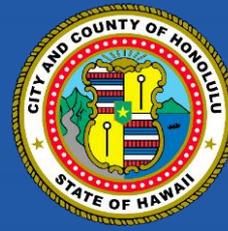


Overview Summary Construction Stormwater Regulations in California

Kennedy/Jenks Consultants





Overview Summary Construction Stormwater Regulations in California

- Welcome
- Introduction
- Relevance of the Topic



Kennedy/Jenks Consultants

Learning Objectives

- ❑ Regulatory History
- ❑ Risked-Based Permitting
- ❑ Core Technical Components of California Construction General Permit Coverage
- ❑ Administrative Components of California Construction General Permit Coverage
- ❑ Implementation Strategies and Illustrative Examples



Regulatory History

First, some historical context for discussing the current construction stormwater regulations in California...



Regulatory Background and Climate

☐ Clean Water Act

- 1972 - prohibited discharges of pollutants from point sources
- 1987 - defined industrial/municipal storm water discharges as point sources

☐ Federal EPA Regulations

- 1990 Phase I Regulations
- 1999 Phase II Regulations

☐ State Implementation

- Storm Water NPDES Permits
- Municipal, Industrial, Construction Activities

☐ Municipal Permitting

- Large , Small, and Non-traditional MS4s



The Main California Stormwater Regulatory Agency



□ State Board

- Statewide policy
- Support regional boards
- Review petitions

□ Nine Regional Boards

- Result of the Porter-Cologne Act
- Organized by basin
- Exercise rulemaking and regulatory activities

- Region 1: North Coast
- Region 2: San Francisco Bay
- Region 3: Central Coast
- Region 4: Los Angeles
- Region 5: Central Valley
- Region 6: Lahontan
- Region 7: Colorado River Basin
- Region 8: Santa Ana
- Region 9: San Diego



CALIFORNIA
Water Boards

STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

California Permit: How did we get here?

- 
- ❑ Three Storm Water General Permits in California:
 - 2003, 2013 Small Municipal (Phase II)
 - 1997, 2014 Industrial
 - 1999 Construction
 - ❑ 2005 SWRCB Blue Ribbon Panel:
 - Question: Are NELs for storm water feasible?
 - ❑ 2007, 2008, 2009 Draft Construction Permits
 - ❑ Construction General Permit
 - Adopted September 2, 2009
 - Effective July 1, 2010
 - Amended in 2010 and 2012

Enforcement Activity

☐ USEPA Enforcement:

- Walmart: \$1M + \$3M Fines
- Homebuilders: Centex, KB Homes, Pulte, and Richmond American \$4.3M Civil Penalties
- USEPA vs. Pflueger (Florida): \$2M penalties, \$5.5M damages, and \$4.4M fine, 10 felony counts



☐ CA Water Board Enforcement

- Escondido, CA: \$1.2M ACL to JRMC Real Estate, City also fined.
- Roseville, CA: \$500,000 to JMC Homes
- Region 2 RWQCB: \$982,350 ACL for Construction related discharges; \$26, 250 ACL for Industrial SW discharge

The California General Permit for Discharges of Stormwater Associated with Construction Activity

Introducing the permit, general requirements, and applicability (since you might want to make sure the permit is needed for your project)...



When is the Permit Required?



- Construction Activity greater than or equal to one acre
- Construction activity that disturbs greater than one acre if the activity is part of a larger development plan (i.e. phase of a development)
- Construction activity on land currently used for agriculture.
- LUPs, Oil & Gas, and Upland Dredge Spoils

When is the Permit NOT Required?



- Maintenance Operations: “To maintain original line and grade, hydraulic capacity, or original purpose of facility.”
- Land disturbances solely related to agriculture operations (leveling, soil preparation, etc.)
- Sites between 1 to 5 acres that can demonstrate a rainfall erosivity factor greater than 5.

Permissible Non-Stormwater Discharges



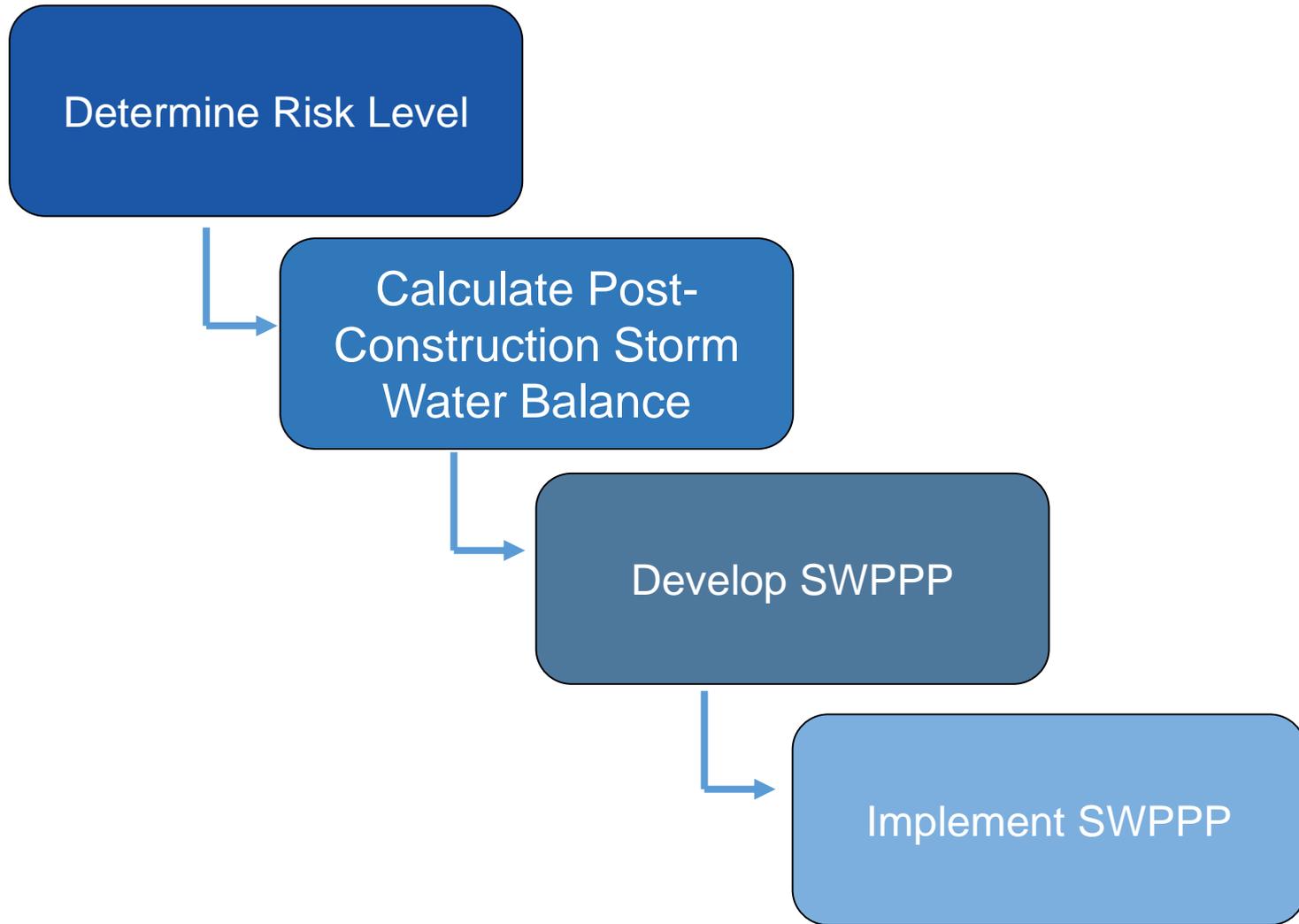
- ❑ Include the Following Types:
 - Dechlorinated potable water from hydrant and pipe flushing
 - Irrigation for erosion control
 - Uncontaminated groundwater from dewatering
 - Water for dust control
- ❑ Must comply with:
 - BMPs in SWPPP
 - NALs/NELs
 - Not cause/ contribute to violation

Overview of Permit Requirements

- ❑ Legally Responsible Person
- ❑ Traditional Projects vs. Linear Underground/Overhead Projects
- ❑ Project Risks Levels:
 - Numeric Action Levels and Numeric Effluent Limitations
 - Risk-based monitoring requirements and posting requirements
- ❑ Permit Registration Documents
- ❑ BMP Requirements(minimum best management practices)
- ❑ Post-Construction Storm Water Performance Standards for Non-Phase 1/ Phase 2 MS4s
- ❑ Qualifications/Training

Project Type	Activity
<input type="checkbox"/> Traditional	<input type="checkbox"/> Site Preparation: Clearing, grading, grubbing, and excavation <input type="checkbox"/> Residential/commercial/industrial development and redevelopment
<input type="checkbox"/> Linear Underground/Overhead Project (LUP)	<input type="checkbox"/> Underground utility mark-out/potholing <input type="checkbox"/> Concrete/asphalt cutting, removal and repair <input type="checkbox"/> Trenching <input type="checkbox"/> Boring and drilling <input type="checkbox"/> Stockpile/borrow locations

Permit Application/Implementation



The Risk Determination

After figuring out if the permit applies to your project, the risk determination is the next most important step in the compliance process...

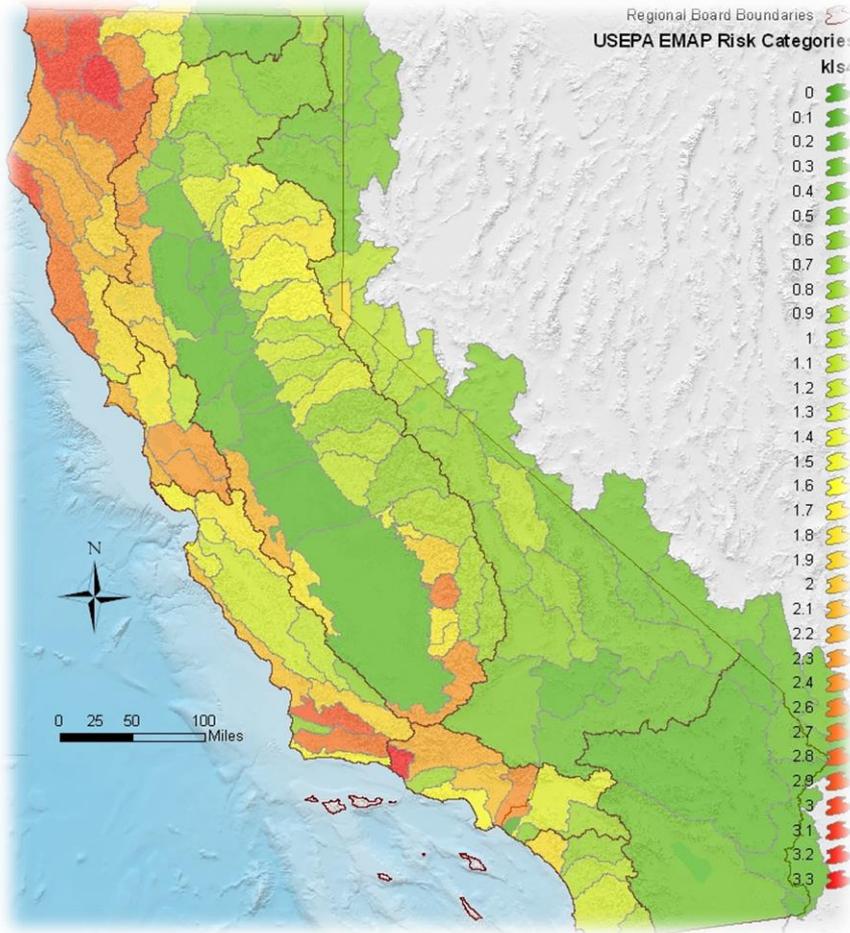


Risk Determination - Overview

- ❑ **Sediment Risk:** Amount of sediment that can be discharged given the project location
- ❑ **Receiving Water Risk:** Based on whether project drains to a sediment-sensitive waterbody
- ❑ **Attachment 1 Worksheet to Determine Project Risk:**
 - Three levels for traditional projects
 - Three Types for LUPs



Risk Determination – Sediment Risk



- Based on Revised Universal Soil Loss Equation (RUSLE)

$$A = R \times K \times LS \times C \times P$$

- Determination Methods:
 - EPA Rainfall Erosivity Calculator and GIS Map
 - EPA Rainfall Erosivity Calculator and Individual Data
- Results:
 - Soil loss < 15 tons/acre = Low risk.
 - Soil loss from 15 to 75 = Medium risk.
 - Soil loss > 75 acres = High risk.

Rainfall-Runoff Erosivity Factor

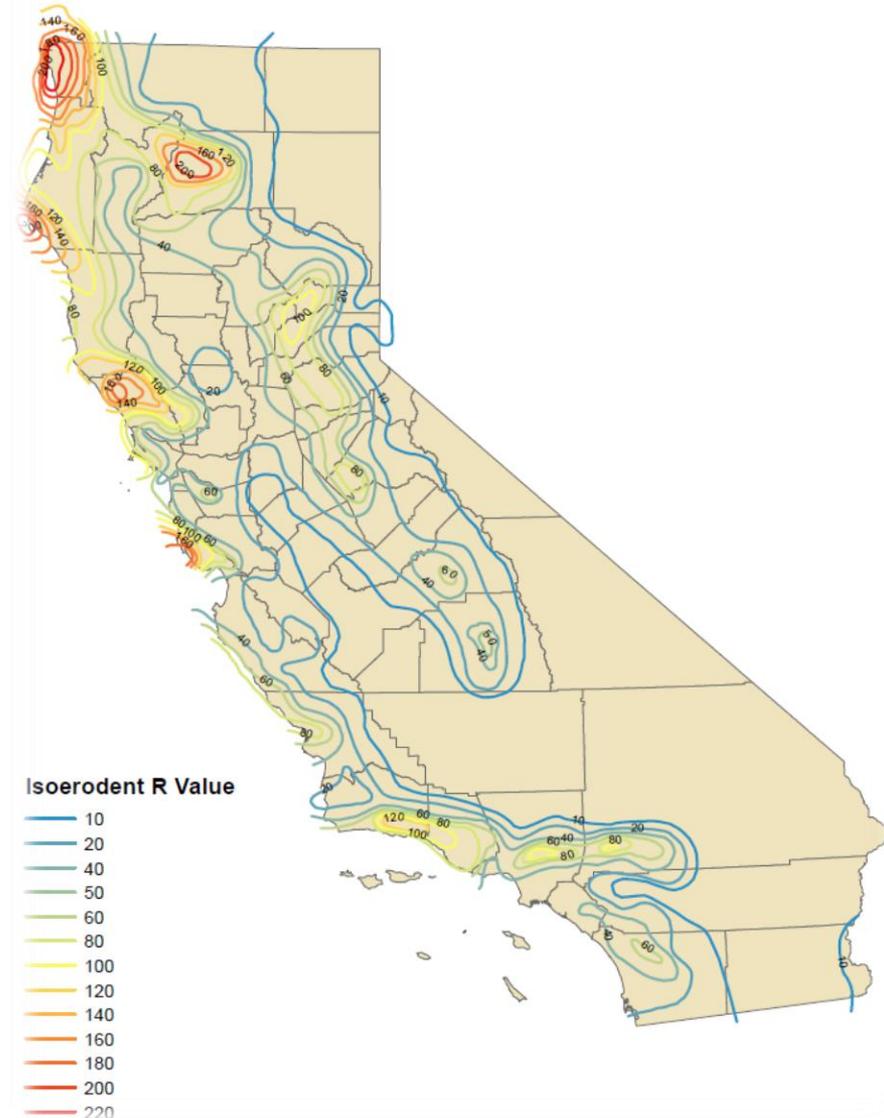
$$A = R \times K \times LS \times C \times P$$

GIS Map Method

- Download from Water Board website

Individual Site Data

- Latitude/Longitude
- Duration



Soil Erodibility Factor

$$A = R \times K \times LS \times C \times P$$

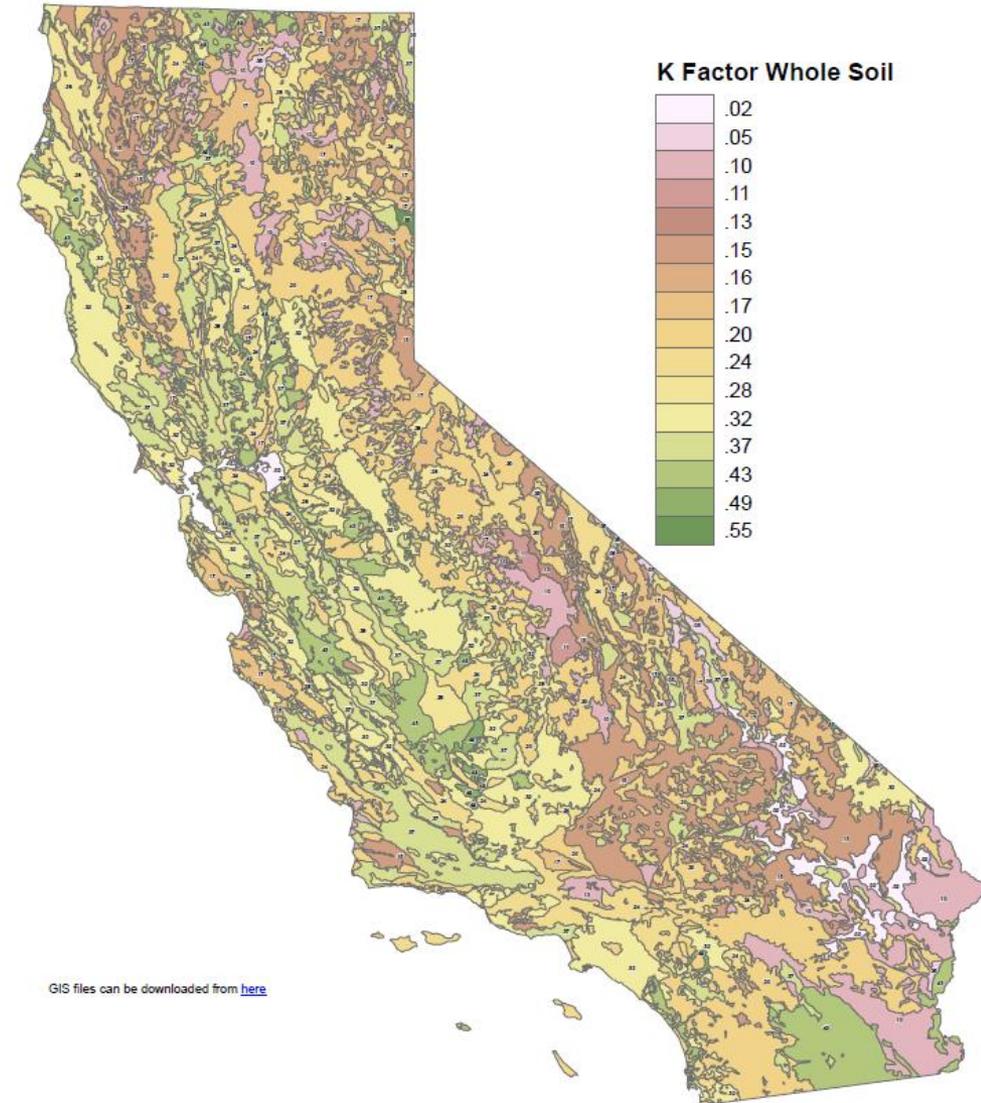
☐ GIS Map Method

- Download from Water Board website

☐ Individual Site Data

- Soils Report
- Lookup literature values based on soil type

RUSLE K Values



Length-Slope Factor

$$A = R \times K \times LS \times C \times P$$

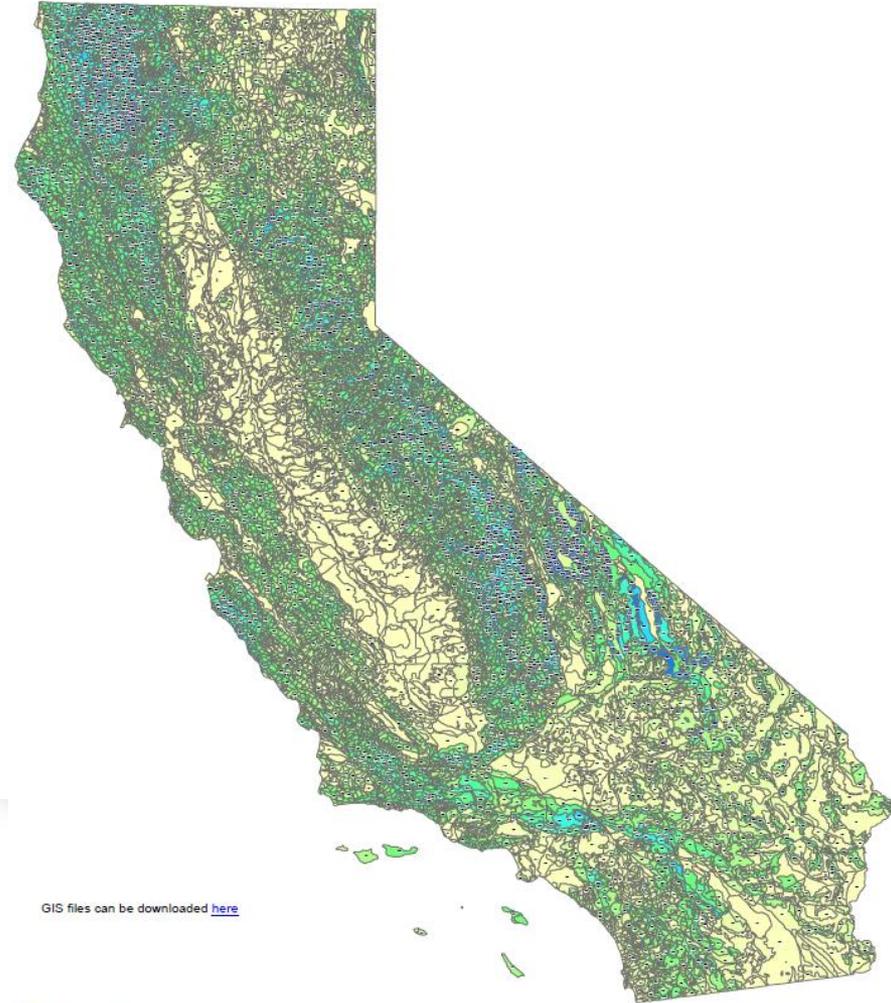
☐ GIS Map Method

- Download from Water Board website

☐ Individual Site Data

- Survey Topography
- Calculate

RUSLE LS Values



0 25 50 100 Miles

Data Source: State Water Resources Control Board

Risk Determination – Receiving Water Risk

WATER BODY NAME	On 303d List	Sediment Impaired	Spawn, Cold, Migratory
Sacramento River (portions)			Y
Smith River			Y
Lower Klamath River	Y		Y
Eel River	Y		Y
San Francisquito Creek		Y	Y

- Project is High risk if it drains to a waterbody meeting at least one of the following criteria:
 - On 303(d) list for sediment impaired waterbodies
 - Has a EPA-approved Total Maximum Daily Load implementation plan for sediment
 - Has the beneficial uses of COLD, SPAWN, and MIGRATORY

- Water Board Interactive Map

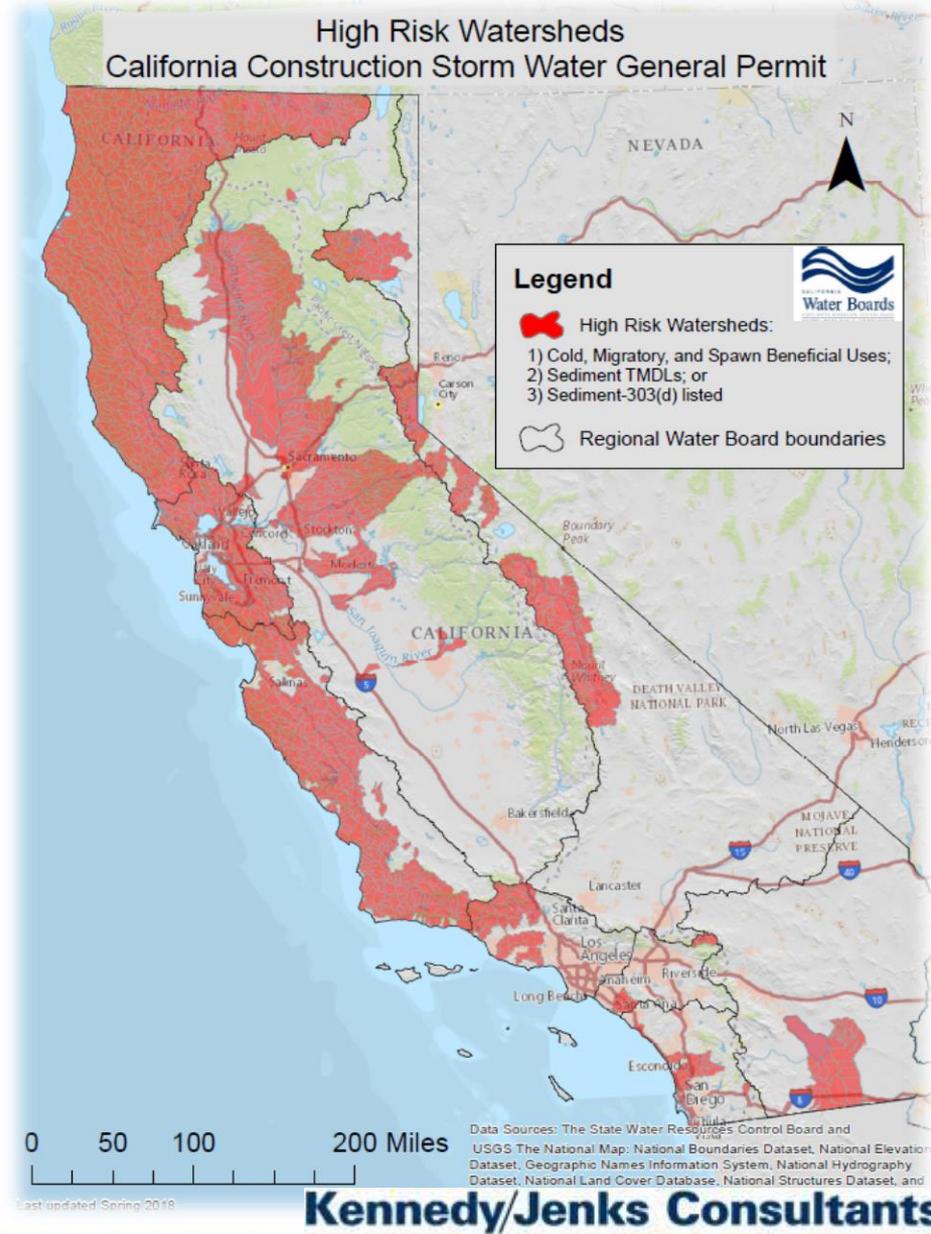
High-Risk Receiving Waters

- ❑ 303(d) list for sediment impaired waterbodies
- ❑ For smaller water bodies, follow drainage to nearest listed water body

The screenshot shows the website for the California State Water Resources Control Board. The main heading is "Impaired Water Bodies". Below this, there is a text block explaining that listing a water body as impaired is governed by the Water Quality Control Policy for developing California's Clean Water Act Section 303(d) Listing. A link is provided for the "2010 Integrated Report on Water Quality with Web-Based Interactive Map," dated April 2010. A note states: "Please allow time for the information below to appear. Tabs will be available to navigate to various topics." Below this is a navigation bar for the "2010 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report) — Statewide". The main content area is titled "2010 INTEGRATED REPORT — ALL ASSESSED WATERS" and features a map of California with various filters and controls. The filters include "Zoom to county:" (set to All), "Zoom to Regional Board:" (set to All), "Show county" (checkbox), "Show Regional Board" (checkbox), "Zoom to water body: (Filter: All)", and "Filter list by:". On the right side of the map, there are options to "Show all assessed waters" (selected) or "Show only impaired ('303(d) listed') waters", and sections for "Show water bodies by pollutant:" with "Pollutant category" and "Pollutant" both set to "All". A "Reset filters" button is also present. At the bottom of the map area, there is a scale bar (0 to 200 km) and the Esri logo. Below the map, a small text block reads: "This Webinar walks the user through the Integrated Report and its geospatial information system (GIS) map. Geographical Information Systems (GIS) Files Updated 12/23/11. The information presented on this map reflects the final USEPA-approved 2010 303(d) list. If you have any questions regarding the Integrated Report data and information, please email Lisa Holmes or call 916-341-5557. For any GIS-related questions, please email Stephanie Buchanan or call 916-558-1708." The left sidebar of the website contains navigation links such as "Home", "About Us", "Public Notices", "Board Info", "Board Decisions", "Water Issues", "Publications/Forms", and "Press Room". It also features a "Report an Environmental Concern" button and a "CONNECT WITH US" section with links for Agendas, Water Quality, and Performance Report. A "RESOURCES" section includes links for Email Subscriptions, Data & Databases, Business Help, Public Records Center, Grants & Loans, Fees, Tribal Affairs, and Customer Service Survey.

High-Risk Watersheds

- ❑ Hydrologic Unit Code (HUC) Level 12 Watersheds
- ❑ Projects in these watersheds are considered to have a high receiving water risk



Combined Risk Level Matrix – Standard Projects

		SEDIMENT RISK		
		LOW	MEDIUM	HIGH
RECEIVING WATER RISK	LOW	Level 1	Level 2	
	HIGH	Level 2		Level 3

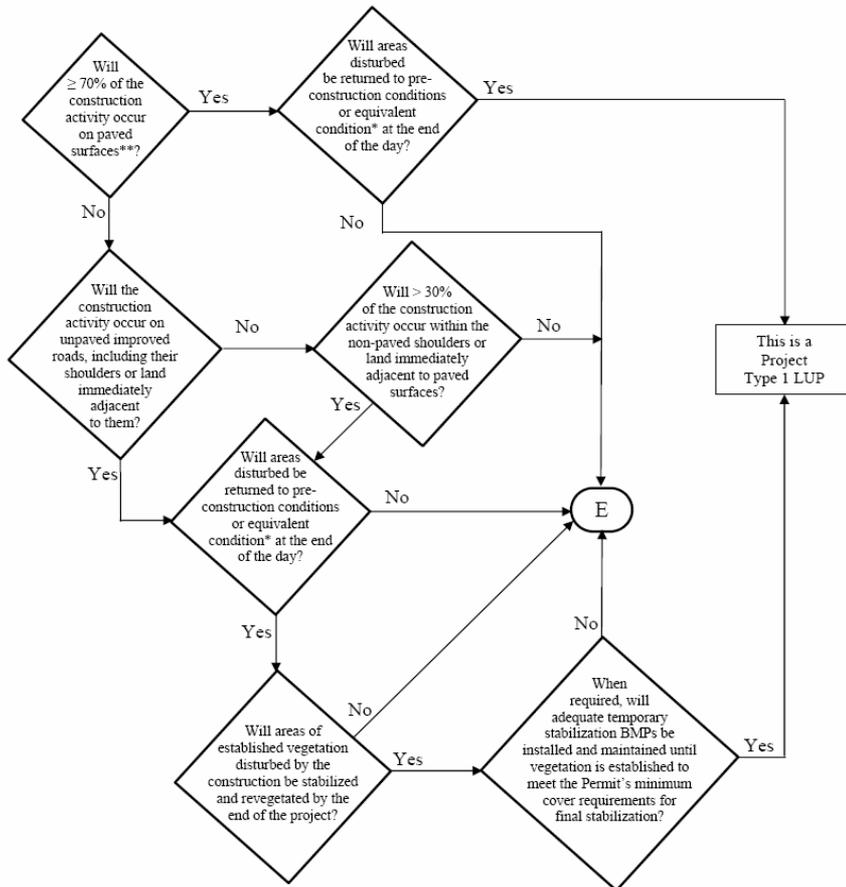
LUP Risk Type Determination

- ❑ Type 1: Project in existing roadway or adjacent to roadway
- ❑ Type 2: Project through a green field with onsite stockpiles
- ❑ Type 3: Project through or near an area of sensitive resources
- ❑ Attachment A.1: Flowcharts to determine type

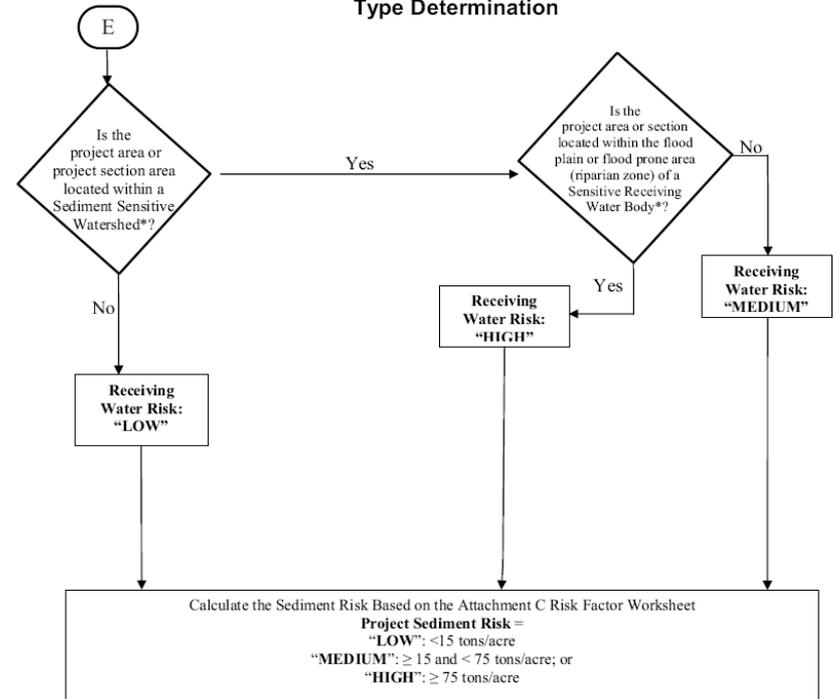


LUP Risk Type Determination – Flow Chart

ATTACHMENT A.1
LUP Project Type Determination



ATTACHMENT A.1
LUP Project Area or Project Section Area Type Determination



* See Definition of Terms

Combined Risk Level Matrix – LUP Projects

		Sediment Risk		
		Low	Medium	High
Receiving Water Risk	Low	Type 1		Type 2
	Medium	Type 1	Type 2	Type 3
	High	Type 2	Type 3	

Requirements for Stormwater Pollution Prevention



Although all projects must include a minimum suite of compliance activities, increased risk levels include expanding compliance activities...



Baseline Requirements for all Risk Levels

- Good Site Management “Housekeeping”
- Non-Storm Water Management
- Erosion Control
- Sediment Control
- Run-on and Run-off Control
- Inspection, Maintenance and Repair
- Monitoring, Sampling and Reporting



Additional Requirements for Higher Risk Levels

- ❑ Rain Event Action Plan (REAP):
 - Requires sites to develop and implement a REAP to protect all exposed portions of the site within 48 hours prior to any likely precipitation event, over 50% probability.
- ❑ Additional measures above baseline requirements



BMP Requirements

- ❑ Specified as part of General Permit
- ❑ Previously only required with SWPPP or were suggested by guidance
- ❑ BMP requirements for Risk Levels 1, 2, and 3 in Attachments C, D, and E.
- ❑ BMP Requirements for LUP are in Attachment A
- ❑ Permit allows active treatment systems (ATS) for Risk Level 3



Rain Event Action Plan (REAP) Grading and Land Development Phase

Preparation of land for utility installation and vertical building including clearing and grubbing, demolition, blasting or rock crushing, if necessary, and soil excavation and mass grading. This form is to be reviewed and completed by the qualified SWPPP practitioner within 48 hours prior to a rain event during the Grading and Land Development Phase.

Site Information:

Site Name, City and Zip Code Risk Level 2 Risk Level 3

Site Storm Water Manager Information:

Name, Company and Emergency Phone Number (24/7)

Erosion and Sediment Control Provider – Labor Force Contracted for the Site:

Name, Company and Emergency Phone Number (24/7)

Storm Water Sampling Agent Information:

Name, Company and Emergency Phone Number (24/7)

Activities Associated with Land Surface Development

Check ALL the boxes below that apply to your site.

- | | | |
|---|--|---|
| <input type="checkbox"/> Demolition | <input type="checkbox"/> Vegetation Removal | <input type="checkbox"/> Vegetation Salvage-Harvest |
| <input type="checkbox"/> Rough Grade | <input type="checkbox"/> Finish Grade | <input type="checkbox"/> Blasting |
| <input type="checkbox"/> Soil Amendment(s): | <input type="checkbox"/> Over Excavation (____ ft) | <input type="checkbox"/> Soils Testing |
| <input type="checkbox"/> Rock Crushing | <input type="checkbox"/> Erosion and Sediment Control | <input type="checkbox"/> Surveying |
| <input type="checkbox"/> Equip. Maintenance/Fueling | <input type="checkbox"/> Material Delivery and Storage | <input type="checkbox"/> Other: |

Trades Active on Site During Land Surface Development

Check ALL the boxes below that apply to your site.

- | | | |
|--|---|---|
| <input type="checkbox"/> Demolition | <input type="checkbox"/> Grading Contractor | <input type="checkbox"/> Erosion and Sediment Control |
| <input type="checkbox"/> Storm Drain Improvement | <input type="checkbox"/> Water, Sewer, Electric Utilities | <input type="checkbox"/> Surveyor – Soils Technician |
| <input type="checkbox"/> Street Improvements | <input type="checkbox"/> Rock Products | <input type="checkbox"/> Sanitary Station Provider |
| <input type="checkbox"/> Material Delivery | <input type="checkbox"/> Equipment Fueling/Maintenance | <input type="checkbox"/> Laborers |
| <input type="checkbox"/> Other: | <input type="checkbox"/> Other: | <input type="checkbox"/> Other: |

Trade Contractor Information Provided

- | | | |
|---|--|--|
| <input type="checkbox"/> Educational Material Handout | <input type="checkbox"/> Tailgate Meetings | <input type="checkbox"/> Training Workshop |
| <input type="checkbox"/> Contractual Language | <input type="checkbox"/> Fines and Penalties | <input type="checkbox"/> Signage |
| <input type="checkbox"/> Other: | <input type="checkbox"/> Other: | <input type="checkbox"/> Other: |

I certify under penalty of law that this Rain Event Action Plan (REAP) will be performed in accordance with the General Permit by me or under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Site Storm Water Manager Signature (Use ink please) _____ Date: _____

Predicted Rain Event Triggered Actions

Below is a list of suggested actions for this project phase. Each active Trade should check all material storage areas, stockpiles, waste management areas, vehicle and equipment storage and maintenance, areas of active soil disturbance, and areas of active work to ensure the proper implementation of BMPs. Project-wide BMPs should be checked and cross-referenced to the BMP progress map.

Trade or Activity	Suggested action(s) to review before rain event
<input type="checkbox"/> Information & Scheduling	<input type="checkbox"/> Inform trade supervisors of predicted rain <input type="checkbox"/> Check scheduled activities and rescheduled as needed <input type="checkbox"/> Alert erosion/sediment control provider <input type="checkbox"/> Alert sample collection contractor (if applicable) <input type="checkbox"/> Schedule staff for extended rain inspections (including weekends & holidays) <input type="checkbox"/> Check Erosion and Sediment Control (ESC) material stock <input type="checkbox"/> Review BMP map <input type="checkbox"/> Other: _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____
<input type="checkbox"/> Material storage areas	<input type="checkbox"/> Material under cover or in sheds (ex: treated woods and metals) <input type="checkbox"/> Perimeter control around stockpiles <input type="checkbox"/> Other: _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____
<input type="checkbox"/> Waste management areas	<input type="checkbox"/> Dumpsters closed <input type="checkbox"/> Drain holes plugged <input type="checkbox"/> Recycling bins covered <input type="checkbox"/> Sanitary stations bermed and protected from tipping <input type="checkbox"/> Other: _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____
<input type="checkbox"/> Trade operations	<input type="checkbox"/> Exterior operations shut down for event (ex: no concrete pours or paving) <input type="checkbox"/> Do not apply soil treatments (ex: fertilizer) within 24 hours of event <input type="checkbox"/> Materials and equipment (ex: tools) properly stored and covered <input type="checkbox"/> Waste and debris disposed in covered dumpsters or removed from site <input type="checkbox"/> Trenches and excavations protected <input type="checkbox"/> Perimeter controls around disturbed areas <input type="checkbox"/> Cover and berm fueling and repair areas <input type="checkbox"/> Other: _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____
<input type="checkbox"/> Site ESC BMPs	<input type="checkbox"/> Adequate capacity in sediment basins and traps <input type="checkbox"/> Site perimeter controls in place <input type="checkbox"/> Catch basin and drop inlet protection in place <input type="checkbox"/> Deploy temporary erosion control on inactive areas <input type="checkbox"/> Deploy temporary perimeter control around disturbed areas or stockpiles <input type="checkbox"/> Sweep roads; stabilize site ingress and egress points <input type="checkbox"/> Other: _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____
<input type="checkbox"/> Concrete rinse out area	<input type="checkbox"/> Adequate capacity for rain <input type="checkbox"/> Cover wash-out bins <input type="checkbox"/> Other: _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____

Numeric Limits – Two Types of Limits

- ❑ Numeric Action Level (NAL)*
Warning:
 - Assists in evaluating effectiveness of BMPs.
 - Exceeding NALs requires implementation of additional BMPs and revised SWPPP.

- ❑ Numeric Effluent Limitation (NEL)**
Violation:
 - Exceeding NELs violates General Permit. Discharger shall report results electronically within 5 days.
 - Compliant Storm: 5-year, 24-hour storm



***Applies to Level/Type 2 and 3**

**** Applies to Active Treatment Systems**

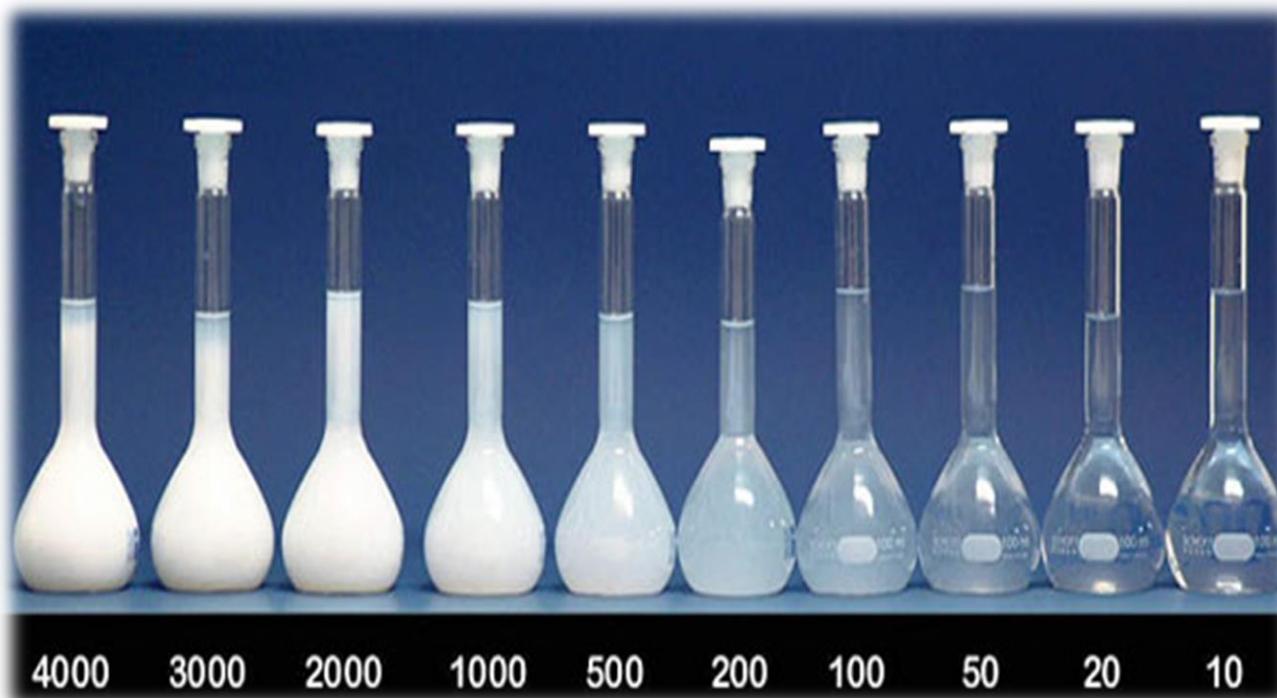
Numeric Limits – Two Constituents of Concern

□ pH:

- NAL under 6.5 or over 8.5
- NEL under 6.0 or over 9.0

□ Turbidity:

- NAL of 250 NTU
- NEL of 500 NTU



Monitoring and Sampling Requirements

Traditional Project

Risk Level	Visual Inspections					Sample Collection		
	Quarterly Non-SW Discharge	Pre-Storm Event		Daily Storm BMP	Post Storm	SW Discharge	Receiving Water	Non-Visible
		Baseline	REAP					
1	X	X		X	X			X
2	X	X	X	X	X	X		X
3	X	X	X	X	X	X	X	X

Linear Underground/Overhead Project

Type	Visual Inspections				Sample Collection		
	Daily Site BMP	Pre-storm Event	Daily Storm BMP	Post Storm	SW Discharge	Receiving Water	Non-Visible
1	X						X
2	X	X	X	X	X		X
3	X	X	X	X	X	X	X

All projects must submit annual monitoring reports.

Visual and Non-visible Monitoring

□ Visual:

- Identify whether BMPs were effective or not
- Qualified rain event = ½-inch or more

□ Non-Visible:

- Required when exposure of construction materials cause discharge affecting water quality
- Materials may include:
 - Cement, fly ash
 - Herbicides, pesticides, fertilizers
- Most effective way to avoid sampling requirements is to avoid exposure of construction materials to stormwater.



LUP Monitoring Requirements

□ Type 1:

- Daily visual inspections of BMPs during construction activities.
- Discontinue inspections when stabilization achieved.
- Submit Photographs.

□ Types 2 and 3:

- Daily visual inspections of BMPs during construction and before/after storms
- Discontinue inspections when stabilization achieved.
- Resources must be available for rapid response to failures/emergencies.
- Inspection logs maintained in SWPPP.
- Submit Photographs.
- Sampling required for visible and non-visible pollutants.

Post-Construction Performance Standards

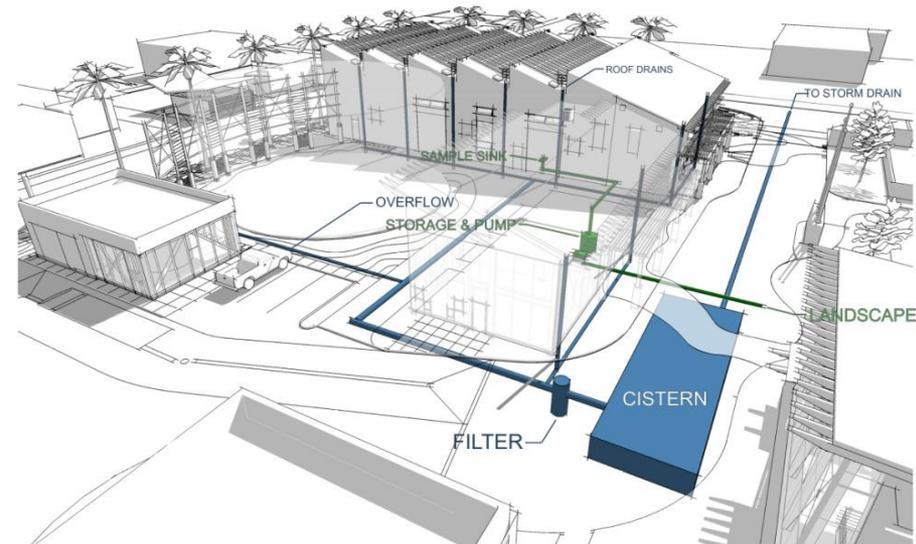
- ❑ Implement BMPs to reduce pollutants that are reasonably foreseeable after construction
- ❑ Required for sites not covered by a Phase I or Phase II MS4 NPDES permit.



- ❑ LUP projects are not subject to these standards.
- ❑ A means of providing stormwater treatment for runoff from small, frequent (e.g. 2 –yr return interval) storms
- ❑ Smaller storms carry higher pollutant loads
- ❑ Customized to the site and pollutant

Post-Construction Performance Standards

- Use Non-Structural Controls Where Feasible
- Non-Structural/LID Practices Available for Crediting
 - Porous Pavement
 - Tree Planting
 - Downspout Disconnection
 - Impervious Area Disconnection
 - Green Roof
 - Stream Buffer
 - Vegetated Swales
 - Rain Barrels and Cisterns
 - Landscaping Soil Quality



Stormwater Management and Greywater Systems Diagram

Post-Construction Water Balance Calculator

User may make changes from any cell that is orange or brown in color (similar to the cells to the immediate right). Cells in green are calculated for you.

(Step 1a) If you know the 85th percentile storm event for your location enter it in the box below

(Step 1b) If you cannot answer 1a then select the county where the project is located (click on the cell to the right for drop down). This will determine the average 85th percentile 24 hr. storm event for your site, which will appear under precipitation to left.

(Step 1c) If you would like a more precise value select the location closest to your site. If you do not recognize any of these locations, leave this drop-down menu at location. The average value for the County will be used.

(Step 2) Indicate the Soil Type (dropdown menu to right):

(Step 3) Indicate the existing dominant non-built Land Use Type (dropdown menu to right):

(Step 4) Indicate the proposed dominant non-built Land Use Type (dropdown menu to right):

(Step 5) Total Project Site Area:

(Step 6) Sub-watershed Area:

(Step 7) Sub-watershed Conditions

Based on the County you indicated above, we have included the 85th percentile average 24 hr event - P85 (in³) for your area.

The Amount of rainfall needed for runoff to occur (Existing runoff curve number - P from existing RCN (in³))

P used for calculations (in) (the greater of the above two criteria)

www.cdmphandbooks.com

Project Information		Runoff Calculations	
Project Name:	Optional	Soil Type	COUNTY
Waste Discharge Identification (WQID):	Optional	Non-Built Land Use Type Pre Development:	LOCATION
Date:	Optional	Non-Built Land Use Type Post Development:	
Sub Drainage Area Name (from map):	Optional	Complete Either	
Runoff Curve Numbers		Sq Ft	Acres
Existing Runoff Curve Number			0.00
Proposed Development Runoff Curve Number			0.00
Design Storm		Percent of total project:	
	In		
	In		
	In		
Existing Rooftop Impervious Coverage		Sq Ft	Acres
Existing Non-Rooftop Impervious Coverage			0.00
Proposed Rooftop Impervious Coverage			0.00
Proposed Non-Rooftop Impervious Coverage			0.00
Credits		Acres	
Porous Pavement		0.00	
Tree Planting		0.00	
Downspout Disconnection		0.00	
Impervious Area Disconnection		0.00	
Green Roof		0.00	
Stream Buffer		0.00	
Vegetated Swales		0.00	
Subtotal		0.00	
Subtotal Runoff Volume Reduction Credit		0 Cu. Ft.	
Pre-Project Runoff Volume (cu ft)		0	
Project-Related Runoff Volume Increase w/o credits (cu ft)		0	
Project-Related Volume Increase with Credits (cu ft)		0	
You have achieved your minimum requirements			
Step 9) Impervious Volume Reduction Credits		Volume (cubic feet)	
Rain Barrels/Cisterns		0 Cu. Ft.	
Soil Quality		0 Cu. Ft.	
Subtotal Runoff Volume Reduction		0 Cu. Ft.	
Total Runoff Volume Reduction Credit		0 Cu. Ft.	

Pre-Project Runoff Volume (cu ft)	0	Cu.Ft.
Project-Related Runoff Volume Increase w/o credits (cu ft)	0	Cu.Ft.
Project-Related Volume Increase with Credits (cu ft)	0	Cu.Ft.
You have achieved your minimum requirements		

Credits	Acres	Square Feet
Porous Pavement	0.00	0
Tree Planting	0.00	0
Downspout Disconnection	0.00	0
Impervious Area Disconnection	0.00	0
Green Roof	0.00	0
Stream Buffer	0.00	0
Vegetated Swales	0.00	0
Subtotal	0.00	0
Subtotal Runoff Volume Reduction Credit	0 Cu. Ft.	
Step 9) Impervious Volume Reduction Credits	Volume (cubic feet)	
Rain Barrels/Cisterns	0 Cu. Ft.	
Soil Quality	0 Cu. Ft.	
Subtotal Runoff Volume Reduction	0 Cu. Ft.	
Total Runoff Volume Reduction Credit	0 Cu. Ft.	

Administrative Requirements Associated with Permit Compliance

Beyond the requirements necessary to prevent stormwater pollution, there a number of administrative requirements work noting...



Legally Responsible Person

Property Type	LRP
Private Land/Utility	Property owner or designee
Public Land/Utility	Principal Executive Officer, ranking elected official, or designee

Responsibilities of LRP

- ❑ Approved signatory authorization (designee) must be posted online
- ❑ Must include certification statement signed by LRP in Permit Registration Documents (PRD)

J. Certification

Any person signing documents under Section IV.I above, shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

SWPPP Qualifications

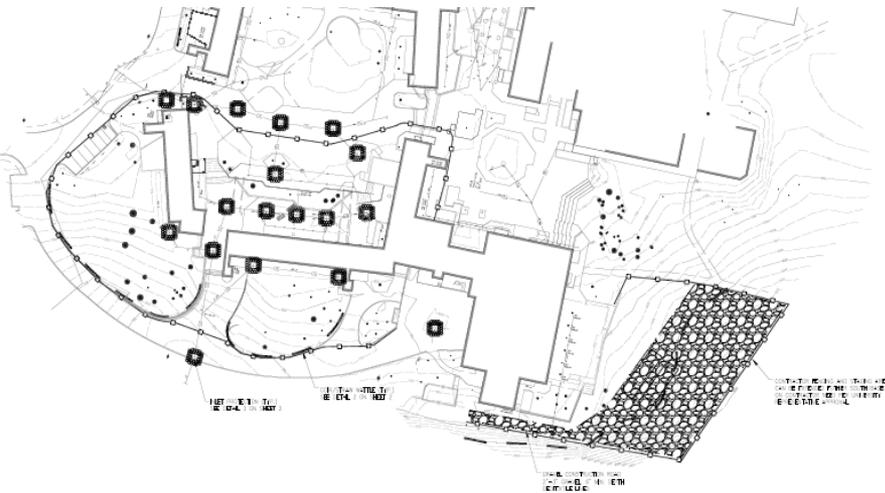
- ❑ Preparation by Qualified SWPPP Developer (QSD)
- ❑ Implementation by Qualified SWPPP Practitioner (QSP)
- ❑ QSD and QSP must attend a State Water Board sponsored or approved training course by September 2, 2011.

Certification/ Title	Registered By	QSD/QSP
Professional Civil Engineer	California	Both
Professional Geologist or Engineering Geologist	California	Both
Landscape Architect	California	Both
Professional Hydrologist	American Institute of Hydrology	Both
Erosion, Sediment and Storm Water Inspector	Certified Professional in Erosion and Sediment Control, Inc. (CPESC)	QSP
Certified Inspector of Sediment and Erosion Control (CISEC)	Certified Inspector of Sediment and Erosion Control, Inc.	QSP
Certified Erosion, Sediment, Storm Water Inspector (CESSWI)	CPESC, inc	QSP
Certified Professional in Storm Water Quality (CPSWQ)	CPESC, inc	Both
Certified Professional Soil Scientist/Classifier (CPSS/C)	Soil Science Society of America Www.soils.org/certifications	Both

Permit Registration Documents

- Notice of Intent (NOI)
- Risk Assessment
- Site Map
- SWPPP
- Fee
- LRP Certification
- Post-Construction Water Balance:
Sites not covered by MS4 Phase I
or II (Appendix 2)
- Active Treatment System (ATS)*
Plan, if utilizing

* Available to Level 3





Water Boards Storm Water Multiple Application & Report Tracking System

[Help](#)

[Logout](#)

You are logged-in as: Rick Teczon
If this account does not belong to you, please log out.

Navigate To:

Attachments

The application is organized into different tabs. Please complete all applicable tabs before submitting the form. If you want to complete the application at a later time, please click on "Save & Exit".

WDID/App ID:	8 26C361615 - 416923	Owner:	West Valley Water District 855 Baseline Rialto CA 92377	Certified Date:	07/25/2011
Status:	Terminated	Site:	Groundwater Wellhead Treatment System Project 855 Baseline Rialto CA 92377	Processed Date:	08/04/2011
Order No:				NOT Effective Date:	03/04/2013
Permit Type:	Construction - NOI			Previous ID:	-

Owner Info | Developer Info | Site Info | Risk | Addl. Site Info | Post Construction | Billing Info | **Attachments** | Certification | Requirements | Reports | Inspections | Print | Status History | Linked Users | NOTs | COIs

Please click on "Upload Attachment" button to upload the corresponding files.

Attached files: The following are the current documents related to the NOI. Click on the Attachment ID to view them.

Attachment ID	Attachment For	File Type	File Title	File Description	Document Date	Part No	Date Attached	Upload By	Delete
1056541	NOI	SWPPP	SWPPP_May2011			1/1	07/20/2011		
1059089	NOI	Original NOI pdf	Original NOI pdf			/	08/04/2011		
1163096	NOT	Photograph	JPG	Photos of Finished Site		2/4	02/25/2013	dischargers	
1163095	NOT	Photograph	JPG	Photos of Finished Site		1/4	02/25/2013	dischargers	
1163097	NOT	Photograph	JPG	Photos of Finished Site		3/4	02/25/2013	dischargers	
1163098	NOT	Photograph	JPG	Photos of Finished Site		4/4	02/25/2013	dischargers	

Fields marked with * are mandatory fields.

Report Certification: You can now certify this Report by completing the form below:

Select Certification & Submission check list



I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Certifier Details

Certifier Name:

Date: 07/07/2016

Certifier Title: Test

Implementation Strategy and Illustrative Examples

Following is an outline of a common implementation strategy a few example projects wherein the strategy was employed with success...



Implementation Strategy

- ❑ Limit project duration to dry season
- ❑ Reduce construction schedule
- ❑ Template SWPPP in contract documents
- ❑ Contractor customizes template with construction phasing, stockpile location, etc
- ❑ Completed SWPPP review during submittal review
- ❑ Update SWPPP as needed

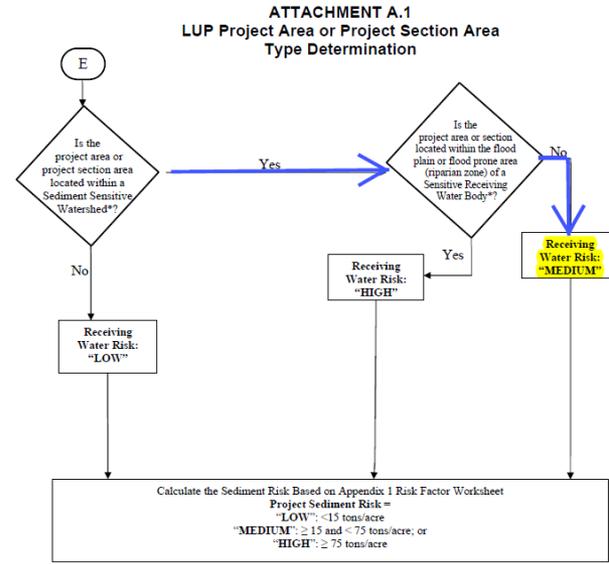
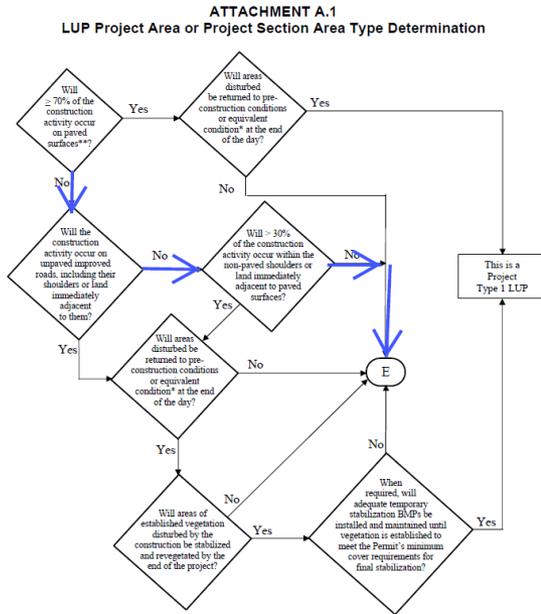


Example 1 – Pipeline Installation



Example 1 – Risk Determination

Sediment Risk Factor Worksheet	Entry
A) R Factor	
Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site. http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm	
R Factor Value	2.48
B) K Factor (weighted average, by area, for all site soils)	
The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted. Site-specific K factor guidance	
K Factor Value	0.32
C) LS Factor (weighted average, by area, for all slopes)	
The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction. LS Table	
LS Factor Value	0.29
Watershed Erosion Estimate (=R _x K _x L _x) in tons/acre	0.230144
Site Sediment Risk Factor	Low
Low Sediment Risk: < 15 tons/acre	
Medium Sediment Risk: ≥ 15 and < 75 tons/acre	
High Sediment Risk: ≥ 75 tons/acre	

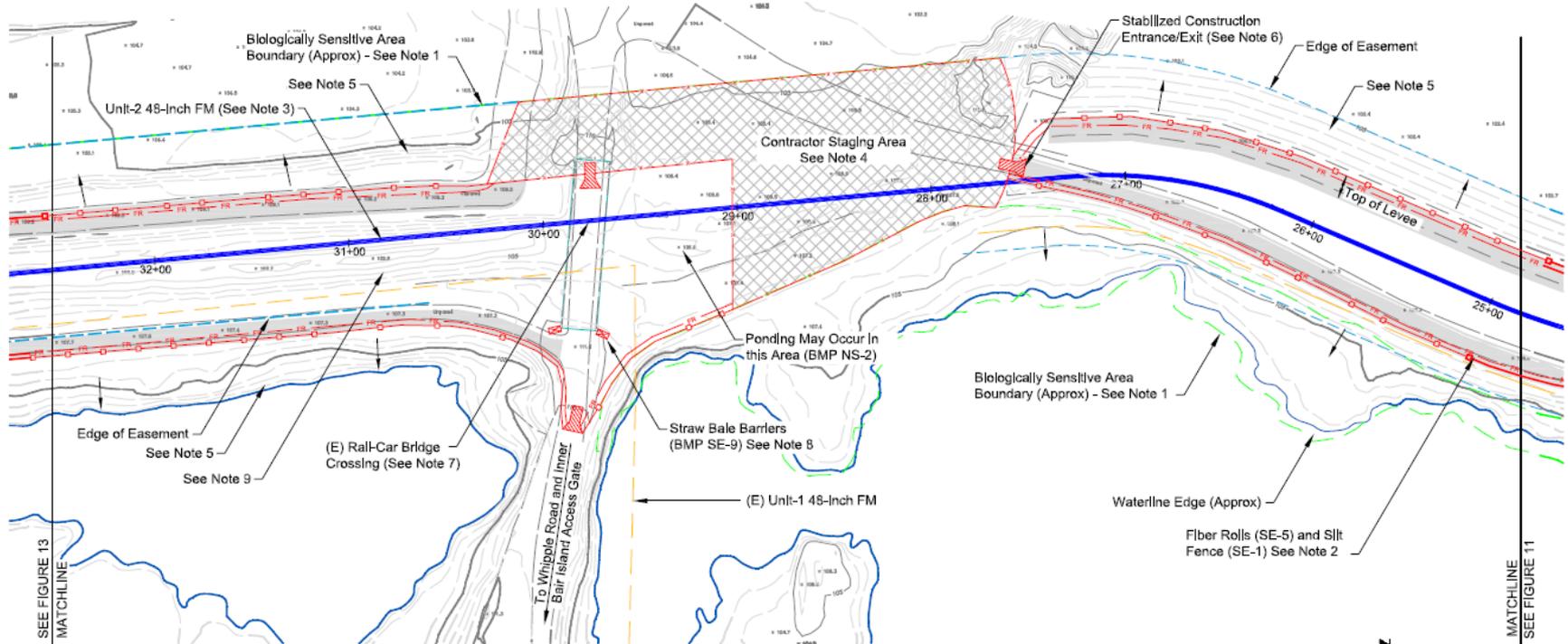


* See Definition of Terms

RECEIVING WATER RISK	PROJECT SEDIMENT RISK			
	LOW	MEDIUM	HIGH	
LOW	Type 1	Type 1	Type 2	Type 2
MEDIUM	Type 1	Type 2	Type 3	Type 3
HIGH	Type 2	Type 3	Type 3	Type 3

Combined Risk Level Matrix				
		Sediment Risk		
		Low	Medium	High
Receiving Water Risk	Low	Type 1	Type 1	Type 2
	Medium	Type 1	Type 2	Type 3
	High	Type 2	Type 3	Type 3
Project Sediment Risk:		Low		
Project RW Risk:		Medium		
Project Combined Type:		Type 1		

Example 1 – WPCDs for Pipe Installation



Notes:

- Best management practices (BMP's) shall be installed in conformance with the following minimum requirements:
1. Biologically Sensitive Area - All vegetation to be protected in accordance with CASQA BMP Handbook (BMP EC-2)
 2. Silt fence installed in accordance with CASQA BMP Handbook (BMP SE-1). Fiber rolls installed in accordance with CASQA BMP Handbook. Fiber rolls to be installed directly behind silt fence. (BMP SE-5). Fiber rolls and silt fence are shown offset for clarity.
 3. This portion of the 48" FM will be installed using open trench methods.
 4. The BMPs in the table to the right will be used throughout the site and in the contractor staging area. Silt fence and fiber rolls shall be installed around the perimeter of the contractor staging area in accordance with CASQA BMP Handbook (BMP SE-1 and BMP SE-5). Fiber rolls to be installed directly behind silt fence.
 5. QSP shall evaluate the circumstances and determine if fiber rolls and silt fence should be installed at the toe of slope depending on condition of slope and water level.
 6. Stabilized construction entrance/exit and roadway in accordance with CASQA BMP Handbook (TC-1,2)

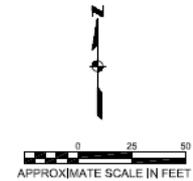
7. 48-Inch FM will be installed below existing rail-car bridge.
8. Straw Bale Barriers will be installed in accordance with CASQA BMP Handbook (BMP SE-9) to protect abutment of bridge from erosion.
9. QSP shall evaluate the circumstances and determine if erosion controls should be installed on the inside slopes of the levees near the open trench pipe installation work.

BMP	Description
WM-1	Material Delivery and Storage
WM-2	Material Use
WM-3	Stockpile Management
WM-4	Spill Prevention and Control
WM-5	Solid Waste Management
WM-6	Hazardous Waste Management
WM-7	Contaminated Soil Management
WM-8	Concrete Waste Management

BMP	Description
WM-9	Sanitary/Septic Waste Management
WM-10	Liquid Waste Management
WE-1	Water Conservation Practices
NS-1	Wind Erosion Control
NS-2	Dewatering Operations
NS-6	Illegal Discharge/Illegal Dumping Reporting
NS-8	Vehicle and Equipment Cleaning
NS-9	Vehicle and Equipment Fueling
NS-10	Vehicle and Equipment Maintenance
SC-7	Street Sweeping and Vacuuming

Legend:

- TC-1 Stabilized Construction Entrance/Exit
- Temporary Construction Fence
- Fiber Rolls
- Silt Fence
- Flow Direction
- Straw Bale Barrier



Kennedy/Jenks Consultants

Water Pollution Control Drawing #3

K/J 1058062.10
March 2015

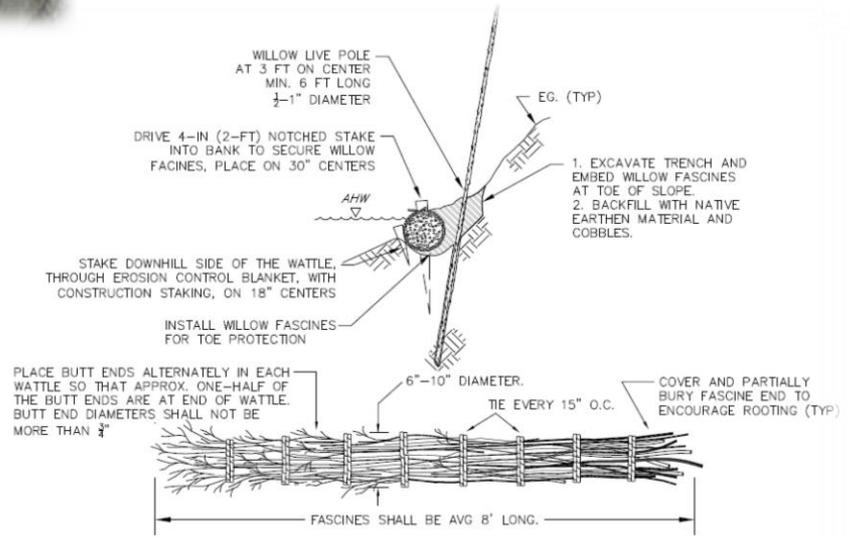
Figure 12

Example 2 – Ski Resort Snow Management Areas



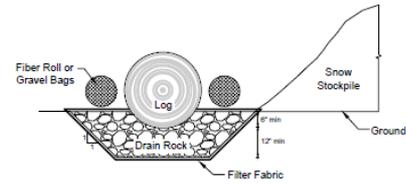
Source: Esri, DigitalGlobe, GeoEye, iSatcom, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, Swirebird, and the GIS User Community

Example 2 – BMPs in Restoration Area

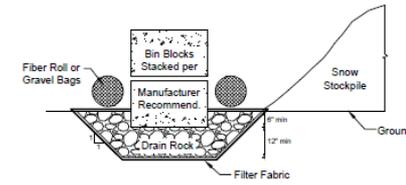


(X) X DETAIL – WILLOW WATTLE INSTALLATION NOT TO SCALE

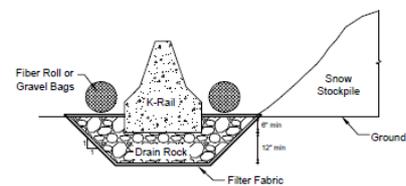
Example 2 – BMP in Snow Stockpile Area



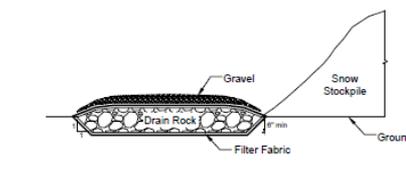
Section 1 - Log Barrier
N.T.S.



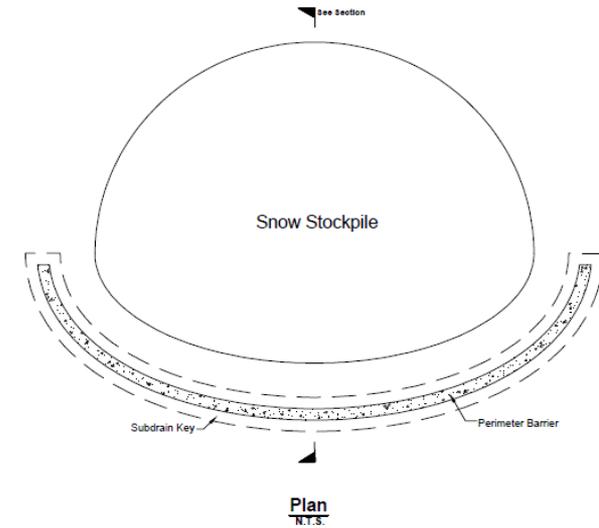
Section 3 - Bin Block Barrier
N.T.S.



Section 2 - K-Rail Barrier
N.T.S.

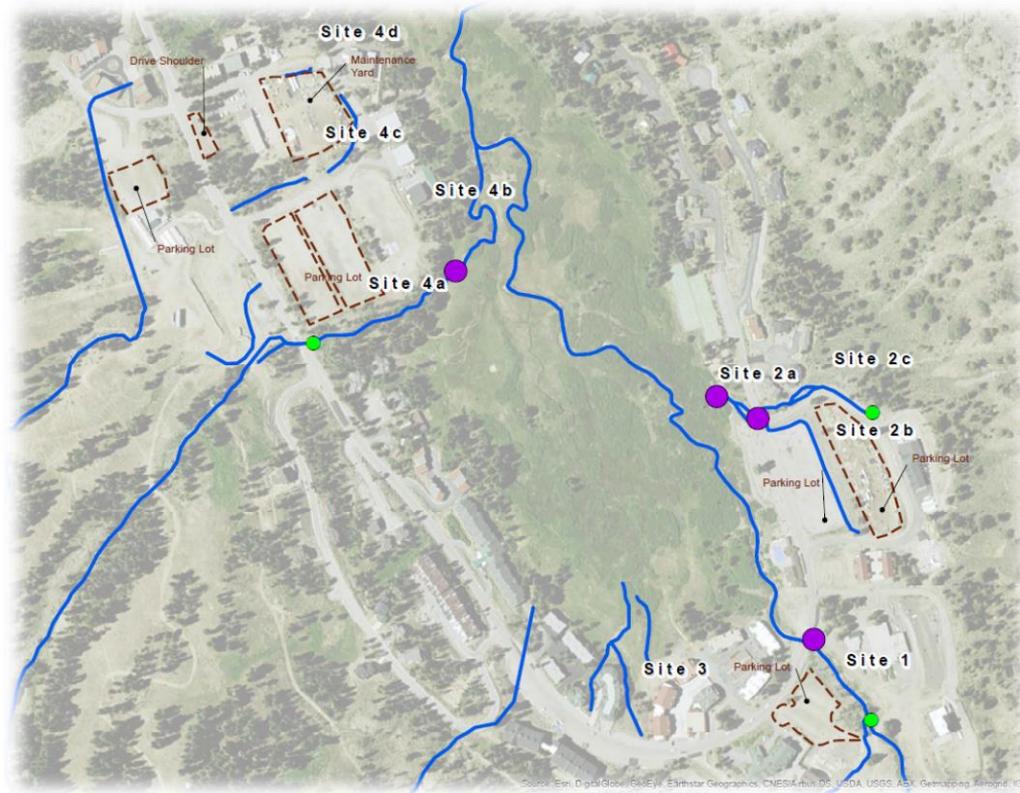


Section 4 - Gravel Gate Barrier
N.T.S.



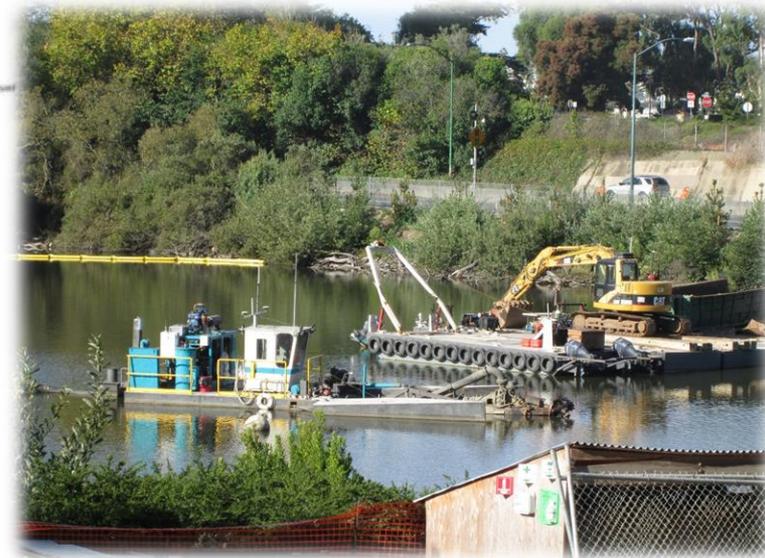
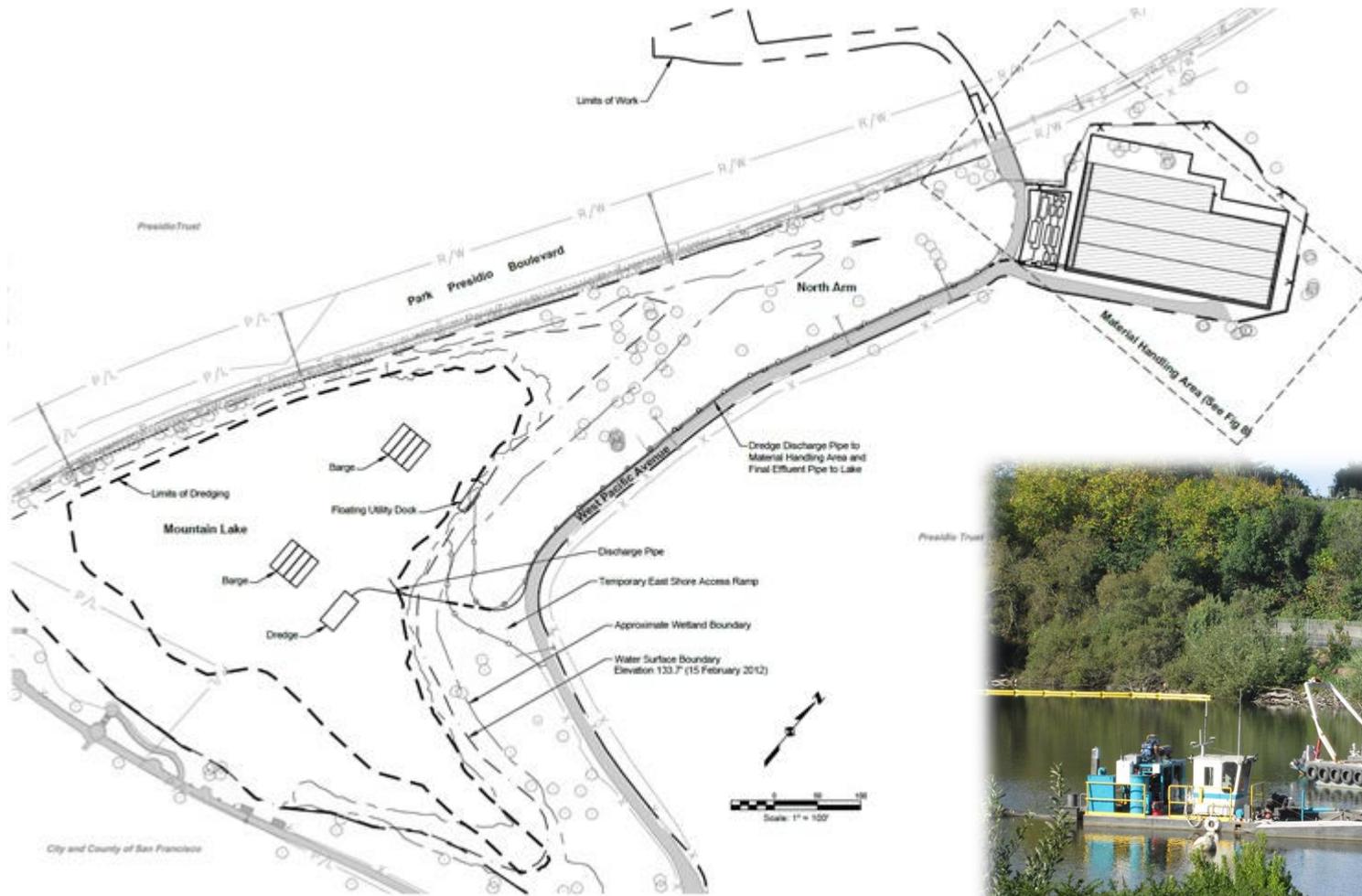
Plan
N.T.S.

Example 2 – Sampling and Analysis

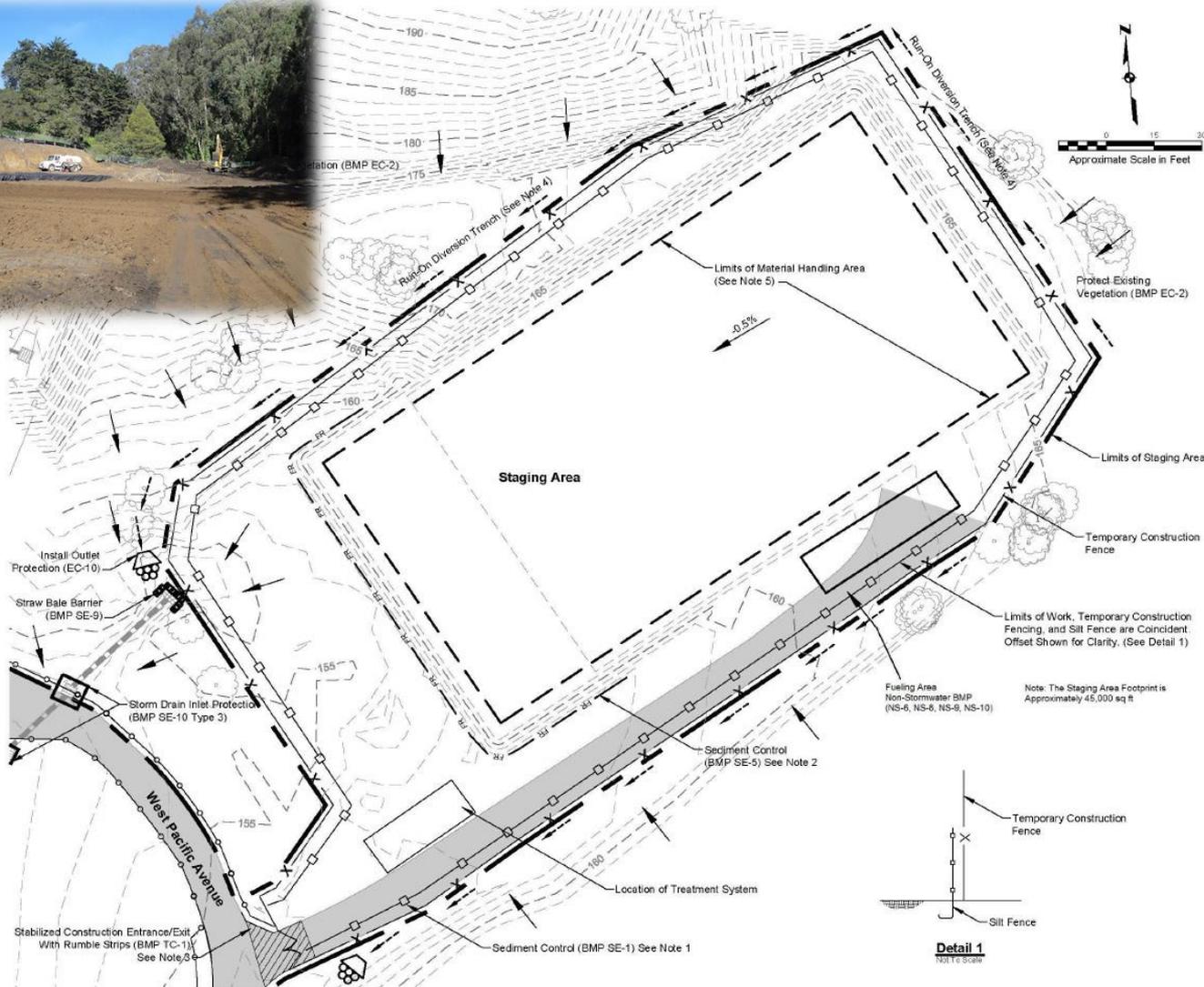


Sample ID	Site Location	Time	Turbidity	pH	Photo of sample location
RO1 (RO = Run On Sample)	Site 2	13:20	.06 NTU	8.7	
A	Site 2	14:28	14.2 NTU	7.9	
C	Site 2	14:34	5.01 NTU	7.8	

Example 3 – Dredging and Dewatering Project



Example 3 – WPCD for Material Handling Area



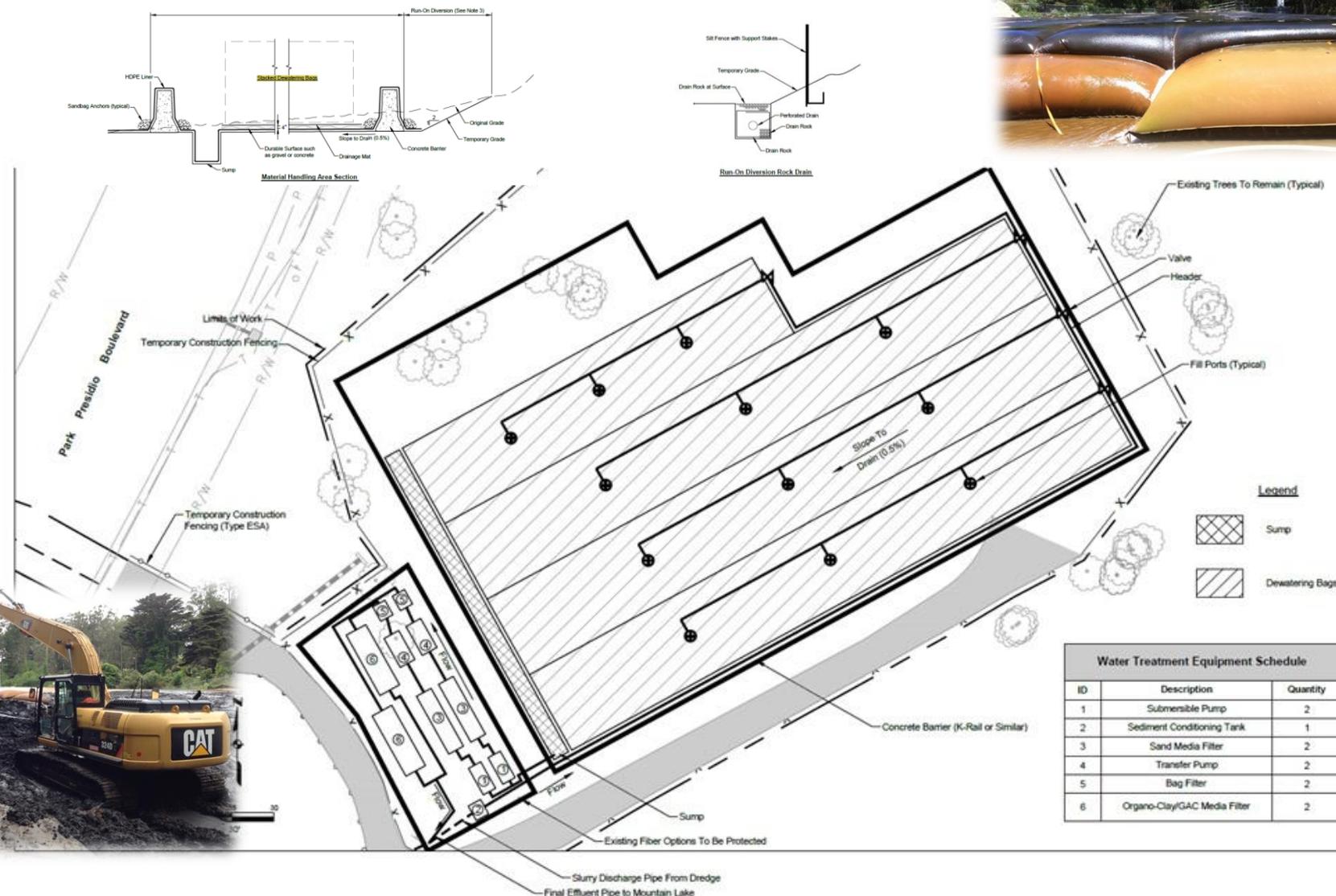
Legend

- X Temporary Construction Fence (Type CL-6)
- Temporary Construction Fence (Type ESA)
- FR FR Fiber Roll
- Silt Fence
- Straw Bale
- Run-On Flow
- Run-On Diversion Trench
- ▨ Stabilized Construction Entrance/Exit
- Storm Drain Inlet Protection
- ⊕ Outlet Protection

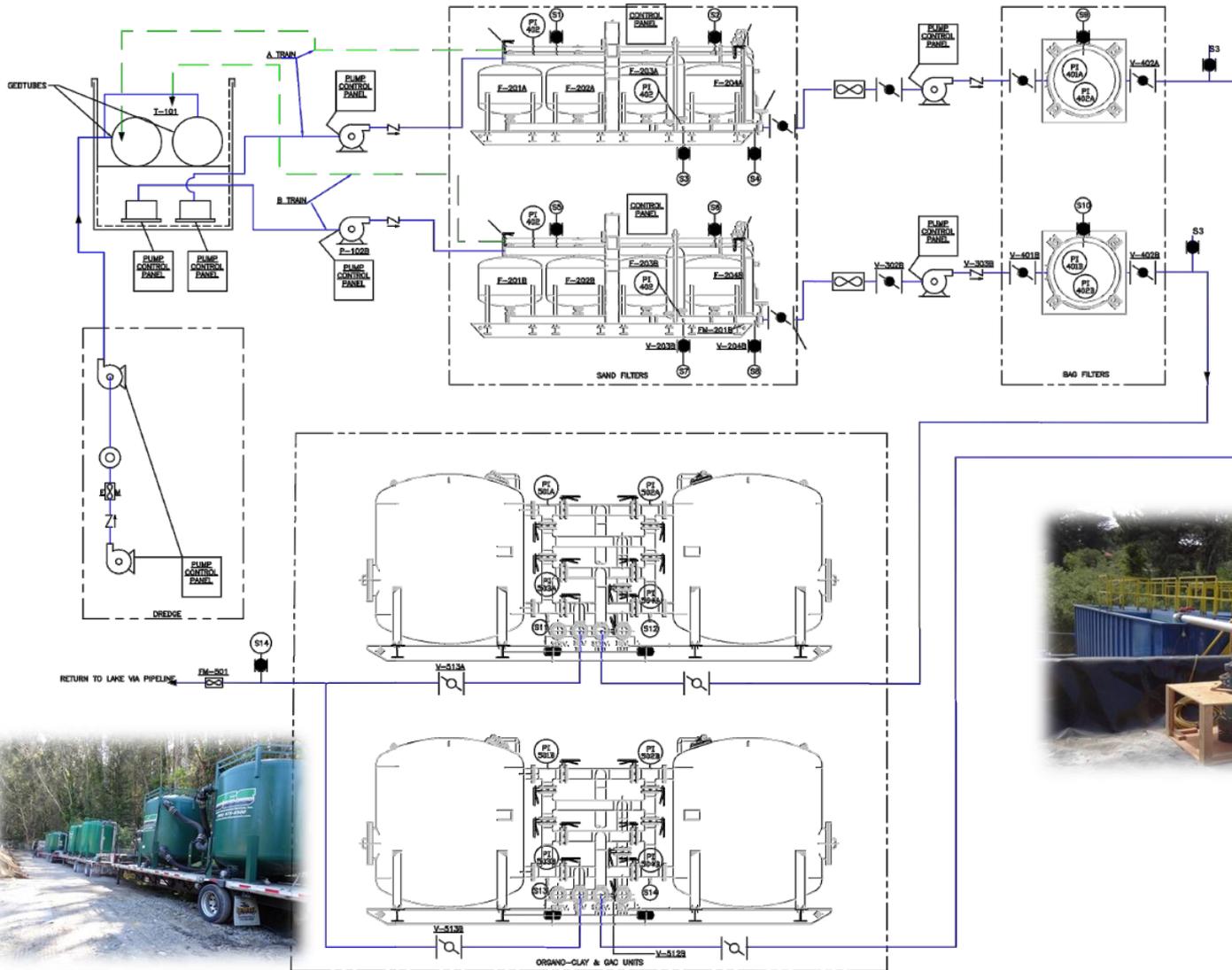
- Notes:**
- Best Management Practices (BMP's) will be installed in conformance with the following minimum requirements
- Silt fence will be installed in accordance with State of California Department of Transportation, Standard Plans, May 2006, Plan T51 (CASQA BMP SE-1).
 - Fiber rolls will be installed in accordance with State of California Department of Transportation, Standard Plans, May 2006, Plan T56 (CASQA BMP SE-5).
 - Stabilized construction entrance and roadway in accordance with State of California Department of Transportation, Standard Plans, May 2006, Plan T56 (CASQA BMP TC-1,2)
 - Run-on diversion trench will be installed along the outer perimeter of the staging area. All run-on storm water will be diverted around the staging area.
 - Silt fence and temporary construction fencing will enclose staging area. Area within material handling area will be lined with a 60mil HDPE liner. All runoff from this area will be collected and treated.
 - The following BMP's will be used at the Contractor's staging area and throughout the site in addition to the BMP's shown on this drawing:

BMP	Description
WM-1	Material Delivery and Storage
WM-2	Material Use
WM-3	Stockpile Management
WM-4	Spill Prevention and Control
WM-5	Solid Waste Management
WM-6	Hazardous Waste Management
WM-7	Contaminated Soil Management
WM-8	Concrete Waste Management
WM-9	Sanitary/Septic Waste Management
WM-10	Liquid Waste Management
NS-1	Water Conservation Practices
WE-1	Wind Erosion Control

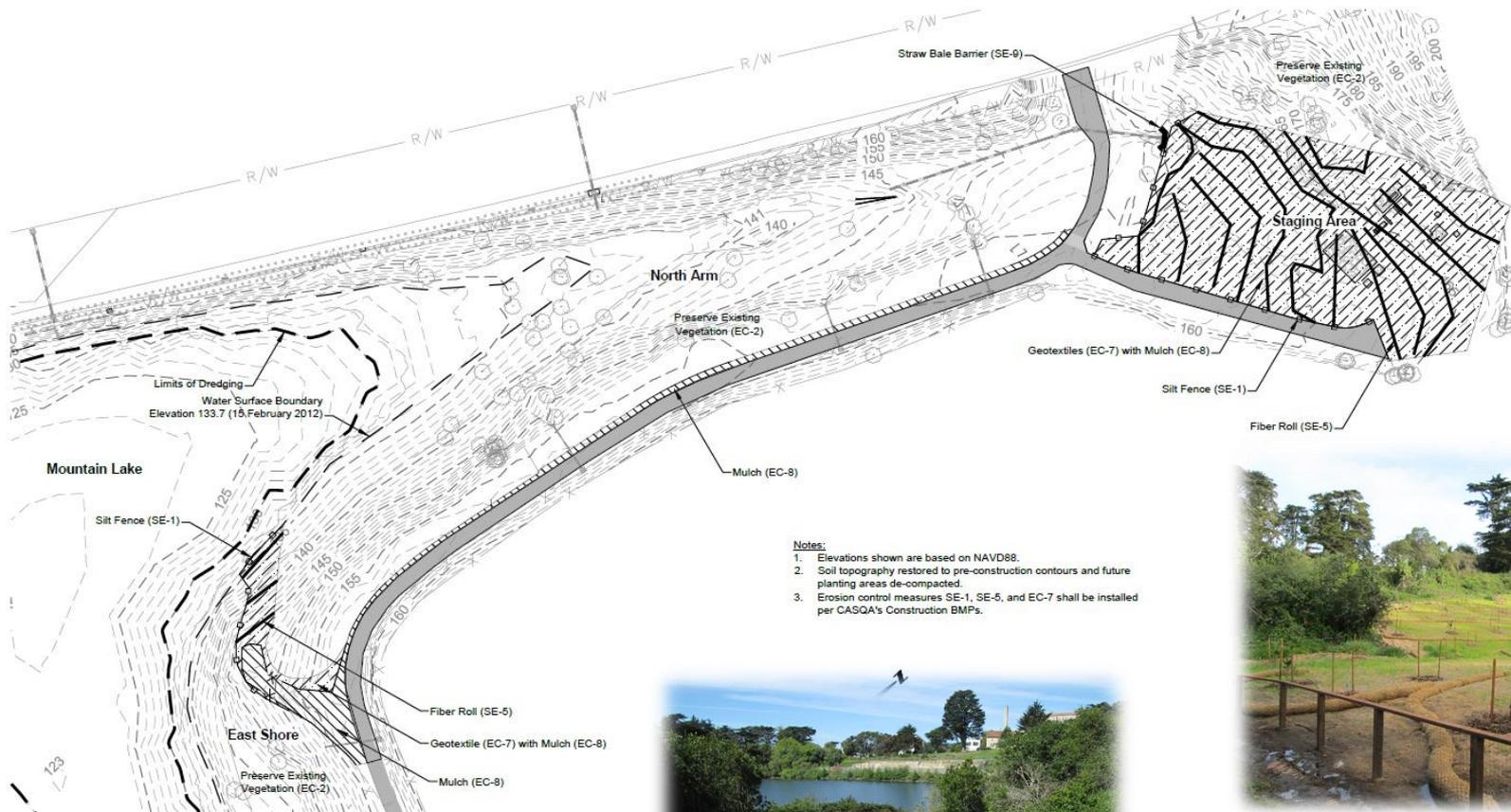
Example 3 – Material Handling Plan



Example 3 – Active Treatment System



Example 3 – Restoration Plan (Stabilization)



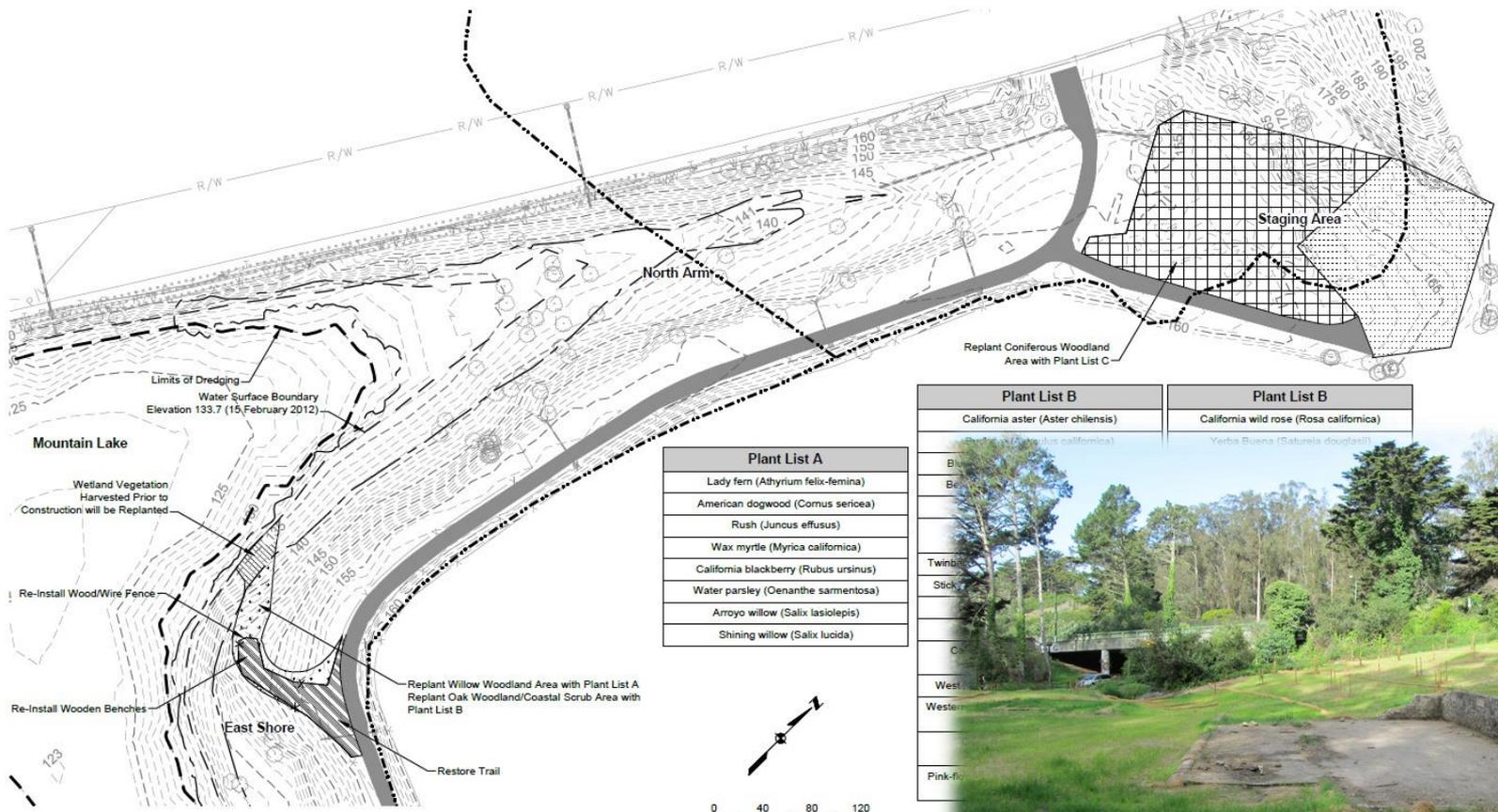
- Notes:**
1. Elevations shown are based on NAVD88.
 2. Soil topography restored to pre-construction contours and future planting areas de-compacted.
 3. Erosion control measures SE-1, SE-5, and EC-7 shall be installed per CASQA's Construction BMPs.



Legend

	Geotextile (EC-7) with Mulch (EC-8)		Project Limits
	Silt Fence (SE-1)		Temporary Construction Fencing
	Fiber Roll (SE-5)		Water Surface Boundary
	Mulch (EC-8)		Wetland Boundary
	Straw Bale Barrier (SE-9)		Temporary Construction Fencing (Type ESA)
			State of California Right-Of-Way

Example 3 – Restoration Plan (Planting)



Plant List A
Lady fern (<i>Athyrium filix-femina</i>)
American dogwood (<i>Cornus sericea</i>)
Rush (<i>Juncus effusus</i>)
Wax myrtle (<i>Myrica californica</i>)
California blackberry (<i>Rubus ursinus</i>)
Water parsley (<i>Oenanthe sarmentosa</i>)
Arroyo willow (<i>Salix lasiolepis</i>)
Shining willow (<i>Salix lucida</i>)

Plant List B	Plant List B
California aster (<i>Aster chilensis</i>)	California wild rose (<i>Rosa californica</i>)
Blue oak (<i>Quercus californica</i>)	Yerba Buena (<i>Satureia douglasii</i>)
Bur oak (<i>Quercus macrocarpa</i>)	
Twined reed (<i>Phragmites australis</i>)	
Stickney reed (<i>Phragmites australis</i>)	
Coastal scrub (<i>Scaevola taccada</i>)	
Western reed (<i>Phragmites australis</i>)	
Western reed (<i>Phragmites australis</i>)	
Pink-flowered reed (<i>Phragmites australis</i>)	



Legend

Water Surface Boundary (5.3-ac)	Coniferous Woodland Plantings	Limits of Dredging (3.27-ac)
Willow and Oak Woodland / Coastal Scrub Plantings	Previously Developed Area	Wetland Planting
Trail	VMP Boundary	



Questions and Comments?



Kennedy/Jenks Consultants