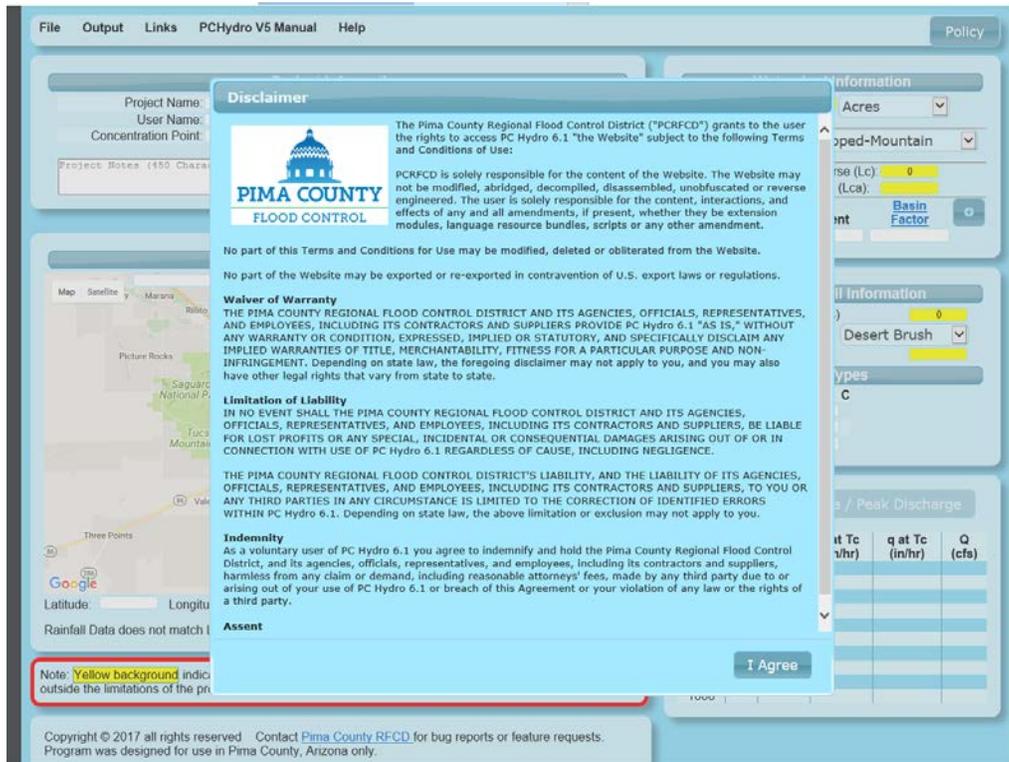


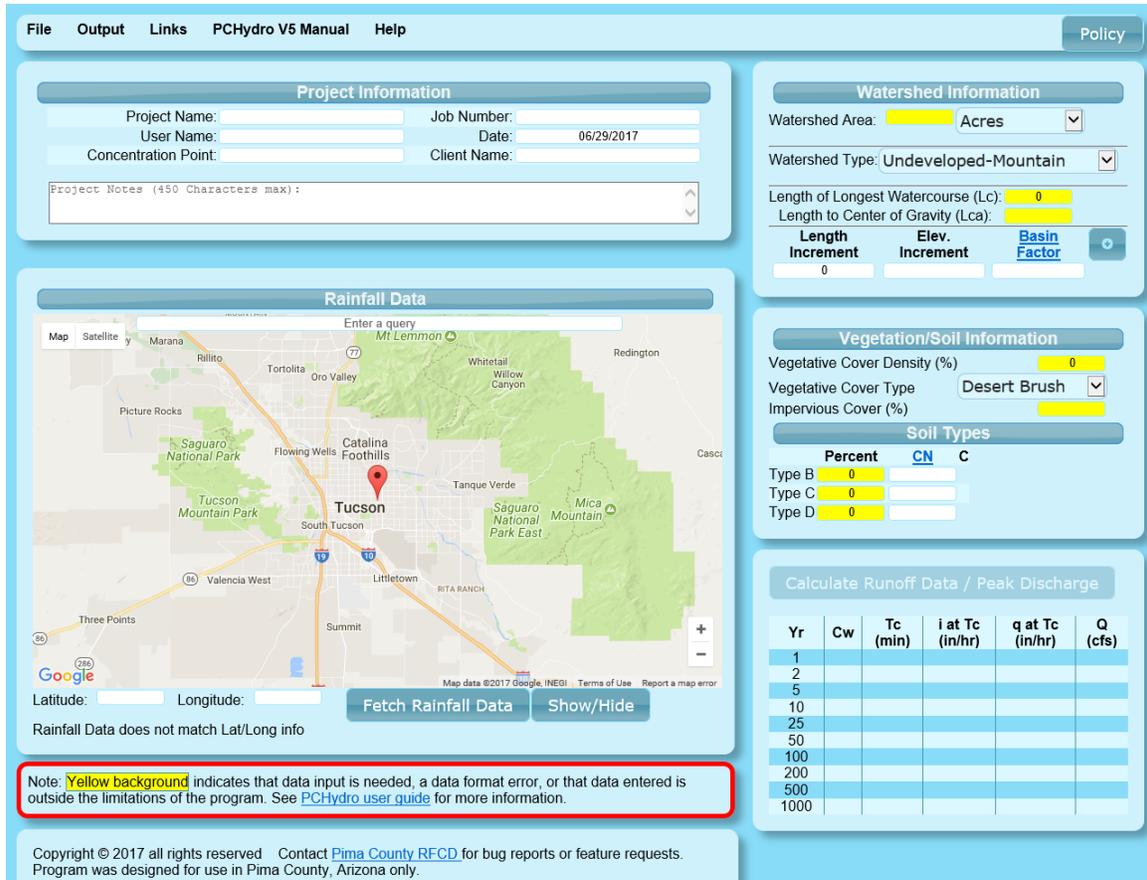
Appendix C – Quick Start Guide

Quick Start Guide to PC-HYDRO

1. **Open the webpage.** The first step to using PC-HYDRO is to open the webpage at <http://pchydro.rfcd.pima.gov>.



2. **Read and Agree to the Terms and Conditions of Use.** Press the **I Agree** button on the Terms and Conditions of Use screen. By doing so, the user agrees to rigidly uphold certain stipulations of use, including the Waiver of Liability, Limitations of Liability, Indemnity, and the voluntary Assent of all Terms and Conditions of Use. Pressing the **I Agree** button will cause the PC-HYDRO webpage to appear.



- Start a New calculation or Open an existing calculation.** For new projects, Begin entering data in the yellow fields. To open an existing file, press the **File** toolset button, select **Open .pk5 or .pk6 file**, and then browse for and open an existing PC-HYDRO file. Version 6 of PC-HYDRO will open existing data sets having a *.pk5 or the newer *.pk6 file extensions. Opening an existing calculation will populate the web page fields. Under the Output menu **Generate Hydrographs** will generate and save a standard Pima County hydrograph from an active calculation. The **Links** dropdown menu will direct the user to data sites or other related sites. The **PC Hydro VX Manual** drop down menu will provide the user with pdf's of the user manual for information on how to use the calculator. Pressing the **File** toolset button and selecting **Save to .pk6 format** will allow the user to browse and save the input data. Closing the webpage will close the program without saving the input data. Pressing the **Calculate Runoff Data/Peak Discharge** button will cause the program to calculate and display Runoff Data using the new or updated information. Selecting the **Help** menu directs you to information about the current version of the webpage through the **About** button or how to contact the District regarding comments, feature requests or to report a bug through the **Support** button. Pressing the **Policy** button on the right side of the webpage directs you to the Pima County Regional Flood Control District's page containing "Rules and Procedures".



4. **Enter Project Data.** Within the “Project Information” area enter information describing the project and drainage concentration point, consisting of: **Project Name**, **User Name**, **Concentration Point** (including whether or not the analysis is for existing or future hydrologic conditions; for example: “CP#30 Existing”), **Job Number**, **Date** of calculation or revision, and **Client Name**, in the appropriate fields. A **Notes** field is available to annotate the calculation with up to 450 characters of information relevant to the calculation, i.e. Existing Conditions, Developed Conditions, LID calculations, etc.

Project Information

Project Name: Job Number:

User Name: Date:

Concentration Point: Client Name:

Project Notes (450 Characters max):

5. **Enter Watershed Information.** Enter **Watershed Information**, general **Watershed Area** with a drop down to indicated the appropriate units as either Acres or Square Miles, **Watershed Type** from the drop down, **Length of Longest Watercourse** and the **Length to the Center of Gravity**, and representative **Length Increments**, **Elevation Increments** and **Basin Factors**. When selecting values for these parameters, assume existing land uses and watershed characteristics within those basins identified as Balanced or Critical, and where stormwater detention will be required as a condition of new development. Otherwise, assume future land uses and watershed characteristic for those watersheds where stormwater detention will not be required. In this second case, consideration should be given to the maximum probable urbanization likely to occur within the watershed's boundaries. Do this by looking at the Land Use Intensities given in the current Pima County Comprehensive Plan.

Watershed Information

Watershed Area: Acres

Watershed Type:

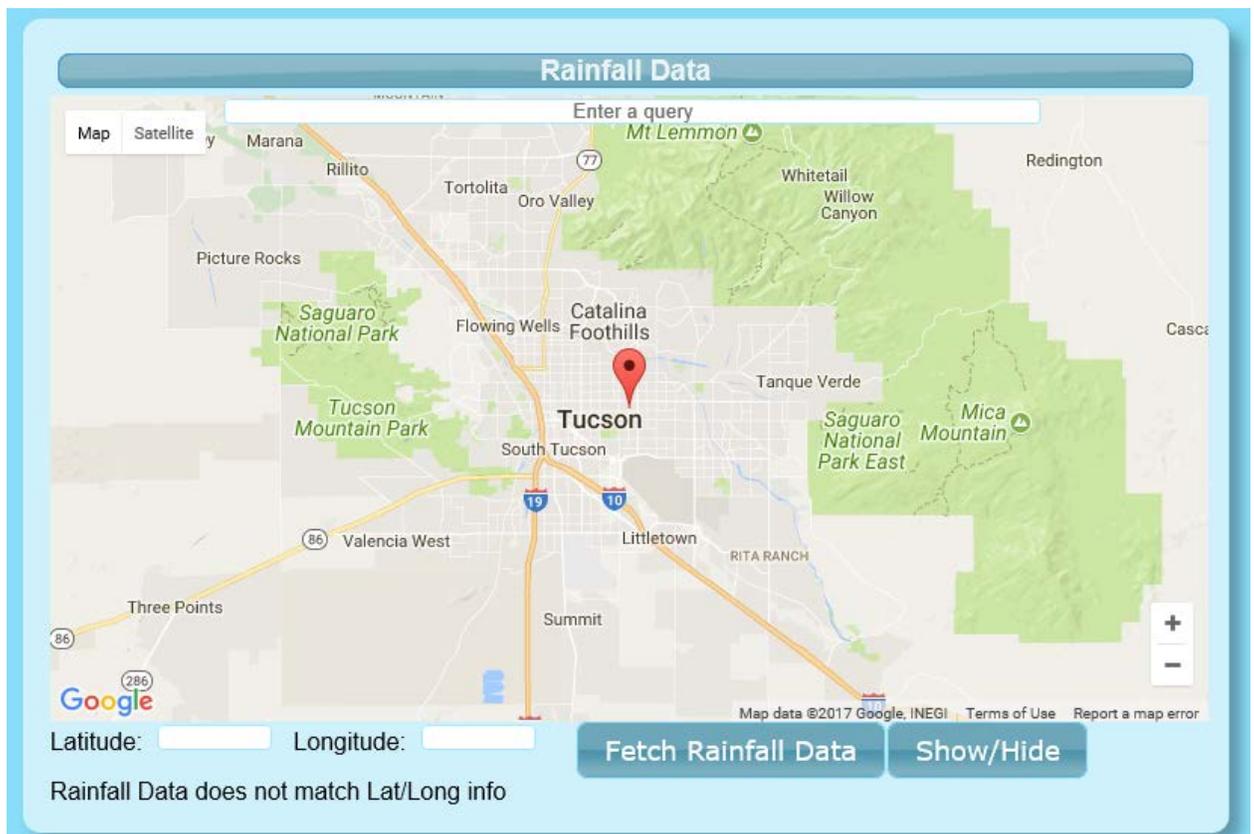
Length of Longest Watercourse (Lc):

Length to Center of Gravity (Lca):

Length Increment	Elev. Increment	Basin Factor
<input type="text" value="0"/>	<input type="text" value=""/>	<input type="text" value=""/>

6. **Enter Rainfall Data.** enter rainfall and flood **Return Period**, **Rainfall Input** (entering either Latitude and Longitude coordinates for the watershed centroid, or rainfall intensity/duration values independently obtained from the NOAA Atlas 14, Upper 90% Confidence Limits). Values representing Latitude and Longitude, in decimal degrees, can be entered with up to 4 significant figures. After entering Latitude and Longitude manually or panning/zooming within the map window to the watershed centroid, press **Fetch Rainfall Data** to populate the precipitation-depth entry fields. (If you pan to a new centroid location you must reload the data from NOAA by again pressing the **Fetch Rainfall Data** button. The webpage links to the current NOAA Atlas 14 web page to retrieve the most current information. The rainfall data can be hidden and shown again by pressing the **Show/Hide** button.

Important: unless granted prior approval by the PCRFC, PC-HYDRO shall not be used to calculate flood peaks for watersheds larger than 10 square miles, or having 100-year Times of Concentration longer than 180 minutes.



7. **Enter Soil and Vegetation Data.** Enter **Vegetation Cover Density**, **Vegetative Cover Type**, percentage of **Impervious Cover**, and the **Percent** and **Curve Number** corresponding to NRCS-SCS Hydrologic Soil Types B, C, and D. When selecting representative values for vegetation, bare soil and impervious cover

types, assume existing watershed conditions, if stormwater detention will be required as a condition of future development within the entire watershed, otherwise, assume future conditions based on allowable Land Use Intensities given in the Pima County Comprehensive Plan. Representative NRCS-SCS Curve Numbers from the Graph on Figure 1 are automatically inserted/updated into the CN field. The CN may be manually modified if justified.

Vegetation/Soil Information		
Vegetative Cover Density (%)	<input type="text" value="0"/>	
Vegetative Cover Type	<input type="text" value="Desert Brush"/>	<input type="text"/>
Impervious Cover (%)	<input type="text"/>	
Soil Types		
Percent	CN	C
Type B	<input type="text" value="0"/>	<input type="text"/>
Type C	<input type="text" value="0"/>	<input type="text"/>
Type D	<input type="text" value="0"/>	<input type="text"/>

8. **Calculate the Resulting Flood Peak and Save the Input Data** Perform the calculation by pressing the **CALCULATE Runoff Data/ Peak Discharge** button located near the bottom right corner of the page. Check the input for correctness, and output for consistency and reasonableness. If all of the fields in yellow have not been entered, an error message will be returned. Either **PRINT** the output to a pdf file, or **SAVE** the input by first pressing the **FILE** button found in the toolset at the top of the PC-HYDRO Summary Page and then Browsing to the desired storage location. Closing the webpage, will the close the page without saving the input data.

Calculate Runoff Data / Peak Discharge

Yr	Cw	Tc (min)	i at Tc (in/hr)	q at Tc (in/hr)	Q (cfs)
1					
2					
5					
10					
25					
50					
100					
200					
500					
1000					

- Optional --- Print or Export a Synthetic Hydrograph.** If needed, a Pima County Synthetic Hydrograph can be generated, with user-defined time increments, and either sent directly to a pdf file, or Browsed and Saved as Comma Separated (*.csv) Text File at a user-defined location. These hydrograph output files will have a *.hyd extension, which can be later used in Microsoft Word, Microsoft Excel, HEC-HMS, or other similar programs, as desired. A third output option for the Hydrograph is an *.xlsx file that can be copied and pasted into the PC Route spreadsheet. You will need to select your desired return intervals for the *.pdf files. For the Excel format and *.csv, all return periods are automatically generated. The output Hydrograph Increment and Volume Units must also be selected. Press **Generate Hydrograph** when finished.

Generate Hydrograph

Output Format: **.PDF**
.CSV
Volume Units: **.XLSX (Excel/PC-ROUTE)**

Hydrograph Increment (min): **1**

Select Return Periods to Output:

- 1-yr
- 2-yr
- 5-yr
- 10-yr
- 25-yr
- 50-yr
- 100-yr
- 200-yr
- 500-yr
- 1000-yr

Generate Hydrograph

Generate Hydrograph

Output Format: **.PDF**

Volume Units: **Acre-Feet**
Cubic Feet

Hydrograph Increment (min): **1**