



Project Model Review Checklist

Version 20200122

Form with fields for Project Name, Design Phase, District PM, Project Model Name, Reviewer, Review Deadline, Modeling S&P Version Provided to Consultant, and Master Model Project is Based On.

Any additional material to support your review, such as record drawings, screen shots from ICM or GIS, literatures, standard and protocols, etc., are recommended to be pasted into additional worksheet tabs for future reference.

1 Submittal Package Completeness (See Section 7.6) Provided Not Provided N/A Notes

Indicate in boxes to the right whether info was provided to determine submittal package is complete. Contact District PM as soon as possible to request missing items prior to completing review before deadline.

Table with 5 columns: Item, Description, Provided, Not Provided, N/A, Notes. Rows include items like Letter/memo/report, Completed Project Model Submittal Checklist, Transportable ICM file, CSO statistics report, etc.

2 Consultant Project Model Submittal Checklist (See Appendix A) Yes No N/A Notes

Review checklist for completeness and identify variances to S&P to be aware of for later portions of review. Information in checklist will also be used as guidance on what components/elements were modified to be reviewed further.

Table with 5 columns: Item, Description, Yes, No, N/A, Notes. Rows include questions like 'Was a complete Consultant Project Model Submittal Checklist provided?', 'Are all fields filled out and explanations provided?', etc.

3 Project Model(s) and Components Yes No N/A Notes

Indicate in boxes to the right whether info was provided or not for completeness. Contact District PM as soon as possible to request missing items prior to completing review before deadline.

Table with 5 columns: Item, Description, Yes, No, N/A, Notes. Rows include questions like 'Does the ICM model file and network name(s) comply with standards?', 'Were the following components provided in the icmt file?', etc.

4 Results - CSO Performance Yes No N/A Notes

Note variances and/or explanations identified during review checklist as part of Section 1 to considered/referred to later in review. Reviewer should contact District PM to confirm they are aware of variance and granted permission prior to submittal.

Table with 5 columns: Item, Description, Yes, No, N/A, Notes. Rows include instructions like 'Re-run the hydraulic simulations previously setup by design consultant.', 'It is recommended that a blank copy of the CSO statistics template...', etc.

5 Results - 5-yr, 6-hr Level of Service Yes No N/A Notes

Note variances and/or explanations identified during review checklist as part of Section 1 to considered/referred to later in review. Reviewer should contact District PM to confirm they are aware of variance and granted permission prior to submittal.

Table with 5 columns: Item, Description, Yes, No, N/A, Notes. Row includes 'Check that the District's 5-yr Level of service criteria is met in District-owned sewers and surcharging was not caused in any local sewers as a result of proposed work.'

b.	- Clear documentation in design documents what targeted level of service is for specific project if default criteria in S&P is not being achieved.				
c.					
6 Documentation (see Section 7 of S&P)		Yes	No	N/A	Notes
<i>Note variances and/or explanations identified during review checklist as part of Section 1 to considered/referred to later in review. Reviewer should contact District PM to confirm they are aware of variance and granted permission prior to submittal.</i>					
a.	Were elements modified by Consultant assigned an appropriate project identifier flag distinguishing project's existing/baseline and/or proposed/design/CD condition modifications?				
b.	Were parameters of modified elements assigned appropriate data flags indicating source of data per Section 7.2 of S&P?				
c.	Parameters assigned Assumed (AS) and Estimated (ES) data flags indicating data source should be accompanied with additional explanation of basis in Notes field. These flags are to indicate assumptions or estimations made by the design consultant and not by field survey crews. Was sufficient information provided in such cases?				
d.	Were modifications adequately described in the Notes field (see Section 7.5)?				
e.	Was the "User Text 1" fields appropriately filled out with the indication of the data source (see Section 7.4)?				
f.	Was the System type appropriately assigned and flagged?				
g.	Was the Sewer References appropriately assigned and flagged?				
h.	NEW - When node names were changed, did the former node name get documented in the Asset ID field?				
i.					
7 Hydraulic Modifications (see Section 4 of S&P)		Yes	No	N/A	Notes
<i>Note variances and/or explanations identified during review checklist as part of Section 1 to considered/referred to later in review. Reviewer should contact District PM to confirm they are aware of variance and granted permission prior to submittal.</i>					
a.	Check conduit loss types/coefficients. Should be set to 'NONE' unless supported by flow monitoring data.				
b.	Check for Manning's roughness specified for all pipes in project area.				
c.	Cut profiles through existing and proposed sewer stretches.				
	- Look for "roller coaster" profiles or adverse sloped pipes. Pay attention to how proposed lines connect to existing system. And/or check for negative gradient values in conduits. Did the consultant verify any adverse slope invert elevations using information outside of their initial data source?				
	- Are there nodes with lower inverts compared to pipe inverts?				
d.	Orifice/Weir coefficients				
e.	Are there any revised/new leaping weirs – Consultant should have submitted documentation how Q/H relationship was developed.				
f.	Naming of dummy nodes				
g.	Chamber/shaft areas				
	- Are there any instances where the node chamber plan area equates to a manhole diameter that is less than the influent and effluent sewer diameters?				
h.	Backflow prevention/flap gates				
i.	Bar screens...associated losses				
j.	Pump stations. Modeled pump operation should be supported by pump curves and/or monitoring data.				
k.	RTC modifications				
l.	Is the naming convention for new structures being followed?				
m.	Track instances where hydraulic parameter changes have been flagged with 'CAL'. Are these changes reasonable?				
o.					
8 Hydrologic Modifications (see Section 3 of S&P)		Yes	No	N/A	Notes
<i>Majority of topics/questions in this review section focus on determining compliance with Section 3 and Appendix L of the S&P. Note variances and/or explanations identified during review checklist as part of Section 1 to consider/refer to for the following section. Reviewer should contact District PM to confirm they are aware of variance and granted permission prior to submittal.</i>					
a.	Were any subcatchment delineations modified as part of the project effort?				
	- If yes, was a GIS shapefile of the subcatchments modified provided in submittal package?				
b.	Were any subcatchments split as part of project refinements? If yes, confirm runoff/hydrology is maintained				
c.	Were any hydrology parameters changed as part of Consultant's effort?				
	- If hydrology parameters changed, review model calibration documentation to evaluate basis for changes made.				
d.	Was flow monitoring data collected to support hydrology changes?				
	- If no flow monitoring data was collected, were any existing subcatchment delineations split to improve/refine the hydrologic loading to the hydraulic network?				
	- Was the split correctly performed in a manner which did not change the total wet weather response estimated by original subcatchment?				
e.	Do the percentages for Runoff Area 1, 2, and 3 add up to 100%?				
f.	Do hydrologic parameter changes flagged as 'CAL' fall within the ranges specified in Appendix L? Parameters falling outside these ranges should be accompanied by an explanation in the Notes field.				
g.	Compare contributing area to total delineated area				
	- Were any "duplicate" polygons delineations in the Master Model (remnants from the conversion of Phase II models into IW) monitored for calibration? If so, did the consultant remove these duplicate representations?				
h.	Review changes made to Land Use and Runoff Surfaces				
i.					
9 Model Calibration (see Section 5 of S&P)		Yes	No	N/A	Notes
<i>Note variances and/or explanations identified during review checklist as part of Section 1 to considered/referred to later in review. Reviewer should contact District PM to confirm they are aware of variance and granted permission prior to submittal.</i>					
a.	Check for two dry periods, seven consecutive days each, preferably not within the same month.				
b.	Check for five wet weather events meeting criteria in the S&P.				
c.	Check that final calibration used a continuous simulation of the entire monitoring period.				
d.	Review that the DWF and WWF calibrations meet the criteria in the S&P.				
e.	Identify individual events per meter location that do not meet the criteria and review the calibration documentation for the consultant's explanation as to why not.				
f.	In general, is the calibrated model over-predicting or under-predicting relative to the meter data?				
g.	Is the required documentation (see Appendix H) submitted as part of the calibration report?				
h.					