



City of Seattle
Seattle Public Utilities (SPU)
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SPU Hydrostats Testing Notes

February 19, 2009

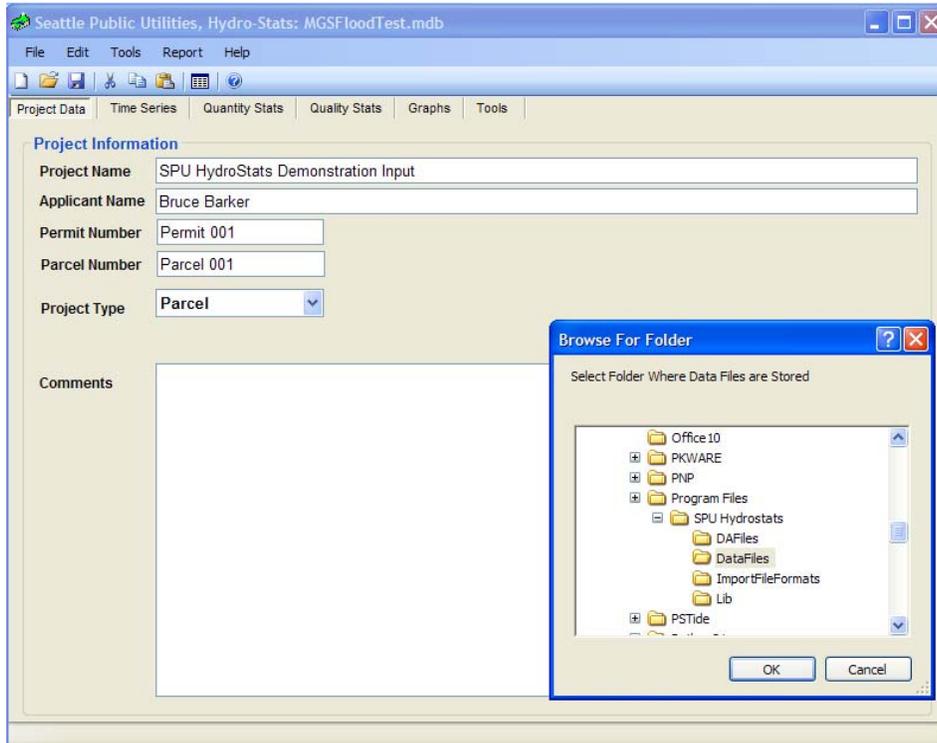
Background:

The City of Seattle (City) has revised its Storm water Code (SMC 22.800-22.808) to comply with its NPDES municipal storm water discharge permit administered by the Washington State Department of Ecology (Ecology). Requirements of the revised code call for the use of continuous hydrologic modeling methods to design storm water management facilities. There are several modeling software packages approved for use by Ecology. The City has decided to allow for the use of any of the approved modeling software alternatives, rather than to endorse a particular software package at this time. However, the City desires a standardized submittal format, regardless of software used, to facilitate the review process.

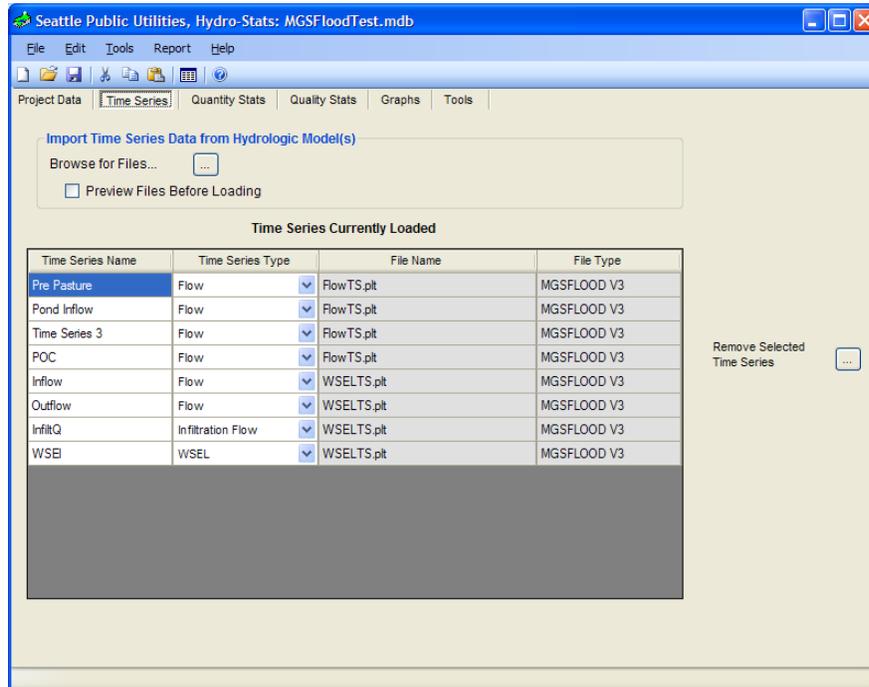
The statistical post-processor software (known as *SPU Hydrostats*) would read data files from the various hydrologic models, compute statistics of interest, and report the specified information in tabular and graphical formats. The output will be utilized by the City's project reviewers to ensure compliance with Seattle's Storm water and Drainage Control Code.

SPU Hydrostats Process

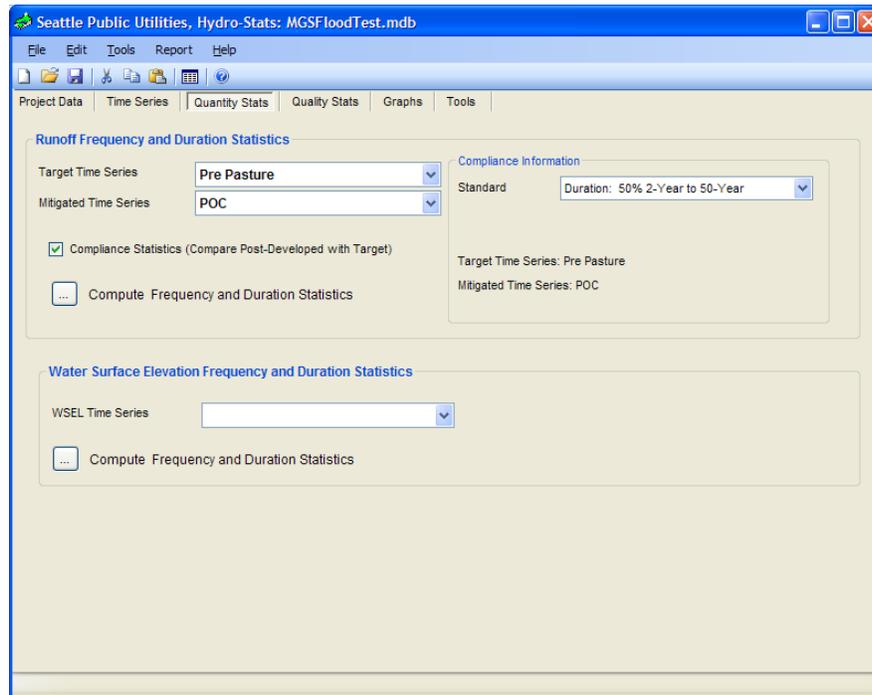
1. Download Hydrostats installation from:
<http://www.mgsengr.com/SPUHydrostatsInstall/HydrostatsInstall.zip>
2. Unzip the installation file and double click setup.exe to install.
3. Start the program by clicking Start>All Programs>MGS Software>Hydrostats you should see the principal window for the program.
4. An example project file with datasets exported from MGSFlood is included with the installation. Click File Open and navigate to the DataFiles folder. Select MGSFloodtest.mdb and click Open. This project file was created using time series exported from MGSFlood.
5. The program will then prompt to create project databases. Click yes when prompted. Next, a directory browse window appears which allows you to navigate to the location where the exported time series are located. It should be pointed to the DataFiles folder as shown below. Click Ok to accept this location. The program will then import the MGSFlood export files and create the database files used by the program.



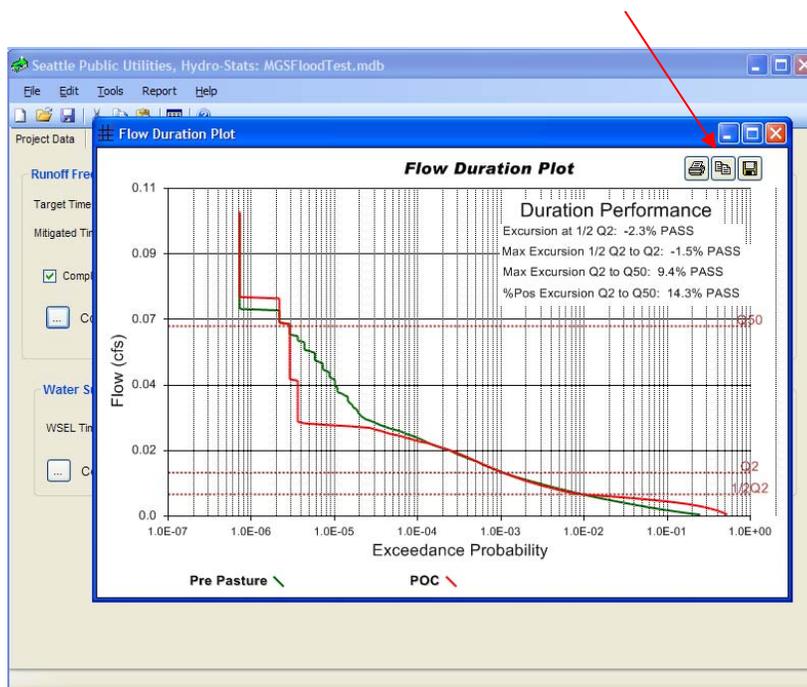
6. Click the Time Series tab. The time series box should look like the image below. The time series name can be changed to any name meaningful to the user. Change the Inflow time series to Pond Inflow. You're now ready to perform analyses on these time series.



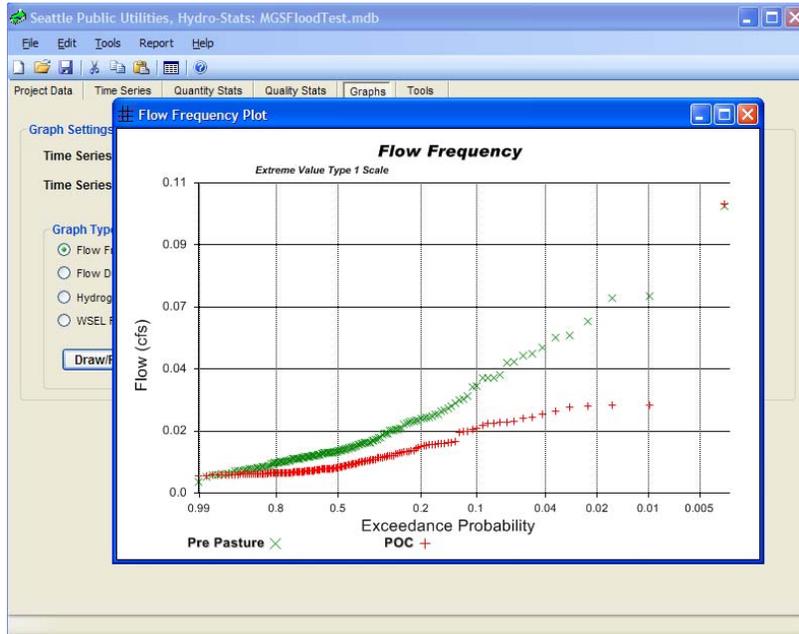
7. Now we'll compute the flow duration performance for a storm water pond designed using MGSFlood. Click the Quantity Stats tab and set the Target time series to Pre Pasture. Set the Mitigated Time Series to POC. Check the Compliance Stats Check box.



- Click the Compute Frequency and Duration Statistics button. The program will compute flood frequency and duration statistics for the target and mitigated time series and then automatically plot the performance. Hover the mouse over the graph and control buttons for printing, copying, and saving the graph image will appear. Right Click the graph to customize the graph labels, scaling, etc.

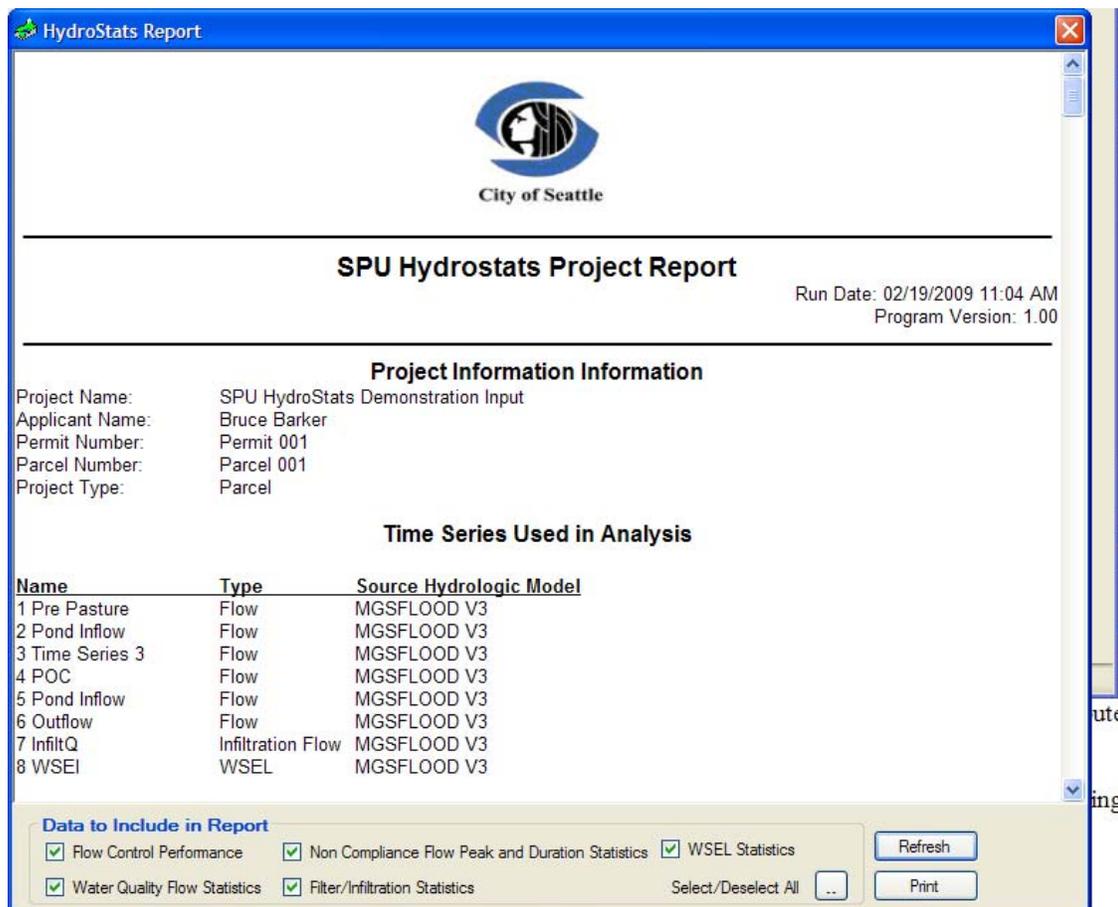


- Close the Flow Duration Window. Click the graphs tab. Make sure that Time Series 1 is set to Pre Pasture, Time Series 2 is set to POC, and Graph type is set to Flow Frequency. Click the Draw/Refresh button to view the flood frequency plot.



- Water Quality statistics can be computed from the Water Quality Stats tab. Compute the water quality treatment volume for the pond by selecting the time series called Pond Inflow and then Click the Compute Water Quality Treatment Volume button. Results are displayed on the window. Water quality flow rate and filtration volume statistics can also be computed from this tab.

11. Click the Save button to save the results in the project data file, MGSFloodTest.mdb in this case. Note that only the statistics computed by the program are saved in the project data file. The time series that were used to compute the statistics are quite large and are not saved in the project data file. This allows users to compute statistics and save the results without the large time series files from the hydrologic model. When you open the project file you will be prompted whether or not to load the time series files. If you respond yes, then they are loaded and you can compute or recompute statistics. If you respond no, then you can only view statistics that were computed and saved in the project file earlier.
12. View the project report by clicking Report>View or by clicking the Report Icon on the toolbar. The detail in the project report can be customized by clicking one or more of the check boxes at the bottom of the window. You can also print the project report by clicking the print button.



13. The project report is a Rich Text file that is stored in the same directory as the project file, in this case: C:\Program Files\SPU Hydrostats\DataFiles. You can open this file with MS Word to edit or extract information.