

Q&A Report

#	Question	Answer	Answer Name
1	Will this version of SWMM become the official version moving forward?	Similar to Bob's answer for FEMA - it is up for the EPA to decide if the open-source version becomes EPA SWMM. Similar efforts have precedence with EPANET and EPA is aware of this SWMM effort.	Scott Jeffers
2	Will this version of SWMM be approved by US regulatory agencies (e.g., FEMA)?	that is up to fema who have their own rules.	Robert Dickinson
3	How much has AI helped in developing SWMM 6? Has there been any quality issues with the generated code?	live answered we are testing swmm6 vs swmm5 for 2000 models	Robert Dickinson
4	How can the engine be improved? I am under the impression that multithreaded C code is nearly as fast as it is possible for code to be.	see the github, better node storage equation. finite volume, improvements in data storage Model stability is a really nice one. Added 1D/2D capabilities. Better data access throughout the model framework. The engine can be speeded up with AI infused in the computation. Caleb knows more for sure.	Robert Dickinson Robert Dickinson Scott Jeffers Attendee
5	Can you explain the difference between the different names that have been mentioned: SWMM2D, SWMM6, OpenSWMM?	OpenSWMM is a community website made by CHI (developers of PCSWMM). Our initiative is called Open-Source SWMM initiative. What we are calling the engine is Open-Source SWMM6.0.0 (SWMM2D)	Corinne Wiesner-Friedman
6	I have been using PCSWMM since 2023. I love working on it. I few questions, 1. how we can calculate base flow in SWMM?2. how to model Snowmelt if continuous data is not available?3. While inserting e-g external flow for calibration, SWMM take it as a node right, when we compare SWMM results, I have noticed the results and external does not coincide on one graph. It does when I select results in the link not in the node itself. Why this issue?4. From my master's thesis I came up with one issue, even though for several new runs, I was still getting the same Quasi-2D inundation while drawing manual transects across floodplain. How does SWMM update it against each run?5. Can we model course gravel in SWMM? If yes, how?	This question might be a bit too SWMM5 tech support for the presentation. Send me a LinkedIn message and I'll try to help!	Scott Jeffers
7	What improvements have been made to the WQ module in SWMM6?	it is on the roadmap, and this is important live answered	Robert Dickinson Scott Jeffers
8	Do you think the current version of SWMM6 is ready to use? What is the chance of having a hidden bug that is not yet investigated?	It is currently in its alpha release stage. It will get better faster with more testers. We have opportunities for alpha testing. There will be QR code links in the presentation. We are aiming for a stable and reliable release next year. The .inp file is intact. You can open existing SWMM5 models in SWMM6 to compare. Validation and verification testing is ongoing and a core goal is to automate all future patches and changes will undergo and standard process.	Corinne Wiesner-Friedman Scott Jeffers
9	Is EPA still working on updates to SWMM in parallel to this effort?	Not currently.	Corinne Wiesner-Friedman
10	Do we consider parallel computing using GPU? Is GPU even faster than CPU?	gpu for 2D - i will explain more about cpu pn linkedin for you Thank you so much! Thanks Robert. When you comment on this, can you also discuss the memory usage of GPU? Will it be an issue if the required memory exceed what's available (eg for a model with millions of cells)?	Robert Dickinson Attendee
11	It looks like the current SWMM6 can only be run in Python or dll. When do you expect to publish SWMM6 GUI?	We have an "alpha GUI" which we are making available to our alpha-testing community. More on this later in the presentation.	Corinne Wiesner-Friedman
12	will there be GPU parallelization? If so, will it be only for CUDA GPU's or will there be the ability to utilise other types of GPU's as well?	It works on all GPU types - testing is being done on CUDA (NVIDIA), AMD, M-chips, ARM, x86, etc. any early benchmarking on how it performs on various platforms?	Scott Jeffers Attendee
13	Is there any plans to include different hydrological methods other than the SWMM's non-linear method? For example SCS UH, etc...?	That is not in our plans, however the plugin structure Caleb just mentioned might be leveraged if someone wanted to build a plugin for this.	Corinne Wiesner-Friedman
14	Does swmm have the same capability as MUSIC to use in urban water quality modelling?	swmm has similar features to music such as washoff	Robert Dickinson
15	Some 1D models allow for irregular geometry weir geometry to represent overland flow. Is there a plan for SWMM6 to handle these weir types?	possible in the future	Robert Dickinson
16	Hello, this is Sam Shamsi from Pittsburgh, USA.https://www.linkedin.com/in/samshamsi/(1) Who is (will) leading SWMM6 development at USEPA after Caleb's departure? Is (will) Caleb serving a consultant to USEPA? (2) When will SWMM6 be released? (3) What GIS capabilities will SWMM6 have?	1. Michael Pennino is currently the official steward but my understanding is that he has also been tasked with stewarding many other tools. He is not currently working on developing SWMM and nor is anyone else at EPA. 2. Timeline to follow in this presentation 3. You are seeing some of this now (:	Corinne Wiesner-Friedman
17	When applying ARR 2019 rainfall inputs in SWMM for Australian design applications, can different pre-burst loss values be assigned for different storm durations and AEP events?	I'm not entirely sure technically what you are asking - but this sounds possible in both SWMM5 and SWMM6 from a number of angles. You would have to generate your own rainfall data and files from scratch using the ARR procedures.	Scott Jeffers Jonathan Klaric
18	Will we have lateral groundwater transport feature in SWMM ?	there is a new, more realistic groundwater model in swmm6 Thank you Robert , that is great to hear	Robert Dickinson Attendee
19	Is the UI developed in Python?	Qt which has C++ and python bindings (same UI library as QGIS) I believe Yeah Jonathan is right (thanks btw for all your answers!!!!) - but it's super easy to make your own GUI using the python bindings - they work very well!	Attendee Scott Jeffers
20	Are you able to import existing 1D SWMM files to run in the new SWMM version? Same question but 1D PCSWMM files? Similarly, are you able to convert an existing PCSWMM 1D/2D surface model with the new SWMM version?	i have run 2000 swmm5 files in swmm6 - same inp file as swmm5 PCSWMM 1D/2D model works on the SWMM5 engine - it will run but the graphical user interface will look odd as PCSWMM using 1D conduits to approximate the 2D.	Robert Dickinson Scott Jeffers
21	Is there a node or catchment count limit to run in SWMM6?	No, I have a 500k element model, and it works fine	Robert Dickinson
22	What is the difference with PCSWMM	PCSWMM uses SWMM5 engine and has been a full supporter of sticking to the core of the EPA SWMM5 engine. PCSWMM adds features and functionality on top of SWMM5. This is the new open-source SWMM6 engine that is an advancement from the SWMM5 core. SWMM5 core is the baseline of most packages with SWMM in the name.	Scott Jeffers
23	Was it included the LID module?	yes of course	Robert Dickinson
24	A recurring pain with SWMM5 has been fork proliferation: separate hard forks for evapotranspiration, water quality, in-sewer processes etc., that seems out of sync and challenging to be combined. Does the SWMM6 plugin framework actually solve this: can someone add a new process model, like more detailed ET or an in-sewer process model, as a plugin without forking the core — running several together in one model — and how deep does the extension seam go? Can a plugin add its own INP sections and state and hook into the routing/quality timestep, or is it limited to boundary coupling between separately-solved models?	live answered	Anushree Mistry
25	Is there a conversion tool in SWMM6 to convert the pseudo PCSWMM 2D cells to a SWMM6 2D model, or does the Pseudo 2D cell mesh need to be removed and created from scratch in SWMM6?	At the moment maybe - but I can image you could use the PCSWMM 2D cell mesh as your baseline for mesh cell generation. But TBH - it's easy enough to generate the mesh and it runs way faster - it would be worth to investigate remeshing.	Scott Jeffers

26	I've seen the SWMM2D roadmap on your website - very exciting. Are there future ambitions or a roadmap for the MCP Server? Thank you	live answered I don't think we'll have a separate roadmap - it'll be on the standard overall roadmap. Most updates quickly on LinkedIn page and GitHub	Scott Jeffers Scott Jeffers
27	What is the limit of number of cells for 2D modelling in version 6. I believe there is some limitations to model 2D in SWMM5 GUI?	swmm5 does not have 2d Referring to PCSWMM	Robert Dickinson Attendee
28	I currently use XPSWMM, is it possible to import existing models into open swmm/swmm6? is it also possible to import rainfall temporal patterns from the Australian Rainfall and Runoff (ARR) data hub like XPSWMM?	i have a converter that does this for SWMM5, which is the same inp as swmm6 XPSWMM has the ability to export to INP file I think? Or at least export geometry data which you could read into this.	Robert Dickinson Attendee
29	Is there an easier way to view detailed LID modelling results/fluxes, compared to the current need to create and read Detailed Report File (Optional)?	the lid in swmm6 is the same as swmm5 -	Robert Dickinson
30	Does SWMM6 have link sub-discretization like SWMM5+?	SWMM5 has three computational points in a link. It is the same for now in swmm6 live answered	Robert Dickinson Scott Jeffers
31	Can the mesh generation consider breaklines and extrusion/exclusion areas? Like roads, waterbodies, buildings etc. Can you import mesh from other models or tools?	live answered	Scott Jeffers
32	Is this alpha released to the public?	see this group on LinkedIn: https://www.linkedin.com/groups/14781228/	Robert Dickinson
33	Who funded development of this program (apologies if already stated - I arrived late).	SWMM6 was forked from EPA SWMM (US taxpayer funded) and then the developments following this have been supported by Caleb, mine, and Scotts free time as well as some support from ASCE and WEF.	Corinne Wiesner-Friedman
34	Has there been any changes to the LID module, there are a number of issues with not being able to factor evap (for trees in soil cells) or having an interflow (subsurface lateral flow) in the LID module?	good suggestions	Robert Dickinson
35	What's the largest cell number have you tested?	live answered	Scott Jeffers
36	Would SWMM6 have the possibility to run scenarios from a base model. That is, model slight changes in a parameter for sensitivity analyses?	Yes - you make your own scripts to do this - but on the GUI front this would be great functionality to add. The GUI is under development to more easily allow this functionality and accessibility for a non-coding audience.	Scott Jeffers
37	Can you provide a demo of the batch/scenario model manager, so a series of models can be run in parallel or in series	There's a basic python example in the docs I believe, but building a full scenario manager would be a large project in of itself. live answered	Attendee Anushree Mistry
38	Do you have any documentation ready that shows demo models results and compares them to SWMM5? Maybe to show the claimed enhancements, mainly in 1D?	yes Can you please share a link to that?	Robert Dickinson
39	Howdy Doodley from Australia OpenSWMMerinos!	yes, we have documentation and compare 2000 models	Robert Dickinson
40	what about backwards compatibility? Old EPA Swmm models imported/transformed into SWMM6?	No problem whatsoever. - It is the same inp file	Robert Dickinson
41	Explicitly capturing LID inlet capacity (to properly account for bypasses) is possible but tedious - any plans to include this option (similar to how inlets are specified and used in dual drainage modeling)?	it is on the roadmap and needed	Robert Dickinson
42	Does the new 2D engine solve the full shallow water equations? What turbulence models are supported?	live answered	Scott Jeffers
43	Is there a download link for us to install SWMM6 2D and start to play with it.	live answered	Scott Jeffers
44	Will pyswmm be update to swmm6?	It's hard to say if this will happen but these are our friends in the close SWMM world :-)	Scott Jeffers
45	Is the MacOS GUI available for alpha-testing?	It will be available with the alpha 3 release. Please consider signing up to be an alpha tester. We will send you updates of the binaries as new releases are available.	Caleb Buahin
46	We are looking for alternative to XPSWMM. Would like to hear your comments how to transition out... :-)	convert to swmm5 and then use swmm6 with 2D	Robert Dickinson
47	For those who are interested in the 'composable components' approach to modelling, I recommend checking out Julia's ModellingToolkit package.	nice	Robert Dickinson
48	Robert, could you please share the documentation of the 2000 model comparisons you stated? Thank you!	see my posts on linkedin	Robert Dickinson
49	swmm 6 is still based on the 1D link- node discretization approach?	some improvements, such as calebs mention of finite volume	Robert Dickinson
50	Are there any plans to create API bindings to other languages for the engine?	Yes! good idea as usual Thanks Bob!	Scott Jeffers Robert Dickinson Jonathan Klaric
51	Is GUI available in Mac for alpha testers?	live answered Soon - but I think you can build it for yourself now if you know how to compile	Anushree Mistry Scott Jeffers
52	Is there LID tolls for green infra in Open SWMM? And can anyone point to some documentation of parameters for LID or research in SWMM LID-based usecase.	live answered Same as SWMM5 at the moment - but this is a passion for me!	Scott Jeffers Scott Jeffers
53	One feature I would like to see is the ability to natively delineate 1D catchments based on the DEM and defined nodes. It would reduce the subjectivity in creation of catchment delineation across stakeholders	live answered Possible in QGIS or others then import - would be a nice feature for the GUI - agreed!	Scott Jeffers Scott Jeffers
54	I'll be great if you could share the GUI exe here.	https://github.com/HydroCouple/openswmm.engine/releases/download/v6.0.0-alpha.2/SWMMVis-6.0.0-alpha.3-win64.exe	Anushree Mistry
55	You mentioned something about improving the groundwater module in SWMM. Can you elaborate on how the groundwater module will be improved?	Work plan: Spatially Explicit Groundwater — a fully coupled two-layer subsurface kernel on the 2D finite-volume mesh (unsaturated and saturated depths joined at a moving water table, selectable soil characteristics, lateral Darcy exchange between cells), enabling saturation-excess overland flow, return flow, head-driven pipe ↔ aquifer exchange, and capillary rise — processes the per-subcatchment aquifer cannot represent (Roadmap §5.2).	Robert Dickinson
56	Sorry I lost the connection. I believe my question was answered regarding max number of 2D cells tested for 2D modelling so far.	1.5 million	Scott Jeffers
57	can one of you send the active linkedin forum for swmm users? thanks!	https://www.linkedin.com/groups/14781228/	Anushree Mistry
58	Is there an organization or non-profit to donate money towards to help fund development?	We're working on it!!!!	Scott Jeffers