

New Jersey Probable Maximum Precipitation Tool

Instructions and Application in ArcGIS Desktop

New Jersey Department of Environmental Protection

Project number: 60629640

December 05, 2024



Quality information

Prepared by	Checked by	Verified by	Approved by	
Bhavin Gandhi, PE, PMP, CFM	_			

Revision History

Revision	Revision date	Details	Authorized	Name	Position
Rev-1	12/05/2025	Updates		Bhavin Gandhi	Project Manager
Distribution L	₋ist				
# Hard Copies	PDF Required	Association	/ Company Name		

Prepared for:

New Jersey Department of Environmental Protection

Prepared by:

AECOM 300 Broadacres Drive Bloomfield, NJ 07003 aecom.com

Prepared in association with:

Applied Weather Associates

Copyright © 2024 by AECOM

All rights reserved. No part of this copyrighted work may be reproduced, distributed, or transmitted in any form or by any means without the prior written permission of AECOM.

Introduction

This document summarizes the step-by-step instruction to use the New Jersey Probable Maximum Precipitation Tool (NJPMP Tool) in the ESRI's ArcGIS Desktop® interface. The tool has been developed by Applied Weather Associates (AWA) in association with AECOM for New Jersey Department of Environmental Protection (NJDEP). This tool will help engineers, hydrologist, and dam safety professional to determine the watershed specific probable maximum precipitation estimates to use for watershed hydrologic studies for New Jersey watersheds. The tool is a Python based script compatible with ArcMap, Arc Catalog or ArcGISPro software from ESRI. The tool provides precipitation estimates on grided and tabular format for user provided watershed or area of interest. The standard output includes the average PMP depths over the provided area with temporary distributed accumulations.

Step 1: Download NJPMP Tool.

Go to NJDEP's Dam Safety website <u>https://dep.nj.gov/wlm/drec/dam-safety/</u> and click on the NJPMP Tool Download link and save the zip file to your local computer. (Must be save on Local Drive)



NJ_Final_PMP_Tool_with_Final_Temporal_Option

Step 2: Extract the Tool Files

Right Click on the downloaded NJPMP tool zip file & click extract all. The resulting folder would be named as PMP_Evaluation_Tool with default contents of two folders named Input & Script. View the contents of the extracted folder below:

File Home Share View				
\leftrightarrow \rightarrow \star \uparrow \blacksquare \rightarrow This PC \rightarrow OSDisk (C:) \rightarrow		NJ_Final_PMP_Tool_	with_Final_Temporal_Option	> PMP_Evaluation_Tool
V PMP_Evaluation_Tool_V9	▲ Name	^ Date modified	Туре	Size
VI NJ_Final_PMP_Tool_with_Final_Temporal_Option	Input	6/15/2023 2:52 P	M File folder	
V 📙 PMP_Evaluation_Tool	Script	6/15/2023 2:52 P	M File folder	
> Input				
Script				

Step 3: Obtain Area of Interest

The NJPMP Tool support the PMP calculations for a distinct watershed (Dams, Rivers at selected Points of interest) or geographic regions (Town, County, or district level boundaries) based on input area of the interest. For watershed boundaries, user can provide their own delineations, one available from prior studies or use service generated watershed such as USGS StreamStats. This document will use StreamStats generated watershed as an example. In order to get a watershed for your area of interest please go to New Jersey StreamStats website at https://www.usgs.gov/centers/new-jersey and click on the StreamStats Web tool.



Overview Science Data Publications Web Tools Partners

StreamStats is a web application (Web Tool) for water-resources planning and engineering purposes. The map-based user interface can be used to delineate drainage areas for user-selected sites on streams, generate basin characteristics and estimate flow statistics for the selected sites. Users also can select the locations of USGS data-collection stations, shown as triangles on the StreamStats map, to get flow statistics and other station-specific information.

StreamStats Web Tool

Contacts

Thomas Suro Hydrologist / Surface Water Specialist New Jersey Water Science Center Email: tsuro@usgs.gov Phone: 609-771-3968



For example, Boonton Reservoir in Morris County, NJ is selected at Point of Interest below:

Using StreamStats Delineation option the watershed for this Dam can be delineated as shown below:



The delineated basin can be downloaded as the shapefile for use for NJPMP Tool input data for PMP depth determination for this watershed.

Step 4: Setting Up ArcMap

After the watershed delineation shapefile was downloaded it can be renamed in ArcCatalog® from its default name globalwatershed.shp from USGS Download site to the name of the watershed or POI you are analyzing.



Start a new ArcMap and add one of the known shapefiles to define projection system of your map (e.g., Political Boundary for State, County, Municipalities etc.)



Use Add data to add watershed:

🧕 Ins	truction	_Map -	ArcMap												
File	Edit	View	Bookm	arks	Insert	Select	tion	Geoprocessing	Customize	Windows	Help				
i 🗋 I	2 🖬	813	. 🖻 🕻	×	5	ଙ୍କ 🔶	- 1	:137,941	~ 😒	🔲 🇊 👼	🔊 🞦	₽ .			
•	⊇, €,	Sen 🔇	AR E	14		🔊 🔶	Ad	ld Data		🗔 🗨), (i	Drawing •	k 🕞 🚳	-	A
	m (c	¢ d	NR RO				Ad	ld Basemap			Snap	ping 🕶 🖸	日口	÷	
Table (Of Conte	ents					Ad	Id Data From Arc	GIS Online			2		N,	

Navigate to the location where the watershed boundary file is located and add the shapefile.:



The watershed boundary shall look similar to below in your map .:



Step 5: Locating & Calling the NJPMP Tool from ArcMap Interface

Use the ArcCatalog® window in the ArcMap *.mxd to navigate to the Python Script for the NJPMP Tool (Gridded PMP Tool) on your local drive:

Catalog
← ▼ → ▲ 🏠 🗔 🏥 ▼ 🖴 😫 😫
Location: 🔁 Script
🗄 🔚 Outlook
🕀 🚞 Pictures
🖃 🚞 PMPTool
🗉 🚞 Downloaded_From_Client
⊞
E PMP_Evaluation_Tool
E C PMP_Evaluation_Tool_V9
NJ_Final_PMP_Tool_with_Final_Tep_poral_Option
🖃 🚞 PMP_Evaluation_Tool
🗄 🧰 Input
🗉 🗁 Script
🗆 😂 NJ_Final_PMP_Tool.tbx
🂐 Gridded PMP Tool
🗄 🧰 Example
🗄 🔚 GIS
🗄 🔚 Lenape
I ■ I NFHL_34_20230122
🗄 🛅 Copy of njdams1_Shorted.xls
NJ Dam national inventory.csv

OR

Alternatively, you can add NJPMP Tool to the Arctoolbox® tool library for your ArcGIS by clicking on Arc Toolbox Icon on your ArcMap.



The ArcToolBox Window will appear next to your Table of Content Window on your ArcMap. Right click on the ArcToolBox and then click on Add Toolbox as shown below:



Navigate to the location where NJPMP tool is saved on your local drive and click to add NJ_Final_PMP_Tool.tbx



The ArcToolBox will have NJPMP Tool along with other ArcGIS tools available as below:



Note: Both methods will provide access to NJPMP Tool script needed to run this analysis. The ArcCatalog will require user to navigate to the file location each time tool intended to be used whereas adding it to ArcMap tool library on your computer makes it available as toolset without navigating to folder each time use is anticipated.

Reminder: Please save your map at this stage as it's ready to process the NJPMP data.

Step 6: Running NJPMP Tool in ArcMap

Navigate to NJPMP Tool location on your map or hard drive and double click on the Gridded PMP Tool Script to start the tool. The processing window will appear as shown below. From the dropdown list for input basin or shape file select the basin shapefile you wish to analyze (For our case selecting Boonton Reservoir)

Note: Check the location of "PMP_Evaluation_Tool" Folder, it should be the same location as in Step # 2, where the NJPMP tool files were extracted.

💐 Gridded PMP Tool -			×
Input basin outline shapefile or feature dass βoonton_Reseroir Location of "PMP_Evaluation_Tool" Folder C:\PMPTool\Downloaded_From_Client\PMP_Evaluation_Tool_V9\NJ_Final_PMP_Tool_with_Fi Output Folder	▼ nal_		^
Local storm durations ***Basin area should be 100-sqmi or smaller for local storm PMP*** (optional) 01 02 03 04 05 06 12 24			
Select All Unselect All Add General storm durations (optional) 01 06 12 24	Value		~
OK Cancel Environments Sh	iow H	lelp >	>

Using the folder icon on the Output Folder Line navigate to the desired location on your drive to save the output data from NJPMP Tool processing, for this example it is navigated to Boonton_Reservoir Folder see below:

引 Gridded PMP Tool — 🗆 🗙	_
Input basin outline shapefile or feature dass	~
Boonton_Reseroir 💌 🖻	
Location of "PMP_Evaluation_Tool" Folder	
C:\PMPTool\Downloaded_From_Client\PMP_Evaluation_Tool_V9\VJ_Final_PMP_Tool_with_Final_	
Output Folder C:\PMPTool\Example\Boonton_Reservoir	
Local storm durations ***Basin area should be 100-sqmi or smaller for local storm PMP*** (optional) 01 02 03 04 05 06 12 24	
Select All Unselect All Add Value General storm durations (optional) 01 06 12	~
OK Cancel Environments Show Help >>]

Select all Local, General, and Tropical storm durations, from 1 hour to 24 hours for computations for NJ watershed irrespective of the drainage area of the basin.

💐 Gridded PMP Tool	—		×
Local storm durations ***Basin area should be 100-sqmi or smaller for local storm PMP** 01 02 03 04 05 06 12 24	** (optional))	
Select All Unselect All General storm durations (optional) 01 06 12 24 48 72	Add	Value	
Select All Unselect All	Add	Value	~
OK Cancel Environmen	nts S	how Help >	>

Note: The NJPMP distributions are recommended based on the overall contributing watershed size at point of interest e.g., local storm application in hydrologic modeling is limited to drainage areas less than 100 square miles.

Scroll down within tool interface and check the boxes shown below. (Note that NJDEP requires determination of temporal distribution for development of rainfall/runoff model)

Use basin area size for areal average
Area-size to use (sqmi) (optional)
✓] Apply weighted average to border gnd cells
Include sub-basin averages (optional)
Sub-basin field (optional)
×
Include depth-duration chart output
Apply temporal distributions
Distributions
Recommended
OK Cancel Environments Show Help >>

Step 7: Geoprocessing of NJPMP Data:

Click Ok on the dialog box and NJPMP Tool will compute the PMP depths and durations applicable to the selected watershed. This process is based on the transposition of the historic storms in the selected watershed based on the location of the watershed and proximity of the storms to selected watershed. The tool than calculate the maximum precipitation depth for the selected storm durations from the dialog box.)

County of Pass Gridded PMP Tool Boonton_Reservi Cancel County of Sus << Details Close this dialog when completed successfully Comparing SPAS_1629_1_LOC adjusted rainfall values against current A driver values... Transposed to 80/80 grid points... Evaluating storm: SPAS 1700 1... 12-hour DAD value: 5.615" Comparing SPAS 1700 1 adjusted rainfall values against current driver values... Transposed to 80/80 grid points... Evaluating storm: SPAS_1534_1... County of Morris

After the NJPMP Tool completes the computations, the results can be viewed from ArcCatalog (GIS Data) and through windows explorer (Non-GIS Data).

Catalog	□ ×
← ▼ ⇒ ▲ 🔓 🗔 ## ▼ 24 %: Ξ	
Location: 🚰 C:\Bhavin\PMPTool	~
🖃 🚝 C:\Bhavin\PMPTool	^
🗄 🧰 Downloaded_From_Client	
🖃 🚞 Example	
🖃 🚞 Boonton_R	
🕀 🛅 General	
🖃 🚞 Local	
🖃 🚞 CSV_Boonton_Reseroir_120sqmi	
Controlling_Storms_Temporal_Distributions_12.csv	
Local_PMP_Basin_Average_120sqmi.csv	
LS_Temporal_Distributions_02hr.csv	
LS_Temporal_Distributions_12hr.csv	
LS_Temporal_Distributions_24hr.csv	
Temporal_Distribution_Check_Local.csv	
UMP_Boonton_Reservir_120sqmi.gdb	
Controlling_Storms_Temporal_Distributions_12	
L_01_Boonton_Reservir_120sqmi	
III IIII IIIII IIIIIIIIIIIIIIIIII	
I IIII L_U3_Boonton_Reservir_120sqmi IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	
I I I I I I I I I I I I I I I I I	
EUD_Boonton_Reservir_120sqmi	
EUO_BOONTON_Reservir_120sqmi	
m m L_12_boonton_Reservir_120sqmi	

Step 8: Viewing Derived Spatial NJPMP Data for Watershed

Navigate to Arc Explorer or Add Data option on ArcMap and navigate to the output folders containing results of GeoProcessing data from NJPMP Tool. To view output data points used for the basin add **Local_PMP_Points_Boonton_Reservir_120sqmi** featureclass from the output Geodatabase as shown below to review the PMP Depth at selected points within the watershed as shown below.



The Attribute table of the database will contain information at each point including lat/long elevation and controlling storm for each recurrence intervals. (Note: at same point different durations may have different control storms.

Tal	ble																		
1		5 - I 🖳 🛛	ah 🛛 🛃	×															
Lo	cal_PM	P_Points_B	oonton_Ke	seroir_1	20sqmi														
	ld	POINT_X	POINT_Y	ZONE	ELEV_FT	PMP_01	PMP_02	PMP_03	PMP_04	PMP_05	PMP_06	PMP_12	PMP_24	Storm ID 01-hour	Storm ID 02-hour	Storm ID 03-hour	Storm ID 04-hour	Storm ID 05-hour	
Þ	340	-74.575	40.825	3	923.6658	6.7	10.6	14.5	17.2	19.6	21.6	23.7	23.7	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	340	-74.55	40.825	3	964.5233	6.7	10.6	14.4	17.1	19.6	21.6	23.7	23.7	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	340	-74.525	40.825	2	619.1747	6	10.9	14.8	18	20.1	22.1	24.3	24.3	SPAS_1534_1	SPAS_1534_1	SPAS_1489_1	SPAS_1489_1	SPAS_1534_1	SPA
	345	-74.625	40.85	3	738.4369	6.7	10.1	13.7	16.3	18.6	20.5	22.5	22.5	5 SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	345	-74.6	40.85	3	1044.109	6.7	10.3	14.1	16.7	19.1	21	23.1	23.1	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	345	-74.575	40.85	3	982.4257	6.7	10.3	14.1	16.7	19.1	21	23.1	23.1	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	345	-74.55	40.85	3	859.9702	6.7	10.6	14.4	17.1	19.5	21.5	23.6	23.6	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	346	-74.525	40.85	3	844.3716	6.7	10.6	14.4	17.1	19.5	21.5	23.6	23.6	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	351	-74.6	40.875	3	891.7615	6.7	10	13.7	16.2	18.5	20.4	22.4	22.4	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	351	-74.575	40.875	3	784.6821	6.7	10.3	14	16.7	19	21	23	23	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	351	-74.55	40.875	3	683.964	6.7	10.3	14	16.7	19	20.9	23	23	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	351	-74.525	40.875	3	614.0639	6.7	10.6	14.4	17.1	19.5	21.5	23.6	23.6	5 SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	351	-74.5	40.875	3	636.8986	6.7	10.6	14.4	17.1	19.5	21.5	23.6	23.6	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	351	-74.475	40.875	2	567.6509	5.9	10.8	14.7	17.9	20	22	24.2	24.2	2 SPAS_1534_1	SPAS_1534_1	SPAS_1489_1	SPAS_1489_1	SPAS_1534_1	SPA
	352	-74.45	40.875	2	486.1403	5.9	10.8	14.7	17.9	20	22	24.1	24.1	SPAS_1534_1	SPAS_1534_1	SPAS_1489_1	SPAS_1489_1	SPAS_1534_1	SPA
	352	-74.425	40.875	2	352.4205	5.9	10.8	14.7	17.9	19.9	22	24.1	24.1	SPAS_1534_1	SPAS_1534_1	SPAS_1489_1	SPAS_1489_1	SPAS_1534_1	SPA
	352	-74.4	40.875	2	338.415	5.9	10.8	14.7	17.8	19.9	21.9	24.1	24.1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1489_1	SPAS_1534_1	SPA
	357	-74.625	40.9	3	789.4503	6.7	9.7	13.3	15.8	18	19.8	21.7	21.7	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	357	-74.6	40.9	3	691.2657	6.7	10	13.6	16.2	18.5	20.4	22.4	22.4	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	357	-74.575	40.9	3	660.681	6.7	10	13.6	16.2	18.5	20.4	22.4	22.4	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	357	-74.55	40.9	3	747.3826	6.7	10.3	14	16.6	19	20.9	23	23	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	357	-74.525	40.9	3	799.5917	6.7	10.5	14.4	17.1	19.5	21.4	23.6	23.6	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	357	-74.5	40.9	3	545.4761	6.7	10.5	14.4	17.1	19.5	21.4	23.5	23.5	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	357	-74.475	40.9	2	553.0475	5.9	10.8	14.7	17.9	19.9	22	24.1	24.1	SPAS_1534_1	SPAS_1534_1	SPAS_1489_1	SPAS_1489_1	SPAS_1534_1	SPA
	357	-74.45	40.9	2	618.3873	5.9	10.8	14.7	17.9	19.9	22	24.1	24.1	SPAS_1534_1	SPAS_1534_1	SPAS_1489_1	SPAS_1489_1	SPAS_1534_1	SPA
	358	-74.425	40.9	2	523.2648	5.9	10.8	14.7	17.9	19.9	21.9	24.1	24.1	SPAS_1534_1	SPAS_1534_1	SPAS_1489_1	SPAS_1489_1	SPAS_1534_1	SPA
	358	-74.4	40.9	2	393.0301	5.9	10.8	14.7	17.8	19.9	21.9	24.1	24.1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1489_1	SPAS_1534_1	SPA
	362	-74.625	40.925	4	1146.901	6.7	9.7	13.2	15.7	17.9	19.7	21.7	21.7	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	363	-74.6	40.925	3	713.6848	6.7	10	13.6	16.1	18.4	20.3	22.3	22.3	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	363	-74.575	40.925	3	730.0161	6.7	10	13.6	16.1	18.4	20.3	22.3	22.3	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	363	-74.55	40.925	3	1010.739	6.7	10.3	14	16.6	18.9	20.8	22.9	22.9	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	363	-74.525	40.925	3	821.2854	6.7	10.3	14	16.6	18.9	20.8	22.9	22.9	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	363	-74.5	40.925	3	693.8795	6.7	10.5	14.3	17	19.4	21.4	23.5	23.5	5 SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	363	-74.475	40.925	3	654.7172	6.7	10.5	14.3	17	19.4	21.4	23.5	23.5	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	363	-74.45	40.925	3	664.0457	6.7	10.5	14.3	17	19.4	21.4	23.5	23.5	SPAS_1406_1	SPAS_1534_1	SPAS 1534 1	SPAS 1534 1	SPAS_1534_1	SPA
	363	-74.425	40.925	3	555.7743	6.7	10.5	14.3	17	19.4	21.4	23.5	23.5	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	363	-74.4	40.925	3	759.1608	6.6	10.5	14.3	17	19.4	21.3	23.4	23.4	SPAS_1406_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPAS_1534_1	SPA
	363	-74 375	40 925	2	387 2084	5.9	10.7	14.6	17.8	19.8	21.8	24	24	SPAS 1534 1	SPAS 1534 1	SPAS 1489 1	SPAS 1489 1	SPAS 1534 1	SPA

The Average Basin PMP average can be viewed as follows:

lai	ble									
0	- 🗄 - 🏪	🛃 🛛 📲 🗙								
Lo	cal_PMP_Basin_/	Average_120sqm	ni							
	OBJECTID *	Storm Type	PMP_01	PMP_02	PMP_03	PMP_04	PMP_05	PMP_06	PMP_12	PMP_24
۲	1	Local	6.59	10.12	13.79	16.41	18.69	20.59	22.61	22.61

Step 9: Viewing Non-Spatial Data of NJPMP (CSV Files Tables)

The Non-spatial data for NJPMP Tool can be viewed through windows explorer and Microsoft Excel.

PMPTool > Example > Boonton_R > Local Name Date modified Type Size CSV_Boonton_Reseroir_120sqmi 6/16/2023 5:29 PM File folder PMP_Boonton_Reseroir_120sqmi_docal_Depth_... 6/16/2023 5:29 PM PNG File 47 KB

The Depth-Duration Chart:



*.CSV Files to import in Excel:

^	Name	Date modified	Туре	Size
	📙 info	6/16/2023 5:29 PM	File folder	
	Controlling_Storms_Temporal_Distributions_12	6/16/2023 5:29 PM	Microsoft Excel C	1 KE
	🔕 Local_PMP_Basin_Average_120sqmi	6/16/2023 5:29 PM	Microsoft Excel C	1 KE
	LS_Temporal_Distributions_02hr	6/16/2023 5:29 PM	Microsoft Excel C	2 KE
	LS_Temporal_Distributions_12hr	6/16/2023 5:29 PM	Microsoft Excel C	9 KE
	LS_Temporal_Distributions_24hr	6/16/2023 5:29 PM	Microsoft Excel C	18 KE
	🔊 schema	6/16/2023 5:29 PM	Configuration sett	2 KE
	🔊 Temporal_Distribution_Check_Local	6/16/2023 5:29 PM	Microsoft Excel C	2 KE

The recommended NJPMP storms to evaluate for Maximum Runoff based on the watershed size area as follows:

Local Storm*	General Storm	Tropical Storm
2-hour local storm synthetic	24-hour general storm 10th-	24-hour tropical storm 10th-percentile
6-hour local storm 10th-percentile	percentile	12-hour tropical controlling storm
12-hour local storm 10th-percentile	12-hour general controlling	
24-hour local storm 10th-percentile	storm	
6-hour local controlling Storm		
12-hour local controlling Storm		

*Local storm application in hydrologic modeling is limited to drainage areas less than 100 square miles.

Step 10: Review & Use Temporal Distribution in Model

Now you can derive the necessary distribution such as LS_Temporal_Distribution_02hr into your HEC-HMS or other hydrologic model's meteorological model for simulations.

AutoSave 💽 🗄 🏷 < 🖓 🍃 🕒 👻 LS_Temporal_Distributions_02hr 〜												
F	ile Ho	ome Ins	ert Pag	je Layout Formulas	Data	a Review	View	Help	ProjectWise			
ľ		ut opy ~	Calibri	~ 11 ~ A^	A	ΞΞ	* ~	ab c₽ Wrap Tex	t			
P	aste –⊡ ∽	ormat Painter	B I	U ~ 🗄 ~ 🔗 ~ 🗚	×	$\equiv \equiv \equiv \equiv$	€= →=	🔁 Merge &	Center ~ \$			
Clipboard 🛛			L2	Font	Б		Alignm	ient	L2			
(i	() POSSIBLE DATA LOSS Some features might be lost if you save this workbook in the comma-delimited (.csv) format. To pres											
L1	.0	•	×	Ĵ _X								
	Α	В	С	D	E	F	G	н	1			
1	OID	TIMESTEP	MINUTE	LS_2HR_DISTRIBUTION								
2	-:	1 1	. 5	0.2375								
3	-:	1 2	10	0.475								
4	-:	1 3	15	0.7125								
5	-:	1 4	20	0.95								
6	-:	1 5	25	1.1875								
7	-:	16	30	1.425								
8	-:	1 7	35	2.15306								
9	-:	1 8	40	2.93894								
10	-:	1 9	45	3.80034								
11	-:	1 10	50	4.8647								
12	-:	1 11	55	6.36684								
13	-:	1 12	60	8.20882								
14	-:	1 13	65	9.4549								
15	-:	1 14	- 70	10.39418								
16	-:	1 15	75	11.20956								
17	-:	1 16	80	11.97184								
18	-:	1 17	85	12.64326								
19	-1	1 18	90	13.22264								
20	-:	1 19	95	13.46014								
21	-1	1 20	100	13.69764								
22	-1	1 21	105	13.93514								
23	-1	1 22	110	14.17264								
24	-1	1 23	115	14.41014								
25	-:	1 24	120	14.64764								
26												

Reference:

PADEP: INSTRUCTIONS - Using the PA PMP TOOL in ArcGIS_Reference PA.pdf

NJDEP/AWS: Probable Maximum Precipitation Study For New Jersey Final Report

AECOM: NJPMP tool Additional Analyses Memo 07-07-22

AECOM 300 Broadacres Drive Bloomfield, NJ 07003 aecom.com

