

APPENDIX H - Conducting a Site-Specific Hydromodification Analysis

A project proponent may choose to develop a site-specific hydromodification mitigation analysis in lieu of using the continuous simulation tool provided by the Santa Margarita Region Hydromodification Management Plan (HMP). The site-specific analysis must be developed to demonstrate that the project will not adversely impact the receiving stream through either changes in the receiving stream hydrograph, or changes in bed material load supply to the stream.

The following items are not intended to be an approach to complete the analysis, rather, they are provided for information as suggestions for the engineering analysis. Each project will have unique conditions and will require a customized approach for analysis. A site-specific analysis may or may not be ultimately approved by the reviewing agency. It is the responsibility of the engineer to assess the potential for an analysis to successfully demonstrate that the project is consistent with the guidelines of this HMP.

1. It is recommended that the applicant develop a study approach and outline, and review it with the local agency prior to beginning the full study.
2. The study must demonstrate that the project is consistent with the requirements of the 2010 SMR NPDES Permit and this HMP.
3. Site-specific information to characterize bed sediment gradation, flow and rainfall data, and watershed hydrologic parameters will be required. Continuous simulation is required.
4. An objective of the study may be to determine if the loss of bed material load from the project-site to the receiving stream can be partially or fully mitigated by additional mitigation of the runoff discharge from the project-site.
5. Sediment transport modeling has inherent uncertainty. The agency may not approve a site-specific analysis if it is apparent that the change in conditions that will be modeled are about the same magnitude as the model uncertainty.

The selected lower flow threshold shall correspond to the critical channel flow that produces the critical shear stress that initiates channel bed movement or that erodes the toe of channel banks of a comparable soft-bottom channel.

The method of analysis, including the specific modeling program, the sediment transport function, the reach of the receiving water to be modeled, the method of determining bed material discharge in the receiving stream, the method of determining bed material discharge from the project-site, the period of record for continuous simulation and other parameters are left to the discretion of the engineer. The study report should document and justify the approach, selected models and methods, data requirements, analysis method and results for review.