

User's Guide for the New York Streamflow Estimation Tool (NYSET) version 1.0

By Christopher L. Gazoorian

Prepared in cooperation with The Nature Conservancy and the New York State Energy Research and Development Authority

Appendix 5 to accompany
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User's Guide for the New York Streamflow Estimation Tool

By Christopher L. Gazoorian

Introduction

The New York Streamflow Estimation Tool (NYSET) is a tool to simulate minimally altered streamflow at a daily time step for an ungaged site for the time period from October 1, 1960, to September 30, 2010. NYSET was developed by the U.S. Geological Survey in cooperation with The Nature Conservancy and the New York State Energy Research and Development Authority. The tool uses a modified QPPQ approach (Fennessey, 1994; Archfield and others, 2010), which relates probability exceedences at a gaged site, termed a reference streamgauge, to an ungaged site. An appropriate reference streamgauge is selected by the NYSET using streamflow correlation, or the user can manually select a different reference streamgauge. A report file is generated documenting a summary of the reference streamgauge and ungaged site information, any warnings, and basic statistics including the mean and median daily flows for WYs 1961 to 2010, and rank-based 7-day, 2-year (7Q2), 7-day, 10-year (7Q10), and select monthly exceedances. The estimated daily flows for the ungaged site can be easily exported to a comma separated values (.csv) file that can be used as input into a statistical software package to determine further streamflow statistics. More information related to the methodology used in the development of NYSET can be found in the body of this report.

Computer Requirements and Installation Instructions

Microsoft® Windows® 7 or 8, Microsoft® Excel 1997 or 2010 (or later), and Visual Basic .NET framework 4.5.1 are required on the machine running NYSET.¹ The tool and associated report can be downloaded from the U.S. Geological Survey (USGS) Publications Warehouse. To download the NYSET, go to <http://pubs.usgs.gov/sir/2014/5220/>, click on the “NYSET” link, and download NYSET_v.1.0.zip. Extract the files from the zip file and save them to your computer. Install NYSET by double clicking on the file “setup.exe”

¹ Microsoft®, Windows® and Excel are either registered trademarks or trademarks of Microsoft® Corporation in the United States and/or other countries.

(administrative privileges are not typically required to install or uninstall this application). During this step, the program checks for prerequisites and will notify you of any problems or missing software. After successful installation, the program will be found in your start menu in a folder named “USGS NY WSC”; a shortcut will also be created on your desktop.

Data Input Requirements

NYSET requires basin characteristics for the ungaged site to be entered on the “Basin Characteristics” tab (fig. 5–1). The opening screen of NYSET is an interface with the USGS StreamStats for New York Web page for New York (fig. 5–2). From the opening screen, users can select an ungaged stream location, delineate a watershed boundary and obtain the required basin characteristics. This can also be done outside of the NYSET with StreamStats. An Esri file geodatabase (.gdb) that includes a shapefile of the watershed area and basin characteristics can be downloaded from StreamStats. Basin characteristics can also be entered manually in the “Basin Characteristics” tab. The following basin characteristics need to be entered: drainage area, mean annual runoff, percent hydrologic soils group A, percent hydrologic soils group B, mean monthly precipitation for the months of May, June and July, mean summer precipitation, maximum June temperature, X location of the basin centroid, Y location of the basin centroid, X location of the basin outlet, Y location of the basin outlet, slope of the lower one-half of the main channel and the percent of basin above 1,200 feet of elevation. More information about these basin characteristics, including data sources, can be found in the body of this report. It is important to use the same data source as was used to develop the regression equations for determination of the basin characteristics to maintain consistency in the accuracy of the regression estimates. This is not possible for some areas where SSURGO (U.S. Department of Agriculture, Natural Resources Conservation Service, 2011) data were unavailable; Digital General Soil Map of the United States (STATSGO2; U.S. Department of Agriculture, Natural Resources Conservation Service, 2013) data have been included in StreamStats to complete areas where SSURGO data are missing. Accuracy may vary from what was found in the regression analysis.

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USGS NY WSC New York Streamflow Estimation Tool (NYSET) v 1.0

StreamStats | Basin Characteristics | Reference Gage Selection | Help

Import basin characteristics from StreamStats

Import basin characteristics

Latitude (NAD83 decimal degrees)

Longitude (NAD83 decimal degrees)

Clear Form

Basin Characteristic	Range	Value	Warnings
Drainage area (square miles)	3.14 - 4780	<input type="text"/>	
Mean annual runoff (inches)	11.6 - 37.4	<input type="text"/>	
Percent of basin underlain by hydrologic soils group A	0.52 - 51.2	<input type="text"/>	
Percent of basin underlain by hydrologic soils group B	1.14 - 65.7	<input type="text"/>	
Slope, lower half of channel (feet/ mile)	1.56 - 152	<input type="text"/>	
Percent of basin above 1,200 feet sea level	0 - 100	<input type="text"/>	
Mean May precipitation (inches)	3.15 - 5.68	<input type="text"/>	
Mean June precipitation (inches)	3.59 - 5.33	<input type="text"/>	
Mean July precipitation (inches)	3.20 - 5.26	<input type="text"/>	
Mean Summer precipitation (inches)	10.5 - 15.5	<input type="text"/>	
Maximum temperature in June (degrees Fahrenheit)	68.8 - 78.8	<input type="text"/>	
X-location of basin centroid (UTM meters, NAD 1983)	-	<input type="text"/>	
Y-location of basin centroid (UTM meters NAD 1983)	-	<input type="text"/>	
X-location of basin outlet (UTM meters NAD 1983)	-	<input type="text"/>	
Y-location of basin outlet (UTM meters NAD 1983)	-	<input type="text"/>	

Project Description

Status Messages:

Compute Unaltered Streamflows

Streamflow statistic	Value in ft ³ /s
Mean daily streamflow	
Median daily streamflow	
Mean January streamflow	
Mean February streamflow	
Mean March streamflow	
Mean April streamflow	
Mean May streamflow	
Mean June streamflow	
Mean July streamflow	
Mean August streamflow	
Mean September streamflow	
Mean October streamflow	
Mean November streamflow	
Mean December streamflow	
7Q2	
7Q10	

Figure 5-1. Screen capture of the Basin Characteristics screen of the New York Streamflow Estimation Tool

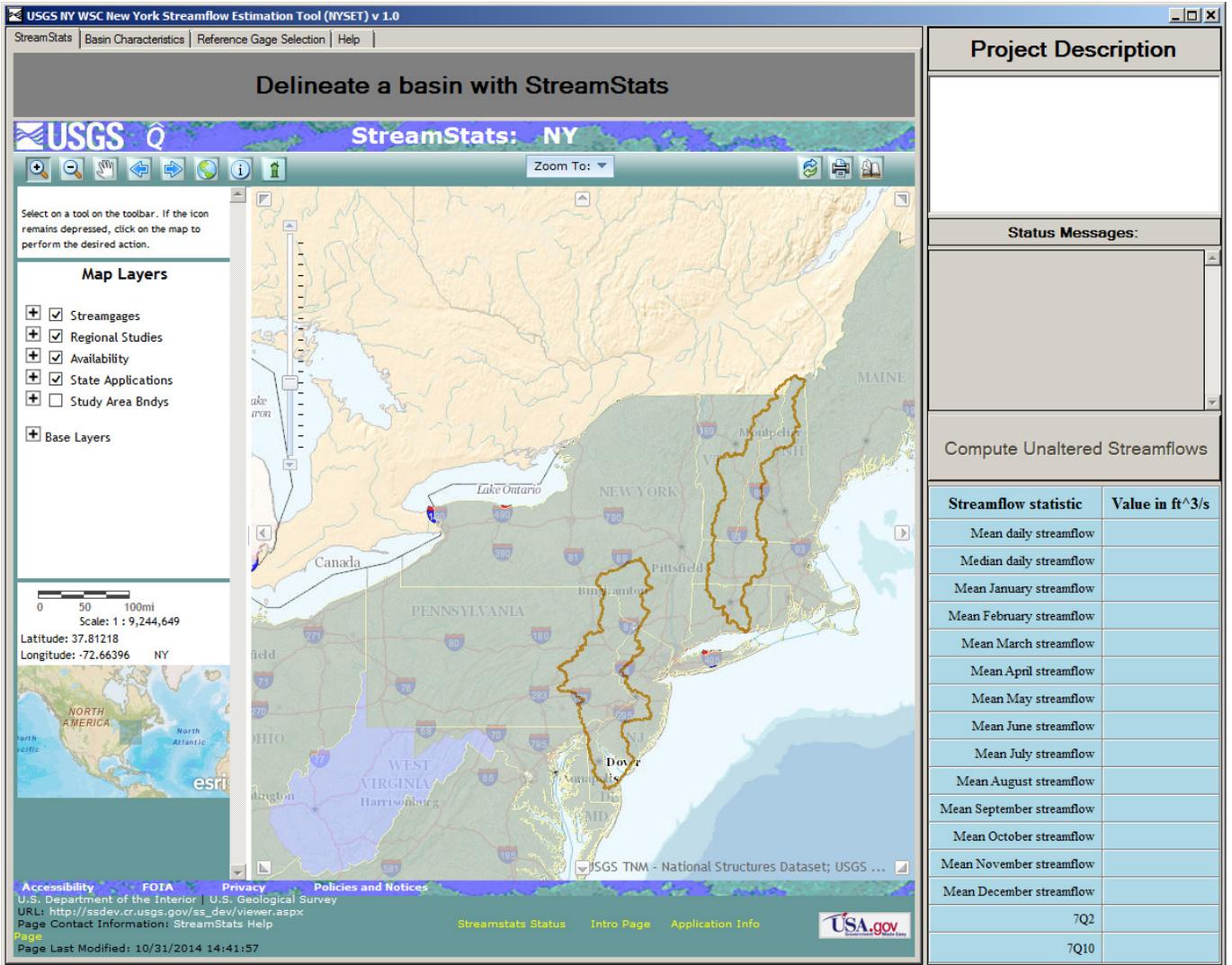


Figure 5-2. Screen capture of opening StreamStats screen of the New York Streamflow Estimation Tool.

To clear entered basin characteristics, click on the button “Clear Form.” This will also clear any computed statistics and reference streamgauge information summarized on the graphical user interface from an earlier analysis.

Running NYSET

The opening screen of NYSET is an interface with USGS StreamStats for New York. The user can navigate to and download the data for the desired stream basin using the StreamStats tools. When the user selects a basin in StreamStats, the latitude and longitude of the pour point are imported into the NYSET “Basin Characteristics” tab. After the ungaged basin delineation is complete, the user will be prompted to proceed with importing the basin characteristics into NYSET. If declined, the user can import the statistics later by clicking the “Import basin characteristics” button on the “Basin Characteristics” tab (fig. 5–3, black circle). If the location coordinates are not filled out, NYSET will not import any basin characteristics. The “Basin Characteristics” tab includes cells to enter basin characteristics manually if they are known. The range of values for each basin characteristic used to develop the regression equations is shown. A warning message will appear if the basin characteristic entered is outside this range (fig. 5–3, red circle), indicating the resulting flow-duration estimates determined from regression equations may not be valid.

After basin characteristics have been entered for the ungaged location, the user can choose whether to allow NYSET to select the reference streamgauge to be used or select a different one. If the user would like to select the reference streamgauge, uncheck the box “Let the NYSET choose” under the “Reference Gage Selection” tab. Next, click on the “Compute Unaltered Streamflows” button (fig. 5–3, arrow) to compute baseline daily flows. The user will have to agree to the disclaimer that appears before continuing. The computation of daily flows will take a few minutes, depending on the processing capacity of your computer. A status bar indicates progress. When computations are completed, a box will open asking you to save the resulting Microsoft® Excel output file. After saving the file, close or save the file under a new name before attempting to run NYSET again. NYSET may not function properly when the previous output file is open.

The Microsoft® Excel summary output files contain worksheets with reference gage information, daily flows for the reference site and ungaged location, probability exceedances for the reference site and ungaged location, a summary report with hydrographs and flow-duration curves (fig. 5–4), and a tool to manipulate additional monthly withdrawals and discharges (fig. 5–5). An additional

spreadsheet displaying select monthly exceedance probability flows is also created and can be saved to a user defined directory (fig. 5–6). The worksheet named “Reference Gage Selection” lists information about the reference streamgauge selected and five reference streamgages with the highest correlations to the ungaged location. The distances between the ungaged location and reference streamgages are listed in the table and can be used to evaluate the appropriateness of the selected streamgauge. To save the estimated daily flows and dates for the ungaged location as a .csv, click on the “Export Daily Values” button on the report worksheet (fig. 5–4, black circle). Macros need to be enabled in Microsoft® Excel to use this feature. To enable macros, click directly on the “Enable Content” button on the yellow security message bar (if it appears) or from File, Options, Trust Center, Trust Center Settings and select the required options.. The exported .csv file can then be used as input into a number of statistical software packages to determine low-flow, flow-duration exceedance, base flow, or mean-flow statistics.

The reference streamgauge can be chosen by the user, overriding the spatial map correlation process. After the basin characteristics have been entered for the ungaged location in NYSET, go to the “Reference Gage Selection” tab (fig. 5–7, black circle), and choose the reference streamgauge you want to use. Click on “Compute Unaltered Streamflows” to proceed with calculations. Review the results and follow the data export procedures to save the data to a file for further use.

Evaluating Monthly Flows

Using the “MonthlyFlows” tab on the output summary file, the user can manipulate additional monthly withdrawals and discharges, designate monthly instream-flow targets and determine the remaining instream-flow after the user defined alterations (fig. 5–7). The “Unaltered streamflow” column is automatically filled in with the mean monthly flows for each month. This can be changed to any of the exceedance flows provided on the right side of the table or from the “MonthlyStats” tab in the monthly exceedance worksheet (fig. 5–7), depending on the user’s preference. The “Instream-flow target” column can be filled in by the user to represent the minimum desirable flows. By entering the instream-flow target, the user will see the “Difference from target” values change. The “Difference from target” column represents the surplus or deficit from the instream-flow target designated by the user for the exceedance or mean flows used in the “Unaltered streamflow” column. For example, if the Q50 (50-percent exceedance flow) flow in January is 100 cubic feet per second (ft³/s; “Unaltered streamflow”) and the instream-flow target was 80 ft³/s, then there would be a surplus (“Difference from target”) of 20 ft³/s, 50 percent of the time.

Import basin characteristics from StreamStats

Import basin characteristics Latitude (NAD83 decimal degrees) Longitude (NAD83 decimal degrees) Clear Form

42.25763 -74.93521

Basin Characteristic	Range	Value	Warnings
Drainage area (square miles)	3.14 - 4780	197	No Warnings
Mean annual runoff (inches)	11.6 - 37.4	24.9	No Warnings
Percent of basin underlain by hydrologic soils group A	0.52 - 51.2	3.99	No Warnings
Percent of basin underlain by hydrologic soils group B	1.14 - 65.7	1.04	Percent soils group B outside of accepted values!
Slope, lower half of channel (feet/ mile)	1.56 - 152	9.03	No Warnings
Percent of basin above 1,200 feet sea level	0 - 100	100	No Warnings
Mean May precipitation (inches)	3.15 - 5.68	4.24	No Warnings
Mean June precipitation (inches)	3.59 - 5.33	4.23	No Warnings
Mean July precipitation (inches)	3.20 - 5.26	4.11	No Warnings
Mean Summer precipitation (inches)	10.5 - 15.5	12.1	No Warnings
Maximum temperature in June (degrees Fahrenheit)	68.8 - 78.8	72.6	No Warnings
X-location of basin centroid (UTM meters, NAD 1983)	-	519318.6	No Warnings
Y-location of basin centroid (UTM meters NAD 1983)	-	4686791.3	No Warnings
X-location of basin outlet (UTM meters NAD 1983)	-	505345	No Warnings
Y-location of basin outlet (UTM meters NAD 1983)	-	4678385	No Warnings

Project Description

Status Messages:
Success: Ready to compute unregulated streamflow

Compute Unaltered Streamflows

Streamflow statistic	Value in ft ³ /s
Mean daily streamflow	
Median daily streamflow	
Mean January streamflow	
Mean February streamflow	
Mean March streamflow	
Mean April streamflow	
Mean May streamflow	
Mean June streamflow	
Mean July streamflow	
Mean August streamflow	
Mean September streamflow	
Mean October streamflow	
Mean November streamflow	
Mean December streamflow	
7Q2	
7Q10	

Figure 5-3. Screen capture showing an example entry of basin characteristics into the New York Streamflow Estimation Tool. Black oval shows button to import data from StreamStats; red oval shows basin characteristic warning; black arrow points to the button to compute unaltered daily mean streamflows.

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USGS NY WSC Streamflow Estimation Tool (NYSET)												
Summary Report by: userID			Date: 12/4/14									
Project Description:												
Reference streamgage:	01350000	Schoharie Creek at Prattsville, NY										
Correlation coefficient:	0.98											
Distance from unged site:	12.45											
Export Daily Values												
Basin characteristics	Ungaged site	Reference streamgage	Range*	Units	different from reference	Streamflow statistics for unged site, 1961 - 2010, in cubic feet per second						
Drainage area	4.80	237.00	3.14-4,780	miles squared	-97.97	Mean daily streamflow 10.40						
Mean annual runoff, 1951 - 1980	30.20	27.60	11.6-37.4	inches	9.42	Median daily streamflow 5.60						
Percent of basin underlain by hydrologic soils group A	1.24	2.54	0.52-51.9	percent	-1.30	7Q2 0.99						
Percent of basin underlain by hydrologic soils group B	1.46	3.25	1.16-69.6	percent	-1.79	7Q10 0.36						
Slope of lower half of channel	53.20	21.50	156-152	feet/mile	147.44	Monthly streamflow statistics for unged site, 1961 - 2010 in cubic feet per second						
Percent of basin above 1200 ft sea level	100.00	99.70	0.00-100	percent	0.30	Mean	Q10	Q50	Q75	Q95	Q99	
Mean May precipitation, 1971 - 2000	5.27	4.42	3.15-5.68	inches	19.23	January	11.13	21.55	5.83	4.32	3.25	2.91
Mean June precipitation, 1971 - 2000	5.07	4.23	3.59-5.33	inches	19.86	February	10.31	20.76	6.34	4.22	2.78	2.21
Mean July precipitation, 1971 - 2000	5.13	4.00	3.20-5.26	inches	28.25	March	18.31	37.20	11.40	6.59	3.72	2.53
Mean Summer precipitation, 1971 - 2000	15.10	12.10	10.49-15.51	inches	24.79	April	21.88	40.36	15.65	9.56	6.12	5.12
Maximun June temperature, 1971 - 2000	69.90	71.80	68.8-78.8	degrees Fahrenhe	-4.04	May	12.25	23.90	8.42	5.68	3.98	3.40
X location of basin centroid	561544.00	560452.76	-	UTM meters	-	June	7.63	14.23	4.37	3.40	1.70	1.09
Y location of basin centroid	4670100.00	4678527.28	-	UTM meters	-	July	4.28	6.84	3.09	1.83	0.77	0.63
X location of basin outlet	559845.00	548444.42	-	UTM meters	-	August	3.26	5.32	2.04	1.20	0.85	0.22
Y location of basin outlet	4670505.00	4685407.78	-	UTM meters	-	September	4.74	8.78	1.84	1.12	0.48	0.12
*Streamflow estimates may not be valid if value for unged site is outside of this range												
						October	7.81	16.43	3.80	1.81	0.75	0.33
						November	10.94	21.07	6.89	4.14	1.66	0.20
						December	12.16	24.03	7.21	4.96	3.54	2.56

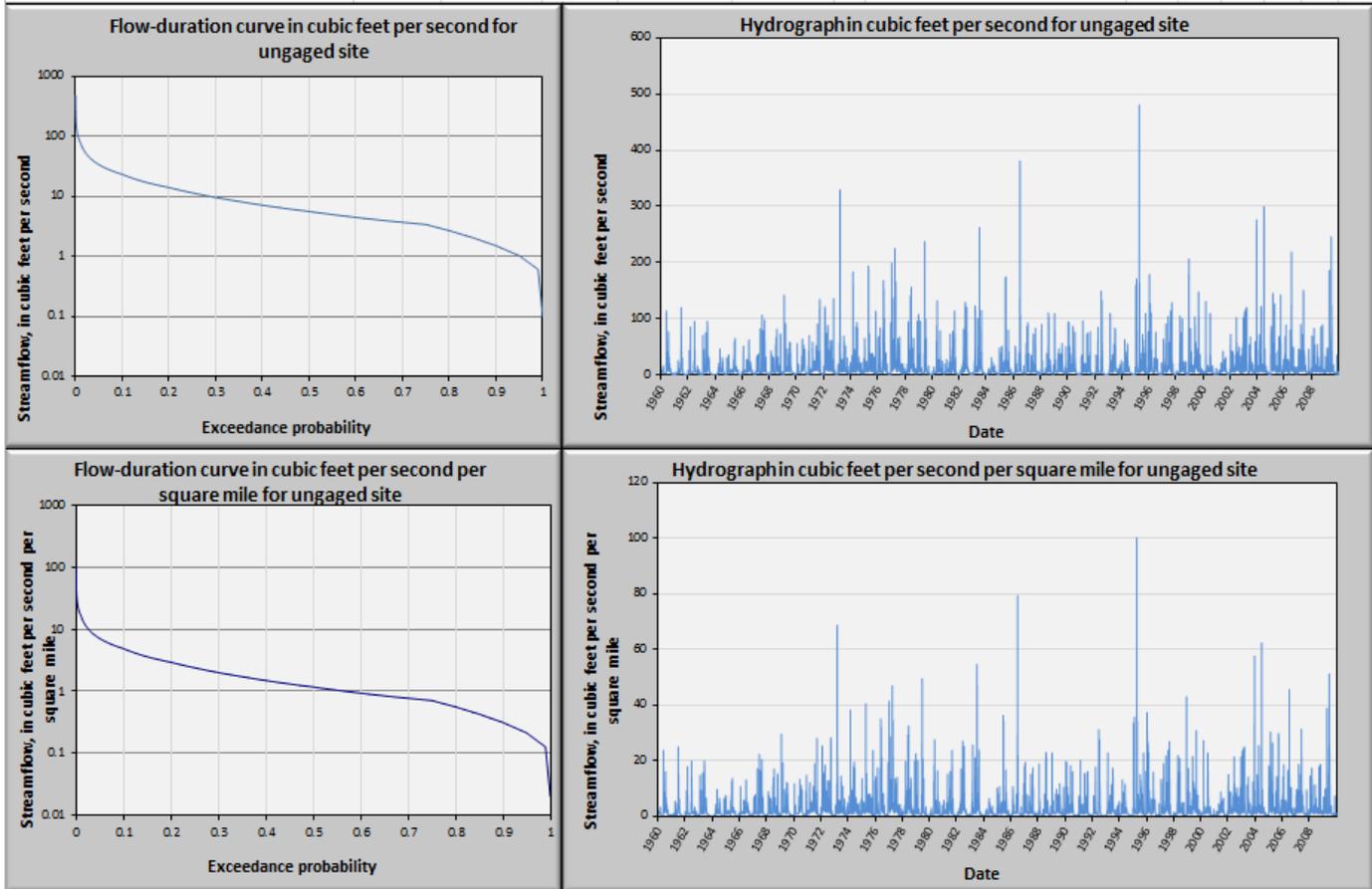


Figure 5-4. Screen capture of the summary report generated from the New York Streamflow Estimation Tool. Black oval shows the button to export daily streamflow for the unged location as a comma separated values (.csv) file.

USGS NY WSC Streamflow Estimation Tool (NYSET)											
Summary Report by:		Date:									
Project Description:											
Monthly flows:	Unaltered streamflow for unengaged site, in cubic feet per second					Monthly unaltered streamflow statistics for unengaged site, in cubic feet per second					
	Unaltered streamflow	Instream-flow target	Additional withdrawals	Altered streamflow	Difference from target	mean	Q10	Q50	Q75	Q95	Q99
January	468.04			468.04	468.04	468.04	970.58	259.29	164.12	92.19	59.59
February	416.18			416.18	416.18	416.18	891.43	256.81	161.15	87.78	55.83
March	765.45			765.45	765.45	765.45	1638.57	509.98	266.84	135.68	84.98
April	981.76			981.76	981.76	981.76	1837.17	728.43	479.76	291.09	225.21
May	560.21			560.21	560.21	560.21	1002.32	415.85	273.94	169.97	129.26
June	338.64			338.64	338.64	338.64	658.51	198.38	125.78	79.22	60.38
July	178.57			178.57	178.57	178.57	316.02	110.59	70.61	36.82	26.36
August	128.83			128.83	128.83	128.83	249.08	75.37	47.26	27.19	21.67
September	170.42			170.42	170.42	170.42	342.38	67.70	41.93	24.15	16.47
October	303.18			303.18	303.18	303.18	721.55	129.36	57.73	27.53	18.44
November	455.77			455.77	455.77	455.77	957.37	304.40	158.16	49.53	18.77
December	519.01			519.01	519.01	519.01	1073.06	346.63	216.40	120.25	76.95

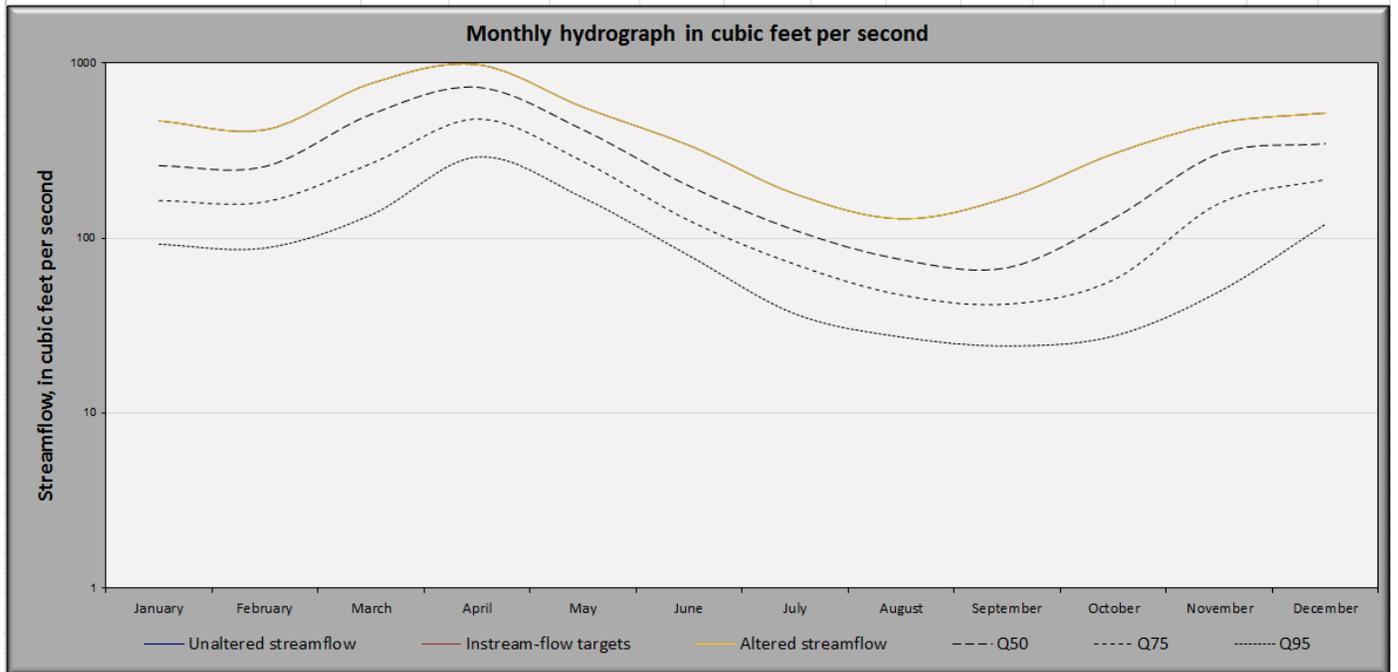


Figure 5-5. Screen capture showing MonthlyFlows evaluation tool.

USGS NY WSC Streamflow Estimation Tool (NYSET)												
Summary Report by:						Date:						
Project Description:												
Unaltered streamflow in cubic feet per second												
Flow statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Q1	2983.25	2928.99	3814.57	3132.13	1954.00	1432.76	1232.46	731.08	1607.42	2164.38	2077.16	2843.28
Q2	2333.08	2224.08	3035.86	2665.22	1594.77	1102.51	773.41	551.07	1034.99	1465.79	1626.22	2043.34
Q5	1278.63	1447.96	2239.89	1994.38	1111.57	742.52	442.10	329.72	494.37	816.72	1100.73	1279.32
Q10	822.03	906.33	1557.31	1431.78	796.54	513.58	267.11	200.05	220.04	529.37	780.59	852.58
Q15	605.93	672.21	1216.70	1228.48	637.20	375.11	202.34	145.68	143.30	375.04	662.66	674.43
Q20	491.96	540.19	990.66	1018.19	547.59	311.47	156.98	116.12	109.50	290.02	571.69	580.02
Q25	403.05	422.56	861.47	895.14	475.75	256.46	133.42	92.49	86.71	231.20	490.00	503.03
Q30	331.39	362.93	755.36	796.01	428.63	217.47	119.49	79.58	72.40	199.34	424.02	446.48
Q35	289.59	317.86	670.34	708.90	383.83	185.29	101.32	70.16	62.07	170.62	374.97	400.50
Q40	253.90	277.50	598.02	642.30	348.34	157.34	87.84	61.81	55.48	138.97	327.86	358.63
Q45	219.74	237.32	536.64	573.41	314.86	139.12	77.60	56.24	50.25	114.41	294.87	330.00
Q50	195.47	209.22	481.40	526.96	283.64	123.59	70.37	51.40	45.67	91.83	243.63	300.71
Q55	180.63	185.32	421.92	483.50	249.62	112.39	64.05	47.07	41.83	74.17	210.95	266.52
Q60	164.63	163.08	368.16	447.45	221.12	98.83	58.87	41.91	38.52	63.85	184.53	237.36
Q65	150.12	146.19	323.55	410.54	200.08	90.63	53.81	37.78	35.18	54.97	154.54	217.10
Q70	138.48	132.15	281.88	373.76	180.33	82.53	49.25	34.34	31.99	45.23	129.19	195.82
Q75	129.30	119.30	247.74	345.10	160.64	75.11	44.68	30.83	29.14	37.65	115.75	177.56
Q80	116.71	105.81	214.22	313.36	142.91	66.51	40.67	27.41	26.18	32.66	96.07	153.65
Q85	101.60	95.11	177.95	275.19	125.74	59.75	36.82	23.87	22.41	28.91	73.43	134.93
Q90	87.73	84.65	145.26	239.42	110.39	52.30	31.64	20.35	18.95	25.30	49.97	112.45
Q95	68.22	76.40	107.52	203.87	87.15	44.82	26.89	17.54	16.42	18.59	29.31	75.36
Q98	55.35	66.67	74.84	176.11	75.61	38.74	21.61	12.73	6.47	10.93	17.45	43.90
Q99	50.81	53.32	67.21	157.87	69.31	34.39	19.96	9.94	5.67	8.33	7.77	38.77

Figure 5-6. Screen capture showing monthly exceedance probability flows as output from the New York Streamflow Estimation Tool.

USGS NY WSC New York Streamflow Estimation Tool (NYSET) v 1.0

StreamStats | Basin Characteristics | Reference Gage Selection | Help

Select a reference streamgauge

Use the NYSET selected reference streamgauge or choose a user selected reference streamgauge

Let the NYSET choose

Best Five Reference Streamgages	Correlation
01421900 West Branch Delaware River upstream from Delhi, NY	.994
01423000 West Branch Delaware River at Walton, NY	.988
01422500 Little Delaware River near Delhi, NY	.982
01426500 West Branch Delaware River at Hale Eddy, NY	.969
01498500 Charlotte Creek at West Davenport, NY	.963

- 01200000 Tenmile River near Gaylordsville, CT
- 01312000 Hudson River near Newcomb, NY
- 01313500 Cedar River below Chain Lakes near Indian Lake, NY
- 01314000 Hudson River at Gooley near Indian Lake, NY
- 01319000 East Branch Sacandaga River at Griffin, NY
- 01329000 Batten Kill at Arlington, VT
- 01329490 Battenkill below mill at Battenville, NY
- 01330000 Gloweege Creek at West Milton, NY
- 01330500 Kayaderoseras Creek near West Milton, NY
- 01332000 North Branch Hoosic River at North Adams, MA
- 01332500 Hoosic River near Williamstown, MA
- 01333000 Green River at Williamstown, MA
- 01333500 Little Hoosic River at Petersburg, NY
- 01334000 Walloomsac River near North Bennington, VT
- 01334500 Hoosic River near Eagle Bridge, NY
- 01349000 Otsquago Creek at Fort Plain, NY
- 01350000 Schoharie Creek at Prattsville, NY
- 01350120 Platter Kill at Gilboa, NY
- 01350140 Mine Kill near North Blenheim, NY
- 01358500 Poesten Kill near Troy, NY
- 01359750 Moordener Kill at Castleton-on-Hudson, NY
- 01361000 Kinderhook Creek at Rossman, NY
- 01362200 Esopus Creek at Allaben, NY
- 01365000 Rondout Creek near Lowes Corners, NY
- 01365500 Chestnut Creek at Grahamsville, NY
- 01366650 Sandburg Creek at Ellenville, NY
- 01368500 Rutgers Creek at Gardnerville, NY
- 01369000 Pochuck Creek near Pine Island, NY
- 01369500 Quaker Creek at Florida, NY
- 01372200 Wappinger Creek near Clinton Corners, NY
- 01372300 Little Wappinger Creek at Salt Point, NY
- 01372500 Wappinger Creek near Wappingers Falls, NY
- 01372800 Fishkill Creek at Hopewell Junction, NY
- 01372850 Whortlekill Creek at Hopewell Junction, NY
- 01387400 Ramapo River at Ramapo, NY
- 01387450 Mahwah River near Suffern, NY
- 01413500 East Branch Delaware River at Margaretville, NY
- 01414000 Platte Kill at Dunraven, NY
- 01414500 Mill Brook at Dunraven, NY
- 01415000 Tremper Kill near Andes, NY
- 01415500 Terry Clove Kill near Pepacton, NY
- 01418500 Beaver Kill at Craigie Clair, NY
- 01419500 Willowemoc Creek near Livingston Manor, NY
- 01420000 Little Beaver Kill near Livingston Manor, NY
- 01420500 Beaver Kill at Cooks Falls, NY
- 01421000 East Branch Delaware River at Fishs Eddy, NY
- 01421900 West Branch Delaware River upstream from Delhi, NY
- 01422500 Little Delaware River near Delhi, NY
- 01423000 West Branch Delaware River at Walton, NY
- 01423500 Dryden Brook near Granton, NY
- 0142400103 Trout Creek near Trout Creek, NY
- 01424500 Trout Creek near Cannonsville, NY
- 01426000 Oquaga Creek at Deposit, NY
- 01426500 West Branch Delaware River at Hale Eddy, NY

Project Description

Status Messages:

Success: Ready to compute unregulated streamflow

Compute Unaltered Streamflows

Streamflow statistic	Value in ft ³ /s
Mean daily streamflow	354.03
Median daily streamflow	184.96
Mean January streamflow	386.81
Mean February streamflow	397.3
Mean March streamflow	715.16
Mean April streamflow	729.9
Mean May streamflow	396.45
Mean June streamflow	233.47
Mean July streamflow	136.53
Mean August streamflow	95.23
Mean September streamflow	124.6
Mean October streamflow	224.83
Mean November streamflow	376.21
Mean December streamflow	436.89
7Q2	25.44
7Q10	15.23

Figure 5-7. Screen capture showing manual reference streamgauge selection checkbox (black oval) for use with the New York Streamflow Estimation Tool.

If additional withdrawals were specified, then the “Difference from target” value would be reduced by those withdrawals.

Selected References

- Archfield, S.A., Vogel, R.M., Steeves, P.A., Brandt, S.L., Weiskel, P.K., and Garabedian, S.P., 2010, The Massachusetts sustainable-yield estimator—A decision-support tool to assess water availability at ungaged stream locations in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2009–5227, 41 p., plus CD-ROM. [Also available at <http://pubs.usgs.gov/sir/2009/5227/>.]
- Fennessey, N.M., 1994, A hydro-climatological model of daily streamflow for the northeast United States: Medford, Mass., Tufts University, Ph.D. dissertation, [variously paged].
- Ries, K.G., III, Guthrie, J.G., Rea, A.H., Steeves, P.A., and Stewart, D.W., 2008, StreamStats—A water resources web application: U.S. Geological Survey Fact Sheet 2008–3067, 6 p. [Also available at <http://pubs.usgs.gov/fs/2008/3067/>.]
- Stuckey, M.H., Koerkle, E.H., and Ulrich, J.E., 2012, Estimation of baseline daily mean streamflows for ungaged locations on Pennsylvania streams, water years 1960–2008: U.S. Geological Survey Scientific Investigations Report 2012–5142, 61 p. [Also available at <http://pubs.usgs.gov/sir/2012/5142/>.]