Model Conversion
XP-SWMM to EmNet SWMM

Step	Need	Action
1	Import	Export model from XP-SWMM using built-in tool.
2	Evaporation not transferred	Add daily, monthly, or other evaporation as global value. Disabled evaporation while raining.
3	Peaking factors for dry weather inflow not transferred. Pump speed factors not transferred correctly or consistently (in one case, head is multiplied but not flow, in others neither is multiplied upon export).	Multiplied dry weather flow patterns by peaking factor and re-entered timeseries to produce correct flow rate. Adjusted pump curves to produce appropriate flow rate. Note that when transferring pump speed factor, new flow = old flow X PF but new head = old head X (SF^2), per XP manual.
4	Simulation duration is not transferred correctly. Timesteps may not necessarily transfer.	Match simulation duration in XP-SWMM. Use shortest common timestep from XP (runoff, hydraulic, sanitary) in EPA SWMM.

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Step	Need	Action
5	Ponding not transferred	Allow global ponding. For juncions: Surcharge depth = 0 where no ponding occurs. Surcharge D = ponding depth where ponding was enabled in XP. Surcharge D = 1000 ft where manhole was sealed in XP. For storage units: surfcharge above storage depth is modeled by increasing maximum depth of storage unit and adjusting curve such that very small area is used above the maximum storage depth that was in XP.
6	After transfer, some nodes show flow that is not as smooth as XP.	Routing timestep shortened in EPA SWMM until flow is smoothed. Dynamic wave tolerance lowered and maximum iterations increased, if necessary.
7	Pump curves did not transfer correctly. Pump start/stop elevations not transferred correctly.	Pump curves were checked and corrected as necessary in EPA SWMM. Care was taken to use same pump classification (i.e. head differential). Start and stop elevations corrected.
8	Dry weather flow patterns for daily timestep were not transferred while, most often, hourly flow time patterns were. If dry weather flow units were different from model units, then values were incorrectly transferred.	Time patterns were checked and corrected in EPA SWMM to match those in XP. Nodes where dry weather flow rates were not in model units were corrected to model units and re-entered in EPA SWMM model.

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9	Time series are not correctly referenced in EPA SWMM	Time series file location specified. Dates added to time series because XP rolls over time without indicating that a day has lapsed. Some time series were directly entered in SWMM input file (tidal TS).
10	There are no special links in EPA SWMM	Special links converted to pump, orifice, or weir, depending on the function of the special link. Control rules generated for the controls to match the function of the special link.
11	Special shape curves for conduits are not transferred correctly (imported as depth vs width).	Values were converted into fraction of full depth and width/full depth then re-entered using the SWMM GUI.
12	Arches not correctly transferred to EPA SWMM. – No width specification, therefore width is transferred as 0.	Entered maximum width = 2x height.

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13	Infiltration type can't be set at each catchment.	Infiltration type set for model to match the XP model.
14	No option in EPA to specify interface file flow percentage inflow into hydraulics layer.	Added a 'helper' tank with a special control rule to only allow fraction (e.g. 10%) of runoff from the subcatchment to enter the hydraulics node.
15	Census-based flows not correctly transferred to EPA SWMM.	All census based parameters exported to a spreadsheet, corrected to the model units, and used to calculate the flow component called "Average Value" for dry weather flow in EPA SWMM. Required adjusting field precision in SWMXP.ini file to copy enough sig. figures.
16	Peaking factor sometimes 0 in XP Table but 1 in XP User Form	As instructed by XP-Solutions, followed values in XP Tables not in user form because user form defaults to non-zero values which are not enabled (therefore zero) if not OK'd.

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