#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
26	Dracup	0 - General Comments	2	In the formulation of the linear form of Manning's equation, the authors move the square root of the energy slope into the denominator of the matrix coefficient. They state that a small, minimum value of this slope is required to prevent instabilities. I buy this, and I think this is a reasonable approach, but the wide range of values for this minimum that they propose concerns me - ranging from 10-7 to 10-13.	1	The range 10^{-7} to 10^{-13} is an artifact of the linearization process as described and the sparse solver more than pure hydraulics. The *K* used for linearization has a singularity that was avoided using the small tolerances. The higher value 10^{-7} was at the more stable end of the range because the values resulting after division are smaller. But with this all slopes less than 10^{-7} are lost in the sense that a Darcian type of flow will be used instead of Manning type of flow (with $(s_f)^{0.5}$) as a result. This may or may not be bad for certain areas in the Everglades where there may not be strict turbulent flow. However, it will not follow the strict Mannings equation. The range of slopes described here is used to describe the range for which the strict Mannings form is to be used. The lower value 10-13 selected is the lowest value one can use without the sparse solver crashing due to the large value of K selected.	amwl	
27	Dracup	0 - General Comments	3	Finally, the authors don't mention the matrix solver that they use to invert the enormous matrix they create - and what the tolerances are in this (probably iterative) solution. Perhaps this is in an appendix; I'll look more carefully for that.	1	The matrix solver used is called PetSc developed by the Argonne National Lab. The maximum of two tolerances is used by default. Convergence is detected at iteration *k* if $\|r_k\| < \max(\ rtol\ * \|b\|_2, atol\ )$, where rtol = 10-5 and atol = 10-50 .	amwl	
28	Dracup	0 - General Comments	1	The transition between subsurface and overland flow. In the stage-volume relationship for a cell, a continuous transition from subsurface flow to overland flow is presented. I can see that this will work well for mass conservation. I could not find, however, an equivalent description for how the momentum equation is handled around this same transition. That is, as the water level rises or falls relative to the soil surface - either temporally or spatially - it isn't clear how the momentum equation handles transitions between the different formulations of the momentum equation. [It should be noted that the authors have essentially solved a simplified form of the momentum equation for each of the three flow domains - subsurface, overland, and canal - that they are considering]. For example, if one cell has overland flow, and the downstream cell doesn't, how does the momentum solver handle it?	1	The transition of the momentum equation between surface and subsurface flows is not handled as delicately for a number of reasons. The momentum equation essentially reduces to a friction term and a gravity term for diffusion flow. This equation applies for the momentum transfer across two water bodies, and the average cell value (or the segment value) of friction and gravity terms between the two water bodies is used without serious consideration given to the discontinuity at the surface. If one is ponded and the other is dry, the conditions given by (15) of Lal, et al (2005) or (2.23) is used to activate the water mover. Beyond that, a gradually changing transmissivity from subsurface flow to surface flow as in wetlands is simulated using a "lookup table". The reason for the serious need of the SV converter for mass balance is that mass balance is important for the type of applications the model is to be used. It is also important in the way the model is designed to handle perfect mass balance without having to carry out iterations within the same timestep. (cont)	amwl	This is a basic difference between RSM and MODFLOW as described at some later point where in MODFLOW, one has to carry out iterations in order to maintain mass balance. The second reason for not having an SV type function for momentum is that momentum balance is not that critical locally, especially at the local surface/subsurface interfaces of regional models, because imbalances in the momentum equation normally do not get accumulated to create massive momentum balance errors. This is because of the nonlinear dissipation behavior of the Mannings equation DH $\propto$ V2. This is particularly true when the cells are large. The worst result of this approximation is a small error in head and the velocity.
31	Ponce	02- Chapter 2	Page 16, paragraph 1	You may want to replace "water storage and conveyance" with "water conveyance and storage." In channels, conveyance is of first order, while storage is of second order. In reservoirs, there is no conveyance.	1			
32	Ponce	02- Chapter 2	Page 18, Section 2.2, paragraph 2	"without regard to the type of discretization." In reality, overland flow, groundwater flow, and canal flow have different characteristics celerities and diffusivities under unsteady flow. How can all these physical characteristics be reconciled under one time step and space step? Please clarify to help justify the above statement.	1	The discretization is determined by the model user. But if the user is careful enough to select discretizations that can carry all the wave in both space and time, the model should carry all the signals. If a small discretization suitable for the subsurface flow is used as a common discretization, with a short temporal discretization needed for the surface flow problem as well, the model will carry most frequencies and wave numbers of the spectrum. If the model is designed only for the longer discretizations, the short disturbances will drop out as suggested. What frequencies can be carried by a discretization are given by Lal (2000). A single discretization for all wave characterizations may look inefficient depending on the problem. The advantage of a single discretization comes because there is no need for coupling separate modules. The final proof of the pudding ought to be in eating, and the experiment to find which approach is better is still considered to be not over.	amwl	
33	Ponce	02- Chapter 2	Page 20	Is Eq. 2.2 correct with respect to dV? Reference to it on Page 22 differs from it.	1	has to be corrected	amwl	
71	Schafftranek	0 - General Comments	64	Would simulations of flow in a canal reach schematized as a sequentially connected sequence of segments with flow solution by the canal watermover and alternatively schematized as a sequence of equilateral triangles aligned along adjacent sides with flow solution by the overland watermover yield identical results?	1	It gives the exact same result, if the triangular cells are developed by dividing the rectangular cells in half.		
72	Schafftranek	0 - General Comments	65	Is the implicit solution within the HSE of the RSM iterative? If so, how many iterations are typically required to achieve convergence? What are the convergence tests?	1	The implicit solution within RSM uses iterations within the sparse solver, as would any sparse solver based on optimization methods. However unlike some Priessman scheme models, the matrix is based on the conditions at the beginning of the time step and not iterated. The reason for coming to use this simplification has to do with a number of experiments that showed that the difference with and without iterations is within the first order error. Iterations were used at the beginning of the development process because it is standard practice. If future experiments show there is a need for this because there is a gain in accuracy for a reasonable price to pay, iterations will be introduced. This seems unlikely for overland and groundwater flow alone.		

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
73	Therrien	01 - Chapter 1	13	In section 1.2, it is stated that SFRSM must be both flexible and adaptable. However, there are limits on the number of elements to use and the input and output time intervals (these limits are listed in the **fact sheet**), which seems to contradict the need for flexibility and adaptability. Why are such limits imposed?	1	the SFRSM fact sheet refers to one implementation of the RSM--each implementation can choose different time intervals, units, etc. Once we have a separate fact sheet for RSM, the difference will be more obvious, and we will more clearly delineate what details need to be in the two different fact sheets	pef	
74	Therrien	01 - Chapter 1	15	On page 12, I am not sure what is meant by a limited error analysis.	1	What was meant by "limited error analysis" was an error analysis due to boundary disturbances only. Numerical errors due to a variety of stresses such as well pumping, rainfall were studied by Lal (2000) for problems such as MODFLOW. In the case of RSM, the testing was limited to errors due to boundary disturbances.		
75	Therrien	01 - Chapter 1	18b	There is a mention of lake flow simulation but I did not find a description in the manual of the way it is done. Is it different from overland flow? Are different equations used, allowing for vertical surface flow components?	1	Lake simulation is very different from overland flow simulation. Lakes are considered as individual water bodies and are not discretized any further. For one layer models, lake seepage to and from neighboring cells is simulated using watermovers considering the aquifer transmissivity and the length of the interface. Each of these watermovers move water from the same lake waterbody to various cell waterbodies. Each of the waterbodies consider the cell transmissivity and the length of the cell wall for the calculation. Water from the lake to other waterbodies can take place with the use of structure and shunt water movers that will be discussed in the user manual.		
76	Therrien	01 - Chapter 1	18d	How are the reservoirs and large water bodies interacting with aquifers?	1	see #75		
77	Therrien	02- Chapter 2	21	The stage volume relationship applies to all waterbodies, surface and subsurface (section 2.4.1). I am not sure if this suggests that a given waterbody in the model can switch to be overland or subsurface depending on the water level, and that the transmissivity adjusts accordingly? Figure 2.3 seems to suggest that but I do not think that it is what HSE does.	1	Watermovers for surface flow and subsurface flow gets activated and deactivated depending on the water level. Transmissivity values are also variable within the range.		
90	Dracup	0 - General Comments	2	The spatial scale of the model isn't altogether clear in the document, but perhaps this is something that will be adjusted depending on the application. I think it is important, however, for the authors to discuss the spatial structure that is lost within grid cells. For example, in an overland flow situation, there will be patchiness in the density of vegetation, leading to preferential flow paths through the system. How this heterogeneity is aggregated to the grid scale isn't clear in the document as presented. If a uniform Manning's n is used, for example, is it set based on observed averages in velocity of flow versus energy slope? Or is it an average based on the bottom/vegetation characteristics? If it is the latter, the flow will likely be underestimated for a given energy slope, due to the fact that flow will preferentially select 'short circuits' with less flow resistance.	2	Selection of finite-cell cell sizes that can be many miles long is unavoidable when carrying out finite volume formulations. A number of parameters are designed to capture the lost spatial structures resulting from the selection of cells of such finite dimensions. The first such parameter described here is the SV converter. It can capture the storage behavior of a cell as a function of water level. There are two other parameters that describe the flow resistance above and below ground. These are conveyance and transmissivity. Currently they are scalar parameters as opposed to tensor parameters and therefore can only describe isotropic behaviors. Conveyance is a property describing surface flow behaviors and transmissivity is a property describing subsurface flow behaviors. Currently the generic transmissivity and conveyance properties vary with the spatial location and depth. What is missing from these parameters in RSM for now is anisotropy. Mannings equation gives only one way to explain flow resistance. In the future, both of these can be tensors.		
95	Dracup	0 - General Comments	3	Along these same lines, I think it would be valuable for the authors to be more specific about the limitations of the 'diffusion' solution (friction-pressure momentum balance, really) that they are applying. One example of such a limitation is the spatial heterogeneity described in (2) above. Perhaps a more important one is the timescale of the events that they intend to resolve. With this formulation, they will not be able to address events with short timescales - which would be associated with large accelerations. There should be a scaling estimate for what timescale of events they could reasonably resolve with this approach.	3	Limitations of not being able to simulate spatial heterogeneity described by Dracup (90) will apply not only to diffusion flow but also to full dynamic flow. Limitations of the diffusion flow approach have already been described at different places. They may have to be restated.		
96	Dracup	0 - General Comments	4	Finally, it seems that the model does not consider "channel" flow in caverns. Are there not major conduits through south Florida - I believe that you could essentially have channel flow in large caverns in the subsurface along with traditional flow through porous media and overland flow. It seems that these subsurface conduits could be simply parameterized like pipe flow, but I would be interested in hearing the authors thoughts on this.	3	There have been a number of occasions where the aquifer had caverns. Karst hydrology is an emerging discipline. Physically based regional models such as RSM are based on governing equations derived after making the continuum assumption, where the properties are assumed to remain the same even when the size of the control volume changes. One way of capturing the karstness is using parameters describing anisotropy. RSM is not there yet. The karstic behaviors that exist in the system model can be captured now only using isotropic parameters in the model.		

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114	Schaffranek	0 - General Comments	62	The RSM solves all equations for regional flow simultaneously. Formulation of the surface-water, groundwater, and canal flow equations for coupled simultaneous matrix solution forces the simulation to be conducted at a unique time step for all flow components within the system. Flow conditions in the most dynamic component of the system will govern the chosen time step. Thus, unnecessary flow computations will be carried out in the other systems, e.g., groundwater flow solutions are typically required much less frequently (daily stress periods) than surface-water flow solutions (hourly or smaller time steps). Isn't this coupled approach more inefficient than decoupled solution?	4	It is true that the flow conditions in the most dynamic process will govern the time step. As described earlier, a different way of explaining this same argument is to say that the system consist of spatial and temporal disturbances of varying scales in the solution, and the model developer has the responsibility to select the spatial and temporal discretizations necessary to capture as much of the solution as accurately as possible. The developers also considered the fact that spatial and temporal scales of the disturbances are connected through the governing equations (Lal, 2000). Earlier models were mostly decoupled, and two different time discretizations (or space discretizations) could be used to capture the disturbances resulting from various governing equations in each model. Algorithms were developed to couple these modules later. MODFLOW and BRANCH models coupled to create MODBRANCH is an example. In these cases, the time steps for each model were different, but the coupling had to be done iteratively. (cont)		With RSM, the coupling is carried out internal to the model, and the sparse solver is extremely efficient in carrying it out. The efficiency loss due to an over-discretization is compensated by the solution speed of the solver itself during the coupling. The ultimate solution of this problem however depends on all these parameters mentioned.
115	Schaffranek	0 - General Comments	63	Is the computational time step in the RSM dynamically variable during the simulation? If not, could it be? It would seem to be more computationally efficient and perhaps even improve the overall accuracy of the simulation to adjust the time step to more closely match the current flow conditions, e.g., longer time steps (?t > 24 hours) in dry seasons and shorter time steps in wet seasons (?t < 24 hours) and during periods of extreme weather, flow, and control events.	4	The time steps in the model were considered to be dynamic for a long time as suggested. However these conditions were found to be not the same any more with modern solvers, and the time steps are fixed now. When an early solver SLAP by the Lawrence Livermore Lab was used, the model started to become unstable with large time steps, and the model had to use smaller time steps to make it stable. With PetSc, the model is stable without any time step adjustments, and there were mechanisms internal to PetSc that can speed the run during dry periods without manually having to do it. Modern solvers have a number of features that can see how fast conditions change in a system, and carry out a minimum amount of calculations between one tim step and the next. PetSc has many of these capabilities.		
78	Therrien	02- Chapter 2	26	Why are 2 conditions, equations (2.35) and (2.36), used?	1	These equations are from MODFLOW. Based on the two values of the transmissivity, simple averaging, harmonic averaging and a variety of averaging methods have various implications. The type of averaging also depends on the type pf function used to describe the variation of the property within the cell.		
79	Therrien	02- Chapter 2	28	I would like to know what equation 2.40 looks like for uncoupled, loosely coupled, implicit or explicit discretizations.	1	Equation 2.40 is a governing equation describing the seepage rate. Whether there is a numerical model or not, this equation exist and it is valid. Regardless of whether there are numerical artifacts such as coupled, uncoupled, implicit etc, this equation is still the same. The difference is in the way this equation is handled in each. In the case of RSM, this is solved simultaneously with all others.		
34	Ponce	02- Chapter 2	Page 21, paragraph 1	The neglect of inertia terms renders the resulting "diffusion flow" unable to circulate. As long as 2-D convection is the primary mechanism being modeled, this may be an expedient assumption. Is 2-D circulation unimportant in all RSM applications?	1	This question brings a value to the seldom used equation (4) of Lal (1998c) which has a vorticity term. Even if 2-D depth averaged shallow water equations can simulate vorticity in the horizontal plane and therefore circulation, dropping of the $\nabla \times \omega$ where $\omega = \nabla \times V$ eliminates this possibility. There are a number of other references as suggested brings us to the same point. Considering the friction and gravity dominated system in most of the Everglades, the need to model vorticity may be small, assuming that the depths are also uniform. In any case, vorticity creation in a horizontal plane is suppressed by the assumption, and should be admitted as such.	amwl	
35	Ponce	02- Chapter 2	Page 21, paragraph 2	The 1-D diffusion flow (wave) applicability criteria may be applicable to the modeled conditions. What is required is a long-period wave or event. Seasonal variations would be certainly covered; rapid changes involving changes occurring in a few days may not.	1	This is true. Lal (2000) shows that anything smaller than a 4 day period is the most that will be lost in the middle of the Everglades.	amwl	
80	Therrien	05 - Appendix A	35	On page 58, a mass balance error of < 10% is assumed reasonable. However, using the control volume ensures local conservation of mass and the mass balance error should be of the same order of the residual of the matrix equation, much less than 10%. Are errors of 10% commonly computed?	1	see #29	pef	
81	Therrien	07 - Appendices C.1 to C.4	36	I would like to know how accurate are the methods and results described in the papers of Appendix C compared to the current version of the model. Are the procedures in C.2 available in the model?	1	The current version of the model in fully implicit form has numerical error behaviors very similar to the MODFLOW model error behaviors. So all the equations of Lal (2000) for fully implicit conditions can be applied to the RSM model. Since the analytical expressions for error were obtained for rectangular problems, the RSM has to be applied with an approximation such as $\Delta x = \sqrt{A}$ for triangular meshes with aspect ratios equal to 1.0.	amwl	
82	Therrien	12 - Appendix C.5	39	Equations should be checked for consistency of units.	1	agreed; this will take some time	ef	
83	Therrien	13 - Appendix C.6	46	On page 2, last paragraph, there is a mention of seamless integration and later uncoupling. It seems that integration and uncoupling are contradictory here.	1	This can be reworded. The seamless integration refers to the user/modeler perspective, the mse tools are integrated with the hse application. Mse specifications are provided in the same manner as hse (via xml) and the suite of mse tools are always available in the rsm. The decoupling referred only to the internal information processing between hse/mse.	jcp	
84	Therrien	14 - SFRSM Fact Sheet	59	During our visit to the district, I would like to discuss the items listed in the general assumptions to find out more about the rationale for the choices made.	1	no comment	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
85	Therrien	0 - General Comments	6	Although the reading material provides a very good overview of the general characteristics of RSM (both HSE and MSE), and I feel that the model has unique simulations capabilities, I still have several questions on the details of the governing equations and numerical methods used. It is still not clear how the model compares or relates to other coupled surface and subsurface flow model I am familiar with.	1	Comparison with other models was the primary verification method during the early days of development. However, the strategy changed to comparison with analytical methods because of a number of bad experiences. The first experience was during the comparison with the UNET model. Here I found that when the Froude number of the particular example was close to 1, and there were already severe problems with UNET. The RSM did not have the same problems close to Fr=1. The conclusion was that it is better to compare with analytical solutions instead of numerical models that may have diffrent behaviors. The second experience was with the Pinder and Sauer (1978) example used in MODBRANCH model (Swain and Wexler, 1993). Two groups simultaneously found the comparison to be difficult. The MODNET contractors (Ray Walton, West Consultants, SFWMD contract) found that the results of the two models do not agree well. I found the same problem, not being able to compare RSM results with any of the results. The only way to solve these problems and eliminate numerical artifacts of the comparison is to use analytical solu		Swain, E. D. and Wexler, E. J. (1993). A coupled Surface Water and Groundwater model for simulation of stream-aquifer interaction,USGS, Open file report 92-138
336	Chin	0 - General Comments	1	To be consistent with USGS terminology change groundwater" to "ground water"	9	SFWMD standard is groundwater	pef	
337	Chin	0 - General Comments	2	Do not use italics in figure captions	9	using LaTeX default for now--will defer to Technical Editor	pef	
338	Chin	0 - General Comments	3	When two words are used as adjectives, insert a hyphen between the two words, e.g. "water supply deliveries" should be "water-supply deliveries". Widespread corrections necessary.	9	some terms in common usage at SFWMD are not hyphenated-- water supply is a good example	pef	
339	Chin	0 - General Comments	4	Be consistent in describing the area as "South Florida" or "south Florida"	9	see #357	pef	
340	Chin	0 - General Comments	5	If RSM is a generic code that can be applied anywhere, and South Florida characteristics are not "hard wired" into the code, then the RSM is itself not a "model" but a "code", i.e. RSC.	9	good point, but it is probably too late to change!	pef	
341	Chin	0 - General Comments	6	The document was obviously written in TeX. Open quotations are not coded in correctly, " should be ``.	9	global replace of " with either \textacutedbl or \textgravedbl seems like lots of extra work--will defer to tech editor	pef	
354	Jones	0 - General Comments	General comment	As a member of the peer review panel, it is my understanding that deliverable #1 due on June 12th is a preliminary set of questions and editorial comments relative to the RSM Theory Manual. I have read through some of the comments submitted by the other panelists and my overall impression of the documentation is similar to what has been expressed thus far. First of all, I am sympathetic to the SFWMD in that they truly have a unique and complex hydrologic system to manage. I applaud your efforts in developing a new suite of tools customized to your special needs. I also applaud the object-oriented, modular, and open-ended approach to the software design. I look forward to the visit later this month and to sharing time with the rest of the panel discussing the model and documentation.	9	no comment	pef	
355	Jones	0 - General Comments		I was a little disappointed that this review did not include a review of the source code, file formats, integration with external data sources, and pre- and post-processing tools. Due to my background, this is the area where I feel that that I could have made the biggest contribution. Perhaps this will be covered in a future peer review.	9	source code and additional XML information is provided on the web site, but was not included in this part I peer review	pef	
36	Ponce	02- Chapter 2	Page 22, section 2.4.1, equation 2.13	Replace partial derivative ? for total derivative d (for consistency with text immediately below and Figure 2.4)	1	yes	amwl	
86	Therrien	0 - General Comments	6a	How is groundwater flow simulated? Some parts of the manual mention that 2D flow is simulated and others parts mention that it can be 2D or 3D. It is not clear what equation(s) can be solved in the model. For example, is Richards' equation solved?	1	In SFRSM, groundwater flow is simulated in 2-D. In SFRSM, Richards equations are not solved. The equations solved in RSM for 2-D and 3-D saturated groundwater flow conditions are the same equations solved in MODFLOW. Both confined and unconfined flow can be simulated using RSM.		
87	Therrien	0 - General Comments	6b	For the case where the aquifer is unconfined, it appears that the governing equation is based on the Dupuit approximation (horizontal flow) with the transmissivity being the product of hydraulic conductivity and hydraulic head in the aquifer. That approach is the cause of the main problem with MODFLOW, where simulations can lead to drying up of finite difference cells (head falls below the bottom of the aquifer) that become inactive. Rewetting capabilities exist in MODFLOW but they generally do not work very well. I would like to know if a similar approach is used here. Note that solving Richards' equation is more involved numerically and requires more data, but the drying/wetting problem is not an issue.	1	Since a single layer groundwater model is used for most RSM applications, the issue of dry cells is not yet a major problem. However for future 3d application of RSM, dry cells can be a problem. The solutions to this problem for now are the same solutions provided in MODFLOW.		
88	Therrien	0 - General Comments	6c	There is a mention of a limestone aquifer in the region, but no mention of capabilities of the model to simulate flow in fractured rock formations. Is an equivalent porous medium approach used for the subsurface?	1			
68	Schaffranek	01 - Chapter 1	7	In the first full paragraph on page 11, the statement is made "Inertia terms in the shallow water equations are neglected, and the solution to the governing equations is obtained using a single global matrix." The location of this sentence, occurring after identification of a number of physically based models, appears to apply to all these models as well, not just the RSM. This same text appears on page 3 in the paper (Lal, et al., 2005) reproduced in Appendix C.3. The potential misrepresentation presented by this text needs to be corrected.	1	agreed.	amwl	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
69	Schafftanek	01 - Chapter 1	11	The comment on page 13 asserts that one challenge in modeling complex hydrologic systems is to maintain "…an acceptable level of numerical errors". What is an acceptable level of numerical errors in the SFRSM? What are typical numerical errors in the HSE of the RSM? What are sources of numerical errors in the RSM? Questions of this type will immediately arise in the mind of the reader, yet no prior explanation or description of numerical errors is initially presented in the RSM Theory Manual. Sources of some numerical errors are subsequently identified on page 15 of the Manual, but numerical, computational, and model errors are largely discussed in reports reproduced in Appendix C.2 and C.3. Identification of typical invalid numerical behavior and manifestations of numerical errors in RSM simulations should be provided in the RSM Theory Manual at the first mention of the topic as on page 13 (reference citations to applicable published papers also should be made and provided). Any numerical errors specific to the RSM theory assumptions should be clearly identified and their manifestations in model simulations discussed in the main body of RSM Theory Manual.	1	Numerical errors exist in all numerical models. The way they are handled in RSM is by providing guidelines for the selection of the time step and the cell size, and establishing relationships between the discretizations and the numerical error. To give an example from MODFLOW, Figures 2, 3, 4 of Lal (2000) show that the equations describing numerical error in MODFLOW are accurate. Similarly Figure 5 of Lal (2005) shows that the same numerical error formulation is valid for RSM as well. Both these analyses show that the numerical errors of MODFLOW and RSM are approximately the same for α = 1 conditions if the cell sizes are the same. Any discussion of error on RSM is equally valid for MODFLOW or any other numerical model as well. Error analysis with both MODFLOW and RSM show that the error in simulating a certain fourier component of the solution increases with increasing cell size and the time step as expected. See Fig (4) of Lal (2000) for the MODFLOW example. (cont.)	amwl	From the plot it can be shown that the only way to keep the numerical error below 100% as in the example of spatial discretization Φ = 0.4 (in the same figure) is to keep β less than 10. The error in simulating a certain fourier component of the solution increases with increasing cell size and the time step. See Fig (4) of Lal (2000) for a MODFLOW example. Unfortunately there is a limit to how small β or the discretizations can get. Lal (1998a) eq (39) shows that the run time becomes extremely large when the discretization becomes small. This brings the idea of compromise between the error and the run time. Once the spatial mesh is determined, the size of the spatial disturbance that is possible on the mesh (say with a 5% accuracy) is known as a result. The time step should be selected to support the same solution in the time dimension, and the accuracy of the solution is given by equations in the paper.
89	Therrien	0 - General Comments	6f	Are overland and subsurface flow equations discretized with the same control volumes (or meshes) or with different meshes?	1	Yes		
106	Therrien	01 - Chapter 1	12	In figure 1.2, is it of importance that the SFWMM extends beyond land to the east, while the SFRSM has slightly different boundaries (figure 1.3)?	3	no--just pretty pictures; change in resolution is more important to note	pef	
107	Therrien	01 - Chapter 1	17a	How does Lake Okeechobee interact with the other hydrological features of the region?	3	Lake Okeechobee can interact with other hydrological features in a number of ways. Some of these are implementation features that will be discussed in other places. The primary way the lake communicates with other features is through structures and through seepage. Rainfall and ET can also be calculated over the lake.	pef	
108	Therrien	01 - Chapter 1	17b	Do the extreme weather patterns of rain events refer to hurricanes? What is the impact of these extreme patterns on the choice of model?	3	The term extreme weather pattern is used for dry events and wet events. Rainfall due to hurricanes is considered in the model, but only the daily values are considered by the model. These values are not as extreme as some of the peak values reached during the hurricanes.	pef	
91	Schafftanek	01 - Chapter 1	2	On page 7, justification of the need to simulate canal seepage and sheet flow in two (x-y) dimensions is attributed to a reference citation (Lin, 2003) identified as a 2003 personal communication in the Bibliography on page 54. Has a formal paper been published to fully support this conclusion? If not, seek other justification or design a set of carefully crafted numerical examples to illustrate need.	2	Steve Lin was an employee at the District for over 30 years. He was an early user of the predecessor to the SFWMM model called the regional routing model. The regional routing model was also called the "pot" model where South Florida was simulated by assuming it to be consisting of large regional pots, and writing mass balance equations between the pots. The conservation areas were the most obvious regional blocks. Each block or pot had one state variable. My question to Steve at the time was about the reasons behind the need to move to a new model beyond the pot model. The new model SFWMM was a more physically based model based on governing equations that are PDEs. The answer was that the seepage in the canals was extremely high, which made the pot model practically meaningless without having a mechanism to simulate the seepage. The assumption of zero water loss in the canals in the pot model during conveyance between water bodies was extremely exaggerated. The SFWMM model could simulate seepage better (SFWMM Primer).		
92	Schafftanek	01 - Chapter 1	10	On page 13 the need for long-term regional simulations of 35-40 years is identified as being imperative to assessing south Florida water demands. It is also noted that "…land use constantly changes as agricultural land is converted to urban use, marshes or reservoirs, …". Are such changes able to be accommodated by the RSM within the context of south Florida regional simulations? Is the land surface mesh definition and configuration in the HSE of RSM dynamically adjustable to account for physical and topographic changes during the course of numerical simulation? In similar context, are physical changes due to natural catastrophic events such as wetland fires and tropical storms that alter the landscape able to be treated by dynamically varying the RSM mesh configuration and applicable parameters and coefficients? How about structure, levee, and canal modifications?	2	The 35-40 year climatic record has to be considered simply as a climatic record available for testing a given configuration of the model. As it is, the model land use is considered static, along with topography, parameters and structures. A test with the 35-40 year record was used with SFWMM to study the behavior various static model configurations and scenarios under the past climatic record. Results of some of the simulations for the actual climatic records can be used for calibration when the structure operations and other system properties are known. SFRSM calibration is still under way. How the 35-40 year record could be used effectively will be known later.		
93	Schafftanek	01 - Chapter 1	12	Does the statement on page 14 that the RSM can treat "ponds or small water bodies residing within meshes but in full interaction" mean ponds or small water bodies wholly contained within a discrete mesh element? Clarify.	2	Most of the lake information was presented in the user manual, and not repeated in the "Theory manual". The reason for this was that with the OO formulation, details of lake behaviors appear to be simple enough to be presented as implementation details. Ponds can reside inside cells or outside cells. If ponds reside outside cells, they are considered as individual waterbodies with their own stage-volume curves and watermovers. These water bodies are connected to the adjacent cells using seepage watermovers. If the pond is small, it can reside inside the waterbody. In this case, the pond area is subtracted from the cell area, and the pond is considered as an individual waterbody no different from the previous case. The only exception here is that the seepage is between the lake and its home cell only.		

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
101	Schaffranek	01 - Chapter 1	4	How is extension of the computational domain of the SFRSM (identified in figure 1.3 on page 10) over the spatial extent of the SFWMM (identified in figure 1.2 on page to include the tidally dominated mangrove ecotone along the southwest Gulf coast between Cape Sable and Ten Thousand Islands justified within the context of the diffusion flow assumption of the RSM? The same computational domain also is defined in figure 1 of the SFRSM Implementation Fact Sheet.	3	The SFRSM domain was extended to the coastline after considering two opposing considerations. On one hand it is true that the diffusion flow formulation of the RSM model is based on depth averaged shallow water flow equations without the inertia terms. As a result, RSM cannot simulate the inertia effects that are dominant in the tidal zones. It can only simulate the effects of both friction and gravity terms. The result of the extended area in the tidal zone is mainly dropping out of the inertia effects from the depth averaged equations. As long as the results of the tidal zone are dropped out from RSM, and as long as any nonlinear effects of tidal solution on the long term water levels are small, all what the boundary extension would do is to provide a seamless boundary condition for the rest of the model. In this proposition, the assumption is that nonlinear effects of the inertia terms in the tidal zone do not fundamentally alter the true water levels at the land boundary (not the ocean boundary) of the tidal zone. (cont)	amwl	If this assumption is valid, the current boundary is ok, as long as the results of the tidal zone are thrown out. If this assumption is extremely wrong, it is necessary to find a suitable bc for the diffusion flow based regional model somewhere at the end of the tidal zone. I am not sure if the work on the tidal model is complete at this time to be used as an alternative boundary condition applied at the rim of the tidal boundary. The opposing view as partially discussed above is to stop the model at the land end of the tidal zone and provide an appropriate bc at the boundary. Unfortunately, availability of data or information at such a boundary is uncertain. This avenue however has to be pursued after checking the progress of USGS work. The third approach was to use a uniform flow bc at the rim of the tidal zone, assuming that overland flow leaves the model domain subjected to uniform flow conditions.
102	Schaffranek	01 - Chapter 1	5	Figure 1.2 shows Lake Okeechobee to be included in the SFWMM, yet it does not appear to be included in the SFRSM according to Figure 1.3, is this correct? If so, why is it not included? If it is included, are lake affects treated? Wind fetch?	3	this is an implementation issue--Ken Tarboton discussed this in his presentation--slides 20-23, and in the minutes @11:40 AM but details aren't given	pef	
109	Therrien	01 - Chapter 1	17c	The aquifers are not described.	3	will address in manual--has been flagged	pef	
110	Therrien	01 - Chapter 1	17d	Be more precise concerning the considerable groundwater and overland flow interaction, because that interaction occurs in several other areas.	3	will address in manual--has been flagged	pef	
111	Therrien	01 - Chapter 1	17e	What is meant by sheet flow and how does it differ from overland flow?	3	Sheet flow is also overland flow. Flows over sloughs are considered as sheet flow. Sheet flow may be not as turbulent as regular overland flow.	amwl	
112	Therrien	12 - Appendix C.5	40	Are typical value in Table 1 for South Florida?	3	This implementation was developed for a watershed in Sri Lanka.	ef	
116	Therrien	0 - General Comments	6d	What type of coupling is used between the various flow domains (for example, between overland and groundwater)? Is a fully coupled approach used or is an iterative approach used (see Panday and Huyakorn (2004) for a discussion of the various coupling approaches possible between domains)? From my own experience with coupled surface and subsurface flow models, I found that the type of coupling used in the model can influence the performance and I would like more information on it. I am also wondering if accounting for HPMs explicitly during a simulation causes numerical difficulties. Perhaps a flowchart of RSM for a typical simulation could help visualize how coupling is performed. The same comment about coupling applies when MSE is used.	4	The regional components of RSM connecting horizontal flow are fully coupled, and there is no iteration between various modules. The only coupling used is for HPMs which contain vertical or local flows. HPMs are considered to be explicit and the coupling itself is explicit. For many of the South Florida conditions, explicitness of HPMs have been found to be adequate as experienced with the SFWMM as well. This is because the water table is much closer to the ground in South Florida, and HPM activities are relatively fast when compared to regional activities.		
117	Therrien	0 - General Comments	6e	How are non-linearities in the governing equations handled numerically? Again, my own experience with coupled surface/subsurface models has been with non-linear equations and the choice of the method of solution can be crucial to avoid convergence problems.	4	Nonlinearities in the governing equations are always linearized. The key is to find the best way to linearize them.		
123	Jones	01 - Chapter 1		I felt this chapter did a good job at outlining the history of model development leading up to the RSM model, giving an overview of the design requirements and a summary of the unique challenges related to modeling in South Florida.	5	will propose a separate background document of the history of modeling in south Florida, which would be on a less frequent update cycle but usable for all modeling in south Florida	pef	
162	Therrien	01 - Chapter 1	8	Figure 1.1 is difficult to understand without more comments in the text. Perhaps another figure, showing an analogy to a real system, would help relate the abstract concepts (watermovers, waterbodies, filters etc.) to real entities.	5	agreed! will address in manual--has been flagged	pef	
163	Therrien	01 - Chapter 1	9	At the bottom of page 6, last 2 paragraphs, there are references to other manuals and documents. I think that a list of all pertinent documents, with a brief description, could help the reader decide if the other documents are of immediate interest. The web site address should also be provided.	5	the inside front cover of the manuals will list the complete document set, which was discussed in Fulton slides during workshop; agreed that there should be more references to other documents throughout the RSM Theory Manual	pef	
164	Therrien	01 - Chapter 1	10	I suggest presenting the main characteristics of South Florida (geography, topography, geology, hydrology natural and man-made) before current section 1.1. Such a description would inform on the model capabilities required and would help put in perspective the need for modifying SFWMM. A few figures to support this description would help a lot. I would also move current section 1.3 after that description to indicate the required model features.	5	see #123	pef	
165	Therrien	01 - Chapter 1	11	In section 1.1, it is not clear if the SFWMM is still used.	5	will address in manual--has been flagged	pef	
166	Therrien	01 - Chapter 1	14	On page 11, it should be stated how RSM differs from the models enumerated.	5	will address in manual--has been flagged	pef	
167	Therrien	01 - Chapter 1	17	The list of special features in section 1.3 could be more detailed. For example items #107-111	5	will address in manual--has been flagged	pef	
168	Therrien	01 - Chapter 1	18	On page 13, the list of RSM capabilities is too long and the items are not placed in a logical fashion. I suggest splitting the list along several topics (for example, equations solved, numerical methods, OO concepts etc.). I also have the following comments and questions (see also #75-76)	5	will address in manual--has been flagged	pef	
169	Therrien	01 - Chapter 1	18a	Do arbitrary water bodies refer to their shape or nature (lake, stream, etc.)?	5	This refers to arbitrariness in shape.	amwl	
170	Therrien	01 - Chapter 1	18c	The notion of a fully integrated model should be defined because it might not have the same meaning for everyone.	5	will address in manual--has been flagged	pef	
171	Therrien	02- Chapter 2	19	Section 2.3 presents the finite volume method (control volume is also used in the text). I suggest presenting a very simple, physically-based, illustrative example of the method before introducing waterbodies and watermovers. A simple 1D flow example, with a central cell and 2 neighbors, could be used to show the integration of the governing equation for the central cell, highlighting mass stored in the cell (waterbody) and fluid flux with the neighbors (watermovers).	5	The term stage-volume was used in the OO design because of the obvious need for a stage-volume relationship in relatively flat wetland type conditions. It is also used in layered flow when there is a head instead of a stage. The word SV converter or curve was extensively used throughout the model by the time 3-D groundwater flow modeling was developed. As a result, the same terms was used as an object name, even when the terminology was not in line with what is used in standard hydrogeology.	amwl	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
245	Schaffranek	01 - Chapter 1	1	The role and interaction of hydrologic process modules (HPMs) in the RSM structure are not discussed in the text on page 5 or identified in flowchart of figure 1.1, even though HPMs are defined as a principal component of the RSM in the figure caption. Explain.	7	figure was replaced at the last minute without update of the caption. Has been flagged	pef	
258	Chin	01 - Chapter 1	1. Page 4, third paragraph	"Modflow" to "MODFLOW"	9	will address in manual--has been flagged	pef	
259	Chin	01 - Chapter 1	2. Page 5, third paragraph	change "man-made structures" to "human-made structures" (two occurrences)	9	will consider changing this--has been flagged	pef	
260	Chin	01 - Chapter 1	3. Page 9, first paragraph	change "began engineering a replacement model which could accommodate the goals" to "began developing a replacement model which could accomplish the goals"	9	will address in manual--has been flagged	pef	
261	Chin	01 - Chapter 1	4. Page 9, fourth paragraph	change "has allowed us to acheive a level" to has allowed the achievement of a level"	9	will address in manual--has been flagged	pef	
262	Chin	01 - Chapter 1	5. Page 11, second paragraph	change "MikeSHE/Mike11 based on Abbott et al. (1986a) and Abbott et al. (1986b)" to "MIKE SHE/MIKE 11 (Abbott et al., 1986a; 1986b)	9	will address in manual--has been flagged	pef	
263	Chin	01 - Chapter 1	6. Page 11, second paragraph	change "Richards' Equation" to "Richards' equation"	9	will address in manual--has been flagged	pef	
264	Chin	01 - Chapter 1	7. Page 12, first paragraph	change "language(XML)" to "language (XML)"	9	will address in manual--has been flagged	pef	
265	Chin	01 - Chapter 1	8. Page 12, second paragraph	change "We conducted a limited error analysis to ensure" to "A limited error analysis was conducted to ensure"	9	will address in manual--has been flagged	pef	
266	Chin	01 - Chapter 1	9. Page 12, third paragraph	change "The accuracy of the model was verified" to "The model was verified"	9	will address in manual--has been flagged	pef	
267	Chin	01 - Chapter 1	10. Page 12. last bullet	change "rapidly expanding urban areas and agricultural sectors" to rapidly expanding urban and agricultural areas"	9	no; urban areas are rapidly expanding; existing agricultural sectors impact wetlands. Will switch them to clarify	pef	
268	Chin	01 - Chapter 1	11. Page 13, last bullet	The wording "used to simulate overland flow, canal flow, lake flow or any combination of them" is misleading since lake flows are not actually calculated. Perhaps it would be better to refer to "lake inflows/outflows".	9			
269	Chin	01 - Chapter 1	12. Page 14, second bullet	change "Manning equations" to "Manning equation"	9	will address in manual--has been flagged	pef	
342	Jones	01 - Chapter 1		No specific editorial comments.	9	no response	pef	
37	Ponce	02- Chapter 2	Page 24, section 2.4.4	Eqs. 2-19 and 2-20 are only valid for rectangular channels. How about trapezoidal channels?	1	the equations take too much space and are ugly, so we use a simpler example; the model does handle trapezoidal channels	amwl	
38	Ponce	02- Chapter 2	Page 26, section 2.5.1	Does the model issue a warning when Stol is activated? (Equation 2.24)	1	no, too many instances	amwl	
39	Ponce	02- Chapter 2	Page 31, section 2.5.5, paragraph 2	Which method is used in the structure flow water mover? Lookup tables or regression equations? Why?	1	Lookup table is popular. Some other equation templates are also used within the MSE. All these are options that one can choose from. Regression hasn't been used much yet. The structure equations only give the maximum capacity. Actual discharge is decided by the MSE. Many of these might change in the future depending on how the MSE evolves.	amwl	
40	Ponce	02- Chapter 2	Page 34, section 2.6.2, bullet 1	Do you mean "precipitation-runoff transform"? Usually the conversion of precipitation to runoff is not considered routing (an exception to this would be the Cascade of Linear Reservoirs).	1			
41	Ponce	02- Chapter 2	Page 39, section 2.8, paragraph 1	What is the reason for going fully implicit (a = 1) in order to avoid the iteration? Slightly off-centered (a = 0.6) can be more accurate for all wavelengths.	1	Fully implicit was used because it gave the most stable looking model results. For most of the benchmarks, a weighting of 0.5 was adequate. But as the problem size became larger, the weighting values had to be pushed towards 1.0, and finally ended in 1.0. The second reason was that as new components were added, modification of the code was easier with 1.0 and cumbersome with values other than 1.0.	amwl	
42	Ponce	02- Chapter 2	Page 39, section 2.8, paragraph 3	Are there sensitivity tests available showing the benefits of a = 1 as opposed to a = 0.6-0.8?	1	About 8 years ago, some of the tests were carried out when there was no clear idea if the whole thing was going to work out. Unfortunately, some of the results were lost.	amwl	
43	Ponce	02- Chapter 2	Page 40, section 2.8.1, paragraph 1	How is Equation 2.49 (average water velocity in a cell) reconciled with unsteady flow?	1	Eq (2.49) is an interpolation equation for flow velocity at the center when the discharges across the three walls are known. This is part of the numerical solution. Except for the discretization error (as a result of the interpolation), this is a good estimate for 2-D velocity. In diffusion flow, velocity is not solved independently but directly calculated from the head solution. The question then is how closely is the ν in diffusion model comparing with ν in the dynamic model. If we consider the condition of validity of diffusion and dynamic flow conditions to be based on wave speeds and decay rates (Ponce, 1978), then the error is in h or in u or ν must be within bound that follow the above stated criterion. The answer to this question is available for diffusion flow. It can be shown that the numerical errors for h and q are within the same order of magnitude as shown in eq (22) of Lal (2000).	amwl	
44	Ponce	05 - Appendix A	Page 58, paragraph 1, number 8	How was the value 10% maximum error in mass conservation determined?	1	see #29	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
45	Ponce	06 - Appendix B	Page 61	The Saint Venant equations are the equations of water continuity and momentum in one dimension, not in two dimensions. Referring to the 2-D system, Cunge mentions that "This system of three equations is analogous to the system derived by de Saint Venant for the flow in one spatial dimension." (See Cunge, J. A., 1975, "Two-dimensional modeling of flood plains," Chapter 17 in Unsteady Flow in Open Channels, K Mahmood and V. Yevjevich, Water Resources Publications). The system in question is properly referred to as the "the system of depth-integrated (two-dimensional) equations for unsteady shallow water flow." It is incorrect to say that this system is "commonly referred to as the Saint Venant equations." However, repeated incorrect usage converts to correct usage (by definition of "usage").	1	We need to just say "depth averaged equations for unsteady shallow water flow" as opposed to "commonly referred to St Venant equations.."	amwl	
46	Ponce	06 - Appendix B	Page 62, paragraph 2	A diffusion flow formulation does away with circulation in two-dimensional depth-averaged flow (Ponce and Yabusaki, 1980, Modeling circulation in depth-averaged flow," ASCE Journal of the Hydraulics Division, 107, HY11). Therefore, the approximation is only good for 2-D convection-dominated flows. Is this condition applicable to all cases where the RSM will be applied? A warning is appropriate to caution other users of the model, who may try to apply the model to sites where the 2-D flows are not necessarily convection-dominated.	1	Some of the same material has been discussed in (Ponce 34). According to (4) of Lal (1998c) which has the components of the complete depth averaged equation, the diffusion flow assumption clearly requires the nullification of $\nabla \times \mathbf{V}$, or the vorticity terms. This means there is no possibility for the model to simulate vorticity in the z plane. But this does not eliminate the possibility of having irrotational circulations. An example of irrotational rotation is demonstrated in the case where there are easterly winds in the southern half of the Everglades and westerly winds in the northern half making a rotation in a confined flow domain. This is possible even now with RSM. What is not possible is true vorticity or rotational flow occurring mainly due to wall shear. This is associated with type cross terms in the momentum equation $\frac{\partial}{\partial y}(\text{cont})$	amwl	In the Everglades, the horizontal boundary layer thickness itself is probably a few feet wide at most when compared with the size of a cell, and even if vorticity terms are present in the model, a huge eddy circulation may be numerically challenging. The final thought on this is that one should recognize that RSM is not capable of simulating vorticity in the horizontal plane because of the diffusion assumption. Even if a full equation model had been used, it is doubtful if the large cell sizes used would allow circulations of huge magnitude at such low depths.
47	Ponce	08 - Appendix C.1	Page 2, Introduction, paragraph 2, last sentence	The crucial question is whether a 2-D diffusion-flow model retains the same (or similar) convective and diffusive properties of its 1-D diffusion-wave counterpart. What is your answer to this question?	1	If we consider (4) of Lal (1998c) to be capturing the 2-D momentum equations, the difference between a 1-D equation and the 2-D equation for the sake of this argument is primarily the term associated with vorticity. The other terms are a gradient driven term, a friction driven term and a local acceleration term. Considering the dominance of the first two terms, it seems that the difference between the remaining 2-D equation and the 1-D equation is the direction of the 2-D model. This implies that convective diffusive properties of the remaining 2-D equation are not different between the 1-D and 2-D equations once the mainly the vorticity terms are dropped out.	amwl	
48	Ponce	08 - Appendix C.1	Page 2, Introduction, paragraph 3	Ponce et al.'s 1978 analysis is strictly valid only for 1-D flow. The extension to 2-D flow is plausible, but it needs to be qualified.	1	Ponce (1978) is valid only for 1-D flow. Its extension to 2-D full equations might have some additional terms. Unless a complete analysis is carried out, it is not clear what the terms are like. But considering that horizontal vorticity is not a key issue even in the deepest part of the Everglades, this issue may not have a very high priority.	amwl	
49	Ponce	08 - Appendix C.1	Page 5, paragraph 1	The strategy of recovering some of the convective inertia through the use of E instead of H may be unwise. Ponce (1990) [Ponce, V. M., 1990, Generalized diffusion wave equation with inertial effects, Water Resources Research, 26, No. 5] has demonstrated that in 1-D flow, the full dynamic diffusivity (including all inertia terms) is closer to the kinematic hydraulic diffusivity (neglecting all inertia terms) than the convective-only (partial inertia) model.	1	I was similarly advised by others, and decided to settle on the current formulation.	amwl	
50	Ponce	09 - Appendix C.2	Page 8, Introduction, paragraph 1	The statement "Various unconditionally stable numerical methods using implicit or other methods have made it possible for modelers to use almost any discretization with computer models" is too strong and possibly misleading. While fully implicit methods generally feature unconditional stability, this is usually at the expense of reduced convergence, i.e, loss of accuracy. To mention the unconditional stability without saying anything about accuracy implies that the strategy is one of stability "at all cost," which is self-defeating.	1	The statement was put together after observing some of the wrong practices in industry where discretization was not analyzed or understood in light of the speeds of disturbance, and yet the solution did not show apparent defects for the user to recognize a problem. Since modern solvers solved many problems, the user never saw the loss of accuracy in order to cast any shadow of suspicion. For some time, "stability at all cost" was the motto in certain user applications. This was the reason for the statement.	amwl	
51	Ponce	09 - Appendix C.2	Page 9, paragraph 1	Replace "are arbitrarily chosen" with "are usually arbitrarily chosen." In some diffusion-flow formulations, the space and time follow the Courant convergence law (See Ponce, 1989, Chapter 9, "Engineering Hydrology, Principles and Practices.")	1	Courant and other criterions are useful in explicit schemes. But in implicit schemes, these guidelines are not available, and sometimes arbitrarily chosen.	amwl	
52	Ponce	09 - Appendix C.2	Page 13, paragraph 1	Three discretizations per half sine wave appears very coarse. The error < 4.5% in what? Stage?	1	It is true that 3 discretizations per sine looks good. But that is only as far as the representation of a continuous function using digital values is concerned. When the computations are over, the solution may have larger errors. The error in what? It can be in the representation of the solution in space or in time.	amwl	
53	Ponce	09 - Appendix C.2	Page 16	All methods that solve many grid points at-a-time are implicit. So, there is no semi-implicit. There is implicit and fully implicit, the latter to show that the functions and/or derivatives are being taken at the advanced time step.	1	True. The term "semi-implicit" has been used in the past too to explain α between 0 and 1. But if they were not explicit, they are implicit.	amwl	
54	Ponce	10 - Appendix C.3	Page 5, Governing equations, paragraph 1	Replace "non-inertia form of the Saint Venant equation" with "the non-inertia form of the Saint Venant equations"	1	yes	amwl	
55	Ponce	10 - Appendix C.3	Page 6	In 1-D unsteady flow, the convective celerity is given by Seddon's law, for laminar, mixed, and turbulent flow. How is Seddon's law represented in 2-D unsteady flow? Is the adopted value of Manning's n turbulent, or is it its laminar-equivalent?	1	RSM model only considers 2-D diffusion flow at this time, and therefore the representation of 2-D unsteady (dynamic) flow in Seddon's law was not investigated. But to the extent numerical solutions are applicable, the wave speeds of the diffusion flow have to be close to the analytical values obtained by Ponce in various papers. The Mannings value used in the model are somewhat larger than the values commonly used for fully developed turbulent flow. Wetland conditions, various vegetation types and microtopographic conditions have pushed the Mannings values higher than most Mannings values developed for deep rivers.	amwl	
56	Ponce	10 - Appendix C.3	Page 7, paragraph 2	When friction slope Sn reaches values as low as 10-7 and lower, the applicability of the diffusion flow assumption may not be guaranteed.	1	Yes. Then, the diffusion flow becomes linear diffusion flow as a Darcian flow, with a constant K value as opposed to the nonlinear K value, and the flow becomes closer to groundwater flow than surface water flow.	amwl	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
57	Ponce	10 - Appendix C.3	Page 9, last line	Is the defined stage-volume (SV) relationship unique? If so, it contradicts the principle of (dynamic or diffusive) unsteady flow, rendering the simulated flow kinematic. Please explain in a better way.	1	SV relationship does not affect dynamic or diffusion flow when the free water surface is above ground because then the gradient of the function becomes 1.0 as opposed to s_e. The SV relationship is important only when the water surface is within the microtopography. At that point, surely the wave speeds are affected. The SV relationship is always unique for a given location, and varies from place to place.	amwl	
58	Ponce	10 - Appendix C.3	Page 10, paragraph 2	Explain the cost to be paid when the a weighting factor is raised to a = 1 when "nonlinearities are severe and the model shows signs of instability."	1	α = 1.0 does not cost anything. It is the cheapest. However nonlinearities are costly. They slow the matrix operations while increasing errors and instabilities.	amwl	
59	Ponce	10 - Appendix C.3	Page 12, paragraph 3	If the water movers (and the water bodies) conserve mass, why is it necessary to track mass balance of the system?	1	Water movers and waterbodies are tracked not for computational reasons but to carry out water budget calculations during post processing.	amwl	
60	Ponce	10 - Appendix C.3	Page 20, paragraph 2	The hydraulic diffusivity of overland flow is likely to be different from that of groundwater flow. How is the mesh size reconciled for this difference? In other words, a resolution (or discretization) that is accurate for overland flow may not have the same accuracy for groundwater flow. Please explain how do you handle this different accuracy response (i.e., convergence response, based on suitable amplitude and phase portraits).	1	The reason for carrying out error analysis was to find out the relationship between the discretization, numerical error taking into account the diffusivity of the medium. Diffusivity come into the picture because the matching between spatial and temporal discretizations depend on the diffusivity. As long as the user designs a discretization that can carry the solution accurately in both space and time, the solution will survive regardless of the medium. If a single discretization is to be used, one has to be careful that it does not drop solution components that are important to the user. Different solution components also have different error levels depending on the discretization.	amwl	
61	Ponce	13 - Appendix C.6	Page 37, paragraph 2	Question the use of the word "arguably" in this context. Argumentative; value judgment. Is there a need to defend MIKE SHE here?	1	Agreed, there is no need to defend MIKE SHE, rather, was attempting to convey that other models do implement advanced management processing, that the mse implementation represents an advance in the state-of-the-art.	jcp	
62	Ponce	14 - SFRSM Fact Sheet	Page 1, Section	What are the main components of SFRSM?	1	see #73	pef	
63	Ponce	06 - Appendix B	2.	Need to establish a better link between the traditional equations (the differential equations of Appendix B) and the equations used in the OO model (look-up tables, regression). Are the latter based on the former? If not, how is the relevancy of the traditional equations justified?	1	The traditional equations are presented only for historical interest. But it is not different from the OO presentation.	amwl	
64	Ponce	0 - General Comments	4.	The so-called "diffusion equations" calculate hydrograph diffusion, in either 1-D or 2-D. True (physical) hydrograph diffusion can only be produced by an unsteady loop in the rating curve. Disregarding the loop by using a static look-up table renders the simulation kinematic, i.e., not subject to physical diffusion. Then, any hydrograph diffusion represented in the simulation would necessarily be a function of the grid size. Please explain how extensive is the use of look-up tables in the model, and what is the effect, if any, on the calculated hydrograph diffusion.	1	This is a valid argument. The idea of a lookup table for conveyance with the slope raised to the power 1 or 0.5 would mean flow of a certain restricted kind more closely related to kinematic waves. Under such shallow conditions, the use of the definition of "diffusion" itself becomes questionable. In large rivers, this would be a different case. Lookup tables have not been used in applications yet. But I can see them useful when the flow is not quite surface flow or subsurface flow but some kind of localized stream flow where there may not be a good analytical relationship developed from raw data, and only a lookup table is possible.	amwl	
65	Ponce	06 - Appendix B	5.	How was the threshold value d in Eq. B.16 determined? How often is it reached? What does the model do when the threshold value is reached?	1	see #26		
66	Ponce	0 - General Comments	6.	The model uses the NRCS curve number method as the infiltration model. However, the latter is strictly applicable only to event (short-term) modeling. In practice, the AMC feature of the curve number method helps it account for the natural variability of infiltration response. There is no such thing as a fixed "curve number," or a constant "maximum potential retention (S)." Thus, a curve number obtained through calibration may not be applicable in the validation phase, unless the two events being used (for calibration and validation) happen to have similar AMC characteristics. This is a tough problem, and one which not many people are fully aware of.	1	The user can decide the type of HPMs used in a model application. The curve number method was used in one of the HPMs as a way to approximate local processes, when there are no other local hydrologic parameters are available to be used.	amwl	
736	Schaffranek	01 - Chapter 1	3	Add NSM, first defined on page 7, and SFRSM and NSRSM, defined on page 9, to the Acronyms list.	9	will address in manual--has been flagged	pef	
737	Schaffranek	01 - Chapter 1	6	Could not find the reference citation (Solomantine, 1996) on page 9 in the 1996 ASCE Journal of Hydraulic Engineering as indicated in the Bibliography on page 55.	9	see #759	pef	
738	Schaffranek	01 - Chapter 1	8	The reference citation (Shen et al., 1997) appearing on page 11 is not in the 1997 ASCE Journal of Hydraulic Engineering as indicated in the Bibliography on page 55.	9	see #759	pef	
739	Schaffranek	01 - Chapter 1	9	The reference (Senarath et al., 2001) cited on page 12 is insufficiently identified in the Bibliography on page 55, no publication source is given for this abstract.	9	see #759	pef	
1	Chin	02- Chapter 2	2. Page 18, Section 2.2, second paragraph	The second sentence states that "The governing equations used in the formulation are based on the Reynolds transport theorem." This is not strictly true, since the Reynolds transport theorem is simply a means of transforming an equation based on a Lagrangian reference frame to the same equation in an Eulerian reference frame. Therefore, the Theory Manual should more correctly state "The governing equations used in the formulation are based on the continuity equation".	1	According to Chow and Maidment in Applied Hydrology, ans many other texts, "a consistent mechanism needed for developing hydrologic models is provided by the Reynolds transport theorem". Prior to 1970's development of various governing equations was based on mass balance and other conservation laws applied on small control volumes on a one-by-one basis. The control volume size was then limited (in the sense of calculus) to zero to obtain differential equations. The Reynolds transport theorem allows for a more elegant way to apply conservation laws using a consistent generic mathematical form without regard to the material type. With this form, it is possible to obtain the integral form of the equation, and even the differential form of the equation. The RT theorem eliminates the need to specify the conservation of "what" and make it possible to write mathematical principle. In RSM, the numerical model is built around conservation laws applicable to many physical processes, and the RT theorem is at the root of the model. (cont)	amwl	Unfortunately according to the way it happened in history, there was Gauss's theorem and Stokes theorem first, and RT theorem came much later in the attempt to make all derivations consistent. The attempt here with the RSM is to take one more step and make the conceptualization consistent with a generic mathematical form. Even if it appears as if the RT theorem transforms a theorem based on the Lagrangian frame of reference to an Eulerian, the intent of the RT theorem is to describe conservation laws written for a constant mass (called a system) to a constant fixed control volume. I found a good description of this in Panton (1994).
2	Chin	02- Chapter 2	5. Page 20, Section 2.3.1	Change "The first term in Equation 2.2 represents storage in the control volumes" to "The first term in Equation 2.2 represents the rate of change of storage in the control volumes".	1	Yes, will correct	amwl	
3	Chin	02- Chapter 2	7. Page 21, Equation 2.3	"E" and "V" are really the same vector, I would recommend using "V" for both. If this is done, Equation 2.2 should also use "V" instead of "E".	1	correct.	amwl	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
4	Chin	02- Chapter 2	8. Page 21, sentence before Equation 2.5	change "explained" to "estimated". It would also be useful to cite a reference for Equations 2.6 and 2.7.	1	sounds better	amwl	
5	Chin	02- Chapter 2	9. Equations 2.10 to 2.12 are incorrect	the integral sign (over cv) on the RHS of these equations needs to be removed.	1	yes	amwl	
6	Chin	02- Chapter 2	12. Page 22, second sentence after Equation 2.13	the phrase "becomes 1 for overland flow and sc for groundwater flow" needs modification to define sc. Care should be taken not to define "sc" simply as the storage coefficient , but as the specific yield.	1	The idea of SV function started for unconfined flow first, but later extended to include confined aquifers and multi-layered configurations. But a single term "storage coefficient" was used to to call all these objects. The variable s_c was also used generically in the OO formulation. Functionally, this captures specific yield or storage coefficient depending on the application. The manual has to be changed to account for this.	amwl	
7	Chin	02- Chapter 2	13. Page 24, Equations 2.16 to 2.18	consideration should be given to using fsv^-1 instead of introducing a new function fvs.	1	The meaning of inverse here is not a reciprocal but an inverse function mapping.	amwl	
8	Chin	02- Chapter 2	14. Page 26, Equations 2.23 and 2.24	The meaning of Tmn should be stated, for example "Tmn is the flow per unit width per unit slope, which is effectively a transmissivity".	1	correct	amwl	
9	Chin	02- Chapter 2	15. Page 27, Equation 2.27	It is not obvious where Equation 2.27 comes from, or what is the basis for its derivation. e.g. is it the slope in the direction normal to jk? This should be addressed in the text.	1	Unfortunately it is not obvious where this came from. But one has to see equations (4) and (5) of Lal (1998a) in which K is described using $\frac{h^{5/3}}{n\sqrt{s_r}}$, the way to calculate s_r is as $\sqrt{s_1^2 + s_2^2}$ as long as s_1 and s_2 are in two perpendicular directions. s_r here is the magnitude of the maximum slope at the wall r.	amwl	
10	Chin	02- Chapter 2	16. Page 27, second to last sentence	the statement "flow across section r adds water to cell n and removes water from cell m" does not follow Figure 2.6. Switch "m" and "n".	1	Will address in manual (fig. 2.6)		
11	Chin	02- Chapter 2	17. Page 28, Equations 2.30 to 2.33	Explain where the additional term on the RHS of each of these equations comes from.	1	Equations 2.20-2.33 are intended to represent lines in the computer code meaning that the new value is equal to the old value plus a term. The arrow implies that the variable in the left hand side is to be replaced with the value of the expression on the right hand side. The manual may have to explain the use of the arrow.	amwl	
12	Chin	02- Chapter 2	18. Page 30, Equation 2.30	Is there a "Delta L" missing from this equation? Comparing Equations 2.38 and 2.34, does Tr have different units in these equations?	1	Delta L is missing	amwl	
13	Chin	02- Chapter 2	19. Page 30, Equation 2.39	Exponent should be "2/3" instead of "5/3".	1	For canal flow, this is 2/3 because there is already an A_m outside. The comment is correct.	amwl	
14	Chin	02- Chapter 2	23. Page 39, Section 2.8	State explicitly whether taking M^n+1 = M^n has any impact on model accuracy	1	Making M^{n+1} to be the same as M^n was found to be a good approximation during the early part of development where a couple of iterative cycles were used to update M^{n+1} with the correct value. During the period, it was found that the error generated by this assumption was smaller than the discretization error (first order error), and therefore could be neglected. As an alternative to the iteration, it was decided to carry out a thorough error analysis with rapidly varying flows (high frequency components) in the solution, and understand the behavior of the error before making a decision. The error analysis showed that the model error without iteration was the range that can also be determined analytically for linear problems. It was determined that even if iterations were added to improve the nonlinear behavior of the diffusion flow model for example, the numerical error will still be within the first order range. (cont)	amwl	Further studying of this is planned with rapidly varying diffusion flows and dynamic flows. These are the types of flows where flow variations are going to be rapid and the iteration are going to be significant. With the results of this study, it will be easy to check how adding dynamic terms compare with adding iterations to nonlinear diffusion flow.
15	Chin	02- Chapter 2	24. Page 40, first sentence	If you know H^n and Delta H why not take H^n+1 = H^n + Delta H instead of H^n+1 = fvs(V^n+A \Delta H)?	1			
25	Dracup	02- Chapter 2	1	It wasn't clear to me why the authors interpolated the energy slope laterally across a cell face in addition to between point's m and n (the centers of the two adjoining cells). See equation 2.27.	1	In eq (7) of Lal (1998c), $K = \frac{1}{n_b} h^{\lambda+1} S_n^{\lambda-1}$, the variable S_n is the maximum slope of the energy grade line at the wall. Eq (2.27) is the way to obtain this at the middle of the wall as described in **Chin 9** as well, which is $\sqrt{s_1^2 + s_2^2}$	amwl	
67	Ponce	0 - General Comments	7.	Need to better explain the determination of the Manning friction coefficient under various vegetative and other terrain (land use) conditions. If the Manning value is going to be large (greater than 0.3), it is probably out of the fully-developed, turbulent-flow regime already, and may be in the mixed laminar-turbulent regime. In this case, it is more appropriate to refer to the friction coefficient as the "equivalent Manning roughness." The latter is sometimes denoted as N to indicate that it is not the fully-developed, turbulent-flow value. What is the model's sensitivity to the chosen value of Manning friction?	1	The Manning friction values used in the Everglades have always been high, sometimes getting close to 1, according to the SFWMM model calibrations. The high values have been justified in thick vegetations in the Everglades consisting of sawgrass, cattail, etc. For some vegetation types, the Manning values were described as functions of depth with Manning value becoming less as the depth increases. It is true that a better term to use here is the equivalent Manning roughness. The most sensitive parameter in the Everglades is ET. The second most sensitive parameters is Mannings roughness. The sensitivity to Mannings coefficient is higher when the water velocity is high.	amwl	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
98	Ponce	06 - Appendix B	Page 65, section B.4, paragraph 1	Is a correction being used to account of the fact that neither rainfall nor ET are being input to the canals? With so many canals in South Florida, is this effect negligible?	3	Will address in response doc. <1% of land surface in FL is canal top elevs.	Ken	
99	Ponce	08 - Appendix C.1	Page 14, paragraph 2	What is the basis for the choice (assumption) of Manning n = 1 for the given case? What is the sensitivity of the results to variation in n?	3	This test was selected after considering the sheet flow problem in the Everglades. The size of the domain, depth of water and the Mannings values were similar to those used in the SFWMM. This test was used first to verify the SFWMM during its peer review and verify if a circular patch of water remains circular after a given time.	amwl	
100	Ponce	12 - Appendix C.5	Page 27, Table 7	What is the s attribute of agimp? Abstraction in the NRCS runoff method? Is it the potential storage (abstraction), commonly referred to as (capital) S? if so, the CN corresponding to S = 0.85 m is CN = 23. This value appears to be too low. Is this a good (central) value for South Florida?	3	The value for S in table 7 will be adjusted to reflect better values for South Florida	ef	
142	Ponce	02- Chapter 2	Page 22, section 2.4, paragraph 1	A stage-volume relationship implies the existence of a unique rating curve. In general, unsteady flow rating curves are not unique. The manual needs to state here that the unique rating assumption is "approximately" consistent with the diffusion flow assumption.	5	With kinematic waves, there will be a unique rating curve. But SV curves can be used with unsteady curves as well, in which case there won't be a unique rating curve. Regardless of the SV curve, there won't be a unique rating curve whenever diffusion waves are used.	amwl	
143	Ponce	02- Chapter 2	Page 26, section 2.5.1	Define Tmn	5	see #8	pef	
144	Ponce	02- Chapter 2	Page 26, section 2.5.1	Question the usage of "If" at the beginning of the sentence. What other equations are used, besides the Manning equation?	5	will change to "when"--has been flagged	pef	
145	Ponce	06 - Appendix B	Page 64, section B.3, paragraph 1	For completeness, the definition of "internal boundary condition" is missing.	5	internal boundary condition is described on the next page; we either need to define both in the opening paragraph, or make subsections for external and internal so that internal stands out more--has been flagged	pef	
146	Ponce	06 - Appendix B	Page 65, section B.4, paragraph 1	The Saint Venant equations are not commonly referred to as "depth-averaged." Replace "Gradually varied 1-D unsteady flow is explained using the depth averaged equations commonly referred to as Saint Venant equations" with "Gradually varied unsteady 1-D flow is commonly described using the equations of water continuity and momentum attributed to Saint Venant"	5	agreed	amwl	
147	Ponce	06 - Appendix B	Page 66, paragraph 1	Is the last sentence needed? The first sentence of Appendix B states "The PDEs... are not directly used in the RSM." The last sentence says "The finite volume method is not directly based on this differential form..." This appears to be redundant. Need to more clearly explain the tie between the PDE's, needed to check accuracy, and the finite-volume method, needed for the OO modeling. Maybe this explanation belongs in Chapter 2.	5	The first sentence "The PDE form of the equations are not directly used in RSM" was meant to say that only the "Reynolds transport theorem form was directly used or modeled in RSM". It is true that the last sentence is redundant. The relationship between the PDE and the RSM is that both can be derived beginning from the Reynolds Transport theorem.	amwl	
148	Ponce	08 - Appendix C.1	Page 2, Introduction, paragraph 2	Liggett and Woolhiser (1967) and the other authors cited here used the 1-D overland flow equations, not the 2-D equations. It is best here to replace "The earliest 2-D models" with "The earliest models"	5	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
149	Ponce	08 - Appendix C.1	Page 5, Governing Equations, paragraph 1	Question the name "Saint Venant equations" to refer to the depth-integrated 2-D shallow-water equations.	5	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
150	Ponce	09 - Appendix C.2	Page 14, paragraph 1	Eq. 9 is not clear.	5	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
172	Therrien	02- Chapter 2	20	Although the stage volume relationship applies for the subsurface, the name is confusing because stage is not used to describe groundwater levels.	5	will address in manual--has been flagged, plus we have noted the need for a glossary of terms, where we would define "stage" to mean either surface water or groundwater head	pef	
173	Therrien	02- Chapter 2	23	Figure 2.6 does not show control volumes 1 and 2 (page 26).	5	Lal? I don't see any reference to control volumes 1 and 2, but it has been flagged in the manual to update the graphic	pef	
174	Therrien	02- Chapter 2	24	Figure 2.6 shows nodes and cells but at that point in the manual, it is not clear what nodes and cells are.	5	will address by expanding figure caption and image of figure 2.2--has been flagged	pef	
94	Schaffranek	02- Chapter 2	27	Are canal segments treated as prismatic channels?	2			
103	Schaffranek	02- Chapter 2	16	In the last page 21 paragraph, what is meant by "under the deep sections"? Is the meaning "for deep locations in the Everglades wetlands"?	3	yes; locations in Everglades where water depths are relatively deep		
104	Schaffranek	02- Chapter 2	22	Change the last sentence on page 26 starting at the definition of Stol to read "a small lower-limit slope for the energy grade line used to prevent division by zero in the calculation of Tmn.	3			
105	Schaffranek	02- Chapter 2	23	Change the first sentence on page 27 that reads "A value of 10-13 to 10-7 is used in the Everglades because these slopes are below typically observed slopes except in deep pools of water." to "A lower-limit slope in the range of 10-13 to 10-7 is reasonable for Everglades wetlands."	3			

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
113	Schaffranek	02- Chapter 2	13	On page 20, the first line of the second paragraph states that "…control volumes are represented by triangular prisms or objects of any other shape, depending on the water body type and discretization used." Does this mean any shape object (square, rectangular, irregular polygons, etc.) for any water body type? Does the HSE code accommodate an unstructured mesh of variable types of elements? If so, within every water body type? Also, if so, how does this pass limitations of the circumcenter method, e.g. acute triangles, identified at the bottom of page 28?	4	overland flow waterbody requires triangles; other types (e.g., canal waterbody) can have other shapes; this has been flagged for clarification in the manual	pef	
124	Jones	02- Chapter 2		Good overall introduction to the HSE. Some parts could have used more explanation. I think this chapter should be combined with Appendix C.3 and C.5 (and perhaps parts of C1).	5	requested panel to provide suggestions on what parts to move forward, what parts to drop	pef	
125	Jones	02- Chapter 2	Page 22	The derivation at the beginning of section 2.4.1 was a little difficult to follow. Could benefit from additional explanation/discussion.	5			
126	Jones	02- Chapter 2	Page 33, paragraph 3	"They are computed separately for each cell with a new land use type." New relative to what? Confusing.	5	will address in manual--has been flagged	pef	
127	Jones	02- Chapter 2	Page 34	This section lists four simple HPMs. A code "layer1nsm", "layer5", etc. is included in brackets after each type name. These codes are not explained until Appendix C.5. A similar set of codes is listed in the next section. Since this section is just a very brief summary, the codes seem out of place here.	5	will address in manual--has been flagged	pef	
128	Jones	02- Chapter 2	Page 40	Figure 2.13 could use more explanation.	5			
151	Ponce	10 - Appendix C.3	Page 2, Introduction	To compare the rate of increase of computing power with the rate of increase in complexity of other hydrologic system and water management issues is to compare apples and oranges. Better to say it this way - "While the computing power has continued to increase steadily, the complexity of the hydrologic system and the related management issues have also continued to grow".	5	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
152	Ponce	10 - Appendix C.3	Page 5, paragraph 1	What is meant by "micro-hydrologic features"?	5	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
153	Ponce	12 - Appendix C.5	General comment	This paper contains some important concepts which are not detailed in the main body of the Theory Manual. You may want to consider eventually placing some of this material within the main body of the Theory Manual.	5	see #124	pef	
160	Schaffranek	02- Chapter 2	26	In Figure 2.8 on page 30, is the matrix definition part intended to represent the canal submatrix as figure 2.7 does for overland flow or is it intended to illustrate canal flow calculations as the caption states, or both? Either this figure needs to be divided into two figures or the information the figure is intended to convey needs more description and discussion in the text, or both.	5			
175	Therrien	02- Chapter 2	25	In section 2.5.1.1., I am not sure what is meant by mixed flow.	5	As explained in the same section, two adjacent cells use different types of flow equations in mixed flow.	amwl	
176	Therrien	02- Chapter 2	27	In section 2.5, it should be clear that segments refer to canals only (I guessed it when reading section 2.5.3) and that cells refer only to overland or subsurface.	5	has been flagged to replace all "segment" with "canal segment waterbody"	pef	
177	Therrien	02- Chapter 2	30	Figure 2.12 is a good example that relates concepts in the model to a field example and I like that figure. Similar examples or figures should be used more often in the manual.	5	good idea--especiallyat the start of section 2.4 on page 22	pef	
178	Therrien	02- Chapter 2	31	The weighted implicit method (section 2.8) should be defined exactly. In general, implicit time weighting corresponds to a value of alpha equal to 1.0 in equation 2.47, which does not correspond with the term implicit method used here.	5	Has been flagged	pef	
179	Therrien	02- Chapter 2	32	Figure 2.13 is difficult to understand.	5	agreed! will address in manual--has been flagged	pef	
180	Therrien	02- Chapter 2	33	The flowchart in figure 2.14 is informative and could be modified to answer some of my comments above (show if other loops exist for non-linearity, show where convergence checks are made). However, I find that the label for the 3rd box, horizontal flow, is confusing because it suggests that only 2D flow is simulated, while I thought that the model has 3D capabilities.	5	agreed! will address in manual--has been flagged	pef	
181	Therrien	03 - Chapter 3	34	I find that chapter 3 (MSE) is rather abstract and would benefit from a few real examples to complement the description of supervisors, assessors and filters. From reading that chapter, I find it difficult to understand which situations are better handled with only assessors or with supervisors and assessors.	5	agreed--MSE is still under development, so we haven't concluded which way is better yet	pef	
182	Therrien	12 - Appendix C.5	37	Appendix C.5 has been written with a different word processor than the theory manual and it is not as easy to read. For example, equations and variables are not written with different fonts and they tend to blend with the text. I prefer the style used in the theory manuel (I assume it is Latex).	5	requested panel to provide recommendations regarding LaTeX vs. MS Word for production of documents; SFWMD will be setting standards before 10/05 and panel's experiences would be welcomed	pef	
183	Therrien	12 - Appendix C.5	41	The concept of the hub is clearly defined, but I am still not sure when it is preferable to use a hub as opposed to independent HPMs.	5	The Hub is preferred for two situations: 1) when a large area has a single water source (irrigation or urban consumptive use) and/or a single discharge. The Hub allows the HMPs that overlay each mesh cell to interact with the regional mesh at two selected locations. 2) where there distinctly different land-use types and consequently different local hydrology within a mesh cell. The Hub can be used to represent this complex hydrology. It is simpler and more flexible to construct a single Hub with multiple simple HPMs than it is to construct a unique HPM that has the necessary features.	ef	
184	Therrien	12 - Appendix C.5	42	The example in section 8 should be presented in more detail. There is missing information on the physical set up (for example, input parameters describing material properties) that makes it difficult to assess. For example, rainfall is not shown.	5	Greater detail will be added to the example in Section 8.	ef	
185	Therrien	13 - Appendix C.6	44	On page 2, the first paragraph is too broad is scope (for example, references to electrical or mechanical engineering). I would also not use the expression overwhelming proliferation, which sounds negative.	5	As in previous comment, overwhelming is removed.	jcp	
186	Therrien	13 - Appendix C.6	45	In the introduction, I think that an example of some hydraulic structures could be given. I would describe exactly the context in South Florida with respect to hydraulic structures, to provide justification for building the MSE.	5	This is a good suggestion. Section 3, which provides a model implementation and demonstration of hse/mse applied to hydraulic structures, was partially intended to address this concern.	jcp	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
270	Chin	02- Chapter 2	1. Page 17	capitalize first word in list (1-7)	9	defer to technical editor	pef	
271	Chin	02- Chapter 2	3. Page 18, Section 2.2, second paragraph	Delete the sentence that begins with "Parts of the surface integral"	9	has been flagged in manual	pef	
272	Chin	02- Chapter 2	4. Page 19, Section 2.3	replace "E = flux vector; n = unit normal vector" by "E = velocity vector; n = unit normal vector pointing out of the control volume".	1			
273	Chin	02- Chapter 2	6. Page 21, first line	change "of the St. Venant equations" to "or the St. Venant equations"	9	has been flagged	pef	
274	Chin	02- Chapter 2	10. Page 22, first sentence after Equation 2.12	change "Ao = plan area of the waterbody" to "Ao = reference plan area of the waterbody"	9			
275	Chin	02- Chapter 2	11. Page 22, first sentence after Equation 2.12	remove the phrase "that applies to any of the control volumes"	9			
276	Chin	02- Chapter 2	20. Page 31, first sentence after Equation 2.40	change "km = sediment layer conductivity" to "kv = sediment layer hydraulic conductivity"	9	has been flagged	pef	
277	Chin	02- Chapter 2	21. Page 31, Section 2.5.5, first sentence	change ";" to "."	9	has been flagged	pef	
278	Chin	02- Chapter 2	22. Page 37, Equation 2.44	remove the "dot" on RHS	9	has been flagged	pef	
279	Chin	02- Chapter 2	25. Page 40, last sentence	change "/cite" to "\cite" to correct the TeX formatting	9	has been flagged	pef	
154	Ponce	14 - SFRSM Fact Sheet	Page 2, item 15	Replace "English units" with "U.S. customary units" [SI units have been used in the papers. Is there a conflict here? Or, are both systems being used?]	5	the RSM can handle English or SI units; the default is SI. See p. 33 of HSE User Manual. The fact sheet describes the units chosen for the SFRSM implementation of the RSM.	pef	
155	Ponce	14 - SFRSM Fact Sheet		Suggest collecting all positives at the beginning, and all negatives at the end. Emphasize positives and deemphasize negatives.	5	the "negatives" are constraints within the current "SFRSM 2005" project deadline. Most of them are intended to be removed as we progress. We will probably group the general assumptions into categories that better the scope of this phase of the SFRSM project.	pef	
156	Ponce	07 - Appendices C.1 to C.4	1.	The main body of the manual consists of 56 pages. The remainder consists of Appendices A, B, and C. In particular, Appendix C consists of six (6) documents, the first four of which are published (or to be published) papers. I believe Appendices C.5 and C.6 contain information which should be part of the main body of the manual. It is okay to place published work in the appendix, but unpublished work, particularly if it relates directly to the subject matter, should be placed within the main body. This may require a major restructuring of the manual chapters.	5	see #124, #129	pef	
157	Ponce	07 - Appendices C.1 to C.4	2.	Published papers to be placed in an appendix (in this case, C.1 to C.4) should be in the original, published form. The proper permissions should be secured from the publishers.	5	see #120	pef	
158	Ponce	0 - General Comments	1.	Avoid jumping over details of equations. If the manual is to be used by practitioners (consultants and others), they need to be able to see the various steps leading to the solution, within reason, of course.	5	traditional approach equations were moved to Appendix B because they are background info; please specify if there are places where we jumped too far (such as comment #125) too fast; potential audience was detailed in Fulton slides during workshop	pef	
159	Ponce	0 - General Comments	3.	Need to be consistent on the system of units. Appendix C.5 contains SI units, while the Fact Sheet states that "all input and output data will be created in English units"	5	see #154	pef	
232	Ponce	12 - Appendix C.5	Page 2	Is the used approximation, which neglects the inertia terms, named "diffusive wave" or "diffusion wave" or "diffusion flow"? Be consistent throughout the report (Theory Manual).	7			
233	Ponce	12 - Appendix C.5	Page 9, section 3.3, paragraph 1	"explicit solution for convenience and stability" Rationale is not clear, aren't explicit solutions conditionally stable?	7			
234	Ponce	12 - Appendix C.5	Page 9, section 4, bullet 4	Replace "deterministic lumped parameter conceptual model" with "deterministic lumped-parameter conceptual model". Is the model is classified as deterministic, it cannot be conceptual; these are mutually exclusive terms. If it has components of both, then it is classified as deterministic-conceptual.	7			
235	Ponce	12 - Appendix C.5	Page 13, paragraph 1	Replace "vegetation specific reference vegetation PET correction coefficient" with "vegetation-specific reference-vegetation PET correction coefficient." Don't vegetation-specific and reference-vegetation contradict each other? Please clarify.	7	1) editorial change will be made, 2) concerning coefficients used to adjust PET values to estimate actual evapotranspiration--this comment was also made during the general comments on the model, and will be addressed by adding the following text to the Section 2 Governing Equations: The driving forces for the HPMs are rainfall and potential evapotranspiration. The rainfall is input for each cell based on a Theissen polygon estimation of local rainfall from daily rainfall data collected at 300+ gages distributed around south Florida (SFWMD, 2004a). The rainfall data are saved in a binary file that is accessed by the mesh cell to determine the daily rainfall. Daily values of potential evapotransporation (PET) are provided to each mesh cell interpolated from theissen polygon of the daily PET values at 60+ stations (SFWMD, 2004b). The daily PET values are estimated using a temperature-based method for approximating solar radiation that was calibrated to the actual ET for wetland vegetation reference-land cover. (cont)	ef	To estimate actual ET for each HPM, either crop PET-correction coefficients or cover-vegetation PET-correction coefficients are applied to the PET developed for the wetland-vegetation, reference-land cover PET. Typically, daily reference-crop PET values are available for a well-watered short grass crop (FAO, 1990), but it is felt that PET from a wetland reference-vegetation such as a mixed emergent macrophyte cover would be more appropriate for South Florida. (3 references will be added)

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
236	Ponce	12 - Appendix C.5	Page 17, first sentence	How is Imax determined?	7	Lmax is computed using Eqn 50, which will be moved from the example into the <prr> HPM chapter.	ef	
237	Ponce	12 - Appendix C.5	Page 29, Table 8	What is the time duration of the depth attributes of the imperv HPM? One day? One time interval?	7	The attributes <imperv> described in Table 8 are continuous. The storages are filled by rain and emptied by evaporation. A water budget is maintained for each storage	ef	
238	Ponce	12 - Appendix C.5	Page 30, paragraph 2	How do you justify using the event-based NRCS runoff (curve number) method for hydrologic abstraction in continuous modeling? I know that this has been done in the past, but, is it generally justified?	7	The curve number method is used for estimating the volume of runoff from any single storm event. If the available watershed storage and initial abstraction are estimated in a reasonable manner, the continuous record may be broken down into a sequence of individual events. This method provides a means to use the accumulated knowledge of curve number values for different land-use and land cover types to estimate runoff. HPMs are designed to produce the one and only best method for modeling local hydrology, but also to provide comparable methods for modeling the same hydrology. The <mbrcell> HPM provides a means of implementing a CN method for local hydrology.	ef	
239	Ponce	12 - Appendix C.5	Page 31, paragraph 1	How was Eq. 44 determined? How was the constant 0.5 in Eq. 44 determined?	7			
240	Ponce	12 - Appendix C.5	Page 31, Table 9	How is time of concentration determined?	7			
241	Ponce	12 - Appendix C.5	Page 37, paragraph 2	The sentence "The urban developments receive water from offsite public water supply wells (PWS), are self-served or have both where landscape irrigation comes from a local source." is ackward. Better state as "The urban developments receive water either from offsite public water-supply wells (PWS), or are self-served, or from both (PWS and self-served) in the case where landscape irrigation comes from a local source" I hope I have not changed the meaning. Please verify.	7	agreed--sounds better; will address in manual--has been flagged	pef	
242	Ponce	12 - Appendix C.5	Page 39, Fgure 16	What is the temporal dimension of ET and runoff? Per day? Per year?	7	The temporal dimension of ET and Runoff is annual. The figure will be changed.	ef	
243	Ponce	12 - Appendix C.5	Page 40, paragraph 3	There is a danger of excessive reliance of NRCS runoff curve number to model conditions for which the model is known not to perform. NRCS is a design tool, not a continuous simulation tool. Its use in continuous simulation, for lack of a better or more convenient method, should be performed with extreme caution.	7	see #243	ef	
244	Ponce	12 - Appendix C.5	Page 41, paragraph 2	Equation 50 is dimensional, with the units of Lmax, 1000 and 10 given in inches. For usage in the metric system, the quantity 1000 and 10 need to be converted to the proper units (2540 and 25.4 for centimeters; 25.4 and 0.254 in meters). Please confirm that this is the case in this application.	7	The HPMs were originally developed in their native units (in, ft or m). In the conversion to a single scale the equation will be converted to 25.4 and 0.254 so S is in meters. The pre-processor will be used to provide those users that prefer to use local units to convert to metric for the xml input files.	ef	
356	Ponce	01 - Chapter 1	Page 4, paragraph 1	Question the usage of words such as "leveraged" and "overwhelming".	9	has been flagged for technical editor	pef	
740	Schaffranek	02- Chapter 2	14	In the last sentence of the second paragraph on page 20, change "are" to "is".	9	has been flagged	pef	
741	Schaffranek	02- Chapter 2	15	In the first sentence of the last paragraph on page 21, change first "conditions" to "factors", "have made" to "make", "possible" to "acceptable" or "reasonable", and "in south Florida" to "models of the south Florida Everglades".	9	has been flagged	pef	
742	Schaffranek	02- Chapter 2	17	Change the sentence in the last page 21 paragraph that reads "Diffusion assumption can also becomes weak in deep canals of RSM for the same reason." to "The diffusion assumption of the RSM also is weak in deep canals for the same reason."	9	has been flagged	pef	
743	Schaffranek	02- Chapter 2	18	In the last sentence on page 21, add "in simulations of the south Florida Everglades" after "of interest" and change "irrelevant, as long as the accuracy of the long period solution components can be maintained" to "neglected, as long as the solution accuracy for long period components is not compromised".	9	has been flagged	pef	
744	Schaffranek	02- Chapter 2	19	On page 23, change "When the ground level is assumed horizontal" to "When the ground surface is assumed horizontal".	9	has been flagged	pef	
745	Schaffranek	02- Chapter 2	20	On page 24, change "flat ground" to "a horizontal ground surface".	9	has been flagged	pef	
746	Schaffranek	02- Chapter 2	21	In sentence on page 25 beginning, "Hydrologic process modules (HPMs)" all words should be first letter capital as on page 33.	9	has been flagged	pef	
747	Schaffranek	02- Chapter 2	24	In the first sentence of section 2.5.1.1 on page 29, add "surface" after "ground" and change "flow takes place between them" to "flow occurs between the cells".	9	has been flagged	pef	
748	Schaffranek	02- Chapter 2	25	In section 2.5.1.1, hyphenate "inter-block" and change "filled up by the" to "representing".	9	has been flagged	pef	
749	Schaffranek	02- Chapter 2	28	At the top of page 31, hyphenate "cross-sectional".	9	has been flagged	pef	
750	Schaffranek	02- Chapter 2	29	In section 2.5.5 on page 31, change "is not easy for most of the structures" to "is difficult for most types of structures used in the Everglades".	9	has been flagged	pef	
751	Schaffranek	02- Chapter 2	30	In the second paragraph of section 2.5.5, change "differential equations with structure equations" to "differential equations for structures".	9	has been flagged	pef	
752	Schaffranek	02- Chapter 2	31	Add PWS, defined on page 34, to Acronyms list.	9	has been flagged	pef	
753	Schaffranek	02- Chapter 2	32	In the first full paragraph on page 37, insert "land" after "impervious" in the sentence that begins "The Hub allows runoff…".	9	has been flagged	pef	
754	Schaffranek	02- Chapter 2	33	In second paragraph on page 39, change matrix "P" to "M" and hyphenate "one-thousand".	9	has been flagged	pef	
755	Schaffranek	02- Chapter 2	34	At the bottom of page 40, correct Latex "/citePutti:1996" to "Putti (1996)" and add reference in Bibliography.	9	has been flagged	pef	
756	Schaffranek	02- Chapter 2	35	Add WQPM and EPM, defined on page 41, to Acronyms list.	9	has been flagged	pef	
129	Jones	03 - Chapter 3		Good introduction to the MSE, but I found Appendix C.6 to be more helpful. I recommend combining this chapter with Appendix C.6.	5	requested panel to provide suggestions on what parts to move forward, what parts to drop	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
130	Jones	03 - Chapter 3	Page 44, paragraph 2	This paragraph was not particularly helpful. Could have been explained in more detail.	5	not sure which paragraph is being referred to; maybe a figure is needed for section 3.2?	pef	
131	Jones	03 - Chapter 3	Page 45, Figure 3.2	This figure is not helpful. First of all the figure is blurry. Second, the accompanying text did not explain it well. Three pages later on page 48, the components of the figure were finally described.	5	will address in manual--has been flagged	pef	
132	Jones	03 - Chapter 3	Page 46, Figure 3.3	Figure is blurry.	5	will address in manual--has been flagged	pef	
133	Jones	03 - Chapter 3	Page 47, Figure 3.4	Overall figure is blurry. The leftmost image in the figure is mostly black and difficult to read.	5	will address in manual--has been flagged	pef	
187	Therrien	13 - Appendix C.6	47	The last sentence of the 1st paragraph on page 3 is not clear.	5	Referring to: "Given a well defined interface between the two, this approach enables multiple information processing algorithms to execute in parallel, with higher levels of the hierarchical management able to synthesize the individual results which are best suited to the managerial objectives." This can be changed for clarification. The primary idea was to recognize that careful design of the supervisor/controller interfaces, and controller/watermover interfaces enables multiple controllers/supervisors to run in parallel, with the ability to dynamically change control charateristics.	jcp	
280	Chin	03 - Chapter 3	1.	Readable and informative	9	no comment	pef	
281	Chin	03 - Chapter 3	2.	Fix grammatical changes suggested by Ponce	9	see Ponce comments	pef	
357	Ponce	01 - Chapter 1	Page 4	Is "south Florida" correct? Or, should it be "South Florida?" (several instances, no consistency).	9	south Florida is correct; we are not consistent--this has been flagged	pef	
358	Ponce	01 - Chapter 1	Page 5, paragraph 2	Question the word "developing;" it should be "has developed."	9	we'll never stop tweaking…:-) has been flagged for technical editor	pef	
359	Ponce	01 - Chapter 1	Page 5, paragraph 3	Note about future developments of the model should not be placed in parenthesis; state in a sentence by itself.	9	will address in manual--has been flagged	pef	
360	Ponce	01 - Chapter 1	Page 5, Figure 1.1	t missing in "managemen"	9	will address in manual--has been flagged	pef	
361	Ponce	01 - Chapter 1	Page 5, Figure 1.1	Where is HPM in the figure?	9	will address in manual--has been flagged	pef	
362	Ponce	01 - Chapter 1	Page 6, paragraph 3	Replace "Chapter two" with "Chapter 2"	9	will address in manual--has been flagged	pef	
363	Ponce	01 - Chapter 1	Page 6, paragraph 4	Replace "Chapter three presents" with "Chapter 3 presents" (no consistency in this paragraph)	9	will address in manual--has been flagged	pef	
364	Ponce	01 - Chapter 1	Page 6, paragraph 5	Question the use of the word "traditionally" in this context.	9			
365	Ponce	01 - Chapter 1	Page 7, paragraph 1	Question the use of the word "always;" too strong.	9	will address in manual--has been flagged	pef	
366	Ponce	01 - Chapter 1	Page 7, paragraph 1	Replace "sheet flow have to be" with "sheet flow would have to be"	9	will address in manual--has been flagged	pef	
367	Ponce	01 - Chapter 1	Page 7, paragraph 2	No need to mention "slow" in here; it is understood.	9	will address in manual--has been flagged	pef	
368	Ponce	01 - Chapter 1	Page 9, paragraph 1	Question the use of "Seeing."	9	will address in manual--has been flagged	pef	
369	Ponce	01 - Chapter 1	Page 9, paragraph 1	Question the use of "currently under development." It obsoletes the phrase when the model is finished. Unless the model is being planned to be under development for a long time.	9	see #358! Has been flagged	pef	
757	Schaffranek	03 - Chapter 3	36	On page 47, define LP since this is the first occurrence.	9	has been flagged	pef	
758	Schaffranek	03 - Chapter 3	37	Add MIMO, defined on page 49, to Acronyms list.	9	has been flagged	pef	
759	Schaffranek	04 - Bibliography	38	References (Senarath et al., 2001), (Shen et al., 1997), and (Solomantine, 1996) need corrected.	9	will address in manual--has been flagged	pef	
29	Jones	05 - Appendix A	Page 58, item 8	“Check if the overall mass balance conditions in the model are within reasonable (<10%) limits.” 10% seems a little high to me.	1	This comment (8) was made in the middle of the uncertainty (6) and accuracy (7) discussion of Appendix A. The 10% was a rule of thumb intended for the comparison of SFRSM model results with observed data, considering the quality of the discharge data in the SFWMD databases. For areas where good data is available, the number could be much smaller. The 10% does not refer to numerical error in simulated head or overall model error. These are variable, and Lal (2000) should be used as a guide, as mentioned in #5.	amwl	
370	Ponce	01 - Chapter 1	Page 9, paragraph 3	No need for the phrase "Without these three building blocks, RSM could not meet the needs of south Florida"	9	will address in manual--has been flagged	pef	
188	Therrien	13 - Appendix C.6	48	Appendix C.6 uses numbered references (for example on page 3), which is not consistent with the other parts of the manual. Also, the table caption is located below, compared to above the table in other sections of the manual.	5	Agreed.	jcp	
371	Ponce	01 - Chapter 1	Page 9, paragraph 4	Use of first person pronoun "us" should be discouraged.	9	see #261	pef	
372	Ponce	01 - Chapter 1	Page 9, paragraph 4	No need to mention that OO is outside of the expertise of many hydrologists.	9	will address in manual--has been flagged	pef	
373	Ponce	01 - Chapter 1	Page 11, paragraph 2	Define or better explain "lookup tables." This is very important, because they are critical to the modeling accuracy.	9	"lookup" defined in dictionary .com as "a procedure in which a table of values stored in a computer is searched until a specified value is found"	pef	
374	Ponce	01 - Chapter 1	Page 11, paragraph 3	Replace "discretizations for integrated modeling approach" for "discretizations for the integrated modeling approach"	9	will address in manual--has been flagged	pef	
375	Ponce	01 - Chapter 1	Page 12, paragraph 1	Replace "language(XML)" with "language (XML)"	9	see #264	pef	
376	Ponce	01 - Chapter 1	Page 12, paragraph 2	Use of first person pronoun "we" should be discouraged.	9	see #265	pef	
377	Ponce	01 - Chapter 1	Page 12, paragraph 3	Replace "Lal, 2001." with "(Lal, 2001)."	9	will address in manual--has been flagged	pef	
378	Ponce	01 - Chapter 1	Page 13, paragraph 1	Question the use of the word "tremendous' here. Overstated.	9	tremendous idea; has been flagged	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
379	Ponce	01 - Chapter 1	Page 13, paragraph 2	"better" repeated too often. Use "enhanced" or "improved" instead.	9	will address in manual--has been flagged	pef	
380	Ponce	01 - Chapter 1	Page 14, bullet 11	Replace "water level difference based" for "water-level-difference-based"	9	will address in manual--has been flagged	pef	
381	Ponce	01 - Chapter 1	Page 14, section 1.4	Replace "sub-surface" with "subsurface"	9	will address in manual--has been flagged	pef	
382	Ponce	01 - Chapter 1	Page 14, section 1.4	Replace "essential to make progress" with "essential to enable progress"	9	will address in manual--has been flagged	pef	
383	Ponce	01 - Chapter 1	Page 15, paragraph 3	delete two instances of "also"	9	will address in manual--has been flagged	pef	
384	Ponce	01 - Chapter 1	Page 15, paragraph 5	Replace "difficult conditions" with "trying conditions" or "challenging conditions"	9	will address in manual--has been flagged	pef	
385	Ponce	01 - Chapter 1	Page 15, paragraph 5	Replace "see Appendix C for additional references with details regarding some of this research" for "see Appendix C for additional references"	9	will address in manual--has been flagged	pef	
386	Ponce	02- Chapter 2	Page 16; paragraph 2	Replace "sophisticated set of rules" with "predetermined set of rules." (Overstated)	9	has been flagged	pef	
387	Ponce	02- Chapter 2	Page 16; paragraph 3	Replace "high level abstractions" with "high-level abstractions"	9	has been flagged	pef	
388	Ponce	02- Chapter 2	Page 17, paragraph 1, bullet 3	Replace "complicated" with "complex"	9	has been flagged	pef	
389	Ponce	02- Chapter 2	Page 17, last paragraph, into Page 18	"important" repeated three times; please reword.	9	has been flagged	pef	
760	Schaffranek	05 - Appendix A	39	Reference citation to "Abbott (1982)" on page 58 is not listed in the Bibliography.	9	should have been Abbott & Cunge, 1982; has been flagged	pef	
761	Schaffranek	05 - Appendix A	40	At the bottom of page 58, correct mistype of "hydrologic".	9	has been flagged	pef	
16	Chin	06 - Appendix B	1. General comment	I am not convinced of the necessity of having an appendix that covers equations that are not used in the RSM	1	Will Consider (App. B/Traditional Approach)	pef	
17	Chin	06 - Appendix B	4. Page 61, Equation B.2	A term accounting for the infiltration rate is missing	1			
18	Chin	06 - Appendix B	6. Page 62, sentence before Equation B.5	Change "without the source term to produce the following vector momentum equation" to "without the source term to produce the following vector equation". The combination of the momentum equation and the continuity equation does not produce a momentum equation.	1			
19	Chin	06 - Appendix B	7. Page 62, second sentence after Equation B.5	The statement that "Equation B.5 can be integrated along a streamline to obtain the commonly-used energy equation." is not correct, this is a common misconception. This is what is done to produce the Bernoulli equation, which is not the energy equation. The energy equation is derived from the first law of thermodynamics, and cannot be derived from the momentum equation.	1	The reviewer comment is partly true and not completely true. As shown in incompressible flow by Panton (1984), p-124, section 5.10, The equation that governs kinetic energy is not an independent law but is derived from the momentum equation. At a later point in the paragraph, The thermal energy equation is obtained by subtracting the mechanical energy equation from the thermal energy equation. What was presented in (4) of Lal (1998c) was the vector form of the momentum equation as derived similar to eq 12.3.4 of Panton (1984), page 316 instead of two scalar forms of the same equation. As in the case where the momentum equation integrates to Bernoullis equation along a straight line when the flow is irrotational, eq (4) of Lal (1998c) also becomes Bernoulli when the flow is irrotational and there is no friction. The purpose of this whole exercise was (in historic terms now, considering that this attempt failed) to see if the diffusion flow solution could be enhanced (cont)	amwl	by adding convective acceleration terms masquerading as $V^2/2$ to the formulation. Unfortunately it was found to be not only inaccurate, but also numerically unstable. The reviewers of ASCE first pointed this out, and the effort was abandoned. However the vector equation was left in the manuscript. The formulation used in RSM is a simple diffusion flow formulation where this term is absent along with the vorticity terms, which means that both local and convective acceleration terms are dropped out of the equation. After these terms are dropped out, the remaining equation is a force balance equation between gravity and friction terms which also can be presented in the standard energy equation format. In conclusion it has to be pointed out that the form of the diffusion equation used in RSM is simple and has been used by many others. The intent of the paragraph was to obtain a kinetic energy equation that looks like the energy equation along the flow.
20	Chin	06 - Appendix B	9. Page 62, Equation B.6	Comment, this is actually the definition of Sf. Equation B.6 (a definition equation) results because the simplifications in the momentum equation leading to Equation B.6 are the same as the assumptions involved in approximating the boundary shear stress (in the momentum equation) equal to gamma x R x Sf.	1	True. The attempt here was to evaluate terms associated with the diffusion flow model in various ways.	amwl	
21	Chin	06 - Appendix B	10. Page 63, Equations B.7 and B.8	It should be made clear that Equations B.7 and B.8 are linearized approximations to the Manning equation.	1	true	amwl	
22	Chin	06 - Appendix B	11. Page 63, first line after Equation B.12	I would strongly discourage using defining sc as the storage coefficient. In ground-water hydrology the storage coefficient generally implies a confined aquifer, which is not the case here. The more correct term would be the specific yield.	1	see #6	amwl	
23	Chin	06 - Appendix B	12. Page 63, Section B.2, first sentence	This statement is not strictly correct. A suggested modification is as follows - "For ground-water flow, combining the continuity equation with Darcy's law, applying the Dupuit-Forcheimer approximation, and assuming that the formation is isotropic, the governing equation is given by (B.12)..."	1	the suggested change is good	amwl	
390	Ponce	02- Chapter 2	Page 18, Section 2.2, paragraph 3	"those who may not be familiar with OO methods". This phrase is condescending. Reword or eliminate.	9	has been flagged	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
391	Ponce	02- Chapter 2	Page 19, Section 2.3, paragraph 1	Replace "Reynolds transport theorem" for "The Reynolds transport theorem"	9	has been flagged	pef	
392	Ponce	02- Chapter 2	Page 20, Figure 2.3	Move "groundwater" to the left so that the "r" can be better seen.	9	has been flagged	pef	
393	Ponce	02- Chapter 2	Page 21, paragraph 1	Replace "The bottom shear stress can be explained" with "The bottom shear stress can be expressed"	9	has been flagged	pef	
70	Schaffranek	06 - Appendix B	46	At the bottom of page 65, change "three" to "two" in sentence that reads "After neglecting the first three terms contributing to inertia effects, ".	1			
394	Ponce	02- Chapter 2	Page 23, section 2.4.2, paragraph 1	Replace "described next." with" described below."	9	has been flagged	pef	
395	Ponce	02- Chapter 2	Page 25, paragraph 1	Replace "pure sources" with "sources"	9	has been flagged	pef	
396	Ponce	02- Chapter 2	Page 25, paragraph 2	Replace "gradient driven" with "gradient-driven"	9	has been flagged	pef	
397	Ponce	02- Chapter 2	Page 25, last line	Replace "current diffusion flow formulation" with "diffusion flow formulation"	9	has been flagged	pef	
282	Chin	06 - Appendix B	2. Page 61, Section B.1, second sentence	Change "It is presented" to "They are presented"	9	has been flagged	pef	
283	Chin	06 - Appendix B	3. Page 61, Equations B.1 and B.2	Add equal signs when defining variables	9	has been flagged	pef	
284	Chin	06 - Appendix B	5. Page 62, first paragraph	Change "These aspects are dealt in local hydrologic" to "These aspects are dealt with in local hydrologic"	9	has been flagged	pef	
285	Chin	06 - Appendix B	8. Page 62, next sentence after the above sentence	put commas in and modify as follows - "The first term in (B.5), which is the local acceleration term, and the second term, which is the convective acceleration term, account for inertia effects."	9	has been flagged	pef	
286	Chin	06 - Appendix B	13. Page 64, Section B.3, first sentence	Change "specified at infinity as in the case of Theies problem" to "specified at infinity, as in the case of Theis problem"	9	will address in manual--has been flagged	pef	
287	Chin	06 - Appendix B	14. Page 64, Section B.3 second paragraph, first sentence	Change "type of the problem," to "type of the problem to be solved,"	9	has been flagged	pef	
288	Chin	06 - Appendix B	15. Page 64, Section B.3 second paragraph, third sentence	Change "If the boundary conditions type selected is not the proper type, the resulting solution will lack in well-posedness" to "If the boundary condition type selected is not the proper type, the resulting solution will lack well-posedness"	9	has been flagged	pef	
289	Chin	06 - Appendix B	16. Page 64, Section B.3 fourth paragraph, first sentence	Change "water water" to "water"	9	has been flagged	pef	
290	Chin	06 - Appendix B	17. Page 64, Section B.3 fourth paragraph	Change "control point" to "control section"	9	has been flagged	pef	
291	Chin	06 - Appendix B	18. Page 64, last sentence	Change "bounfary" to "boundary"	9	see #343	pef	
292	Chin	06 - Appendix B	19. Page 65, Section B.4, first sentence	Change "depth averaged" to "cross-section averaged"	9	has been flagged	pef	
293	Chin	06 - Appendix B	20. Page 65, sentence continuation after Equation B.14	Change "water level; beta" to "water level; and beta". In the following sentence, change "three" to "two".	9	has been flagged	pef	

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294	Chin	06 - Appendix B	21. Page 65, last sentence	Change "can be expressed in the following form using Manning's equations" to "can be approximated using the following form of the Manning equation"	9	has been flagged	pef	
295	Chin	06 - Appendix B	22. Page 66, sentence before Equation B.17	Remove the word "now".	9	has been flagged	pef	
296	Chin	06 - Appendix B	23. Page 66 Equation B.17	Change "qae" to "qint" to be consistent with Equation B.13.	9	has been flagged	pef	
343	Jones	06 - Appendix B	Page 64. last paragraph	“bounfary” should be “boundary”	9	will address in manual--has been flagged	pef	
398	Ponce	02- Chapter 2	page 31, section 2.5.6	Replace "(Equation 2.21)" with "Equation 2.21"	9	has been flagged	pef	
399	Ponce	02- Chapter 2	Page 32	Replace "The case" with "For the case"	9	has been flagged	pef	
400	Ponce	02- Chapter 2	Page 37, paragraph 2	Replace "landuse" for land-use	9	has been flagged	pef	
401	Ponce	02- Chapter 2	Page 39, section 2.8, paragraph 2	Replace "one thousand cell discretization" with "one-thousand cell discretization" or "a discretization of one thousand cells"	9	has been flagged	pef	
402	Ponce	02- Chapter 2	Page 39, section 2.8, paragraph 3	Replace "values used;a" with "values used; a"	9	has been flagged	pef	
403	Ponce	02- Chapter 2	Page 40, paragraph 2	Replace "involved mainly for" with "involved for"	9	has been flagged	pef	
404	Ponce	02- Chapter 2	Page 40, section 2.8.1	delete "/cite"	9	has been flagged	pef	
405	Ponce	02- Chapter 2	Page 41, paragraph 2	Replace "EPMs are being developed to simulate landscape and habitat" with "EPMs simulate landscape and habitat"	9	these are still under development--will clarify	pef	
406	Ponce	03 - Chapter 3	Page 42, paragraph 1	Replace "water resource management schemes" with "water-resource-management schemes"	9	defer to technical editor	pef	
407	Ponce	03 - Chapter 3	Page 42, paragraph 1	Delete "carefully designed and". It is redundant.	9	has been flagged	pef	
408	Ponce	03 - Chapter 3	Page 42, paragraph 2	Replace "water resource control schemes" with "water-resource-control schemes"	9	defer to technical editor	pef	
409	Ponce	03 - Chapter 3	Page 42, paragraph 2	Replace "water resource management feature" with "water-resource-management feature"	9	defer to technical editor	pef	
410	Ponce	03 - Chapter 3	Page 43, section 3.1, bullet 2	Replace "alternative resource control strategies" with "alternative resource-control strategies"	9	has been flagged	pef	
411	Ponce	03 - Chapter 3	Page 43, section 3.1, paragraph 3, bullet 1	Replace "water resource reallocation" with "water-resource reallocation"	9	defer to technical editor	pef	
412	Ponce	03 - Chapter 3	Page 47, Figure 3.4 caption	Replace "M SE" with "MSE"	9	has been flagged	pef	
413	Ponce	03 - Chapter 3	Page 50, section 3.3.2, paragraph 3:	Replace "Related to the assessors are MSE filters." with "MSE filters are related to the assessors."	9	has been flagged	pef	
414	Ponce	03 - Chapter 3	Page 50, seciton 3.3.2, paragraph 3	Replace "from the users perspective" with "from the user's perpective"	9	has been flagged	pef	
762	Schaffranek	06 - Appendix B	41	In the second sentence on page 62, insert "with" after "dealt".	9	has been flagged	pef	
763	Schaffranek	06 - Appendix B	42	On page 62, change format of the "Kadlec and Knight (1996)" reference citation to "(Kadlec and Knight ,1996)".	9	has been flagged	pef	
764	Schaffranek	06 - Appendix B	43	In line after equation (B.9) on page 63, change "ds" to "dn" in sentence that begins "A value of …".	9	has been flagged	pef	
765	Schaffranek	06 - Appendix B	44	In line after equation (B.10) on page 63, change "expresses" to "expressed".	9	has been flagged	pef	
766	Schaffranek	06 - Appendix B	45	On page 64 in the fourth paragraph, delete the first "as" in the sentence that reads "The two components of water velocities can also be used as at…".	9	has been flagged	pef	
767	Schaffranek	06 - Appendix B	47	At the bottom of page 65 and top of page 66, use non-possessive form to reference the Manning equation and coefficient to be consistent with prior usage, e.g., see page 62.	9	has been flagged	pef	
768	Schaffranek	06 - Appendix B	48	At the bottom of page 65, change "using Manning's equations" to "using the Manning equation".	9	has been flagged	pef	
415	Ponce	03 - Chapter 3	Page 50, section 3.3.2, paragraph 3	Replace "(first-in, first-out)" with (first in, first out)"	9	left as is--checked www.dictionary.com	pef	
189	Therrien	13 - Appendix C.6	49	On page 4, I am not sure what is meant exactly by "partially available features" and "disjoint functional overlaps".	5	The 'partially available' is described in the individual sections of each feature, for example under Arbitrary Control: The feature is partially implemented if the model restricts the expression of control algorithms to a set of rules, or limits the inputs to a restricted set hydraulic and temporal variables. Disjoint functional overlap simply means that not all of the models have the same functional capabilities.	jcp	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
141	Jones	07 - Appendices C.1 to C.4		As for the documentation, I thought it was well-written overall. It was fairly easy to read, with certain exceptions noted in my review sections below. I did have some concerns about the organization and structure of the documents. The documentation consists primarily of three chapters with a series of articles included in the Appendix. As I was reading the three chapters there were many instances where I felt that more explanation and detail was needed. Much of this was provided later in the articles in the Appendix. Furthermore, there was considerable amount of redundant information between the chapters and the Appendix. I would suggest taking sections C1, C3, C5, and C6 in the Appendix and integrating them into the main body of the manual. The other sections could be left in the Appendix.	5	requested panel to provide suggestions on what parts to move forward, what parts to drop	pef	
416	Ponce	03 - Chapter 3	Page 51, section 3.4.1, paragraph 2, bullet 1	Replace "rulecurves" with "rule curves"	9	has been flagged	pef	
417	Ponce	03 - Chapter 3	Page 51, section 3.4.1, paragraph 2, bullet 2	Replace "Piecewise linear transfer function" with "Piecewise-linear transfer function"	9	has been flagged	pef	
776	Schaffranek	07 - Appendices C.1 to C.4	49	Published papers were read for verifying theory development in the RSM Theory Manual. Any questions are reflected in above review comments.	5	see #120	pef	
418	Ponce	03 - Chapter 3	Page 51, section 3.4.1, paragraph 2, bullet 6	Replace "finite state machine" with "finite-state machine"	9	left as is--checked www.dictionary.com	pef	
419	Ponce	05 - Appendix A	Page 57, paragraph 1, 3rd sentence	Avoid starting a sentence with "And"	9	will address in manual--has been flagged	pef	
420	Ponce	05 - Appendix A	Page 57, paragraph 2	Replace "Numerous articles" with "Several articles"	9	agreed	pef	
421	Ponce	05 - Appendix A	Page 57, paragraph 2	Replace "should also be consulted prior to the application" with "provide the bakground documentation for the application"	9	agreed	pef	
118	Chin	08 - Appendix C.1	1	I have looked closely at Appendix C.1 and compared it to the published paper. The text is not exactly the same. To be efficient in reviewing the Theory Manual, I would strongly recommend that the published version of the paper (rather than an earlier version of the paper) be included in Appendix C.1. The same should be done for Appendices C.2 and C.3.	5	see #120	pef	
119	Chin	08 - Appendix C.1	2	I have read Appendix C.1, which was published about 7 years ago, obviously when the RSM was in early stages of development. This paper documents the relative advantage of the circumcenter method versus the line integral method in calculating cell-boundary fluxes. In today's model, this is no longer an issue, since the circumcenter method has been adopted in the RSM. The benchmark examples used to demonstrate the relative advantages of the circumcenter method were very simplistic, and maybe not representative of the types of applications being envisioned for today's model. Nevertheless, including Appendix C.1 (published version) is justified since it provides additional details to equations presented in the main chapters of the Theory Manual.	5	see #124	pef	
120	Chin	08 - Appendix C.1	3	I am in the process of securing the published versions of Appendices C.2 and C.3, so that I do not have to look at (possibly) earlier versions.	5	checked with attorneys and we have a green light to use the copyrighted journal articles in the appendix, unless we decide to take parts out and put them in the main body instead	pef	
134	Jones	08 - Appendix C.1		Good overview of model. It would have been nice to have a copy of the published paper with the figures integrated with the text. The same is true for each of the previously published papers.	5	see #120	pef	
422	Ponce	05 - Appendix A	Page 57, paragraph 2	Replace "numerous operational alternatives" with "many operational alternatives"	9	agreed	pef	
423	Ponce	05 - Appendix A	Page 57, paragraph 2	Replace "any other model" with "other models" (Overstated).	9	has been flagged	pef	
424	Ponce	05 - Appendix A	Page 57, paragraph 3	Reword "One should be very careful..." Perhaps "Users should be very careful..." will do.	9	has been flagged	pef	
425	Ponce	05 - Appendix A	Page 57, paragraph 4	Replace "does not say anything" with "says little" (Overstated)	9	has been flagged	pef	
426	Ponce	05 - Appendix A	Page 58, paragraph 1, number 4	Replace "well- posed" with "well-posed"	9	has been flagged	pef	
427	Ponce	05 - Appendix A	Page 58, paragraph 2	Reword "One should consider..."	9	has been flagged	pef	
428	Ponce	05 - Appendix A	Page 58, paragraph 3	Replace "hydlorogic" with "hydrologic" (Typo)	9	has been flagged	pef	
429	Ponce	05 - Appendix A	page 59, section A.2, number 1	Replace "a variety of hydrologic models to understand the underlying" with "a variety of hydrologic models to describe the underlying"	9	has been flagged	pef	
430	Ponce	05 - Appendix A	Page 59, section A.2, number 2	Delete "in the model structure" (unnecessary)	9	has been flagged	pef	
431	Ponce	05 - Appendix A	Page 59, section A.2, number 2	Replace "without having to abandon the entire model" with "without becoming obsolecent"	9	has been flagged	pef	
432	Ponce	05 - Appendix A	Page 60, number 6	Replace "Even if a certain amount of this is inevitable" with "Even is a certain amount of this practice is inevitable"	9	has been flagged	pef	
433	Ponce	05 - Appendix A	Page 60, number 6	Replace "Anyone" with "Other parties" or "Third parties"	9	has been flagged	pef	
434	Ponce	05 - Appendix A	Page 60, number 6	Replace "should be allowed and even encouraged to do so" with "can do so"	9	has been flagged	pef	
435	Ponce	05 - Appendix A	Page 60, number 8	Replace "Non personal" with "Non-personal"	9	has been flagged	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
436	Ponce	05 - Appendix A	Page 60, number 8	Replace "the use of scientific method falling to the original authors" with "the credit for the development of a scientific method falling to the original authors"	9	has been flagged	pef	
437	Ponce	05 - Appendix A	Page 60, number 8	In this paragraph, you may want to use the word "open source." This is a commonly used term to denote the fact that the source code is open to anybody willing to participate.	9	has been flagged	pef	
438	Ponce	06 - Appendix B	Page 61	Question the use of the title "Governing Equations Using the Traditional Approach." Prefer "Governing Equations in Partial Differential Form" or "Governing Equations of Hydromechanics."	9	has been flagged	pef	
439	Ponce	06 - Appendix B	Page 63, paragraph 1	Replace "conveyance can be expresses" with "conveyance can be expressed"	9	has been flagged	pef	
440	Ponce	06 - Appendix B	Page 63, paragraph 2	Replace "sub-surface" with "subsurface"	9	has been flagged	pef	
441	Ponce	06 - Appendix B	Page 63, paragraph 2	Replace "using many of the methods used to solve parabolic equations" with "using methods applicable to parabolic equations"	9	has been flagged	pef	
442	Ponce	06 - Appendix B	Page 63, section B.2, paragraph 1	Replace "object oriented" with "object-oriented"	9	has been flagged	pef	
443	Ponce	06 - Appendix B	Page 64, section B.3, paragraph 1	Do not start sentence with "Unless". Reword.	9	has been flagged	pef	
444	Ponce	06 - Appendix B	Page 64, section B.3, paragraph 1	Replace "Theies" with "Theis" (misspelling).	9	has been flagged	pef	
445	Ponce	06 - Appendix B	Page 64, section B.3, paragraph 3	Replace "sub-critical" with "subcritical"	9	has been flagged	pef	
446	Ponce	06 - Appendix B	Page 64, section B.3, paragraph 3	Last sentence is awkward; rephrase and/or clarify.	9	has been flagged	pef	
447	Ponce	06 - Appendix B	Page 64, section B.3, paragraph 4	Replace "shallow water water models" with "shallow-water models"	9	has been flagged	pef	
448	Ponce	06 - Appendix B	Page 64, section B.3, paragraph 4	Replace "can also be used as at" with "can also be used at"	9	has been flagged	pef	
449	Ponce	06 - Appendix B	Page 64, section B.3, paragraph 4	Replace "specified head" with "specified-head" or "head-specified"	9	has been flagged	pef	
450	Ponce	06 - Appendix B	Page 64, section B.3, paragraph 5	Replace "the governing equation used is nonlinear parabolic" with "the system of governing equations is nonlinear and parabolic"	9	has been flagged	pef	
451	Ponce	06 - Appendix B	Page 64, section B.3, paragraph 4	Replace "ground water" "groundwater"	9	has been flagged	pef	
452	Ponce	06 - Appendix B	Page 64, section B.3, paragraph 5	The correct spelling for Neuman is "Neumann" However, the incorrect spelling has been used in groundwater.	9	okay	pef	
453	Ponce	06 - Appendix B	Page 65, section B.3, paragraph 5	Replace "mixed type" with "mixed-type"	9	has been flagged	pef	
454	Ponce	06 - Appendix B	Page 65, section B.3, paragraph 5	Replace semi-pervious" with "semipervious"	9	has been flagged	pef	
455	Ponce	08 - Appendix C.1	Page 1, Title	Replace "A weighted implicit finite volume model for overland flow" with "A weighted-implicit finite-volume model for overland flow"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
456	Ponce	08 - Appendix C.1	Page 1, Abstract	Replace "A weighted implicit finite volume model for overland flow" with "A weighted-implicit finite-volume model for overland flow"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
457	Ponce	08 - Appendix C.1	Page 1, Abstract	Replace "two dimensional diffusion flow" for "two-dimensional diffusion flow" (Two instances in this paragraph).	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
458	Ponce	08 - Appendix C.1	Page 1, Abstract	Replace "the implicit formulation makes the model stable and run faster" with "The implicit formulation makes the model stable and enables it to run faster"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
459	Ponce	08 - Appendix C.1	Page 1, Abstract	Replace "conjugate gradient" with "conjugate-gradient" (also all other instances)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
460	Ponce	08 - Appendix C.1	Page 1, Abstract	Replace "that had known solutions" with "for which solutions are available"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
461	Ponce	08 - Appendix C.1	Page 1, Abstract	Replace "weighted implicit methods" for "weighted-implicit methods" (As opposed to forward-implicit methods)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
462	Ponce	08 - Appendix C.1	Page 1, Abstract	Replace "The method is to be used" with "The method will be used"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
463	Ponce	08 - Appendix C.1	Page 1, Abstract	Replace "local and regional modeling problems in South Florida" with "local and regional flow modeling in South Florida"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
464	Ponce	08 - Appendix C.1	Page 1, Introduction	Replace "large scale" with "large-scale"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
465	Ponce	08 - Appendix C.1	Page 2, Introduction, paragraph 1	Replace "The features" with "Features"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
466	Ponce	08 - Appendix C.1	Page 2, Introduction, paragraph 2	Replace "finite element" with "finite-element" and "finite volume" with "final-volume"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
467	Ponce	08 - Appendix C.1	Page 2, Introduction, paragraph 2	Replace "the inertia term is negligible" with "the inertia terms are negligible" (Under an Eulerian frame, there are two types of inertia - local and convective)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
121	Chin	09 - Appendix C.2	1	Reviewed the published version of this paper. Include this version in the Theory Manual.	5	see #120	pef	
468	Ponce	08 - Appendix C.1	Page 3, Introduction, paragraph 2	Suggest using the adjective "finite-volume" throughout, rather than "finite volume" (Many references)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
297	Chin	09 - Appendix C.2	2	This is an interesting and relevant paper that discusses the relationship between numerical errors (in 1-D and 2-D wave propagation problems) and spatial and temporal discretization. These results are particularly useful if the forcing function is sinusoidal. This paper provides a basis for the RSM error analysis performed in Appendix C.3.	9	no comment	pef	
344	Jones	09 - Appendix C.2		No specific editorial comments.	9	no comment	pef	
469	Ponce	08 - Appendix C.1	Page 3, Introduction, paragraph 3	Suggest using the adjective "weighted-implicit" throughout, rather than "weighted implicit" (Many references)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
470	Ponce	08 - Appendix C.1	Page 4, Introduction, paragraph 1	Suggest using the adjective "conjugate-gradient" throughout, rather than "conjugate gradient" (Many references)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
471	Ponce	08 - Appendix C.1	Page 5, Introduction, paragraph 2	Replace "both long and short term simulations" with "both long- and short-term simulations"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
472	Ponce	08 - Appendix C.1	Page 5, Introduction, paragraph 2	Replace "some results shown at low resolutions" with "some results shown at low grid resolution"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
473	Ponce	08 - Appendix C.1	Page 5, paragraph 1	Replace "The first term is neglected in slowly varying flow" with "The first two terms are neglected in slowly varying flow"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
474	Ponce	08 - Appendix C.1	Page 6, paragraph 2	"When the velocity head is included, H is replaced with E as explained earlier" Ditto the above comment.	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
475	Ponce	08 - Appendix C.1	Page 6, paragraph 2, last line	Replace "using many of the methods" with "with many of the methods"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
476	Ponce	08 - Appendix C.1	Page 7, paragraph 1	Replace "free surface diffusion flow or ground water flow" with "free-surface diffusion flow or groundwater flow"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
477	Ponce	08 - Appendix C.1	Page 8, paragraph 2	"Replace low-order mixed finite element method" with "low-order mixed finite-element method" (Many instances of finite element as adjective, with no hyphen)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
478	Ponce	08 - Appendix C.1	Page 11, paragraph 3	Reword sentence to avoid starting with "If"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
479	Ponce	08 - Appendix C.1	Page 11, paragraph 3, last sentence	Avoid the usage of "explained later"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
480	Ponce	08 - Appendix C.1	Page 12, paragraph 1	Replace "0 and 1 for explicit and implicit problems" with "0 and 1 for explicit and implicit problems, respectively"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
481	Ponce	08 - Appendix C.1	Page 13, paragraph 1	Replace "with the choicen sparse solver" with "with the chosen sparse solver"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
482	Ponce	08 - Appendix C.1	Page 13, paragraph 1	Replace "re-run the code due to non-convergence" with "rerun the code due to nonconvergence"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
483	Ponce	08 - Appendix C.1	Page 13, paragraph 2	Replace "Active research" with "Research" or "Current research"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
484	Ponce	08 - Appendix C.1	Page 13, paragraph 2	Replace "transient flow activities" with "transient flow phenomena"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
485	Ponce	08 - Appendix C.1	Page 13, paragraph 3	Replace "numerical error and stability analysis" with "stability and convergence analysis"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
486	Ponce	08 - Appendix C.1	Page 15, paragraph 1	Replace "solve (30) accurately" with "solve Eq. 30 accurately" (This is only a matter of style)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
487	Ponce	08 - Appendix C.1	Page 15, paragraph 3	Replace "spatial and temporal discretizations" with "spatial and temporal discretization"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
488	Ponce	08 - Appendix C.1	Page 15, paragraph 3	Replace "wave length" with "wavelength" (Twice)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
489	Ponce	08 - Appendix C.1	Page 15, paragraph 3	Replace "spatial and temporal resolutions" with "spatial and temporal resolution"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
490	Ponce	08 - Appendix C.1	Page 17, paragraph 2	Avoid the use of "explained later"; use instead "explained in the next section"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
491	Ponce	08 - Appendix C.1	Page 18, paragraph 1	Do not use italic font for units such as m3/s.	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
492	Ponce	08 - Appendix C.1	Page 18, paragraph 2	Replace "current model" with "present model"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
493	Ponce	08 - Appendix C.1	Page 19, paragraph 1	Replace "current model" with "present model"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
494	Ponce	08 - Appendix C.1	Page 20, paragraph 2	Replace "much finer spatial resolutions and larger time steps otherwise possible" with "much finer spatial resolution and larger time steps"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
495	Ponce	09 - Appendix C.2	Page 6, Abstract,last line	Replace "in in" with "in"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
496	Ponce	09 - Appendix C.2	Page 6, Abstract,last line	Replace "finite difference model" with "finite-difference model"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
497	Ponce	09 - Appendix C.2	Page 7, Introduction, paragraph 1	Ackward phrasing "increased recently due to the increased need". Reword.	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
498	Ponce	09 - Appendix C.2	Page 7, Introduction, paragraph 1	Replace "The current study" with "This study" or "The present study"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
499	Ponce	09 - Appendix C.2	Page 7, Introduction; paragraph 2	Replace "rainfall, and evapotranspiration" with "rainfall and evapotranspiration"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
500	Ponce	09 - Appendix C.2	Page 8, Introduction, paragraph 1	The statement "compiled many of the basis developments" is weak. Prefer "have described many of the basic principles"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
501	Ponce	09 - Appendix C.2	Page 9, paragraph 3	Replace "two dimensional" with "Two-dimensional"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
502	Ponce	09 - Appendix C.2	Page 10, paragraph 1	Replace "St Venant equations." with "St. Venant equations" (no period at the end, before a reference)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
503	Ponce	09 - Appendix C.2	Page 10, paragraph 1	Replace "Manning's" with "Manning"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
504	Ponce	09 - Appendix C.2	Page 10, paragraph 1	Replace "weighted implicit finite volume formulation" with "weighted-implicit finite-volume formulation"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
505	Ponce	09 - Appendix C.2	Page 10, paragraph 1	Replace "semi-implicit" with "implicit" (There are implicit and fully implicit schemes; the term semi-implicit is redundant).	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
506	Ponce	09 - Appendix C.2	Page 11, paragraph 1	Replace "explicit and the implicit methods are obtained by using a = 0 and 1.0" with "explicit and implicit schemes are obtained by using a = 0 and a = 1, respectively"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
507	Ponce	09 - Appendix C.2	Page 11, paragraph 2	Replace "explaining" with "describing"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
508	Ponce	09 - Appendix C.2	Page 11, paragraph 2	Replace "current paper" with "present paper"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
509	Ponce	09 - Appendix C.2	Page 12, paragraph 1	Replace "numerical approximations for derivatives, etc" with "numerical approximations for derivatives and other terms"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
510	Ponce	09 - Appendix C.2	Page 12, paragraph 2	Replace "maximum percentage" with "maximum-percentage"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
122	Chin	10 - Appendix C.3	1	Reviewed published version of this paper. Include this version in the Theory Manual.	5	see #120	pef	
135	Jones	10 - Appendix C.3		Good overview of RSM model, but a lot of material to put into a single paper.	5	requested panel to provide suggestions on what parts to move forward, what parts to drop	pef	
136	Jones	10 - Appendix C.3	Page 16, first paragraph	Discussion on pseudo-cells was not clear.	5	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
137	Jones	10 - Appendix C.3	Page 36, Figure 3	There is an empty box to the right of the single control box. What does this box represent?	5	flexibility to add more watermover types	pef	
511	Ponce	09 - Appendix C.2	Page 13, paragraph 1	Replace "Quantity f" with "the quantity f"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
512	Ponce	09 - Appendix C.2	Page 13, paragraph 2	Replace "sinusoidal water level variation" with "sinuosidal water-level variation"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
205	Chin	10 - Appendix C.3	2	Well written and informative. Contains much of the material presented in Chapter 2 of the Theory Manual, in a clear concise form. The Model Error section was useful in confirming the computational-error theory presented in Appendix C.2. The Model Verification section provided needed assurance of the validity of the RSM, and demonstrated its applicability to a particular area in South Florida.	6	this may be relocated to the Benchmarks and Testing Manual	pef	
298	Chin	10 - Appendix C.3	3	Page 256, XML data entry of "5.9 12.6" should be "5.9 25.2".	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
513	Ponce	09 - Appendix C.2	Page 13, paragraph 2	Replace "problems respectively" with "problems, respectively"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
514	Ponce	09 - Appendix C.2	Page 15 and 16	Replace "explicit, implicit, and semi-explicit" with "explicit, implicit, and fully implicit"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
515	Ponce	09 - Appendix C.2	Page 19, paragraph 1	Replace "measured as the (numerical value - analytical value) is small" with "measured as the numerical minus the analytical value is small"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
516	Ponce	09 - Appendix C.2	Page 19	Replace "water level subsidence" with "water-level subsidence"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
517	Ponce	09 - Appendix C.2	Page 19, paragraph 1, last line	Delete "in the paper"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
518	Ponce	09 - Appendix C.2	Page 24, paragraph 1	Replace "time lag error" with "time-lag error"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
519	Ponce	09 - Appendix C.2	Page 25, paragraph 1	Replace "in head for for a given frequency" with "in head for a given frequency"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
520	Ponce	09 - Appendix C.2	Page 26, paragraph 1	Replace "steady state" with "steady-state"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
521	Ponce	09 - Appendix C.2	Page 26, paragraph 1	Replace "Thiem" with "The Thiem"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
522	Ponce	09 - Appendix C.2	Page 28, paragraph 2	Replace "(rainfall - evapotranspiration)" with "rainfall minus evapotranspiration" Avoid algebra in text.	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
523	Ponce	09 - Appendix C.2	Page 29, last paragraph	Replace "two one dimensional rainfall patterns" with "two one-dimensional rainfall patterns"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
524	Ponce	09 - Appendix C.2	Page 30, paragraph 1	Replace "source induced flow condition" with "source-induced flow condition".	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
525	Ponce	09 - Appendix C.2	Page 31	Do not use italics for units.	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
526	Ponce	09 - Appendix C.2	Page 31, paragraph 2	Replace "14 day intervals" with "14-day intervals"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
527	Ponce	09 - Appendix C.2	Page 32, paragraph 2	Replace "rain driven water level fluctuations" with "rain-driven water-level fluctuations"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
528	Ponce	09 - Appendix C.2	Page 32, paragraph 2	Replace "driving forces of hydrology" with "driving forces"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
529	Ponce	09 - Appendix C.2	Page 34, paragraph 2	Replace "spatial discretizations" with "spatial discretization" The word "discretization" applies to the entire grid, in either 1-D or 2-D.	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
530	Ponce	10 - Appendix C.3	Page 1, Abstract, paragraph 1	Replace "super fast computers" with "super-fast computers"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
531	Ponce	10 - Appendix C.3	Page 1, Abstract, paragraph 2	Replace "object oriented" with "object-oriented" (Many other instances of this same problem with hyphenation).	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
532	Ponce	10 - Appendix C.3	Page 2, Introduction, paragraph 2	Avoid the use of the first person pronoun "us"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
533	Ponce	10 - Appendix C.3	Page 3, Introduction, paragraph 2	Replace "Richard's Equation" with "Richard's equation"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
534	Ponce	10 - Appendix C.3	Page 5, Governing equations, paragraph 1	Replace "finite volume method" with "finite-volume method" (Many instances)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
535	Ponce	10 - Appendix C.3	Page 5, Governing equations, paragraph 2	May consider replacing the name "pseudo cells" with "subgrid cells" (this is only a suggestion)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
536	Ponce	10 - Appendix C.3	Page 7, paragraph 1, last line	Replace "in to" with "into"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
537	Ponce	10 - Appendix C.3	Page 7, paragraph 2	Standardize the spelling of St. Venant (Either Saint Venant of St. Venant) throughout the reports and papers.	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
538	Ponce	10 - Appendix C.3	Page 8, paragraph 2, last line	Replace "is provided under the object design" with "is provided under the section on object design"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
539	Ponce	10 - Appendix C.3	Page 8, last section, title	Replace "THE IMPLICIT FINITE VOLUME METHOD" with "THE IMPLICIT FINITE-VOLUME METHOD" (Many other instances of the same hyphenation problem)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
97	Jones	11 - Appendix C.4	Page 14, last sentence of top paragraph	"Considering that the discretization is crude, the discrepancy has more to do with the numerical error." If that is the case, why not simply use a more refined mesh? It appears that the grid resolution was rather coarse.	3	This was a test to see if the analytical solutions derived in the paper are applicable to relatively short channels. The analytical solutions were derived assuming the canals to be infinitely long. The test showed that the analytical and numerical model results match reasonably well. The small difference between the results can be due to a number of factors. I was speculating based on my past experience that the difference is more likely be due to the crude discretization rather than the shortness of the canal. Of course the truth of this could be verified by taking finer discretizations. Considering the length and the focus in the paper, and the closeness of the results already obtained, this was not pursued.	amwl	
299	Chin	11 - Appendix C.4	1	I have read Appendix C.4 as a reviewer for Water Resources Research and have provided written comments to the Editor, which will be shortly forwarded to Dr. Lal for consideration and possible modification of this paper. I anticipate an improved paper will be forthcoming. It is probably not appropriate for me to repeat these comments here.	9	thank you	amwl	
345	Jones	11 - Appendix C.4		I assume this is an unpublished paper. I could not find a corresponding reference in the bibliography.	9	yes, in review--is in the Bibliography midway through page 54	pef	
346	Jones	11 - Appendix C.4		Interesting approach to determine aquifer parameters. I can certainly understand how traditional parameter estimation would be difficult with the RSM applied to the complex conditions of South Florida.	9	no comment	pef	
347	Jones	11 - Appendix C.4	Page 2, near end of paragraph 1	"…canal seepage parameters is important in necessary in order to…" I assume you meant to say "…canal seepage parameters is necessary in order to…"	9	paper is in review; these changes will be considered	pef	
348	Jones	11 - Appendix C.4	Page 18, last paragraph	"effificncy" should be "efficiency"	9	paper is in review; these changes will be considered	pef	
540	Ponce	10 - Appendix C.3	Page 9, paragraph 1	Replace "lake related regional flows" with "lake-related regional flows"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
541	Ponce	10 - Appendix C.3	Page 13, paragraph 1	Replace "described in the paper by Lal (1998a)" with "described by Lal (1998a)."	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
542	Ponce	10 - Appendix C.3	Page 14, paragraph 2	Replace "Canal seepage water mover" with "Canal-seepage water mover" (Many instances)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
543	Ponce	10 - Appendix C.3	Page 14, paragraph 2	Replace "linearization" with "linearization:"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
544	Ponce	10 - Appendix C.3	Page 15, last line	Replace However" with "However,"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
545	Ponce	10 - Appendix C.3	Page 16, paragraph 2	When used as a compound adjective, the phrase "pseudo cell" requires hyphenation, as in "pseudo-cell models"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
546	Ponce	10 - Appendix C.3	Page 17, paragraph 1	Replace "bc" with "boundary condition" (several instances)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
547	Ponce	10 - Appendix C.3	Page 18, paragraph 3	Replace "oscillation free" with "oscillation-free"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
548	Ponce	10 - Appendix C.3	Page 18, paragraph 4	Replace "model error control" with "model-error control"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
549	Ponce	10 - Appendix C.3	Page 19, paragraph 1	No italics associated with units, as in km.	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
550	Ponce	10 - Appendix C.3	Page 21, paragraph 1	Replace "current model" with "present model"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
551	Ponce	10 - Appendix C.3	Page 21, paragraph 3	Replace "human influences" with "anthropogenic influences"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
552	Ponce	10 - Appendix C.3	Page 22, paragraph 1	No italics associated with units, as in m3/s (many instances)	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
553	Ponce	10 - Appendix C.3	Page 25, paragraph 1	Replace "Sri-Lanka (3200) cells, Lal et al., (2004)" with "Sri-Lanka (3200) cells (Lal et al., 2004)"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
554	Ponce	10 - Appendix C.3	Page 25, Summary and Conclusions	Replace "An implicit finite volume method, a high-speed sparse solver, and the object oriented design approach" with "An implicit finite-volume method, a high-speed sparse solver, and an object-oriented design approach"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
555	Ponce	10 - Appendix C.3	Page 25, Summary and Conclusions	Replace "one simple computational algorithm" with "one computational algorithm"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
556	Ponce	10 - Appendix C.3	Page 25, Summary and Conclusions	Replace "are extremely useful in designing suitable model discretizations with know numerical error limits" with "are very useful in the design of model discretization following established numerical error limits"	9	paper already published--parts that are added into Theory Manual will incorporate these suggestions	pef	
557	Ponce	11 - Appendix C.4	Page 1, title	Replace "PARAMATERS... WATER LEVEL" with "PARAMETERS... WATER-LEVEL"	9	paper is in review; these changes will be considered	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
558	Ponce	11 - Appendix C.4	Page 1, Abstract	Replace "water level disturbance" with "water-level disturbances"	9	paper is in review; these changes will be considered	pef	
559	Ponce	11 - Appendix C.4	Page 1, Abstract	Replace "water management system" with "water-management system"	9	paper is in review; these changes will be considered	pef	
560	Ponce	11 - Appendix C.4	Page 1, Abstract, paragraph 2, 2nd sentence	"Which" is awkward here. Reword.	9	paper is in review; these changes will be considered	pef	
561	Ponce	11 - Appendix C.4	Page 1, Abstract, paragraph 2	Replace "noisy or questionable" with "either noisy or questionable"	9	paper is in review; these changes will be considered	pef	
562	Ponce	11 - Appendix C.4	Page 2, Introduction	Replace "management of the hydrology" with "management of the water resource"	9	paper is in review; these changes will be considered	pef	
563	Ponce	11 - Appendix C.4	Page 2, Introduction	Sentence "Any future restoration of natural areas could be accomplished only by..." is overstated. Reword and deemphasize. Suggest "Future restoration of natural areas is best accomplished by ..."	9	paper is in review; these changes will be considered	pef	
564	Ponce	11 - Appendix C.4	Page 2, Introduction	"Replace "base flow" with "baseflow"	9	paper is in review; these changes will be considered	pef	
565	Ponce	11 - Appendix C.4	Page 2, Introduction	Replace "manuscript" with "study" or "paper"	9	paper is in review; these changes will be considered	pef	
566	Ponce	11 - Appendix C.4	Page 2, Introduction, paragraph 2	Awkward wording, "simple" repeated twice. Reword. Do not use "complicated" here. Instead use "complex"	9	paper is in review; these changes will be considered	pef	
567	Ponce	11 - Appendix C.4	Page 3, paragraph 1	Replace "cause and effect relationships" with "cause-and-effect relationships"	9	paper is in review; these changes will be considered	pef	
568	Ponce	11 - Appendix C.4	Page 3, paragraph 2	Several instances such as "under-determined" and "under determined". The correct spelling is "underdetermined" (although this word not in the dictionary; overdetermined is, though; so "underdetermined" appears to be appropriate).	9	paper is in review; these changes will be considered	pef	
569	Ponce	11 - Appendix C.4	Page 4, paragraph 1	Replace "These approaches however require" with "These approaches, however, require" or better yet "However, these approaches require"	9	paper is in review; these changes will be considered	pef	
570	Ponce	11 - Appendix C.4	Page 4, paragraph 2	Replace "Hydrogeology" with "hydrogeology" What beginning? Reword. Prefer "has remained a challenge"	9	paper is in review; these changes will be considered	pef	
571	Ponce	11 - Appendix C.4	Page 4, paragraph 2	Replace "flow meter" "flow-meter"	9	paper is in review; these changes will be considered	pef	
572	Ponce	11 - Appendix C.4	Page 4, paragraph 2	Replace "steady state solutions" with "steady-state solutions"	9	paper is in review; these changes will be considered	pef	
573	Ponce	11 - Appendix C.4	Page 4, paragraph2	Replace "Chin (1991) for example" with "For example, Chin (1991)"	9	paper is in review; these changes will be considered	pef	
574	Ponce	11 - Appendix C.4	Page 4, paragraph 2, last sentence	Replace "steady state assumption" with "steady-state assumption"	9	paper is in review; these changes will be considered	pef	
575	Ponce	11 - Appendix C.4	Page 5, paragraph 1	leakance, replace for leakiness, or leakage (many instances)	9	paper is in review; these changes will be considered	pef	
576	Ponce	11 - Appendix C.4	Page 5, paragraph 2	Replace "south Florida" with "South Florida" (many instances)	9	paper is in review; these changes will be considered	pef	
577	Ponce	11 - Appendix C.4	Page 6, paragraph 1	Replace "targetted" with "targeted" (twice)	9	paper is in review; these changes will be considered	pef	
578	Ponce	11 - Appendix C.4	Page 6, paragraph 2	Replace "High frequency disturbances" with "High-frequency disturbances"	9	paper is in review; these changes will be considered	pef	
579	Ponce	11 - Appendix C.4	Page 6, paragraph 2	Replace "close to th canal" with "close to the canal"	9	paper is in review; these changes will be considered	pef	
580	Ponce	11 - Appendix C.4	Page 6, paragraph 2	Replace "low frequency disturbances" with "low-frequency disturbances"	9	paper is in review; these changes will be considered	pef	
581	Ponce	11 - Appendix C.4	Page 6, paragraph 2	Replace "far field investigations" with "far-field investigations"	9	paper is in review; these changes will be considered	pef	
582	Ponce	11 - Appendix C.4	Page 6, paragraph 2	Replace "water level differences" with "water-level differences" (many instances)	9	paper is in review; these changes will be considered	pef	
583	Ponce	11 - Appendix C.4	Page 8, paragraph 1	Replace "inhomogenuity" with "inhomogeneity"	9	paper is in review; these changes will be considered	pef	
584	Ponce	11 - Appendix C.4	Page 9, paragrapg 1	Replace "aquifer properties can be plotted on a map to show the heterogenuity" with "aquifer properties that can be plotted on a map to show the heterogeneity"	9	paper is in review; these changes will be considered	pef	
585	Ponce	11 - Appendix C.4	Page 9, paragraph 3	Replace "1.0 hr" with "1-hr"	9	paper is in review; these changes will be considered	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
586	Ponce	11 - Appendix C.4	Page 9, paragraph 3	Do not use italics for units.	9	paper is in review; these changes will be considered	pef	
587	Ponce	11 - Appendix C.4	Page 9, paragraph 3	Replace "least square method" with "least-square method"	9	paper is in review; these changes will be considered	pef	
588	Ponce	11 - Appendix C.4	Page 10, paragraph 2	Replace "sediment conductance parameter" with "sediment-conductance parameter"	9	paper is in review; these changes will be considered	pef	
589	Ponce	11 - Appendix C.4	Page 12, paragraph 3	Replace "100 m and 1hr respectively" with "100 m and 1 hr, respectively"	9	paper is in review; these changes will be considered	pef	
590	Ponce	11 - Appendix C.4	Page 12, paragraph 3	Replace "16 hrs" with "16 hr"	9	paper is in review; these changes will be considered	pef	
591	Ponce	11 - Appendix C.4	Page 13, paragraph 2	Replace "Hrs" with "hr"	9	paper is in review; these changes will be considered	pef	
592	Ponce	11 - Appendix C.4	Page 15, paragraph 2	Replace "top 1/3 rd." with "top one-third"	9	paper is in review; these changes will be considered	pef	
593	Ponce	11 - Appendix C.4	Page 15, paragraph 2	Replace "bottom 2/3 rd." with "bottom two-thirds"	9	paper is in review; these changes will be considered	pef	
594	Ponce	11 - Appendix C.4	Page 15, paragraph 2	Replace "Ft" with "Ft."	9	paper is in review; these changes will be considered	pef	
595	Ponce	11 - Appendix C.4	Page 15, paragraph 3	Replace "Tp = 48 Hrs" with "Tp = 48 hr"	9	paper is in review; these changes will be considered	pef	
596	Ponce	11 - Appendix C.4	Page 15, paragraph 3	Replace "48 Hr" with "48-hr"	9	paper is in review; these changes will be considered	pef	
597	Ponce	11 - Appendix C.4	Page 15, paragraph 3	Replace "south Florida" with "South Florida"	9	paper is in review; these changes will be considered	pef	
598	Ponce	11 - Appendix C.4	Page 17, paragraph 3	Replace "T = 4.49ms/s" with "T = 4.49 m3/s"	9	paper is in review; these changes will be considered	pef	
24	Chin	12 - Appendix C.5	2. Page 3, after Equation (1)	Change to "where St is the volumetric storage in the HPM at step t, Pt is the precipitation, ETt is the evapotranspiration…". Change of wording recommended since it is not necessary to define St and St-1 separately once St has been defined.	9	will address in manual--has been flagged	pef	
190	Therrien	13 - Appendix C.6	50	On page 6, PID should be defined.	5	has been flagged	pef	
599	Ponce	11 - Appendix C.4	Page 18, paragraph 4	Replace "effificncy" with "efficiency"	9	paper is in review; these changes will be considered	pef	
191	Therrien	13 - Appendix C.6	51	Assessors (A) are not shown in figure 1.	5	This is represented as "Assess", this will be changed to be consistent with Assessors.	jcp	
138	Jones	12 - Appendix C.5		This paper was very helpful in understanding HPMs. As mentioned above, I think it would be a good idea to integrate this paper with Chapter 2 in the Theory Manual.	5	see #124	pef	
600	Ponce	11 - Appendix C.4	Page 18, paragraph 4	Replace "single layer" with "single-layer" (several instances)	9	paper is in review; these changes will be considered	pef	
192	Therrien	13 - Appendix C.6	52	A real example would help understand figures 1 and 2.	5	Section 3 was intended to fulfill this need. Though the model of section 3 didn't explicitly refer to figures 1&2, perhaps it should.	jcp	
193	Therrien	13 - Appendix C.6	53	Figure 2 tries to convey too much information and is difficult to understand. It is not clear from the figure that controllers can operate independently of supervisors.	5	A valid criticism. Need to review ways to simplify the expression of the control scheme.	jcp	
194	Therrien	13 - Appendix C.6	54	Page 13, what is user defined state machine?	5	Refers to a 'finite state machine': A finite state machine (FSM) or finite automaton is a model of behaviour composed of states, transitions and actions. A state stores information about the past, i.e. it reflects the input changes from the system start to the present moment. A transition indicates a state change and is described by a condition that would need to be fulfilled to enable the transition. An action is a description of an activity that is to be performed at a given moment. Essentially, it is an information processing algorithm which can be expressed in a flow chart, and thereby easily coded into a software module.	jcp	
207	Chin	12 - Appendix C.5	13. Page 13, Equation (12)	Change "P + CellDelta + hpmInflow" to "addwater"	7	will address in manual--has been flagged	pef	
208	Chin	12 - Appendix C.5	14. Page 13, sentence after Equation (12)	Change "The water in the unsaturated soil is determined by the amount of available water. Kc is the PET correction coefficient, The vegetation…" to "where Xthres is the wilting point, Kc is the PET correction coefficient, and the vegetation…"	7	will address in manual--has been flagged	pef	
209	Chin	12 - Appendix C.5	15. Paragraph before Equation (13), second sentence	The statement "When the wtdepth is less than the surface elevation…" is a bit confusing. The basic problem is comparing a depth with an elevation. Maybe using "When the water-surface elevation is less than the ground-surface elevation…" would be much clearer. If such a change is adopted, there are several similar changes that would need to be made; especially when the variable name has includes "depth", even though the variable is an elevation.	7	The text and Figure 5. will be modified to clearly show that the unsaturated zone is determined by the depth to the water table and when the water table is less than zero, the water table is above ground surface.	ef	

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210	Chin	12 - Appendix C.5	16. Page 13, Equation (13), last line	Remove " 0 wtdepth > Rd"	7	The equation will be modified to reflect that above ground surface the wtdepth is compared to -Pd. The last line of the equation is necessary to state that Kc = 0 when the wtdepth is greater than root depth regardless of water content.	ef	
211	Chin	12 - Appendix C.5	19. Page 14, Section 4.3, first paragraph, fourth sentence	This sentence begins with "Extractable water (theta_cap) is the". Since "Ew" was used previously to represent the extractable water, the same variable should be used throughout, i.e. Ew or theta_cap.	7	The text will be modified to reflect the use of extractable water equals field capacity (FC) minus wilting point (WP): Ew = FC – WP. Throughout the text, the terminology for field capacity and wilting point will be revised.	ef	
212	Chin	12 - Appendix C.5	21. Page 18, Equations (20) and (22)	It appears that Equations (20) and (22) are heuristic and without supporting data. This should be made clear in the text.	7			
213	Chin	12 - Appendix C.5	22. Page 19, Table 4	Add a "References" column. Several of the "Typical values" in Table 4 should be reconsidered, specifically - (1) "K0inf" equal to 0,4 m/s is incorrect; (2) "Lmax" equal to 1.3 m is very misleading since this will depend on the depth of the water table and the soil type; (3) "CKOL", "CKIF", and "CKBF" could vary significantly depending on surface and subsurface conditions, more specific guidance in selecting these variables (based on their functional relationship to other parameters) would be helpful.	7	A reference column will be added to table 4. The implementation of <prr> is being reviewed	ef	
214	Chin	12 - Appendix C.5	23. Page 22, Equation (26)	It seems to me that the "minus" sign before "Upflux" should be changed to a "plus" sign.	7			
215	Chin	12 - Appendix C.5	24. Page 22, third paragraph from the bottom	Sentence beginning with "The amount of percolation is determined by soil water" should be changed to "The amount of deep percolation is determined by soil water". The reason for this suggestion is that "percolation" refers generally to flow through any portion of the soil while "deep percolation" generally refers to flow below the root zone.	7	agreed; will address in manual--has been flagged	pef	
216	Chin	12 - Appendix C.5	25. Page 22, third paragraph from the bottom, last sentence	The "wedge of water" mentioned here should be described in more detail, such as how the wedge dimensions are related to the soil characteristics.	7	The text will be modified to: "Soil water upflux from the water table into the root zone is modeled as a wedge of water extending from the water table up one meter into the root zone such that the water content in the root zone can not fall below the water content described by the wedge. The wedge decreases linearly from saturated water content at the water table to zero a meter above the water table."	ef	
217	Chin	12 - Appendix C.5	27. Page 24, fifth row	this sentence states that "throwout pump that can remove the water from the farm at a rate as high as six inches per day". Expressing maximum pumping rates in terms of inches per day seems questionable; m^3/s seems to be more appropriate. This doubt is reinforced in Table 6, where the pump rates for wsPump and fcPump are expressed in m^3/s.	7	The information discussing the characteristics of the flood control and water supply pumps is based on the drainage design characteristics used to size the pumps. The (in/day) pumpage makes the pump size independent of area. A pre-processor is used to convert the design pump rate into the model input dimensions. The attribute values in the table are the required metric for the model (m3/s). This text will be added to page 24.	ef	
218	Chin	12 - Appendix C.5	28. Page 24, Table 6	Several definitions seem incorrect, specifically - (1) for "fcPumpoff" change "water supply pump turn-on" to "collector ditch turn-off"; (2) for "fcPumpOn" change "water supply pump turn-on" to "collector ditch turn-on"; (3) for "fcPumpoff" change "Trigger elevation for water supply pump turn-on" to "Trigger elevation for water supply pump turn-off"; (4) for "maxLevel" change "Trigger elevation for water supply pump turn-on" to "Trigger elevation for pump turn-on"; and (5) for "minLevel" change "Trigger elevation for water supply pump turn-on" to "Trigger elevation for pump turn-off".	7	The attribute definitions in lines 7-12 in Table 6 need to be changed--has been flagged in white paper	ef	
219	Chin	12 - Appendix C.5	30. Page 25, second line after Equation (29)	"The value of S is determined from the soil series" is questionable. According to SFWMD (2000), "The value of S is determined from the depth to the water table".	7	The following method will be incorporated in the code for calculating S based on water table depth: This method was developed from the absorption curve of sandy soils in the Taylor Creek area (Speir et.al., 1960). The relationship between watershed storage and water table is given by the following equations: S = 0.60 (DWT) , 0.0 < DWT <0.5; S = 0.30 + 1.00 (DWT-0.5) , 0.5<DWT<1.0 ; S = 0.80 + 1.35 (DWT-1.0) , 1.0<DWT<2.0 ; S = 2.15 + 1.55 (DWT-2.0) , 2.0<DWT<3.0 ; where S = watershed storage, inches DWT = depth to water table, feet.	ef	
220	Chin	12 - Appendix C.5	31. Page 26, Equations (30) to (33)	These equations are not dimensionally homogeneous; the units of the variables in these equations must be given in the text.	7	The units and description of the variables and coefficients will be added to the document.	ef	
221	Chin	12 - Appendix C.5	33. Page 26, after Equation (32)	The text states that Equation (32) is used to calculate the angle of the V-notch weir. Limitations on the calculated value of this angle must be stated.	7	The following language will be included in the document and the source code will be modified. The devices shall incorporate dimensions no smaller than 6 square inches of cross sectional area, two inches minimum dimension, and 20 degrees for "V" notches.	ef	
222	Chin	12 - Appendix C.5	35. Page 27, Table 7	Add reference column. The "Typical value" of 5.2 m for r253d is obviously incorrect.	7	see #309	ef	
223	Chin	12 - Appendix C.5	40. Page 30, first sentence after Equation (40)	Change to "Where Sy is specific yield, Fld_cap is field capacity (= maximum soil water storage in unsaturated zone) uns is water…"	7	will address in manual--has been flagged	pef	
224	Chin	12 - Appendix C.5	41. Page 30, Equation (42)	Provide specific justification for including "uns" in Equation (42), since this is not the standard form of Equation (42).	7	The intent of this equation is to adjust for the changes in the watershed storage, S, in the continuous model. The primary change is an adjustment for the antecedent moisture content of the soil. Typically, the CN values is changed resulting in a new value of S. In this HPM, excess rainfall is reduced as the amount of water in the unsaturated zone increases. The <mbrcell> HPM is not a preferred HPM, it is undergoing additional calibration and testing.	ef	
225	Chin	12 - Appendix C.5	42. Page 31, sentence before Equation (43)	it would be nice to add a reference for derivation of Equation (43). The equation itself is okay.	7			

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
226	Chin	12 - Appendix C.5	44. Page 31, Table 9	Add "References" column. Would be better to add a function for estimating the time of concentration, rather than just a typical value of 3600 seconds. Similarly, the water content at field capacity is better estimated by a function (where the field capacity in meters is related to the depth to the water table and soil type) instead of a typical value of 0.2 m.	7	see #309; The time of concentration is currently intended to be an input value that is provided to the model as a typical value for a specific land use type. A pre-processing package can be used to develop the site-specific values for input into the model input XML. It is not intended that the model calculate TOC internally. The value of FC is provided on a ft/ft or m/m basis and after the water table elevation is determined at each time that thickness of unsaturated soil is determined the actual available soil water content is determined. This text will be added to the document.	ef	
227	Chin	12 - Appendix C.5	45. Page 32, Table 10	Is there a "Suggested Range" and "Typical Value" for "septic"?	7	The septic tank attribute is binary, on or off indicating whether the return flow for urban consumptive use goes to the home cell or some other water body. This text will be added to the document.	ef	
228	Chin	12 - Appendix C.5	49. Page 38, Section 8.1.1	Is the duration of the applied rainfall mentioned anywhere? Are the head boundary conditions mentioned anywhere (the no-runoff result would indicate a uniform head on boundaries 2-3 and 14-15).	7	Section 8 will be revised to provide more details on the example. Several tests were applied to the benchmark to evaluate the performance of the <prr> HPM. In the editing for space some of the details were inadvertently deleted. This will be revised.	ef	
229	Chin	12 - Appendix C.5	50. Page 40, third paragraph	A brief explanation or reference to explain how the curve number method can be used to estimate "Imax" would be useful here.	7			
230	Chin	12 - Appendix C.5	51. Page 40, fourth paragraph	the term "base flow" may not be appropriate for the stage hydrograph. Perhaps "base stage hydrograph" would be better.	7	will address in manual--has been flagged	pef	
231	Chin	12 - Appendix C.5	52. Page 41, Equation (50)	Some suggestion or reference of how to estimate CN for a given land area in South Florida should be added below this equation.	7	A reference will be provided for typical CN values for South Florida	ef	
601	Ponce	11 - Appendix C.4	Page 19, paragraph 1	Replace 0.8 days" with "18 d"	9	paper is in review; these changes will be considered	pef	
602	Ponce	11 - Appendix C.4	Page 19, paragraph 2, last sentence	Replace "1 day" with "1 d"	9	paper is in review; these changes will be considered	pef	
603	Ponce	11 - Appendix C.4	Page 19, paragraph 3	Replace "many gages are spatially spread" with "many gages spatially spread"	9	paper is in review; these changes will be considered	pef	
604	Ponce	11 - Appendix C.4	Page 19, paragraph 4	Replace "0.1m2/s" with "0.1 m2/s"	9	paper is in review; these changes will be considered	pef	
605	Ponce	11 - Appendix C.4	Page 20, paragraph 1	Replace "78 day" with "78 d"	9	paper is in review; these changes will be considered	pef	
606	Ponce	11 - Appendix C.4	Page 21, paragraph 3	Replace "Using the test it was able to demonstrate" with "This test was used to demonstrate"	9	paper is in review; these changes will be considered	pef	
607	Ponce	11 - Appendix C.4	Page 21, paragraph 4, sentence 2	Replace "calibation" with "calibration"	9	paper is in review; these changes will be considered	pef	
608	Ponce	11 - Appendix C.4	Table 5	Replace "Ampl based" with "amplitude-based"	9	paper is in review; these changes will be considered	pef	
609	Ponce	11 - Appendix C.4	Table 5	Replace "Storage coeff" with "Storage coefficient"	9	paper is in review; these changes will be considered	pef	
610	Ponce	11 - Appendix C.4	Table 5	Replace "Coeff of leakage (sediment)" with "sediment-leakage coefficient"	9	paper is in review; these changes will be considered	pef	
611	Ponce	11 - Appendix C.4	Table 5	Replace "Coeff of leakage (aquifer)" with "aquifer-leakage coefficient"	9	paper is in review; these changes will be considered	pef	
612	Ponce	11 - Appendix C.4	Table 5	Replace "effi ciency based" with "efficiency-based"	9	paper is in review; these changes will be considered	pef	
613	Ponce	11 - Appendix C.4	Figure 2	Replace "semiperveous" with "semipervious"	9	paper is in review; these changes will be considered	pef	
246	Schaffranek	12 - Appendix C.5	50	Should the recharge term (Recjt) in equations (1) and (4) include the "j" subscript since it only applies to the homecell or is a summation sign (?) missing?	7	will address in manual--has been flagged to remove j	pef	
247	Schaffranek	12 - Appendix C.5	51	How significant is the error introduced by using the HSE from the previous time step to compute water balance in the HPM? How does time lag constrain the HSE time step? Have sensitivity tests been conducted to determine the effect of this time lag in SFRSM simulations?	7			
248	Schaffranek	12 - Appendix C.5	52	On page 8 the last sentence in the first paragraph reads "To simulate such areas without unduly complicated arrangements of mesh cells or watermovers, a hub is used." How complex can a mesh or arrangement of watermovers be before the solution is degraded? What guidelines govern the choice of mesh and watermover complexities?	7	This sentence will be dropped; it has caused too much confusion. The topic of what components (nonlinear, small scale, unique) of hydrology should be placed in Hubs and which components (regional, generic, linear) should be placed in the water movers is discussed elsewhere in the document.	ef	
249	Schaffranek	12 - Appendix C.5	54	Does the assumption on the bottom of page 11 that "(AET) from open ponded water is greater than the ET from the vegetation" mean at same site?	7	The text will be modified to indicate that “The model default is that the actual evapotranspiration of flooded sites will be higher than the AET at the same site when it is not flooded as shown in Fig. 4. Based on the input values, it is possible to model s site where the AET under flooded conditions is lower than the now flooded land at the same site. Land cover types with very high AET, such as sugar cane, cattail or *E. melaleuca*, are not likely to have higher AET when flooded.”	ef	
250	Schaffranek	12 - Appendix C.5	56	Change the summation limit in equation (16) from "3" to "5".	7	Actually, the summation should be changed from 0-3 to 3-4 because there is no ET from layer 5.	ef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
251	Schaffranek	12 - Appendix C.5	57	Upper limits for TOF, TIF, and TG in equations (1 , (20), and (22) cannot be one as defined by limit ranges on page 18 and in Table 4 on page 19.	7	The implementation of <prr> is being reviewed	ef	
252	Schaffranek	12 - Appendix C.5	58	On page 26, Q is defined as "discharge rate" which is dimensionally inconsistent with equations (31), (32), and (33). Equation (33) is dimensionally inconsistent.	7	see #220	ef	
253	Schaffranek	12 - Appendix C.5	59	In the last sentence of the third paragraph on page 26 "Equation 34" should read as "Equation 33".	7	see #317; should be 31; has been flagged	pef	
195	Therrien	13 - Appendix C.6	55	I like the example FCL shown on page 17. It really helps understand the feature described. An example of supervisor (section 2.5) would also help.	5	Agreed.	jcp	
196	Therrien	13 - Appendix C.6	56	Section 2.5.2, variables maxflow and mincost should be defined. Is arc a graph theory term or does it refer to a mesh feature?	5	Maxflow and mincost are standard flow optimization algorithms. Can add references to maxflow and mincost algorithms ([28, 29]), didn't want to explain them in the text. Arc is a graph theory term, refers to the connection between two nodes in the graph. In the rsm context, it has a one-to-one correspondence with a canal segment in the hse.	jcp	
300	Chin	12 - Appendix C.5	1. Page 2, third paragraph	Change "Huyahorn" to "Huyakorn". Also misspelled in References section on Page 43.	9	will address in manual--has been flagged	pef	
301	Chin	12 - Appendix C.5	3. Page 4, Figure 1	Change "HPM" to "Hub"	9			
302	Chin	12 - Appendix C.5	4. Page 5, paragraph after Equation (4), second-to-last sentence	Change "includes" to "included".	9	will address in manual--has been flagged	pef	
303	Chin	12 - Appendix C.5	5. Page 5, last paragraph, second sentence	Change "Water bodies" to "water bodies"	9	will address in manual--has been flagged	pef	
304	Chin	12 - Appendix C.5	6. Page 7, Section 3.1, first sentence	Change "native" to "natural"	9	will address in manual--has been flagged	pef	
305	Chin	12 - Appendix C.5	7. Page 10, first paragraph	Change "Evaporation (Evap) occurs from the Intso at the rate" to "Evaporation (Evap) occurs from the interception storage (Intso) at the rate".	9	will address in manual--has been flagged	pef	
306	Chin	12 - Appendix C.5	8. Page 10, sentence before Equation (6)	Change "(7)" to "(6)".	9	will address in manual--has been flagged	pef	
307	Chin	12 - Appendix C.5	9. Page 10, Equation (6)	"Kc" is introduced here, but not defined until later on. Define "Kc" here.	9			
308	Chin	12 - Appendix C.5	10. Page 11, first sentence	Change "Where" to "where".	9	will address in manual--has been flagged	pef	
309	Chin	12 - Appendix C.5	11. Page 12, Table 1	Add "References" column (at right) and fill in as appropriate.	9	It was recommended by the Panel that a reference be provided for the values used in the attribute tables for HPM. This will be done but can not be completed immediately.	ef	
310	Chin	12 - Appendix C.5	12. Page 13, sentence before Equation (12)	Change "Ew is the extractable water between field capacity and wilting point" to "Ew is the extractable water equal to the difference between field capacity and wilting point"	9	will address in manual--has been flagged	pef	
311	Chin	12 - Appendix C.5	17. Page 14, Table 2	Add "References" column (at right) and fill in as appropriate.	9	see #309	ef	
312	Chin	12 - Appendix C.5	18. Page 14, second sentence	Change "length" to "height"	9	will address in manual--has been flagged	pef	
313	Chin	12 - Appendix C.5	20. Page 16, Table 3	Add "References" column (at right) and fill in as appropriate.	9	see #309	ef	
314	Chin	12 - Appendix C.5	26. Page 22, second paragraph from the bottom	Change "The crop information includes crop correction coefficients for wetland" to "The crop information includes crop coefficients for wetland".	9	will address in manual--has been flagged	pef	
315	Chin	12 - Appendix C.5	29. Page 25, Section 5.3, second paragraph	Change "store the first inch" to "detain the first inch".	9	will address in manual--has been flagged	pef	
316	Chin	12 - Appendix C.5	32. Page 26, sentence before Equation (33)	Change "following equation" to "following compound-weir equation".	9	will address in manual--has been flagged	pef	
317	Chin	12 - Appendix C.5	34. Page 26, second paragraph from the bottom	Change "Equation 34" to "Equation 31".	9	will address in manual--has been flagged	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
318	Chin	12 - Appendix C.5	36. Page 28, last paragraph	"undirectly connected impervious area" is not standard terminology, "non-directly connected impervious area" is more standard. This should at least be mentioned.	9	A quick search indicates that “undirectly connected impervious” should be changed to “unconnected impervious area” rather than “non-directly connected impervious area”	ef	
319	Chin	12 - Appendix C.5	37. Page 29, Table 8	Add "References" column.	9	see #309	ef	
320	Chin	12 - Appendix C.5	38. Page 29, Section 6.2, first paragraph	Change "South Florid Water" to "South Florida Water"	9	will address in manual--has been flagged	pef	
321	Chin	12 - Appendix C.5	39. Page 30, second paragraph	Given the history of the CN method, change " method was developed to determine the volume" to "method was developed to indicate the volume".	9	will address in manual--has been flagged	pef	
322	Chin	12 - Appendix C.5	43. Page 31, sentence after Equation (46)	Replace "depths" by "elevations"	9	Eqn 46 needs to be modified to the following: Kveg z – h > Dshallow Kc = [(z-h) -Ddeep] * Kveg Dshall > z-h > Ddeep [Ddeep – Dshal] 0 z-h < Ddeep	ef	
323	Chin	12 - Appendix C.5	46. Page 34, first paragraph, fourth sentence	should read "The water-quality discharge from the pond…"	9	will address in manual--has been flagged	pef	
324	Chin	12 - Appendix C.5	47. Page 34, Table 11	Add "References" column.	9	see #309	ef	
325	Chin	12 - Appendix C.5	48. Page 38, Section 8.1.1	Given previous syntax, the title of this section should be "<prr> HPM"	9	will address in manual--has been flagged	pef	
349	Jones	12 - Appendix C.5	Page 4, second paragraph	“…explicitly define progression…” should be “…explicitly defined progression…”	9	will address in manual--has been flagged	pef	
350	Jones	12 - Appendix C.5	Page 5, end of fourth paragraph	“…the processes includes in the…” should be “…the processes included in the…”	9	see #302; will address in manual--has been flagged	pef	
351	Jones	12 - Appendix C.5	Page 24, near end of first paragraph	There is a reference to “Table 9” that should be a reference “Table 6”.	9	will address in manual--has been flagged; also there is no table 5, renumber all	pef	
352	Jones	12 - Appendix C.5	Page 29, middle of page	Change “…South Florid Water…” to “…South Florida Water…”	9	see #320	pef	
614	Ponce	11 - Appendix C.4	Figure 4	Replace "sediment conductivity parameter" with "sediment-conductivity parameter"	9	paper is in review; these changes will be considered	pef	
615	Ponce	11 - Appendix C.4	Figure 9	Replace "m^3/s" with "m3/s" (delete ^)	9	paper is in review; these changes will be considered	pef	
616	Ponce	12 - Appendix C.5	Page 1, Abstract	Word "regional" in the first line is redundant.	9	sentence was reworded but left in the concept, since HPMs are needed to bridge the gap bwtween regional-scale and local-scale	pef	
617	Ponce	12 - Appendix C.5	Page 1, Abstract	Replace "surface water" with "surface-water"	9	following District standard--has been flagged for technical editor	pef	
618	Ponce	12 - Appendix C.5	Page 1, Abstract	Replace "additional functionality is required" with "additional functionality is envisioned"	9	see #144	pef	
619	Ponce	12 - Appendix C.5	Page 1, Abstract	Replace "There are Hubs" with "In addition, there are Hubs"	9	will address in manual--has been flagged	pef	
620	Ponce	12 - Appendix C.5	Page 2	Review and apply consistent spelling of "south Florida" throughout.	9	see #357	pef	
621	Ponce	12 - Appendix C.5	Page 3, paragraph 1	Avoid the use of the first-person pronoun "we"	9	will address in manual--has been flagged	pef	
622	Ponce	12 - Appendix C.5	Page 4, paragraph 2	Replace "explicitly define" with "explicitly defined"	9	will address in manual--has been flagged	pef	
623	Ponce	12 - Appendix C.5	Page 5, paragraph 1	Replace "right hand side" with "right-hand side"	9	will address in manual--has been flagged	pef	
624	Ponce	12 - Appendix C.5	Page 5, paragraph 4	Replace "local detention storage components" with "local detention-storage components"	9	will address in manual--has been flagged	pef	
625	Ponce	12 - Appendix C.5	Page 7, paragraph 2	Replace "landuse" with "land-use" (several instances)	9	following District standard	pef	
626	Ponce	12 - Appendix C.5	Page 7, section 3.1, paragraph 1	Replace "surface water management systems" with "surface-water management systems"	9	see #617	pef	
627	Ponce	12 - Appendix C.5	Page 8, section 3.2, paragraph 3	Replace "process specific HPMs" with "process-specific HPMs"	9	will address in manual--has been flagged	pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
628	Ponce	12 - Appendix C.5	Page 9, section 4, bullet 1	Replace "high water table soils" with "high-water-table soils"	9	will address in manual--has been flagged	pef	
629	Ponce	12 - Appendix C.5	Page 9, section 4, bullet 4	Replace "where is apportioned" with "where it is apportioned"	9	will address in manual--has been flagged	pef	
630	Ponce	12 - Appendix C.5	Page 11, paragraph 1	Replace "dry season ET budgets" with "dry-season ET budgets"	9	will address in manual--has been flagged	pef	
631	Ponce	12 - Appendix C.5	Page 11, paragraph 2	Replace "generic crop correction factor" with "generic crop-correction factor"	9	will address in manual--has been flagged	pef	
632	Ponce	12 - Appendix C.5	Page 11, paragraph 2	Replace "reference crop potential evapotranspiration" with "reference-crop potential evapotranspiration"	9	will address in manual--has been flagged	pef	
633	Ponce	12 - Appendix C.5	Page 11, Figure 4	Replace "Water table Elevation" with "Water-table elevation"	9	defer to technical editor	pef	
634	Ponce	12 - Appendix C.5	Page 12, Section 4.2	Replace "except it considers" with "except that it considers"	9	will address in manual--has been flagged	pef	
635	Ponce	12 - Appendix C.5	Page 18, paragraph 5	Replace "lower zone storage" with "lower-zone storage"	9	will address in manual--has been flagged	pef	
636	Ponce	12 - Appendix C.5	Page 18, paragraph 6	Replace "upper zone storage" with "upper-zone storage"	9	will address in manual--has been flagged	pef	
637	Ponce	12 - Appendix C.5	Page 18, last line	Replace "root zone threshold value" with "root-zone threshold value"	9	will address in manual--has been flagged	pef	
638	Ponce	12 - Appendix C.5	Page 20, section 5.1, paragraph 2	Replace "soil moisture accounting" with "soil-moisture accounting"	9	will address in manual--has been flagged	pef	
639	Ponce	12 - Appendix C.5	Page 29, section 6.2, paragraph 1	Replace "South Florid Water Management Model" with "South Florida Water Management Model"	9	see #320	pef	
640	Ponce	12 - Appendix C.5	Page 36, section 7.1, paragraph 2	Replace "is described above in Section 5.1" with "was described in Section 5.1"	9	defer to technical editor	pef	
641	Ponce	12 - Appendix C.5	Page 37, paragraph 3	Replace "water storage capacity" with "water-storage capacity"	9	will address in manual--has been flagged	pef	
642	Ponce	12 - Appendix C.5	Page 38, paragraph 1	Replace "ignored" with "neglected." Provide additional justification for the statement "infiltration is assumed to be complete within a day."	9	The word "*ignored*" will be replaced with "neglected". The following text will be added: "The surface soils of South Florida are typically poorly graded sands or fine sands with infiltration rates greater than 20 inches per day. Except in the locations where the surface soil is hydrophobic, the soil is not infiltration-limited and surface runoff only occurs when soil water storage capacity is exceeded."	ef	
769	Schaffranek	12 - Appendix C.5	53	On page 11, "where" in the first sentence should be lower case and there should be a period instead of a comma between "type" and "KW" in the last sentence of the same paragraph.	9	will address in manual--has been flagged	pef	
770	Schaffranek	12 - Appendix C.5	55	Delete "in the" in the last line of page 14.	9	will address in manual--has been flagged	pef	
30	Jones	13 - Appendix C.6	Page 4, Table 1	There is a reference here to the HEC-RAS model. HEC-RAS is a 1-D river routing model. Then in Table 2 on page 5, it lists indicates that the HEC model can do coupled surface water/ground water interaction. HEC-RAS certainly cannot. Then I noticed that the legend below the table caption says "HEC – HEC HMS". HMS is a watershed runoff model. Once again, it does not do coupled ground water/surface water modeling. Then I noticed that in the appendix to the article (pages 46-48), it discusses a suite of HEC models including HMS, RAS, and RESSIM. This makes a little more sense, although I wouldn't classify any of these as a ground water model. The early references are confusing and incomplete. Perhaps the early references should simply say "HEC" or "HEC Suite".	1	Agreed, should change to HEC	jcp	
643	Ponce	12 - Appendix C.5	Page 38, paragraph 1	Replace "soil water storage" with "soil-water storage"	9	will address in manual--has been flagged	pef	
197	Therrien	13 - Appendix C.6	**57**	On page 24, I think that the structure (node) object is different from the nodes in figure 7. Also, do segments on that page refer to canals?	5	Correct. The structure (node) objects on page 24 refer to the structures depicted in figure 8 (S1, S2, etc..), the nodes of figure 7 are HSE canal segment boundaries. The segments are portions of the HSE canal network. A group of segments represents a canal, a group of canals represents a WCU.	jcp	
139	Jones	13 - Appendix C.6		Good overview of MSE. Could be integrated with Chapter 3 in the Theory Manual.	5	see #129	pef	
140	Jones	13 - Appendix C.6	Page 5, paragraph entitled "Metadata Input"	I am not sure I would agree on the definition of "metadata". In my experience, this term is used to describe header information associated with data objects that provides supplementary information about the data (i.e., "data about data"). There are federal and ISO metadata standards. Metadata can be included in XML, but I wouldn't call it a type of metadata input.	5	jcp: Semantics. Consider: Metadata (Greek: meta-+data "information") means data about data. While this definition is commonly offered, it is also commonly not helpful. Metadata is more properly called ontology or schema when it is structured into a hierarchical arrangements. Both terms describe "what exists" for some purpose or to enable some action. In this context, it seems appropriate to express: A prime example would be the use of the Extensible Markup Language (XML) employed by the RSM. pef: metadata describes content, quality, condition, limitations, source of data; will address in manual--has been flagged	jcp pef	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
161	Schaffranek	13 - Appendix C.6	60	On page 4 of Appendix C.6, the reader also should be cautioned that the models used for comparative analyses with the RSM were not developed with the same purpose and scope in mind as the RSM, i.e., long-term (30+ year) regional simulation in a closely coupled aquifer/wetland/canal flow system that is extensively managed, frequently structurally modified, and undergoing an extensive engineering restoration. In fact, most of the models listed in Tables 1 and 2 and Appendix A on page 44 can be classified as hydrodynamic-simulation models rather than hydrologic-management models due to the fact that the purpose and scope driving the original model development was quite different than that of the RSM. Naturally, although these models are capable of simulating part or the whole of the south Florida ecosystem, they might not be as efficient and easy to operate for management purposes as the RSM because the main driving force behind their development was quite different.	5	Excellent point. This will be added.	jcp	
198	Therrien	14 - SFRSM Fact Sheet	58	My main comment about the quick facts is that it contains information about the model application and assumptions that does not seem to be in the manual (but I think should be in the manual).	5	see #73	pef	
199	Therrien	0 - General Comments	2	I would like to have a better idea of the intended audience for the manual. Is it aimed mainly at potentia users of the manual, or is it also aimed at developers (programmers)? What are the levels of knowledge of hydrology (surface or groundwater) and programming skills expected?	5	see Fulton slides	pef	
200	Therrien	0 - General Comments	3	In relation to comment 2, I assumed when reading the manual (correctly or not) that the main audience will be mainly model users, who should have a solid background in physical hydrology, but perhaps not so much in object-oriented (OO) programming. If it is the case, I think that the manual should put emphasis first on the hydrological processes and then on the OO concepts. For example, chapter 2 of the manual presents the HSE theory and concepts but I find that the presentation focuses a lot on OO concepts and to a lesser extent on physical processes. A reader not so familiar with OO will probably have to read more than section 2 to get a precise idea of all physical processes simulated in HSE, and numerical methods of solution (by reading for example Appendix B and papers in Appendices C). As a university professor, I observe that undergraduate and graduate students trained in hydrological sciences usually do not have a good (or any at all) knowledge of object-oriented programming. The only programming experience they have is usually with non OO languages, which are quite different in	5	we should include more "object" type figures throughout the manuals to introduce these concepts more clearly--this is flagged to be added later	pef	
201	Therrien	0 - General Comments	4	A requirement of RSM is that it must simulate all important hydrological processes to do regional scale modeling in South Florida. Not being very familiar with the hydrology of South Florida, I find that the information provided on the physical system to model (i.e. South Florida) is not described in enough detail to allow me to comment on the fulfillment of that requirement. There is some background presented in section 1.1 of the manual, and a list of features presented in section 1.3. That list clearly shows that canals and control structures are a main feature of South Florida but it remains somewhat vague, in my opinion, on the natural surface and subsurface flow characteristics for the region. For example, there is a mention that highly pervious aquifers (that I assume deep) are connected to superficial aquifers but I did not find much more information in the documents as to the nature of these different aquifers. Unless we can assume that the reader is very familiar with the hydrology of South Florida, I think that the description of the hydrological characteristics needs to be expanded.	5	see #123; also covered during tour and Obeysekera and Tarboton slides	pef	
202	Therrien	0 - General Comments	5	A, Adding a series of papers in Appendix C is a good idea if the reader wants more information on a given topic. However, the papers should not replace description of theory in the manual, unless it is clearly stated that the model follows exactly the theory presented in a given paper. I do not feel that it is the case at the moment. For example, some of these papers have been published in 1998 or 2000 and I assume that RSM has evolved a lot since and that the model may have significant differences compared to the original papers. B. Another example is paper C.2, which presents the only theory I have seen on estimation of numerical errors, which seems to be part of RSM. C. I also suggest presenting the papers in the original published format or at least indicate the name of the journal, the pages and the date of publication.	5	A. see #124; B. benchmarks, numerical estimation of errors, and validation tests will all be in a separate Benchmarks and Testing Manual; C. see #120	pef	
203	Therrien	0 - General Comments	7a	The notion of a fully integrated model is used consistently but it should be clearly defined because it might not have the same meaning for everyone (could be physical or numerical).	5	see #170	pef	
204	Therrien	0 - General Comments	7c	The notion of implicit formulation is also used, but I am not sure that it only refers to the time weighting used for solution of the equations, which is the common meaning in modeling.	5	subset of #773; see #178	pef	
206	Therrien	01 - Chapter 1	16	On page 12, there is mention of tests against MODFLOW and stream-aquifer interactions. I assume that many more verification examples are used to check the code and I would like to see a list or table or verification examples for RSM (or HSE).	6	this was discussed during Lal's Testing talk (slide 9), but is not in the meeting notes; it is also covered in Appendix C.1; it may also be part of the Benchmarks and Testing Manual--has been flagged to make this clearer	pef	
254	Therrien	02- Chapter 2	22	It is not clear what is meant by HPMs being uncoupled or loosely coupled with head (page 25).	7			
255	Therrien	02- Chapter 2	29	More detail should be given on the method of coupling HPMs to overland and subsurface equations (perhaps with a flowchart).	7			
256	Therrien	12 - Appendix C.5	38	There are numerous HPMs described in the appendix and it becomes overwhelming to differentiate between them and to visualize situations where one HPm is more suitable than another. I suggest having a table of content for the appendix, and also providing a summary table of the main features of all HPMs. I am also wondering why such a large number of HPMs have been designed, since it seems that a general HPM could be designed and could be used for several situations.	7	The table that was presented at the Panel workshop that describe the HPM types and instances and the table that indicated the preferred application of HPMs to different land use types will be placed in the document. Additional text will be added discussing the preferred HPM implementation with the flexibility to implement other HPMs depending on the objectives of the application and desires of the client. The are occasions when we wish to simulate the local hydrology a specific way to match previous work.	ef	
257	Therrien	12 - Appendix C.5	43	In the future work, there is mention of additional HPMs. A clear summary of all HPMs will be absolutely necessary, otherwise the reader will not know which HPM is better suited for his/her needs.	7			

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
772	Therrien	0 - General Comments	1	The documentation reviewed provides a very good overview of the main features of RSM, as well as the challenges for the model developers. The inclusion of HPMs in HSE makes it very flexible for simulating a variety of surface hydrologic processes and distinguishes RSM from similar numerical models. The Management Simulation Engine (MSE) is also very impressive and it reflects the complexity of managing control structures in South Florida. Coupling the MSE with the HSE makes RSM a unique model, because most coupled surface/subsurface flow models that I am aware of offer no or limited capabilities for managing control structures. This coupling is one of the main strengths of RSM. I am quite impressed with the model capabilities and with the developments made to this day.	9	no comment	pef	
326	Chin	13 - Appendix C.6	1	This paper is clear, polished, and very well written.	9	no comment	pef	
327	Chin	13 - Appendix C.6	2	The paper (Section 2.1) refers to "pseudocells" in the context of HPMs. More use of the term "pseudocell" in the HPM white paper would complement this discussion.	9	"pseudocell" is the old term for "HPM"; this one was overlooked	pef	
328	Chin	13 - Appendix C.6	3. Page 19, Section 2.5, second paragraph	Change "Kolmorogorov" to "Kolmogorov"	9	Agreed.	jcp	
353	Jones	13 - Appendix C.6	Page 8, bottom of paragraph 1	Change “it’s” to “its”.	9	Agreed.	jcp	
644	Ponce	12 - Appendix C.5	Page 42, section 10, paragraph 1	Replace "more functionality is necessary" with "more functionality becomes necessary"	9	will address in manual--has been flagged	pef	
645	Ponce	13 - Appendix C.6	Page 1, Abstract	Replace "water resource control schemes" with "water-resource control schemes"	9	Agreed.	jcp	
646	Ponce	13 - Appendix C.6	Page 2, Introduction, paragraph 1	Suggest replacing or remove the word "overwhelming". It is a value judgment, and does not belong in this document.	9	Agreed.	jcp	
647	Ponce	13 - Appendix C.6	Page 2, Introduction, paragraph 2	Suggest rewording of the phrase "This is not to say"	9	Agreed.	jcp	
648	Ponce	13 - Appendix C.6	Page 3, Introduction, paragraph 1	Replace "well defined interface" with "well defined interface"	9	well-defined interface	jcp	
649	Ponce	13 - Appendix C.6	Page 3, Introduction, paragraph 2	Last sentence is awkward. Please rephrase.	9	Agreed.	jcp	
650	Ponce	13 - Appendix C.6	Page 3, section 1.1, paragraph 1	Delete first word "Even"	9	Agreed.	jcp	
651	Ponce	13 - Appendix C.6	Page 3, section 1.1, paragraph 1	Avoid usage of first-person pronoun "we" (many instances)	9	Agreed.	jcp	
652	Ponce	13 - Appendix C.6	Page 3, section 1, bullet 2	Replace "&" with "and"	9	Agreed.	jcp	
653	Ponce	13 - Appendix C.6	Page 3, section 1	Replace "appendix 7" with "Appendix 7"	9	Agreed.	jcp	
654	Ponce	13 - Appendix C.6	Page 4, paragraph 1	Replace "capabilities" with "capabilities,"	9	Agreed.	jcp	
655	Ponce	13 - Appendix C.6	Page 4, paragraph 1	Replace "ground water and stream flow" with "groundwater and streamflow"	9	Agreed.	jcp	
656	Ponce	13 - Appendix C.6	Page 4, paragraph 1	Replace "stream conveyance models" with "stream-conveyance models"	9	Agreed.	jcp	
657	Ponce	13 - Appendix C.6	Page 4, paragraph 1	Suggest replacing or removing the phrase "not to argue for superiority" This phrase is confrontational, does not belong here.	9	The intent was to defuse a confrontational perception that a comparison of models would naturally arise. Can be changed.	jcp	
658	Ponce	13 - Appendix C.6	Page 5, paragraph 2	Replace "pragmatics of applying finite difference formulations" with "the pragmatics of finite-difference formulations"	9	Agreed.	jcp	
659	Ponce	13 - Appendix C.6	Page 6, paragraph 5	Replace "closed loop feedback controller" with "closed-loop feedback controller"	9	Agreed.	jcp	
660	Ponce	13 - Appendix C.6	Page 6, paragraph 5	Replace "it's target value" with "its target value" (Many instances of the contraction "it's" instead of the possessive "its". Replace all)	9	Agreed.	jcp	
661	Ponce	13 - Appendix C.6	Page 8, paragraph 1	Replace "section, one may refer to the citations for more detail" with "section. More details can be found in the aforementioned citations."	9	Agreed.	jcp	
662	Ponce	13 - Appendix C.6	Page 8, section 2.1, paragraph 1	Replace "piecewise linear canal segments" with "piecewise-linear canal segments"	9	Agreed.	jcp	
663	Ponce	13 - Appendix C.6	Page 8, section 2.1, paragraph 1	Replace "ET and rain function" with "ET and rainfall function"	9	Agreed.	jcp	
664	Ponce	13 - Appendix C.6	Page 8, section 2.1, paragraph 2	Replace "semi-implicit finite volume approximation of the diffusion flow transport equations" with"semi-implicit finite-volume approximation of the diffusion-flow transport equations"	9	Agreed.	jcp	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
665	Ponce	13 - Appendix C.6	Page 9, section 2.2, paragraph 1	Replace "water control structures" with "water-control structures" (Many instances throughout)	9	Agreed.	jcp	
666	Ponce	13 - Appendix C.6	Page 10, paragraph 2	Replace "uniform data monitor interface" with "uniform data-monitor interface"	9	Agreed.	jcp	
667	Ponce	13 - Appendix C.6	Page 10, paragraph 2	Replace "complex water management policies" with "complex water-management policies"	9	Agreed.	jcp	
668	Ponce	13 - Appendix C.6	Page 11, section 2.3 title	Replace "Assessors & Filters" with "Assessors and Filters"	9	Agreed.	jcp	
669	Ponce	13 - Appendix C.6	Page 11, section 2.3, paragraph 1	Replace "supply & demand" with "supply and demand"	9	Agreed.	jcp	
670	Ponce	13 - Appendix C.6	Page 11, section 2.3, paragraph 2	Replace "Related to the assessors, are MSE filters" with "MSE filters are related to the assessors"	9	Agreed.	jcp	
671	Ponce	13 - Appendix C.6	Page 13, paragraph 3	Replace "flexible, data-driven specification, which is easily modified providing a level of plug-and-play ..." with "flexible, data-driven specification, which can be readily modified." (Delete last part of this sentence; argumentative; value judgment; not needed)	9	Agreed.	jcp	
672	Ponce	13 - Appendix C.6	Page 13, secton 2.4, paragraph 2, bullet 1	Replace "One & two dimensional rulecurves" with "One- and two-dimensional rule curves" (The word "rulecurve" is not in the dictionary. The preferred spelling should be rule curve). Replace "rulecurve" with "rule curve" throughout, unless willing to invent a new word, or if common usage (in the field) can be demonstrated.	9	Agreed.	jcp	
673	Ponce	13 - Appendix C.6	Page 13, secton 2.4, paragraph 2, bullet 6	Replace "User defined finite state machine" with "User-defined finite-state machine"	9	Agreed.	jcp	
674	Ponce	13 - Appendix C.6	Page 14, paragraph 1	Replace "[20]" with "Ref. [20]" or "Reference [20]"	9	Agreed.	jcp	
675	Ponce	13 - Appendix C.6	Page 14, section 2.4.1, title	Replace "One & two dimensional rulecurves" with "One- and two-dimensional rule curves"	9	Agreed.	jcp	
676	Ponce	13 - Appendix C.6	Page 14, section 2.4.2, title	Replace "Piecewise linear transfer function" with "Piecewise-linear transfer function"	9	Agreed.	jcp	
677	Ponce	13 - Appendix C.6	Page 15, section 2.4.4, paragraph 3	Replace "closed loop" with "closed-loop"	9	Agreed.	jcp	
678	Ponce	13 - Appendix C.6	Page 16, section 2.4.5, paragraph 1	Replace "doesn't" with "does not"	9	Agreed.	jcp	
679	Ponce	13 - Appendix C.6	Page 18, section 2.4.6, title	Replace "User defined finite state machine" with "User-defined finite-state machine"	9	Agreed.	jcp	
680	Ponce	13 - Appendix C.6	Page 18, section 2.4.6, paragraph 1	Replace "it's" with "its"	9	Agreed.	jcp	
681	Ponce	13 - Appendix C.6	Page 18, section 2.4.6, paragraph 2	Replace "user defined" with "user-defined"	9	Agreed.	jcp	
682	Ponce	13 - Appendix C.6	Page 20, paragraph 4, bullet 2	Replace "User defined finite state machine" with "User-defined finite-state machine"	9	Agreed.	jcp	
683	Ponce	13 - Appendix C.6	Page 20, paragraph 5	Replace "User defined controller" with "User-defined controller"	9	Agreed.	jcp	
684	Ponce	13 - Appendix C.6	Page 20, last sentence	Reword to avoid "allows one to define." Prefer "allows the definition of"	9	Agreed.	jcp	
685	Ponce	13 - Appendix C.6	Page 21, section 2.5.1, paragraph 1	Replace "mixed integer" with "mixed integer"	9	Agreed.	jcp	
686	Ponce	13 - Appendix C.6	Page 21, section 2.5.2, paragraph 2	Replace "it's" with "its"	9	Agreed.	jcp	
687	Ponce	13 - Appendix C.6	Page 22, section 2.5.3, paragraph 1	Replace "water resource management" with "water-resource management"	9	Agreed.	jcp	
688	Ponce	13 - Appendix C.6	Page 23, section 2.6, paragraph 2	Replace "it's" with "its"	9	Agreed.	jcp	
689	Ponce	13 - Appendix C.6	Page 24, paragraph 3	Replace "representation facilitating" with "representation, facilitating	9	Agreed.	jcp	
690	Ponce	13 - Appendix C.6	Page 28, section 3, paragraph 1	Avoid use of first-person pronoun "we"	9	Agreed.	jcp	
691	Ponce	13 - Appendix C.6	Page 28, section 3, paragraph 1	Replace "rain event" with "rainfall event"	9	Agreed.	jcp	
692	Ponce	13 - Appendix C.6	Page 30, paragraph 1	Replace "piecewise linear transfer functions" with "piecewise-linear transfer functions"	9	Agreed.	jcp	

#	Author	Document	Comment Location	Comment	Goal	Response	who	Response continuation
693	Ponce	13 - Appendix C.6	Page 30, paragraph 1	Replace "User defined (C++) finite state machine module" with "User-defined (C++) finite-state machine module"	9	Agreed.	jcp	
694	Ponce	13 - Appendix C.6	Page 30, paragraph 2	Replace "User defined C++ module" with "User-defined C++ module"	9	Agreed.	jcp	
695	Ponce	13 - Appendix C.6	Page 32, paragraph 1	Replace "three day moving window" with "three-day moving window"	9	Agreed.	jcp	
696	Ponce	13 - Appendix C.6	Page 36, paragraph 1	Replace "there are several areas of continuation relative to the RSM that deserve attention" with "several areas of continuation relative to the RSM deserve further attention"	9	Agreed.	jcp	
697	Ponce	13 - Appendix C.6	Page 36, paragraph 2	Replace "finite state machine" with "finite-state machine"	9	Agreed.	jcp	
698	Ponce	13 - Appendix C.6	Page 37, paragraph 1	Replace "water resource control policies" with "water-resource control policies"	9	Agreed.	jcp	
699	Ponce	13 - Appendix C.6	Page 37, paragraph 3	Replace "industry standard" with "industry-standard"	9	Agreed.	jcp	
700	Ponce	13 - Appendix C.6	Page 37, paragraphs 5 and 6, bullets	Fill in hyphens in "closed loop", "piecewise linear", "user defined" and finite state"	9	Agreed.	jcp	
701	Ponce	13 - Appendix C.6	Page 38, paragraph 3	Replace "stream flow network abstraction" with "streamflow network abstraction"	9	Agreed.	jcp	
771	Schaffranek	13 - Appendix C.6	61	In the first sentence at the top of page 8, change "of an integrated aquifer-stream flow model" to "in an integrated aquifer-stream-surface system".	9	Agreed.	jcp	
702	Ponce	13 - Appendix C.6	Page 46, section 6.4	Replace "user specified discharge rating curves" with "user-specified discharge-rating curves"	9	Agreed.	jcp	
773	Therrien	0 - General Comments	7	There is a need to clearly define some notions used in the manual and use consistent terminology as well. Some examples are (7a and 7c are goal 5)	9	see #203 and #204 above for 7a and 7c responses	pef	
703	Ponce	14 - SFRSM Fact Sheet	Page 1, paragraph 1	Replace "regional modeling tool than can handle" with "regional modeling tool to handle"	9	I think it should remain as is	jmr	
704	Ponce	14 - SFRSM Fact Sheet	Page 1, paragraph 1	Replace "complexities of South Florida today and for years to come" with "complexities of South Florida well into the future"	9	I think it should remain as is	jmr	
774	Therrien	0 - General Comments	7b	The words cell, mesh, grid, volume are used throughout the manual to describe discretization, and I feel that sometimes they are synonymous but other times they are not, which can create confusion.	9	good point--a glossary would help, plus revisiting each usage. This has been flagged in the manual	pef	
329	Chin	14 - SFRSM Fact Sheet	1. Page 1, caption to left	Change "Our Mission is to manage and protect water resources of the region" to "Our mission is to protect the water resources of the region"	9	we can't change the District mission!	pef	
330	Chin	14 - SFRSM Fact Sheet	2. Page 1 first paragraph	This is not clear. A suggested modification is "The South Florida Regional Simulation Model (SFRSM) is an implementation of the Regional Simulation Model (RSM) covering a major portion of South Florida This calibrated and verified model will be implemented by December 2005. The model will simulate the operation of the water-management system within the District an provide screening-level analysis of system modifications."	9	toss-up	jmr	
331	Chin	14 - SFRSM Fact Sheet	3. Page 1, under "What are the Main Components of the SFRSM?", first paragraph	Replace "undertaken" by "done".	9	simpler, I agree	jmr	
332	Chin	14 - SFRSM Fact Sheet	4. Page 1, under "What are the Main Components of the SFRSM?", second paragraph	Replace "Hydrologic simulation comprises collating the necessary" by " The hydrologic simulation engine collates the necessary"	9	I agree. We're explaining the HSE, not hydrologic simulation	jmr	
333	Chin	14 - SFRSM Fact Sheet	5. Page 1, under "What are the Main Components of the SFRSM?", third paragraph	Replace "Management in the SFRSM portrays the Central" by "The management simulation engine incorporates the Central"	9	I agree. Again, we're describing MSE, not water management	jmr	
334	Chin	14 - SFRSM Fact Sheet	6. Page 2, item 5	Insert hyphens, i.e. use "regional-scale" and "project-scale"	9	agreed	pef	
335	Chin	14 - SFRSM Fact Sheet	7. Page 2, item 9	Insert hyphen, i.e. use "single-layer"	9	agreed	pef	
705	Ponce	14 - SFRSM Fact Sheet	Page 1, paragraph 1, bullet 1	Replace "Primary and certain select Secondary" with "primary and selected secondary"	9	I agree	jmr	
706	Ponce	14 - SFRSM Fact Sheet	Page 1, paragraph 1, bullet 3	Replace "Flexible mesh" with "A flexible mesh"	9	I agree	jmr	
707	Ponce	14 - SFRSM Fact Sheet	Page 1, paragraph 1, bullet 3	Replace "natural area like the Everglades" "natural areas such as the Everglades"	9	I agree	jmr	

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708	Ponce	14 - SFRSM Fact Sheet	Page 1, paragraph 1, bullet 4	Replace "SFWMD providing modeling flexibility in scenario investigation" with "SFWMD, providing modeling flexibility in scenario investigations."	9	agreed	pef	
709	Ponce	14 - SFRSM Fact Sheet	Page 1, paragraph 2	Replace "covering the major portion of South Florida" with either "covering a major portion of South Florida" or "covering the majority of South Florida"	9	agreed--a major portion	pef	
710	Ponce	14 - SFRSM Fact Sheet	Page 1, paragraph 2	Replace "regional level operational functionality" with "regional-level operational functionality"	9	agreed	pef	
711	Ponce	14 - SFRSM Fact Sheet	Page 1, paragraph 2	Replace "screening level analysis" with "screening-level analysis"	9	agreed	pef	
712	Ponce	14 - SFRSM Fact Sheet	Page 1, Section	This implementation is expected to	9	no issue noted	pef	
713	Ponce	14 - SFRSM Fact Sheet	Bullet 2	Replace "current best available tool" with "current available tool"	9	leave as is; there are multiple tools, but it is the best currently	pef	
714	Ponce	14 - SFRSM Fact Sheet	Bullet 3	Replace "individuals and consultants" with "professional practitioners"	9	agreed	pef	
715	Ponce	14 - SFRSM Fact Sheet	Bullet 3	Replace "run the model" with "interact with the model"	9	okay	pef	
716	Ponce	14 - SFRSM Fact Sheet	Paragraph 2	Replace "Tasks include: " with "Tasks include"	9	okay	pef	
717	Ponce	14 - SFRSM Fact Sheet	Paragraph 2	Replace "collection of necessary data" with "data collection"	9	okay	pef	
718	Ponce	14 - SFRSM Fact Sheet	Paragraph 2	Delete "pseudo cells" (Not necessary at this information level)	9	agreed	pef	
719	Ponce	14 - SFRSM Fact Sheet	Paragraph 3	Replace "control algorithm selections available to the modeler" with "available control-algorithm selections"	9	okay	pef	
720	Ponce	14 - SFRSM Fact Sheet	Paragraph 3	Replace "dictated by the imposed operational policies" with "dictated by imposed operational policies"	9	okay	pef	
721	Ponce	14 - SFRSM Fact Sheet	Page 2	Replace title with "Model features" or "Model features and capabilities" or "Model capabilities and limitations". Do not use "Assumptions".	9	will consider changing this--has been flagged	pef	
722	Ponce	14 - SFRSM Fact Sheet	Page 2, item 2	Replace "less than 30,000" with "approximately 30,000"	9	agreed	jmr	
723	Ponce	14 - SFRSM Fact Sheet	Page 2, item 4	Replace "if needed" with "if necessary"	9	agreed	jmr	
724	Ponce	14 - SFRSM Fact Sheet	Page 2, item 4	Replace "project scale" with "project-scale"	9	agreed	pef	
725	Ponce	14 - SFRSM Fact Sheet	Page 2, item 6	Replace "time-steps" with "time steps"	9	agreed	pef	
726	Ponce	14 - SFRSM Fact Sheet	Page 2, item 6	Replace "flood impact" with "flood hydrology"	9	FEMA wording--will double check	pef	
727	Ponce	14 - SFRSM Fact Sheet	Page 2, item 7	Replace "some secondary canals" with "selected secondary canals"	9	agreed	jmr	
728	Ponce	14 - SFRSM Fact Sheet	Page 2, item 8	Replace "flow-barriers" with "flow barriers"	9	agreed	pef	
729	Ponce	14 - SFRSM Fact Sheet	Page 2, item 9	Replace "single layer" with "single-layer"	9	agreed	pef	
730	Ponce	14 - SFRSM Fact Sheet	Page 2, item 9	Replace "simulate the surficial aquifer only" with "only simulate the surficial aquifer"	9	okay	pef	
731	Ponce	14 - SFRSM Fact Sheet	Page 2, item 12	Replace "climactic" with "climatic"	9	agreed	jmr	
732	Ponce	14 - SFRSM Fact Sheet	Page 2, item 16	Replace "where possible" with "whenever possible"	9	agreed	jmr	
733	Ponce	14 - SFRSM Fact Sheet	Page 2, item 16	Replace "higher resolution (e.g., topography)" with "higher spatial resolution".	9	agreed	jmr	
734	Ponce	14 - SFRSM Fact Sheet		Eliminate forced hyphenation on right margins to improve readability (Example "Manage-ment"). This comment applies also to Page 1 (Example "Simula- tion")	9	defer to technical editor	pef	
735	Ponce	0 - General Comments	1.	The manual has extensive problems with hyphenation and several spelling and grammatical errors. I recommend having the manual edited by a technical writer or someone who has a high level of knowledge in the formal use of the English language.	9	agreed; technical editor scheduled to begin work in October	pef	
775	Ponce	06 - Appendix B	Page 65, paragraph 2	Consider placing definition of "internal boundary conditions" at the beginning of section B.3.	5	see #145	pef	