



**Evaluation of Storm Water Data Reports for
Fiscal Year 2010/2011**

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EVALUATION OF STORM WATER DATA REPORTS FOR FISCAL YEAR 2010/2011



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Overview

Independent quality assurance/quality control reviews were conducted on a total of 80 Storm Water Data Reports (SWDRs) prepared during the 2009/10 fiscal year. The reviews were performed to evaluate whether the SWDRs have been prepared consistent with the current version of the Project Planning and Design Guide, the Caltrans National Pollutant Discharge Elimination System (NPDES) Permit, and the Storm Water Management Plan.

A majority of the SWDRs (92 percent) being prepared by or for Caltrans, based on this sampling, conform with the requirements of the Stormwater Quality Handbooks, Project Planning and Design Guide, December 2008; the Permit (Order No. 99-08-DWQ); and the Department’s Storm Water Management Plan, May 17, 2001.

A common issue observed in many of the SWDRs was that the PE included costs in the narrative. Costs should only be included in the attachments, as all costs are for Caltrans internal use only. Only quantities should be listed in the narrative.

Additionally, short form cover sheets were either incorrectly completed or altered. A short form may be used in lieu of a long form for a project that has over 0.25 acres of disturbed soil area (DSA) if approved by the District/Regional Stormwater Coordinator in advance. This exception may be granted for projects due to lack of potential permanent water quality impacts. In this instance, the PE must document approval on the cover sheet or in the report narrative. PEs must not delete items from standard forms; however, strikeouts of text with an explanation are acceptable.

The reports have been evaluated against information expected in eleven categories that comprise a fully-developed SWDR. Rating summaries and general recommendations are included in the following sections for each category of evaluation. Table 1 summarizes ratings for each of the review categories further presented in Tables 2 through 12 of this report.

Table 1. Summary of All Ratings			
Category	Percentage of Reports By Rating		
	Outstanding	Acceptable	Poor
1. Overall Review	4%	92%	4%
2. Appropriately Incorporated and Evaluated BMPs	3%	93%	4%
3. Cover Page	0%	94%	6%
4. Project Description	10%	83%	7%
5. Site Data and Storm Water Quality Issues	4%	87%	9%
6. RWQCB Agreements	3%	97%	0%
7. Design Pollution Prevention BMPs	4%	86%	10%
8. Permanent Treatment BMPs	3%	87%	10%
9. Temporary Construction Site BMPs	0%	59%	41%
10. Maintenance BMPs	1%	96%	3%
11. Required Attachments	2%	89%	9%

Overall Review Rating

Table 2 summarizes the overall results of the 80 reviewed reports.

	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	3	74	3
Percentage of Reports Receiving Score	4%	92%	4%

Three SWDRs from the sampling were deemed as “Outstanding” and provided most 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 among the various Caltrans districts, particularly 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 incomplete or missing data in the narrative. Poor ratings were also given to reports with incomplete consideration or documentation of Design Pollution Prevention BMPs, Permanent Treatment BMPs, and/or Maintenance BMPs.

General Recommendations - In order to increase the level of consistency throughout various Caltrans districts, it is recommended that Caltrans provide further training to PEs related to the proper methods for preparing SWDRs in the next fiscal year. This training should focus on roles and responsibilities of all functional units involved in developing stormwater BMP strategies (including signatures on SWDR cover page); the minimum acceptable level of detail required in a SWDR at the various phases of project delivery; necessary data and backup calculations to substantiate Design Pollution Prevention and Treatment BMP selections, importance of understanding Regional Water Quality Control Board (RWQCB) agreements (i.e. do not wait to coordinate with RWQCB until the end of the plans, specifications, and estimates [PS&E] phase); importance of early involvement with the Construction and Maintenance Divisions to obtain concurrences; importance of supplemental and required attachments; and the use of the targeted design constituent (TDC) approach.

Does the Design Incorporate and Evaluate BMPs Appropriately

Table 3 summarizes SWDR review results in terms of the number of reports that appropriately incorporated and evaluated BMPs in the design.

Table 3. Summary Ranking of Appropriately Incorporated and Evaluated BMPs			
	Rating		
	*Outstanding	*Acceptable	*Poor
No. of Reports Receiving Score	2	74	4
Percentage of Reports Receiving Score	3%	93%	4%

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

“Poor” ratings were based on costs being included in the narrative. All costs are to be included as attachments. Costs are for Caltrans internal use only. Additionally, several projects did not fully consider (or at least document the consideration of) Permanent 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. 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 percent.

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

General Recommendation – Further training of PEs on the overall BMP evaluation and documentation process is recommended. Specifically, the training should include information related to the minimum level of documented detail necessary when considering BMPs at the Project Initiation Document (PID) and Project Approval/Environmental Document (PA/ED) phases.

Cover Page Information Rating

Table 4 summarizes SWDR review results related to cover pages.

Table 4. Summary of Cover Page Ratings			
	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	0	75	5
Percentage of Reports Receiving Score	0%	94%	6%

“Poor” ratings were based on cover sheets that were either filled out incorrectly or altered. Several projects used the short form even though the project had over 0.25 acres of DSA and require use of the long form. Use of the short form can be approved by the

District/Regional Stormwater Coordinator. In this case the PE must document approval on the cover sheet or in the narrative. The PE must not delete items from the cover sheet; however, strikeouts of text with an explanation are acceptable.

General Recommendation – Further training of PEs on completing the cover sheets is recommended. PEs may not delete items from the standard forms. When the PE receives approval to use a short form, a notation should be made on the cover sheet or in the narrative identifying this allowance from the District/Regional Stormwater Coordinator.

Project Description Information Rating

Table 5 summarizes SWDR review results related to project descriptions.

Table 5. Summary of Ratings			
	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	8	66	6
Percentage of Reports Receiving Score	10%	83%	7%

“Poor” ratings were based on missing quantification of total DSA and impervious area, not identifying if urban MS4 areas are within the project limits, identification of drinking water or recharge facility locations, RWQCB concerns including total maximum daily loads (TMDLs), reuse of aerially deposited lead (ADL), right of way costs for Permanent Treatment BMPs, and identification of any existing BMPs, and inclusion of project costs in the narrative.

“Outstanding” ratings were based on all required information being thorough and clearly presented.

General Recommendation – SWDRs rated as “Poor” are in the PS&E phase, as such the District/Regional Storm Water Coordinator has the authority to reject SWDRs that are missing quantifications in the narrative. District/Regional Storm Water Coordinators should verify that complete narratives are included with the SWDRs prior to submittal to Headquarters (HQ) for evaluation.

Site Data and Storm Water Quality Issues Information Rating

Table 6 summarizes SWDR review results related to site data and storm water quality issues.

Table 6. Summary of Site Data and Storm Water Quality Issues Ratings			
	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	3	70	7
Percentage of Reports Receiving Score	4%	87%	9%

“Poor” ratings were based on the following:

- Missing information related to the following:
 - Identifying receiving water bodies (including the Hydrologic Area or sub-area [name and/or number]) and distance from the project’s outfall;
 - Identifying if 401 certification is required, if any;
 - Descriptions of planned measures for reducing or avoiding storm water impacts;
 - Local agency requirements/concerns, if any;
 - Additional right-of-way that is needed to be acquired to construct Permanent Treatment BMPs, if any;
 - Description of approaches to identify or avoid drinking water/recharge facilities;
 - Identification if project involves reuse of soil containing ADL;
 - Description of RWQCB special requirements/concerns, including TMDLs or effluent;
 - Identification of right-of-way costs for BMPs; and
 - Identification of any existing Permanent Treatment BMPs within the project limits and their association with the project.
- Including costs in the narrative; and
- Missing information related to the receiving water bodies, including:
 - 303(d) listings;
 - TMDLs; and
 - Pollutants of concern.

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

General Recommendations – Further training of PEs and District/Regional Storm Water Coordinators on the overall SWDR documentation process is recommended. The PE should use this part of the narrative to describe all pertinent responses to checklists SW-1, SW-2 and SW-3. For example, if a 401 certification is not required, then it should be simply stated that it is not required in the narrative. If the 401 requirement is not known, it should be stated 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

Table 7 summarizes SWDR review results related to RWQCB agreements.

Table 7. Summary of RWQCB Agreements Ratings			
	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	2	78	0
Percentage of Reports Receiving Score	3%	97%	0%

“Outstanding” ratings were based on detailed and clear descriptions of project specific meetings held with the RWQCB and requirements dictated in specific RWQCB permits or orders for the project.

Though there are no “poor” ratings, but in some instances coordination with the RWQCB could be more clearly documented in some of the SWDRs.

General Recommendations – PEs should provide a clear description of coordination conducted with the RWQCB (or at least with the District/Regional Storm Water Coordinator at the PID phase), dates/times/names of such coordination, and a description of any project specific permit requirements imposed as a result of the coordination.

National Pollutant Discharge Elimination System (NPDES) 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

Table 8 summarizes SWDR review results related to Design Pollution Prevention BMPs.

Table 8. Summary of Design Pollution Prevention BMPs Ratings			
	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	3	69	8
Percentage of Reports Receiving Score	4%	86%	10%

“Poor” ratings were based on the following:

- SWDR included costs for BMPs in the narrative;
- Pre- and Post-Construction conditions and hydraulic changes were not addressed; and
- Incomplete consideration of Design Pollution Prevention BMPs in the narrative.

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

General Recommendations – Continue to provide training to the PEs and District/Regional Storm Water Coordinators on the overall SWDR documentation process. Training should clarify the PE’s responsibility to assure that adequate language has been provided in the narrative (strategy) to clearly document those decisions made after answering the questions in the checklists. Training should also specify the minimum level of detail necessary for PID, PA/ED, and PS&E SWDRs. In addition, the training should discuss the importance of the Storm Water BMP Cost Summary Spreadsheet.

Permanent Treatment BMPs Information Rating

Table 9 summarizes SWDR review results related to Permanent Treatment BMPs.

Table 9. Summary of Permanent Treatment BMPs Ratings			
	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	2	70	8
Percentage of Reports Receiving Score	3%	87%	10%

“Poor” ratings based on incomplete consideration and/or documentation of Permanent Treatment BMPs and incomplete documentation of the TDC approach. All applicable Permanent Treatment BMPs must be considered unless found infeasible by results on the T-1 checklists. 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 percent. “Poor” ratings are also based on costs being included in the narrative.

“Outstanding” ratings were based on reports that fully considered all applicable Permanent Treatment BMPs and provided backup calculations to confirm compliance with BMP design criteria.

General Recommendations – PEs should follow and document the TDC approach more closely. The TDC approach has been significantly changed in the July 2010 Project Planning and Design Guide (PPDG), thus training venues should emphasize understanding and use of the T-1 by PEs. Electronic tools for assisting PEs with completion of the T-1 checklist may minimize process related mistakes and ensure complete accounting for treatment of the WQV/WQF, especially by infiltration. These tools should be used in training venues and attendees should be tested in their use of these tools to arrive at correct conclusions.

Temporary Construction Site BMPs Information Rating

Table 10 summarizes SWDR review results related to Temporary Construction Site BMPs.

Table 10. Summary of Temporary Construction Site BMPs Ratings

	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	0	47	33
Percentage of Reports Receiving Score	0%	59%	41%

“Poor” ratings were based on costs being included in the narrative, a lack of Temporary Construction Site BMP strategy, and lack of both Temporary Construction Site BMP coordination and concurrence (at PS&E) from the Construction Division. Several narratives did not identify or quantify the items designated as separate bid items or as lump sum items and many did not address dewatering requirements. One report indicated that a separate dewatering permit is required; however, there was no discussion of dewatering in the SWDR.

General Recommendations – Further training of PEs and District/Regional Storm Water Coordinators on the overall SWDR documentation process is recommended. The PE needs to develop a Temporary Construction Site BMP strategy and coordinate with Construction staff at each phase of the project. While the level of detail will vary at each phase, coordinating with Construction at each phase will help when documenting concurrence from the Construction Division at the PS&E stage. District/Regional Storm Water Coordinators should not approve (sign) a SWDR unless the PE has documented the effort to attain concurrence of the Temporary Construction Site BMP strategy from the Construction Division.

It is recommended that the upcoming SWDR workshop training venues stress coordination between the PE and the Designated Construction Representative to formulate a clear and comprehensive Temporary Construction Site BMP strategy. Furthermore, it is also recommended that the Construction Site BMP Training for Designers continue to be offered. This strategy and coordination efforts will need to be documented in the SWDR, as significant changes resulting from the new Construction General Permit will demand even greater need for planning and development of a monitoring program in conjunction with the BMP strategy.

Maintenance BMPs Information Rating

Table 11 summarizes SWDR review results related to Maintenance BMPs.

Table 11. Summary of Maintenance BMPs Ratings			
	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	1	77	2
Percentage of Reports Receiving Score	1%	96%	3%

“Poor” ratings were assigned to SWDRs that omitted the Maintenance BMP section.

“Outstanding” rating is based on information presented in a clear and concise manner including maintenance coordination and concurrence effort.

General Recommendation – Follow up on the two projects that did not include this section to see if this was just an over sight in documentation. If the projects are required to institute inlet stenciling, then this activity could be placed into the projects by contract change order or through the efforts of the Maintenance Division.

Required Attachments Information Rating

Table 12 summarizes SWDR review results related to required attachments.

Table 12. Summary of Required Attachments Ratings			
	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	2	71	7
Percentage of Reports Receiving Score	2%	89%	9%

“Poor” ratings were based on missing required attachments including: vicinity maps, Permanent Treatment BMP summary spreadsheets, Temporary Construction Site BMP Quantities, and Temporary Construction Site BMP Consideration Forms; (Evaluation Documentation Form) EDFs without required initials and Temporary Construction Site BMP Consideration Forms without required initials at PS&E.

“Outstanding” ratings were based on SWDRs that provided all required attachments and comprehensive design backup data for each proposed Permanent Treatment BMP.

General Recommendation – Since the District/Regional Storm Water Coordinators are to be the last signature on the SWDR, they should not sign it until all of the required attachments have been included.

Conclusion

While this annual evaluation has determined that improvements can be made when documenting stormwater decisions in the SWDR process, it continues to show that Caltrans has a sufficient process for incorporating stormwater management strategies into project planning and design. Caltrans incorporates BMPs into the design process, implements BMPs to protect water quality to the “maximum extent practicable,” and documents these steps through the preparation of their SWDRs. These reports adequately document the process and stormwater design decisions made by the Caltrans designers from PID through final PS&E.

Recommendations

Specific areas of documentation that can be improved in the SWDRs include:

- Additional information related to site data and stormwater design issues,
- Descriptions of RWQCB Agreements and other permits (if any),
- More information related to permanent erosion control strategies,
- Clarity in the narratives of Temporary Construction Site BMPs strategies (including documentation of concurrence),
- Inclusion of required attachments at each phase of the project.

Caltrans stormwater program continues to be improved by updating existing guidance and training curriculums for staff. The following items have been updated or are planned for revision, thus these items provide a distinctive opportunity to address many of the recommendations described within each review category of this report:

1. Stormwater specifications and special provisions;
2. Project Planning and Design Guide (incl. Emphasize the use of short form SWDRs, use of T-1 checklist processes, and prohibition of costs into the SWDR narrative;
3. T-1 checklist tools, which may minimize process related errors and ensure accounting for treatment of the WQV/WQF;
4. SWDR workshop, emphasizing use of the revised T-1 checklist, incorporation of descriptive narratives, and ensuring all BMP categories are adequately evaluated;
5. Example SWDRs have been developed to show sample language and the level of detail expected at each phase of a project. The examples are being developed based on the July 2010 PPDG.
6. PPDG Training, which is planned to have a self-paced internet (online) component that allows staff to obtain consistent and timely clarification on PPDG direction without having to rely upon other staff or the District/Regional Stormwater Coordinator.

The revisions to the guidance and training curriculum should facilitate an increased level of consistency throughout various Caltrans district offices.