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MEMORANDUM

DATE: 21 May 2020

TO: Eric Christensen, P.E., Water Resources Director, City of Olympia

CC: Bill Taylor, Principal Investigator

FROM: Doug Beyerlein, P.E., Hydrology Lead and Project Manager
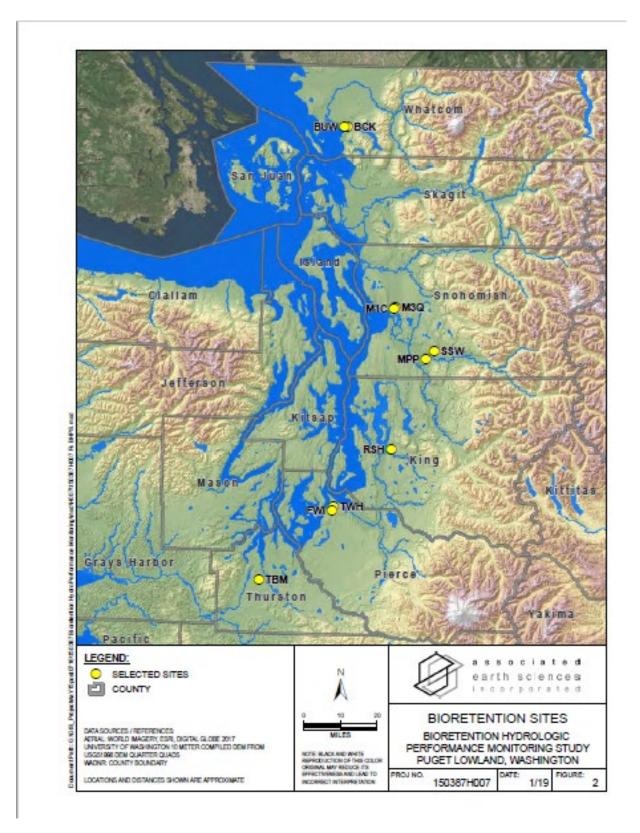
SUBJECT: Deliverable 5.3 WWHM2012 Models List

For Task 5 of the Bioretention Hydrologic Performance Study II we have completed Deliverable 5.3 – WWHM2012 models for each bioretention site. The WWHM2012 models and their results are presented in Deliverable 5.2. This memo provides the names and locations of the models created for Deliverable 5.2.

Two sets of WWHM2012 models were created for each of the ten bioretention sites listed below.

Site Name	Jurisdiction	Project Name
BCK	Bellingham	Nevada-Kentucky Bike Boulevard
BUW	Bellingham	Columbia WQ Improvements
FWI	Tacoma S.D.	Wainwright Intermediate School
M1C	Marysville	1st and 3rd Street SW Retrofit
M3Q	Marysville	1st and 3rd Street SW Retrofit
MPP	Monroe S.D.	Park Place Middle School
RSH	Renton	Green Connections
SSW	Monroe S.D.	Salem Woods Elementary School
TBM	Tumwater S.D.	Bush Middle School
TWH	Tacoma S.D.	Wilson High School

The locations of the ten sites in the Puget Sound Basin are shown in the figure below.

Two sets of WWHM2012 model results were generated and evaluated.

The first set consist of bioretention site models used to compare the model results with the monitored data. For this first set of models the simulation period used was the same as the period during which monitored data were collected (October 2018 to July 2019). Each model was run for this entire simulation period but for the purposes of consistency and the removal of the impact of freezing temperatures only the modeling results for the months of April, May, and June 2019 were used for comparison with the monitored data (see Deliverable 5.2 for more details). The associated WWHM2012 files are listed below.

Site Name	Set #1 Model WWHM2012 Project File	Set #1 Model WWHM2012 Database File
BCK	Bioretention BCK.whm	Bioretention BCK.wdm
BUW	Bioretention BUW.whm	Bioretention BUW.wdm
FWI	Bioretention FWI.whm	Bioretention FWI.wdm
M1C	Bioretention M1C.whm	Bioretention M1C.wdm
M3Q	Bioretention M3Q.whm	Bioretention M3Q.wdm
MPP	Bioretention MPP.whm	Bioretention MPP.wdm
RSH	Bioretention RSH.whm	Bioretention RSH.wdm
SSW	Bioretention SSW.whm	Bioretention SSW.wdm
TBM	Bioretention TBM.whm	Bioretention TBM.wdm
TWH	Bioretention TWH.whm	Bioretention TWH.wdm

The second set of models used the long-term county precipitation data. For each site the long-term (50 years or longer) precipitation record was used to generate long-term simulated ponding and outflow data. These simulated data were not compared against the monitored data, but were used to evaluate the individual bioretention's site ability to meet Ecology minimum requirements #5 and #6 (see Deliverable 5.2 for more details). The associated WWHM2012 files are listed below.

Site Name	Set #2 Model WWHM2012 Project File	Set #2 Model WWHM2012 Database File
BCK	Bioretention BCK Long Term.whm	Bioretention BCK Long Term.wdm
BUW	Bioretention BUW Long Term.whm	Bioretention BUW Long Term.wdm
FWI	Bioretention FWI Long Term.whm	Bioretention FWI Long Term.wdm
M1C	Bioretention M1C Long Term.whm	Bioretention M1C Long Term.wdm
M3Q	Bioretention M3Q Long Term.whm	Bioretention M3Q Long Term.wdm
MPP	Bioretention MPP Long Term.whm	Bioretention MPP Long Term.wdm
RSH	Bioretention RSH Long Term.whm	Bioretention RSH Long Term.wdm
SSW	Bioretention SSW Long Term.whm	Bioretention SSW Long Term.wdm
TBM	Bioretention TBM Long Term.whm	Bioretention TBM Long Term.wdm
TWH	Bioretention TWH Long Term.whm	Bioretention TWH Long Term.wdm

All of the above files have been placed in my Dropbox folder and a link to download the files has been sent to the Department of Ecology, City of Olympia, and project team staff members. This completes Deliverable 5.3.