



Stormwater Management Plan

CCEP

Construction Compliance Evaluation Plan

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California Department of Transportation
Division of Environmental Analysis, Stormwater Program
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Acronyms, Abbreviations and Definitions

ASBS: Areas of Special Biological Significance (SWMP, Appendix G)

ATS: Active Treatment System

BMP: Best Management Practice (SWMP, Appendix G)

Caltrans: State of California Department of Transportation

CCEP: Construction Compliance Evaluation Plan

CFR: Code of Federal Regulations (SWMP, Appendix G)

Construction Activity. Any construction or demolition activity, clearing, grading, grubbing, or excavation or any other activity that results in a land disturbance. Construction does not include emergency construction activities required to immediately protect public health and safety or routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility (SWMP, Appendix H)

Construction Site: Location where a construction activity is performed.

C/EP-SWAT: Construction–Encroachment Permit Stormwater Advisory Team (SWMP, Appendix G)

CWA: Clean Water Act (SWMP, Appendix G)

DCSWC: District Construction Stormwater Coordinator

DEA-SWP: Division of Environmental Analysis - Stormwater Program

Discharge: When used without qualification, the term refers to the discharge of a pollutant

Discharge of a Pollutant: The addition of any pollutant or combination of pollutants to waters of the United States from any point source, or any addition of any pollutant or combination of pollutants to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. The term includes additions of pollutants to waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works (SWMP, Appendix H)

DSA: Disturbed Soil Area

ERP: Enforcement Response Program

IQA: Independent Quality Assurance. The independent third party conducts the independent quality assurance (IQA) construction project reviews for the Permit-required self-audit program

Non-compliance: Failure to meet any field and administrative requirement of the SWMP or Permit or to meet any applicable water quality standard. This includes failure to install required BMPs or conduct required monitoring or maintenance. It also includes discharges of prohibited non- stormwater that do not meet the definition of emergency incidents. It does not include determinations by Caltrans or a RWQCB Executive Officer that a discharge is causing or contributing to exceedances of an applicable water quality standard. (SWMP, Section 16)

Non-stormwater: Discharges that are not induced by precipitation events and are not composed entirely of stormwater. These discharges include, but are not limited to, discharges of process water, air conditioner condensate, non-contact cooling water, vehicle wash water, concrete washout water, paint wash water, irrigation water, pipe testing water, lawn watering overspray, hydrant flushing and firefighting activities (SWMP, Appendix H)

NPDES: National Pollutant Discharge Elimination System (SWMP, Appendix G)

Permit: National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Permit Waste Discharge Requirements (WDRs) for the State of California Department of Transportation (Order No. 2012-0011-DWQ, NPDES No. CAS000003)

PLACS: Permits, Licenses, Agreements, Certifications and Approvals

Pollutant: Dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended [42 U.S.C. 2011 et seq.]), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water (SWMP, Appendix H)

QC: Quality Control

QA: Quality Assurance

RE: Resident Engineer (SWMP, Appendix G)

Review Report: Construction Project Site Stormwater Compliance Review Report used in the self-audit program for construction activities

RWQCB: Regional Water Quality Control Board (SWMP, Appendix G)

Sediment: Soil, sand, and minerals washed from land into water, usually after rain (SWMP, Appendix H)

Sensitive water body: As defined in the CCEP, includes water bodies listed for Areas of Special Biological Significance in the Permit Attachment III and listed water bodies pursuant to CWA Section 303(d)

SMARTS: Storm Water Multiple Application and Record Tracking System (Permit Sec. E.2.b.6)

Stormwater: Stormwater runoff, snowmelt runoff, and surface runoff and drainage, as defined in 40 CFR 122.26(b)(13) (SWMP, Appendix H)

Surface water: Collectively includes Waters of the State, Waters of the U.S. and sensitive water bodies

SWMP: Stormwater Management Plan (SWMP, Appendix H)

SWPPP: Stormwater Pollution Prevention Plan (SWMP, Appendix G)

SWRCB: State Water Resources Control Board (SWMP, Appendix G)

TMDL: Total maximum daily load (SWMP, Appendix G)

U.S.: United States

U.S.C.: United States Code

U.S. EPA: United States Environmental Protection Agency (SWMP, Appendix G)

U.S. EPA R-9 A.O.: United States Environmental Protection Agency – Region 9 Administrative Order

Waters of the State: Any surface water or groundwater, including saline waters, within boundaries of the state as defined in California Water Code §13050(e) (SWMP, Appendix H)

Waters of the U.S.: All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide. Waters of the United States [as defined in 40 CFR §230.3(s)] include all interstate waters and intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use of which would affect or could affect interstate or foreign commerce. The definition also applies to tributaries of the aforementioned waters. See 40 CFR §122.2 for the complete definition, which is hereby incorporated by reference (SWMP, Appendix H)

WDRs: Waste Discharge Requirements. “NPDES Permits” as used in the federal Clean Water Act (33 U.S.C. §1251 et seq.; Permit Finding 4) (SWMP, Appendix G)

WPCP: Water Pollution Control Program (SWMP, Appendix G)

WQSWAT: Water Quality Stormwater Advisory Team (SWMP, Appendix G)

YEPR: Year-End Performance Report

1. Introduction

The Construction Compliance Evaluation Plan (CCEP) describes the independent assurance portion of the self-audit program implemented by the State of California Department of Transportation (Caltrans) for evaluating construction activities at construction sites.

Development of the CCEP complies with the water pollution control requirements of the National Pollutant Discharge Elimination System (NPDES) Statewide Stormwater Permit Waste Discharge Requirements (WDRs) for Caltrans (Order No. 2012-0011-DWQ; NPDES No. CAS000003) (Permit), the Construction General Permit for Storm Water Discharges Associated With Construction and Land Disturbance Activities (Order No. 2010-0014-DWQ and 2012-0006-DWQ) (CGP), the California Regional Water Quality Control Board Lahontan Region (Order No. R6T-2011-0019, NPDES No. CAG616002) General Waste Discharge Requirements and NPDES Permit for Storm Water Discharges associated with Construction (Lahontan CGP), the Caltrans' Statewide Storm Water Management Plan (SWMP), and Caltrans guidance documents.

The data gathered through implementation of this CCEP will provide Caltrans with the information necessary to ascertain whether an appropriate level of stormwater pollution control is being achieved at construction sites, as well as evaluate trends and recommend improvements to the program. This CCEP will be made available to the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs).

1.1 Caltrans National Pollutant Discharge Elimination System Statewide Stormwater Permit

The Permit requires Caltrans to perform compliance evaluations for field activities (field activities self-audit) including construction, highway maintenance, facility maintenance, and selected targeted program components. The results of the field compliance evaluations are to be provided in the Annual Report (SWMP Section 16.3). The SWMP establishes the compliance evaluation program (self-audit) for field activities. This CCEP addresses the independent quality assurance (IQA) component of the self-audit process for construction sites.

1.2 Caltrans Statewide Stormwater Management Plan

The Permit requires Caltrans to prepare a SWMP that fully addresses the Permit requirements (Permit Sec. E.1.a).

The SWMP addresses stormwater pollution control related to highway planning, design, construction, maintenance, and operations activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing stormwater management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation and reporting activities.

Stormwater quality management is incorporated into construction activities. The SWMP, (Appendix F), lists the construction best management practices (BMPs) that may be used at Caltrans construction project sites. The SWMP presents the Construction program and defines the different types of construction activities. The program also provides criteria for routine inspections, corrective action and enforcement action procedures (SWMP, Section 6.5).

The SWMP addresses the Permit-required self-audit program for construction activities. Audits serve as a quality assurance (QA) mechanism to determine the adequacy of stormwater activities being implemented. The QA evaluations are conducted by the District Construction Stormwater Coordinator (DCSWC).

Independent quality assurance (IQA) evaluations, conducted by a third party, are implemented under the direction of Caltrans Division of Environmental Analysis – Stormwater Program (DEA-SWP).

As part of the Permit conditions, the SWMP shall commit to the provisions presented in the U.S. Environmental Protection Agency (U.S. EPA) Findings of Violation and Order for Compliance - U.S. EPA Docket No. CWA.-09-2011-0001 (U.S. EPA R-9 A.O.) (Permit Sec. E.1.c). The U.S. EPA R-9 A.O. reinforced the Permit requirements for an inspection and enforcement program, an oversight inspection program and an Enforcement Response Program (ERP) to ensure regulatory compliance.

Implementation of the ERP is described in the SWMP (Section 2.8) along with the roles and responsibilities for initiating the ERP notification and escalating enforcement response action.

2. Compliance Review Objectives

The purpose of this CCEP is to describe the activities implemented by Caltrans for evaluating construction project stormwater compliance with the permits, guidance documents and the stormwater program for construction.

The CCEP is designed to accomplish the following objectives:

- Review construction projects for compliance with the requirements of the Permit, the SWMP, the CGP, and applicable Lahontan Regional Water Quality Control Board permit provisions.
- Review construction projects for compliance with relevant sections of the Caltrans Standard Specifications and Standard Plans.
- Identify sources and causes of observed findings.
- Provide a process for evaluating trends.
- Evaluate the adequacy of guidance documents and contract specifications.
- Evaluate the adequacy of the stormwater program for construction.
- Recommend program improvements, including SWMP improvements, training, research, updates to guidance documents, updates to specifications and updates to the CCEP.
- Report compliance status to Caltrans management including the ERP as required by the SWMP.
- Evaluate BMP implementation and suggest areas for improvement and new BMP implementation methodologies.

The CCEP describes the compliance evaluation criteria, protocols, and reporting methods. The key elements of the CCEP include:

- Roles and Responsibilities for Construction Projects (Section 3.1)
- Project Selection Process (Section 3.2)
- Independent Quality Assurance (IQA) Review Process (Section 3.3)
- Project Construction Stormwater Review Report (Section 3.4)
- IQA Review Corrective Action (Section 4.1)
- Enforcement Response Program (Section 4.2)
- Trend Evaluation (Section 5.1)
- Program Improvement Process (Section 5.2)

- Reporting (Section 5.3)

3. Review Methodology

This section discusses the methodology for project selection, review schedule, project review, and review documentation, including the relevant roles and responsibilities of contractor, Caltrans RE, DCSWC and HQ-SWP.

3.1 Roles and Responsibilities for Construction Projects

There are three types of inspections/reviews that are performed at Caltrans construction sites. The roles and responsibilities for construction site QC, QA and IQA inspections are diagrammed in Figure 3 1 and are outlined as follows:

3.1.1 Contractor's Responsibilities

- Providing quality control (QC) inspections
- Ensuring compliance with the CGP, the Permit, contract SWPPP and contract-specific permits e.g., 401, 1601 permits)

3.1.2 Resident Engineer's Responsibilities

- Administering the construction contract and ensuring the stormwater controls are implemented
- Providing quality assurance level I (QA I) inspections
- Being available or ensuring that a designated representative (Assistant RE) will be available to provide assistance during IQA review for project information and safety
- Completing and documenting the corrective actions within two weeks. Corrective action status must be documented on Form, "Project Construction Stormwater Review Report," and submitted to DEA-SWP within two weeks

3.1.3 DCSWC Responsibilities

- Providing quality assurance level II (QA II) inspections
- Providing project(s) status list to HQ-SWP (including WPCP projects with 401 Cert.)
- Notifying the RE and ensuring that a representative (RE or Assistant RE) will be available to escort the reviewer for safety reasons
- Providing assistance to RE for completing and documentation the corrective actions on Form, Project Construction Stormwater Review Report
- Notifying DEA-SWP of corrective action status for tracking purposes and to evaluate programmatic changes as appropriate

3.1.4 Independent Quality Assurance (IQA) reviewers Responsibilities

- Providing project details 3 business days prior to IQA review date to DCSWC
- Conducting the project review and documenting the results of the project review in the review report
- Submitting the review report to the RE, Senior RE, Construction Manager, DCSWC and DEA-SWP

3.1.5 DEA-SWP Responsibilities

- Ensuring the Independent quality assurance (IQA) reviews are performed as described in this CCEP
- Providing direction and support to the IQA reviewer
- Providing oversight, evaluating programmatic changes and directing changes if deemed appropriate

Figure 3-1 Construction Stormwater Standard Inspection Process – Roles and Responsibilities

Activity Whom	Quality Control (QC) Contractor	Quality Assurance (QA) Resident Engineer (RE) – QA I District Construction Stormwater Coordinator- QA II	Independent Quality Assurance (IQA) HQ-SWC -Third Party
Authority	Contract	Contract and CGP Deputy District Director, Construction NPDES Permit and SWMP	NPDES Permit and SWMP
Protocol/ Frequency	As described in the Contract and CGP	As described in the Contract and CGP	As described in the CCEP

3.2 Project Selection Process

Caltrans DEA-SWP will maintain a list of active construction projects and will aim to conduct a sufficient number of reviews in order to reach statistically valid conclusions, and to generate adequate data points for analysis of trends. Appendix C, “Determination of Sample Size” provides explanation on how to determine the number of projects required to draw valid conclusions. This section describes the criteria used by DEA-SWP to compile the list of all potential projects and the selection of projects for an IQA review.

3.2.1 List of Active Projects

DEA-SWP will compile and maintain a list of active construction projects by extracting and compiling information from the following spreadsheets and databases:

- Headquarters Division of Construction Contracts Quarterly Status Report
- District information on oversight projects, and
- The Storm Water Multiple Application and Report Tracking System (SMARTS) database

The list will be updated monthly (or quarterly) to add new projects in construction or delete completed projects that have been terminated on SMARTS.

3.2.2 Project Ranking Criteria

Evaluation priority is given to construction sites “based on their relative risk to water quality, using the Risk Determination Methodology in the state CGP and the CWA 303(d) list of impaired water bodies” (U.S. EPA R-9 A.O.). In addition, the following criteria have been established to prioritize sites for IQA review(s):

- CGP Risk Determination (in the order of high to low priority):
 - Risk Level 3
 - Risk Level 2 with high risk receiving water body
 - Risk Level 2
 - Risk Level 1 with soil disturbance area of 10+ acres
 - WPCP with 401 certification and
 - Risk Level 1
- All Risk Level sites with high risk receiving water body will be reviewed at least once each year
- The highest ranked sites may be reviewed multiple times per year
- All districts will be reviewed at least once each year

This will allow the Department to target its resources on projects that have high water quality risks instead of no/low threat water quality projects.

3.2.3 Project Selection Process

DEA-SWP will examine the project list developed based on Section 3.2.2. to select projects for the IQA review by considering the following:

- Total number of active construction projects per District
- Between 10-90 % completion stated in Headquarters Division of Construction Contracts Quarterly Status Report
- Time of year that poses the highest potential to impact water quality
- Construction project geographic region
- Project stage/activities with disturbed soil area (DSA)
- District project status

3.3 Independent Quality Assurance (IQA) Review Process

The CCEP IQA review process is illustrated in Figure 3-2. The IQA reviewer uses the Project Construction Stormwater Review Report Form (Appendix A) to document findings and identify the need for a corrective action. If corrective action is required, follow-up reviews, documentation, tracking and resolution of corrective action will be performed. IQA reviews will be conducted year-round for each reporting year.

3.3.1 IQA Site Review Scheduling

As shown in Figure 3-2, DEA-SWP coordinates scheduling and 24-hour notification of the IQA reviews with the DCSWC. The DEA-SWP will establish review dates with the DCSWC and send a 3-business-day notification to the DCSWC with the project detail. The DCSWC will provide the 24-hour (1-business-day) notification to the RE, Senior RE, and Construction Manager.

3.3.2 IQA Site Review and Documentation

The IQA reviewer evaluates stormwater compliance at project construction sites by comparing observed site conditions, including project contract administration, with the following:

- SWRCB regulatory drivers (i.e., the CGP and the Permit)
- SWMP
- Project-specific Stormwater Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP) requirements, including any amendments.

The IQA reviewer conducts the site review using the review report form. The Field BMP and Administrative checklists provide guides to the IQA reviewer to assist in the identification of deficiencies; however, the reviewer must also consider any site-specific construction contract requirements that may apply (i.e., applicable Permits, Licenses, Agreements, Certifications and Approvals (PLACS)). The review report form documents the IQA reviewer's findings. The IQA reviewer will document site conditions using photo-documentation (i.e., written observations with supporting photographs). Photographs will be taken on both a macro view and a micro view of field BMP deficiencies requiring corrective action so that site conditions are ascertainable by: (1) Personnel who were not present during the compliance reviews, and (2) Personnel who may be performing the follow-up reviews to ensure corrective actions have been implemented.

The IQA reviewer signs and certifies the review report and simultaneously submits electronically the report to the RE, Senior RE, Construction Manager, DCSWC and DEA-SWP. The IQA reviewer will submit the report no later than 3 business days after completion of the IQA review.

3.4 Project Construction Stormwater Review Report

Construction IQA reviews are documented using the Project Construction Stormwater Review Report Form (Appendix A). The form documents the individual findings (deficiencies), noting each instance of non-compliance in the implementation of contract specification, field (construction site) BMPs, and SWPPP. Help tools are included to help with completing the report. A series of checklists (Appendix B) will be used to assess implementation of Construction Site BMPs and the required stormwater administration documentation.

Photographs will be required to document both the findings and the corrective actions taken. The complete report will consist of project site general information; a summary of the number and types of findings (deficiencies) observed, both administrative and field; corrective actions implemented and certification by both the IQA reviewer and the individual responsible for documenting the corrective actions of the findings.

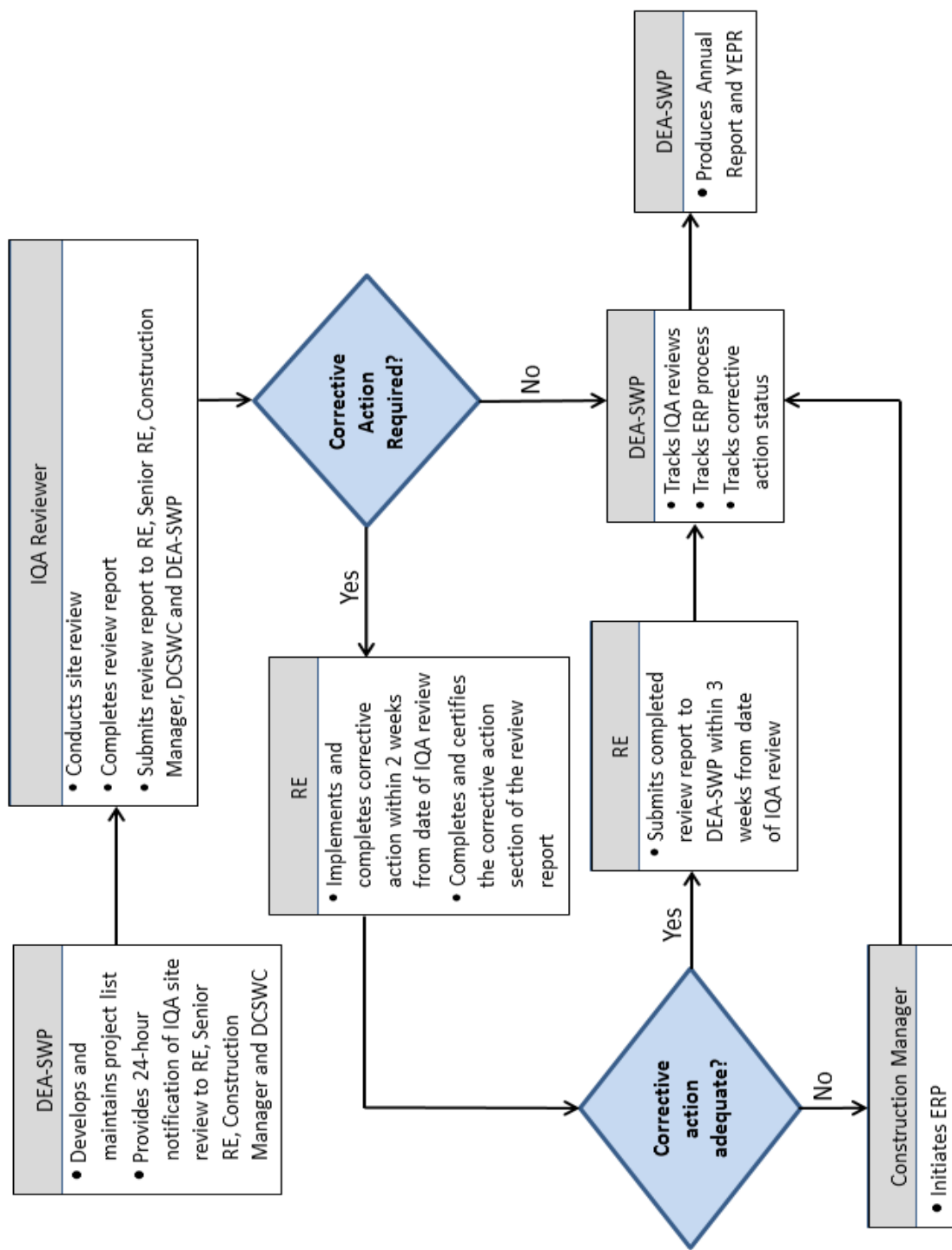
3.4.1 Administrative Findings

Administrative findings are separated into several categories. The definitions of each category and the pertinent review questions are as follows:

- Plans and Permits:
 - o Is the contract SWPPP located onsite?
 - o Is the contract SWPPP prepared and signed by a certified QSD?
- Training: Queries
 - o Is the WPCM certified as a QSD (or QSP for WPCP construction projects)?
 - o Is the contractor conducting the required stormwater training?
- SMARTS:
 - o Is annual reporting uploaded into SMARTS?
- Active Treatment System (ATS):
 - o Is ATS employed per the contract specification?

- Construction Site Monitoring:
 - o Are site monitoring and inspection procedures performed and properly documented in the project files?

Figure 3-2 Process for Construction Site IQA Reviews



- o Has NAL/NEL been exceeded and if so, has a construction site and run-on evaluation been prepared?

- o Has NAL exceedence report been prepared and reported to the SWRCB?
- Tahoe Permit:
 - o Has a Restoration Monitoring Plan been prepared?
 - o Are there waste prohibition exemptions on file (100 year floodplain)?
 - o Has all analytical information been uploaded into SMARTS within 5 days?

3.4.2 Field BMP Findings

Each field BMP type has standards that regulate the correct application (e.g., is the BMP implemented as intended), installation or placement, utilization of appropriate materials, and proper maintenance. The field BMP findings are organized into six construction site BMP categories as follows:

Soil Stabilization:

- preservation of vegetation
- temporary cover of DSAs
- temporary run-on and run-through control
- stream bank stabilization

Sediment Control

- temporary perimeter control
- temporary face of slope controls
- temporary check dams
- temporary drain inlet protection.

Tracking Control:

- stabilized construction entrance
- stabilized construction roadways
- tire washes

Wind Erosion Control:

- dust control throughout the construction site

Non-Stormwater Control:

- dewatering
- paving and saw cutting operations
- temporary stream crossings
- clear water diversions
- equipment cleaning
- fueling, and maintenance
- pile driving operations
- working near and over water

Materials and Waste Management Control

- material storage and use
- stockpile management
- spill prevention and control
- waste management: solid, hazardous, contaminated soil, concrete, sanitary, and liquid waste

3.4.3 Critical Water Quality Findings

If during the IQA review, an unauthorized discharge is discovered or evidence of a previously unseen discharge is found, the IQA reviewer will notify the RE immediately upon discovery. The RE will take

immediate corrective action to eliminate/minimize impacts to water quality and will file a report as per the contract SWPPP.

4. IQA Review Corrective Action

Corrective actions are implemented under the Standard Inspection Process or the ERP process (refer to Figure 4-1).

4.1 Corrective Action Process

The review report contains a “Corrective Action” section following each finding. The RE, assisted by the DCSWC as necessary, reviews the report and establishes an action plan with a schedule for the implementation of all corrective actions. The RE or assigned staff are responsible for verifying and documenting the completion of corrective actions with a photograph (if the finding is a field BMP finding) on the review report. Once all corrective actions have been addressed and documented, the assigned staff signs the review report.

DEA-SWP is responsible for tracking review reports and the status of all corrective actions. As corrective actions to findings are completed, the review report automatically tracks the completion efforts, including the date of completion. DEA-SWP will track all review reports and the status of corrective actions, including any findings that are resolved through the ERP.

Corrective action indicated in the construction site IQA review report is not complete until all findings identified in the review report have been resolved, accepted and documented by the RE). If corrective action implementation is insufficient or not completed within the required timeframe of the contract the ERP process is then initiated by the RE. DEA-SWP with the help of DCSWC will continue to track each corrective action until it is resolved.

DEA-SW will provide a quarterly summary of inspections, corrective action report status and ERP level will be generated for all Districts including their reporting percentage based on the completed corrective action reports.

4.2 Enforcement Response Program

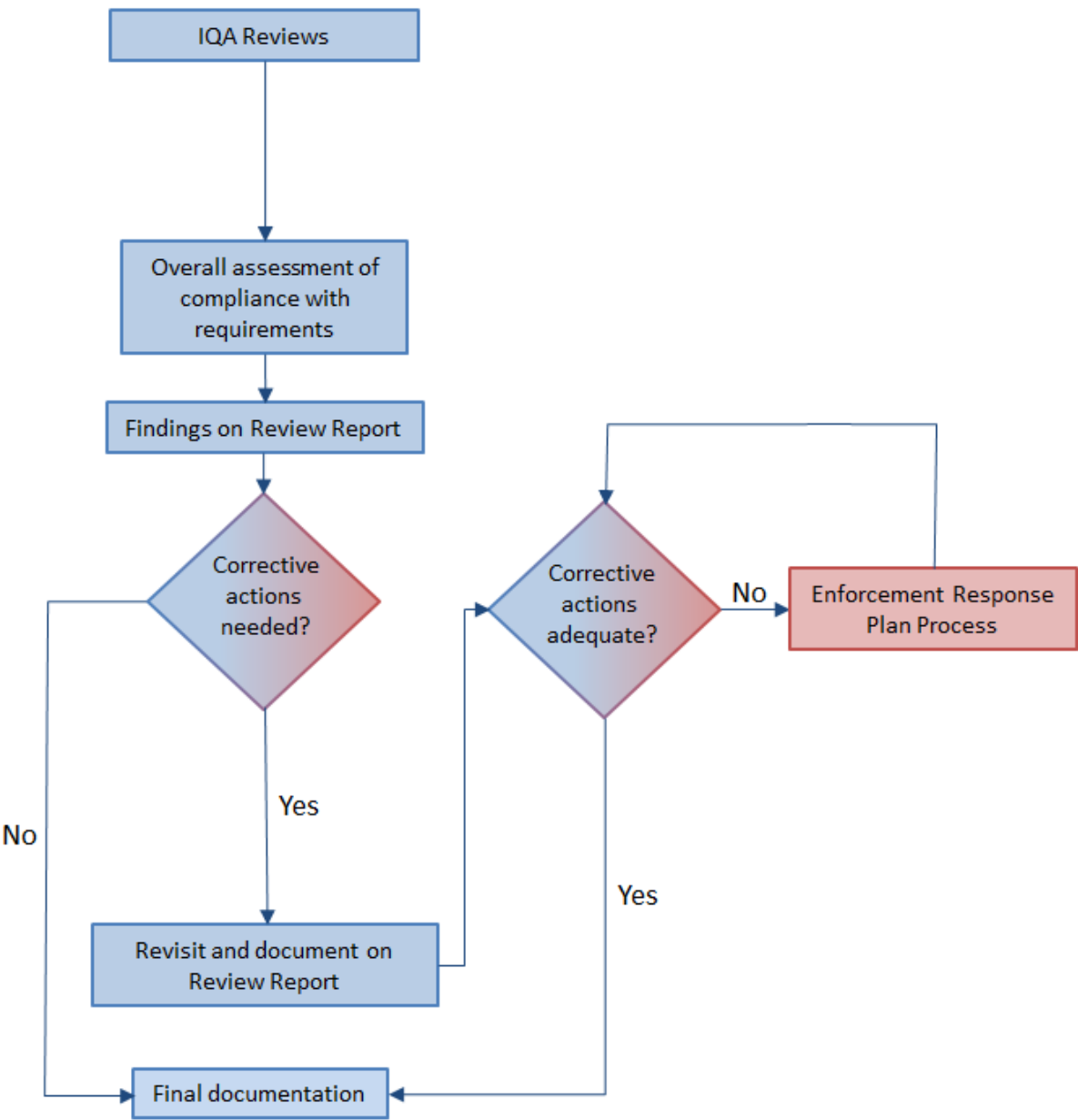
The ERP is initiated when site findings of deficiencies or issues are not adequately addressed by first line field personnel. When initial corrective actions implemented at the project level are determined to be inadequate, the ERP is initiated. The ERP is required as a result of an audit conducted by U.S. EPA in 2010 (Permit Sec. E.1.c; U.S. EPA R 9 A.0) and SWMP (Section 2.8) A comprehensive description of the ERP is provided in the SWMP (Section 2.8).

The effectiveness of the ERP rests on several components:

- Accurate classification and documentation of BMP deficiencies by the IQA reviewer
- Prompt communication, clear reports and recommendations from the IQA reviewer to the RE
- Efficient implementation of corrective action by Construction staff and District Construction line management.
- Timely re-evaluation by the IQA reviewer and/or District Construction staff

The flow chart below summarizes the IQA review and the ERP is initiation (Figure 4-1).

Figure 4-1 IQA Review Process Coordination with ERP



To achieve a consistent approach in complying with the ERP requirements, the Stormwater Management Program Enforcement Response Plan provides the programmatic enforcement plan and defines the roles and responsibilities of Caltrans and the third-party reviewer (Table 4-2).

Table 4-1 Construction Stormwater Enforcement Response Program Responsibility

	Enforcement Level			
	Level 1	Level 2	Level 3	Level 4
Caltrans Director	–	–	N	R
District Director	–	N	R	N
Deputy District Director, Construction	N	R	N	N
Construction Manager (Supervising TE)	R	N	N	N
Construction Engineer (Senior TE)	N	N	N	N
Resident Engineer	I	I	I	I
Caltrans Contractor (WPCM)	I*	I*	I*	I*
District Construction Stormwater Coordinator	A	A	A	A
DEA-SWP	N/T	N/T	N/T	N/T
Chief Environmental Engineer	N	N	A/N	A/N
NPDES Coordinator	A	A	A	A
IQA Reviewer	A	A	A	A

– No role or responsibility defined

R – Responsible party to manage process & determine corrective action

A – Party to assist responsible party, as needed

N – Notification provided to this party

I – Responsible party to implement corrective action

I* – Responsible to deploy corrective action as directed by the RE

T – Tracking compliance

TE – Transportation Engineer

5. Program Reporting and Communication

Using data collected from IQA reviews, DEA-SWP will evaluate trends in stormwater quality deficiencies and identify processes in the program that need improvements, with the resulting analysis to be included in an annual report.

5.1 Trend Evaluation

DEA-SWP will analyze the data collected by the reviews to identify trends in stormwater contract administration and field BMP deficiencies. BMP and construction contract administration deficiencies will be ranked by individual districts and statewide in the annual report

The cause of BMP deficiencies will be grouped into the following reason types: missing, improperly located, incorrectly installed, improperly maintained and improperly selected. A trend evaluation will be conducted to identify the cause(s) for recurrence of deficiencies and will be used for determining if the BMP needs improvement, additional training for contractor or Caltrans staff, or if guidance documents require updating.

For those BMP and construction contract administration deficiencies that are trending toward a higher frequency, Caltrans will collect project-level noncompliance information that appropriately allocate responsibilities to REs, construction contractors, Caltrans stormwater program's support and training efforts, or specification and guidance deficiencies.

5.2 Program Improvement Process

The information gathered through the CCEP will identify the source(s) and cause(s) of deficiencies and will provide a solid basis for redirecting or refining stormwater program priorities for construction activities. The information gathered will also provide critical data about the strengths and weaknesses of the stormwater program for construction.

The CCEP evaluation processes will answer the following questions:

- Do BMPs need functional improvement?
- Are BMPs too difficult to install?
- Are BMPs too difficult to maintain?
- Has adequate training been provided?
- Are construction projects complying with WPCPs or SWPPPs, and permit requirements?
- Do construction contractors properly implement and maintain WPCPs or SWPPPs?
- Does the Caltrans' stormwater program provide adequate support and training for resident engineers and Caltrans staff to satisfactorily administer construction site stormwater compliance?
- Are contractors properly trained to implement, maintain and inspect BMPs for WPCP or SWPPP compliance?
- Do the guidance or specifications provide the necessary details to ensure proper implementation?

Results from the CCEP evaluation processes will be reviewed by the Construction/Encroachment Permit Stormwater Advisory Team. The Construction/Encroachment Permit SWAT will provide recommendations to the Water Quality Stormwater Advisory Team (WQSWAT) for consideration of stormwater program improvements.

5.3 Reporting

The data gathered from IQA reviews will be used to prepare the Annual Report and a Year-End Performance Report (YEPR). The YEPR will include:

- An analysis of trends and recommendations to improve the stormwater program for construction
- An assessment of statewide and district-by-district construction compliance, including a compilation of all ratings received during the reporting period by the DCSWCs, and an evaluation of the different types of BMP adequacy
- A list of challenges for construction stormwater contract administration and recommendations for corrective actions

Appendix A: Project Construction Stormwater Review Report Form

PROJECT CONSTRUCTION STORMWATER REVIEW REPORT

ENV-WQP-0003 (REV 10/2015)

Page 1 of 5

PROJECT DESCRIPTION	CONTRACT NUMBER/CO/RTE/PM		DISTRICT
	WDID NUMBER	PROJECT NAME	

REVIEW REPORT SUMMARY

STORMWATER CONTRACT ADMINISTRATION		CONSTRUCTION SITE BEST MANAGEMENT PRACTICES (BMP)	
CATEGORY	No. of Findings	CATEGORY	No. of Findings
Plans and Permits	0	Soil Stabilization	0
Training	0	Sediment Control	0
SMARTS	0	Tracking Control	0
Active Treatment Systems	0	Wind Erosion Control	0
Monitoring and Reporting	0	Non-Storm Water	0
Tahoe CGP-Specific Requirements	0	Waste Management	0
TOTAL	0	TOTAL	0

KEY PERSONNEL

IQA REVIEWER	REVIEW DATE
RESIDENT ENGINEER (RE)	RE PHONE NUMBER ()
REVIEW PARTICIPANTS	
CONSTRUCTION COMPANY	WATER POLLUTION CONTROL MANAGER (WPCM)

SITE CONDITIONS

WEATHER CONDITIONS	PROJECT RISK LEVEL / TAHOE CGP	
RECEIVING WATER BODY(S)	PERCENT COMPLETE BY TIME	
TOTAL DISTURBED SOIL AREA (DSA) (ACRES)	ACTIVE DSA (ACRES)	INACTIVE DSA (ACRES)

REGULATORY STATUS

SWPPP OR WPCP	RWQCB(S)
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PLACS (PERMITS, LICENSES, AGREEMENTS, CERTIFICATIONS) SPECIFYING TEMPORARY BMP REQUIREMENTS

OVERSIGHT PROJECT?	LEAD AGENCY
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ADA Notice

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PROJECT CONSTRUCTION STORMWATER REVIEW REPORT

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SUMMARY OF FINDINGS AND CORRECTIVE ACTION STATUS**STORMWATER CONTRACT ADMINISTRATION SUMMARY**

Finding No.	Finding Description Summary	Corrected?	Date of Corrective Action Completion
A1		NO	

CONSTRUCTION SITE BMP SUMMARY

Finding No.	Finding Description Summary	Corrected?	Date of Corrective Action Completion
B1		NO	

PROJECT CONSTRUCTION STORMWATER REVIEW REPORT

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STORMWATER CONTRACT ADMINISTRATION REVIEW

FINDING NO.	ADMINISTRATIVE CATEGORY	CHECKLIST QUESTION NO.
A1		

OBSERVATION

STANDARD REFERENCE

STANDARD

Corrective Action Taken:

DATE COMPLETED	VERIFIED BY (Print Name and Title)

PROJECT CONSTRUCTION STORMWATER REVIEW REPORT

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CONSTRUCTION SITE BMP REVIEW

FINDING NO.	BMP CATEGORY	BMP TYPE	CHECKLIST QUESTION NO.	LOCATION
B1				

STANDARD REFERENCE

STANDARD

Click here to insert image.

Observation:

Click here to insert image.

Corrective Action:

DATE COMPLETED

VERIFIED BY (Print Name and Title)

PROJECT CONSTRUCTION STORMWATER REVIEW REPORT

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REVIEW REPORT CERTIFICATION

I certify under penalty of law that this Project Construction Stormwater Review Report was performed in accordance with the Construction General Permit. The information contained in this Review Report was gathered from a field site review. I am aware that Section 309 (c)(4) of the Clean Water Act provides for significant penalties, including fines and imprisonment for knowingly submitting false material statement, representation, or certification.

IQA REVIEWER NAME

DATE REPORT COMPLETED

IQA REVIEWER SIGNATURE

CORRECTIVE ACTION CERTIFICATION

I certify under penalty of law that all corrective actions have been implemented in accordance with the Construction General Permit for all findings identified in this Project Construction Stormwater Review Report. I am aware that Section 309 (c)(4) of the Clean Water Act provides for significant penalties, including fines and imprisonment for knowingly submitting false material statement, representation, or certification.

CORRECTIVE ACTION VERIFIER NAME

DATE ALL CORRECTIVE ACTIONS COMPLETED

CORRECTIVE ACTION VERIFIER SIGNATURE

This Project Construction Stormwater Review Report (Report) assists Caltrans HQ DEA-WQP with implementing the construction site Self-Audit Program required by the Caltrans NPDES Permit (refer to Caltrans Construction Compliance Evaluation Plan (CCEP) CTSW-PL-15-321.02, February 2015-REVISED).

Instructions for completion of each field on the Report can be found by "mousing over" the respective field. The Report completion process is:

1. **IQA Review** - The Independent Quality Assurance (IQA) Reviewer provides entries on the Report from observations made during the construction site stormwater review. The IQA Reviewer then signs a hard copy of the completed Report and, after a quality control check by IQA Management Staff, submits to the Resident Engineer (RE) and the District Construction Stormwater Coordinator (DCSWC). The IQA Reviewer then selects from the respective pull down menu and inserts the statement, "Original signed by" followed with their first and last name and date (MM/DD/YYYY) in the Report field "IQA REVIEWER SIGNATURE". The IQA Reviewer clicks the "Lock" button and emails the Report to the RE, Senior RE, Construction Manager, DCSWC, and DEA-WQP.
2. **Corrective Action Documentation** – After all corrective actions have been completed and documented, the RE verifies and documents successful completion of corrective action(s) with a signature on the original review report. The signed copy will be submitted to the DCSWC and DEA-WQP. Then the RE selects from the respective pull down menu and inserts the following statement: "Original signed by" followed with their first and last name and date (MM/DD/YYYY) in the form field "CORRECTIVE ACTION VERIFIER SIGNATURE". The RE then clicks the "Lock" button and emails the Report to the Senior RE, Construction Manager, DCSWC and DEA-WQP.

Appendix B: Field BMPs and Administrative Checklist Summary

Listed below are listed the potential Field BMPs evaluated during the IQA reviews. Each BMP has an associated checklist that can be accessed on the Caltrans DEA-SWP website.

BMP Category	BMP ID	BMP Name
Temporary Soil Stabilization	SS-1	Scheduling
	SS-2	Preservation of existing vegetation
	SS-3	Hydraulic mulch
	SS-5	Hydro seeding
	SS-6	Soil binders
	SS-7	Straw mulch
	SS-8	Geotextiles, mats, plastic covers, and lined ditches
	SS-9	Wood mulching
	SS-10	Earth dikes and drainage swales and lined ditches
	SS-11	Outlet protection and velocity dissipation devices
	SS-12	Slope drains
	SS-13	Stream bank stabilization
Temporary Sediment Control	SC-1	Silt fence
	SC-2	Sediment or distilling basin
	SC-3	Sediment trap
	SC-4	Check dams
	SC-5	Fiber rolls
	SC-6	Gravel bag berm
	SC-7	Street Sweeping
	SC-8	Sandbag barrier
	SC-9	Straw bale barrier
	SC-10	Storm drain inlet protection
Tracking Controls	TC-1	Stabilized construction entrance and exit
	TC-2	Stabilized construction roadway
	TC-3	Entrance and exit tire wash
Wind Erosion Control	WE-1	Wind erosion control

BMP Category	BMP ID	BMP Name
Non-Stormwater Management	NS-1	Water conservation practices
	NS-2	Dewatering operations
	NS-3	Paving and grinding operations
	NS-4	Temporary stream crossing
	NS-5	Clear water diversion
	NS-6	Illegal connection or discharge detection and reporting
	NS-7	Potable water and irrigation
	NS-8	Vehicle and equipment cleaning
	NS-9	Vehicle and equipment fueling
	NS-10	Vehicle and equipment maintenance
	NS-11	Pile-driving operations
	NS-12	Concrete curing
	NS-13	Material and equipment use over water
	NS-14	Concrete finishing
	NS-15	Structure demolition or removal over or adjacent to water
Waste Management	WM-1	Material delivery and storage
	WM-2	Material use
	WM-3	Stockpile management
	WM-4	Spill prevention and control
	WM-5	Solid waste management
	WM-6	Hazardous waste management
	WM-7	Contaminated soil management
	WM-8	Concrete waste management
	WM-9	Sanitary or septic waste management
	WM-10	Liquid waste management

Listed below are listed the potential Stormwater Contract Administration BMP categories evaluated during the IQA reviews. Each BMP category has associated checklists that can be accessed on the Caltrans DEA-SWP web site.

Stormwater Contract Administration Category
Plans and Permits
Training
SMARTS
Active Treatment Systems (ATS)
Monitoring and Reporting
Tahoe-Specific Requirements

Appendix C: Determination of Sample Size

Determination of Number of Projects

Number of Projects to Review	Three criteria will usually need to be specified to determine the appropriate sample size: the level of precision, the level of confidence, and the degree of variability in the attributes being measured. These criteria are briefly discussed below.
Level of Precision, c	The level of precision, sometimes called the sampling error, is the range in which the true value of the population is estimated to be. This range is often expressed in percentage points (for example, ± 5 percent). Thus, if it is found that, for example, 60 percent of projects in the sample have received a 2 rating with a precision level of ± 5 percent, then we can conclude that between 55 and 65 percent of all construction projects in the state would have scored a 2 rating.
Level of Confidence, z	The level of confidence occurs when a population is repeatedly sampled and the average value of the attribute obtained by those samples is equal to the true population value. Furthermore, the values obtained by these samples are distributed, normally about the true value. In other words, if a 95 percent confidence level is selected, 95 out of 100 samples will have the true population value within the range of precision specified earlier. For a 95 percent confidence level, Z value from the standard normal distribution table is 1.96. (see Diagram C-1 Finding z-value for 95% Confidence Interval)
Degree of Variability, p	The degree of variability in the attributes being measured refers to the distribution of attributes in the population. The more heterogeneous a population, the larger the sample size required to obtain a given level of precision. The less variable (more homogeneous) a population, the smaller the sample size. Note that a proportion of 50 percent indicates a greater level of variability than either 20 percent or 80 percent. This is because 20 percent and 80 percent indicates that a large majority do not or do score, respectively, for example a 2 rating (attribute of interest). Because a proportion of 0.5 indicates the maximum variability in a population, it is often used in determining a more conservative sample size. That is, the sample size may be larger than if the true variability of the population attribute were used. Probability of getting a particular rating, expressed as a decimal (use 0.5 for a conservative [larger] sample size) (see Diagram C-2 Probability Scale)

To calculate the number of projects selected to review annually, we first calculate the initial sample size:

$$N_0 = \frac{Z^2 p(1 - p)}{c^2} = \frac{1.96^2 \times 0.05(1 - 0.05)}{0.05^2}$$

$$N_0 = 392$$

Where:

N_0 = Initial sample size

Sample Size for ± 5 percent Precision Levels where Confidence Level is 95 percent and $p = 0.5$.

Then, we need to correct for finite population:

$$N_1 = \frac{N_0}{1 + \frac{N_0 - 1}{N}} = \frac{392}{1 + \frac{392 - 1}{1000}} = 278$$

Where:

N_1 = Number of projects to review annually

N = Number of projects or contracts statewide (population size)

N_0 = Initial sample size

Size of Population (N)	Number of Projects to Review (N_1)
100	80
200	132
300	169
400	196
500	217
600	234
700	248
800	260
900	269
1000	278

The following steps will be taken to calculate the number of reviews per district to provide assurance that each district is proportionately represented and a satisfactory number of projects is selected from each district.

To determine the number of projects selected for review in each district, follow the steps below:

Step 1: Determine the total number of ongoing contracts, Section 3.2.1

Step 2: Determine the sample size (total number of reviews) with 95% confidence level, Appendix C.

Step 3: Determine the percentage of going contracts in each district

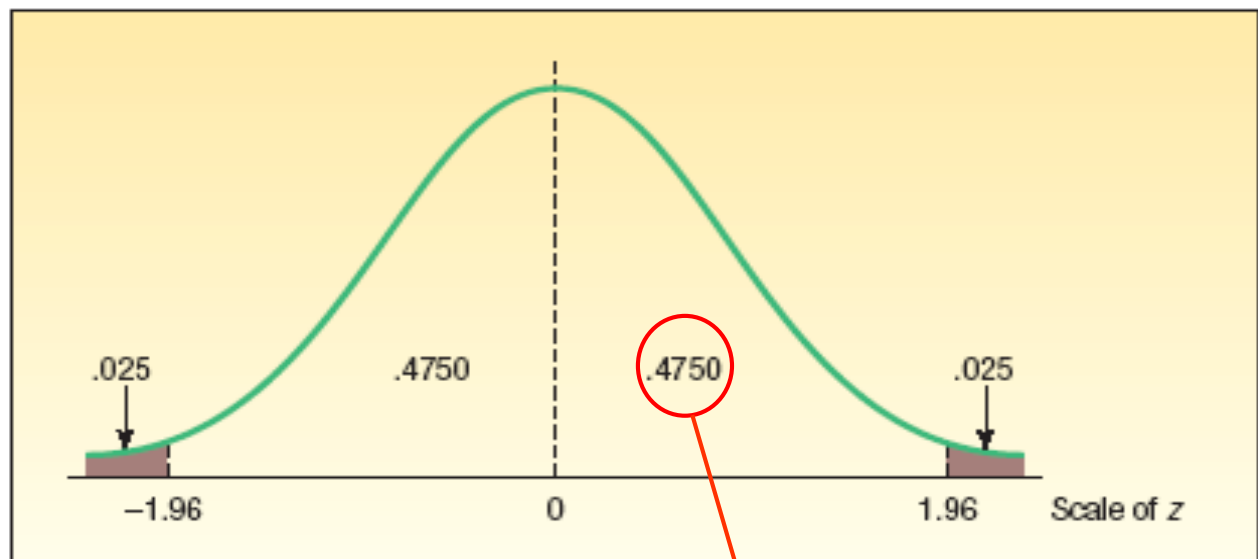
Step 4: Determine the number of reviews within each district (multiply the percentage from step 3 by the sample size from step 2).

Example: Table showing approximate # of reviews per month per District. Please note the following conservative assumptions: Annual Caltrans workload of 1000 contracts. With this annual workload, the 95% CL sample size is calculated to be 278. The percent workload per district is applied to the sample size to give each district's annual review estimate. Divide this by 12 to get reviews per month.

Districts	1	2	3	4	5	6	7	8	9	10	11	12
Active Contracts	67	36	59	217	70	67	198	81	18	65	80	43
Workload (%)	7	4	6	22	7	7	20	8	2	7	8	4
Est. Annual No. of Reviews (% workload x annual sample size)	19	10	16	60	19	19	55	23	5	18	22	12
Approx. No. of reviews per month	2	1	1	5	2	2	5	2	0	2	2	1

Diagram C-1: Finding z-value for 95% Confidence Interval

The area between $Z=-1.96$ and $+1.96$ is 0.95 (95% or 47.5% each half)



z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
1.5	0.4332	0.4345	0.4357	0.4370	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
1.6	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936

Diagram C-2: Probability Scale

The probability can be recorded on a scale of 0 to 1, showing the likelihood or chance that a particular outcome will occur, ranging between 0 (impossible) to 1 (certain).

