



**Evaluation of Storm Water Data Reports
for Fiscal Year 2014/2015**

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List of Abbreviations

BMP	best management practice
CGP	Construction General Permit
DPP	design pollution prevention
FY	fiscal year
GSRDs	gross solids removal devices
HQ	Headquarters
NPDES	National Pollutant Discharge Elimination System
PAED	Project Approval/Environmental Document
PE	project engineer
PID	Project Initiation Document
PPDG	Project Planning and Design Guide
PS&E	Plans, Specifications, and Estimates
QA/QC	quality assurance/quality control
RUSLE2	Revised Universal Soil Loss Equation 2
RWQCB	Regional Water Quality Control Board
SMARTS	Storm Water Multi Application and Report Tracking System
SWC	Storm Water Coordinator
SWDR	Storm Water Data Report
WDRs	Waste Discharge Requirements
WQV/WQF	Water Quality Volume/Water Quality Flow

1. Background

This report summarizes the independent quality assurance/quality control (QA/QC) reviews on Storm Water Data Reports (SWDRs) prepared by or for Caltrans District staff. The SWDRs evaluated for this 2015 report were prepared during the 2013/14 fiscal year (FY). The reviews were performed to evaluate whether the SWDRs have been prepared in accordance with the Project Planning and Design Guide (PPDG, May 2012), which facilitates compliance with the Caltrans National Pollutant Discharge Elimination System (NPDES) Permit (Order No. 99-06-DWQ, NPDES No. CAS000003) (1999 Permit), the 2003 Storm Water Management Plan (July 2012 Revision), and the Construction General Permit (CGP) (Order No. 2009-0009-DWQ, NPDES No. CAS000002 as amended by 2010-0014-DWQ, NPDES No. CAS000002).

The PPDG is currently being updated to incorporate the requirements of the updated Caltrans NPDES Permit (Order No. 2012-0011-DWQ, NPDES No. CAS000003) (2012 Permit) which became effective on July 1, 2013. Projects included in this QA/QC review that had Project Initiation Documents (PIDs) signed after July 1, 2013 were reviewed for compliance with the 2012 Permit. In addition to the SWDR reviews, 15 of the projects were reviewed to evaluate whether the advertised contract documents (i.e., plans, specifications, and estimates) had been prepared in accordance with the project PS&E SWDR.

In general, a SWDR is required for every project. Depending on the extent of soil disturbance and degree of stormwater impacts, a “Long Form” or a “Short Form” SWDR is required. Typically, projects that do not have the potential to create stormwater impacts, and have little or no soil disturbance may utilize the “Short Form” SWDR.

The reviews included in this report have been conducted on SWDRs that District staff submitted to Headquarters (HQ) for evaluation. The information provided in each SWDR has been evaluated to determine if there are areas of the stormwater evaluation process that can be improved. Ratings were solely based on the information provided to HQ at the time of the review. If information was missing, either in the SWDR or the advertised contract documents, the reports were rated accordingly.

It should be noted that a rating of “Poor” does not necessarily mean that the project is out of compliance.

1.1 SWDR Reviews Comparison: 2009-2015

To evaluate the trend of SWDR reviews over the years, Figure 1-1 compares the results of SWDR reviews in 10 categories from 2009 through 2015 to come up with an Overall Review rating. The comparison chart generally shows that as SWDRs become more standardized over the years the rankings have become more consistent across the majority of review categories. This result is most likely due to on-going efforts to incorporate stormwater evaluations and documentation into everyday business practices. The reports are becoming more complete, consistent, and streamlined throughout the state.

In a majority of the categories, the SWDR reviews in 2015 (from FY 2013/14 SWDRs) have had a slight decrease in “Outstanding/Acceptable” rankings. After Caltrans updated the PPDG in 2012, reviews of SWDRs for the 2011 and 2012 reports (reviews of FY 2010/11 and FY 2011/12 SWDRs, respectively) allowed some leniency of implementing the new requirements under the updated PPDG. For the FY 2013/14 SWDRs reviewed in this report, SWDRs were expected to fully meet the 2012 PPDG requirements (e.g., RUSLE 2 outputs and Storm Water Multi Application and Report Tracking System [SMARTS] forms) in addition to the 2012 Permit requirements, when applicable. This has resulted in a trend of slightly lower rankings in some of the categories.

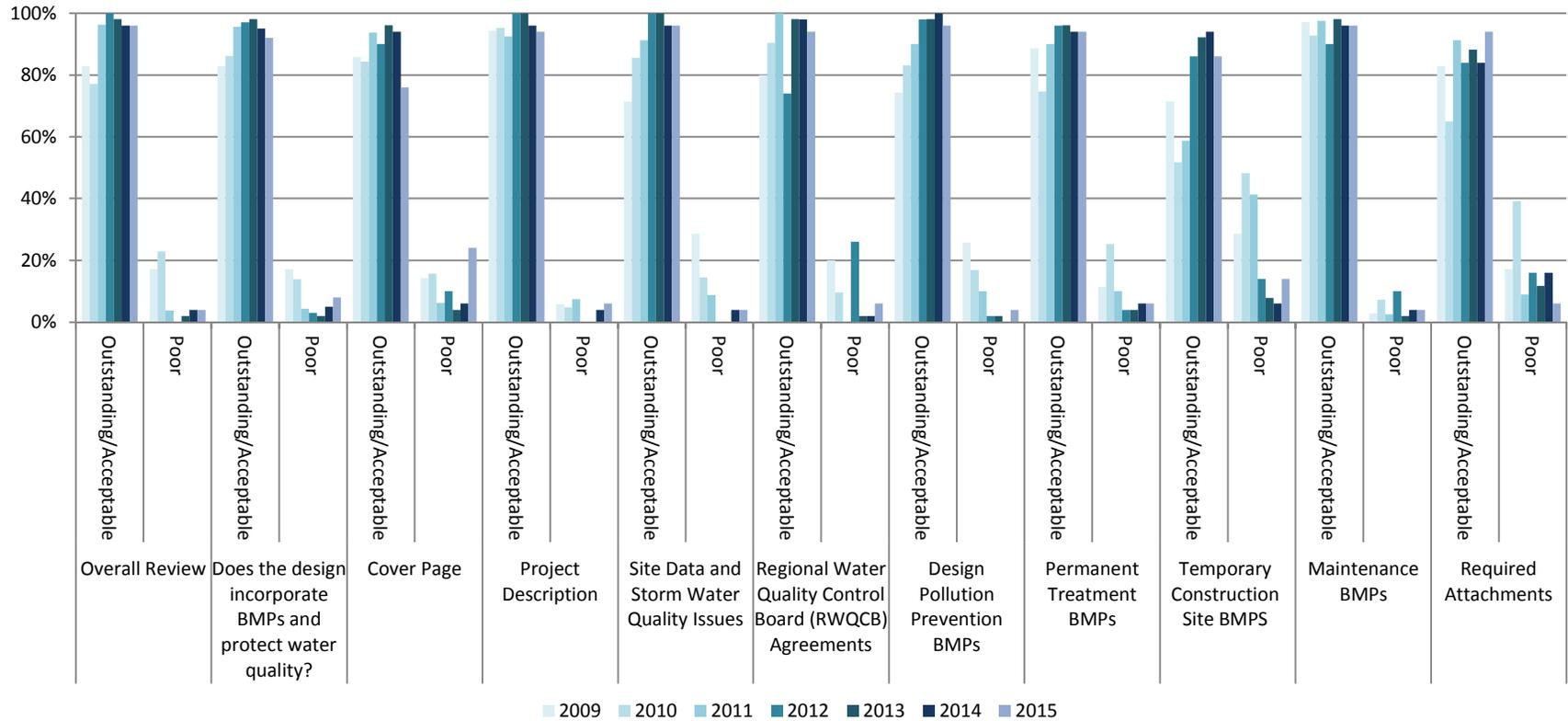


Figure 1-1. SWDR Review Rankings by Category (2009-2015)

2. Overview of SWDR Review Findings

This section summarizes the independent QA/QC reviews conducted on a total of 50 SWDRs prepared during FY 2013/14. Based on this sampling, 96 percent of the SWDRs prepared by or for Caltrans conform to the requirements of the permits and PPDG.

The 50 SWDRs reviewed represented the following:

- Project Initiation Document (PID) phase, (21 projects),
- Project Approval/Environmental Document/Plans, Specifications, and Estimates (PAED/PS&E) phase, (1 project),
- Plans, Specifications, and Estimates (PS&E) phase (28 projects),
- Long Form (33 projects), and
- Short Form (17 projects).

In addition to evaluating the SWDRs against the categories shown in Figure 1-1, another review focus was to confirm that Districts used the current T-1 Checklist and included additional monitoring requirements based on project risk level.

The SWDRs evaluated showed the following general trends:

- The reports are concise and informative.
- In most Districts, project engineers (PEs)¹ have included quantities in the SWDR narrative sections and costs in the supplemental attachments.
- PEs are using the current PPDG and incorporating the requirements into the reports and cost estimates (e.g., Storm Water Sampling and Analysis, Additional Water Pollution Control, Rain Event Action Plan, Storm Water Annual Report, etc.).
- PEs are documenting use of the design tools created by Caltrans (e.g., the Infiltration Tool).

Validating the final soil stabilization design compared to the original conditions is described in Section 8.1.10 of the PPDG and supported within the CGP. One validation method involves using the Revised Universal Soil Loss Equation 2 (RUSLE2) computer program to estimate soil erosion loss and sediment transport in natural and disturbed construction sites. If this method is used, the RUSLE2 summary sheet must be provided with the SWDR at PS&E. Three of the SWDRs reviewed utilized RUSLE2 to document the basis of soil stabilization. Validating final soil stabilization continues to be an important area to be documented during design and represents an area for future improvement.

When designing BMPs to meet the post construction treatment requirements, the PE must treat the water quality volume/water quality flow (WQV/WQF) generated by the project's impervious area to be treated. Projects developed under the 1999 Permit maximize the area treated with a goal of providing 100 percent treatment. Projects developed under the 2012 Permit have a requirement of 100 percent treatment.

¹ Use of PE in this report is based on a registered engineer or landscape architect, as identified on the cover page of the SWDR.

Twenty-six reports reviewed were non-exempt from treatment. Thirteen of these non-exempt projects had narrative documenting that 100 percent of the WQV/WQF will be treated by the project BMPs in the narrative. Nine of the 13 reports providing at least 100 percent treatment of the WQV/WQF reported that the following BMPs were incorporated:

- Biostrips (2 reports)
- Bioswales (2 reports)
- Combination of Biostrips and Bioswales (2 reports)
- Infiltration Basin (2 reports)
- Detention Basin (2 reports)
- Media Filter (1 report)
- Traction Sand Trap (1 report)

At this time, the Caltrans Infiltration Calculation Tool is available to PEs through the Caltrans website. While it is not a requirement, this tool can be used to calculate the total amount of stormwater infiltrated by project BMPs. Five of the reports reviewed documented use of the infiltration tool.

The SWDRs have been evaluated against information expected in 10 categories that comprise a fully developed SWDR and contribute to the overall rating of the report. Rating summaries and general recommendations are included in the following sections for each category of evaluation.

Table 2-1 summarizes ratings for each of the review categories further presented in Table 3-1 through Table 3-11 of this report. The Overall Review considers all 10 categories.

Table 2-1. Summary of All Ratings			
Category	Percentage of Reports By Rating		
	Outstanding	Acceptable	Poor
Overall Review	8%	88%	4%
Does the design incorporate BMPs and protect water quality	8%	84%	8%
Cover Page	0%	76%	24%
Project Description	2%	92%	6%
Site Data and Storm Water Quality Issues	14%	82%	4%
Regional Water Quality Control Board (RWQCB) Agreements	2%	92%	6%
Design Pollution Prevention BMPs	6%	90%	4%
Treatment BMPs	10%	84%	6%
Temporary Construction Site BMPs	2%	84%	14%
Maintenance BMPs	0%	96%	4%
Required Attachments	6%	88%	6%

3. SWDR Review Findings by Review Category

The results of the FY 2013/14 report evaluations by category are summarized in the following subsections.

3.1 Overall Review Rating

Table 3-1 summarizes the overall results of the 50 reviewed reports.

Table 3-1. Summary of Overall SWDR Review Ratings			
Category	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	4	44	2
Percentage of Reports Receiving Score	8%	88%	4%

The “Outstanding” ratings were associated with reports that provided most of the required information in a clear and concise manner 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 BMPs.

The “Poor” ratings were assigned to a project that incorrectly used a short form at PID on a project that was required to use a long form, and a project that incorrectly applied the CapM policy. The CapM memo does not supersede the NPDES Permit and if the project was unable to incorporate treatment BMPs, a Technical Data Report should have been prepared per Section 2.2.1 of the PPDG and referenced in the SWDR.

General Recommendations – Overall the SWDR process works well. The Design Storm Water Coordinator (SWC) should verify that the information contained in all SWDRs is incorporated into the corresponding project PS&E documents. The Design SWC should understand all general recommendations for each review category identified in this report.

3.2 Does the Design Incorporate BMPs and Protect Water Quality

Table 3-2 incorporate BMPs and protect water quality.

Table 3-2. Summary Ranking of Designs that Incorporate BMPs and Protect Water Quality			
Category	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	4	42	4
Percentage of Reports Receiving Score	8%	84%	8%

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

The “Poor” ratings were based on incomplete consideration and documentation of treatment BMPs for the project.

General Recommendations – The Design SWC should verify that the PE is correctly and completely documenting design decisions in the SWDR narrative.

3.3 Cover Page Information Rating

Table 3-3 summarizes SWDR review results related to cover pages.

Table 3-3. Summary of Cover Page Ratings			
Category	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	0	38	12
Percentage of Reports Receiving Score	0%	76%	24%

The “Poor” ratings were based on cover sheets that were missing significant or critical information, or where the Design SWC was not the last to sign off on the SWDR.

General Recommendations – The Design SWC should be the last person signing the cover page to ensure the significant and critical project information is included. It is the responsibility of the Design SWC to ensure other disciplines have reviewed and approved the content of the SWDR specific to their area of expertise and concern, including the design approach, prior to signing the SWDR.

3.4 Project Description Information Rating

Table 3-4 summarizes SWDR review results related to project descriptions.

Table 3-4. Summary of Project Description Information Ratings			
Category	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	1	46	3
Percentage of Reports Receiving Score	2%	92%	6%

The “Outstanding” rating was assigned to an SWDR with a complete and concise project description.

The “Poor” ratings were assigned to a project that used the incorrect impervious area to consider and size treatment BMPs; a project that provided an incomplete project description so that the scope was unclear; and, a project that had used total NNI for a project with non-contiguous areas.

General Recommendations – PEs are to use the project description section of the SWDRs to briefly describe the project scope and site conditions. PEs must take care to correctly calculate and document all impervious areas on a project site to ensure treatment is sized to meet permit objectives. Design SWC should continue to verify that complete, concise narratives are included with the SWDRs prior to approval.

3.5 Site Data and Storm Water Quality Issues Information Rating

Table 3-5 summarizes SWDR review results related to site data and storm water quality issues.

Table 3-5. Summary of Site Data and Storm Water Quality Issues Ratings			
Category	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	7	41	2
Percentage of Reports Receiving Score	14%	82%	4%

The “Outstanding” ratings were based on all pertinent information being provided in a concise narrative, along with substantiation or a source for significant or decisive statements.

The “Poor” ratings were assigned to a project with incomplete documentation of pertinent site data to be considered in design and to a project that had excluded this section.

General Recommendations – Design SWC should verify that complete narratives are included with the SWDRs, including data that is pertinent to design, prior to approval.

3.6 RWQCB Agreements Information Rating

Table 3-6 summarizes SWDR review results related to RWQCB agreements.

Table 3-6. Summary of RWQCB Agreements Ratings			
Category	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	1	46	3
Percentage of Reports Receiving Score	2%	92%	6%

The “Outstanding” rating was based on complete documentation of coordination with the RWQCB and documentation of specific agreements that pertain to the project.

The “Poor” ratings were assigned to a project that was missing information related to RWQCB understanding/agreements because it is unclear from the narrative whether or not coordination with RWQCB occurred; a project that was missing narrative explaining that a Technical Data Report would be submitted to the RWQCB since treatment was infeasible; and, a project that had excluded this section.

General Recommendations – Design SWC should be diligent in identifying and documenting agreements with RWQCBs, including BMPs required for compliance with permits other than the Caltrans NPDES permit.

3.7 Design Pollution Prevention BMPs Information Rating

Table 3-7 summarizes SWDR review results related to Design Pollution Prevention BMPs.

Table 3-7. Summary of Design Pollution Prevention BMPs Ratings			
Category	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	3	45	2
Percentage of Reports Receiving Score	6%	90%	4%

The “Outstanding” ratings were based on well-documented design pollution prevention (DPP) approaches that included clear identification of downstream effects related to potentially increased flow, validation of final soil stabilization, and emphasis on infiltration BMPs, and identification of percent WQV infiltrated.

The “Poor” ratings were assigned to a project that lacked discussion of DPP BMPs particularly project specific BMPs for preventing downstream impacts and a project that had excluded this section.

Three of the reports reviewed documented qualitative infiltration treatment credit, including the use of landscaped areas and existing vegetated areas. Five of the reports documented use of the Caltrans Infiltration Tool.

General Recommendations – Continue to document strategies used for BMPs in the narrative, including the documentation of infiltration treatment credits for DPP BMPs and details on project specific BMPs. Design SWCs need to ensure that appropriate elements of this section are addressed in SWDRs, including: validation of final soil stabilization design, downstream effects based on drainage reports, and emphasis on infiltration.

3.8 Permanent Treatment BMPs Information Rating

Table 3-8 summarizes SWDR review results related to Treatment BMPs.

Table 3-8. Summary of Treatment BMPs Ratings			
Category	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	5	42	3
Percentage of Reports Receiving Score	10%	84%	6%

The “Outstanding” ratings were based on reports that fully considered and documented consideration of applicable Treatment BMPs along with complete documentation of the Treatment BMP design approach.

The “Poor” ratings were assigned to a project that incorrectly used a short form at PID that was required to use a long form; a project that incorrectly applied the CapM policy; and, a project that was unable to incorporate treatment BMPs but did not state that a Technical Data Report would be prepared per Section 2.2.1 of the PPDG in the SWDR narrative.

General Recommendations – PEs should continue to document Treatment BMPs strategies in the narrative. All reports requiring Treatment BMPs must use the T-1 Checklist; as such, Design SWCs need to ensure that the T-1 Checklist is being used correctly prior to signing SWDRs.

PEs must document the percentage of the WQV/WQF to be treated by the preferred BMPs and justify the BMPs strategy if treatment is less than 100 percent. Projects covered by the 2012 Permit that have less than 100 percent treatment provided must document the shortfall, so that an equivalent area can be sought or addressed through other means. A tool has been developed to assist PEs with completing calculations to answer infiltration questions within the T-1 Checklist; however, this tool is not required to be used. If the tool is not used, then the PE will need to use computations or other supporting information that can reliably answer the infiltration questions to complete the T-1 Checklist and to meet the permit requirements.

3.9 Temporary Construction Site BMPs Information Rating

Table 3-9 summarizes SWDR review results related to Temporary Construction Site BMPs.

Table 3-9. Summary of Temporary Construction Site BMPs Ratings			
Category	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	1	42	7
Percentage of Reports Receiving Score	2%	84%	14%

The “Outstanding” rating was based on all required information being thorough and clearly presented. This report included complete documentation of the Construction Site BMPs strategy and coordination with the Construction SWC and the narrative identified quantities.

The “Poor” ratings were based on the following missing information:

- Coordination and concurrence from the Construction Division.
- Identification or quantification of the items designated as separate bid items or as lump sum items, including items required for Risk Level 2 and 3 sites.
- Monitoring activities and locations for Risk Level 2 and 3 sites.

In general, PEs have done a good job clearly documenting the strategy for implementing Construction Site BMPs and the necessary coordination/concurrence from Construction personnel.

General Recommendations – Continue to document Construction Site BMP strategy, coordination, and concurrence with Construction. Design SWC should ensure that the PE is including information related to the CGP requirements in the narrative and in the quantities for construction site BMPs and monitoring (e.g., Storm Water Sampling and Analysis Day). SWC should verify that PE documents monitoring activities, as well as monitoring locations in the report narrative or on project plans if plans are included as a supplemental attachment to the report.

3.10 Maintenance BMPs Information Rating

Table 3-10 summarizes SWDR review results related to Maintenance BMPs.

Table 3-10. Summary of Maintenance BMPs Ratings			
Category	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	0	48	2
Percentage of Reports Receiving Score	0%	96%	4%

The “Poor” ratings were assigned to a project that deleted the Maintenance BMPs section, and a project that did not include a description of maintenance requirements.

General Recommendations – Design SWC should verify that complete narratives are included with the report prior to approval and subsequent submittal to HQ for evaluation.

3.11 Required Attachments Information Rating

Table 3-11 summarizes SWDR review results related to required attachments.

Table 3-11. Summary of Required Attachments Ratings			
Category	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	3	44	3
Percentage of Reports Receiving Score	6%	88%	6%

The “Outstanding” ratings were based on SWDRs that provided complete and concise information on all of the required attachments.

The “Poor” ratings were based on more than one of the following required attachments being incomplete or missing as follows:

- Vicinity Map (2 reports)
- RUSLE2 Summary Sheet (3 reports).
- Risk Level Determination documentation (1 report).
- Permanent Treatment BMPs summary spreadsheets (2 reports).
- Quantities for Construction Site BMPs (2 reports).
- SMARTS Form (2 reports)

Twelve of the reports reviewed attached the SWDR Attachment for SMARTS input. This attachment was not a requirement until May 2012 and only applicable if the project requires coverage under the CGP.

It is important that the Design SWC verify that all applicable attachments are submitted to HQ to ensure a complete review. These quality assurance reviews are based on the project information provided at the time of the review; missing or incomplete data can lead to a “Poor” rating.

General Recommendations – Design SWC should note that as of the May 2012 PPDG update, the SMARTS form is now a required attachment. Also, Design SWC should verify that complete attachments are included with the SWDRs prior to approval and subsequent submittal to HQ for evaluation.

4. Advertised Contract Documents Review Findings

Fifteen project SWDRs along with their advertised contract documents have been evaluated to determine whether the elements identified in the project SWDR were consistent with the contract documents. Those elements include but are not limited to: CGP requirements, treatment BMPs (when required), considerations for generating treatment credit, construction windows, and appropriate information on final soil stabilization, erosion control, and infiltration.

Table 3-1 summarizes the overall results of the 15 reviewed reports.

Table 4-1. Summary of Advertised Contract Documents Review Ratings			
Category	Rating		
	Outstanding	Acceptable	Poor
No. of Reports Receiving Score	0	15	0
Percentage of Reports Receiving Score	0%	100%	0%

The advertised contract documents provided most of the required information identified in the SWDR in a clear and concise manner. In general, the advertised contract documents were consistent among the various Caltrans districts, particularly in regard to providing CGP requirements and including treatment BMPs in construction plans.

The following list is a summary of the general findings:

- CGP risk level listed in the SWDR and the advertised documents matched for all projects.
- Some projects only had general write ups in the SWDRs for erosion control, however, they included specific line items in the contract documents.
- The projects with dewatering requirements or temporary clear water diversions were mentioned in the SWDRs and were also included in specifications and BEES/Bid.
- One project did not include tracking control which is a prescriptive CGP BMP and in addition was located adjacent to a 303(d) listed water body for sediment.

Design/build projects have been included in this QA/QC review. Design/build projects have various submittals in construction that address erosion control, CGP compliance (SWPPP), and treatment BMP design. It is best to complete the QA/QC reviews on design/build projects when the project is substantially complete and a majority of the contractor's deliverables have been approved. This will allow for a comprehensive QA/QC review. The design/build documents are dynamic documents that are routinely updated as the project progresses.

General Recommendations –The PE should verify that the information contained in the project SWDR is incorporated into the corresponding PS&E documents, including erosion control measures, final soil stabilization, defining the construction window, and documenting infiltration measures. PE should delineate treatment BMP locations on the project plans.

5. Summary

5.1 Stormwater Design Compliance Improvements

The ability to comply with stormwater design requirements continues to be improved by updating existing guidance, training curriculums for staff, and special provisions. Recent updates include the following:

- Stormwater special provisions are revised periodically to reflect changes to regulatory requirements and to provide clarity for elements causing issues in the field.
- The T-1 Checklist tool and infiltration tool are available to designers through the Caltrans website (<http://www.dot.ca.gov/hq/oppd/stormwtr/tools.htm>). These tools can help to minimize process related errors, provide automated accounting for treatment of the WQV/WQF, and provide an easy method to document specific compliance elements from the 2012 Permit.
- On-going discussions with District Stormwater coordinators to discuss allowable variations from the siting and design requirements of the approved stormwater Best Management Practices.

5.2 Conclusions and Recommendations

This evaluation has determined that the preparation of the SWDRs are becoming more standardized and streamlined. Design SWCs need to continue to verify and reinforce inclusion of required attachments with the SWDR. While this annual evaluation has determined that improvements can still be made when documenting stormwater decisions in the SWDR process, Caltrans fulfills stormwater requirements by incorporating stormwater management strategies throughout project planning and design. The reports reviewed adequately document the stormwater design processes and decisions made by the Caltrans designers.

Based on the SWDR reviews conducted in this evaluation, the revisions to the PPDG and training curriculum, including revisions to special provisions, have facilitated a consistent awareness of stormwater design requirements throughout the Caltrans district offices. It is recommended that the SWDR Workshop slides posted on the Caltrans website be updated to reflect new requirements on required attachments to the SWDRs. Consideration should be given to placing a note at the website where the example SWDRs are posted to define new requirements related to SWDR attachments.

Based on the review and comparison of advertised contract documents to SWDRs, PEs should ensure that erosion control measures described in the SWDRs are included in specifications and plans. Water quality permit conditions (401 certifications, Waste Discharge Requirements [WDRs], or dewatering permits), where required, should be mentioned in the specifications as well. Treatment BMPs and their contributing drainage areas should be identified and included in the PS&E SWDR or as a supplemental attachment for the purposes of verifying areas that are being credited to meet post construction or TMDL Compliance Unit (CU) requirements.

In an effort to use terms consistent with the 2012 Permit, PEs should refrain from using the term reworked areas. The PE is to use the term redevelopment to describe replacement of impervious surface on an already developed site. Replacement of impervious surfaces includes any activity that removes impervious materials and exposes the underlying soils or pervious subgrade.

The following are specific areas of documentation that can be improved when preparing SWDRs:

- Address all updated requirements including documenting any planned monitoring activities and discharge locations for Risk Level 2 and 3 sites.
- Provide information related to the method used for the validation of final soil stabilization and include documentation of this validation at the PS&E phase.
- The total WQV/WQF that will be treated by the preferred permanent Treatment BMPs (i.e. including DPP Infiltration areas) should be justified and documented in the SWDR. Documentation should include the total area (impervious and pervious) treated by the project BMPs and should include the contributing drainage areas for each BMP.
- Ensure that the Design SWC is last to sign the SWDR.
- Ensure that only quantities are listed in the narrative. Costs are for Caltrans internal use only and therefore should only be included in the supplemental attachments.
- Describe Regional Water Quality Control Board (RWQCB) specific agreements and other permit agreements, such as a 401 certification (as applicable to water quality issues).
- Include all required attachments with SWDR for PS&E submittal, such as treatment BMP spreadsheets and final stabilization calculations.

The following are specific areas of documentation that can be improved when preparing contract documents for advertisement:

- Add bid items pertinent to how final stabilization will be accomplished that matches the calculations in the SWDR.
- Review 401 certifications and dewatering permits and ensure that relevant conditions are included in specifications, such as additional water quality monitoring, dewatering parameters, construction windows, etc.
- Identify treatment BMP locations in contract documents. Treatment BMPs can be shown on drainage plans, erosion control plans, or PE can create construction details to highlight locations.

5.3 Next Steps

Caltrans NPDES Permit was re-issued in 2012 (Order No. 2012-0011-DWQ) and became effective on July 1, 2013. All documents that relate to the 2012 Permit are being revised accordingly such as the SWMP, PPDG, special provisions, training programs, etc.

Additional clarification for the following items should be considered while updating the PPDG and any training programs:

- Methods to validate final soil stabilization; consider renaming the RUSLE2 Output, Section 8.1.10 of the PPDG to Final Soil Stabilization Validation. Add direction on how to validate final soil stabilization and restate when validation is required.
- Monitoring activities and locations; clarify requirements in the PPDG. Documentation of monitoring activities and planned locations is not being included in the SWDRs, consequently re-evaluation of existing training or specialized training on this item should be considered.
- SMARTS Form; consider adding a paragraph in the PPDG explaining the SMARTS form, how it's used, and list the website to access the form.
- Short and Long Form Instructions; update to clarify when specific report attachments are required rather than just saying at PS&E.
- Define the PEs role in the process for tracking areas treated by BMPs and expected level of effort for documentation.

- Consider requiring that contributing drainage area delineation on plans or figures be submitted with SWDRs for all BMPs that generate treatment credit.
- Show samples of how treatment BMPs can be shown on various types of plans in the next iteration of the SWDR example reports.
- Include a sample of the Treatment BMP Summary Spreadsheet that is listed as a required attachment to the Long Form.
- Revisit T-1 Checklist to clarify the definition and treatment requirements from the 2012 Permit for post construction treatment and TMDL Compliance Unit credits.
- Consider requiring that designers provide the 401 certification or WDR along with relevant contract language to SW Coordinators for their review to ensure project documents are compliant.