



**Evaluation of Storm Water Data Reports for
Fiscal Year 2008/2009**

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**California Department of Transportation
Division of Environmental Analysis, Storm Water
Program
1120 N Street
Sacramento, California 95814
<http://www.dot.ca.gov/hg/env/stormwater/index.htm>**

EVALUATION OF STORM WATER DATA REPORTS FOR FISCAL YEAR 2008/2009



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A total of sixty-nine Storm Water Data Reports (SWDRs) were reviewed for the 2008/09 fiscal year. A majority of the SWDRs (88%) being prepared by or for Caltrans based on this sampling are in compliance with the requirements of the Stormwater Quality Handbooks, Project Planning and Design Guide (PPDG), and the Department’s Storm Water Management Plan (SWMP). A common problem in all of the Poor rated SWDRs was that the narrative either omitted information or used incomplete descriptions of design decisions. For instance, if a 401 certification was not required for the project, the Project Engineer (PE) simply omitted the certification from the narrative. In some cases, the PE might state that existing vegetation will be preserved but did not describe how the preservation will be accomplished.

Overall Review Rating

Outstanding	Acceptable	Poor
3	58	8
4%	84%	12%

Three SWDRs from the sampling were deemed as Outstanding and provided most all of the required information in a clear, concise, and easy to follow format, along with backup data to substantiate the statements in the narrative. In general, most of the SWDRs reviewed were consistent throughout the state, especially in regard to narratives for the project description, completion of checklists, and consideration of all types of best management practices BMPs.

Most Poor ratings associated with the reviews were based on the following findings:

- Ambiguous description of agreements with the Regional Water Quality Control Board (RWQCB);
- Incomplete description of site data and measures to reduce impacts;
- Lack of a Construction Site BMP strategy, including concurrence from the Construction Division; and
- Incomplete consideration of Design Pollution Prevention BMPs and Treatment BMPs.

General Recommendations - In order to increase the level of consistency throughout the state, it is recommended that further training of Project Engineers (PEs) on the proper methods for preparing the SWDR be undertaken in the next fiscal year. This training should focus on roles and responsibilities; timelines regarding negotiation or receipt of RWQCB agreements (i.e. not waiting to engage RWQCB at later phases of design); the minimum acceptable level of detail required at the various project development phases; backup calculations and data necessary to substantiate Design Pollution Prevention and Treatment BMP selections; and the use of the targeted design constituent (TDC)

approach. In addition, it is recommended that the PPDG be modified to provide emphasis upon the incorporation of Design Pollution Prevention BMPs and the use of the TDC approach, as well as a discussion of treatment benefits afforded by Design Pollution Prevention BMPs.

Does the design incorporate and evaluate BMPs appropriately

*Outstanding	*Acceptable	*Poor
2	61	6
3%	88%	9%

• Average of the “Does the design incorporate BMPs appropriately?” and “Does the design evaluate BMPs appropriately?” categories.

Poor ratings were based on several projects that did not fully consider, or at least document consideration of Treatment and Design Pollution Prevention BMPs. In general, these reports typically did not provide details on the quantities, locations, types, and sizes of the proposed permanent BMPs. Most of the Poor rated SWDRs considered biofiltration as the only Treatment BMP, or exhibited a clear preference, while disregarding detailed consideration of other more effective Treatment BMPs. Some Poor rated SWDRs did not validate that the required Water Quality Volume or Flow (WQV/WQF) could be treated by the selected BMP or justify why treatment trains were not considered in cases where the percentage of WQV/WQF being treated was less than 100%.

Outstanding ratings assigned to two SWDRs that considered all applicable BMPs in detail and provided backup data to substantiate the statements in the narrative.

General Recommendation - PPDG should be updated to clarify that it is the PE’s responsibility to summarize the decision behind each checklist response within the narrative, and to provide quantitative or specific backup to support each statement. Updated guidance should also specify the minimum level of detail necessary when considering BMPs at the Project Initiation Document (PID) and Project Approval/Environmental Document (PA/ED) phases. In addition, the TDC approach should be emphasized in Section 2 and Appendix E, such that more PEs can recognize the relative effectiveness of different BMPs in treating different pollutants of concern.

Cover Page information rating

Outstanding	Acceptable	Poor
7	54	8
10%	78%	12%

Poor ratings assigned were based on missing signatures, RU, program identification, or dates for the Notification of Construction (NOC) or notification of ADL re-use.

Outstanding ratings were based on complete and thorough information provided in the SWDRs.

General Recommendations – Most missing information for this category could be an incidental mistake; however, District/Regional Storm Water Coordinators should be reminded to verify signatures on SWDRs for the PS&E phase prior to submittal to HQ for evaluation.

Project Description information rating

Outstanding	Acceptable	Poor
11	57	1
16%	83%	1%

The single Poor rating was based on missing quantification of impervious area and potentially inappropriate identification of urban MS4 areas within project limits.

Outstanding ratings were based on all required information being clearly presented.

General Recommendations - None

Site Data and Storm Water Quality Issues information rating

Outstanding	Acceptable	Poor
4	54	11
6%	78%	16%

Poor ratings were based on missing information related to describing measures for reducing or avoiding storm water impacts; defining the unit cost of right-of-way that may be needed to acquire and construct Treatment BMPs; identifying or avoiding drinking water/recharge facilities; determining depths to groundwater; and identifying soil types/classifications. Several SWDRs at the PS&E phase had a blank or partially filled-out Checklist SW-1, such that data missing from the narrative could not be independently located.

Outstanding ratings were based on all pertinent information being provided in the narrative, along with a substantiation or source for each statement.

General Recommendations – Update PPDG to clarify that each question on Checklists SW-2 and SW-3 should be answered, and that a description of the answer is to be provided within the SWDR narrative. For example, if a 401 certification is not required, then it should be simply stated that it is not required and why, or if not known, state that Environmental Unit is to make determination if a 401 certification is required and when this milestone is anticipated to be determined.

RWQCB Agreements information rating

Outstanding	Acceptable	Poor
3	54	12
4%	79%	17%

Poor ratings were based on SWDRs that did not contain a discussion or mention of RWQCB Agreements or related meetings and correspondence. These are recurring issues throughout many of the SWDRs. The PE rarely clarifies whether or not the RWQCB was contacted.

Outstanding ratings based on a detailed and clear description of project specific meetings held with the RWQCB and requirements dictated in the project-specific RWQCB permit.

General recommendations – PEs should provide a clear description of coordination held with the RWQCB (or at least with the District/Regional Storm Water Coordinator at the PID phase), dates/times/names related to coordination, and if any project specific permit requirements are imposed as a result of the coordination. If the project doesn't have negotiated understandings or agreements with the RWQCB, then the PE should state that there are no agreements in the narrative for clarification. District Storm Water Coordinators and Design Storm Water Coordinators should take more responsibility in assuring documentation related to discussions with RWQCB on agreements is memorialized.

Design Pollution Prevention BMPs information rating

Outstanding	Acceptable	Poor
3	56	10
4%	81%	15%

Poor ratings were based on the following:

- Most SWDRs indicated that the downstream effects due to new paved areas were found to be negligible, but did not provide any quantitative information to validate this statement. Sediment load of downstream flow and pre- and post-construction flow velocities/volumes were not addressed in most cases;
- Several SWDRs stated that the paved area was reduced to the MEP, as required in Checklist DPP-1, Part 2; however, none of the SWDRs provided details on how this was accomplished;
- For vegetated and hard surface BMPs, as well as for storm drain systems within the project, specific quantities, types, and general locations were not provided in most SWDRs;
- Several SWDRs stated that existing vegetation will be preserved; however, most provided no backup information on how this will actually be accomplished; and
- A common response to several questions was observed to be "the BMP will be considered at PS&E phase." As expected, at earlier phases of the project delivery process (PID and PA/ED), not all project information is available. However, at each phase, critical storm water data must be considered and likely BMPs identified to reach consensus on estimated costs. In many cases, this response was considered insufficient.

Outstanding ratings based on detailed quantities, locations, types, and sizes of design BMPs provided in the SWDR narrative.

General Recommendation: PPDG guidance material should be updated to clarify that it is the PE's responsibility to summarize the decision behind each checklist response within the narrative, and to provide quantitative or specific backup to support each statement. For example, if the project increases velocity of a downstream flow and mitigates it with energy dissipation devices, then the PE should provide an explanation of the complete issue rather than just state that there will be no downstream impacts. Updated guidance should also specify the minimum level of detail necessary for PID and PA/ED SWDRs. Updates to PPDG guidance material should include a reference to the Storm Water BMP Cost Summary attachment required at each phase of the project. In regard to reducing pavement to the maximum extent practicable (MEP), the PPDG or SWDR training sessions should provide direction on actions to minimize pavement surfaces, such as discerning when to use a gravel shoulder instead of a paved shoulder or an unlined ditch instead of a concrete v-ditch.

Permanent Treatment BMPs information rating

Outstanding	Acceptable	Poor
2	60	7
3%	87%	10%

Poor ratings based on incomplete consideration of Treatment BMPs and the TDC approach. Several SWDRs considered only biofiltration and disregarded detailed consideration of other more effective Treatment BMPs (i.e. infiltration). The majority of the SWDRs did not provide backup calculations to validate if the required WQV/WQF could be treated by the selected BMP or justify why treatment trains were not considered in cases where the percentage of WQV/WQF being treated was less than 100%. Some SWDRs had inconsistencies between forms regarding MS4 areas.

Outstanding ratings based on two reports that completely followed the TDC approach and provided backup calculations to confirm compliance with BMP design criteria.

General Recommendation – PEs should follow the TDC approach more closely, with the understanding that biofiltration is not always the most effective BMP for certain pollutants of concern. The SWDR cover sheet should require the PE to list the percentage of WQV/WQF treated such that projects providing unusually low percentage of treatment can be more readily identified. A reference to cost estimate attachments should be included.

Temporary Construction Site BMPs information rating

Outstanding	Acceptable	Poor
1	51	17
1%	74%	25%

Poor ratings based on missing Construction Site BMP strategy (at all phases) and Construction Site BMP concurrence (at PS&E) from the Construction Division, as well as not identifying the items designated as separate bid items or as lump sum items. An estimate of quantities and costs for Construction Site BMPs was not developed as a part of the Storm Water BMP Cost Summary.

The single Outstanding rating was based on a report that provided detailed description of all construction site BMPs; listed lump sum versus line item BMPs; and documented the concurrence of the Construction Storm Water Coordinator.

General Recommendation – PPDG guidance material should be updated to clarify that it is the PE’s responsibility to assemble a Construction Site BMP strategy at each phase of the project and that concurrence from the Construction Division is required at the PS&E stage. PPDG should require that a SWDR not be approved (signed) by the District/Regional Storm Water Coordinator unless PE has documented receipt of Construction Site BMP strategy concurrence or non-concurrence from the Construction Division. SWDR workshop should reinforce how a construction site BMP strategy should be assembled.

Maintenance BMPs information rating

Outstanding	Acceptable	Poor
2	65	2
3%	94%	3%

One Poor rating was assigned to a SWDR, as it provided no explanation for why Drainage Inlet Stenciling was not required for a project in an urban MS4 area where pedestrians are expected to use the facility. The other Poor rating was made, as the SWDR did not contain a section for addressing this item.

Outstanding rating based on information presented in a clear and concise manner.

General recommendations – None

Required Attachments information rating

Outstanding	Acceptable	Poor
4	51	14
6%	74%	20%

Poor ratings were based on missing vicinity maps; missing Treatment BMP summary spreadsheets; EDFs without required initials; or Construction Site BMP Strategy Form without the PE’s signature at the PS&E phase.

Outstanding ratings were based on SWDRs that provided comprehensive design backup data for each proposed Treatment BMP.

General Recommendation – PPDG should require that SWDRs not be approved (signed) by the District/Regional Storm Water Coordinator, unless the PE has included all required attachments for each phase of the project.