



Online Watershed Delineation and Hydrology Report Guide

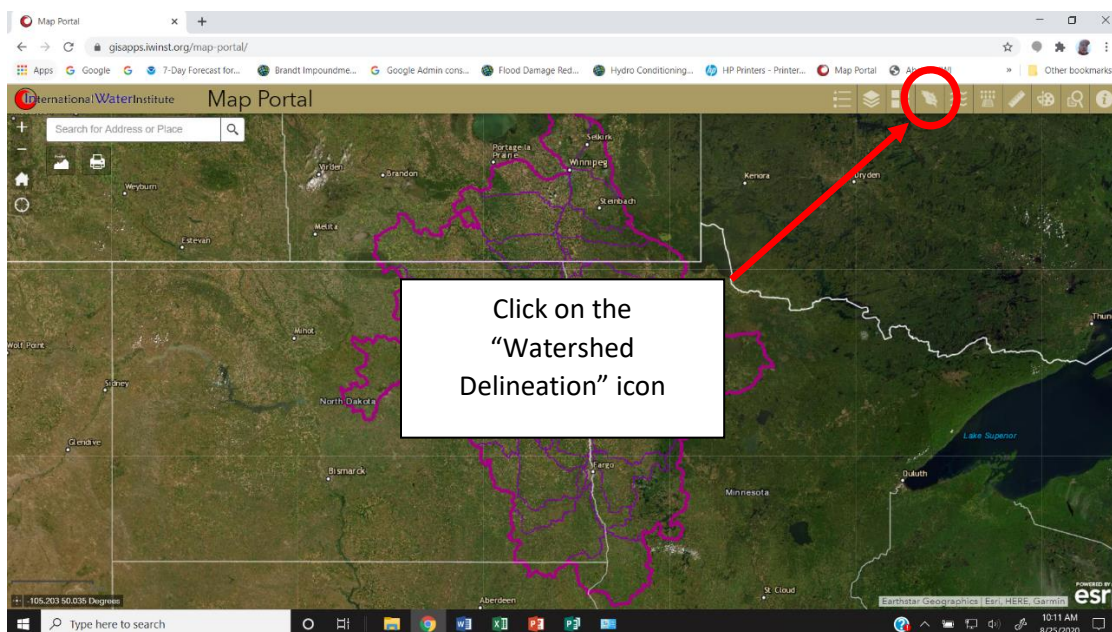
<https://gisapps.iwinst.org/map-portal/>

BACKGROUND

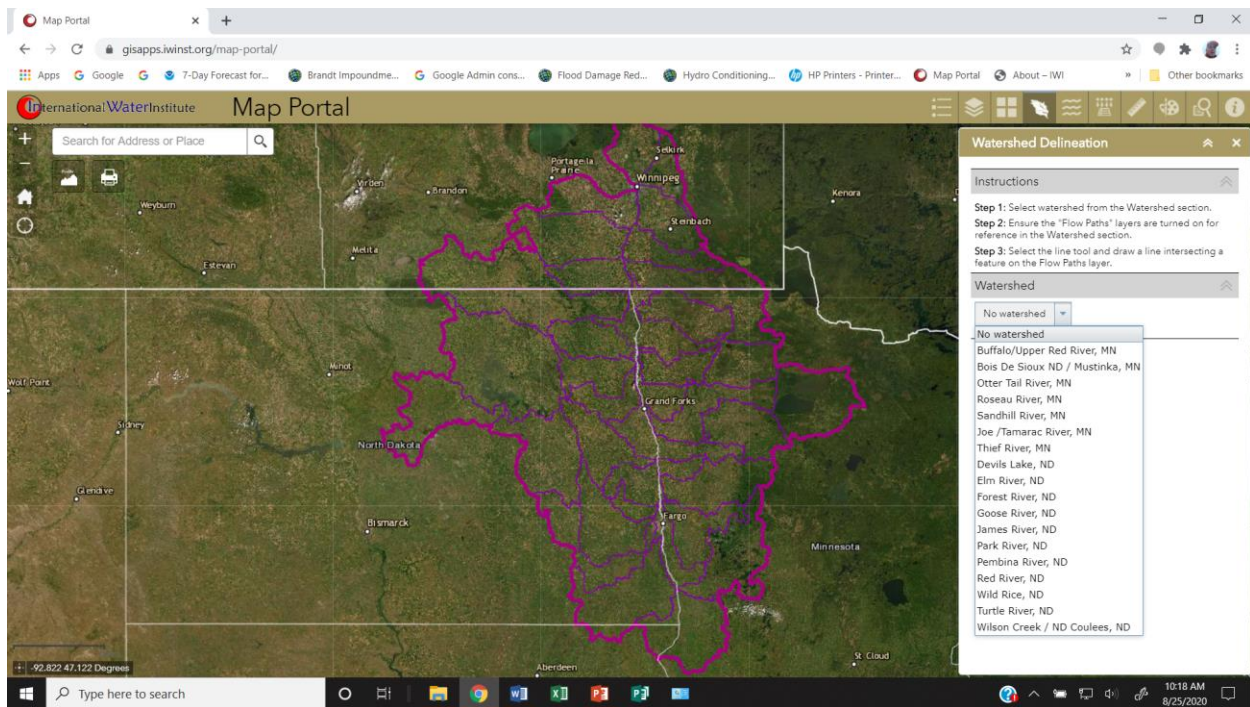
The International Water Institute (IWI) established its online mapping services in 2005 to provide public access to Light Detection and Ranging data collected as part of the IWI's \$5.0 million Red River Basin Mapping initiative. The IWI Map portal is funded by the ND Red River Joint Water Resource District and the MN Red River Watershed Management Board. The current IWI Map Portal provides public access to a number of geospatial data available in the Red River of the North Basin including elevation contours (2', 10' and 50'), 1997 and 2009 Flood Extents, Weather Radar, Section, Range and Township, Drought Information, and Snow Depth and Water Equivalent. The IWI Map portal also features a number of "widgets" to help users create custom maps for printing, measure distances, determine spot elevations (1-meter grid), depict horizontal profiles or the landscape, and depict flood inundation areas (Fargo-Moorhead and Lisbon).

Recently the Watershed Delineation and Hydrology Report widget was added to the IWI Map Portal as part of the ND Prioritize, Target, and Measure Application ([PTMApp](#)) funded by the ND Department of Environmental Quality, the ND Natural Resources Conservation Service, the ND Red River Joint Water Resource District, Stutsman County Soil Conservation District, Lamoure County Soil Conservation District and the International Water Institute.

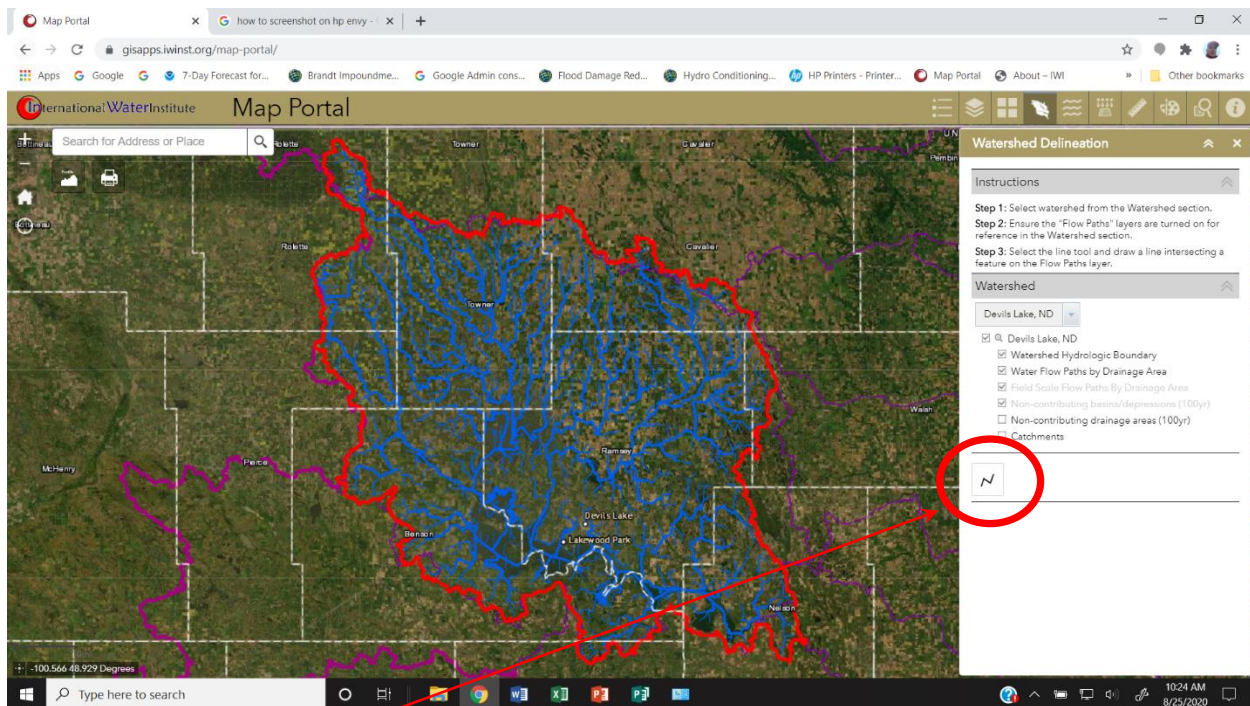
WATERSHED DELINEATION/HYDROLOGY REPORT INSTRUCTIONS:



Select desired watershed from the drop-down watershed list.

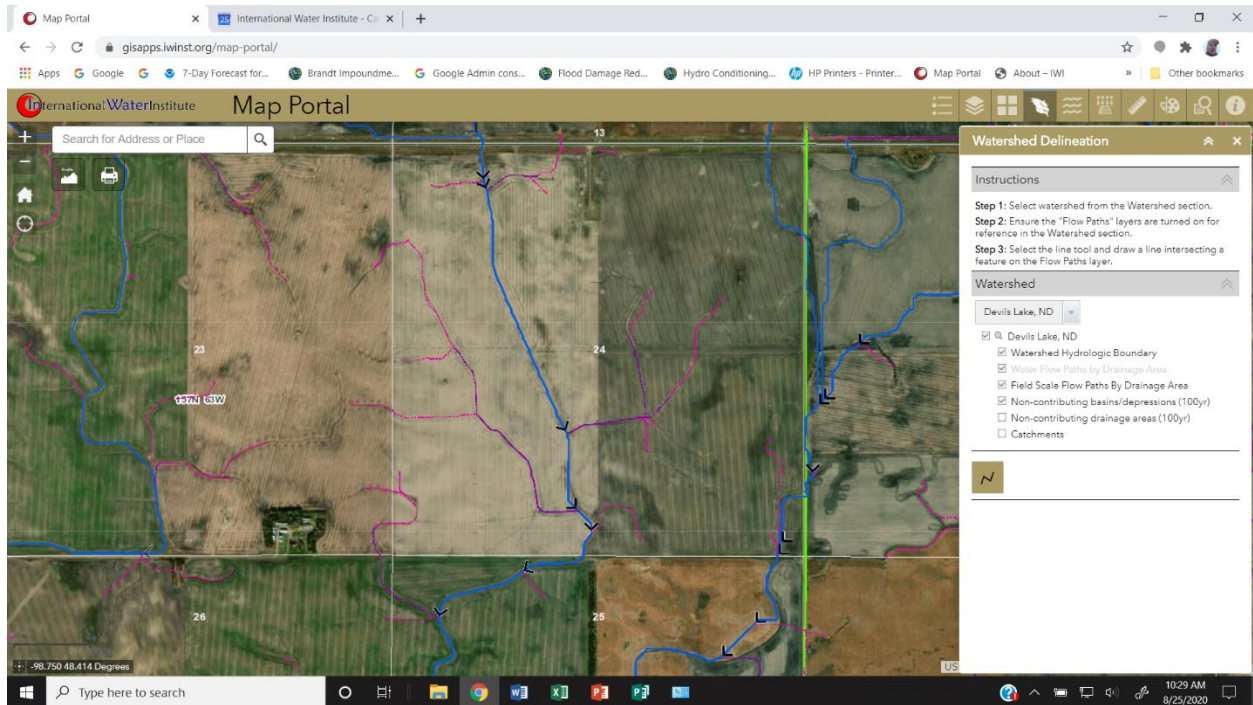


The boundary and flow paths of the watershed selected will appear:

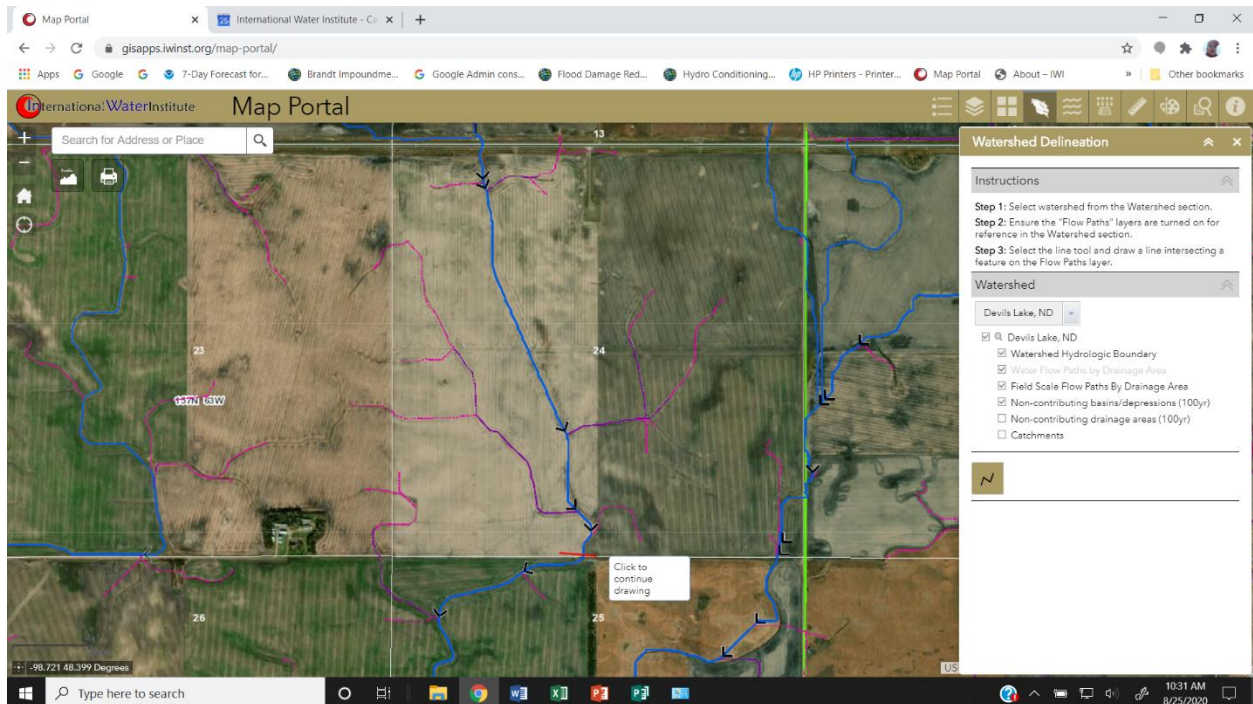


Select "Draw Line"

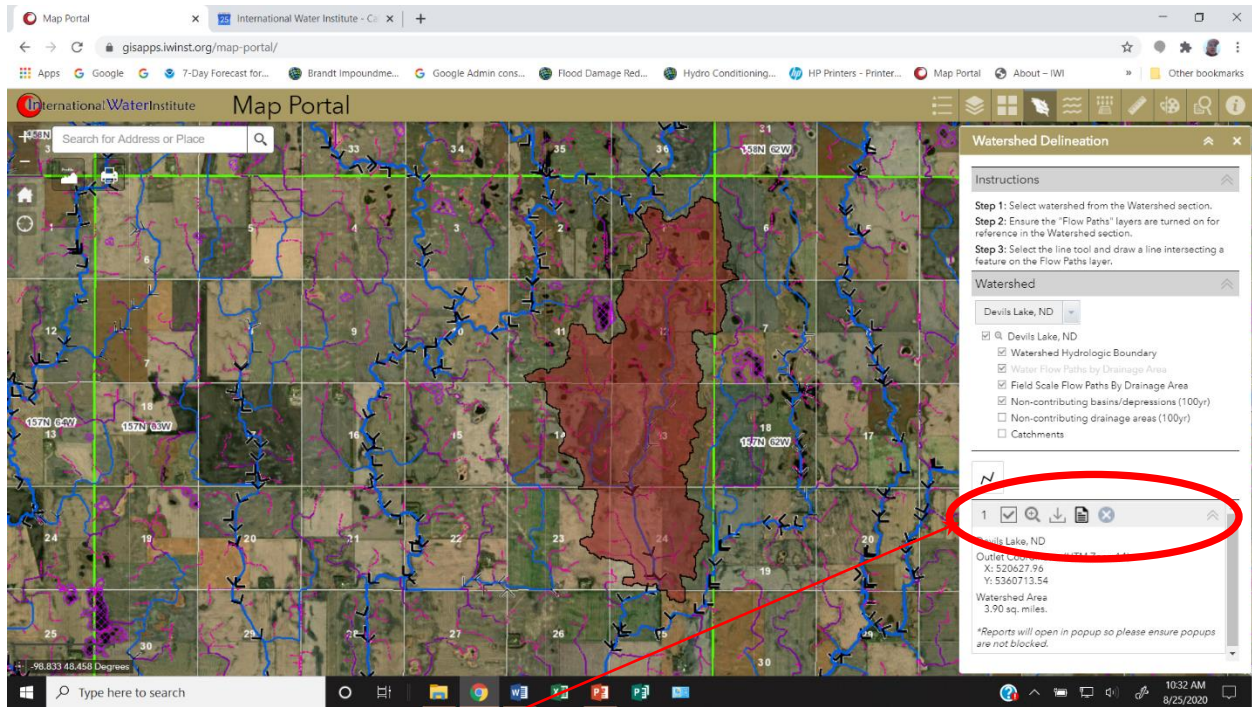
Zoom to the area of interest (using your mouse wheel or the map control):



Click once to start the line, then intersect the desired point through the flow path and double click to delineate the upstream watershed.



Wait for the process to complete (larger watershed will take more time to delineate). The screen will re-center on the watershed (black outline).



Move your mouse over the icons to hide the watershed, zoom to the watershed, download the watershed (shapfile) to your computer, create a Hydrology Report, or delete the watershed. *Make sure your computer allows popups from this site.*

The Hydrology Report will take some time to generate (larger watersheds will take more time).

HYDROLOGY REPORT EXAMPLE:



Watershed Delineation and Hydrology Report

DEMONSTRATION PROJECT: This is a demonstration project ONLY, sponsored in part by the International Water Institute, the ND Department of Environmental Quality, the Red River Joint Water Resources District, and the ND Natural Resources Conservation Service with the express purpose of applying new technologies for water resources management.

LIMITATION OF LIABILITY: With respect to the data presented by or available through this application, neither the North Dakota Department of Environmental Quality, the International Water Institute nor any of its employees, or any Cooperators, Consultants or Subcontractors, makes any warranty, express or implied, including the warranties of merchantability and fitness for a particular purpose, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, product, or process disclosed, or represents that its use would not infringe privately owned rights. The user of this system assumes all responsibility and risk for

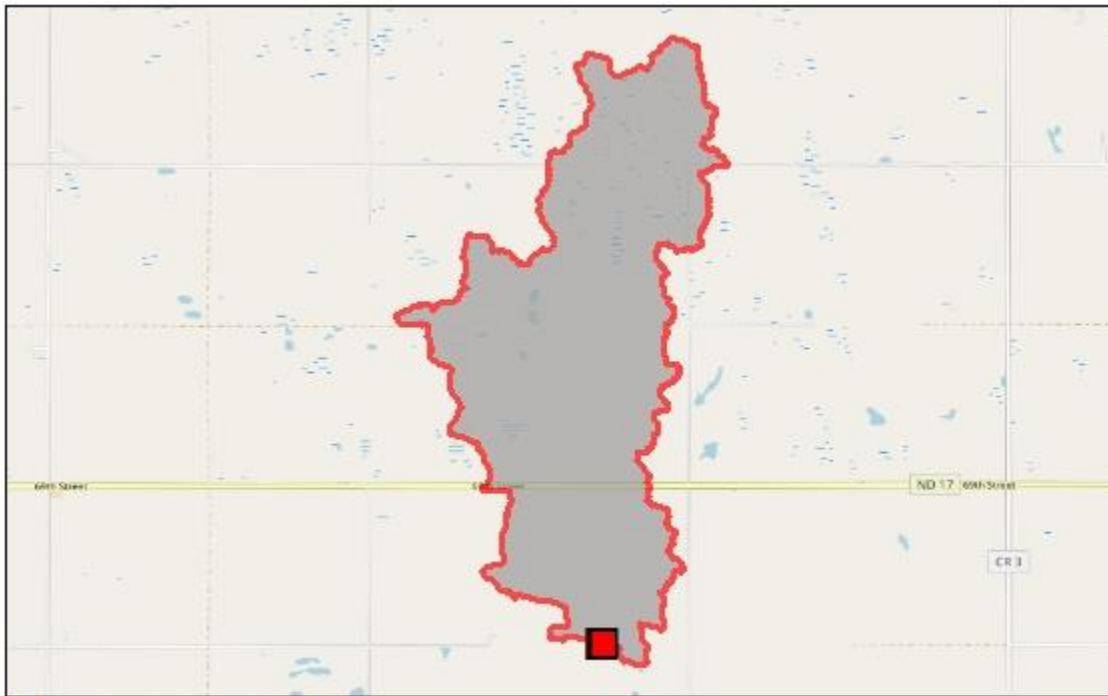
information use and any decision made as a result of this information. The user alone is responsible for the application and interpretation of this information and is responsible for use consistent with an appropriate level of caution. *You should see the advice of a Professional Engineer or other suitable technical specialist to further evaluate and provide additional detail about the preliminary information contained within this report.*

REPORT PURPOSE: This report delivers basic hydrology information about the watershed being delineated. The information provided is preliminary and suitable for PLANNING PURPOSES ONLY. In no way should the information be construed to be of enough detail and accuracy for any other purpose than planning.

Report Generated: 08/25/2020 10:37:52 AM

Location Map

Delineated Watershed Located Within Devils Lake Watershed



User Digitized Outlet Coordinates: Latitude 48.399251 Longitude -98.721322

Delineated Watershed Physical Characteristics

Slope Characteristics

Characteristic	Value	Units	Data Source
Total Contributing Drainage Area	3.9	Sq. Miles	Hydro Conditioned DEM Derived from LIDAR
Proportion of Area < 3%	72.9%	Percent	DEM Derived from LIDAR
Proportion of Area > 3% and <= 6%	21.1%	Percent	DEM Derived from LIDAR

Proportion of Area > 6%	6.0%	Percent	DEM Derived from LIDAR
Maximum elevation	1,532.0	Feet (1988 NAVD)	DEM Derived from LIDAR
Minimum Elevation	1,487.9	Feet (1988 NAVD)	DEM Derived from LIDAR
Elevation at Outlet	1,489.2	Feet (1988 NAVD)	DEM Derived from LIDAR
Maximum Elevation Change	44.1	Feet	DEM Derived from LIDAR

Hydrology Summary

The top five curve number derived from soils and land use combinations for the delineated watershed are:

Curve Number (CN) Value	Acres
74	861.5
81	684.9
85	375.4
58	225.8
100	121.5

Hydrologic Soils Group Summary

The dominant hydrologic soils group for this subwatershed is: B.

Hydrologic Soil Group	Acres
A	10.5
B	847.5
C	522.1
D	0.0
A/D	0.0
B/D	473.2
C/D	643.0
No Data	0.0

Estimated Discharges Using U.S. Geological Survey Regression Equations

Peak discharges are computed using the <https://pubs.er.usgs.gov/publication/sir20155096> report. The report should be reviewed to ensure the reasonableness of input parameters used to develop peak flow rates.

Basin Characteristics:

- Total Drainage Area (area draining to outlet point digitized by user) = 3.9 sq. Miles

2 Year = 18.2 Cubic Feet per Second

10 Year = 50.8 Cubic Feet per Second

15 Year = 81.6 Cubic Feet per Second

25 Year = 128.6 Cubic Feet per Second

50 Year = 168.7 Cubic Feet per Second

100 Year = 212.7 Cubic Feet per Second

500 Year = 322.9 Cubic Feet per Second

See USGG Report [link](#) for accuracy and limitations of the techniques used to generate this report.

More information / Questions contact:

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