3 (future)	
6	76.92	55.05	72.93	89.44	108.38	121.63	134.77	149.77	170.24	185.72	RCM3-GFDL (future)	
7	73.08	50.28	72.05	84.13	102.99	118.68	134.25	147.87	165.15	179.8	RCM3-CGCM3 (historical)	
8	69.23	50.1	68.1	83.88	100.62	115.64	130.54	145.39	164.99	178.21	HRM3-GFDL (historical)	
9	65.38	49.93	68.09	81.83	97.7	107.96	118.14	128.28	142.14	153.04	WRFG-CGCM3 (historical)	
10	61.54	45.21	67.52	80.38	96.38	105.83	116.8	127.72	141.66	151.78	WRFG-CGCM3 (future)	
11	57.69	44.24	66.21	79.88	94.77	105.46	115.62	126.41	140.66	151.42	WRFG-CCSM (future)	
12	53.85	41.67	65.09	79.16	93.87	104.79	114.47	123.46	135.31	144.26	MM51-HadCM3 (future)	
13	50.00	40.48	64.36	76.87	90.35	100.35	110.27	120.16	133.21	143.07	MM51-HadCM3 (historical)	
14	46.15	40.3	60.8	71.76	85.6	95.87	106.07	116.23	129.63	139.76	WRFG-CCSM (historical)	
15	42.31	40.16	57.82	68.51	82.01	92.03	101.98	111.89	124.96	134.84	MM51-CCSM (future)	
16	38.46	39.81	54.04	64.15	78.34	88.87	99.33	109.74	123.48	133.86	MM51-CCSM (historical)	
17	34.62	38.35	53.81	63.01	74.35	82.77	91.12	99.44	110.42	118.71	ECP2-HadCM3 (future)	
18	30.77	35.95	52.91	62.76	74.06	82.45	90.77	99.06	110.01	118.28	ECP2-GFDL (future)	
19	26.92	35.86	49.21	56.39	65.47	72.2	79.17	86.67	96.57	104.05	ECP2-GFDL (historical)	
20	23.08	33.52	45.74	53.83	64.06	71.64	78.89	85.55	94.34	100.98	ECP2-HadCM3 (historical)	
21	19.23	22.51	30.54	35.86	42.58	47.56	52.51	57.44	63.95	68.86	CRCM-CGCM3 (future)	
22	15.38	15.96	23.6	28.66	35.06	39.8	44.51	49.2	55.39	60.07	CRCM-CGCM3 (historical)	
23	11.54	15.78	21.65	25.55	30.46	34.11	37.73	41.34	46.1	49.69	CRCM-CCSM (future)	
24	7.69	13.05	18.46	22.04	26.57	29.93	33.26	36.58	40.96	44.27	CRCM-CCSM (historical)	
25	3.85	10.07	14.41	17.29	20.92	23.61	26.28	28.94	32.46	35.11	Observed	
HUC: 2080202; Duration: 6 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	46.81	64.53	76.26	91.08	102.08	112.99	123.87	138.21	149.06	HRM3-GFDL (future)
2	92.31	45.22	62.1	73.28	87.4	97.87	108.27	118.63	132.3	144.26	RCM3-GFDL (historical)
3	88.46	41.26	58.48	69.87	84.28	94.96	105.56	116.13	131.47	142.63	HRM3-HadCM3 (future)
4	84.62	39.33	50.15	59.37	75.87	88.84	101.71	114.54	130.07	140.61	HRM3-HadCM3 (historical)
5	80.77	37.04	48.87	58.78	73.4	84.24	95	105.73	119.87	130.57	RCM3-CGCM3 (future)
6	76.92	36.21	47.76	58.38	71.03	79.68	88.27	98.13	111.51	121.62	RCM3-GFDL (future)
7	73.08	33.09	47.21	55.19	67.57	77.82	88	96.82	108.11	117.59	RCM3-CGCM3 (historical)
8	69.23	32.94	44.7	54.85	65.97	75.76	85.48	95.16	107.94	116.63	HRM3-GFDL (historical)
9	65.38	32.79	44.55	53.75	63.82	70.48	77.08	83.66	93	100.1	WRF3-CGCM3 (historical)
10	61.54	29.74	44.26	52.78	63.17	69.31	76.47	83.59	92.34	98.98	WRF3-CCSM (future)
11	57.69	29.12	43.42	52.39	62.11	69.1	75.63	82.68	91.96	98.9	WRF3-CGCM3 (future)
12	53.85	27.45	42.82	51.85	61.45	68.57	74.98	80.83	88.56	94.4	MM5I-HadCM3 (future)
13	50.00	26.65	42.33	50.36	59.13	65.64	72.09	78.52	87.01	93.43	MM5I-HadCM3 (historical)
14	46.15	26.59	39.9	47.04	56.06	62.75	69.39	76.01	84.74	91.33	WRF3-CCSM (historical)
15	42.31	26.56	37.99	44.96	53.77	60.31	66.8	73.27	81.8	88.24	MM5I-CCSM (future)
16	38.46	26.3	35.47	42.1	51.34	58.19	65	71.78	80.72	87.48	MM5I-CCSM (historical)
17	34.62	25.32	35.43	41.31	48.69	54.16	59.6	65.02	72.18	77.59	ECP2-GFDL (future)
18	30.77	23.74	34.78	41.28	48.67	54.15	59.59	65.01	72.15	77.55	ECP2-HadCM3 (future)
19	26.92	23.65	32.4	37.09	43.01	47.4	51.91	56.8	63.25	68.12	ECP2-GFDL (historical)
20	23.08	22.17	30.13	35.4	42.07	47.01	51.77	56.11	61.84	66.17	ECP2-HadCM3 (historical)
21	19.23	14.98	20.24	23.72	28.12	31.38	34.62	37.85	42.11	45.33	CRCM-CGCM3 (future)
22	15.38	10.7	15.69	18.99	23.16	26.25	29.32	32.38	36.42	39.47	CRCM-CGCM3 (historical)
23	11.54	10.58	14.4	16.93	20.12	22.49	24.84	27.18	30.28	32.61	CRCM-CCSM (future)
24	7.69	8.82	12.33	14.66	17.6	19.79	21.95	24.11	26.96	29.11	CRCM-CCSM (historical)
25	3.85	6.28	8.92	10.67	12.88	14.52	16.15	17.77	19.91	21.53	Observed
HUC: 2080202; Duration: 12 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance Probability (%)											
		2	5	10	25	50	100	200	500	1000		
		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001		
1	96.15	24.82	34.11	40.26	48.03	53.8	59.52	65.22	72.74	78.42	HRM3-GFDL (future)	
2	92.31	23.99	32.82	38.66	46.05	51.53	56.97	62.38	69.53	76.02	RCM3-GFDL (historical)	
3	88.46	21.91	30.9	36.85	44.37	49.94	55.48	61	69.31	74.94	HRM3-HadCM3 (future)	
4	84.62	20.91	26.57	31.39	40.13	46.94	53.7	60.43	68.27	73.77	HRM3-HadCM3 (historical)	
5	80.77	19.74	25.91	31.12	38.77	44.45	50.09	55.7	63.11	68.7	RCM3-CGCM3 (future)	
6	76.92	19.29	25.36	30.96	37.48	42	46.49	51.61	58.59	63.87	RCM3-GFDL (future)	
7	73.08	17.66	25.07	29.21	35.65	41	46.31	50.96	56.85	61.81	RCM3-CGCM3 (historical)	
8	69.23	17.59	23.73	29.08	34.83	39.95	45.03	50.09	56.76	61.31	HRM3-GFDL (historical)	
9	65.38	17.53	23.7	28.43	33.78	37.27	40.73	44.18	48.98	52.7	WRFG-CGCM3 (historical)	
10	61.54	15.92	23.52	27.93	33.39	36.6	40.34	44.07	48.73	52.17	WRFG-CGCM3 (future)	
11	57.69	15.59	23.08	27.75	32.83	36.49	39.91	43.58	48.44	52.1	WRFG-CCSM (future)	
12	53.85	14.72	22.72	27.49	32.5	36.22	39.56	42.63	46.67	49.73	MM51-HadCM3 (future)	
13	50.00	14.31	22.47	26.71	31.3	34.71	38.09	41.46	45.9	49.26	MM51-HadCM3 (historical)	
14	46.15	14.25	21.23	24.96	29.68	33.18	36.65	40.11	44.68	48.13	WRFG-CCSM (historical)	
15	42.31	14.23	20.22	23.87	28.47	31.89	35.28	38.66	43.12	46.49	MM51-CCSM (future)	
16	38.46	14.1	18.93	22.38	27.22	30.8	34.36	37.91	42.59	46.13	MM51-CCSM (historical)	
17	34.62	13.59	18.87	21.99	25.86	28.73	31.58	34.41	38.15	40.98	ECP2-HadCM3 (future)	
18	30.77	12.78	18.56	21.92	25.78	28.64	31.48	34.32	38.05	40.87	ECP2-GFDL (future)	
19	26.92	12.73	17.29	19.75	22.84	25.14	27.49	30.05	33.42	35.97	ECP2-GFDL (historical)	
20	23.08	11.95	16.11	18.86	22.35	24.93	27.42	29.7	32.69	34.96	ECP2-HadCM3 (historical)	
21	19.23	8.19	10.94	12.76	15.06	16.76	18.46	20.14	22.37	24.05	CRCM-CGCM3 (future)	
22	15.38	5.96	8.56	10.29	12.47	14.09	15.69	17.29	19.4	21	CRCM-CGCM3 (historical)	
23	11.54	5.9	7.9	9.22	10.89	12.13	13.36	14.58	16.2	17.42	CRCM-CCSM (future)	
24	7.69	4.97	6.81	8.02	9.56	10.7	11.83	12.96	14.45	15.58	CRCM-CCSM (historical)	
25	3.85	3.66	5.1	6.06	7.26	8.16	9.04	9.93	11.09	11.98	Observed	
HUC: 2080202; Duration: 24 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year		

Rank	Pr ($x \leq X$)	Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability									Data Source for 1000-year
	Non-exceedance	2	5	10	25	50	100	200	500	1000	
	Probability (%)	0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002	0.001	
1	96.15	13.05	17.89	21.09	25.13	28.13	31.11	34.07	37.99	40.95	HRM3-GFDL (future)
2	92.31	12.62	17.2	20.24	24.08	26.92	29.75	32.56	36.28	39.72	RCM3-GFDL (historical)
3	88.46	11.53	16.2	19.29	23.19	26.09	28.96	31.83	36.23	39.09	HRM3-HadCM3 (future)
4	84.62	11.02	13.96	16.46	21.04	24.59	28.1	31.61	35.6	38.46	HRM3-HadCM3 (historical)
5	80.77	10.42	13.61	16.33	20.31	23.26	26.19	29.1	32.95	35.86	RCM3-CGCM3 (future)
6	76.92	10.18	13.34	16.27	19.63	21.98	24.31	26.96	30.59	33.33	RCM3-GFDL (future)
7	73.08	9.33	13.18	15.32	18.67	21.45	24.21	26.63	29.69	32.28	RCM3-CGCM3 (historical)
8	69.23	9.3	12.49	15.28	18.25	20.91	23.55	26.18	29.65	32	HRM3-GFDL (historical)
9	65.38	9.27	12.49	14.92	17.73	19.54	21.34	23.14	25.61	27.54	WRF3-CGCM3 (historical)
10	61.54	8.43	12.39	14.67	17.49	19.17	21.12	23.05	25.51	27.3	WRF3-CGCM3 (future)
11	57.69	8.26	12.15	14.58	17.22	19.1	20.92	22.84	25.36	27.27	WRF3-CCSM (future)
12	53.85	7.81	11.96	14.46	17.06	19	20.69	22.28	24.38	25.96	MM5I-HadCM3 (future)
13	50.00	7.59	11.83	14.04	16.43	18.2	19.96	21.71	24.03	25.77	MM5I-HadCM3 (historical)
14	46.15	7.56	11.2	13.14	15.6	17.42	19.22	21.02	23.4	25.2	WRF3-CCSM (historical)
15	42.31	7.54	10.67	12.57	14.96	16.74	18.5	20.26	22.58	24.33	MM5I-CCSM (future)
16	38.46	7.48	10	11.79	14.3	16.16	18.01	19.86	22.29	24.13	MM5I-CCSM (historical)
17	34.62	7.22	9.96	11.59	13.6	15.09	16.57	18.05	19.99	21.46	ECP2-HadCM3 (future)
18	30.77	6.79	9.8	11.55	13.55	15.04	16.51	17.98	19.92	21.39	ECP2-GFDL (future)
19	26.92	6.78	9.15	10.42	12.04	13.23	14.46	15.78	17.54	18.86	ECP2-GFDL (historical)
20	23.08	6.37	8.53	9.97	11.78	13.12	14.42	15.6	17.16	18.34	ECP2-HadCM3 (historical)
21	19.23	4.42	5.84	6.78	7.97	8.85	9.73	10.6	11.76	12.63	CRCM-CGCM3 (future)
22	15.38	3.25	4.6	5.5	6.63	7.47	8.3	9.13	10.22	11.05	CRCM-CGCM3 (historical)
23	11.54	3.22	4.26	4.95	5.82	6.47	7.11	7.75	8.6	9.23	CRCM-CCSM (future)
24	7.69	2.74	3.7	4.33	5.13	5.72	6.31	6.89	7.67	8.25	CRCM-CCSM (historical)
25	3.85	2.05	2.87	3.41	4.1	4.61	5.12	5.62	6.29	6.79	Observed
HUC: 2080202; Duration: 48 hr		2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	

Rank	Pr (x ≤ X)		Intensity (mm h ⁻¹) for the Return Period or Exceedance Probability								Data Source for 1000-year	
	Non-exceedance		2	5	10	25	50	100	200	500		1000
	Probability (%)		0.5	0.2	0.1	0.04	0.02	0.01	0.005	0.002		0.001
1	96.15		8.56	11.69	13.77	16.4	18.34	20.28	22.2	24.74	26.66	HRM3-GFDL (future)
2	92.31		8.28	11.25	13.23	15.72	17.57	19.4	21.23	23.64	25.86	RCM3-GFDL (historical)
3	88.46		7.57	10.59	12.59	15.12	17	18.86	20.71	23.59	25.46	HRM3-HadCM3 (future)
4	84.62		7.24	9.14	10.76	13.74	16.04	18.32	20.6	23.16	25.01	HRM3-HadCM3 (historical)
5	80.77		6.85	8.92	10.69	13.27	15.19	17.09	18.98	21.48	23.37	RCM3-CGCM3 (future)
6	76.92		6.7	8.75	10.65	12.81	14.33	15.84	17.58	19.94	21.72	RCM3-GFDL (future)
7	73.08		6.15	8.65	10.03	12.2	14.01	15.8	17.34	19.34	21.05	RCM3-CGCM3 (historical)
8	69.23		6.13	8.19	10	11.94	13.67	15.38	17.09	19.32	20.82	HRM3-GFDL (historical)
9	65.38		6.1	8.19	9.77	11.59	12.77	13.94	15.11	16.68	17.93	WRFG-CGCM3 (historical)
10	61.54		5.57	8.13	9.61	11.43	12.52	13.78	15.03	16.65	17.81	WRFG-CGCM3 (future)
11	57.69		5.46	7.97	9.54	11.25	12.48	13.66	14.91	16.54	17.78	WRFG-CCSM (future)
12	53.85		5.16	7.85	9.47	11.16	12.42	13.51	14.54	15.9	16.93	MM5I-HadCM3 (future)
13	50.00		5.02	7.77	9.2	10.74	11.89	13.03	14.16	15.66	16.79	MM5I-HadCM3 (historical)
14	46.15		5	7.36	8.61	10.2	11.38	12.55	13.72	15.26	16.42	WRFG-CCSM (historical)
15	42.31		4.98	7.01	8.24	9.79	10.94	12.09	13.23	14.73	15.86	MM5I-CCSM (future)
16	38.46		4.94	6.58	7.74	9.38	10.59	11.79	12.99	14.57	15.77	MM5I-CCSM (historical)
17	34.62		4.78	6.56	7.61	8.91	9.87	10.83	11.79	13.04	14	ECP2-HadCM3 (future)
18	30.77		4.5	6.45	7.59	8.89	9.85	10.81	11.77	13.02	13.98	ECP2-GFDL (future)
19	26.92		4.49	6.02	6.85	7.89	8.67	9.47	10.33	11.47	12.33	ECP2-GFDL (historical)
20	23.08		4.22	5.62	6.55	7.73	8.6	9.43	10.2	11.21	11.97	ECP2-HadCM3 (historical)
21	19.23		2.96	3.88	4.49	5.26	5.83	6.39	6.96	7.7	8.26	CRCM-CGCM3 (future)
22	15.38		2.21	3.08	3.66	4.39	4.94	5.48	6.01	6.72	7.26	CRCM-CGCM3 (historical)
23	11.54		2.19	2.86	3.3	3.86	4.28	4.69	5.11	5.65	6.06	CRCM-CCSM (future)
24	7.69		1.88	2.49	2.9	3.42	3.8	4.19	4.57	5.07	5.44	CRCM-CCSM (historical)
25	3.85		1.45	2.03	2.42	2.91	3.27	3.63	3.99	4.46	4.82	Observed
HUC: 2080202; Duration: 72 hr			2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year	1000-year	