



# Storm Water Data Report (SWDR) Workshop

**Spring 2011**

**May 6, 2011**

# Introductions

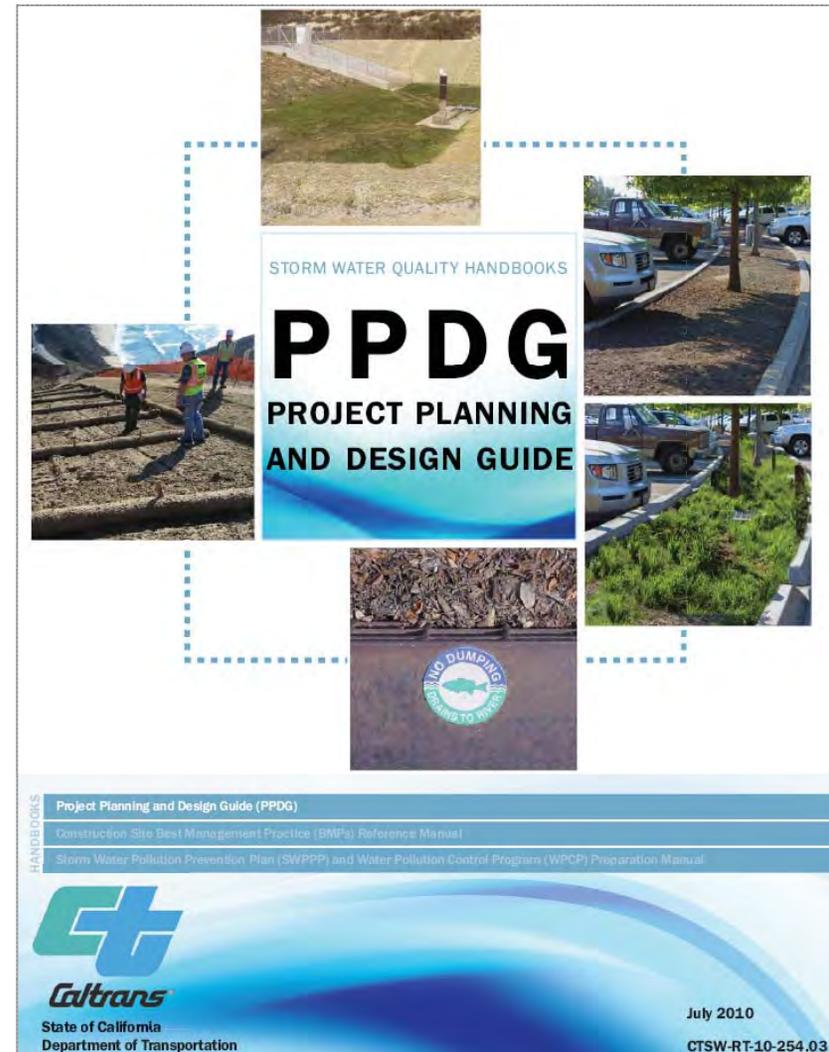


# Agenda

Topic	Time
Introduction and Pre-Exam	25 minutes
The EDF	10 minutes
SWDR – Long Form – Cover and Sec. 1	15 minutes
SWDR – Long Form – Sec. 2 to 4	55 minutes
SWDR – Long Form – Sec. 5 to 7	50 minutes
SWDR – Long Form Attachments	15 minutes
SWDR - Short Form	15 minutes
SWDR - Short Form Attachments	5 minutes
Finale and Post Exam	20 minutes

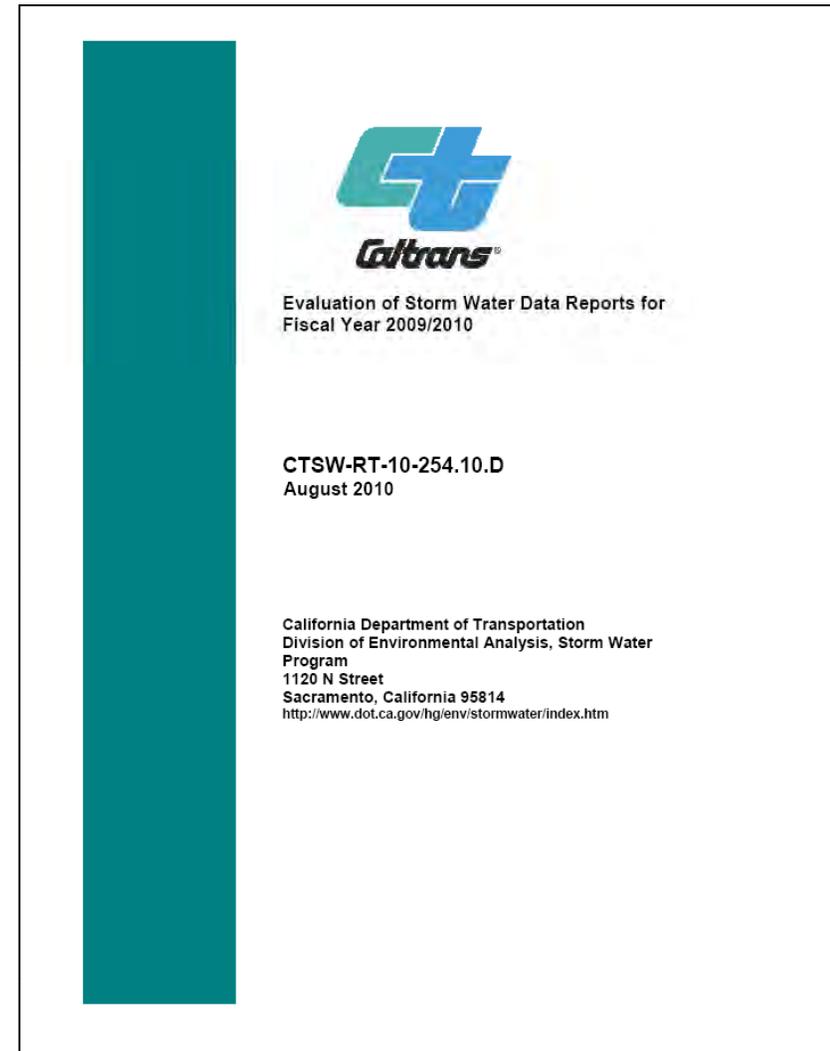
# What's New?

1. July 2010 PPDG changes for developing SWDRs.
  - Streamline SWDR Process (Short Form)
  - New Construction General Permit (CGP)
  - New T-1 checklist and process
  - Sustainable BMPs (LID)



# What's New?

2. 2009/10 Evaluation Report, SWDRs findings:
  - Narrative Descriptions
  - Cost information
  - TDC approach
  - Construction BMP strategies



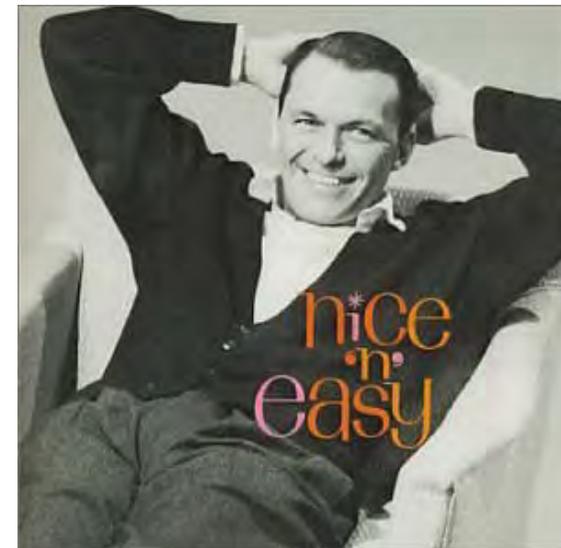
# What's New?

3. Consistency in SWDR development.
  - Get to the point – don't repeat and be concise!
  - Justify decisions – complete the story!
  - Understand the expected level of detail per project phase.

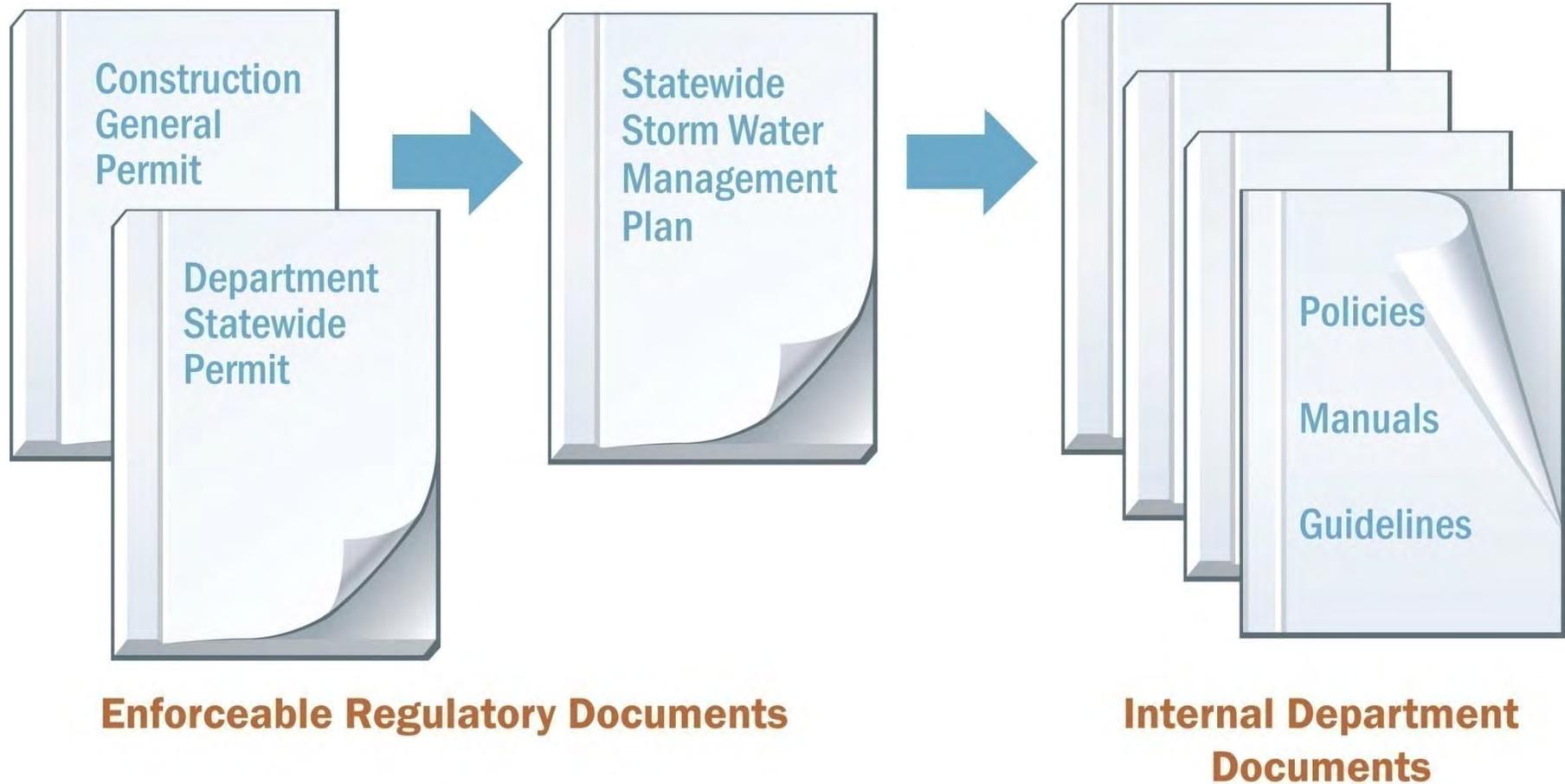


# Workshop Objectives

1. Clarify what is expected in the preparation of a SWDR.
2. Continue to achieve statewide consistency in SWDR preparation.
3. Review recent revisions to the PPDG that affect SWDRs.

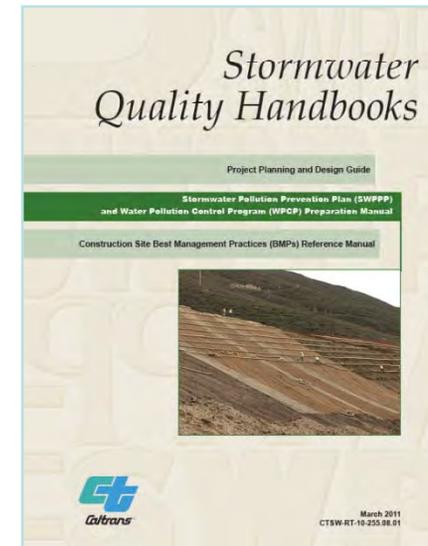
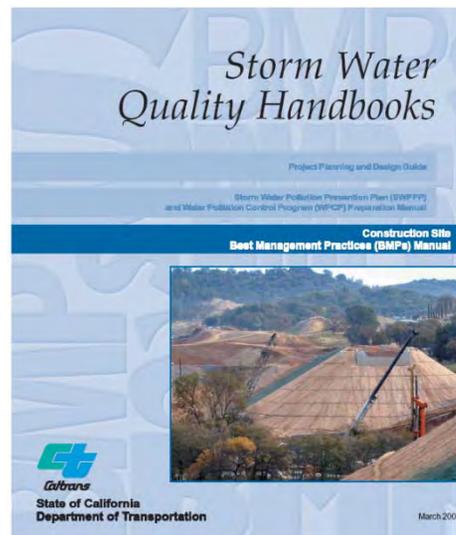
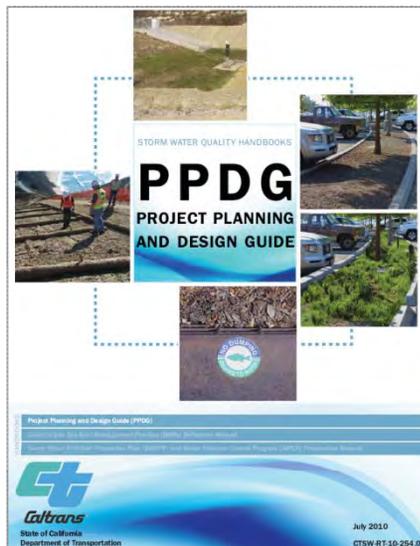


# NPDES Permit Relationship



# References and Sources

- **Caltrans Storm Water Quality Handbooks**
  - **Project Planning and Design Guide, July 2010**
  - **Construction Site Best Management Practices (BMPs) Manual, March 2003 (currently under revision for CGP)**
  - **Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual, March 2011**



# What is a SWDR?

- Documents storm water decisions, key project information, and BMP selections/strategies.
- Serves as technical report and feasibility analysis for permit compliance.



# SWDR Types

## Short Form

Short Form - Storm Water State Report

Cofens

City County/Project: 00706-05  
Project Name: 00706-05  
Project No: SW-00706-05  
Project Location: 00706-05  
Phase:  PD  PL/CD  P&E

Regional Water Quality Control Board, Cofens Office

	Yes <input type="checkbox"/>	No <input type="checkbox"/>
1. Is this project located in a water quality protection area (WQPA)?	<input type="checkbox"/>	<input type="checkbox"/>
2. Does the project disturb 5 or more acres of wetlands?	<input type="checkbox"/>	<input type="checkbox"/>
3. Does the project disturb more than 1 acre of wetland and not qualify for the National Wetlands Inventory?	<input type="checkbox"/>	<input type="checkbox"/>
4. Does the project potentially create potential water quality impacts?	<input type="checkbox"/>	<input type="checkbox"/>
5. Does the project require a certification of ADL review?	<input type="checkbox"/>	<input type="checkbox"/>

If this project is one of the following conditions, it is "Yes" unless a Long Form - Storm Water State Report is submitted to the Regional Water Quality Control Board, Cofens Office.

Storm Water Discharge from a Construction Site (SW-00706-05) Yes  No   
Storm Water Discharge from a Construction Site (SW-00706-05) Yes  No   
Storm Water Discharge from a Construction Site (SW-00706-05) Yes  No   
Storm Water Discharge from a Construction Site (SW-00706-05) Yes  No

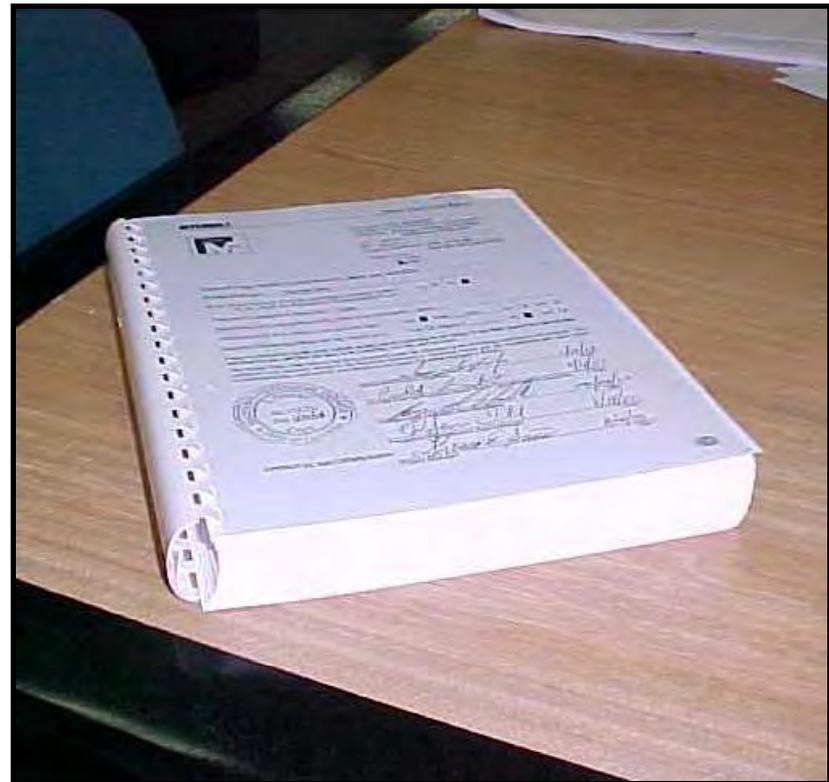
This Short Form - Storm Water State Report has been prepared under the direction of the following:

Project Engineer/Regional Project Engineer/Lead Designer: [Signature] Date: 10/26/10  
I have reviewed the stormwater quality design issues and find this report to be complete, correct and accurate.

John Doe, District/Regional SW Coordinator or Designer Date: 10/26/10

Cofens Storm Water Quality Handbook  
Project Planning and Design Guide  
July 2010

## Long Form



**What conditions dictate either form?**

# Short vs. Long Form and Useful Websites

## HANDOUT #1



# Handout #1 – PPDG Pages E-1 and E-2

In general, a Storm Water Data Report (SWDR) shall be prepared for every project. Depending upon the extent of soil disturbance and degree of stormwater impacts, a “Long Form” or “Short Form” SWDR shall be required. Projects that do not have the potential to create stormwater impacts, and have little or no soil disturbance may utilize the “Short Form” SWDR. A Short Form SWDR may be appropriate for (but not limited to) the following types of projects:

- Signing and striping projects;
- Weigh-in-motion projects;
- Traffic monitoring projects (closed-circuit camera installation, etc.);
- Construction of ADA ramps;
- Bridge rail projects;
- Chip seal and/or fog seal projects;
- Pavement marker projects (raised or depressed);
- Metal Beam Guardrail Projects;
- Loop detector installations;
- Median Barrier Projects;
- Extended plant establishment projects and other planting projects;
- Emergency projects<sup>2</sup> using informal bids (as defined per PDPM);
- Building remodeling or refurbishment such as painting, tile, or plumbing repair;
- Small Maintenance Projects (CEQA exempt);
- Approach Slab Replacement;
- Paint Striping;
- Overlay existing and shoulder backing;
- Utility trenches;
- Cold Plane and Resurfacing;
- Micro surfacing;
- Culvert Lining (without CWA 404/401); and
- Culvert Replacement (without CWA 404/401).

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<sup>2</sup> Note that an Emergency Project done under Force Account does not require a SWDR

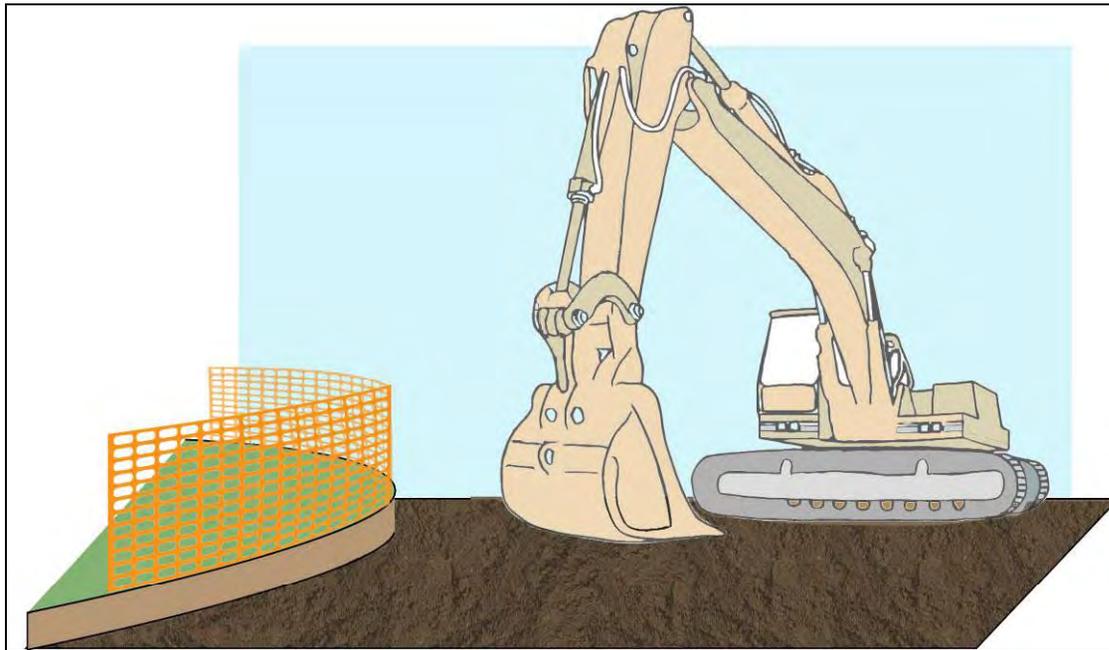
## Streamlining

- Short form encouraged, if appropriate

## Anything in Common?

- Routine maintenance
- Minimal DSA
- No or limited new impervious
- 401/404 Permits not needed
- Treatment not required

# Disturbed Soil Area (DSA)



Do you know:

**DSA?**

## Disturbed Soil Area

- Areas of exposed, erodible soil that is to be disturbed
- Within construction limits
- Resulting from construction activities

# Routine Maintenance

What is a:  
**Routine  
Maintenance  
Project?**



Per EPA definition, it's a project that:

- Maintains original line/grade, hydraulic capacity, and original purpose
- Provides preventative maintenance to existing facilities

Note: Exempt from CGP requirements, but a WPCP is still required.

DSA is needed for determining EC costs



# Handout #1 – PPDG Pages E-1 and E-2

Please note that all the aforementioned project types may still be required to utilize a “Long Form” Storm Water Data Report if meeting the following conditions:

1. The Project is required to consider Treatment BMPs.
2. The project disturbs 5 or more acres of soil.
3. The project disturbs more than 1 acre of soil and does not qualify for the erosivity waiver.
4. The project potentially creates permanent water quality impacts.
5. The project requires a notification of ADL reuse.

Any exceptions must be under the direction of the District/Regional Design Storm Water Coordinator.

Licensed Landscape Architect) determines whether a project qualifies and may utilize a Short Form SWDR based upon the previously identified criteria. During the Project Initiation phase, the Design District/Regional Storm Water Coordinator shall confirm that the project may appropriately utilize the Short Form SWDR. The applicability of the Short Form will be reviewed and changed (if necessary) during the Project Approval and PS&E phases.

Off the shelf projects should follow the project shelf guidance at [http://onramp.dot.ca.gov/hq/design/memos/Project\\_Shelf\\_Guidance.pdf](http://onramp.dot.ca.gov/hq/design/memos/Project_Shelf_Guidance.pdf) and the project delivery memo dated 08/11/2006.

## Use Long Form, if:

- Treatment is required.
- DSA is  $\geq$  5 Acres.
- DSA  $>$  1 acre and no Erosivity Waiver

## Additional info:

- Design Coord. determines if Short Form is used.
- Project shelf guidance is available.



# Handout #1 – Websites

*Additional Storm Water Web Sites*

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Storm Water Related Web Sites

Web Sites	Description
<a href="http://www.dst.ca.gov/hq/oppd/stormwr/">http://www.dst.ca.gov/hq/oppd/stormwr/</a>	Caltrans external website

→ **New!** July 2010 PPDG/SWDR Implementation Matrix

→ **New!** The Storm Water Quality Handbook - Project Planning and Design Guide (July 2010) is available to view or download in pdf format

- [Project Planning and Design Guide Cover \(July 2010\)](#)
- [Replacement pages to the July 2010 PPDG](#)

→ Storm Water Data Report (SWDR)

- **New!** SWDR Files - July 2010
  - [SWDR Instructions](#)
  - [SWDR Short Form](#)
  - [SWDR Long Form](#)
  - [SWDR Long Form and Attachments](#)
- **New!** SWDR Attachments - July 2010
  - [SWDR Erosion Documentation Form](#)
  - [SWDR Construction Consideration Form](#)
  - [SWDR SW Checklist 1](#)
  - [SWDR SW Checklist 2](#)
  - [SWDR SW Checklist 3](#)
  - [SWDR RFP Checklist](#)
  - [SWDR T Checklist](#)
  - **New!** [SWDR CS Checklist](#)
- [SWDR May 2007 - Old Version](#)

→ **New!** SWDR Examples (coming soon)

→ **New!** [Project Risk Level Determination Guidance](#)

→ **New!** [Banfill Erosivity Waiver Form and Guidance - Banfill Erosivity Waiver Form \(CEM2005\)](#)

→ **New!** [Estimating Guidance for CGP](#)

→ **New!** [Construction Site BMPs \(Specifications, Standard Plans, and Guidance\)](#)

→ **New!** [T-1 Checklist Infiltration Tool](#)

→ **New!** [Erosion Prediction with RUSLE2](#)

→ [Infiltration Tool \(coming soon\)](#)

→ [Treatment BMPs \(Plans, Specifications and Guidance\)](#)

 Office of Storm Water Management 1

- 2010 PPDG
- SWDR Templates
- Example SWDRs
- Risk Level Guidance
- Erosivity Waiver Guide and Form
- Estimating Guidance
- Const. BMP Specs. and Details
- T-1 checklist Tool and Guide
- EPP and RUSLE2
- TBMP Specs. and Details



# Handout #1 – Websites

**Project Delivery Design**

[Project Delivery](#) [Design](#) [Storm Water Management](#) Search:

## Storm Water Management

The Office of Storm Water Management — Design (OSWMD) has the following duties:

**Coordination:** In coordination with the Water Quality Program, the OSWMD provides general guidance to the District quality management practices. This is accomplished by conducting regular Project Design - Storm Water Advisory teaching guidance material such as the Project Planning and Design Guide (PPDG).

**Program Evaluation:** The OSWMD monitors and assesses District incorporation of storm water quality BMPs into of the Design Compliance Monitoring Program that is currently under development. The main element of Design Compliance Data Report (SWDR).

### Staff

<a href="#">Treatment BMP Training</a>
<a href="#">Construction Site BMP Training for Design</a>
<a href="#">SWDR Workshop - coming soon</a>

Download SWDR Workshop Powerpoint presentation

**Storm Water Menu**

- [PD SWAT](#)
- [Treatment BMP&s \(Plans, Specifications and Guidance\)](#)
- [PPDG](#)
- [BMP Examples, Spec & Cost Estimate](#)
- [Specifications](#)
- [FAQs](#)
- [Training](#)
- [Studies & Reports](#)
- [Miscellaneous](#)
- [District Storm Water](#)



# Evaluation Documentation Form

Initial Treatment Evaluation

May 6, 2011

# Question No. 1 – Treatment?

**APPENDIX E**

*Short Form - Storm Water Data Report*

- |   |                              |                             |
|---|------------------------------|-----------------------------|
| 1. Is the project required to consider incorporating Treatment BMPs?                                    | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 2. Does the project disturb 5 or more acres of soil?  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 3. Does the project disturb more than 1 acre of soil and not qualify for the Rainfall Erosivity Waiver? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 4. Does the project potentially create permanent water quality impacts?                                 | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 5. Does the project require a notification of ADL reuse   | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

Estimate Construction Start Date: \_\_\_\_\_ Construction Completion Date: \_\_\_\_\_  
 Separate Dewatering Permit (if yes, permit number) Yes  Permit # \_\_\_\_\_ No   
 Erosivity Waiver Yes  Date: \_\_\_\_\_ No

*This Short Form - Storm Water Data Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the data upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.*

\_\_\_\_\_  
 (Name), Registered Project Engineer/Landscape Architect Date

*I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:*

(Stamp Required for PS&E only) \_\_\_\_\_  
 (Name), District/Regional SW Coordinator or Designee Date

How do we answer?

Use the EDF.



# The EDF – Section 4.2

## APPENDIX E

## Evaluation Documentation Form

DATE: \_\_\_\_\_

Project ID ( or EA): \_\_\_\_\_

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION FOR EVALUATION
1.	Begin Project Evaluation regarding requirement for consideration of Treatment BMPs	✓		See Figure 4-1. Project Evaluation Process for Consideration of Permanent Treatment BMPs. Go to 2
2.	Is this an emergency project?			If Yes, go to 10. If No, continue to 3.
3.	Have TMDLs or other Pollution Control Requirements been established for surface waters within the project limits? Information provided in the water quality assessment or equivalent document.			If Yes, contact the District/Regional NPDES Coordinator to discuss the Department's obligations under the TMDL (if Applicable) or Pollution Control Requirements, go to 9 or 4. _____(Dist./Reg. SW Coordinator initials) If No, continue to 4.
4.	Is the project located within an area of a local MS4 Permittee?			If Yes, <i>(write the MS4 Area here)</i> , go to 5. If No, document in SWDR, go to 5.
5.	Is the project directly or indirectly discharging to surface waters?			If Yes, continue to 6. If No, go to 10.
6.	Is it a new facility or major reconstruction?			If Yes, continue to 8. If No, go to 7.
7.	Will there be a change in line/grade or hydraulic capacity?			If Yes, continue to 8. If No, go to 10.
8.	Does the project result in a <u>net increase of one acre or more of new impervious surface</u> ?			If Yes, continue to 9. If No, go to 10. _____ <i>(Net Increase New Impervious Surface)</i>
9.	Project is required to consider approved Treatment BMPs.			See Sections 2.4 and either Section 5.5 or 6.5 for BMP Evaluation and Selection Process. Complete Checklist T-1 in this Appendix E.
10.	Project is not required to consider Treatment BMPs. _____(Dist./Reg. Design SW Coord. initials) _____(project engineer initials) _____(Date)			Document for Project Files by completing this form, and attaching it to the SWDR.

See Figure 4-1. Project Evaluation Process for Consideration of Permanent Treatment BMPs

## SECTION FOUR

## Permanent Treatment Consideration

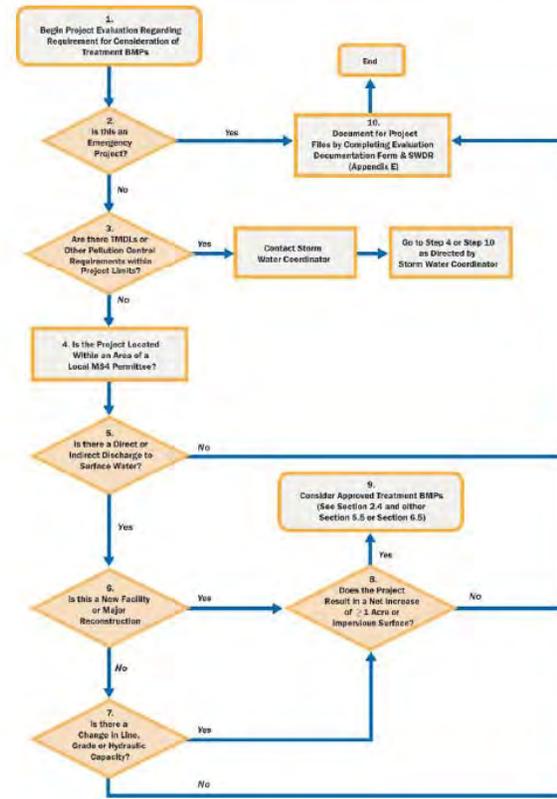


Figure 4-1. Project Evaluation Process for Consideration of Permanent Treatment BMPs

# The EDF – Steps 1 and 2

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION FOR EVALUATION
1.	Begin Project Evaluation regarding requirement for consideration of Treatment BMPs	✓		See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs. Go to 2
2.	Is this an emergency project?			If <b>Yes</b> , go to 10. If <b>No</b> , continue to 3.

Emergency projects under a Director's Order restore public health, safety, and property.

Emergency projects done under force account do not require a SWDR!!!!!!

# The EDF – Step 3

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION FOR EVALUATION
3.	Have TMDLs or other Pollution Control Requirements been established for surface waters within the project limits? Information provided in the water quality assessment or equivalent document.			If <b>Yes</b> , contact the District/Regional NPDES Coordinator to discuss the Department's obligations under the TMDL (if Applicable) or Pollution Control Requirements, go to 9 or 4.  _____ (Dist./Reg. SW Coordinator initials) If <b>No</b> , continue to 4.

Hey there!  
Do I have any pollution control requirements?

I'm glad you asked. Let's check the ED.



# The EDF – Steps 4 and 5

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION FOR EVALUATION
4.	Is the project located within an area of a local MS4 Permittee?			If <b>Yes</b> . ( <i>write the MS4 Area here</i> ), go to 5. If <b>No</b> , document in SWDR go to 5.
5.	Is the project directly or indirectly discharging to surface waters?			If <b>Yes</b> , continue to 6. If <b>No</b> , go to 10.

What is an “MS4 Permittee”?

MS4 – Municipal Separate Storm Sewer System - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains): (i) owned or operated by a state, city, town, borough, or county.

Where do I find this info.? NPDES Coordinator, SWRCB website, ....

# The EDF – Steps 4 and 5

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION FOR EVALUATION
4.	Is the project located within an area of a local MS4 Permittee?			If <b>Yes</b> , <i>(write the MS4 Area here)</i> , go to 5. If <b>No</b> , document in SWDR go to 5.
5.	Is the project directly or indirectly discharging to surface waters?			If <b>Yes</b> , continue to 6. If <b>No</b> , go to 10.

What is the difference between “direct” and “indirect” discharge?

Direct - a discharge of surface runoff directly to the surface water body without first flowing through an MS4.

Indirect - a discharge of surface runoff to the surface water body through an MS4, unlisted tributary to the surface water, or a stormwater discharge that otherwise reaches the water body.

# The EDF – Step 6

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION FOR EVALUATION
6.	Is it a new facility or major reconstruction?			If Yes, continue to 8. If No, go to 7.

New Facility and Major Reconstruction- the development of new routes, route alignments, and route upgrades. New construction activity does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility, nor does it include emergency construction activities required to protect public health and safety.

# The EDF – Step 7

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION FOR EVALUATION
7.	Will there be a change in line/grade or hydraulic capacity?			If Yes, continue to 8. If No, go to 10.

The following changes would be considered a change in line, grade or hydraulic capacity:

- A change in the time of concentration, peak flow, volume or velocity of stormwater discharges;
- Creating new drainage ditches, swales, culverts, or storm drain facilities; or
- Changing historic drainage patterns.

# The EDF – Step 7 – Quick Exercise

Is there a potential change(\*) in line, grade, or hydraulic capacity?

Description	Change	No Change
Placement of a culvert lining		X
Change of pipe diameter size from 12" to 36"	?	
Re-grade ditch to remove accumulated sediment		X
Overlay of a roadway surface		X
Placement of 4 maintenance vehicle pullouts.	?	
Median paving	X	
Install traffic signals, control box, and loop detectors		X

(\*) Note: Documented in the drainage report.

# The EDF – Steps 8, 9, and 10

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION FOR EVALUATION
8.	Does the project result in a <u>net increase of one acre or more of new impervious surface?</u>			If <b>Yes</b> , continue to 9. If <b>No</b> , go to 10.  <u>20 Ac</u> (Net Increase New Impervious Surface)
9.	Project is required to consider approved Treatment BMPs.	<b>X</b>		See Sections 2.4 and either Section 5.5 or 6.5 for BMP Evaluation and Selection Process. Complete Checklist T-1 in this Appendix E.
10.	Project is not required to consider Treatment BMPs.  _____(Dist./Reg. Design SW Coord. Initials)  _____(Project Engineer Initials)  _____(Date)			Document for Project Files by completing this form, and attaching it to the SWDR.

Q8. – Yes – Go to Step 9 - Prepare Long Form SWDR and T-1 checklist.

# The EDF – Steps 8, 9, and 10

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION FOR EVALUATION
8.	Does the project result in a <u>net increase of one acre or more of new impervious surface</u> ?			If <b>Yes</b> , continue to 9. If <b>No</b> , go to 10.  <i>0.11 ac. (Net Increase New Impervious Surface)</i>
9.	Project is required to consider approved Treatment BMPs.			See Sections 2.4 and either Section 5.5 or 6.5 for BMP Evaluation and Selection Process. Complete Checklist T-1 in this Appendix E.
10.	Project is not required to consider Treatment BMPs.  <i>NY</i> (Dist./Reg. Design SW Coord. <i>11/11/11</i> ) <i>BR</i> (Project Engineer Initials) <i>___/20/11</i> (Date)		<b>X</b>	Document for Project Files by completing this form, and attaching it to the SWDR.

Q8. – No – Go to Step 10 - Document in SWDR and attach EDF



# Long Form SWDR

Cover Sheet

May 6, 2011

# Long Form Cover Sheet

## MAIN IDEAS FOR THIS SECTION

### WHAT'S NEW:

- Technical Data Report 30 days prior to RTL
- CGP Risk Level Determination
- Rainfall Erosivity Waiver, if applicable

### WHAT CAN BE IMPROVED:

- Include signatures and stamp at PS&E
- Dates of NOC (NOI)
- Dates of Notification of ADL reuse

# Long Form Cover Sheet

## APPENDIX E

## Long Form - Storm Water Data Report



Dist-County-Route: \_\_\_\_\_  
Post Mile Limits: \_\_\_\_\_  
Project Type: \_\_\_\_\_  
Project ID (or EA): \_\_\_\_\_  
Program Identification: \_\_\_\_\_  
Phase:  PID  
 PA/ED  
 PS&E

Regional Water Quality Control Board(s): \_\_\_\_\_  
Is the Project required to consider Treatment BMPs? Yes  No   
If yes, can Treatment BMPs be incorporated into the project? Yes  No   
If No, a Technical Data Report must be submitted to the RWQCB  
at least 30 days prior to the projects RTL date. List RTL Date: \_\_\_\_\_

Total Distributed Soil Area: \_\_\_\_\_ Risk Level: \_\_\_\_\_  
Estimated Construction Start Date: \_\_\_\_\_ Construction Completion Date: \_\_\_\_\_  
Notification of Construction (NOC) Date to be submitted: \_\_\_\_\_

Erosivity Waiver Yes  Date: \_\_\_\_\_ No   
Notification of ADL reuse (if Yes, provide date) Yes  Date: \_\_\_\_\_ No   
Separate Dewatering Permit (if yes, permit number) Yes  Permit # \_\_\_\_\_ No

*This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.*

\_\_\_\_\_  
[Name], Registered Project Engineer/Landscape Architect Date

*I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:*

\_\_\_\_\_  
[Name], Project Manager Date

\_\_\_\_\_  
[Name], Designated Maintenance Representative Date

\_\_\_\_\_  
[Name], Designated Landscape Architect Representative Date

(Stamp Required for PS&E only) \_\_\_\_\_  
[Name], District/Regional Design SW Coordinator or Designee Date

Project Info

Signatures

# Long Form Cover Sheet

Is the Project required to consider Treatment BMPs?

Yes

No

If yes, can Treatment BMPs be incorporated into the project?

Yes

No

If No, a Technical Data Report must be submitted to the RWQCB  
at least 30 days prior to the projects RTL date.

List RTL Date: 01/22/11

## What is a **TECHNICAL DATA REPORT?**

### Includes:

- Explanation of why TBMPs were not incorporated
- Cover letter
- Relevant technical info from Drainage Report & SWDR without cost data

### Coordinated with:

- PE
- SW Coordinator
- NPDES Coordinator

### Submitted to RWQCB:

- 30 days before Ready to List (RTL) date
- NPDES discretion



# Long Form Cover Sheet

Is the Project required to consider Treatment BMPs?

Yes

No

If yes, can Treatment BMPs be incorporated into the project?

Yes

No

If No, a Technical Data Report must be submitted to the RWQCB  
at least 30 days prior to the projects RTL date.

List RTL Date: \_\_\_\_\_

Total Distributed Soil Area: 20 ac Risk Level: 1

Estimated: Construction Start Date: 3/1/12 Construction Completion Date: 3/1/13

Notification of Construction (NOC) Date to be submitted: 2/1/2012 (usually 1 mo. prior to start)



# Long Form Cover Sheet

Erosivity Waiver

Yes

Date: \_\_\_\_\_ No

Notification of ADL reuse (if Yes, provide date)

Yes

Date: TBD (unless PS&E) No

Separate Dewatering Permit (if yes, permit number)

Yes

Permit # TBD (unless PS&E) No



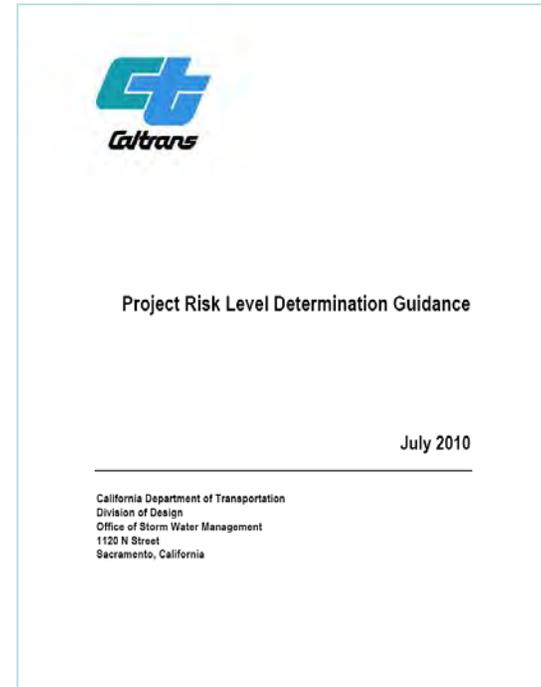
# Long Form Cover Sheet

## CGP Risk Level Determination

- New Construction General Permit
- Risk Levels 1 – 3

Higher Risk Level = Increased Requirements

- Risk Level is calculated in two Parts:
  - 1) Project Sediment Risk
  - 2) Receiving Water Risk



		<u>Sediment Risk</u>		
		Low	Medium	High
<u>Receiving Water Risk</u>	Low	Level 1	Level 2	
	High	Level 2		Level 3

# Long Form Cover Sheet

## Small Construction Rainfall Erosivity Waiver

- Small projects can be exempt from CGP coverage
  - 1 - 5 acres
  - Rainfall erosivity factor (R)  $\leq 5$
- “R” calculated in RUSLE

Erosivity Waiver Guide and Form:

<http://www.dot.ca.gov/hq/oppd/stormwtr/>

EPA R-factor calculator:

<http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm>



# Long Form Cover Sheet

**APPENDIX E** *Long Form - Storm Water Data Report*



Dist-County-Route: \_\_\_\_\_  
 Post Mile Limits: \_\_\_\_\_  
 Project Type: \_\_\_\_\_  
 Project ID (or EA): \_\_\_\_\_  
 Program Identification: \_\_\_\_\_

Phase:  PID  
 PA/ED  
 PS&E

Regional Water Quality Control Board(s): \_\_\_\_\_

Is the Project required to consider Treatment BMPs? Yes  No   
 If yes, can Treatment BMPs be incorporated into the project? Yes  No   
 If No, a Technical Data Report must be submitted to the RWQCB at least 30 days prior to the projects RTL date. List RTL Date: \_\_\_\_\_

Total Distributed Soil Area: \_\_\_\_\_ Risk Level: \_\_\_\_\_  
 Estimated: Construction Start Date: \_\_\_\_\_ Construction Completion Date: \_\_\_\_\_  
 Notification of Construction (NOC) Date to be submitted: \_\_\_\_\_

Erosivity Waiver Yes  Date: \_\_\_\_\_ No   
 Notification of ADL reuse (if Yes, provide date) Yes  Date: \_\_\_\_\_ No   
 Separate Dewatering Permit (if yes, permit number) Yes  Permit # \_\_\_\_\_ No

*This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.*

\_\_\_\_\_  
 [Name], Registered Project Engineer/Landscape Architect Date

*I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:*

\_\_\_\_\_  
 [Name], Project Manager Date

\_\_\_\_\_  
 [Name], Designated Maintenance Representative Date

\_\_\_\_\_  
 [Name], Designated Landscape Architect Representative Date

[Stamp Required for PS&E only] \_\_\_\_\_  
 [Name], District/Regional Design SW Coordinator or Designee Date

 Caltrans Storm Water Quality Handbooks  
 Project Planning and Design Guide July 2010 E-5

WHO IS  
SIGNING?

AND WHY?

1. Registered PE or LA
2. Project Manager
3. Maintenance
4. Landscape Architect
5. SW Coordinator

# Long Form Cover Sheet

## Maintenance

PE should include Maintenance early in the design of TBMPs:

- Coordinate early with the Maintenance supervisor and other personnel
- Maintenance access
- Safety issues
- Slopes steeper than 2:1



Earthen AVSF with Maintenance Access

# Long Form Cover Sheet

## Landscape Architecture

PE should include LA early in design to:

- Identify steep/erosive slopes;
- Assist with erosion control strategy; and .....
- Approve erosion control plans for slopes steeper than 4:1



# Long Form Cover Sheet

## District/Region Storm Water Coordinator

PE should work with SW  
Coordinator on:

- Permitting
- Non-standard BMP designs
- Other water quality issues





# Long Form SWDR

## Section 1. Project Description

May 6, 2011

# Long Form Section 1

## MAIN IDEAS FOR THIS SECTION

### WHAT'S NEW:

- Nothing new in this section!

### WHAT CAN BE IMPROVED:

- Don't forget to include existing and proposed impervious area
- Clearly describe if portions of the project are considered "routine maintenance"

# Long Form Section 1

## SECTION 1: PROJECT DESCRIPTION

1. Type of project and major engineering features
2. Total DSA and how it was calculated
3. Existing and proposed impervious surface
4. Urban MS4 areas in project limits

Commonly  
Neglected ▶



# Acceptable SWDRs (Project Descriptions)?

## HANDOUT #2



# Long Form Section 1 - Narrative

## Acceptable for SWDR?

### 1. Project Description

Interstate 100 is a four-lane divided freeway traversing relatively flat terrain between State Route 2 (SR-2) to Marble Avenue in the City of San Marcos/County of San Marcos. The existing facility consists of two 3.6-meter-wide Portland cement concrete (PCC) paved lanes in both directions with 3.0-meter-wide asphalt concrete (AC) paved outside shoulders, 0.5-meter-wide AC paved inside shoulders, and a varying width unpaved median. As part of the State Route 2, Segment 11 project (EA#123456), two mixed flow lanes and one auxiliary lane will be constructed in both directions. The proposed SR-2 Segment 11 project is scheduled to be completed prior to construction beginning on this project.

This project includes widening of the existing Interstate 100 mainline between 580 meters north of Smith Street to SR-2 in both directions; replacement of the existing overcrossing bridges at Marble Avenue and Highland Avenue; modifications of existing interchange ramps at Highland Avenue and Marble Avenue; and a new traffic signal at Marble Avenue and ramp terminus. A High Occupancy Vehicle (HOV) lane as well as an additional mixed flow lane will be added in both the northbound and southbound directions. The existing northbound exit ramp to Peters Avenue will also be reconfigured.

The total construction cost for this project is estimated to be approximately \$40.3 million. Construction is expected to begin in early 2011.

The project is completely within an urbanized built up area and is in an MS4 permit area.

- 
- DSA?
  - Existing Impervious?
  - Proposed Impervious?

- 
- Cost?
  - MS4 Name?

# Long Form Section 1 – Narrative – PID

## 1. Project Description

The California Department of Transportation (Caltrans), in cooperation with the Santa Clara Valley Transportation Authority (VTA), proposes to construct improvements to a 7.6-mile segment of United States Highway 101 (US 101) that is located in southern Santa Clara County/northern San Benito County. The primary improvements consist of the following:

- Widen and upgrade US 101 to a six-lane freeway between the Monterey Road interchange in Gilroy and the SR 129 interchange in northern San Benito County.
- Reconstruct the US 101/SR 25 interchange.
- Construct an auxiliary lane in each direction on US 101 between the Monterey Road and SR 25 interchanges.
- Extend Santa Teresa Boulevard approximately 0.5 miles from Castro Valley Road to the new US 101/SR 25 interchange.
- Construct improvements at the southbound US 101 off-ramp to SR 129.
- Construct frontage roads, as needed, to replace existing access to US 101 from adjacent properties.
- Grade-separate the Union Pacific Railroad crossing on SR 25 west of Bloom Avenue.
- Construct bicycle facilities, as needed, to replace access that is lost when US 101 is upgraded to a freeway and to improve bicycle access in the project area.

The proposed project includes the reconstruction of the existing US 101/SR 25 interchange. There are two design options under consideration for this component of the project:

Design Option A will reconstruct the US 101/SR 25 interchange at a location approximately 0.2 miles north of the existing interchange. The interchange will include a new bridge to convey SR 25 over US 101. It will also include ramps to allow all traffic movements between US 101 and SR 25. The proposed work at the reconstructed US 101/SR 25 interchange will include the realignment of SR 25 to a location just east of the UPRR crossing, at which point it will either transition to the existing SR 25 or tie into an upgraded four-lane SR 25.

Design Option B will reconstruct the US 101/SR 25 interchange the existing interchange's location. The interchange will include a new bridge to convey SR 25 over US 101. It will also include ramps to allow all traffic movements between US 101 and SR 25. The proposed work at the reconstructed US 101/SR 25 interchange will include a minor realignment of SR 25 to a location just east of the UPRR crossing, at which point it will either transition to the existing SR 25 or will into an upgraded four-lane SR 25.



- Type of project
- Location
- Major engineering features

# Long Form Section 1 – Narrative – PID

## Disturbed Soil Area and Net Additional Impervious Area

The existing impervious area for this project is estimated to be 84.9 acres. Table 1 and Table 2 show the disturbed soil area (DSA) and net added impervious area (AIA) for the project by design option and county.

**Table 1. Project DSA**

Design Option	DSA (ac)		
	Santa Clara	San Benito	Total
A	325.6	106.2	431.8
B	305.5		411.7

**Table 2. Project AIA**

Design Option	Net AIA (ac)		
	Santa Clara	San Benito	Total
A	62.5	13.0	75.5
B	60.6		73.6

- 
- DSA and net added impervious area by alternative

The DSA was calculated by subtracting the overlay impervious area from the proposed total construction area, including staging areas. This includes any soil that will be exposed; including soil beneath the existing pavement - also to be removed.

There is approximately 60 acres of existing impervious area. The net additional impervious area was calculated by subtracting the total existing impervious area intended to be removed from the total new impervious area.

From post mile (PM) 3.7 to PM 5.0 along US 101 in Santa Clara County, the project is within the combined City of Gilroy, City of Morgan Hill and County of Santa Clara Phase II Municipal Separate Storm Sewer System (MS4). All other areas within the project are not within an MS4.

- 
- Existing Impervious
  - MS4 areas

# Long Form Section 1 - Narrative – PS&E

## 1. Project Description

The California Department of Transportation (Caltrans), in cooperation with the Santa Clara Valley Transportation Authority (VTA), proposes to construct improvements to a 7.6-mile segment of United States Highway 101 (US 101) that is located in southern Santa Clara County/northern San Benito County. The primary improvements consist of the following:

- Widen and upgrade US 101 to a six-lane freeway between the Monterey Road interchange in Gilroy and the SR 129 interchange in northern San Benito County.
- Reconstruct the US 101/SR 25 interchange.
- Construct an auxiliary lane in each direction on US 101 between the Monterey Road and SR 25 interchanges.
- Extend Santa Teresa Boulevard approximately 0.5 miles from Castro Valley Road to the new US 101/SR 25 interchange.
- Construct improvements at the southbound US 101 off-ramp to SR 129.
- Construct frontage roads, as needed, to replace existing access to US 101 from adjacent properties.
- Grade-separate the Union Pacific Railroad crossing on SR 25 west of Bloom Avenue.
- Construct bicycle facilities, as needed, to replace access that is lost when US 101 is upgraded to a freeway and to improve bicycle access in the project area.

The project reconstructs the US 101/SR 25 interchange at approximately the same location as the existing interchange. The interchange includes a new bridge to convey SR 25 over US 101. It also includes ramps to allow all traffic movements between US 101 and SR 25. The proposed work at the reconstructed US 101/SR 25 interchange includes a minor realignment of SR 25 to a location just east of the UPRR crossing, at which point it either transitions to the existing SR 25 or ties into an upgraded four-lane SR 25.

### Disturbed Soil Area and Net Additional Impervious Area

The total disturbed soil area (DSA) is 411.7 acres, with 305.5 acres within Santa Clara and 106.2 within San Benito County. The DSA was calculated by subtracting the overlay impervious area from the proposed total construction area, including staging areas. This includes any soil that is exposed through the removal of pavement. There is approximately 60 acres of existing impervious area. The net additional impervious area (AIA) is 73.6 acres, with 60.6 within Santa Clara County and 13.0 within San Benito County. The AIA was calculated by subtracting the total existing impervious area intended to be removed from the total new impervious area. From post mile (PM) 3.7 to PM 5.0 along US 101 in Santa Clara County, the project is within the combined City of Gilroy, City of Morgan Hill and County of Santa Clara Phase II Municipal Separate Storm Sewer System (MS4). All other areas within the project are not within an MS4.

- 
- Type of project
  - Location
  - Major engineering features

- 
- DSA
  - Existing Impervious
  - Net Added Impervious Area
  - MS4 area



# Long Form SWDR

Section 2. Site Data and Storm Water Quality Design Issues

May 6, 2011

# Long Form Section 2

## MAIN IDEAS FOR THIS SECTION

### WHAT'S NEW:

- Nothing new in this section!

### WHAT CAN BE IMPROVED:

- Don't forget to include if 401 Certification Required
- Develop drainage concepts early
- Receiving water body information
- Measures for reducing or avoiding SW impacts
- Drinking water/recharge facilities
- Depths to groundwater
- Soil types/classifications

# Long Form Section 2

## Section 2: Based on Checklists SW-1, SW-2, and SW-3

- Checklists started in PID phase
- Updated with more info in later phases

### Who should you coordinate with to identify SW Issues?

- SW Coordinator
- Landscape Architecture
- Maintenance
- Hydraulics
- Construction
- Environmental



# Long Form Section 2

## Required Information

- Receiving Water Bodies
  - HU, HA, and HSA for each
  - Distance from project outfalls
  - 303(d) listing
  - TMDLs
- 401 certification (as applicable)
- Drinking water reservoirs
- Recharge facilities
- Measures for avoiding/reducing potential SW impacts



# Long Form Section 2

## Project Design Considerations

- Climate
- Soils
- Topography
- Local agency
- Problem slopes
- RWQCB concerns
- Right-of-way requirements
- Right-of-way costs
- Existing Treatment BMPs
- Groundwater info
- ADL reuse



# Long Form Section 2

## 2. Site Data and Storm Water Quality Design Issues (refer to Checklists SW-1, SW-2, and SW-3)

*Project Engineer (PE) should confer with District/Regional Storm Water Coordinator, Landscape Architecture, Maintenance, Hydraulics, Construction and Environmental Units to define design issues. Provide a narrative that contains pertinent information from source documents identified on SW-1 (e.g. Preliminary Geotechnical Report [PGR]) and a summary of the answers to the questions in SW-2 and SW-3. Use the bullets listed below as examples of information that should be described in the narrative.*

*Note, not all of the information listed is available at each phase of a project (document status of availability, as appropriate). Information to be included will depend on the nature of the project and the site conditions.*

- Identify Receiving Water Bodies (including the Hydrologic Area or sub-area [name and/or number]) and distance from the project's outfalls
- Identify if any of the Receiving Water Bodies are on the 303(d) list / describe Pollutants of Concern
- Identify if 401 certification is required
- Identify any Drinking Water Reservoirs and/or Recharge Facilities within project limit

# Long Form Section 2: Checklist SW-1

## APPENDIX E

### Storm Water Checklist SW-1

#### Checklist SW-1, Site Data Sources

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_ District-Co-Route: \_\_\_\_\_

PM : \_\_\_\_\_ Project ID (or EA): \_\_\_\_\_ RWQCB: \_\_\_\_\_

Information for the following data categories should be obtained, reviewed and referenced as necessary throughout the project planning phase. Collect any available documents pertaining to the category and list them and reference your data source. For specific examples of documents within these categories, refer to Section 5.5 of this document. Example categories have been listed below; add additional categories, as needed. Summarize pertinent information in Section 2 of the SWDR.

DATA CATEGORY/SOURCES	Date
Topographic	
•	
•	
•	
Hydraulic	
•	
•	
•	
Soils	
•	
•	
•	
Climatic	
•	
•	
•	
Water Quality	
•	
•	
•	
Other Data Categories	
•	
•	
•	

## Site Data Sources

- Topographic
- Hydraulic
- Soils
- Climatic
- Water Quality
- Other Data Categories

# Long Form Section 2: Checklist SW-1

DATA CATEGORY/SOURCES	Date
<b>Topographic</b>	
<ul style="list-style-type: none"> <li>Scott Miles and Charles Goudey. <i>Ecological Subregions of California</i>.</li> </ul>	May 1998
<ul style="list-style-type: none"> <li>USGS. Topographic maps.</li> </ul>	1980
<b>Soils</b>	
<ul style="list-style-type: none"> <li>US Dept. of Agriculture (USDA), Natural Resources Conservation Service (NRCS). Web Soil Survey. <a href="http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx">http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx</a></li> </ul>	Accessed December 4, 2009
<b>Climatic</b>	
<ul style="list-style-type: none"> <li>Federal Emergency Management Agency (FEMA). <i>Sonoma County Flood Insurance Study</i></li> </ul>	1997
<b>Water Quality</b>	
<ul style="list-style-type: none"> <li>California State University (CSU) at Sacramento, Office of Water Programs. Water Quality Planning Tool. <a href="http://stormwater.water-programs.com/">http://stormwater.water-programs.com/</a></li> </ul>	Accessed May 22, 2009
<ul style="list-style-type: none"> <li>San Francisco Bay Regional Water Quality Control Board. <i>Basin Plan</i>.</li> </ul>	2006

# Long Form Section 2: Checklist SW-1

## PID, PA/ED and PS&E

### Source Documents

• Technical Studies (or drafts) available ,  
such as:

- Drainage Report or Concept
- Preliminary Environmental Assessment Report (PEAR)
- Geotechnical Report
- Water Quality Report
- Preliminary Site Investigation
- Draft EIR/EIS



# Long Form Section 2: Checklist SW-2

## APPENDIX E

### Storm Water Checklist SW-2

#### Checklist SW-2, Storm Water Quality Issues Summary

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_ District-Co-Route: \_\_\_\_\_

PM: \_\_\_\_\_ Project ID (or EA): \_\_\_\_\_ RWQCB: \_\_\_\_\_

The following questions provide a guide to collecting critical information relevant to project stormwater quality issues. Complete responses to applicable questions, consulting other Caltrans functional units (Environmental, Landscape Architecture, Maintenance, etc.) and the District/Regional Storm Water Coordinator as necessary. Summarize pertinent responses in Section 2 of the SWDR.

1. Determine the receiving waters that may be affected by the project throughout the project life cycle (i.e., construction, maintenance and operation).  Complete  NA
2. For the project limits, list the 303(d) impaired receiving water bodies and their constituents of concern.  Complete  NA
3. Determine if there are any municipal or domestic water supply reservoirs or groundwater percolation facilities within the project limits. Consider appropriate spill contamination and spill prevention control measures for these new areas.  Complete  NA
4. Determine the RWQCB special requirements, including TMDLs, effluent limits, etc.  Complete  NA
5. Determine regulatory agencies seasonal construction and construction exclusion dates or restrictions required by federal, state, or local agencies.  Complete  NA
6. Determine if a 401 certification will be required.  Complete  NA
7. List rainy season dates.  Complete  NA
8. Determine the general climate of the project area. Identify annual rainfall and rainfall intensity curves.  Complete  NA
9. If considering Treatment BMPs, determine the soil classification, permeability, erodibility, and depth to groundwater.  Complete  NA
10. Determine contaminated soils within the project area.  Complete  NA
11. Determine the total disturbed soil area of the project.  Complete  NA
12. Describe the topography of the project site.  Complete  NA
13. List any areas outside of the Caltrans right-of-way that will be included in the project (e.g. contractor's staging yard, work from barges, easements for staging, etc.).  Complete  NA
14. Determine if additional right-of-way acquisition or easements and right-of-entry will be required for design, construction and maintenance of BMPs. If so, how much?  Complete  NA
15. Determine if a right-of-way certification is required.  Complete  NA
16. Determine the estimated unit costs for right-of-way should it be needed for Treatment BMPs, stabilized conveyance systems, lay-back slopes, or interception ditches.  Complete  NA
17. Determine if project area has any slope stabilization concerns.  Complete  NA
18. Describe the local land use within the project area and adjacent areas.  Complete  NA
19. Evaluate the presence of dry weather flow.  Complete  NA

## Storm Water Quality Issues

- Existing background info
- Existing stormwater quality issues
- Future requirements
- Potential sources of pollution

Where do we  
find this  
information?

# Long Form Section 2: Checklist SW-2

**Water Quality Planning Tool**

This Water Quality Planning Tool was designed for Caltrans to use applicable water quality standards while developing strategies for achieving regulatory compliance with storm water permits.

**Using the tool**

The information on water quality is divided in to hydrologic sub-areas (HSAs). To find a HSA use the HSA name or post-mile of the road in an HSA.

[HSA name or number](#)

[Post-Miles](#)

**For more information contact**

Division of Environmental Analysis, Stormwater Unit  
California Department of Transportation  
P.O. Box 942874, MS-27  
Sacramento, CA 94274-0001  
Email: [Division of Environmental Analysis, Stormwater Unit](#)

<http://www.owp.csus.edu/research/stormwater/tools/wqpt.htm>

## 1. RECEIVING WATERS

## 2. 303(d) LISTINGS and TMDLs

### CSU Water Quality Planning Tool

Search by Post Mile to find:

- HU, HA, and HSA
- TMDLs
- 303d listings

<http://www.water-programs.com/wqpt.htm>

# Long Form Section 2

3. DRINKING WATER FACILITIES
4. RWQCB REQUIREMENTS
5. OTHER REGULATORY REQUIREMENTS

- District Work Plans
- Ask SW Coordinator
- Environmental Document



# Long Form Section 2: Checklist SW-2

## 6. 401 CERTIFICATION

- See environmental document and environmental coordinator
- Environmental group responsible for obtaining 401 Cert from RWQCB



# Long Form Section 2: Checklist SW-2

## 9. SOIL DATA:

### Permeability, Erodibility, and Depth to Groundwater

#### PID & PA/ED:

- Use Web Soil Survey, USDA, GIS, District 8 website, or more accurate data if available

#### PS&E:

- Use Geotech Report/Information



#### Hydrologic Soil Groups (HSGs):

<b>Group A</b>	High infiltration rate, low runoff potential. Deep, well-drained sands.
<b>Group B</b>	Moderate infiltration rate.
<b>Group C</b>	Slow infiltration rate. Moderately fine texture.
<b>Group D</b>	Very slow infiltration rate, high runoff potential. Clay soils, high water table, or shallow soils over nearly impervious material.

# Long Form Section 2: Checklist SW-3

## APPENDIX E

## Storm Water Checklist SW-3

### Checklist SW-3, Measures for Avoiding or Reducing Potential Storm Water Impacts

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_ District-Co-Route: \_\_\_\_\_

PM : \_\_\_\_\_ Project ID (or EA): \_\_\_\_\_ RWQCB: \_\_\_\_\_

The PE must confer with other functional units, such as Landscape Architecture, Hydraulics, Environmental, Materials, Construction and Maintenance, as needed to assess these issues. Summarize pertinent responses in Section 2 of the SWDR.

## How can you as a PE design a project to avoid SW Measures for Avoiding or Reducing SW Impacts?

- Relocate or realign project
- Relocate or redesign facilities
- Design slopes to reduce
- BMP maintenance
- Scheduling construction work to avoid rain events and install BMPs early



# Long Form SWDR

Section 3. Regional Water Quality Control Board Agreements

May 6, 2011

# Long Form Section 3

## MAIN IDEAS FOR THIS SECTION

### WHAT'S NEW:

- Nothing new in this section!

### WHAT CAN BE IMPROVED:

- Describe only special permit conditions or non-standard features

# Long Form Section 3

## SECTION 3: RWQCB AGREEMENTS



1. Negotiated understandings and special conditions:
  - 401 Certification
  - NPDES non-standard conditions
  - Waste discharge requirements (WDRs)
  - Rainfall erosivity waivers
  - Other permits/certifications (404, 1602, CCC, ASBS)
2. Meeting dates and participants
3. Consult with SW Coord. throughout project delivery
4. District/Regional NPDES Coord. to provide information and language.

# Long Form Section 3

## At PS&E...

- Document permit process compliance
  - List all key negotiated understandings or agreements, meetings, correspondences, submittals to RWQCB
- 401 Certification requirements
- Watershed treatment approaches
- Notification of ADL Reuse – 30 days prior to advertisement



# Long Form Section 3 – Narrative – PAED

## Acceptable?

### 3. Regional Water Quality Control Board Agreements

- This project conforms to NPDES Permits No. CAS 000002 and No. CAS 000003. The Notification of Construction (NOC) will be submitted to LARWQCB 30 days before the beginning of the construction.

Poor.

### 3. Regional Water Quality Control Board Agreements

A meeting was held by District NPDES Stormwater Coordinator, Nathanael Greene, on 9/1/10 with the Los Angeles RWQCB. There are no negotiated understandings or agreements between Caltrans and the RWQCB for this project.

The Notification of Construction (NOC) will be submitted to the Los Angeles RWQCB 30-days prior to the start of construction.

Good!

# Long Form Section 3 – Narrative – PS&E

## 3. Regional Water Quality Control Board Agreements

- 404, 401 and 1601 permits are required since the bridges will be widened. NPDES and 404 coordination will also be required. 404, 401, and 1601 permit requirements are unknown at this time.

Poor.

## 3. Regional Water Quality Control Board Agreements

The North Coast RWQCB requires all projects that increase impervious surface area to evaluate the feasibility of post construction Treatment BMPs as a condition of the 401 Water Quality Certification process. It has been determined that bioswales are feasible and will be incorporated into the project to meet the Board requirement.

A meeting was held by District NPDES Stormwater Coordinator, Nathanael Greene on 8/31/10 with the North Coast RWQCB. The project requires the following permits: Section 404 Permit from U.S. Army Corps of Engineers (Clean Water Act), 1602 Streambed Alteration Agreement from California Department of Fish and Game, and Water Quality Certification, Section 401 from the RWQCB. The required permit applications have been submitted.

Good!



# Long Form SWDR

Permanent BMPs

May 6, 2011

# Permanent BMP Strategy

## 2 Types of Permanent BMPs:

- **Design Pollution Prevention (DPP) BMPs**  
Permanent soil stabilization and concentrated flow controls
- **Treatment BMPs**  
Permanent treatment devices and facilities



This bioswale is a treatment BMP.

It is also a DPP BMP since it has a check dam to address downstream effects.



# Long Form SWDR

Section 4. Design Pollution Prevention BMPs

May 6, 2011

# Long Form Section 4

## MAIN IDEAS FOR THIS SECTION

### WHAT'S NEW:

- Take credit for QUALITATIVE benefits of Low Impact Development (LID) measures
- Provide QUANTITATIVE evidence of downstream effects
- Greater emphasis on infiltration

### WHAT CAN BE IMPROVED:

- Describe how new paved areas are negligible
- Describe how existing vegetation will be preserved
- Summarize likely BMPs at PID and PA/ED
- Specify quantities, types, and general locations for all BMPs and storm drain systems

# Long Form Section 4

## Design Pollution Prevention (DPP) BMPs:

1. Permanent BMPs
2. Pollution source control fixtures
3. Design goals
  - Prevent erosion, stabilize streams, and encourage LID

Many of these are LID features!



Vegetated Swale



Slope revegetation



Energy dissipators

# What is LID?

## Low-Impact Development (LID) is:

1. A stormwater management strategy aimed at maintaining or restoring the natural hydrologic functions of a site.
2. A subset of sustainable infrastructure, which emphasizes resource conservation to reduce impacts on the environment.
3. Integrated system of decentralized, small-scale control measures.
  - Encourages infiltration, filtration, storage, evaporation, and detention,
  - Reduces volume and rate of stormwater while reducing pollutants in discharges.



Caltrans bioswale –  
Implementation of LID  
since the beginning.

# What changed in Sect. 4?

## New Emphasis on Qualitative Benefits:

- Credit for LID measures that mimic natural drainage and reduce pollutants
- Special emphasis on infiltration even where treatment is not required

**Old approach:** End-of-pipe treatment, often relying on hardened infrastructure for conveyance (pipes, concrete ditches, curbs, etc.)

**New approach (LID):** Decentralized, small-scale measures controlling storm water where it falls, using on-site infiltration, detention, etc.

What are some other examples of LID for transportation projects?

# Long Form Section 4

## Matching Pre- and Post-Construction Flows: DPP Methods

### Minimize Impervious Surfaces

To reduce the volume of runoff

### Manage Volume and Flow Rates

To avoid downstream erosion

### Stabilize Disturbed Soil Areas

To prevent erosion

### Maximize Vegetated Surfaces

To prevent erosion, **promote infiltration**, and remove SW pollutants



CALTRANS ENCOURAGES INFILTRATION

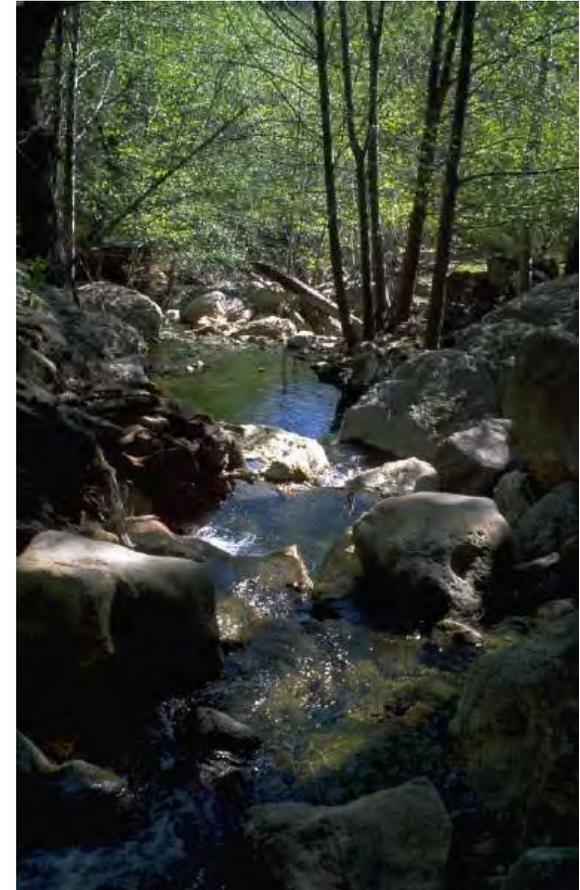
# Long Form Section 4

## Negligible Downstream Effects

Projects with negligible downstream effects are exempt from additional flow and volume control BMPs.

Determination can be based on:

1. Added impervious area is very small compared to watershed area of receiving water body
2. Discharge to a lined channel
3. Drainage report, if available



# Long Form Section 4

## SECTION 4:

### Summarize Checklist DPP-1, Parts 1-5

Part 1: Consideration of the 4 types of DPP

Part 2: Downstream effects of increased flow

Existing vs. post-construction conditions

Part 3: Slope/surface protection

Cut-fill requirements

Slope conditions

Part 4: Concentrated flow conveyance systems

Part 5: Preservation of Existing Vegetation

Areas of clearing and for preservation

# Long Form Section 4: Checklist DPP-1, Part 1

## APPENDIX E

### Checklist DPP-1, Part 1

<b>Design Pollution Prevention BMPs</b> <b>Checklist DPP-1, Part 1</b>		
Prepared by: _____	Date: _____	District-Co-Route: _____
PM: _____	Project ID (or EA): _____	RWQCB: _____

#### Consideration of Design Pollution Prevention BMPs

##### Consideration of Downstream Effects Related to Potentially Increased Flow [to streams or channels]

Will project increase velocity or volume of downstream flow?  Yes  No  NA

Will the project discharge to unlined channels?  Yes  No  NA

Will project increase potential sediment load of downstream flow?  Yes  No  NA

Will project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?  Yes  No  NA

If Yes was answered to any of the above questions, consider *Downstream Effects Related to Potentially Increased Flow*, complete the DPP-1, Part 2 checklist.

##### Slope/Surface Protection Systems

Will project create new slopes or modify existing slopes?  Yes  No  NA

If Yes was answered to the above question, consider *Slope/Surface Protection Systems*, complete the DPP-1, Part 3 checklist.

##### Concentrated Flow Conveyance Systems

Will the project create or modify ditches, dikes, berms, or swales?  Yes  No  NA

Will project create new slopes or modify existing slopes?  Yes  No  NA

Will it be necessary to direct or intercept surface runoff?  Yes  No  NA

Will cross drains be modified?  Yes  No  NA

If Yes was answered to any of the above questions, consider *Concentrated Flow Conveyance Systems*, complete the DPP-1, Part 4 checklist.

##### Preservation of Existing Vegetation

It is the goal of the Storm Water Program to maximize the protection of desirable existing vegetation to provide erosion and sediment control benefits on all projects.  Complete

Consider *Preservation of Existing Vegetation*, complete the DPP-1, Part 5 checklist.

## Downstream Effects:

Will the Project...

1. Increase velocity/volume of flow?
2. Discharge to unlined channels?
3. Increase potential sediment load?
4. Cause hydraulic changes to a stream that may affect downstream stability?

... if YES to ANY,  
use Checklist DPP-1, Part 2

# Reducing Downstream Effects



**PROBLEM:** Incised channel



**Soil modification:** To improve infiltration



**Increase pervious areas:** To reduce runoff



**Check dam:** Lengthen time of concentration

# Long Form Section 4: Checklist DPP-1, Part 1

## APPENDIX E

### Checklist DPP-1, Part 1

#### Design Pollution Prevention BMPs Checklist DPP-1, Part 1

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_ District-Co-Route: \_\_\_\_\_

PM : \_\_\_\_\_ Project ID (or EA): \_\_\_\_\_ RWQCB: \_\_\_\_\_

#### Consideration of Design Pollution Prevention BMPs

##### Consideration of Downstream Effects Related to Potentially Increased Flow [to streams or channels]

Will project increase velocity or volume of downstream flow?  Yes  No  NA

Will the project discharge to unlined channels?  Yes  No  NA

Will project increase potential sediment load of downstream flow?  Yes  No  NA

Will project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?  Yes  No  NA

If Yes was answered to any of the above questions, consider *Downstream Effects Related to Potentially Increased Flow*, complete the DPP-1, Part 2 checklist.

##### Slope/Surface Protection Systems

Yes  No  NA

If Yes was answered to the above question, consider *Slope/Surface Protection Systems*, complete the DPP-1, Part 3 checklist.

##### Concentrated Flow Conveyance Systems

Will the project create or modify ditches, dikes, berms, or swales?  Yes  No  NA

Will project create new slopes or modify existing slopes?  Yes  No  NA

Will it be necessary to direct or intercept surface runoff?  Yes  No  NA

Will cross drains be modified?  Yes  No  NA

If Yes was answered to any of the above questions, consider *Concentrated Flow Conveyance Systems*, complete the DPP-1, Part 4 checklist.

##### Preservation of Existing Vegetation

It is the goal of the Storm Water Program to maximize the protection of desirable existing vegetation to provide erosion and sediment control benefits on all projects.  Complete

Consider *Preservation of Existing Vegetation*, complete the DPP-1, Part 5 checklist.

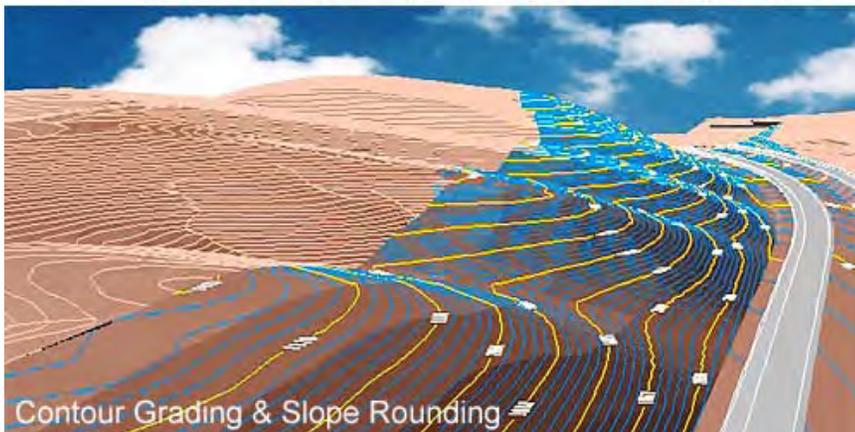
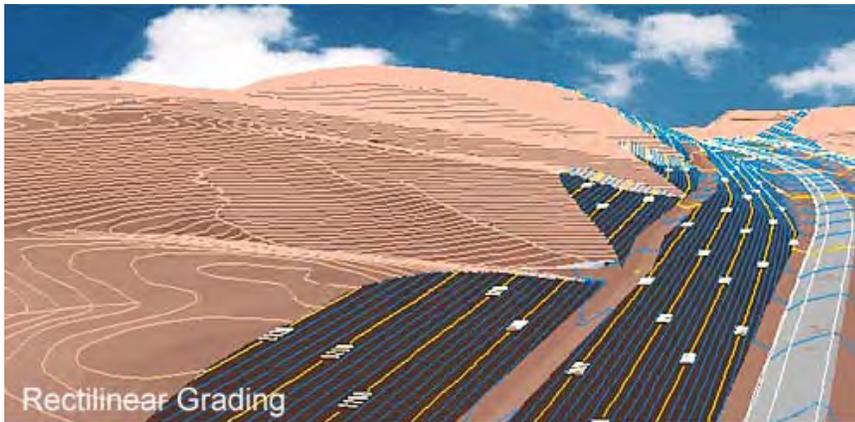
## Slope/Surface Protection:

Will the Project...

1. Create new slopes or modify existing slopes?

... if YES, use Checklist DPP-1, Part 3

# Slope Surface Protection Systems



**Rounded slopes (bottom):** Blend with natural terrain, prevent gulying, help retain existing site hydrology.



**Soil Stabilization:** Mix of plant seed, fertilizer, fiber, and stabilizer. Sprayed on to quickly protect exposed soil.

See Caltrans EC Tool Box:

<http://www.dot.ca.gov/hq/LandArch/ec/index.htm>

# Long Form Section 4: Checklist DPP-1, Part 1

## APPENDIX E

### Checklist DPP-1, Part 1

<b>Design Pollution Prevention BMPs</b> <b>Checklist DPP-1, Part 1</b>		
Prepared by: _____	Date: _____	District-Co-Route: _____
PM: _____	Project ID (or EA): _____	RWQCB: _____

#### Consideration of Design Pollution Prevention BMPs

##### Consideration of Downstream Effects Related to Potentially Increased Flow [to streams or channels]

Will project increase velocity or volume of downstream flow?  Yes  No  NA

Will the project discharge to unlined channels?  Yes  No  NA

Will project increase potential sediment load of downstream flow?  Yes  No  NA

Will project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?  Yes  No  NA

If Yes was answered to any of the above questions, consider *Downstream Effects Related to Potentially Increased Flow*, complete the DPP-1, Part 2 checklist.

##### Slope/Surface Protection Systems

Will project create new slopes or modify existing slopes?  Yes  No  NA

If Yes was answered to the above question, consider *Slope/Surface Protection Systems*, complete the DPP-1, Part 3 checklist.

##### Concentrated Flow Conveyance Systems

Will the project create or modify ditches, dikes, berms, or swales?  Yes  No  NA

Will project create new slopes or modify existing slopes?  Yes  No  NA

Will it be necessary to direct or intercept surface runoff?  Yes  No  NA

Will cross drains be modified?  Yes  No  NA

If Yes was answered to any of the above questions, consider *Concentrated Flow Conveyance Systems*, complete the DPP-1, Part 4 checklist.

##### Preservation of Existing Vegetation

It is the goal of the Storm Water Program to maximize the protection of desirable existing vegetation to provide erosion and sediment control benefits on all projects.  Complete

Consider *Preservation of Existing Vegetation*, complete the DPP-1, Part 5 checklist.

## Concentrated Flow Conveyance Systems:

Will the Project...

1. Create or modify ditches, dikes, berms, or swales?
2. Create new slopes or modify existing ones?
3. Need to direct or intercept runoff?
4. Modify cross drains?

... if YES to ANY,  
use Checklist DPP-1, Part 4

# Concentrated Flow Conveyance Systems



**Rock Slope Protection (RSP):** Rip rap at culvert outlet. Dissipates energy at outflow, reducing erosion.



**Lined Ditch:** Prevents erosion but also increases hydraulic efficiency (faster-moving water) and doesn't provide any treatment.

# Long Form Section 4: Checklist DPP-1, Part 1

## APPENDIX E

### Checklist DPP-1, Part 1

#### Design Pollution Prevention BMPs Checklist DPP-1, Part 1

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_ District-Co-Route: \_\_\_\_\_

PM : \_\_\_\_\_ Project ID (or EA): \_\_\_\_\_ RWQCB: \_\_\_\_\_

#### Consideration of Design Pollution Prevention BMPs

##### Consideration of Downstream Effects Related to Potentially Increased Flow [to streams or channels]

Will project increase velocity or volume of downstream flow?  Yes  No  NA

Will the project discharge to unlined channels?  Yes  No  NA

Will project increase potential sediment load of downstream flow?  Yes  No  NA

Will project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?  Yes  No  NA

If Yes was answered to any of the above questions, consider *Downstream Effects Related to Potentially Increased Flow*, complete the DPP-1, Part 2 checklist.

##### Slope/Surface Protection Systems

Will project create new slopes or modify existing slopes?  Yes  No  NA

If Yes was answered to the above question, consider *Slope/Surface Protection Systems*, complete the DPP-1, Part 3 checklist.

##### Concentrated Flow Conveyance Systems

Will the project create or modify ditches, dikes, berms, or swales?  Yes  No  NA

Will project create new slopes or modify existing slopes?  Yes  No  NA

Will it be necessary to direct or intercept surface runoff?  Yes  No  NA

Will cross drains be modified?  Yes  No  NA

If Yes was answered to any of the above questions, consider *Concentrated Flow Conveyance Systems*, complete the DPP-1, Part 4 checklist.

##### Preservation of Existing Vegetation

Will project create or modify ditches, dikes, berms, or swales?  Complete

Consider *Preservation of Existing Vegetation*, complete the DPP-1, Part 5 checklist.

## Preservation of Existing Vegetation:

The goal of the Storm Water Program is to maximize the protection of desirable existing vegetation to provide erosion/sediment control.

Use Checklist DPP-1, Part 5

# Preservation of Existing Vegetation



Protect and preserve trees, shrubs, and groundcover

# Long Form Section 4



- If existing vegetation will be preserved...  
describe how (specify ESA fence and show on all plans).
- At early phases (PID, PA&ED)...  
indicate likely BMPs and summarize what you're going to do  
(Just saying "to be considered at PS&E phase" isn't enough)

# Long Form Section 4



- If downstream effects due to new paved areas are negligible... provide quantitative information to support.
- For all BMPs and storm drain systems... specify quantities, types, and general locations.
- Maximize Sustainable Measures – Low Impact Development

# Long Form Section 4 Narrative – DPP BMPs

## HANDOUT #3



# Long Form Section 4 Narrative – PID

## 4. Proposed Design Pollution Prevention BMPs to be used on the Project.

### Downstream Effects Related to Potentially Increased Flow, Checklist DPP-1, Parts 1 and 2

The project will result in an increase in impervious surface in the project area. The net additional impervious area for the project is 73.6 acres. Additional impervious areas proposed for the project may increase the volume and velocity of the stormwater discharge. This Project will incorporate low impact design (LID) efforts to maintain or restore pre-project hydrology, as well as provide overall water quality improvement of discharges. These LID efforts will be incorporated in the development and placement of permanent best management practices (BMPs) to the maximum extent practicable. LID measures that will be considered for this Project to improve water quality include:

- Constructing permanent vegetated drainage ditches to decrease the velocity of discharge, plus decreasing the volume of discharge by promoting infiltration and allowing for pollutant removal,
- Grading slopes to blend with the natural terrain and decreasing the need for dikes, promoting sheet flow to vegetated areas that can provide water quality benefits and promote infiltration,
- Designing permanent drainage facilities that mimic the existing drainage pattern of the area through the use of permanent check dams for attenuation of flow and disconnected drainage facilities, and
- Maintaining existing vegetated areas

To examine the effectiveness of these LID efforts, the pre and post project hydrology will be compared during the design phase; these calculations include determining changes in the runoff coefficient, time of concentration and discharge to downstream water bodies.



• Qualitative benefits to LID



• LID Measures

# Long Form Section 4 Narrative – PS&E

## 4. Proposed Design Pollution Prevention BMPs to be used on the Project.

### Downstream Effects Related to Potentially Increased Flow, Checklist DPP-1, Parts 1 and 2

The Project results in an increase in impervious surface in the project area. The net additional impervious area for the project is 73.6 acres. Additional impervious areas proposed for the project may increase the volume and velocity of the stormwater discharge. This Project utilizes low impact design (LID) efforts to maintain or restore pre-project hydrology, as well as provide overall water quality improvement of discharges. These LID efforts are incorporated in the development and placement of permanent best management practices (BMPs) to the maximum extent practicable. LID measures incorporated into this Project that improve water quality include:

- Vegetated drainage ditches (see Drainage Plans for specific locations) to decrease the velocity of discharge plus decrease the volume of discharge by promoting infiltration and allowing for pollutant removal,
- Graded slopes to blend with the natural terrain at 4:1 (H:V) slopes and decreasing quantities of dikes for sheet flow to vegetated areas which provide water quality benefits and promote infiltration,
- Check dams within drainage ditches and swales (see Drainage Details) to increase time of concentrations and designing disconnected drainage facilities to mimic the existing drainage pattern of the area,
- Maintaining existing vegetated areas with ESA fencing

To examine the effectiveness of these LID efforts, the pre and post project hydrology was compared; these calculations include determining changes in the runoff coefficient, time of concentration and discharge to downstream water bodies.

Table 1 examines the flow control calculations for the proposed vegetated ditches and swales. The establishment of vegetation in these systems increases the roughness coefficient to 0.24 from 0.05 in the existing condition. Thus, the time of concentration increases and the rainfall intensity decreases. The intensity from a 2-year, 24-hour storm from WinIDF was used to compare the pre-project and post-project flows; a 5 minute duration was used for pre-project and a 6 minute duration was used for post-project analysis. Due to the length of the project multiple IDF curves were developed based on area being analyzed.

Due to the addition of these LID features and based on the comparison of the pre-construction flows versus the post-construction flows, negligible changes or effects to existing downstream flows is anticipated.



- Qualitative benefits to LID



- LID Measures



- Quantitative benefits to LID

- Addressed pre- and post-construction conditions comparison



# Long Form SWDR

Section 5 and the T-1 Checklist

May 6, 2011

# Long Form Section 5

## MAIN IDEAS FOR THIS SECTION

### WHAT'S NEW:

- T-1 Checklist
- T-1 Tool
- Greater emphasis on infiltration and biofiltration

### WHAT CAN BE IMPROVED:

- Don't skip steps
- Justify decisions in the narrative.
- Use tables to summarize information, esp. drainage areas or treatments

# Something New - The New T-1 Checklist

## APPENDIX E

## Checklist T-1, Part 1

### Treatment BMPs Checklist T-1, Part 1

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_ District-Co-Route: \_\_\_\_\_  
PM: \_\_\_\_\_ Project ID (or EA): \_\_\_\_\_ RWQCB: \_\_\_\_\_

#### Consideration of Treatment BMPs

This checklist is used for projects that require the consideration of Approved Treatment BMPs, as determined from the process described in Section 4 (Project Treatment Consideration) and the Evaluation Documentation Form (EDF). This checklist will be used to determine which Treatment BMPs should be considered for each watershed and sub-watershed within the project. Supplemental data will be needed to verify siting and design applicability for final incorporation into a project.

Complete this checklist for each phase of the project, when considering Treatment BMPs. Use the responses to the questions as the basis when developing the narrative in Section 5 of the Storm Water Data Report to document that Treatment BMPs have been appropriately considered.

Answer all questions, unless otherwise directed. Questions 14 through 16 should be answered after all subwatershed (drainages) are considered using this checklist.

1. Is the project in a watershed with prescriptive TMDL treatment BMP requirements in an adopted TMDL implementation plan?  Yes  No

If Yes, consult the District/Regional Storm Water Coordinator to determine whether the T-1 checklist should be used to propose alternative BMPs because the prescribed BMPs may not be feasible or other BMPs may be more cost-effective. Special documentation and regulatory response may be necessary.

2. Dry Weather Flow Diversion

(a) Are dry weather flows generated by Caltrans anticipated to be persistent?  Yes  No

(b) Is a sanitary sewer located on or near the site?  Yes  No

If Yes to both 2 (a) and (b), continue to (c). If No to either, skip to question 3.

(c) Is connection to the sanitary sewer possible without extraordinary plumbing, features or construction practices?  Yes  No

(d) Is the domestic wastewater treatment authority willing to accept flow?  Yes  No

If Yes was answered to all of these questions consider *Dry Weather Flow Diversion*, complete and attach Part 3 of this checklist

3. Is the receiving water on the 303(d) list for litter/trash or has a TMDL been issued for litter/trash?  Yes  No

## The T-1 Contains:

- Infiltration Rules!
- Biofiltration encouraged
- TDCs simply 4 Matrices
- Supported by an Easy-to-Use Tool



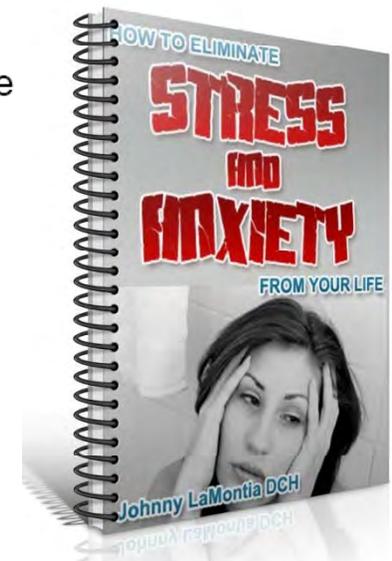
# T-1 Checklist – The Start

- Use to support narrative of Section 5.
- Complete for all sub-watersheds (drainages).
- Question 1 - Prescriptive TMDL requirements

1. Is the project in a watershed with prescriptive TMDL treatment BMP requirements in an adopted TMDL implementation plan?

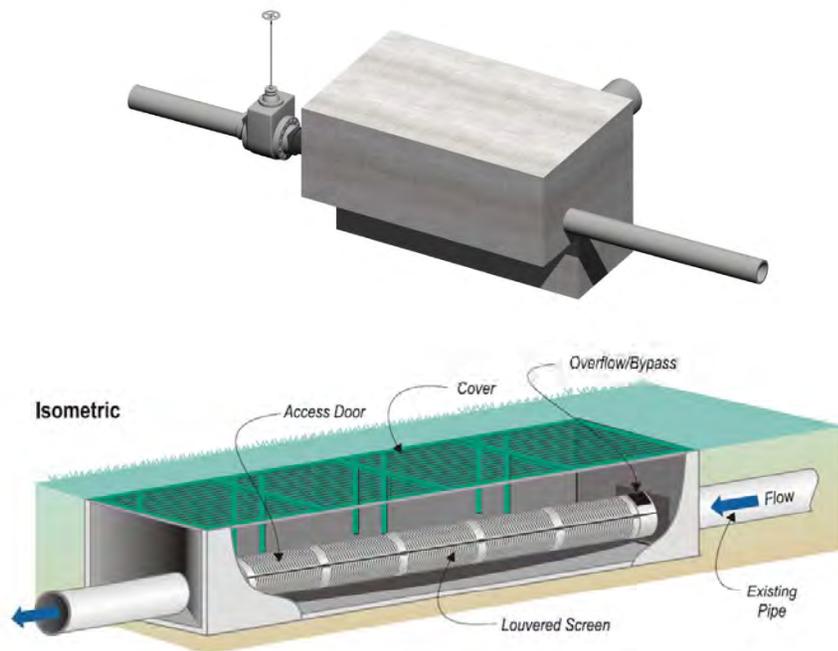
Yes  No

If Yes, consult the District/Regional Storm Water Coordinator to determine whether the T-1 checklist should be used to propose alternative BMPs because the prescribed BMPs may not be feasible or other BMPs may be more cost-effective. Special documentation and regulatory response may be necessary.



# T-1 Checklist – Specific BMPs

- Question 2 – Dry Weather Flow Diversions.
- Question 3 – GSRDs.
- Question 4 – Traction Sand Traps.



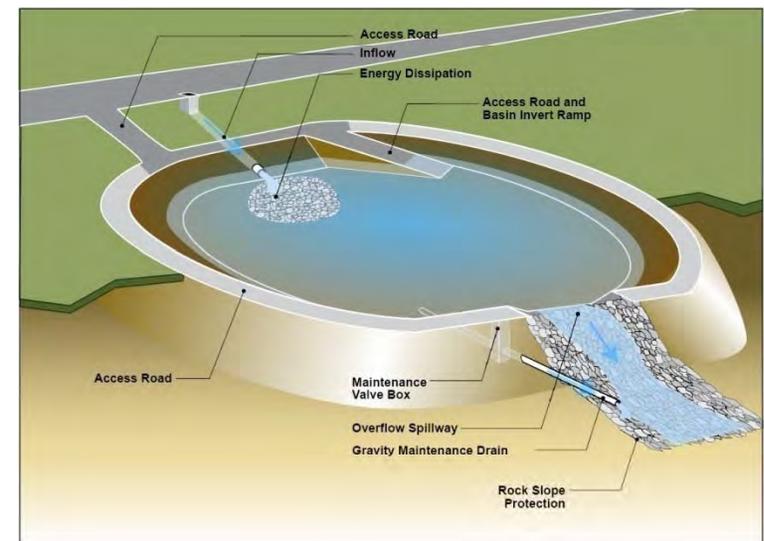
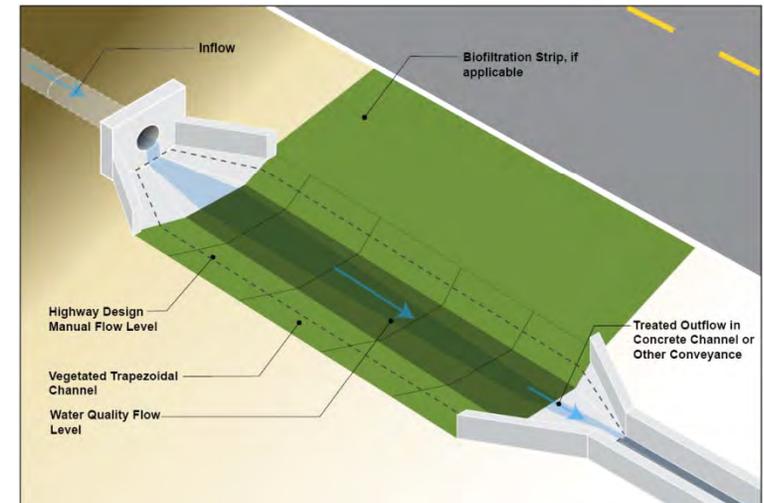
# Maximizing biofiltration

- Approach on maximizing infiltration
  - Maximize use of biofiltration
  - How much infiltration does biofiltration get?
  - Can amendments augment infiltration?



# T-1 Checklist – Infiltration Rules!

- Question 5 – Maximize Biofiltration.
  - Can you achieve 90% or greater infiltration? Yes, then 13.
- Question 6 – Biofiltration in Rural Areas.
  - Outside of an MS4? Yes, then 13.
- Question 7 – Targeted Infiltration
  - Can overall 90% Infiltration be achieved? Yes, then 13.



# Using tools to answer infiltration

- Basin Sizer: <http://www.water-programs.com/BasinSizer/Basinsizer.htm>
- Infiltration Tools: See Handout #1 for website.

**Rainfall Stations**

Dist (km)	Elev (m)	Years	Station
<input checked="" type="checkbox"/>	11.45	86	58 FIVE POINTS 5 SSW
<input checked="" type="checkbox"/>	18.85	204	64 COALINGA
<input type="checkbox"/>	18.85	200	35 COALINGA 1 SE
<input checked="" type="checkbox"/>	20.83	86	52 WESTHAVEN
<input type="checkbox"/>	24.21	154	54 KETTLEMAN STATION

**Water Quality Volumes**

Maximized Volume Method

Drawdown Time (hours)

Runoff Coefficient

Unit Basin Storage Volume (inches)

**Caltrans Water Quality Flows**

Region 5, South West counties: below 2000 ft = 0.16 in/hr;  
above 2000 ft = 0.20 in/hr.

**KEY**

- User input
- Linked to yellow cell do not change
- Optional Input
- Warning: Assumption has been violated - See Reality Check (below)
- Output

**PROJECT INFORMATION**

Project: Elk Grove I-5 Elk Grove Blvd Interchange  
Sub-watershed: HAS 519.11  
Free-Flow BMP type: Strip

**USER INPUT: Area and Rainfall**

	Final	Iteration 2	Iteration 3	Units
Unit Basin Storage Volume from Basin Sizer, where C=1.0	0.85			in
Drawdown time used in Basin Sizer	72	72	72	hr
Rainfall rate from Basin Sizer "Caltrans Water Quality Flows"	0.16			in/hr
Contributing drainage area	1.6	1.6	1.6	ac
Contributing drainage area runoff coefficient	0.95	0.95	0.95	
BMP area: strip area or swale invert area	20908.8			ft <sup>2</sup>
BMP area/contributing drainage area	30%	0%	0%	%

**USER INPUT: Native Soil or Fill**

	Final	Iteration 2	Iteration 3	units
Native or fill (underlying) HSG soil type	D	D	D	
Bulk density	1.9	1.9	1.9	g/cm <sup>3</sup>
Depth of incorporation, below FG	7	15	10	in

**Soil Infiltration Properties**

Click Here to: Autofill infiltration rate based on HSG soil type

# T-1 Checklist – Less than 90% Infiltration

- Question 7 – Infiltration

- Can overall 90% Infiltration be achieved? If “No”, then how much?

(use 24 hr WQV)

\_\_\_ < 20% (do not consider this BMP combination)

\_\_\_ 20% - 50%

\_\_\_ 50% - 90%

\_\_\_ >90%

# T-1 Checklist – The TDC Approach

## ■ Question 8

– What are the TDCs?

(a) Does the project discharge to a water body that has been placed on the 303-d list or has had a TMDL adopted? If “No,” use Matrix A to select BMPs, consider designing to treat 100% of the WQV, then skip to question 12.

Yes     No

If Yes, is the identified pollutant(s) considered a Targeted Design Constituent (TDC) (check all that apply below)?

sediments

copper (dissolved or total)

phosphorus

lead (dissolved or total)

nitrogen

zinc (dissolved or total)

general metals (dissolved or total)<sup>1</sup>

(b) Treating Sediment. Is sediment a TDC? If Yes, use Matrix A to select BMPs, then skip to question 12. Otherwise, proceed to question 9.

Yes     No



# T-1 Checklist – The TDC Approach

- Question 8 – TDCs
  - Selection of TDCs will dictate what Matrix to use.

Matrix	Constituent Mix
A	General Purpose Pollutant Removal – Sediment or No TMDL
B	Any Metal, but not Nitrogen or Phosphorous
C	Phosphorous and/or Nitrogen, but not Metals
D	Any Metal, plus Phosphorous and/or Nitrogen

# T-1 Checklist – Let's use the Tool

Strip\_and\_Swale\_Infiltration\_Tool\_2\_3\_11\_v1.1.xls [Compatibility Mode]

Home Insert Page Layout Formulas Data Review View Bluebeam Get Started

Normal Page Layout Page Break Layout Custom Views Full Screen

Workbook Views

Security Warning Macros have been disabled. Options...

A	B	C	D	E	F	G
40	<b>RESULT: Native Soil or Fill</b>					
41	C factor for downstream BMP with no amendment	0.41	0.47	0.00		
42	Volume of total runoff infiltrated	421.88	421.88	337.50	ft <sup>3</sup>	
43	Percent of total runoff volume infiltrated	34%	29%	100%		
44	<b>Portion of WQV from net new impervious that is infiltrated with native soil or fill (use for T-1, 5b)</b>	<b>#DIV/0!</b>	<b>125%</b>	<b>100%</b>	<b>%</b>	
45	NOTE: If this satisfies your needs for the T-1 Checklist you are done there is no need to consider soil amendment.					
46	<b>USER INPUT: Amended Soil</b>					
47	*NOTE: This section estimates the infiltration with soil amendment. All GREY cells passed this point are optional. Key in the GREY cells if the information is available. Otherwise, click the button to accept OWP's best professional judgement.					
48	Click Here to: Autofill Compost Properties					
49						
50	Bulk density (of compost)	0.50	0.50	0.50	g/cm <sup>3</sup>	
51	Specific gravity of compost particles	0.80	0.80	0.80		
52	Depth of placement	0.0	4.0	4.0	in	
53	Click Here To: Restore Calculation of Final Bulk Density assuming a porosity of 0.35					
54	Final bulk density	#DIV/0!	1.18	1.18	g/cm <sup>3</sup>	
55	Final depth with compaction	#DIV/0!	8.1	8.1	in	
56	Bulk density: weighted average of native soil and compost without a volume change (no compaction, no fluffing due to incorporation)	#DIV/0!	1.20	1.20	g/cm <sup>3</sup>	
57						
58	<b>RESULTS: Amended Soil</b>					
59	*NOTE: This section presents the results of soil amendment					
60	C factor for downstream BMP after amendment	#DIV/0!	0.00	0.00		
61	Volume of total runoff infiltrated	#DIV/0!	1462.50	337.50	ft <sup>3</sup>	
62	Percent of total runoff volume infiltrated	#DIV/0!	100%	100%		
63	<b>Portion of WQV from net new impervious area that is infiltrated with amended soil (use for T-1, 5d)</b>	<b>#DIV/0!</b>	<b>433%</b>	<b>100%</b>	<b>%</b>	
64	NOTE: After infiltration of downstream full this based on permeability					

Free-Flow BMP Look Up Table Results Defs for Guidance

Oh Yeah! I can find the solution by using this nifty tool from HQ.





# Construction Site BMP Strategy

CS-1 Checklists  
and  
Short Form Section 2  
or  
Long Form Section 6

May 6, 2011

# Construction Site BMP Strategy

## MAIN IDEAS FOR THIS SECTION

### WHAT'S NEW:

- CGP Risk Level Determination, if SWPPP
- Monitoring and Rain Event Action Plan (REAP), as applicable
- Rainfall Erosivity Waiver, if applicable

### WHAT CAN BE IMPROVED:

- Obtain Construction concurrence (name and date)
- Narrative to describe strategy – complex or simple
- Narrative needs to convey magnitude of BMPs
- Don't include costs

# Construction Site BMPs

What are the Construction Site BMP Categories?

Table 2-6. Approved Temporary Construction Site BMP Categories

Temporary Soil Stabilization
Temporary Sediment Control
Wind Erosion Control
Tracking Control
Non-Stormwater Management
Waste Management and Materials Pollution Control

The strategy used for implementing Construction Site BMPs depends on specific project conditions and anticipated construction operations. The level of detail and coordination in support of the estimate is different at each phase of the project.

# Construction Site BMP Consideration Form

## APPENDIX E

### Construction Site BMP Consideration Form

DATE: \_\_\_\_\_

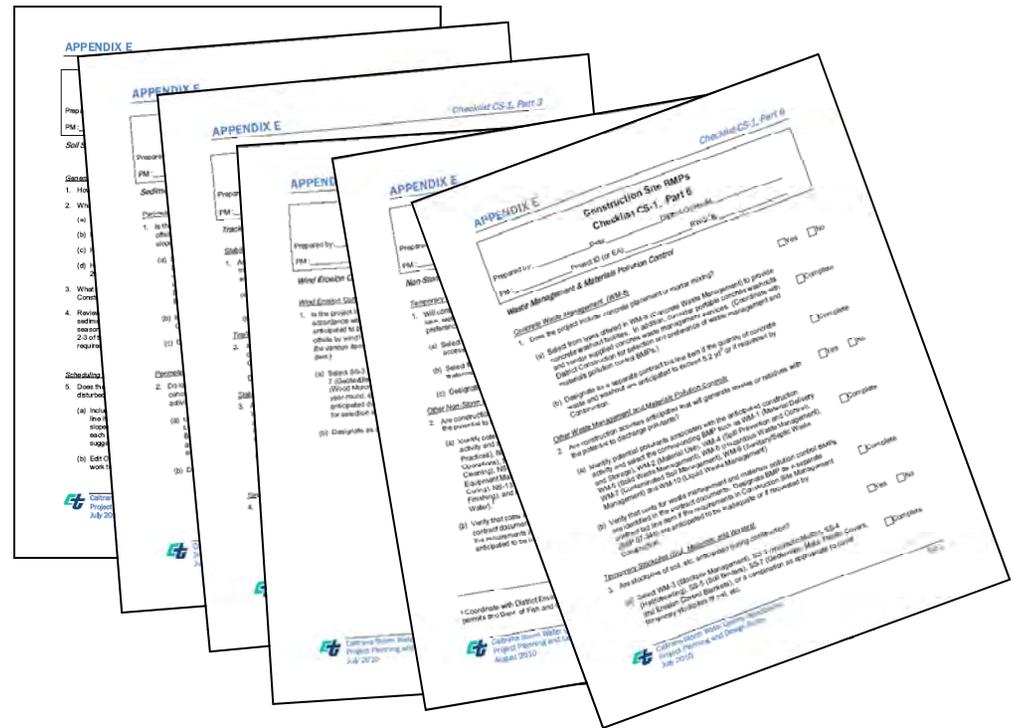
Project ID (or EA): \_\_\_\_\_

Project Evaluation Process for the Consideration of Construction Site BMPs

NO.	CRITERIA	YES	NO	SUPPLEMENTAL INFORMATION
1.	Will construction of the project result in areas of disturbed soil as defined by the Project Planning and Design Guide (PPDG)?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	If Yes, Construction Site BMPs for Soil Stabilization (SS) will be required. Complete CS-1, Part 1. Continue to 2. If No, Continue to 3.
2.	Is there a potential for disturbed soil areas within the project to discharge to storm drain inlets, drainage ditches, areas outside the right-of-way, etc?	<input type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Sediment Control (SC) will be required. Complete CS-1, Part 2. Continue to 3.
3.	Is there a potential for sediment or construction related materials and wastes to be tracked offsite and deposited on private or public paved roads by construction vehicles and equipment?	<input type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Tracking Control (TC) will be required. Complete CS-1, Part 3. Continue to 4.
4.	Is there a potential for wind to transport soil and dust offsite during the period of construction?	<input type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Wind Erosion Control (WE) will be required. Complete CS-1, Part 4. Continue to 5.
5.	Is dewatering anticipated or will construction activities occur within or adjacent to a live channel or stream?	<input type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Part 5. Continue to 6.
6.	Will construction include saw-cutting, grinding, drilling, concrete or mortar mixing, hydro-demolition, blasting, sandblasting, painting, paving, or other activities that produce residues?	<input type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Parts 5 & 6. Continue to 7.
7.	Are stockpiles of soil, construction related materials, and/or wastes anticipated?	<input type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 8.
8.	Is there a potential for construction related materials and wastes to have direct contact with precipitation; stormwater run-on, or stormwater runoff; be dispersed by wind; be dumped and/or spilled into storm drain systems?	<input type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 9.
9.	End of checklist.			Document for Project Files by completing this form, and attaching it to the SWDR.

PE to initialize after concurrence with Construction (PS&E only) Date

- Required at PS&E
- Identifies what parts of CS-1 “should” be completed:



# Construction Site BMP Consideration Form

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION
1.	Will construction of the project result in areas of disturbed soil as defined by the Project Planning and Design Guide (PPDG)?			If Yes, Construction Site BMPs for Soil Stabilization (SS) will be required. Complete CS-1, Part 1. Continue to 2. If No, Continue to 3.
2.	Is there a potential for disturbed soil areas within the project to discharge to storm drain inlets, drainage ditches, areas outside the right-of-way, etc?			If Yes, Construction Site BMPs for Sediment Control (SC) will be required. Complete CS-1, Part 2. Continue to 3.
3.	Is there a potential for sediment or construction related materials and wastes to be tracked offsite and deposited on private or public paved roads by construction vehicles and equipment?			If Yes, Construction Site BMPs for Tracking Control (TC) will be required. Complete CS-1, Part 3. Continue to 4.
4.	Is there a potential for wind to transport soil and dust offsite during the period of construction?			If Yes, Construction Site BMPs for Wind Erosion Control (WE) will be required. Complete CS-1, Part 4. Continue to 5.

PE to initialize after concurrence with Construction (PS&E only) Date

First 4 Questions Define the Erosion and Sediment Control Strategy

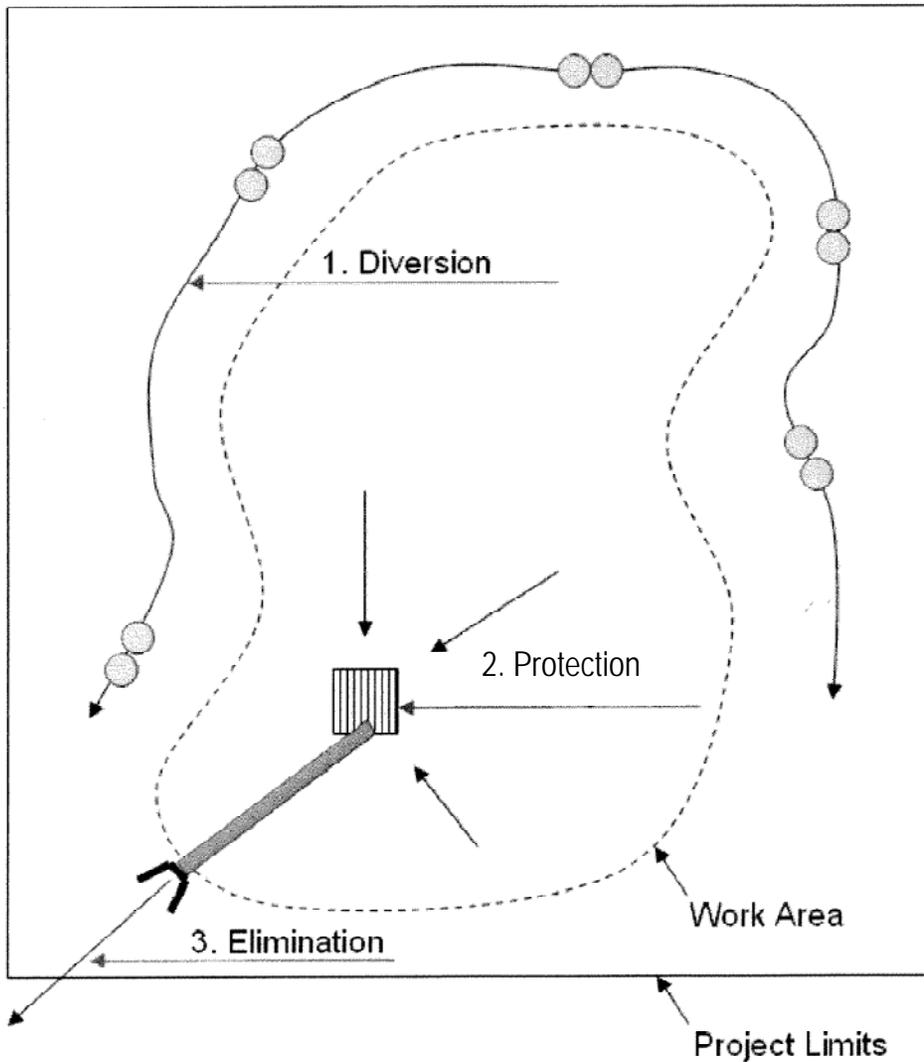
# Erosion and Sediment Control Strategy - Quick Exercise

Would the erosion and sediment control strategy be complex, thus necessitating CS-1 parts?

Description	Complex	Simple
New bridge span		?
New auxiliary lane, 1 mile.	?	
Expand culvert and re-grade ditch, summer construction		?
Overlay of a roadway surface		X
Placement of 4 maintenance vehicle pullouts.		X
Landscape planting of interchange	?	
Install traffic signals, control box, and loop detectors		X

Note: Be sure to coordinate with Construction.

# Construction Site BMP Consideration Form



1. Diversion



2. Protection



3. Elimination

# CS-1, Part 1 – Soil Stabilization

## APPENDIX E

Checklist CS-1, Part 1

### Construction Site BMPs Checklist CS-1, Part 1

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_ District-Co-Route: \_\_\_\_\_

PM: \_\_\_\_\_ Project ID (or EA): \_\_\_\_\_ RWQCB: \_\_\_\_\_

#### Soil Stabilization

##### General Parameters

1. How many rainy seasons are anticipated between begin and end of construction? \_\_\_\_\_
2. What is the total disturbed soil area for the project? (ac) \_\_\_\_\_
  - (a) How much of the project DSA consists of slopes 4:1 (h:v) or flatter? (ac) \_\_\_\_\_
  - (b) How much of the project DSA consists of 4:1 (h:v) < slopes < 2:1 (h:v)? (ac) \_\_\_\_\_
  - (c) How much of the project DSA consists of slopes 2:1 (h:v) and steeper? (ac) \_\_\_\_\_
  - (d) How much of the project DSA consists of slopes with slope lengths longer than 20 ft? (ac) \_\_\_\_\_
3. What rainfall area does the project lie within? (Refer to Table 2-1 of the Construction Site Best Management Practices Manual ) \_\_\_\_\_
4. Review the required combination of temporary soil stabilization and temporary sediment controls and barriers for area, slope inclinations, rainy and non-rainy season, and active and non-active disturbed soil areas. (Refer to Tables 2-2, and 2-3 of the Construction Site Best Management Practices Manual for Rainfall Area requirements.)  Complete

##### Scheduling (SS-1)

5. Does the project have a duration of more than one rainy season and have disturbed soil area in excess of 25 acres?  Yes  No
  - (a) Include multiple mobilizations (Move-in/Move-out) as a separate contract bid line item to implement permanent erosion control or revegetation work on slopes that are substantially complete. (Estimate at least 6 mobilizations for each additional rainy season. Designated Construction Representative may suggest an alternate number of mobilizations.)  Complete
  - (b) Edit Order of Work specifications for permanent erosion control or revegetation work to be implemented on slopes that are substantially complete.  Complete



# CS-1, Part 2 – Sediment Control

## APPENDIX E

Checklist CS-1, Part 2

### Construction Site BMPs Checklist CS-1, Part 2

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_ District-Co-Route: \_\_\_\_\_

PM: \_\_\_\_\_ Project ID (or EA): \_\_\_\_\_ RWQCB: \_\_\_\_\_

#### Sediment Control

##### Perimeter Controls - Run-off Control

1. Is there a potential for sediment laden sheet and concentrated flows to discharge offsite from runoff deared and grubbed areas, below cut slopes, embankment slopes, etc.?  Yes  No
  - (a) Select linear sediment barrier such as SC-1 (Silt Fence), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or a combination to protect wetlands, water courses, roads (paved and unpaved), construction activities, and adjacent properties. (Coordinate with District Construction for selection and preference of linear sediment barrier BMPs.)  Complete
  - (b) Increase the quantities by 25% for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.)  Complete
  - (c) Designate as a separate contract bid line item.  Complete

##### Perimeter Controls - Run-on Control

2. Do locations exist where sheet flow upslope of the project site and where concentrated flow upstream of the project site may contact DSA and construction activities?  Yes  No
  - (a) Utilize linear sediment barriers such as SS-9 (Earth Dike/Drainage Swales and Lined Ditches), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or other BMPs to convey flows through and/or around the project site. (Coordinate with District Construction for selection and preference of perimeter control BMPs.)  Complete
  - (b) Designate as a separate contract bid line item.  Complete



# CS-1, Part 3 – Tracking Controls

## APPENDIX E

Checklist CS-1, Part 3

### Construction Site BMPs Checklist CS-1, Part 3

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_ District-Co-Route: \_\_\_\_\_

PM: \_\_\_\_\_ Project ID (or EA): \_\_\_\_\_ RWQCB: \_\_\_\_\_

#### Tracking Controls

##### Stabilized Construction Entrance/Exit (TC-1)

1. Are there points of entrance and exit from the project site to paved roads where mud and dirt could be transported offsite by construction equipment? (Coordinate with District Construction for selection and preference of tracking control BMPs.)  Yes  No

(a) Identify and designate these entrance/exit points as stabilized construction entrances (TC-1).  Complete

(b) Designate as a separate contract bid line item.  Complete

##### Tire/Wheel Wash (TC-3)

2. Are site conditions anticipated that would require additional or modified tracking controls such as entrance/outlet tire wash? (Coordinate with District Construction.)  Yes  No

Designate as a separate contract bid line item.  Complete

##### Stabilized Construction Roadway (TC-2)

3. Are temporary access roads necessary to access remote construction activity locations or to transport materials and equipment? (In addition to controlling dust and sediment tracking, access roads limit impact to sensitive areas by limiting ingress, and provide enhanced bearing capacity.) (Coordinate with District Construction.)  Yes  No

(a) Designate these temporary access roads as stabilized construction roadways (TC-2).  Complete

(b) Designate as a separate contract bid line item.  Complete

##### Street Sweeping and Vacuuming (SC-7)

4. Is there a potential for tracked sediment or construction related residues to be transported offsite and deposited on public or private roads? (Coordinate with District Construction for preference of including street sweeping and vacuuming with tracking control BMPs.)  Yes  No

Designate as a separate contract bid line item.  Complete



# CS-1, Part 4 – Wind Erosion Controls

## APPENDIX E

Checklist CS-1, Part 4

### Construction Site BMPs Checklist CS-1, Part 4

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_ District-Co-Route: \_\_\_\_\_

PM: \_\_\_\_\_ Project ID (or EA): \_\_\_\_\_ RWQCB: \_\_\_\_\_

#### Wind Erosion Controls

##### Wind Erosion Control (WE-1)

1. Is the project located in an area where standard dust control practices in accordance with Standard Specifications, Section 10: Dust Control, are anticipated to be inadequate during construction to prevent the transport of dust offsite by wind? (Note: Dust control by water truck application is paid for through the various items of work. Dust palliative, if it is included, is paid for as a separate item.)  Yes  No
- (a) Select SS-3 (Hydraulic Mulch), SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-7 (Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets), SS-8 (Wood Mulching) or a combination to cover the DSA subject to wind erosion year-round, especially when significant wind and dry conditions are anticipated during project construction. (Coordinate with District Construction for selection and preference of wind erosion control BMPs.)  Complete
- (b) Designate as a separate contract bid line item.  Complete



# Construction Site BMP Consideration Form

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION
5.	Is dewatering anticipated or will construction activities occur within or adjacent to a live channel or stream?			If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Part 5. Continue to 6.
6.	Will construction include saw-cutting, grinding, drilling, concrete or mortar mixing, hydro-demolition, blasting, sandblasting, painting, paving, or other activities that produce residues?			If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Parts 5 & 6. Continue to 7.
7.	Are stockpiles of soil, construction related materials, and/or wastes anticipated?			If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 8.
8.	Is there a potential for construction related materials and wastes to have direct contact with precipitation; stormwater run-on, or stormwater runoff; be dispersed by wind; be dumped and/or spilled into storm drain systems?			If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 9.

Last 4 Questions formulate the Non-Stormwater and Waste Management Strategy

PE to initialize after concurrence with Construction (PS&E only)      Date

# Waste Management and Non-Stormwater - Quick Exercise

Would inclusion of WM and NS BMPs be complex, thus necessitating applicable CS-1 checklists?

Description	Complex	Simple
Bridge retrofit, 250 ft. span	X	
New clover leaf interchange	X	
Expand culvert and re-grade ditch, summer construction		X
Overlay of a roadway surface		X
Placement of 4 maintenance vehicle pullouts.		X
Landscape planting of interchange	?	
Install traffic signals, control box, and loop detectors		X

Note: Be sure to coordinate with Construction.

# CS-1, Part 5 – Non-Storm Water

## Non-Storm Water Management

### Temporary Stream Crossing (NS-4) & Clear Water Diversion (NS-5)

1. Will construction activities occur within a waterbody or watercourse such as a lake, wetland, or stream? (Coordinate with District Construction for selection and preference for stream crossing and clear water diversion BMPs.)  Yes    No
- (a) Select from types offered in NS-4 (Temporary Stream Crossing) to provide access through watercourses consistent with permits and agreements.<sup>1</sup>  Complete
- (b) Select from types offered in NS-5 (Clear Water Diversion) to divert watercourse consistent with permits and agreements.<sup>1</sup>  Complete
- (c) Designate as a separate contract bid line item(s).  Complete

Curing), NS-13 (Material and Equipment Use Over Water), NS-14 (Concrete Finishing), and NS-15 (Structure Demolition/Removal Over or Adjacent to Water).

(b) Verify that costs for non-stormwater management BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item.

<sup>1</sup> Coordinate permits and



1 Coordinate with District Environmental for consistency with US Army Corps of Engineers 404 and 401 permits and Dept. of Fish and Game 1602 Streambed Alteration Agreements.



# CS-1, Part 5 – Non-Storm Water

## APPENDIX E

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_ District/Co-F  
FM (KF): \_\_\_\_\_ EA: \_\_\_\_\_  
RWQCB: \_\_\_\_\_

### Non-Storm Water Management

#### Temporary Stream Crossing (NS-4) & Clear Water Diversion (NS-5)

1. Will construction activities occur within a waterbody or watercourse, wetland, or stream? (Coordinate with District Construction for selection and

with the anticipated construction activity and select the corresponding BMP such as NS-1 (Water Conservation Practices), NS-2 (Dewatering Operations), NS-3 (Paving and Grinding Operations), NS-7 (Potable Water/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), and NS-15 (Structure Demolition/Removal Over or Adjacent to Water).<sup>1</sup>

- (b) Verify that costs for non-stormwater management BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Construction Site Management (SSP 07-346) are anticipated to be inadequate or if requested by Construction.

## Warning!

If you pick any of these BMPs, then be sure they are accounted for in the BEES, either as a separate line item or within SSP 07-346.

No

Complete

Complete

# CS-1, Part 6 – Waste and Materials Management

## APPENDIX E

Checklist-CS-1,-Part 6

### Construction Site BMPs

#### Checklist CS-1, Part 6

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_ District-Co-Route: \_\_\_\_\_

PM: \_\_\_\_\_ Project ID (or EA): \_\_\_\_\_ RWOCB: \_\_\_\_\_

#### Waste Management & Materials Pollution Control

##### Concrete Waste Management (WM-8)

1. Does the project include concrete placement or mortar mixing?  Yes  No

(a) Select from types offered in WM-8 (Concrete Waste Management) to provide concrete washout facilities. In addition, consider portable concrete washouts and vendor supplied concrete waste management services. (Coordinate with District Construction for selection and preference of waste management and materials pollution control BMPs.)  Complete

(b) Designate as a separate contract bid line item if the quantity of concrete waste and washout are anticipated to exceed 5.2 yd<sup>3</sup> or if requested by Construction.  Complete

##### Other Waste Management and Materials Pollution Controls

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants?  Yes  No

(a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as WM-1 (Material Delivery and Storage), WM-2 (Material Use), WM-4 (Spill Prevention and Control), WM-5 (Solid Waste Management), WM-6 (Hazardous Waste Management), WM-7 (Contaminated Soil Management), WM-9 (Sanitary/Septic Waste Management) and WM-10 (Liquid Waste Management)  Complete

(b) Verify that costs for waste management and materials pollution control BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Construction Site Management (SSP 07-346) are anticipated to be inadequate or if requested by Construction.  Complete

##### Temporary Stockpiles (Soil, Materials, and Wastes)

3. Are stockpiles of soil, etc. anticipated during construction?  Yes  No

(a) Select WM-3 (Stockpile Management), SS-3 (Hydraulic Mulch), SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-7 (Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets), or a combination as appropriate to cover temporary stockpiles of soil, etc.  Complete

- Create storage locations
- Confine waste/materials from water contact
- Collect and Remove.



# Construction Site BMP Narrative

## Section 2.0 Short Form

## Section 6.0 Long Form

### 1. WPCP or SWPPP?

- Water Pollution Control Program
- Storm Water Pollution Prevention Plan
- Or [Rainfall Erosivity Waiver](#) (waives SWPPP)

### 2. Risk level and required monitoring

### 3. Construction site BMPs

- Lump sum or bid line item
- Estimating strategy
- Concurrence from Construction group



# Short Form Sect. 2 / Long Form Sect. 6

## CONSTRUCTION SITE BMP COST ESTIMATION METHODS

Table F1 and F2 of the PPDG

Project Process	Option	Documentation
<b>PID</b>	Percent of Total Project Cost or Historical Project Information	Storm Water Data Report (SWDR) / Project Planning Cost Estimate (PPCE)
<b>PA/ED</b>	Historical Project Information Estimated Unit Cost Sample or Actual Unit Cost	Updated PPCE
<b>PS&amp;E</b>	Estimated Unit Cost Sample or Actual Unit Cost	Preliminary Engineer's Cost Estimate (PECE)



# Acceptable SWDRs?

## HANDOUT #5



# Construction Site BMPs - Narrative

## Acceptable for Short Form SWDR – PID level?

### 2. Construction Site BMPs

The project requires a Storm Water Pollution Prevention Plan (SWPPP) be prepared because the total disturbed soil area is greater than 1 acre as stated in Section 3 of the Caltrans SWPPP/WPCP Preparations Manual.

Temporary Construction Site BMP's included as bid items and agreed to by Designated Construction Representative, on 12-19-08 and 1-8-09 are:

- Prepare SWPPP (\$5,000)
- Construction Site Management (\$6,000)
- Supplemental Water Pollution Control (\$2,000)

- 
- If BMP strategy is simple, then describe it.
  - Costs should not be described.

- 
- Should identify Const. Rep.
  - Define risk level and associated monitoring.

# Construction Site BMPs - Narrative

## Acceptable for Long Form SWDR – PA/ED level?

### 6. Describe Proposed Temporary Construction Site BMPs to be used on Project

Construction BMPs should include: planning and scheduling to ensure the majority of the construction takes place during the non-rainy season (May through July and October), implementation of erosion control such as fiber matrices and hydraulic mulch to protect graded slopes, and the usage of sediment control devices such as silt fences and fiber rolls to prevent sediment pollution. These devices should remain in place until construction is complete and there is no potential for erosion and sediment transportation.

- Construction Site BMPs that have been designated as separate Bid Line Items include: Hydraulic Mulch; Fiber Rolls; Street Sweeping; Concrete Washout Facilities; Drainage Inlet Protection; and Silt Fences.
- Preliminary quantities and unit costs for each Construction Site BMP were determined based on the project length, steepness of slopes, disturbed soil areas, concrete quantities, proposed/existing drainage facilities, and temporary impact areas. The temporary construction site BMP costs are detailed in the table below:

# Construction Site BMPs - Narrative

Specialty Items	Fiber Rolls	16,600 m	\$ 15/m	\$249,000
	Prepare Storm Water Pollution Prevention Plan	LS	\$10,000	\$10,000
	Construction Site Management	LS	\$80,000	\$80,000
	Temporary Hydraulic Mulch (Polymer Stabilized Fiber Matrix)	32,400 m <sup>2</sup>	\$ 1.00/m <sup>2</sup>	\$32,400
	Temporary Construction Entrance/ Exit	10	\$ 4,000/EA	\$40,000
	Temporary Concrete Washout Facility	11	\$ 5,000/EA	\$55,000
	Temporary Drainage Inlet Protection	60	\$ 500/EA	\$30,000
	Temporary Fiber Roll	16,600 m	\$ 15/m	\$249,000
	Temporary Silt Fence	7,800 m	\$ 15/m	\$117,000
	Move in/Move Out (Temporary Erosion Control)	10	\$500/EA	\$5,000
	Street Sweeping	LS	\$50,000	\$50,000
	Water Pollution Control Maintenance Sharing	LS	\$30,000	\$30,000
	Additional Water Pollution Control	LS	\$50,000	\$50,000
	Storm Water Sampling and Analysis	LS	\$45,000	\$45,000
	<b>TOTAL COST: \$ 1,042,400</b>			
<b>TOTAL : \$ 2,905,400</b>				

# Example SWDR CS-BMP Narratives

## HANDOUT #6



# Example SWDR – Short Form - PID Level

## 2. Construction Site BMPs

This project has no disturbed soil area, and therefore will require a Water Pollution Control Program rather than a Storm Water Pollution Prevention Plan. Because there is no disturbed soil area, the project is also exempt from the Construction General Permit and associated risk assessment.

- No DSA

Because there is no disturbed soil area, no erosion control is anticipated to be required. Only general housekeeping tasks are anticipated to be necessary. The Construction Site Management and Additional Water Pollution Control items are anticipated to cover the cost of all Construction Site Best Management Practices (BMPs). The BMP costs for this Project are estimated based on the “Percent of Total Cost Method” presented in Appendix F.6.1 of the Caltrans *Project Planning and Design Guide*.

- WPCP

A coordination meeting with the Water Coordinator will be held during later phases of the Project.

- BMP types

Estimate - percent method

- Planned meeting with Construction

# Example SWDR – Short Form – PS&E

## 2. Construction Site BMPs

This project has no disturbed soil area, and therefore will require a Water Pollution Control Program rather than a State Water Pollution Prevention Plan. Because there is no disturbed soil area, the project is exempt from the Construction General Permit and associated risk assessment.

- DSA is same

Because there is no disturbed soil area, no erosion control is required, and the Construction Site Management and Pollution Control items are anticipated to cover the cost of all Construction Site Practices (BMPs). General housekeeping items are the only tasks anticipated. The contractor shall be responsible for the disposal of wastes in accordance with Section 7-1.13 of the State Standard Specifications.

- Repeated paragraph from PID

Presently, this project will not require any equipment/staging areas. However, if the contractor requires such areas, the Caltrans Standard Special Provisions (SSPs), Section 5.1, indicates that the contractor will be responsible for securing locations for staging and storage to be approved by the Resident Engineer.

The BMP costs for this Project are estimated based on the “Unit Costs” method presented in Appendix F.6.3 of the Caltrans Project Planning and Design Guide. Quantities are shown below, and the estimate is included in the Environmental Attachments.

- Clarification on staging needs
- Estimate – unit costs method

# Example SWDR – Short Form – PS&E

## Temporary Construction Site BMPs

BEES		SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit
<b>Temporary Waste Management Control</b>					
CSM*	Material Delivery and Storage	07-346	No		
CSM*	Material Use	07-346	No		
CSM*	Stockpile Management	07-346	No		
<b>Temporary Non-Storm Water Management</b>					
CSM*	Paving & Grinding Operations		No		
CSM*	Vehicle and Equipment Cleaning	07-346	No		
CSM*	Vehicle and Equipment Fueling	07-346	No		
CSM*	Vehicle and Equipment Maintenance	07-346	No		
074016	<b>*Construction Site Management</b>	07-346	No	1	LS
<b>Miscellaneous Items</b>					
074017	Water Pollution Control Plan (WPCP)	07-340	No	1	LS
066596	Additional Water Pollution Control			1	LS
<b>Total Construction Site BMP Costs</b>					



- SSPs
- Quantities
- Construction Concurrence

Concurrence to exclusively use these items was obtained during a meeting with William Alexander, the Caltrans Construction Storm Water Coordinator, on September 15, 2010. Mr. Alexander gave verbal concurrence to the project engineer and project manager, and this is documented in the meeting minutes.

# Example SWDR – Long Form - PID Level

## 6. Proposed Temporary Construction Site BMPs to Be Used on Project

The project is scheduled to cover approximately two years. Whenever possible, the scheduling of earth-disturbing construction activities should not be made during anticipated rain events. To mitigate any potential runoff or run-on within the project area, construction site BMPs should be installed prior to the start of construction.

Disturbed soil areas (DSAs) will be protected in accordance with the project's pollution control measures. Measures that are to be considered for this project are shown below and will be detailed during the design phase:

- Soil Stabilization Measures
- Sediment Control Measures
- Tracking Control
- Non-stormwater Management Measures
- General Construction Site Management
- Stormwater Sampling and Analysis

Soil stabilization and sediment control include placing linear sediment barriers such as silt fence at the toe of all excavation and embankment slopes. Contour grading of slopes shall include surface roughening by walking the slopes with tracked equipment. Immediately thereafter, slope interruption devices such as fiber rolls shall be installed and soil stabilizer shall be hydraulically applied. Wherever possible, early implementation of permanent erosion control seeding or landscape planting shall be performed.

There are riparian areas adjacent to creeks that will be designated as ESAs and protected with temporary high visibility fencing. Construction within the creek channels is anticipated, so temporary stream crossings and clear water diversions shall be considered to protect water quality; details for these systems will be developed during the design phase.

Concrete work is anticipated for this project and shall be managed through the use of temporary concrete washout bins.

Storm drain inlet protection shall be deployed throughout the project.

## Const. BMP Strategy

- Covers all BMP categories
  - Some specified BMPs
- 
- ESA Area protection
  - Concrete work
  - Inlet protection

# Example SWDR – Long Form - PID Level

Various waste management, materials handling, and other housekeeping BMPs shall be used throughout the duration of the project. Stockpiles of various kinds are anticipated and shall be maintained with the appropriate BMPs.

The project includes work on bridges for widening, and the project team may propose upsizing or extending cross culverts. Some of these waterways are perennial and may need dewatering operations or temporary creek diversions during construction to protect water quality. A dewatering permit from the RWQCB will be needed for proposed work near these perennial waterways. Dewatering for retaining wall footings or pilings may also be needed.

The project has medium wind erosion potential. Off-site tracking of sediment shall be limited by using stabilized construction entrances and roadways in combination with regular street sweeping and vacuuming. Locations of tracking control BMPs will be considered during the design phase.

It is not anticipated that active treatment systems will be necessary for this project. Further consideration will be made during the design phase.

At this phase of the project, a general lump sum for construction site BMPs is calculated using the Percent of Total Project Cost Method per Appendix F of the PPDG.

## Storm Water Sampling and Analysis

This project is required to perform stormwater sampling at all discharge locations. Numeric Action Levels and Numeric Effluent Limitations are applicable to this project because the project is Risk Level 3. The required specifications will be prepared during the design phase included in the project Special Provisions.

This project is required to incorporate bioassessment monitoring for impaired receiving waters. Bioassessment monitoring is required both upstream and downstream of the impacted areas, before and after the project.

## Construction BMP Strategy

- Waste management
- Dewatering needed
- Wind erosion
- ATS not needed
- Total Project Cost Estimate Method

## SW Sampling and Analysis

- Risk level 3 Monitoring
- Bioassessment required

# Example SWDR – Long Form – PS&E

## 6. Proposed Temporary Construction Site BMPs to Be Used on Project

As presented in Section 2 of this Report, this project is classified as Risk Level 3. This section presents the temporary construction site BMP strategy to be implemented for this project to meet both current Caltrans criteria and the requirements presented in the CGP.

The Caltrans Construction Stormwater Coordinator has reviewed and approved the BMP approach and specifications for this project on October 5, 2010.

### Storm Water Pollution Prevention Plan

The project has a DSA of 411.7 acres. Because this project disturbs more than one acre of soil, a Storm Water Pollution Prevention Plan (SWPPP) must be submitted for this project by the Contractor prior to the start of construction. The SWPPP include a Construction Site Monitoring program (CSMP) that presents procedures and methods related to the visual monitoring and sampling and analysis plans for non-visible pollutants, sediment and turbidity, pH, and receiving waters.

### Rain Event Action Plan

Risk Level 3 projects are required to prepare a Rain Event Action Plan (REAP). The number of REAPs anticipated for this Project is shown in Table 3. The quantities for REAPs are based on precipitation data from a National Oceanic and Atmospheric Administration station in Gilroy. Calculations are included in the attachments of this report.

- 
- General
  - RL 3

### SWPPP Details

- 
- DSA
  - QSP/QSD requirements

- 
- REAP

# Example SWDR – Long Form – PS&E

Temporary Construction Site BMPs						
ID	BEES	Temporary BMPs - PPDG Appendix C	SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit
<b>Temporary Soil Stabilization</b>						
SS-1	074037	Move-In/Move-out (Temporary Erosion Control)	07-485	No	12	EA
SS-2	071325	Temporary Fence (Type ESA)	07-446	Yes	45,000	LF
SS-3	074040	Temp. Hydraulic Mulch (Bonded Fiber Matrix)	07-381	No	30,000	SQYD
SS-7	074034	Temporary Cover	07-395	Yes	15,000	SQYD
<b>Subtotal Soil Stabilization BMPs</b>						
<b>Temporary Sediment Control</b>						
ID	BEES	Temporary Sediment Control	SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit
SC-1	074029	Temp. Silt Fence	07-430	Yes	67,000	LF
SC-5	074028	Temporary Fiber Roll	07-420	Yes	8,000	LF
SC-7	074041	Street Sweeping	07-360	No	1	LS
SC-10	074038	Temp. Drainage Inlet Protection	07-490	Yes	200	EA
<b>Subtotal Sediment Control BMPs</b>						
<b>Temporary Tracking Control</b>						
ID	BEES	Temporary Tracking Control	SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit
TC-1	074033	Temp. Construction Entrance	07-480	Yes	50	EA
<b>Subtotal Tracking Control BMPs</b>						
<b>Temporary Waste Management Control</b>						
ID	BEES	Temporary Waste Management Control	SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit
WM-1	CSM*	Material Delivery and Storage	07-346	No		LS
WM-2	CSM*	Material Use	07-346	No		LS
WM-3	CSM*	Stockpile Management	07-346	No		LS
WM-4	CSM*	Spill Prevention and Control	07-346	No		LS
WM-5	CSM*	Solid Waste Management	07-346	No		LS
WM-6	CSM*	Hazardous Waste Management	07-346	No		LS
WM-7	CSM*	Contaminated Soil Management	07-346	No		LS
WM-8	074043	Temp. Concrete Washout Bin	07-047	No	15	EA
WM-9	CSM*	Sanitary/Septic Waste Managemt	07-346	No		LS
WM-10	CSM*	Liquid Waste Management	07-346	No		LS
<b>Subtotal Waste Management &amp; Materials Handling BMPs</b>						

## Estimate Notables

- Move-in / Move-out
- Street Sweeping
- Temp. Const. Entrance

## Waste Management

- Notice Temp. Concrete Washout SSP and quantity

# Example SWDR – Long Form – PS&E

ID	BEES	Temporary Non-Storm Water Management	SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit
NS-1	CSM*	Water Conservation Practices	07-346	No		LS
NS-2	CSM*	Dewatering Operations	07-341	No		LS
NS-3	CSM*	Paving & Grinding Operations				LS
NS-4		Temporary Stream Crossing	07-495	No		LS
NS-5		Clear Water Diversion		No		LS
NS-6	CSM*	Illicit Connection/Illegal Discharge Detection and Reporting	07-346	No		LS
NS-7	CSM*	Potable Water/Irrigation	07-346	No		LS
NS-8	CSM*	Vehicle and Equipment Cleaning	07-346	No		LS
NS-9	CSM*	Vehicle and Equipment Fueling	07-346	No		LS
NS-10	CSM*	Vehicle and Equipmt Maintenance	07-346	No		LS
NS-11	CSM*	Pile Driving Operations	07-346	No		LS
NS-12	CSM*	Concrete Curing	07-346	No		LS
NS-13	CSM*	Material & Equipmt use over water	07-346	No		LS
NS-14	CSM*	Concrete Finishing	07-346	No		LS
NS-15	CSM*	Structure Demolition/Removal Over or Adjacent to Water	07-346	No		LS
NS-16		Temporary Batch Plants				LS
	CSM*	*Construction Site Management	07-346	No	1	LS
<b>Subtotal Non-Storm Water Management</b>						

## Soil Stabilization Measures

The following soil stabilization measures are considered for this project and are included as separate bid line items in the Basic Engineering Estimating System (BEES) of this project:

- Temporary Move-In/Move-Out (Erosion Control)
- Temporary Mulch (Bonded Fiber Matrix)
- Temporary Cover
- Temporary Fence (Type ESA)

Because construction is scheduled cover approximately two years and the DSA is greater than 25 acres, Move-In/Move-Out locations are used to implement temporary erosion control and construction site measures throughout the project.

Temporary mulch (bonded fiber matrix) is placed on any exposed disturbed soils, stockpiles of soils and unprotected slopes that may be susceptible to erosion from either runoff or wind. Temporary Cover is also used to protect disturbed soil areas from erosion. This additional measure to protect disturbed soil areas is necessary, when a rain event has the potential to occur before vegetation is established. Locations of potential stockpiles were discussed with the Construction Resident Engineer on October 3, 2010.

There are identified ESAs within the project limits. Temporary fence (Type ESA) is specifically designed to designate an area as being outside the limits of work.

## Estimate Notables

- 07-346 – Const. Site Mgmt.
- Temp. Stream Crossing

## Soil Stabilization

- Relevant BMPs
- Duration of coverage
- Supportive calcs.

# Example SWDR – Long Form – PS&E

## Construction Site Management

The project Construction Site Management lump sum consists of controlling potential sources of water pollution before they enter stormwater systems or water courses. The measures covered under Construction Site Management are specified in Project Special Provisions.

## Storm Water Sampling and Analysis

This project is required to perform stormwater sampling at all discharge locations. Numeric Action Levels and Numeric Effluent Limitations are applicable to this project because the project is Risk Level 3. Storm water sampling and analysis requirements are specified in the Project Special Provisions. This project is required to incorporate bioassessment monitoring for impaired receiving waters. Bioassessment monitoring is required both upstream and downstream of the impacted areas, before and after the project; these requirements are specified in the Project Special Provisions.

## Const. Site Management

- Reflects items in quantity table
- Broken down between waste management and non-storm

## Sampling and Analysis

- Quantifies number of anticipated storms?



# SWDR – Long Form

Section 7 Maintenance BMPs

May 6, 2011

# Stencils

Briefly describe the use of stencils at publicly accessible drainage as follows:



- Park and Ride Lots.
- Rest Areas.
- Vista Points.
- Bike Paths.
- Maintenance Facilities
- Roads and streets of Phase 2 and Phase 1 MS4s.



# Stencils



# Other considerations

- Sect. 2.4.4. and page 2-25

Other BMPs exist, but are installed based on public need or desires of the Maintenance Area Manager in line with the project scope and budget. These BMPs might include the installation of call boxes, anti-littering signage or measures, stabilized access points, vehicle pullouts, temporary material and waste storage locations, etc.



# Long Form Section 7 - Narrative

Acceptable for SWDR at PID, PA/ED, or PS&E?

## 7. Maintenance BMPs (Drain Inlet Stenciling)

Drain inlet stenciling is required

Poor?

## 7. Maintenance BMPs (Drain Inlet Stenciling)

A meeting was held on 9/1/10 to coordinate the maintenance BMPs and concerns for this project with the District Maintenance Stormwater Coordinator (MSWC) Paul Revere. Topics discussed included protection of existing inlets, drain inlet stenciling, and the permanent erosion control strategy for the site. Drain inlet stenciling is not required as determined by the District MSWC. Final concurrence on the implementation strategy was obtained from Paul Revere via email to Betsy Ross on 9/30/10.

Good!



# Long Form SWDR

Required Attachments

May 6, 2011

# Long Form Attachments

## MAIN IDEAS FOR THIS SECTION

### WHAT'S NEW:

- RUSLE2 Summary Sheet
- Risk Level Determination
- Rainfall Erosivity Waiver, if applicable
- Treatment BMP summary spreadsheets-new format

### WHAT CAN BE IMPROVED:

- Vicinity maps
- Initials on EDFs (at all phases)
- Initials on Construction Site BMP Strategy Form (at PS&E phase)

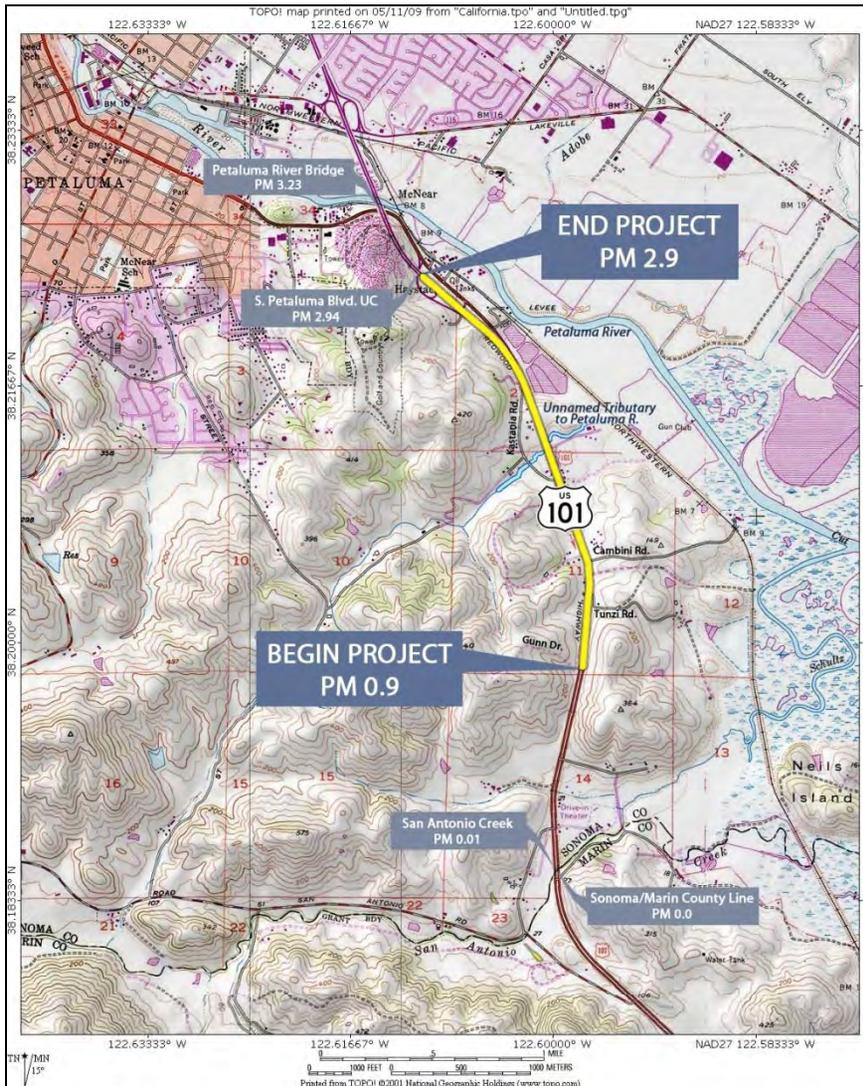
# Long Form – Required Attachments

- Vicinity Map
- Evaluation Documentation form (EDF)
- Risk Level Determination

## **REQUIRED AT PS&E ONLY**

- Construction Site BMP Consideration Form
- Quantities for Construction Site BMPs
- RUSLE2 Summary Sheet (if applicable)
- Treatment BMP Summary Spreadsheet (if applicable)
- Rainfall Erosivity Waiver (if applicable)

# Long Form Attachments

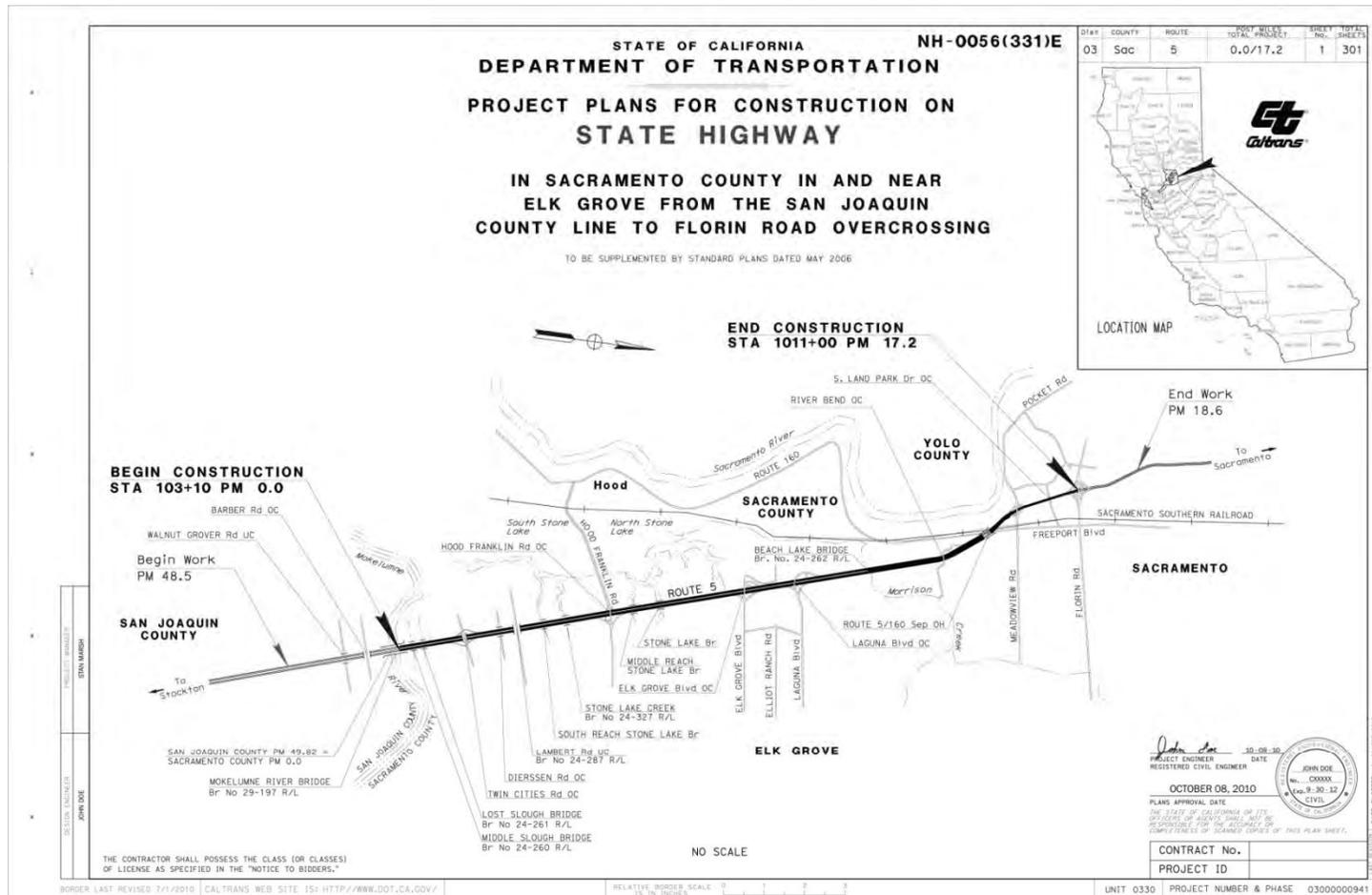


## Vicinity Map

### Key Labels:

- Begin and End Post Mile (PM)
- Major Roadways
- Stream Crossings
- Receiving Water Bodies

# Long Form Attachments



You may use the Title Sheet as the Vicinity Map at PS&E



# Long Form Attachments

## APPENDIX E

### Construction Site BMP Consideration Form

DATE: **Dec. 2009**

Project ID (or EA): \_\_\_\_\_

Project ID (or EA): **XXXXXXXXXX**

Project Evaluation Process for the Consideration of Construction Site BMPs

NO.	CRITERIA	YES ✓	NO ✓	SUPPLEMENTAL INFORMATION
1.	Will construction of the project result in areas of disturbed soil as defined by the Project Planning and Design Guide (PPDG)?	<b>X</b>		If Yes, Construction Site BMPs for Soil Stabilization (SS) will be required. Complete CS-1, Part 1. Continue to 2. If No, Continue to 3.
2.	Is there a potential for disturbed soil areas within the project to discharge to storm drain inlets, drainage ditches, areas outside the right-of-way, etc?	<b>X</b>		If Yes, Construction Site BMPs for Sediment Control (SC) will be required. Complete CS-1, Part 2. Continue to 3.
3.	Is there a potential for sediment or construction related materials and wastes to be tracked offsite and deposited on private or public paved roads by construction vehicles and equipment?	<b>X</b>		If Yes, Construction Site BMPs for Tracking Control (TC) will be required. Complete CS-1, Part 3. Continue to 4.
4.	Is there a potential for wind to transport soil and dust offsite during the period of construction?	<b>X</b>		If Yes, Construction Site BMPs for Wind Erosion Control (WF) will be required. Complete CS-1, Part 4. Continue to 5.
5.	Is dewatering anticipated or will construction activities occur within or adjacent to a live channel or stream?		<b>X</b>	If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Part 5. Continue to 6.
6.	Will construction include saw-cutting, grinding, drilling, concrete or mortar mixing, hydro-demolition, blasting, sandblasting, painting, paving, or other activities that produce residues?	<b>X</b>		If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Parts 5 & 6. Continue to 7.
7.	Are stockpiles of soil, construction related materials, and/or wastes anticipated?	<b>X</b>		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 8.
8.	Is there a potential for construction related materials and wastes to have direct contact with precipitation, stormwater run-on, or stormwater runoff; be dispersed by wind; be dumped and/or spilled into storm drain systems?	<b>X</b>		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 9.
9.	End of checklist	<b>X</b>		Document for Project Files by completing this form, and attaching it to the SWDR.

PE to initialize after concurrence with Construction (PS&E only) Date

## Construction Site BMP Consideration Form (covered earlier)

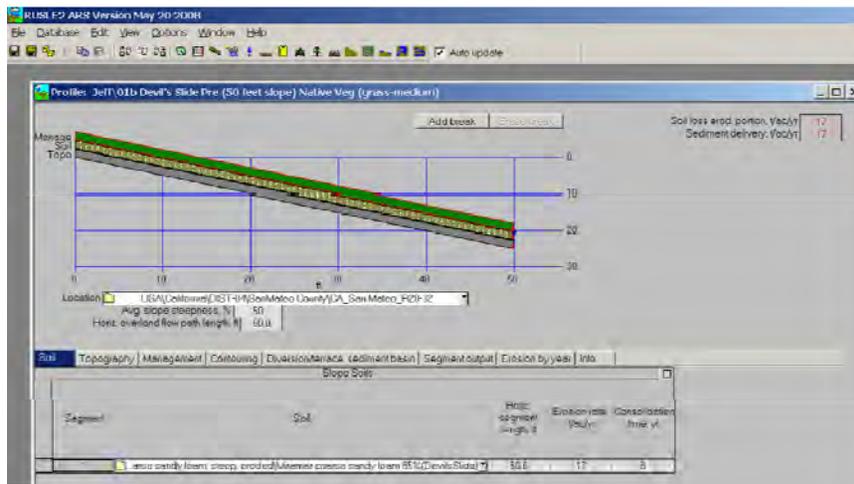


**Don't forget:  
PE Initials at PS&E &  
date!**

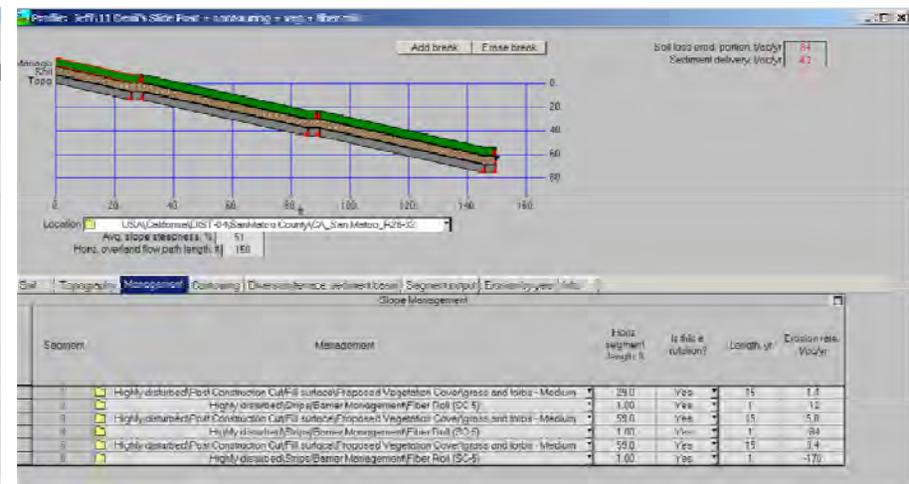
# Long Form Attachments

## RUSLE2 Summary Sheet

- Screen shots, summary of assumptions, and outputs
- For pre-construction, construction, and post-construction conditions



Pre-construction EC



Post-construction EC

<http://www.dot.ca.gov/hq/oppd/stormwtr/rusle2.htm>

# Long Form Attachments

## Treatment BMP Summary Spreadsheet

- Report Date
- District EA, County, Route, Beg PM, and End PM
- Description, Phase, and Type of SWDR
- Exempt, SWPPP or WPCP
- Added Impervious, % Treated
- MS4 Area, Water Bodies Affected
- Type of Treatment and quantity
- Construction Start and Construction Completion

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Report Date	Dist EA	District EA	EA	County	Route	Beg PM	End PM	Descrip	Phase	LongSWDR	PhaseRptDate	Exempt	TBMP
2														
3														

# Long Form Attachments

The screenshot shows a web browser window with the address <http://onramp.dot.ca.gov/hq/design/stormwater/>. The page features a banner for "Project Delivery Design" and a search bar. A left-hand navigation menu includes sections for "Storm Water Menu" and "Division of Design Menu". The main content area is titled "Storm Water Management" and contains text about the Office of Storm Water Management's duties, including coordination and program evaluation. A "Staff" section lists Tim Sobelman and Sean Penders. A dropdown menu is open over the "BMP Pilot Projects" link, showing options like "Treatment BMP Tracking", "Process Policy", "SWDR Tracking User Guide", "SWDR Input Form", and "SWDR Tracking Tool". Three images at the bottom illustrate "Treatment BMPs", "Construction Site BMPs", and "Poor BMP Examples".

**Storm Water Menu**

- PD SWAT
- Treatment BMP&s (Plans, Specifications and Guidance)
- PPDG
- BMP Examples, Spec & Cost Estimate
- Specifications
- FAQs
- Training
- Studies & Reports
- Miscellaneous
- District Storm Water
- Other Storm Water

**Division of Design Menu**

- Design Offices
- Design Guidance
- About Division of Design

**Storm Water Management**

The Office of Storm Water Management — Design (OSWMD) has the following duties:

**Coordination:** In coordination with the Water Quality Program, the OSWMD provides general guidance to the District Design Divisions on the implementation of quality management practices. This is accomplished by conducting regular Project Design - Storm Water Advisory Team meetings, and by preparing, and teaching guidance material such as the Project Planning and Design Guide (PPDG).

**Program Evaluation:** The OSWMD monitors and assesses District incorporation of storm water quality BMPs into facility designs. This will be accomplished through the Design Compliance Monitoring Program that is currently under development. The main element of Design Compliance is the implementation of the Data Report (SWDR).

**Staff**

- Tim Sobelman (916) 653-5747
- Sean Penders (916) 653-5646

**Task Orders**

- Treatment
- Maintenance
- BMP Pilot Projects

**Treatment BMP Tracking**

- Process Policy
- SWDR Tracking User Guide
- SWDR Input Form
- SWDR Tracking Tool

**Treatment BMPs**

**Construction Site BMPs**

**Poor BMP Examples**

**Related Links**

# Long Form Attachments

## Treatment BMP Summary

- List all TBMP locations
- Route and direction from road
- Beginning and ending Station/PM

Existing features can be considered as Treatment BMPs...

- Features must meet guidelines, regardless of design intent
- Needs SW Coordinator and Project Team concurrence

### Biofiltration Strips

Station	Route	Direction	Beginning Station	Flow Rate	Ending Station	Flow Rate
Son	101	NB	413+20	7.82	424+90	8.04
Son	101	NB	425+70	8.06	432+54	8.19
Son	101	NB	442+50	8.38	451+70	8.55
Son	101	NB	455+00	8.61	471+49	8.93
Son	101	SB	376+70	7.13	381+55	7.22
Son	101	SB	381+80	7.23	386+57	7.32
Son	101	SB	386+73	7.32	389+30	7.37
Son	101	SB	389+30	7.37	393+05	7.44
Son	101	SB	393+30	7.44	396+12	7.50
Son	101	SB	425+59	8.06	432+00	8.18



# Long Form SWDR

Supplemental Attachments

May 6, 2011

# Long Form Supplemental Attachments

## MAIN IDEAS FOR THIS SECTION

### WHAT'S NEW:

- New CGP BEES items included in Storm Water BMP Cost Summary  
Estimating Guidance for CGP can be downloaded at <http://www.dot.ca.gov/hq/oppd/stormwtr/>
- Updated Checklists

### WHAT CAN BE IMPROVED:

- Conceptual Drainage Map/Plan (if needed)
- BMP Deployment Plans

# Long Form Supplemental Attachments

## **Supplemental Attachments** (refer to E-12 & 13 for entire list)

- Storm Water BMP Cost Summary
- Plans showing BMP deployment
- Treatment BMP calculations/cross-sections
- 07-340 WPCP or 07-345 SWPPP (at PS&E, if requested by SW Coordinator)
- Drainage plans (or conceptual drainage map)

### **Already Covered:**

- Correspondence with SW Coordinator

### **Already Covered in Long Form Sections:**

- Relevant Checklists (updated in PPDG for 2010)



# Long Form Supplemental Attachments

## HANDOUT #7



# Long Form Supplemental Attachments

## STORM WATER BMP COST SUMMARY

### • Temporary Construction Site BMP Costs

- Soil stabilization
- Sediment control
- Wind erosion control
- Tracking control
- Waste/materials management
- Non-storm water management

### • Treatment BMP Costs

### • DPP BMP Costs

Project Name:	
District:	04 & 05
EA:	XX-XXXXXX
County:	SCI & SBt
Route:	101/25
Postmile:	0.0, 4.9, 1.6
End Postmile:	5.0, 7.5, 2.5

Total Treatment BMP Costs \$ 157,500

Total Design Pollution Prevention BMP Costs \$ 1,039,500

**Total Permanent Storm Water BMP Costs \$ 1,197,000**

Subtotal Soil Stabilization BMPs \$ 453,000

Subtotal Sediment Control BMPs \$ 356,000

Subtotal Wind Erosion Control BMPs \$ -

Subtotal Tracking Control BMPs \$ 125,000

Subtotal Waste Management & Materials Handling BMPs \$ 15,000

Subtotal Non-Storm Water Management \$ 200,000

Subtotal Miscellaneous Items \$ 631,100

**Total Construction Site BMP Costs \$ 1,780,100**

CGP Storm Water Sampling \$ 619,100.00

CGP Storm Water Sampling Supplemental Work \$ 12,000

**Total Permanent Storm Water BMP Costs \$ 631,100**

**TOTAL COST FOR STORM WATER BMPs \$ 3,608,200**

# Long Form Supplemental Attachments

## Storm Water BMP Cost Breakdown Treatment & DPP BMPs

**PID:**

No summary needed

**PA/ED:**

Include as much info as  
is available

**PS&E:** →

Specific BMP types,  
quantities, and costs



### Treatment BMPs

BEES	Pollution Prevention BMPs Appendix A	PPDG	SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit	Unit Cost (\$/Unit)	Cost (\$)
	<b>Biofiltration Swale</b>							
204013	Plant (Group M)		20-502	No	30,000	EA	3	\$ 90,000
200101	Imported Topsoil		20-160	No	1,500	CY	\$45	\$ 67,500
<b>Total Treatment BMP Costs</b>								<b>\$ 157,500</b>

### Design Pollution Prevention BMPs

BEES	Pollution Prevention BMPs Appendix A	PPDG	SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit	Unit Cost (\$/Unit)	Cost (\$)
	<b>Downstream Effects/Increased Flow Mitigation</b>							
705311	- 18" Alternative Flared End Section		No	Yes	50	EA	550	\$ 27,500
705315	- 24" Alternative Flared End Section		No	Yes	20	EA	650	\$ 13,000
	<b>Slope/Surface Protection Systems-Hard Surfaces</b>							
721007	- Rock Slope Protection (1/4 Ton, Method B)		72-010	No	350	CY	190	\$ 66,500
721008	- Rock Slope Protection (Light, Method B)		72-010	No	1,000	CY	65	\$ 65,000
721023	- Rock Slope Protection (1/2 Ton, Method B)		72-010	No	50	CY	250	\$ 12,500
729010	- Rock Slope Protection Fabric		72-150	No		SQYD		\$ -
	<b>Slope/Surface Protection Systems-Vegetated Surfaces</b>							
203021	Fiber Rolls		20-060	Yes	60000	LF	2.00	\$ 120,000
203031	Erosion Control (Hydroseed)		20-040	No	1,500,000	SQFT	0.25	\$ 375,000
203018	Rolled Erosin Control Product (Netting)		20-015	No	250,000	SQFT	0.40	\$ 100,000
204099	Plant Establishment Work		20-550	No	1	LS	100,000	\$ 100,000
203026	Move-In/Move-Out (Erosion Control)		20-020	No	20	EA	500.00	\$ 10,000
	<b>Concentrated Flow Conveyance Systems</b>							
194001	- Ditch Excavation		No	No	6,000	CY	\$25	\$ 150,000
<b>Total Design Pollution Prevention BMP Costs</b>								<b>\$ 1,039,500</b>

<b>Total Permanent Storm Water BMP Costs</b>								<b>\$ 1,197,000</b>
--	--	--	--	--	--	--	--	---------------------

# Long Form Supplemental Attachments

## Storm Water BMP Cost Breakdown: Temporary Construction Site BMP Costs

Storm Water BMP Cost Summary  
THIS INFORMATION IS FOR **CALTRANS INTERNAL USE ONLY**

### Temporary Construction Site BMPs

ID	BEEES	Temporary BMPs - PPDG Appendix C	SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit	Unit Cost (\$/Unit)	Cost (\$)
<b>Temporary Soil Stabilization</b>								
SS-1	074037	Move-In/Move-out (Temporary Erosion Control)	07-485	No	12	EA	500	\$ 6,000
SS-2	071325	Temporary Fence (Type ESA)	07-446	Yes	45,000	LF	8	\$ 360,000
SS-3	074040	Temp. Hydraulic Mulch (Bonded Fiber Matrix)	07-381	No	30,000	SQYD	0.90	\$ 27,000
SS-7	074034	Temporary Cover	07-395	Yes	15,000	SQYD	4	\$ 60,000
<b>Subtotal Soil Stabilization BMPs</b>								<b>\$ 453,000</b>

ID	BEEES	Temporary Sediment Control	SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit	Unit Cost (\$/Unit)	Cost
SC-1	074029	Temp. Silt Fence	07-430	Yes	67,000	LF	2	\$ 134,000
SC-5	074028	Temporary Fiber Roll	07-420	Yes	8,000	LF	4	\$ 32,000
SC-7	074041	Street Sweeping	07-360	No	1	LS	180,000	\$ 180,000
SC-10	074038	Temp. Drainage Inlet Protection	07-490	Yes	200	EA	50	\$ 10,000
<b>Subtotal Sediment Control BMPs</b>								<b>\$ 356,000</b>

ID	BEEES	Temporary Tracking Control	SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit	Unit Cost (\$/Unit)	Cost
TC-1	074033	Temp. Construction Entrance	07-480	Yes	50	EA	2,500	\$ 125,000
<b>Subtotal Tracking Control BMPs</b>								<b>\$ 125,000</b>

ID	BEEES	Temporary Waste Management Control	SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit	Unit Cost (\$/Unit)	Cost
WM-1	CSM*	Material Delivery and Storage	07-346	No		LS		\$ -
WM-2	CSM*	Material Use	07-346	No		LS		\$ -
WM-3	CSM*	Stockpile Management	07-346	No		LS		\$ -
WM-4	CSM*	Spill Prevention and Control	07-346	No		LS		\$ -
WM-5	CSM*	Solid Waste Management	07-346	No		LS		\$ -
WM-6	CSM*	Hazardous Waste Management	07-346	No		LS		\$ -
WM-7	CSM*	Contaminated Soil Management	07-346	No		LS		\$ -
WM-8	074043	Temp. Concrete Washout Bin	07-047	No	15	EA	1,000	\$ 15,000
WM-9	CSM*	Sanitary/Septic Waste Management	07-346	No		LS		\$ -
WM-10	CSM*	Liquid Waste Management	07-346	No		LS		\$ -
<b>Subtotal Waste Management &amp; Materials Handling BMPs</b>								<b>\$ 15,000</b>

ID	BEEES	Temporary Non-Storm Water Management	SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit	Unit Cost (\$/Unit)	Cost
NS-1	CSM*	Water Conservation Practices	07-346	No		LS		\$ -
NS-2	CSM*	Dewatering Operations	07-341	No		LS		\$ -
NS-3	CSM*	Paving & Grinding Operations				LS		\$ -
NS-4		Temporary Stream Crossing	07-495	No		LS		\$ -
NS-5		Clear Water Diversion		No		LS		\$ -
NS-6	CSM*	Illicit Connection/Illegal Discharge Detection and Reporting	07-346	No		LS		\$ -
NS-7	CSM*	Potable Water/Irrigation	07-346	No		LS		\$ -
NS-8	CSM*	Vehicle and Equipment Cleaning	07-346	No		LS		\$ -
NS-9	CSM*	Vehicle and Equipment Fueling	07-346	No		LS		\$ -
NS-10	CSM*	Vehicle and Equipmt Maintenance	07-346	No		LS		\$ -
NS-11	CSM*	Pile Driving Operations	07-346	No		LS		\$ -
NS-12	CSM*	Concrete Curing	07-346	No		LS		\$ -
NS-13	CSM*	Material & Equipmt use over water	07-346	No		LS		\$ -
NS-14	CSM*	Concrete Finishing	07-346	No		LS		\$ -
NS-15	CSM*	Structure Demolition/Removal Over or Adjacent to Water	07-346	No		LS		\$ -
NS-16		Temporary Batch Plants				LS		\$ -
	CSM*	*Construction Site Management	07-346	No	1	LS	200,000	\$ 200,000
<b>Subtotal Non-Storm Water Management</b>								<b>\$ 200,000</b>

ID	BEEES	Miscellaneous Items	SSP/nSSP (#, Y or N)	STD. Det. (Y or N)	Quantity	Unit	Unit Cost (\$/Unit)	Cost
	074019	Water Pollution Control (SWPPP)	07-345	No	1	LS	398,400	\$ 398,400
	066596	Additional Water Pollution Control	07-345	No	1	LS	6,000	\$ 6,000
	066597	Storm Water Sampling and Analysis	07-345	No	1	LS	6,000	\$ 6,000
	074056	Rain Event Action Plan	07-345	No	83	EA	500	\$ 41,500
	074057	Storm Water Annual Report	07-345	No	2	EA	2,000	\$ 4,000
	074058	Storm Water Sampling and Analysis Day	07-345	No	46	LS	3,157	\$ 145,200
		Receiving Water Bioassessment	07-345	No	1	LS	30,000	\$ 30,000
<b>Subtotal Miscellaneous Items</b>								<b>\$ 631,100</b>

<b>Total Construction Site BMP Costs</b>								<b>\$ 1,780,100</b>
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# Long Form Supplemental Attachments

## Storm Water BMP Cost Breakdown: CGP Cost Estimate and Guidance

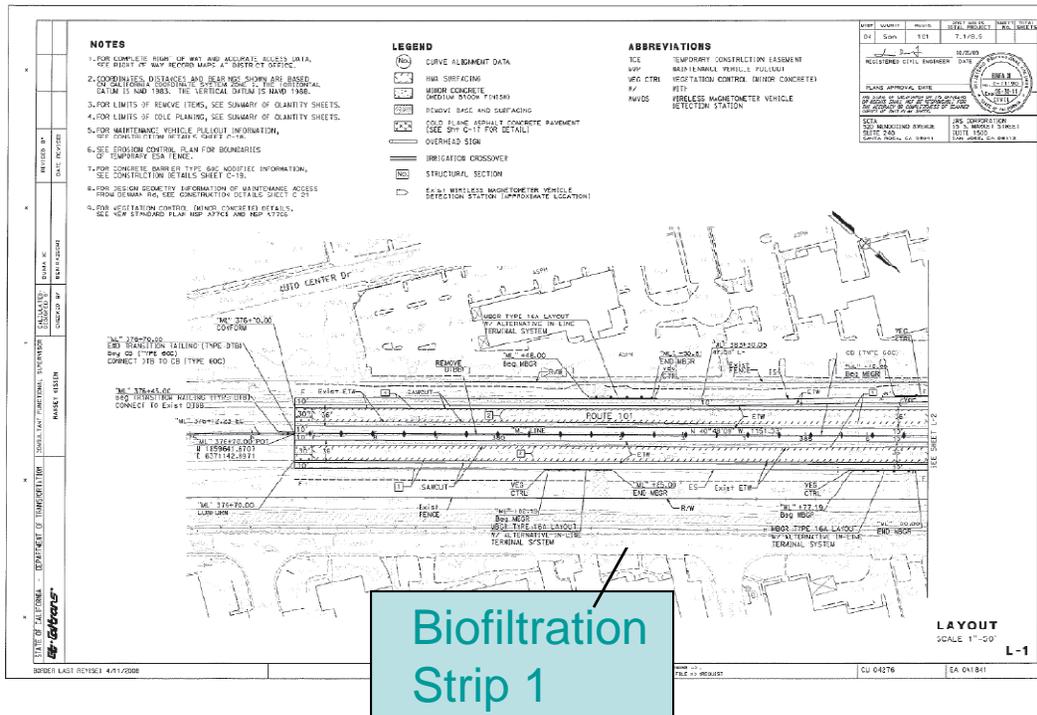
<b>T</b>  <b>1.</b>  					

New/Updated Items



# Long Form Supplemental Attachments

Plans Showing BMP Deployment:  
Layout Sheets or other plans



PID:

No plans needed

PA/ED:

Conceptual plans fine, if available (hand drawn, approximate)

PS&E:

Specific locations and sizes in CAD

# Long Form Supplemental Attachments

Checklists: Use 2010 PPDG (see E-12 and E-13 for additional items)

- Storm Water BMP Cost Summary
- BMP Cost Information (PPCE during PID & PECE for PS&E)
- Plans showing BMP Deployment
- SW-1, Site Data Sources
- SW-2, Storm Water Quality Issues Summary
- SW-3 Measures for Avoiding or Reducing Potential Storm Water BMPs
- DPP-1, Parts 1–5 (Design Pollution Prevention BMPs)
  - only those parts that are applicable
- T-1, Parts 1–10 (Treatment BMPs)
  - only those parts that are applicable
- CS-1, Parts 1–6 (Construction Site BMPs)
  - only those parts that are applicable



# Short Form SWDR

Cover Sheet

May 6, 2011

# Short Form Cover Sheet

## MAIN IDEAS FOR THIS SECTION

### WHAT'S NEW:

- Short Form encouraged
  - Consider projects with less than 5 acres
- Include Rainfall Erosivity Waiver if applicable

### WHAT CAN BE IMPROVED:

- Don't forget to sign and stamp at PS&E

# Short Form Cover Sheet

## APPENDIX E

## Short Form - Storm Water Data Report



Dist-County-Route: \_\_\_\_\_  
Post Mile Limits: \_\_\_\_\_  
Project Type: \_\_\_\_\_  
Project ID (or EA): \_\_\_\_\_  
Program Identification: \_\_\_\_\_  
Phase:  PID  
 PA/ED  
 PS&E

Regional Water Quality Control Board(s): \_\_\_\_\_

1. Is the project required to consider incorporating Treatment BMPs? Yes  No
2. Does the project disturb 5 or more acres of soil? Yes  No
3. Does the project disturb more than 1 acre of soil and not qualify for the Rainfall Erosivity Waiver? Yes  No
4. Does the project potentially create permanent water quality impacts? Yes  No
5. Does the project require a notification of ADL reuse? Yes  No

If the answer to any of the preceding questions is "Yes", prepare a Long Form - Storm Water Data Report.

Estimate Construction Start Date: \_\_\_\_\_ Construction Completion Date: \_\_\_\_\_  
Separate Dewatering Permit (if yes, permit number) Yes  Permit # \_\_\_\_\_ No   
Erosivity Waiver Yes  Date: \_\_\_\_\_ No

*This Short Form - Storm Water Data Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the data upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.*

\_\_\_\_\_  
[Name], Registered Project Engineer/Landscape Architect Date  
I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate;

(Stamp Required for PS&E only)

\_\_\_\_\_  
[Name], District/Regional SW Coordinator or Designee Date

# Short Form Cover Sheet

Regional Water Quality Control Board(s): San Francisco Bay RWQCB

- |    |  |                              |  |
|----|--|------------------------------|--|
| 1. | Is the project required to consider incorporating Treatment BMPs?                                    | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 2. | Does the project disturb 5 or more acres of soil?  | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 3. | Does the project disturb more than 1 acre of soil and not qualify for the Rainfall Erosivity Waiver? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 4. | Does the project potentially create permanent water quality impacts?                                 | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| 5. | Does the project require a notification of ADL reuse   | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |



Caltrans ENCOURAGES use of short form!  
Get SW Coordinator concurrence.

But if “Yes” to any above questions...  
prepare a Long Form SWDR, unless  
approved by Design SW Coord. –

Be sure to document!



# Short Form Cover Sheet

If the answer to any of the preceding questions is "Yes", prepare a Long Form – Storm Water Data Report.

Estimate Construction Start Date: \_\_\_\_\_ Construction Completion Date: \_\_\_\_\_

Separate Dewatering Permit (if yes, permit number) Yes  Permit # \_\_\_\_\_ No

Erosivity Waiver Yes  Date: \_\_\_\_\_ No

*This Short Form – Storm Water Data Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the data upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.*

\_\_\_\_\_  
*[Name), Registered Project Engineer/Landscape Architect Date*

*I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:*

*[Stamp Required for PS&E only)*

\_\_\_\_\_  
*[Name), District/Regional SW Coordinator or Designee Date*

# Short Form Cover Sheet

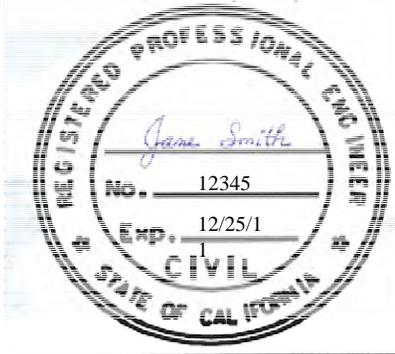
If the answer to any of the preceding questions is "Yes", prepare a Long Form – Storm Water Data Report.

Estimate Construction Start Date: 05/25/10 Construction Completion Date: 05/25/11

Separate Dewatering Permit (if yes, permit number) Yes  Permit # 123456 No

Erosivity Waiver Yes  Date: \_\_\_\_\_ No

*This Short Form – Storm Water Data Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the data upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.*



*(Stamp Required for PS&E only)*

*Jane Smith*

03/01/10

*[Name), Registered Project Engineer/Landscape Architect Date*

*I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:*

*Tom Hill*

03/01/10

*[Name), District/Regional SW Coordinator or Designee Date*

Stamp only at  
PS&E



# Short Form SWDR

## Section 1. Project Description

May 6, 2011

# Short Form Section 1

## MAIN IDEAS FOR THIS SECTION

### WHAT'S NEW:

- Nothing new here!

### WHAT SHOULD BE IMPROVED:

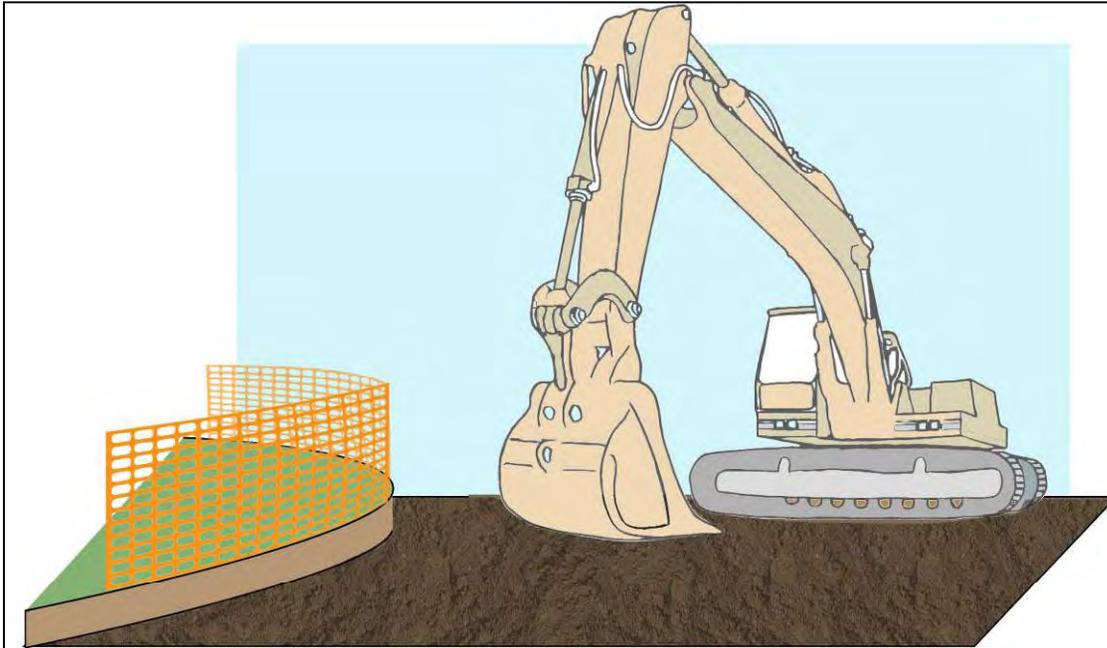
- Clearly describe if project is “routine maintenance”
- For Short Forms, don't include site information that is not relevant to the project

# Short Form Section 1

## SECTION 1: PROJECT DESCRIPTION

1. Type of project and major engineering features
2. Why project will not cause water quality impacts
3. Total DSA and how calculated
4. Existing and proposed impervious surface
5. Other pertinent SW info., if practical

# Short Form Section 1



Do you know:

**DSA?**

## Disturbed Soil Area

- Areas of exposed, erodible soil that is to be disturbed
- Within construction limits
- Resulting from construction activities

# Short Form Section 1

## What is a: Routine Maintenance Project?



Per EPA definition, it's a project that:

- Maintains original line/grade, hydraulic capacity, and original purpose
- Provides preventative maintenance to existing facilities

Note: Exempt from CGP requirements, but a WPCP is still required.

DSA is needed for determining EC costs



# Short Form Section 1

## 1. Project Description

This project proposes to place a microsurfacing seal coat consisting of asphaltic emulsion and aggregate on the existing pavement to prolong the life of the roadway in Sierra County near Sierra City on State Route 49 (SR49) from 0.7 miles east of Gold Lake Road to the northern SR 49/89 junction. Prior to placing the microsurfacing, cracks will be sealed, and failed pavement will be replaced by grinding to a maximum depth of 3 inches and repaving with hot mix asphalt (HMA).

Per the EPA definition for the CGP, this project is considered routine maintenance because it maintains the original line and grade, hydraulic capacity, and original purpose of the facilities. This project should have minimal water quality impacts because it does not disturb soil and does not create any new impervious area. With the exception of temporary construction area sign placement and placement of shoulder backing behind HMA dikes, all work is within existing pavement limits and does not count toward the calculation of DSA. This project provides preventative maintenance to existing highway facilities and will maintain existing facility functions. Because this project is routine maintenance, it is exempt from the Construction General Permit requirements.

- Type of project
- Major engineering features

- Why project doesn't impact water quality
- DSA and Net Added Impervious Area



# Short Form SWDR

Attachments

May 6, 2011

# Short Form Attachments

## MAIN IDEAS FOR THIS SECTION

### WHAT'S NEW:

- Include a CGP Risk Level Assessment, if applicable
- Include a CGP Rainfall Erosivity Waiver, if applicable

# Short Form Attachments

## APPENDIX E

### Short Form - Storm Water Data Report

#### 1. Project Description

- Clearly describe the type of project and major engineering features, including a brief explanation why project does not have the potential to create water quality impacts.
- Quantify total disturbed soil area (DSA) and describe how it was calculated. Quantify added impervious areas (if any). It should be noted that projects that preserve, upkeep, and restore roadway structures do not need to include these activities within the calculation for DSA. When projects solely maintain the original line and grade, hydraulic capacity, and original purpose of the facility, then these projects are defined as routine maintenance and exempt from the DSA calculation and the Construction General Permit. Examples of such activities exempt from the DSA calculation are as follows:
  - Placement of shoulder backing material onto existing shoulder backing material.
  - Scarifying of existing shoulder backing material.
  - Re-grading or placement of gravel at existing maintenance access roads.
  - Grinding and grooving of roadway surfaces, including "cold planning" of asphalt surfaces.
  - Replacement of Portland Cement Concrete (PCC) slabs.
  - Highway planting without mass grading.
- Provide any additional information that may be pertinent to the project (e.g. TMDLs, Drinking Water Reservoirs and/or Recharge Facilities, 303(d) water bodies, 401 certifications, ASBS, etc.).

#### 2. Construction Site BMPs

- A WPCP is typically used, unless written direction from the HWQCB requires a SWPPP. Identify if Rainfall Erosivity Waiver was used to eliminate need for SWPPP.
- Identify project, risk level and document required monitoring.
- Coordinate with Construction to determine the appropriate selection of Construction Site BMPs being implemented into the contract documents (e.g. separate line items and/or lump sum).
- Summarize those Construction Site BMPs been designated as separate Bid Line Items.
- Describe any pertinent details from the strategy used for estimating Construction Site BMPs.
- Document coordination effort to get concurrence from Construction regarding the Construction Site BMP strategy and associated quantities (provide names of staff and date of meeting(s)).

#### 3. Required Attachments<sup>1</sup>

- Vicinity Map
- Evaluation Documentation Form
- Construction Site BMP Consideration Form (required at PS&E only)
- Risk Level Determination Documentation, if applicable.
- Rainfall Erosivity Waiver, if applicable (required at PS&E)

<sup>1</sup> Additional attachments may be required as applicable or directed by the District/Regional Design Storm Water Coordinator (e.g. BMP line item estimate, DPP, CS checklists, etc).

## SECTION 3: REQUIRED ATTACHMENTS

1. Vicinity Map
2. Evaluation Documentation Form
3. Construction Site BMP Consideration Form (PS&E)
4. Risk Level Determination (if applicable)
5. Rainfall Erosivity Waiver (if applicable, at PS&E)



Finale!

Final Points

May 6, 2011

# Quick Questions to Discuss

- 1. Can you change the headings of the SWDR?**
- 2. Name some streamlining methods learned today.**
- 3. What is routine maintenance?**
- 4. Is a drainage evaluation needed at PID?**
- 5. What are some LID measures?**
- 6. What is the benefit to doing a long form SWDR?**
- 7. Who is your Design SW Coord.?**
- 8. How do I know if I'm using the current SWDR template?**

# 10 Important items to remember

- 1. Narratives - Tell the “story” and “get to the point.”**
- 2. Use the new, example SWDRs to help define the level of detail needed.**
- 3. Use the Short Form whenever you can. Review project types in Handout #1.**
- 4. Describe your Construction BMP Strategy and obtain concurrence from Const. SW Coordinator.**
- 5. Do not identify costs in the SWDR. Place costs in the supplemental attachments.**
- 6. Document agreements and meetings with the RWQCB, include dates and names.**

# 10 Important items to remember

- 7. Be sure to identify LID measures.**
- 8. Obtain as much biofiltration and infiltration as possible using the new T-1 checklist and tool.**
- 9. Obtain all the signatures – Reviewers only attest to their areas of relevance. PE to stamp SWDR at PS&E only.**
- 10. When in doubt, talk to the Design Storm Water Coordinator.**