Caltrans Construction General Permit Compliance

Presented by the Caltrans Stormwater Program

August 17, 2011

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Agenda

- **9:00 Welcome/Introduction of Trainers and Class**
- **9:15 Construction General Permit**
  - Module 1: Training Overview and Stormwater Regulations
  - Module 2: Erosion Processes and Sediment Production
  - Module 3: Construction General Permit Requirements/SWPPPs
  - Module 4: Construction Site BMPs
  - Module 5: Construction Site Monitoring
  - Module 6: Reporting Requirements
  - Module 7: SMARTS and PRDs
  - Module 8: Project Planning and Site Risk Assessment
  - Module 9: SWPPP Preparation
  - Module 10: Project Closeout
- **12:00 Lunch Break**
- **1:00 Caltrans Guidance and Procedures**
  - Design
  - Construction
- **2:00 Questions**

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Welcome

- Information-sharing for Caltrans staff and our partners
- Construction General Permit Requirements
- Caltrans Guidance and Procedures
- This is not…
  - QSD/QSP Certification Training
  - Caltrans 24-hour training
- Visit the Caltrans Stormwater Program website for more information (FAQs and webcast recordings)

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Introduction of Trainers

- Scott McGowen, Chief Environmental Engineer
- Joyce Brenner, Chief, Office of Stormwater Program Implementation
- Scott Taylor, RBF, State Board CGP Trainer-of-Record
- Anna Lantin, RBF, State Board CGP Trainer-of-Record
- Timothy Sobelman, Chief, Office of Stormwater Management- Design
- Jack Broadbent, Chief, Office of Roadside Management & Landscape Architecture
- Rob Effinger, Chief, Office of Stormwater Management - Construction

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Module 1
Training Overview and Regulations

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General Permit Structure

- Think of Permit Structured into Four Major Sections
- Section 1 - Fact Sheet (Why information)
- Section 2 – Order (What information – general)
  I. Findings
  II. Conditions for Permit Coverage
  III. Discharge Prohibitions
  IV. Special Provisions
  V. Effluent Standards
  VI. Receiving Water Limitations
  VII. Training Qualifications and Certification Requirements

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General Permit Structure

- Order (Continued)
  - VIII. Risk Determination
  - IX. Risk Level 1 Requirements
  - X. Risk Level 2 Requirements
  - XI. Risk Level 3 Requirements
  - XII. Active Treatment Systems
  - XIII. Post-Construction Standards
  - XIV. SWPPP Requirements
  - XV. Regional Water Board Authorities
  - XVI. Annual Reporting Requirements

General Permit Structure

- Section 3 – Attachments (What information - detailed)
  - A – LUP Requirements
  - A.1 – LUP Type Determination
  - A.2 – LUP Permit Registration Documents
  - B – Permit Registration Documents
  - C – Risk Level 1 Requirements
  - D – Risk Level 2 Requirements
  - E – Risk Level 3 Requirements
  - F – Active Treatment Systems Requirements

General Permit Structure

- Section 4 – Appendices (Special Information)
  1. Risk Determination Worksheet
  2. Post-Construction Water Balance Performance Standard
     - 2.1 Post-Construction Water Balance Performance Standard Spreadsheet
  3. Bioassessment Monitoring Guidelines
  4. Adopted/Implemented Sediment TMDLs
  5. Glossary
  6. Acronyms
  7. State and Regional Board Contacts

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Activities Covered Under the Permit

- Construction activity related to roadway and highway repair and maintenance, including, but not limited to…
- Discharges of sediment from construction activities associated with roadway and highway repair and maintenance…

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Activities Covered Under the Permit

- Storm water discharges from Caltrans activities that disturb one or more acres of land surface from roadway repair and maintenance activity are covered by this General Permit.
- Linear Construction
  - Exempt from post-construction requirements
- Caltrans Sites
  - Subject to permit coverage
  - Exempt from post-construction requirements

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Activities Not Covered Under the Permit

- Routine maintenance to repair streets and highways.
- Disturbances to roadway surfaces.
- Discharges of storm water from areas on tribal lands.
- Roadway construction activity that disturbs less than one acre of land.

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Activities Not Covered Under the Permit

- Discharges of storm water within the Lake Tahoe Hydrologic Unit.
- Construction activity covered by an individual NPDES Permit for storm water discharges.
- Discharges from small construction sites with a Rainfall Erosivity Waver.
- Landfill construction activity that is subject to the Industrial General Permit. Note: borrow sites for landfill capping may require permit coverage (check with Regional Board).

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Activities Not Covered Under the Permit

- Construction activity that discharges to Combined Sewer Systems.
- Conveyances that discharge storm water runoff combined with municipal sewage or run-on from…
- Discharges occurring in basins that are not a tributary or hydrologically connected to water of the U.S. (Contact Regional Board).

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LRP Definition

- Amendment to Order No. 2009-0009-DWQ
  - Replaces the exemptions identified with a more broad definition of the LRP as:
    - "A person, company, agency, or other entity that possesses a real property interest (including, but not limited to, fee simple ownership, easement, leasehold, or rights of way) in the land upon which the construction or land disturbance activities will occur for the regulated site."
- Approved by the State Board on November 16, 2010

Modifying Permit Coverage

- Modifying Permit Coverage for a portion of the property sold to another owner
  - Electronically file a change of information form
  - The seller must notify the new owner about his/her responsibilities concerning the permit
  - Must disclose state of construction activity and post construction
  - The new owner must submit PRDs within 30 days

Discharge Prohibitions

- Prohibits the discharge of pollutants other than storm water and non-storm water discharges authorized by this General Permit or another NPDES permit.
- Prohibits all discharges which contain a hazardous substance in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4 unless a separate NPDES Permit has been issued to regulate those discharges.
- Incorporates discharge prohibitions contained in water quality control plans, as implemented by the Regional Boards.

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Discharge Prohibitions

- Prohibits Discharges to Areas of Special Biological Significance unless covered by an exception that the State Water Board has approved.
- Prohibits the discharge of any discharge of debris from a construction site.

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500 NTU Turbidity NEL vs. Basin Plan

- 500 NTU turbidity NEL
  - technology based effluent limitation
  - Applies to storm water discharges leaving the project boundaries
- Basin Plan turbidity standards
  - Water quality based effluent limitations which apply to receiving waters.
  - Regional Water Boards will continue to enforce their Basin Plan

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Direct Discharge

- Direct Discharge
  - Discharge that is routed directly to waters of the US
  - Pipe, channel, or ditch (including a municipal storm system), or through surface runoff
  - Discharges from a construction site to a MS4 where commingling with upstream and/or downstream discharges can occur are not considered 'direct discharges'

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The Water Boards have a number of enforcement options to address stormwater violations

- Informal Enforcement
  - Verbal Warning
  - Staff Enforcement Letter
  - Notice of Violation
  - Cease and Desist

Formal Enforcement

- Cleanup and Abatement Order
- Administrative Civil Liability (ACL)
- Joint enforcement with Department of Fish and Game and U.S. EPA
- Referral to District Attorney, Environmental Circuit Prosecutor, or Attorney General

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Penalties

- Failure to submit a NOI (13399.33)
  - $5,000
- Failure to submit an annual report (13399.33)
  - $1,000
- Violation of
  - Section 13375 or 13376
  - Waste discharge requirements or dredged and fill material permit
  - Requirements of Sections 301, 302, 306, 307, 308, 318, or 405 of the Federal Water Pollution Control Act
  - $10,000 per day / $10 per gallon
- Federal penalties $37,500 per calendar day

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MMPs

- Mandatory Minimum Penalties
- Applies to Risk level 3 Sites
  - Issued for Violation of the NEL limit
  - On the 4th violation of the NEL limit within 180 days the discharger would be subject to the MMPs
  - The MMP is calculated on a daily basis
  - After the fourth violation the MMP amount is $3000 for each violation
- Also Apply to Late Reports
  - Reports submitted over 30 days late are also subject to MMPs

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Section 404 Clean Water Act

- Issued by United States Army Corps of Engineers
  - Individual permits
  - Nationwide permits
- For discharges of dredge or fill material into waters of the United States
- Requires State 401 Water Quality Certification issued by the Regional Board

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Section 401 Certification

- Issued by California Regional Water Quality Control Boards
  - Certification or Denial
- Required whenever project activities require a Federal permit (such as an Army Corps of Engineers permit) and may result in a discharge to waters of the U.S.
- Certification must be obtained prior to initiation of project activities
- State certifies that the discharge of a pollutant, including fill, into 'Waters of the State' will comply with applicable effluent limitations and state water quality standards

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1600 Streambed Alteration Agreement

- Issued by the California Department of Fish and Game
- For work in any stream course
- Appropriate mitigation may be required
- Contact the California Department of Fish and Game for more details, application and information
- Does not replace or substitute for 401 certification or waste discharge requirements

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Related Laws and Considerations

- Low Threat Discharge Permit
  - E.g. groundwater dewatering permit
- Air Quality Regulations
- Federal Endangered Species Act
- National Historic Preservation Act
- State of California Endangered Species

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Permit Guidance

- State Board website
- http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml
  - Fact Sheet
  - Order
  - Attachments
  - Appendix
  - Frequently Asked Questions
  - Glossary
  - Acronyms
  - State and Regional Board Contacts

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Module 2
Erosion Theory

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Presentation Agenda

- Erosion Theory
  - Types of Erosion
- Sedimentation Processes
  - Overview
- Erosion Prediction (RUSLE)

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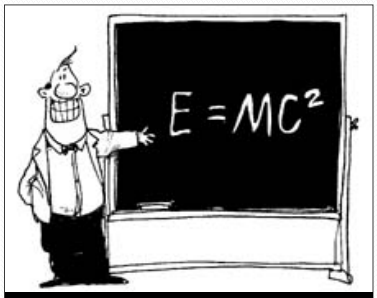
Erosion is Relative



Where:

E=Erosion of the Soil

M= Mechanical Disturbance

C=Construction Period

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What is erosion?

Soil erosion is the process by which soil particles become detached by water, wind, or gravity and are transported from their original location

- What do we need to understand about erosion?
  - Understand how to prevent it
  - Understand how it varies for site conditions
  - Understand the causes
  - Understand how to predict it
- Why is it bad?
  - Turbid water:
    - Reduces light
    - Abrades fish gills
    - Deposits and covers vegetation
    - Contains metals, nutrients, other
    - Can get you fined.

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What is Sedimentation?

- Sedimentation is the deposition of eroded material.
- If you don't have erosion, you do not need sediment control.

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Types of Erosion

- Splash/Raindrop Erosion
- Sheet Erosion (Interrill erosion)
- Rill Erosion
- Gully Erosion
- Channel Erosion
- All types occur on a construction site, but have different solutions to reduce or eliminate them

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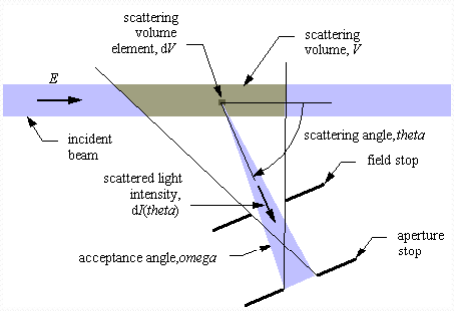
What is Turbidity?

- Turbidity is measured in Nephelometric Turbidity Units (NTUs)
- The instrument used for measuring it is called a Nephelometer or turbidimeter, which measures the intensity of light scattered at an angle as a beam of light passes through a water sample



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Raindrop Erosion

- Primary source of erosion
- Raindrop erosion is often imperceptible
- Indicators
  - Pedestals
  - Stains
  - Gravelling or Lag
- Prevent by: Protecting Soil

http://www.dot.ca.gov

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Sheet Erosion (Interrill Erosion)

- The removal of a uniform thin layer of soil by raindrop splash or water run-off
- Surface film of water 1/16" – 1/8" deep
- This process may occur unnoticed on exposed soil even though raindrops are eroding large quantities of soil
- Prevention: Soil binders or covers

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Rill Erosion

- Sheet flows that become concentrated into conveyance
- Well-defined channels
- Small enough to step across
- Often end part way up a slope but can extend to crest by "headcutting"
- Increased velocity and turbulence
- The rate of rill erosion can be approximately 100 X greater than sheet erosion.
- Prevention: Cover or segment slope

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Gully Erosion

- Several rills may form throughout a slope and eventually may join together to form Gullies
- The rate of gully erosion can be approximately 100 X greater than rill erosion
- Prevention: Control of flow, armoring

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BMP Tool Box – Erosion Control

- Spray on binders
- Spray on mulches
- Spray on matrix
- Hydroseed
- RECPs
- Which is best?
  - Depends on: Design life, slope ratio, soil type and $ you want to spend.

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BMP Tool Box – Runoff Control

- Maintain vegetation cover
- Diversion
- Detention
- Which is best?
  - Always use scheduling to maintain cover
  - Divert flows when possible around work area
  - Detention for flow control is a last resort

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BMP Tool Box – Sediment Control

- Silt Fence
- Straw Wattle
- Gravel Bag
- Check Dam
- Sediment Basin
- Sediment Trap
- Which is best?
  - None work very well, all are required

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Which are More Effective… Erosion Control or Sediment Control?

- Erosion controls are preferred
  - Keep the soil in its place
  - Enhance the protection of the site resources
- Use erosion controls as the primary protection, with sediment controls as a secondary system.
- Erosion controls give you about 85% of the overall program effectiveness

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Wind Erosion Control

- Control system for wind erosion work in one of two ways:
  - Reduce wind speed on the soil surface
  - Form a new, less erodible soil surface

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Reducing Wind Speed at Soil Surface

- Covering the pile with a wind-impervious fabric or other material
- Changing the pile orientation and shape

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Forming a New Less Erodible Surface

- Spraying water to compact and weight the soil particles
- Applying a chemical dust suppressant or soil binder to form a crust or bind the surface soil particles together
- Establishing vegetation
  - Roots bind the soil together; stems and leaves reduce wind speed at soil surface

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What kind of erosion is it?

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Vegetation

- A cover of permanent vegetation is the final goal of most erosion control efforts
- (because projects in arid regions of California may rely on non-vegetated means of providing "cover.")

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Sediment Yield Estimation

- Channels must normally be stabilized in response to development
- RUSLE estimates the average annual soil loss for a specific slope for a single year.
- Can be used to understand sediment contribution before and after project.
- MUSLE estimates the sediment yield for a specific location for a single storm event.

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Using RUSLE:

The Revised Universal Soil Loss Equation

- The most widely used and tested model
- Used as a tool to estimate erosion rate
- Used to determine if a construction site qualifies for a low rainfall erosivity waiver
- Can be used to test the acceptability of temporary erosion and sediment controls

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RUSLE

$$A = R \cdot K \cdot L\,S \cdot C \cdot P$$

- Rainfall (R) (energy)
- Soil Erodibility (K)
- Slope Length and Steepness Factor (LS)
- Cover Management Factor (C)
- Support Practices (P)

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Rainfall Runoff Erosivity Factor (R)

- Rainfall Erosivity Factor for a given geographic location

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Map for R - Factor

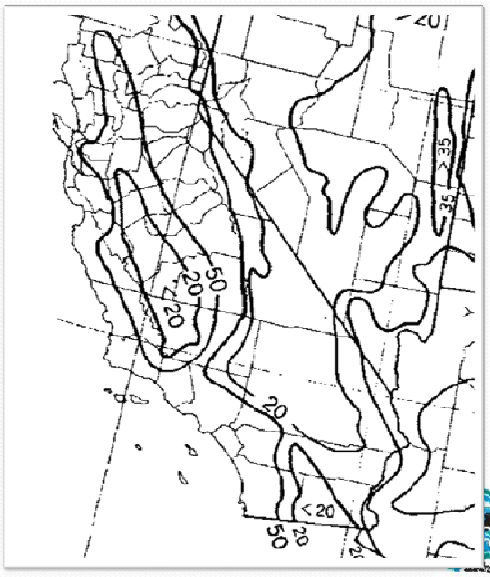
R = E x I/n

Where,

E = kinetic raindrop energy

I = maximum 30-minute storm intensity

n = number of rainfall events



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Soil Erodibility (K)

- The ease with which soil is detached by drop impact or tractive force for surface flow or both.

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Slope Length and Steepness (LS)

- A ratio of slope length to steepness

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Cover Factor (C)

- The C factor indicates how the surface cover will affect the average soil loss.

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Support Practices (P)

Support practices affect erosion by altering the flow pattern, redirecting, or reducing the runoff.

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Module 3
SWPPP Implementation

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Learning Objectives

- To Understand:
  - The Role of the SWPPP
  - Proper BMP use and installation, by Category and Risk/Type Level
  - SWPP Inspection Requirements
  - Rain Event Action Plan (REAP) Requirements

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SWPPP Implementation

- In a nutshell:
  - Inspections
  - BMP installation and maintenance
  - Sampling
  - Reporting
  - Housekeeping
  - Training
  - SWPPP maintenance
  - Weather tracking

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Construction NPDES Permit - What is Covered?

- Construction activity that disturbs one (1) or more acres of soil
- Construction activity includes:
  - Clearing and grubbing, demolition (land disturbance)
  - Grading / excavation
  - Stockpiling
  - Structure construction
- Sites < 1 acre also included if part of a larger common development (that exceeds one acre total) or if Regional Board requests coverage

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General Permit Requirements

- Apply for Coverage Under General Permit
- Develop and Implement a SWPPP
  - Identify pollutant sources
  - Identify / implement BMPs
- Eliminate or Control Non-Storm Water Discharges
  - E.g. pipe flushing, street cleaning, dewatering
- Inspections, reporting, repair, good housekeeping
- Sampling
- Initial and Annual certification

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What Time of the Year do Permit Requirements Apply?

- SWPPP Must Be Implemented Year-round
  - Non-storm water discharges controlled
  - BMPs implemented at all times
  - Stockpile materials for sediment and erosion control as well as for spill control
  - Inspections

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Storm Water Pollution Prevention Plan (SWPPP)

- Purpose:
  - Prevent discharge of potential pollutants during construction
- Potential pollutants include:
  - Sediment (erosion)
  - Litter, trash, and debris
  - Paint, plaster, concrete and stucco
  - Fuel, oil, grease and solvents
  - Pesticides and fertilizers
  - Others

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Common Construction Site Pollutants

List of Common Potential Non-visible Pollutants at Construction Projects

Category	Potential Pollutant Source	Field Indicator of Pollutant Release	Laboratory Analysis
Line flushing	Chlorinated water	Colormetric kit	Residual chlorine
Portable toilets	Bacteria, disinfectants	NA	Total/fecal coliform
Concrete & Masonry	Acid wash	pH meter	pH
	Curing compounds	pH meter	pH, alkalinity, volatile organic compounds (VOCs)
	Concrete rinse water	ph meter	pH
Painting	Resins	NA	Semi-volatile organic compounds (SVOCs)
	Thinners	Phenols kit	Phenols, VOCs
	Paint Strippers	NA	VOCs
	Solvents	Phenols kit	Phenols, VOCs
	Adhesives	Phenols kit	Phenols, SVOCs
	Sealants	N/A	SVOCs
Cleaning	Detergents	Colorimetric kit	MBAS, phosphates
	Bleaches	Colorimetric kit	Residual chlorine
	Solvents	Phenols kit	VOCs
Landscaping	Pesticides/Herbicides	NA	Check with analytical laboratory
	Fertilizers	NA	$NO_3/NH_3/P$
	Lime and gypsum	pH meter	Acidity/alkalinity
	Aluminum sulfate, sulfur	Total dissolved solids (TDS), pH	TDS, alkalinity
Treated wood	Copper, arsenic, selenium	Metals test kits may be available	Metals
Soil amendments & dust control	Lime, gypsum	pH meter	pH
	Plant gums	NA	Biochemical oxygen demand (BOD)
	Magnesium chloride	TDS	Alkalinity, TDS
	Calcium chloride	TDS	Alkalinity, TDS
	Natural brines	TDS	Alkalinity, TDS
	Lignosulfonates	TDS	Alkalinity, TDS

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SWPPP Requirements

- SWPPP document must be available at project site
- Must have map showing BMPs
- Required inspections and documentation
  - Before anticipated storm events
  - After storm events
  - Once each 24-hour period during extended storms
- Include name & number of QSP and QSD

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SWPPP Basics – Strategies

- Typical Strategies:
  - Prevent stormwater contact with disturbed soil
  - Protect Disturbed Soil Areas (DSAs) from erosion
  - Minimize sediment in storm water before discharging
  - Prevent storm water contact with other pollutants
  - Prevent non-stormwater discharges
  - Project understanding
  - Permit understanding

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Site Planning and Management

- The best plan for water quality is to minimize disturbance, maximize natural features and perform grading operations during dry weather
- Preserve existing vegetation
- Clearing Limits/Buffer Zones
- Protect trees & ESAs
- Scheduling / Sequencing

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BMP Implementation and Maintenance

- By Risk/Type Level
- The Permit identifies 5 categories of year-round minimum BMPs:
  - Good site management / housekeeping
  - Non-Stormwater Management
  - Erosion Control
  - Sediment Control
  - Run-on / Run-off Controls

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Good Site Management – "Housekeeping"

- For Construction materials:
  - Inventory of products used
  - Cover & Berm loose stockpiled materials (spoils, aggregate, fly-ash, lime, etc)
  - Store chemicals in watertight containers with proper secondary containment or in a storage shed
  - Minimize exposure of construction materials to precipitation
  - Implement BMPs to prevent off-site tracking

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Develop a Spill Response Plan

- Part of SWPPP
- Prior to Construction
- Equipment and materials for cleanup of spills shall be available on site and that spills and leaks shall be cleaned up immediately and disposed of properly
- Appropriate spill response personnel are assigned & trained

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Non-Stormwater Management

- Authorized vs. Unauthorized Non-Stormwater
- Non-stormwater discharges are allowed, but must meet the following criteria:
  - Infeasible to eliminate
  - Comply with BMPs as described in the SWPPP
  - Filter or treat sed basin discharges
  - Meet NELs and NALs
  - Not cause or contribute to a violation of water quality standards (Basin Plan)
- Check with Regional Board for additional permits

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Perimeter Controls

- Designed to control sediment leaving the site
  - Baffles
  - Cut Back Curb
  - Drain Inlet Protection
  - Fiber Rolls (straw wattle)
  - Sediment Bags
  - Sediment Basins / Traps
  - Silt Fence
  - Sediment Ditch Check

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Run-On / Run-Off Controls

- Dischargers shall:
  - Effectively manage all run-on, all run-off within the site and all run-off that discharges off the site. Run-on from off site shall be directed away from all disturbed areas or shall collectively be in compliance with the effluent limitations in this General Permit.

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Run-On / Run-Off Controls

- Diversions
- Gabions
- Inlet Protection
- Pipe Slope Drain
- Retaining Wall
- Rip Rap
- Rock Check Drain
- Swales

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Permit Findings

- Prohibited: Discharge of any debris (including trash)
- NAL: Turbidity 250 NTU, pH 6.5 – 8.5
- NEL: Turbidity 500 NTU, pH 6 – 9
- Design Storm: 5 year, 24 hr for NEL compliance (RL 3) – 10 Yr. ATS
- Exceedance of NEL is a violation of the permit!

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Order – Section II Conditions

- Electronic Filing of PRDs
  - NOI
  - Risk Assessment
  - Site Map
  - SWPPP
  - Signed Certification Statement
- 7 Days prior to construction
- Send fee via mail AFTER submitting PRDs
- Site not covered until you receive WDID #
- LRP or LRP designee (Approved Signatory) must certify
- All Existing Projects after July 1, 2010 – Risk 1 until 9/2/2011

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Changes to LRP and Approved Signatory

- To obtain coverage, the LRP or the LRP's Approved Signatory or other entity must file Permit Registration Documents (PRDs) prior to the commencement of construction activity.
- The definitions of the Approved Signatory and the LRP have been changed.

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LRP

- A person, company, agency, or other entity that possesses a real property interest (including, but not limited to, fee simple ownership, easement, leasehold, or rights of way) in the land upon which the construction or land disturbance activities will occur for the regulated site. If the land is controlled by an estate or similar entity, the person who has day-to-day control over the land (including, but not limited to, a bankruptcy trustee, receiver, or conservator) is considered to possess a real property interest. The Legally Responsible Person will typically be the project proponent. A contractor who does not possess a real property interest is not qualified to be a Legally Responsible Person.

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Order, Con't

- Small Site Erosivity Waiver
  - 1 to 5 acres disturbed area
  - R less than 5, submit waiver through SMARTS, pay fee
- Final Stabilization
  - 2.D.1.a. "not pose any additional sediment discharge risk than it did prior to the commencement of the construction activity" (photos)
  - 70% coverage rule still applies, or:
  - RUSLE2 Method
  - Custom Method (undefined)

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Order – Section II

- Changes to permit coverage? File a COI in SMARTS
- File NOT within 90 days of completion
- Need post-construction BMP maintenance plan
- Non-stormwater discharge must be monitored for NAL and NEL compliance

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Order Section VIII – Risk Determination/Requirements

- Three Risk Categories – based on sediment and receiving water risk
- Risk computation/determination greatly simplified:
  - Assess Site Sediment Risk: Compute R, K and LS for project
  - Assess RW: 303(d) listed or COLD, SPAWN and MIGRATORY
- For Risk 3, must be 'high' for site and RW Risk

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Risk Categories

Table 7 - Combined Risk Level Matrix

Combined Risk Level Matrix				
		Sediment Risk		
		Low	Medium	High
Receiving Water Risk	Low	Level 1	Level 2	
	High	Level 2		Level 3

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Order Section VIII – Risk Determination/Requirements Risk Level 1

- Risk Determination – Appendix 1
- Risk Level 1 Requirements (Attachment C)
  - No NELs or NALs
- B. Housekeeping
  - Cover stockpiled materials not 'actively' being used
  - Must store chemicals under cover (watertight)
  - Cover waste containers – end of day and before rain
  - Concrete washouts must be water tight
  - BMPs to prevent trackout.

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Risk Level 1 – Con't

- Discontinue application of any erodible landscape material within 2 days before a forecasted rain
- Street washing is effectively prohibited
- Soil cover required for inactive areas (14 days)
- Design sediment basins to CASQA stds.
- Run-on: It appears that you own it

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Run-on (Attch C, Section F.)

- "Risk Level 1 dischargers shall effectively manage all run-on, all runoff within the site and all runoff that discharges off the site. Run-on from off-site shall be directed away from all disturbed areas or shall collectively be in compliance with the effluent limitations in this General Permit."

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Risk Level 1 – Con't

- Permit Section G. Inspection and Repair:
- Done by a QSP, each formally documented
- Inspect weekly (checklist), during rain events – other text indicates before/after inspections also required (48 hrs).
- 72 hrs to effect repairs + document repairs
- No REAP required
- Inspection during business hours only
- Quarterly non-stormwater inspection

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Risk Level II

- Additional Risk Level II Requirements
  - pH NAL 6.5 – 8.5
  - Turbidity NAL 250 NTU
  - REAPs are required – all phases or inactive
  - Provide effective soil cover for inactive areas (14 days) AND 'appropriate' erosion control BMPs (soil stabilization) for active areas
  - Required sediment controls at top/toe and face of slopes to segment them (assumed 'finished' slopes)

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Risk II Additional Requirements Con't

- Limit traffic to designated entrances/exits
- Inspect all access roads daily for track out
- REAP developed 48 hrs prior to forecast event and on site 24 hrs prior to event
- MUST collect effluent samples
  - Collect 3 samples per day
  - pH and Turbidity

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Rain Event Action Plan (REAP)

- Risk Level 2 and 3 only
- Develop plan 48 hrs prior to a 'likely' rain event (50% chance of rain)
- REAP must be on site, and implementation starting 24 hours prior to likely rain event
- Prepared by the QSP
- Reflect construction stage of site – 4 stages

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REAP

Rain Event Action Plan (REAP)

Date:		**WDID Number:**	
Date Rain Predicted to Occur:		**Predicted % chance of rain:**	

Site Information:

Site Name, City and Zip Code — Project Risk Level: ☐ Risk Level 2 ☐ Risk Level 3

Site Stormwater Manager Information:

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

Erosion and Sediment Control Contractor – Labor Force contracted for the site:

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

Stormwater Sampling Agent:

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

Current Phase of Construction

Check ALL the boxes below that apply to your site.

☐ Grading and Land Development	☐ Vertical Construction	☐ Inactive Site
☐ Streets and Utilities	☐ Final Landscaping and Site Stabilization	☐ Other:

Activities Associated with Current Phase(s)

Check ALL the boxes below that apply to your site (some apply to all Phases).

Grading and Land Development:

☐ Demolition	☐ Vegetation Removal	☐ Vegetation Salvage-Harvest
☐ Rough Grade	☐ Finish Grade	☐ Blasting
☐ Soil Amendment(s):	☐ Excavation (_____ ft)	☐ Soils Testing
☐ Rock Crushing	☐ Erosion and Sediment Control	☐ Surveying
☐ Equip. Maintenance/Fueling	☐ Material Delivery and Storage	☐ Other:

Streets and Utilities:

☐ Finish Grade	☐ Utility Install: water-sewer-gas	☐ Paving Operations
☐ Equip. Maintenance/Fueling	☐ Storm Drain Installation	☐ Material Delivery & Storage
☐ Curb and Gutter/Concrete Pour	☐ Masonry	☐ Other:

Vertical Construction:

92

Risk Level II Sampling Con't

- Characterize entire disturbed area
- All points discharging offsite
- Pick up the 'worst' discharges
- No sampling if 'dangerous' or outside of business hours, but have to document the reasons
- Must train personnel to SWAMP QAPP stds.
- Must sample NSW that discharges off site.
- Non-visible sampling requirements
- Can substitute for a regional monitoring program (RB discretion)

93

Risk II NAL Exceedences

- What is required if NAL exceedence:
  - Submit all sampling results to SB w/in 10 days after storm event conclusion
  - RB may require a NAL Exceedence Report which describes the problem and corrective actions taken
  - Examine BMPs and take action to reduce value to less than NAL – this is a continuous loop for NAL exceedence

94

Risk Level III

- Risk Level III Requirements
  - NAL and NEL compliance required
  - Erosion and sediment controls ('appropriate') required for all areas during active construction

95

Risk III Additional Requirements

- Regional Board can require additional site specific measures
- If violate an NEL (pH or turbidity) then sample the receiving waters for pH, turbidity, SSC and others (at Board discretion) for remainder of permit coverage (if direct discharge)
- Project greater than 30 acres of DSA and direct discharge will participate in benthic macroinvertebrate bioassessment.
  - Sample u/s and d/s of project during index period

96

Risk III Additional Requirements Con't

- Sampling on inactive sites is required
- NAL Exceedence Report is similar to RL 2, is a RB discretionary item
- Submit all sampling data within 5 days of event to SB
- NEL violation report (QSD – submitted by LRP):
  - Submit data to SB within 24 hrs after violation identified
  - Document the violation, and the corrective actions
  - Document the rainfall depth (compliance storm)

97

Module 4
Construction Site BMPs

98

Construction BMP Categories

- Temporary Erosion Control (Soil Stabilization)
- Temporary Sediment Control
- Tracking Control
- Non-Storm Water Management
- Waste Management and Materials Pollution Control

99

Soil Binders

- Generally temporary and may require reapplication
- Soil type dictates kind of soil binder to use
- Must be environmentally benign, and should not stain paved or painted surfaces

100

Hydraulic Mulch

- Most types need 24 hours to dry before rainfall occurs
- Generally good for one wet season (may need re-application)
- Binder and a wood fiber with dye

101

Bonded Fiber Matrix (BFM)

- Last longer than mulch (may get several wet seasons)

102

Straw Mulch

- A tackifier (glue) is the preferred method of anchoring straw
- May not be allowed near structures (Fire Regs)
- Generally short lived (one wet season or less)
- Excellent performance

103

Geotextiles & Mats

- Used when disturbed soil may be difficult to stabilize or drying time an issue
- Blankets and mats may need to be removed and disposed of prior to application of permanent soil stabilization
- Natural & synthetic

104

Hydroseeding

- Seed mix must comply with local standards
- Steep slopes are difficult to protect with temporary seeding
- Must be established to qualify as a BMP

105

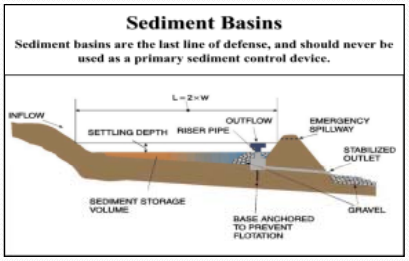
Silt Fence

- Located level on contours, not perpendicular
- Not for concentrated flow areas
- Must be keyed in

106

Sediment Basin

- Tributary area 5 to 75 acres
- Use with erosion control, not instead of
- Always have spillway
- Drain in 7 days max
- Protect outlet from erosion
- Use anti-seep collars
- Size per permit criteria



107

Sediment Basins

- Calculations must be in SWPPP and performed by a registered engineer
- Always have spillway
- Use anti-seep collars

108

Sediment Basins Con't

109

Fiber Rolls

- Locate on level contours
- Use at top and on face of slopes
- Good for perimeter control
- Space 30 - 60 feet on slopes

110

Gravel Bag Berm

- Use for small check dams
- Use for perimeter control

111

Inlet Protection

- Protect active inlets year-round
- Use where ponding won't encroach into traffic

112

Track-Out

- Maintain Entrances

113

Temporary Construction Entrance / Exit

- A VERY visible indicator of compliance effort (or lack of)
- Minimize number of access points
- Use coarse aggregate over fabric – can add plates
- Year-round

114

Tire Wash

- If stabilized entrance and sweeping don't work…:
- Must be effective
- Tire wash is the next level

Images from Tirewash.com

115

Dewatering

- Likely requires a separate discharge permit from RWQCB
- Addresses sediment and other permit-specified pollutants

116

Dewatering Discharge Options

- Direct to sanitary sewer (with permission from sewer agency)
- Retain on site (e.g. use for dust control)
- Off-site transport & disposal via licensed contractor)

117

Dewatering Treatment Options

- Desilting basin or sediment trap
- Weir (Baker) tank
- Dewatering tank
- Gravity (dewatering) bag
- Filtration
- Effectiveness depends on target sediment particle size

118

Material Storage

- Cover and contain
- Keeps site clean
- Avoids potential sampling

119

Concrete Waste

- Provide proper wash-out area
- Locate away from storm drain/street gutter
- Empty or provide new wash out when ¾ full

120

Module 5
Monitoring

121

Module Objectives

- Overview of monitoring requirements of CGP
- Identify and describe monitoring requirements by project risk
- Introduce CSMP
- Identify sampling location selection methods
- Discuss field meter and lab analysis

122

Types of Monitoring

- Visual Inspection of BMPs
- Visual Monitoring of site discharge
  - Qualifying Storm Events
  - Non-stormwater discharges
- Sampling and Analysis of
  - Construction site runoff
  - Non-stormwater discharges
  - Receiving waters
  - Contained runoff
- Conditional/Optional Monitoring – Run-on

123

Summary of Sampling Requirements by Risk/Type

Risk Level 1

- Non-visible pollutant monitoring as necessary

Risk Level 2

- Non-visible pollutant monitoring as necessary
- Stormwater runoff monitoring
- Non-stormwater discharges from site
- Contained rainwater when discharged

124

Sampling and Analysis by Risk and Site Factors

- Risk Level 3
  - Non-visible pollutant monitoring as necessary
  - Stormwater runoff monitoring
  - Non-stormwater discharges from site
  - Contained rainwater when discharged
  - Receiving water monitoring and SSC sampling if an NEL for turbidity is violated
  - Receiving water benthic macroinvertebrate bioassessment if project
    - Disturbs 30+ acres, and
    - Has a direct discharge to fresh water wadeable stream

125

Purpose of Monitoring Program

- CSMP will address the following objectives:
  - Demonstrate that the site is in compliance with the CGP
  - Determine whether non-visible pollutants are present and causing exceedances of WQO
  - Determine need for corrective actions, additional BMPs or SWPPP revisions to reduce pollutants

126

Weather and Rain Event Tracking

- Inspection and sampling requirements are based on both likely precipitation events and qualifying rain events
- Likely precipitation event: >50% chance of rain, per NOAA forecast
- Qualifying Rain Event: Any event that produces 0.5 inch or more of rainfall

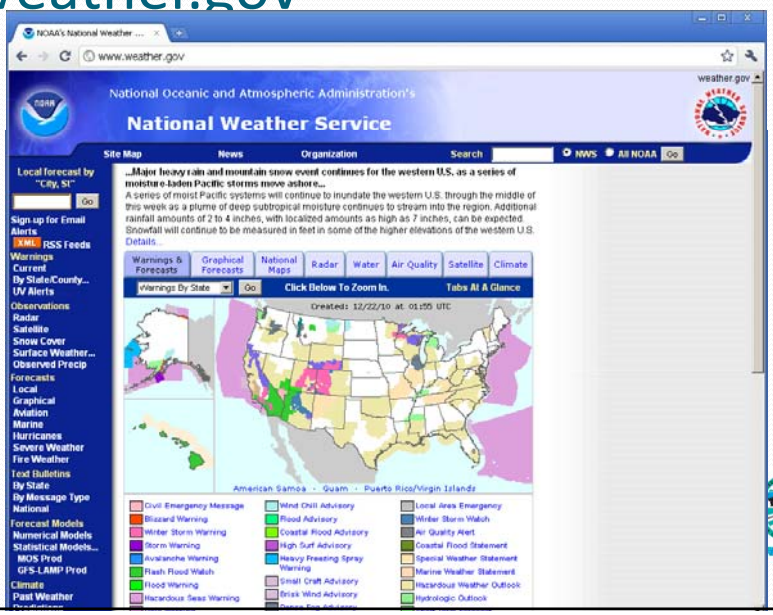
127

Weather and Rain Event Tracking

- All sites must record rainfall amounts
- Use either a local government rain gauge or onsite rain gauge
- Depending on interpretation of permit requirements, all or some sites must check and print daily NOAA forecasts
- Applies to Risk Level 2&3 at a minimum
- QSP must check weather.gov (same as NOAA.gov) daily for storm event forecast

128

Weather.gov



129

Identify Monitoring Locations

- QSD will identify locations for
  - Visual Monitoring/inspection
  - Water quality sampling and analysis
    - Effluent monitoring
    - Non-stormwater monitoring
    - Non-visible pollutant monitoring
    - Run-on monitoring
  - Receiving Water Monitoring
    - Bioassessment
    - Exceedance-triggered receiving water monitoring

130

Effluent Monitoring Locations

- All discharge points from site
  - Site boundary
  - Storm drain inlets
  - Monitor downstream of last BMP
  - Must monitor 100% of active areas
- Representative locations

131

Non-Stormwater Monitoring Locations

- QSD should anticipate non-stormwater discharges
- Non-stormwater discharges encountered during construction should be added to the SWPPP
- Treat non-stormwater discharges like stormwater runoff:
  - Monitor where required (Risk Level 2 & 3)
  - Treat with BMPs
  - Eliminate where feasible

132

Non-Visible Pollutant Monitoring Location

- QSD will indicate upstream and downstream sampling locations
- Should correspond with all potential locations for spill of non-visible pollutants
- Additional locations (e.g. if a laydown area is moved or added) should be added to SWPPP

133

Receiving Water Monitoring Location

- Sample the receiving water
  - Upstream of the construction site
    - Background; unaffected by site runoff
  - Downstream of the site
  - Affected by site runoff
  - Can use one downstream location if a site has more than one discharge point into the receiving water
- Selecting locations in a lake, bay, or lagoon requires more creativity

134

Receiving Water Monitoring

Rivers, Bays, Alpine Streams, Flood Control Channels

135

Visual Monitoring

- All sites are required to conduct specified types of visual monitoring
- Visual monitoring includes the following types of activity (varies by Risk Level)
  - Routine and Event Based BMP Inspection
  - Visual site monitoring of stormwater discharge
  - Non-stormwater inspection
  - (in different sections of the permit)

136

Routine BMP Inspections

- Requirements are the same for all Risk Levels
  - Routine BMP Inspections
    - Weekly
    - Note that some BMPs like tracking control require more frequent inspections
    - Year round requirement
- Goal – identify BMPs that need maintenance to operate effectively, have failed, or could fail

137

Event Based BMP Inspection

- Requirements are the same for all Risk Levels
  - Qualifying Rain Event Triggered Inspections
    - Pre-Rain Event: within 48 hours in advance of likely event
    - Implement when NOAA predicts a probability of precipitation of 50% or more in the project area
    - Weather.gov
    - Post-Rain Event: within 48 hours following a qualifying event
- Required only during scheduled construction site business hours

138

Pre-Rain Event Inspection

- Goal – Ensure the site and BMPs are ready for the predicted rain by inspecting:
  - Drainage areas for spills or uncontrolled pollutant sources
  - BMPs for proper installation per SWPPP or REAP
  - Stormwater containment and storage areas for adequate capacity
  - Observations for floating or suspended materials, sheen, odors, turbidity, or other pollutants within stored stormwater
- Combine the pre-storm inspection with the REAP (if applicable)

139

Post-Rain Event Inspection

- Goal – determine if the BMPs functioned effectively by inspecting:
  - All site stormwater discharge locations
  - Discharge from stormwater containment and storage areas
  - All BMPs to determine if they were adequately designed, implemented, and effective

140

BMP Inspection Response

- Initiate correction of deficiencies within 72 hours of identification
- Complete corrective actions as soon as possible
- As needed, initiate SWPPP or REAP revisions
- Document corrective actions – you will be asked to describe in detail in the Annual Report

141

Non-Stormwater Inspections

- Inspection requirements are the same for all risk levels
- Routine quarterly non-stormwater inspections of all project drainage areas
- Goals
  - Detect unauthorized non-stormwater discharges
  - Observe authorized non-stormwater discharges

142

Non-stormwater Inspection Documentation

- Document on an Inspection Checklist
  - Checklist must include the basic permit required information
    - Presence or indications of authorized or unauthorized non-stormwater discharges and their sources
    - Pollutant characteristics (floating or suspended material, sheen, turbidity, odor or discoloration)
    - Personnel performing inspection
    - Dates and times of the inspection of each drainage area
    - Observations
    - Response taken

143

Sampling

- Objective of monitoring is to determine if BMPs are effective in controlling potential pollutants and demonstrate compliance with NELs and NALs
  - Requirements vary by risk level or project type
  - Qualifying Rain Event Triggers sampling requirement
    - Dischargers will not know if a rain event is a QE at the start of the event
  - Required during normal construction site business hours

144

Non-Visible Pollutant Sampling

- Required of all Risk Levels
  - Triggered by the potential for non-visible pollutants to be discharged from site
  - Typically associated with a BMP failure or spill
- Sample two locations
  - Runoff from area affected by spill or BMP failure
  - Runoff from area not affected by spill or BMP failure

145

Non-Stormwater Discharge Sampling

- Required for Traditional Project Risk Levels 2 and 3 where non-stormwater is discharged off the project site
  - Triggered by:
    - Observation of unauthorized discharge
    - Planned non-stormwater discharge
- Samples must be collected at the time of discharge or discovery
- Not required for linear projects (except Type 3)

146

Stormwater Discharge Sampling

- Sampling required for each qualifying event
- Minimum of 3 samples for each day of discharge
- Risk level 2 and 3
  - Collect samples at ALL site discharge locations
- Collect samples of contained or stored stormwater from a qualifying event, at time of discharge

147

Effluent Sampling for Turbidity, pH, and SSC

- Turbidity and pH
  - Required at sites subject to NELs and NALs
    - Traditional Risk Level 2, 3
- SSC
  - Runoff sampling required for Risk Level 3 sites that exceed the turbidity NEL
  - If RL 3 site has direct discharge to receiving waters, must sample receiving water for turbidity, SSC
  - Once the NEL has been exceeded, SSC sampling continues for the duration of the project

148

Receiving Water Monitoring

- Required at sites subject to NELs (Risk Level 3) where:
  - Site effluent exceeds the pH or Turbidity NEL
  - Site has a direct discharge to the receiving water
- Turbidity Exceedance
  - Sample receiving water for SSC and Turbidity
- pH Exceedance
  - Sample receiving water for pH

149

Monitoring Quick Reference

	Visual	Non-visible Pollutant	Effluent	Receiving Water
Risk Level 1	three types required for all Risk Levels: non-storm water, pre-rain and post-rain	As needed for all Risk Levels (see below)	where applicable	not required
Risk Level 2			pH, turbidity	not required
Risk Level 3			(if NEL exceeded) pH, turbidity and SSC	(if NEL exceeded) pH, turbidity and SSC. Bioassessment for sites 30 acres or larger.

150

Module 6
Reporting

151

Ongoing Documentation

Maintain in SWPPP

- Weekly inspection reports
- Daily logs
- NAL compliance data (as long as no NAL exceedance)
- REAP
- Quarterly Non-stormwater Inspection Reports

Upload to SMARTS

- Annual Report
- SWPPP modifications (major mods or quarterly)
- Photos (every 3 storms, linear only)
- NEL Effluent Monitoring (all)
- NEL Violation Report
- NAL Exceedance data
- NAL Exceedance Report (if requested by RB)

152

Compliance Activities: Risk Level 1

Task	Submittal Requirement
Weekly Inspection Report	Hold in SWPPP, submit with Annual Report
Storm Event Inspection Report	Hold in SWPPP, submit with Annual Report
SWPPP Modifications	Upload major modifications Upload revised SWPPP quarterly at a minimum
Quarterly Non-Stormwater Inspection	Hold in SWPPP, submit with Annual Report
Non-visible Pollutant Monitoring	Hold in SWPPP, submit with Annual Report
Annual Report	Covers July 1 – June 30, Due September 1

153

Compliance Activities: Risk Level 2

Task	Submittal Requirement
Weekly Inspection Report	Hold in SWPPP, submit with Annual Report
Storm Event Inspection Report	Hold in SWPPP, submit with Annual Report
Rain Event Action Plan (REAP)	Hold in SWPPP, submit with Annual Report
Weather forecast	Hold in SWPPP, submit with Annual Report
NAL compliance monitoring data	Hold in SWPPP, submit with Annual Report If NAL exceedance, submit to SMARTS within 10 days
NAL Exceedance Report	Submit to SMARTS if requested by RB
SWPPP Modifications	Upload major modifications Upload revised SWPPP quarterly at a minimum
Quarterly Non-Stormwater Report	Hold in SWPPP, submit with Annual Report
Non-visible pollutant Monitoring	Hold in SWPPP, submit with Annual Report
Annual Report	Covers July 1 – June 30; due on September 1

154

Compliance Activities: Risk Level 3

Task	Submittal Requirement
Weekly Inspection Report	Hold in SWPPP, submit with Annual Report
Storm Event Inspection Report	Hold in SWPPP, submit with Annual Report
Rain Event Action Plan (REAP)	Hold in SWPPP, submit with Annual Report
Weather forecast	Print daily, hold in SWPPP, submit with Annual Report
NAL compliance monitoring data	Hold in SWPPP, submit with Annual Report If NAL exceedance, submit to SMARTS within 10 days
NAL Exceedance Report	Submit to SMARTS if requested by RB
NEL compliance monitoring data	Submit to SMARTS within 5 days of conclusion of rain ever
NEL Violation Report	Submit to SMARTS within 24 hours of NEL violation
SWPPP Modifications	Upload major modifications Upload revised SWPPP quarterly at a minimum
Quarterly Non-Stormwater Report	Hold in SWPPP, submit with Annual Report
Non-visible pollutant Monitoring	Hold in SWPPP, submit with Annual Report
Annual Report	Covers July 1 – June 30; due on September 1

155

Weekly and Storm Event Related Inspection Reports

- Inspect site weekly, on standard projects
- Inspect site before, during, and after storm events
- Document inspections using checklist
- Retain records on site with SWPPP while construction is on going
- Maintain an electronic or paper copy of records for three years from the date generated or date submitted, whichever is last.

156

Daily Visual Track Out Inspections

- Risk Level 2, 3
- Maintain a log of inspections in the SWPPP
- Do not need to document using a checklist
- Ensure that records of all storm water monitoring information and copies of reports required by CGP be retained for a period of at least three years.

157

Rain Event Action Plans

- Complete REAP 48 hours prior to 50% or greater forecast event
- Implement REAP 24 hours prior to forecast event
- Retain a paper copy of each REAP in the SWPPP
- Retain printed copy of forecast information from National Weather Service in the SWPPP
- Note: Permit discusses rain forecast records for all traditional risk types.

158

NAL Exceedance Report

- If an NAL is exceeded, Risk Level 2 dischargers shall electronically submit all storm event sampling results to State Water Board no later than 10 days after the storm event
- If no NAL or NEL exceedances, Risk Level 3 dischargers shall electronically submit all storm event sampling results to SMARTS within 5 days
- Regional Water Boards may require NAL Exceedance Reports.
- All Exceedance Report must be certified by the LRP or Approved Signatory

159

Storm Event Related Sampling NAL Compliance

- Sample site runoff to document compliance with NAL for pH and turbidity
- pH must only be sampled when there are high risk activities (concrete pour) occurring
- If no NAL exceedances
  - Do not submit storm event sampling results to State Water Board (Risk 2), submit within 5 days (Risk 3)

160

Storm Event Related Sampling NEL Compliance

- Sample to document compliance with NEL for pH and turbidity
- If no NEL violations
  - Electronically submit all storm event sampling results to State Water Board
  - No later than 5 days after the conclusion of the storm event.

161

NEL Violation Report

- NEL Violation Reports must be submitted to SMARTS within 24 hours after exceedance has been identified
- LRP/AS shall certify each report
  - 24-hour countdown could be an issue
  - On risk level 3 projects, always have an LRP/AS on standby during rain events

162

NEL Violation Report Requirements

- Analytical method(s), reporting units, detection limit(s), parameter
- Date, time of sampling, place, visual observations (inspections), and measurements including precipitation
- Description of the current BMPs associated with the effluent sample that exceeded the NAL and the proposed corrective actions.
- Compliance Storm Exemption
  - Get out of jail free card: if an NEL was exceeded during a storm equal to or greater than a Compliance Storm Event (5-year 24 hour rainfall depth)
  - Risk Level 3 dischargers shall report on site rain gauge reading and nearby governmental rain gauge reading for verification

163

Quarterly Non-Storm Water Reports

- Dischargers shall visually observe (inspect) each drainage area for the presence of unauthorized and authorized non-storm water discharges and their sources.
  - January-March
  - April-June
  - July-September
  - October-December
- Report shall document:
  - Presence or evidence of non-storm water discharge
  - Pollutant characteristic and source

164

Quarterly Non-Storm Water Reports

- All Risk level dischargers shall
- maintain on-site records that include
- Personnel performing inspections
- Dates and times inspection occurred
- Responses taken to eliminate unauthorized non-storm water discharges
- Efforts made to reduce or prevent pollutants contact with non-storm water discharges

165

Quarterly Non-Storm Water Reports

- Risk level 2 & 3 sites
- Shall sample effluent at all discharge points where non-storm water is discharged off site
- Dischargers shall send all non-storm water sample analyses to a laboratory certified for such analyses by the State Dept of Health Services
- Shall monitor & report run on from surrounding areas if it contributes to exceedance of NAL's or NEL's for risk level 3

166

Annual Reporting Requirements

- All eligible dischargers shall prepare & electronically submit an Annual Report.
- Reporting period is July 1 – June 30 each year.
- Reports due no later than September 1st of each year.
- First Annual Report will be due September 1, 2011
- SMARTS will not accept an NOT application without an annual report filing if applicable (3 months active construction)

167

Annual Reporting Requirements

- Annual Report must be certified by the LRP or AS
- The LRP shall list in the SWPPP the name of any Approved Signatory and provide a copy of the written agreement or other mechanism that provides this authority from the LRP
- Active projects >3 months must file Annual Report
- Important to gather the information as you go, and in the form required for the report – review the SMARTS tabs

168

Annual Reporting - Specifics

- Annual report is a series of forms to be filled out - data to be manually entered
- Assemble data throughout the year in the format of the forms
- Remember this will be publicly available data

169

Module 7
SMARTS

170

SMARTS

- Stormwater Multi Application Reporting & Tracking System, or
- Stormwater Multiple Application & Report Tracking System
  - How does the system work?
  - Who sets up accounts?
  - Who has access?
  - What information is provided?

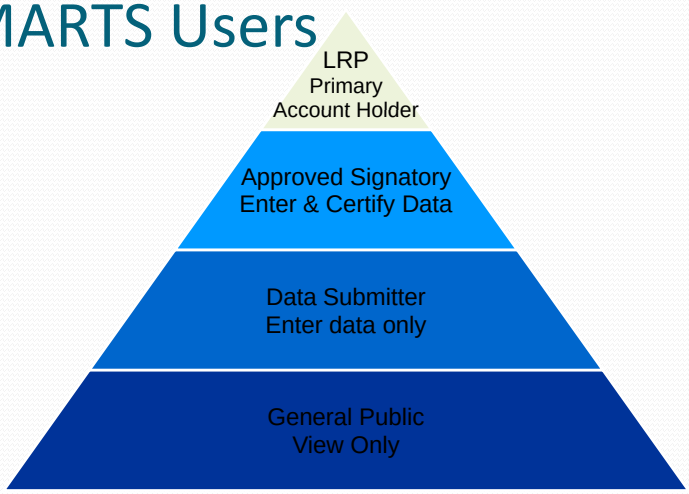
171

What is SMARTS?

- Purpose:
  Provide a platform where dischargers, regulators, and the public can enter, regulate, and/or comment on storm water data including NOIs, NOTs, compliance, and monitoring data.
- Internet-based
- Available 24/7
- Reports
  - Public reports - NOI, Inspections, Violations, and Enforcement data.

172

SMARTS Users



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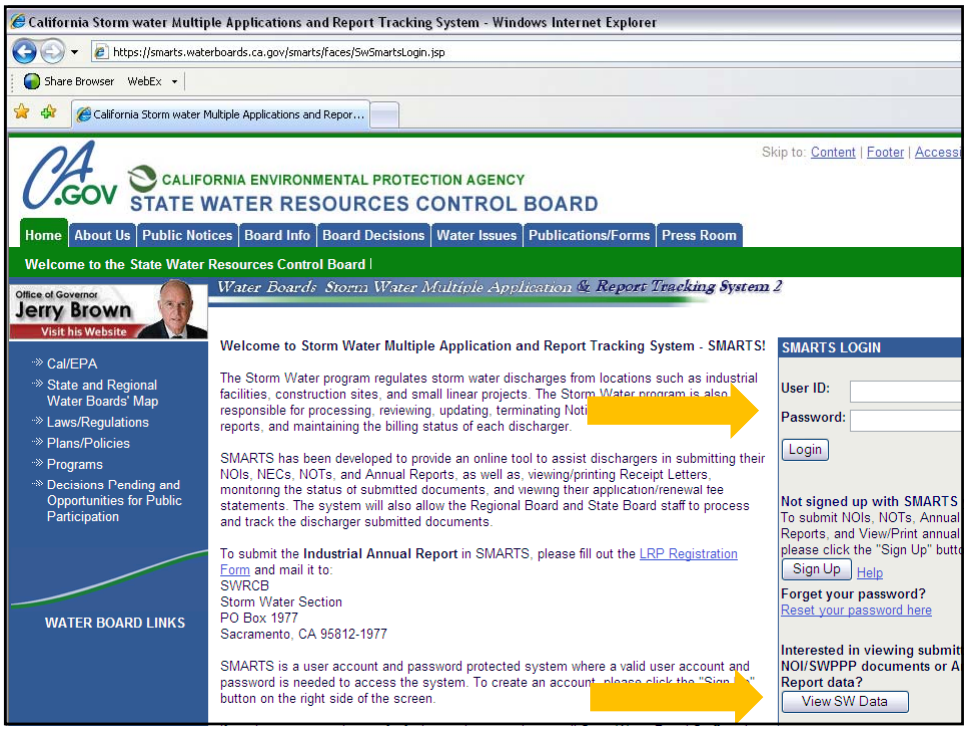

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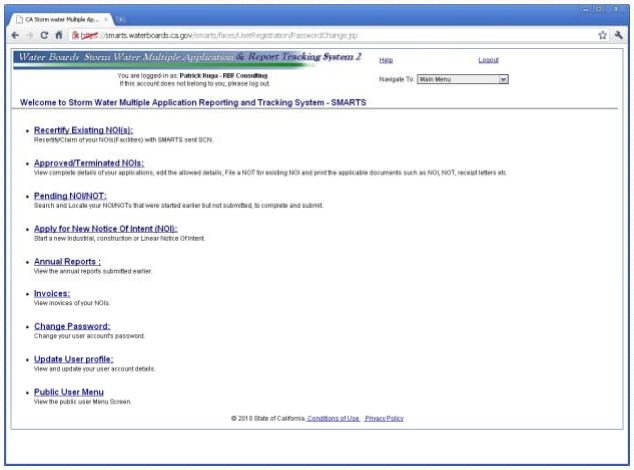

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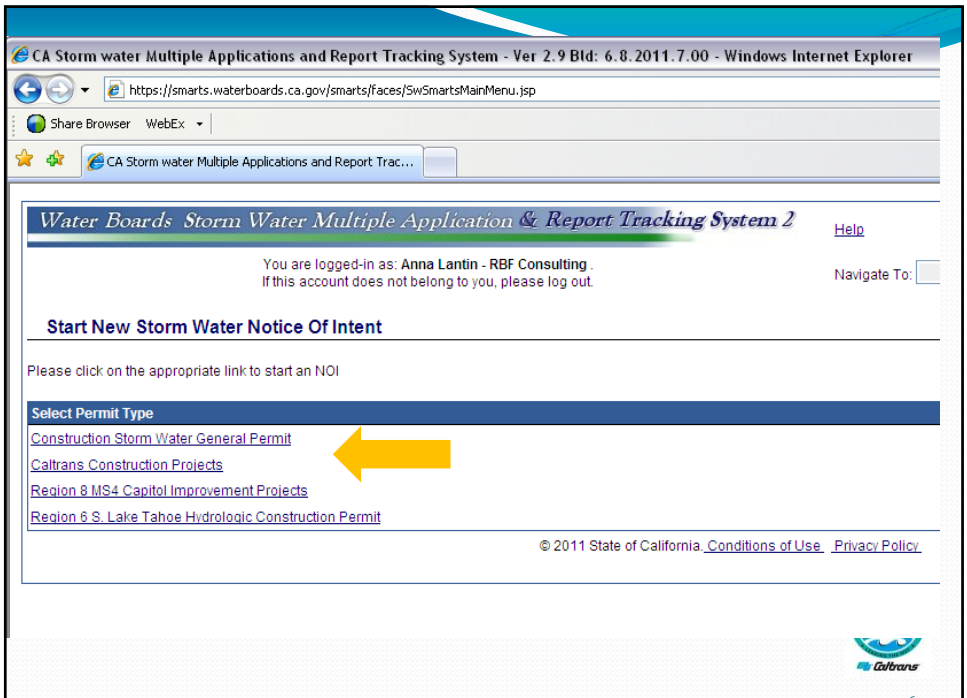

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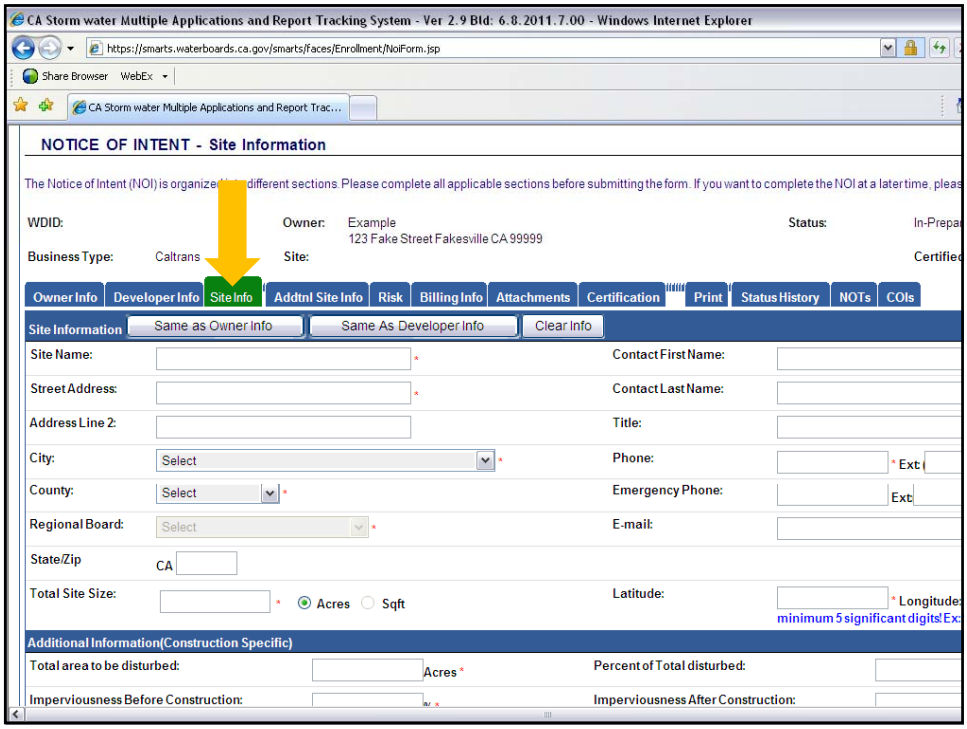
CA Storm water Multiple Applications and Report Tracking System - Ver 2.9 Bld: 6.8.2011.7.00 - Windows Internet Explorer
https://smarts.waterboards.ca.gov/smarts/Faces/Enrollment/NoiForm.jsp
NOTICE OF INTENT - Site Information
WDID:
Owner: Example
123 Fake Street Fakesville CA 99999
Status:
Business Type: Caltrans
Site:
Owner Info
Developer Info
Site Info
Addtnl Site Info
Risk
Billing Info
Attachments
Certification
Print
Status History
NOTs
COIs
Site Information
Same as Owner Info
Same As Developer Info
Clear Info
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Contact First Name:
Street Address:
Contact Last Name:
Address Line 2:
Title:
City:
Select
Phone:
County:
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Emergency Phone:
Regional Board:
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CA
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Acres
Percent of Total disturbed:
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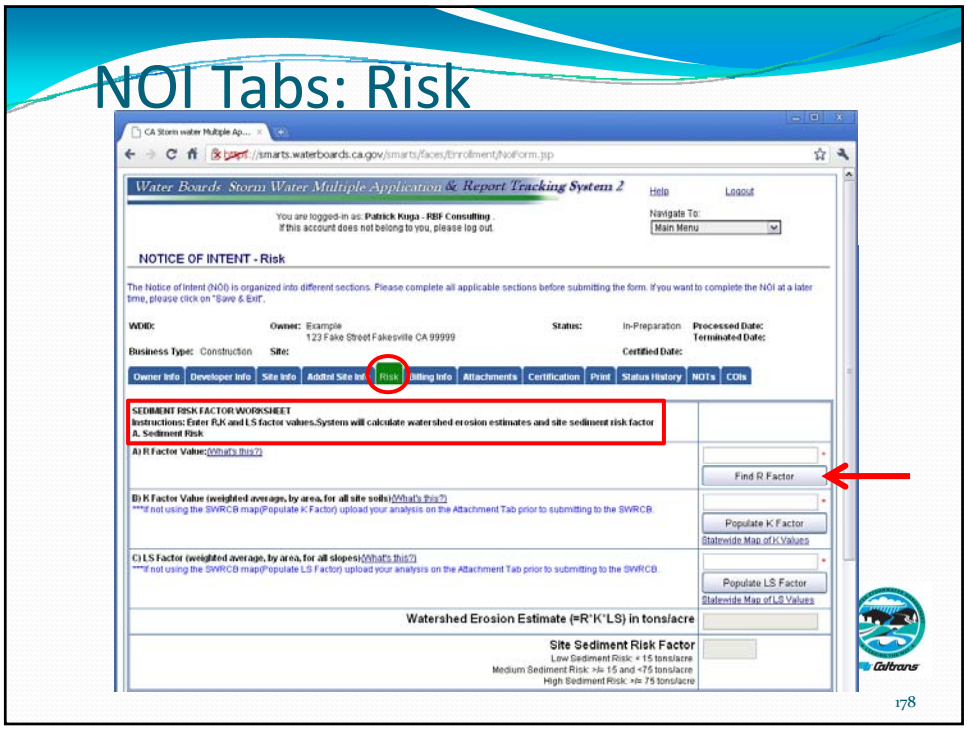
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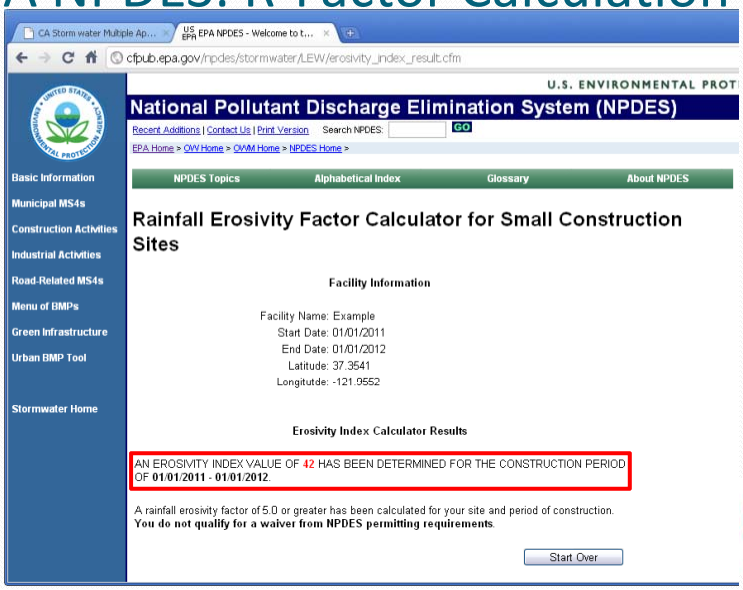
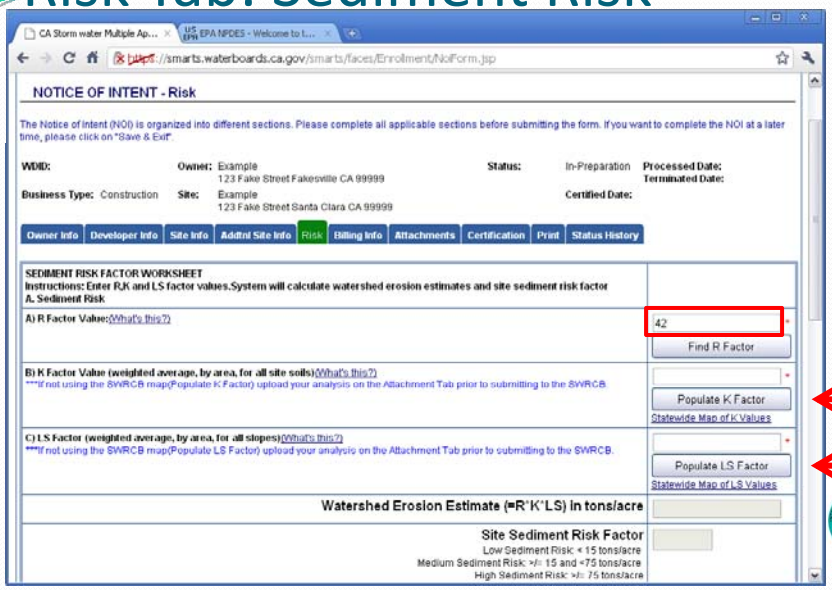
Water Boards Storm Water Multiple Application & Report Tracking System 2
Help
Logout
Navigate To:
Main Menu
NOTICE OF INTENT - Risk
WDID:
Owner: Example
123 Fake Street Fakesville CA 99999
Status:
In-Preparation
Processed Date:
Terminated Date:
Business Type: Construction
Site:
Certified Date:
Owner Info
Developer Info
Site Info
Risk
Billing Info
Attachments
Certification
Print
Status History
NOTs
COIs
SEDIMENT RISK FACTOR WORKSHEET
A. Sediment Risk
A) R Factor Value:
Find R Factor
B) K Factor Value (weighted average, by area, for all site soils)
Populate K Factor
Statewide Map of K Values
C) LS Factor (weighted average, by area, for all slopes)
Populate LS Factor
Statewide Map of LS Values
Watershed Erosion Estimate (=R*K*LS) in tons/acre
Site Sediment Risk Factor
Low Sediment Risk: < 15 tons/acre
Medium Sediment Risk: >= 15 and <75 tons/acre
High Sediment Risk: >= 75 tons/acre
178

EPA NPDES: R-Factor Calculation



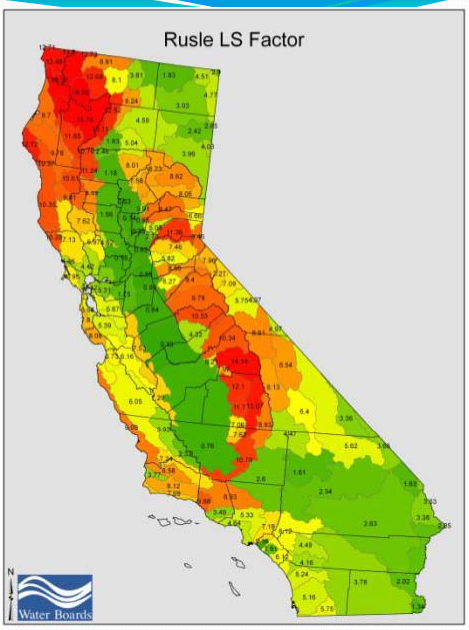
179

Risk Tab: Sediment Risk



180

Note: LS Factor Map



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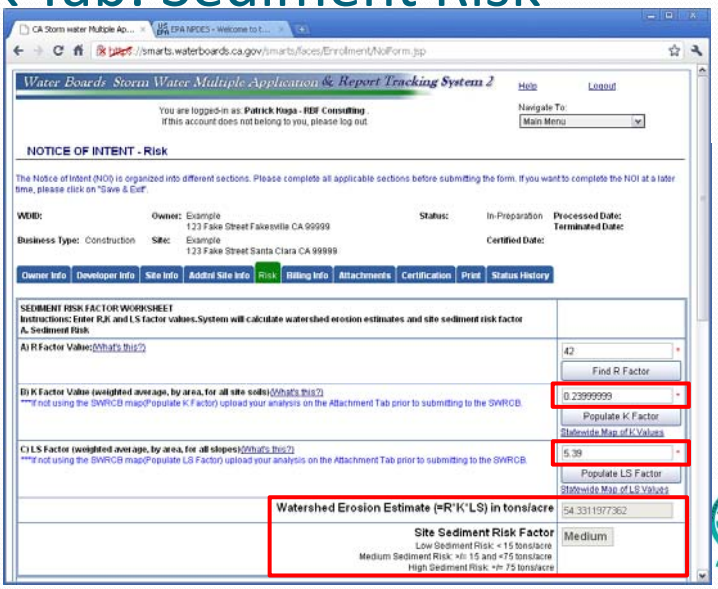
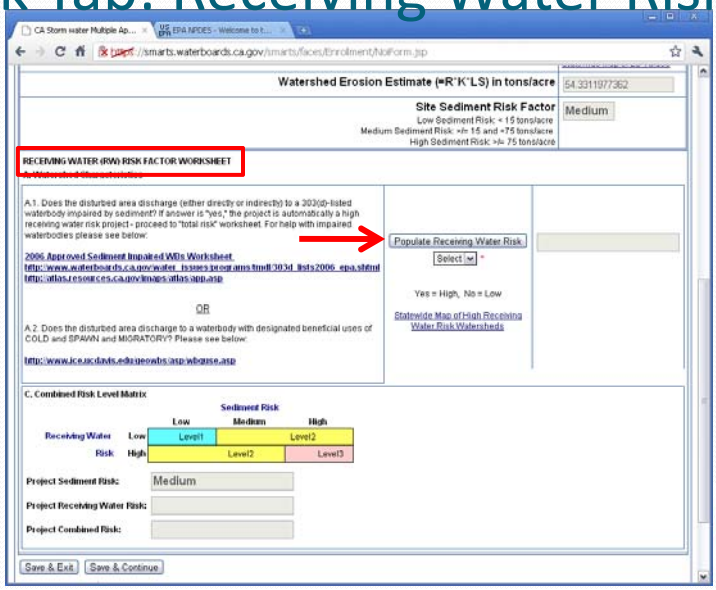
Risk Tab: Sediment Risk



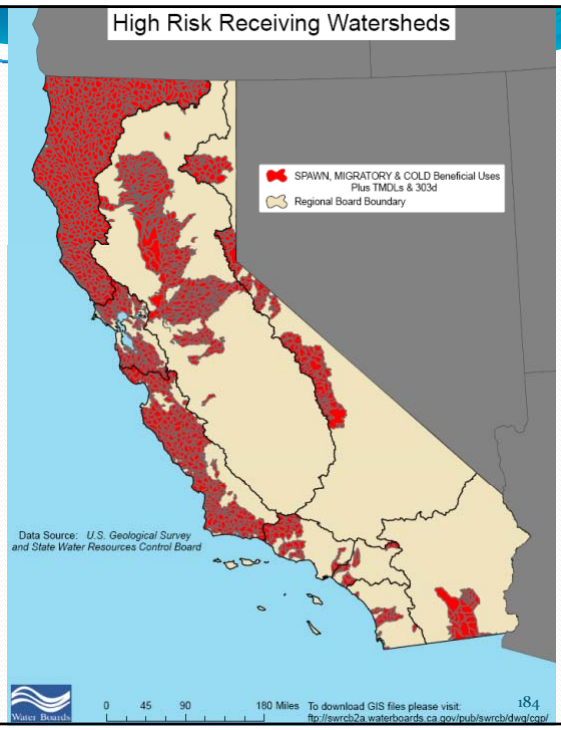
182

Risk Tab: Receiving Water Risk



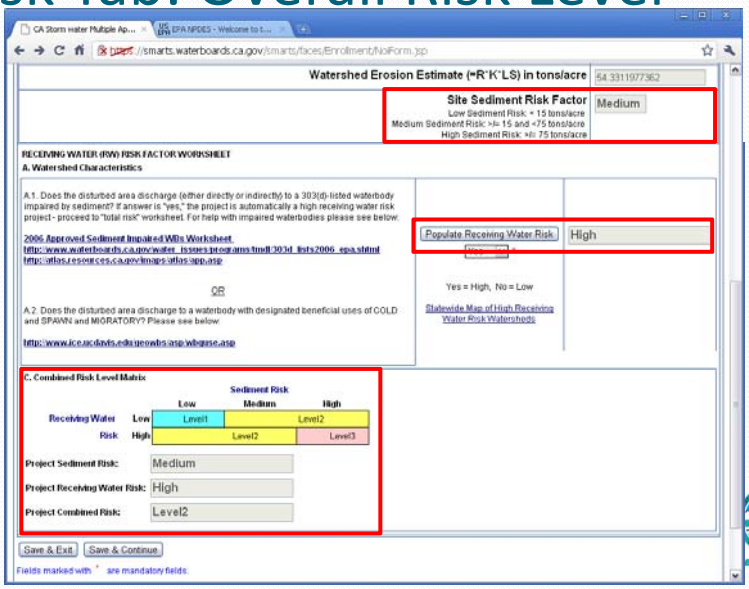
183

Risk Tab: Sediment Sensitive Watersheds



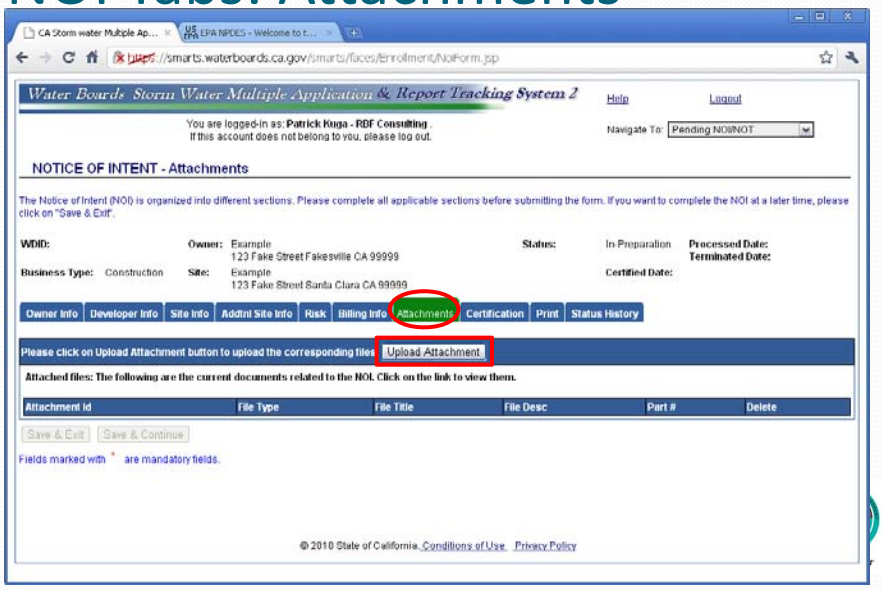
184

Risk Tab: Overall Risk Level



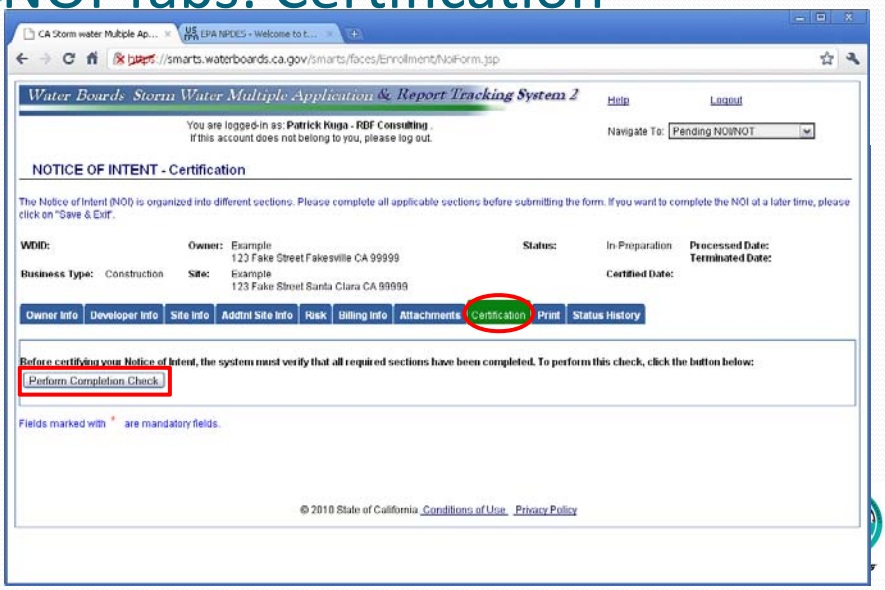
185

NOI Tabs: Attachments



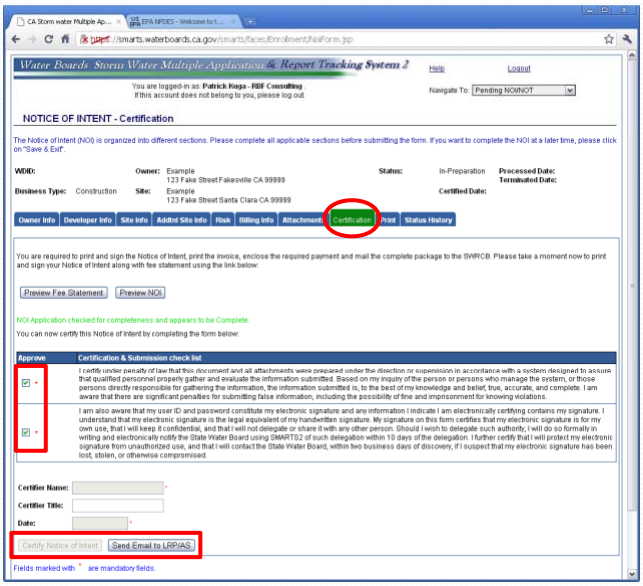
186

NOI Tabs: Certification



187

NOI Tabs: Certification



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Module 8
Project Planning and Risk Determination

189

Overview

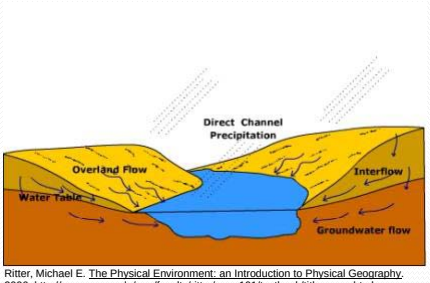
- Pre-Construction Water Balance (Hydromodification)
- Post-Construction Standards
- Sediment Risk
- Receiving Water Risk
- Bioassessment Monitoring

190

Stream Flow

There are four basic sources of stream flow.

- Groundwater
- Interflow
- Direct channel precipitation
- Surface runoff



Ritter, Michael E. The Physical Environment: an Introduction to Physical Geography. 2006. http://www.uwsp.edu/geo/faculty/ritter/geog101/textbook/title_page.html

191

Normal Stream Flow

- All streams accomplish three
- basic geomorphic tasks:
  - Erosion
  - Sediment transport
  - Sediment deposition
- These determine the size and shape of the stream channel, both laterally and longitudinally.

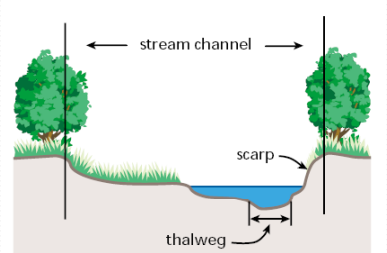


Figure 2.1 Cross-section of a Stream Channel (FISRWG, 1998)

192

Geomorphic Definitions

- Erosion – the detachment of soil particles along the stream bed and banks
- Sediment transport – the movement of eroded soil particles in stream flow
- Sediment deposition – the settling of eroded soil particles in the water or on land as water recedes.

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Dynamic Equilibrium

Sediment particles that erode are transported downstream

$$Qs * D \propto Qw * S$$

Where:

Qs = Sediment discharge

Qw = Streamflow

D = Sediment particle size

S = Stream slope

When all four variables are in balance, the channel is stable

194

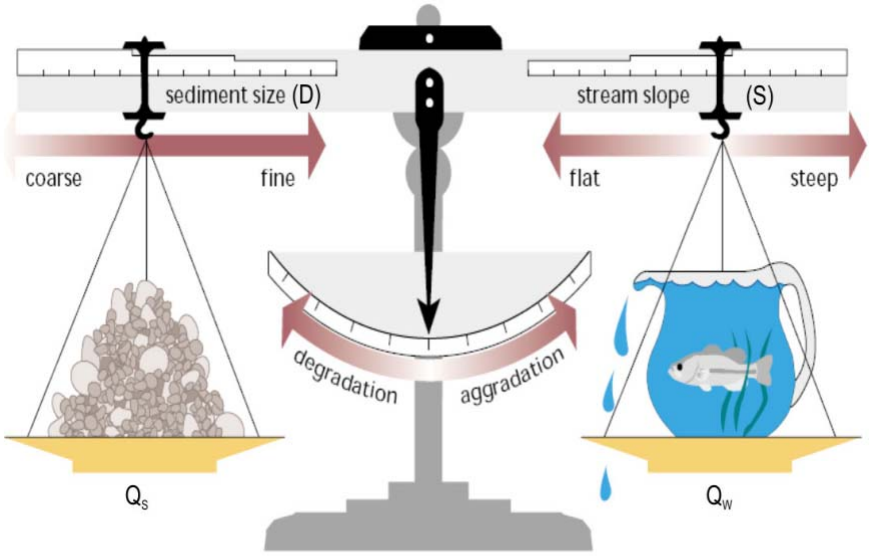

Figure 2.2 Factors Affecting Channel Degradation and Aggradation (FISRWG, 1998)

195

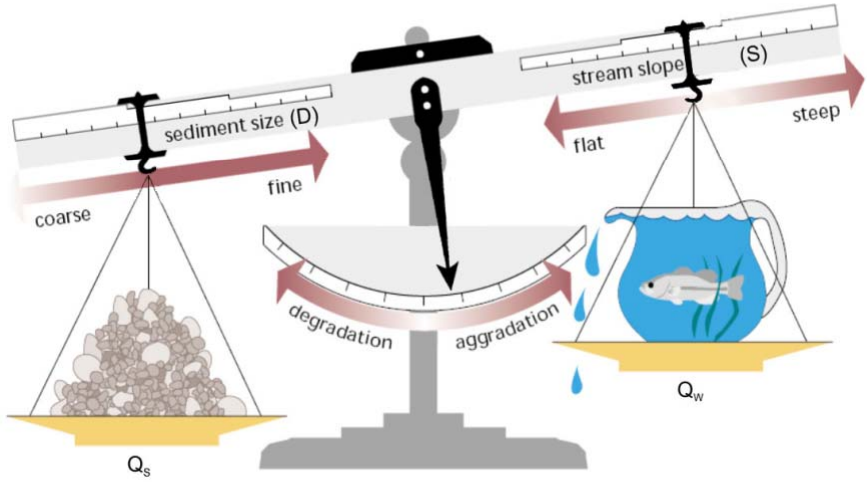

Figure 2.3 Example of Aggradation (Adapted from FISRWG, 1998)

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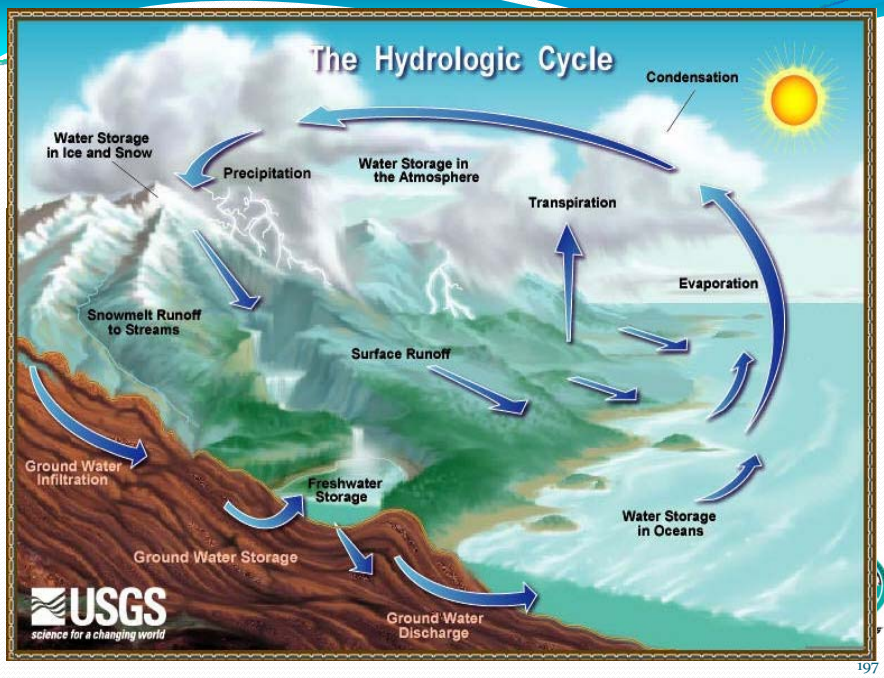

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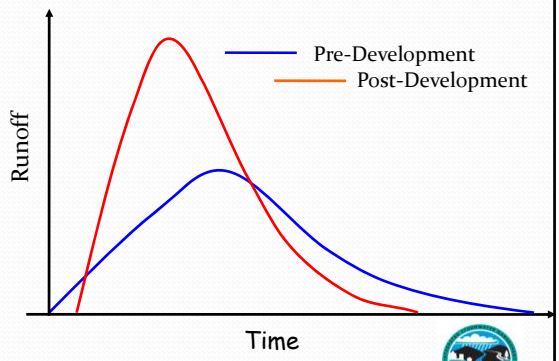
Hydrologic Changes

Urbanization tends to increase storm water runoff:

- peak flows
- volume
- frequency



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Construction Activity Threats

- Two-fold – construction projects over an acre have the potential to cause impacts to our beneficial uses of water both during and after the project.
- During – potential for accelerated erosion.
- After – potential for pollutant export and hydromodification impacts as a result of how the new landscape functions.

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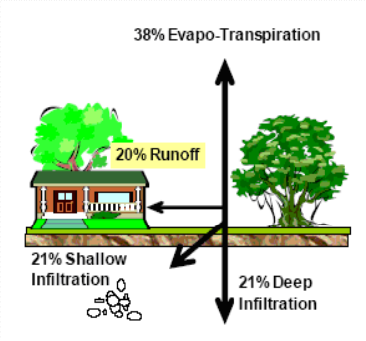
Construction Water Quality Threats

Source: State Board

+



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What is Hydromodification?

- Alteration of the hydrologic characteristics of waters, which in turn could cause degradation of water resources.
- Effectively reduces base-flow and increases overland or stormwater flow, which increases peak discharge rates and increases water temperatures in creeks and rivers through an increase in sedimentation.
- Causes excessive erosion and/or sedimentation rates, causing excessive turbidity, streambank downcutting, and/or excessive deposition within the stream channel.

201

Hydromodification

- The USEPA cateragorizes hydromodification activities into three categories:

- Channelization and channel modification;
- Dams; and
- Streambank and shoreline erosion.

202

Stream Channel Modification

- In the past, new and redevelopment construction activities have resulted in modified natural watershed and stream processes.
- Caused by altering the terrain, modifying the vegetation and soil characteristics (i.e. pavement, etc.).

203

Solution

- To address hydromodification concerns and/or impacts the new CGP includes:
- Post-Construction Standards
- Post-Construction Water Balance Calculator
- Increased sampling and monitoring requirements for projects according to Sediment Risk and Receiving Water Risk levels
- Added Bioassessment Monitoring

205

What does this mean?

- Are we trying to go back to historical conditions?
  - No! The intent is to work today forward.
  - Stream systems have changed over time and are new in a new equilibrium state. So going backwards may do more harm than good to the receiving water system.
- Need to be aware of post-construction requirements

206

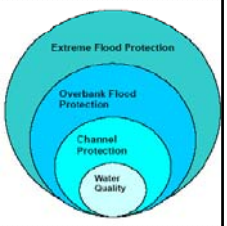
Hydromodification Management

- Evaluate potential effects from construction on pre-construction water balance.
- Stormwater discharges from new development and redevelopment projects should not increase the erosion potential for the receiving stream over the pre-project (existing) condition.
- Increase in runoff flow and volumes should be managed so that post-project runoff does not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion.

207

Post Construction Standards

- Post-Construction Standards developed to avoid, minimize and/or mitigate post-construction storm water runoff impacts
- Specifically addresses water quality and channel protection events
- Required for all Caltrans projects covered by the Statewide NPDES Permit
- Follow the Project Planning and Design Guide (PPDG) and Stormwater Data Report Process



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Risk Based Permitting Approach

- A project's overall risk assessment is broken up into three steps:
  - Project Sediment Risk – the relative amount of sediment that can be discharged, driven largely by scheduling and site characteristics.
  - Receiving Water Risk – the risk sediment discharges pose to the receiving waters.
  - Overall Risk

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

Traditional Risk Matrix

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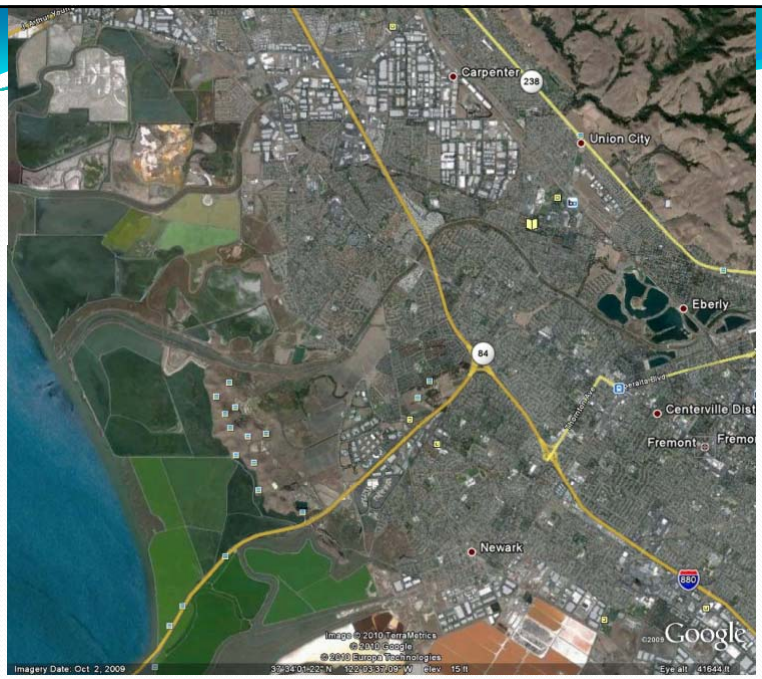

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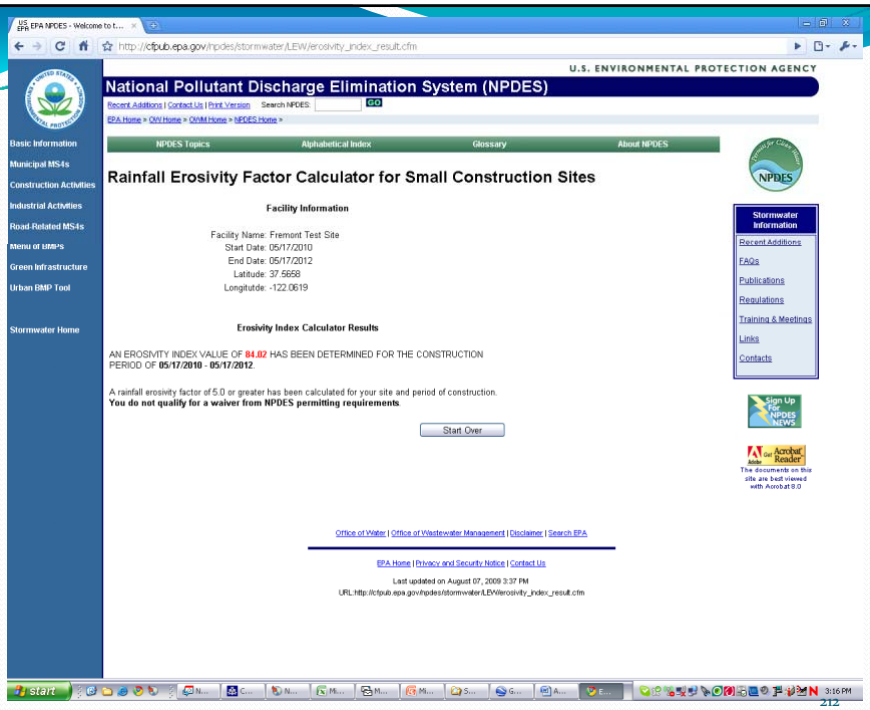
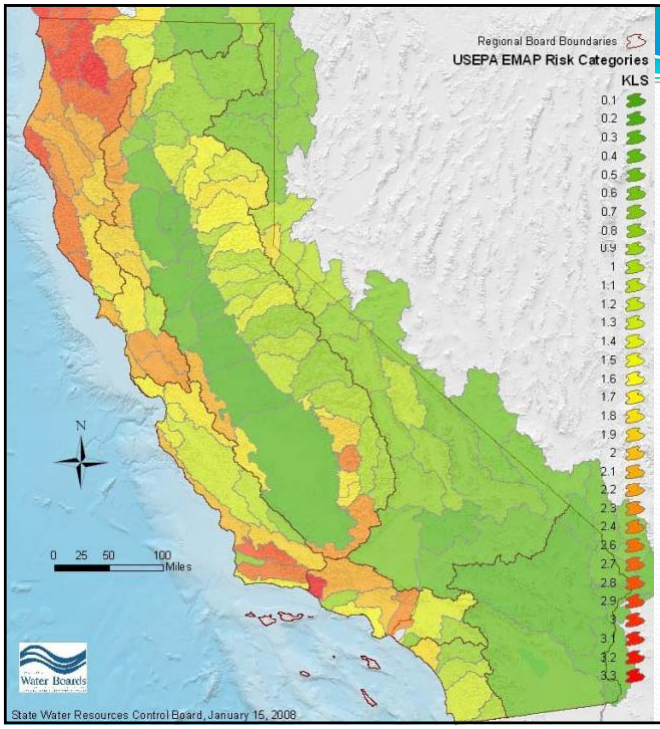
Sediment Risk Factor Worksheet	Entry
A) R Factor	
Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). 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 http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm to determine the R factor for the project site. http://cfpub.epa.gov/npdes/stormwater/waiver.cfm	
R Factor Value	40.11
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. Refer to GIS Map provided or site-specific data (requires submittal of supporting data).	
K Factor Value	0.45
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 GIS Map provided or LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.	
LS Factor Value	0.01
Watershed Erosion Estimate (=RxKxLS) in tons/acre	0.180495
Site Sediment Risk Factor Low Sediment Risk: < 15 tons/acre Medium Sediment Risk: >/=15 and <75 tons/acre High Sediment Risk: >/= 75	**Low**

211



212



- KLS Map

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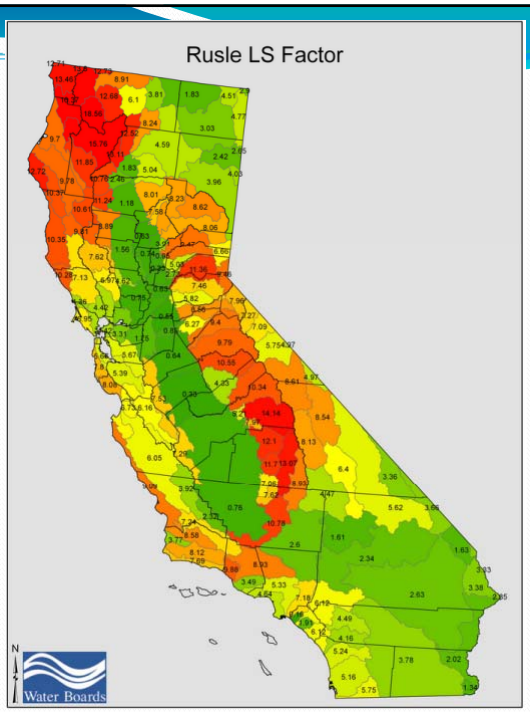
LS Factor
GIS Map



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Receiving Water Risk

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Receiving Water Risk

Combined Risk Level Matrix

Receiving Water Risk	Sediment Risk: Low	Sediment Risk: Medium	Sediment Risk: High
Low	Level 1	Level 2	
High	Level 2		Level 3

Project Sediment Risk: Low

Project RW Risk: Low

Project Combined Risk: Level 1

216

Project Sediment Risk: Revised Universal Soil Loss Equation (RUSLE)

C = 1

P = 1

- A = R x K x LS x ~~C x P~~
- A = the rate of sheet and rill erosion (tons/acre)
- R = rainfall erosivity factor
- K = soil erodibility factor
- LS = length slope factor

217

Receiving Water Risk: Sediment Sensitive Waterbodies

- Receiving water has Beneficial Uses of COLD and SPAWN and MIGRATORY
- CWA 303(d) list for waterbodies impaired for a sediment pollutant (TSS, turbidity, siltation)
- TMDL for sediment, silt, or turbidity

218

Receiving Water Risk Traditional Projects

- If any of the receiving water risk conditions 1-3 are met, the project has HIGH receiving water risk.
- If none of the conditions above are met, the project has LOW receiving water risk.

219

Traditional Project Risk Matrix

		Sediment Risk		
		Low	**Medium**	**High**
Receiving Water Risk	**Low**	Level 1	Level 2	Level 2
	High	Level 2	Level 2	Level 3

220

Receiving Water Risk

- Sediment Sensitive Waterbodies
- Use a map or a list to determine the following:
  - CWA 303(d) list for waterbodies impaired for a sediment pollutant (TSS, turbidity, etc.)
  - USEPA approved Total Maximum Daily Load implementation plan for sediment
  - Beneficial uses of COLD, SPAWN, and MIGRATORY

221

R-Factor Sensitivity Analysis

Location	Start Date	End Date	Duration	R-Factor
Santa Barbara	1/1	1/30	1 month	9
	8/1	8/30	1 month	2.08
	1/1	1/1	1 year	91.14
	1/1	1/1	2 year	189.14
Fresno	1/1	1/30	1 month	1.04
	3/1	3/30	1 month	1.38
	1/1	1/1	1 year	13.94
	1/1	1/1	2 year	27.94
	10/1	3/1	5 month	8.89
	12/1	5/1	5 month	8.83
	3/1	8/1	5 month	4.07
Indio	1/1	1/1	1 year	10.03
	1/1	1/1	2 year	20.06
	10/1	12/1	2 month	2.15
Berkeley	10/1	12/1	2 month	4.97
	10/1	12/2	2 month, 1 day	5.23
	11/1	1/1	2 month	14.8
	7/1	9/1	2 month	0.09

222

Three Ways to Reduce Risk

- Construct during the dry season (in general May 1 to October 1) only (this will reduce the R-factor)
- Shorten project duration (this will reduce the R-factor)
- For linear projects, divide the project into segments. Discrete segments may have different risk levels (this will reduce the size of high risk segments)

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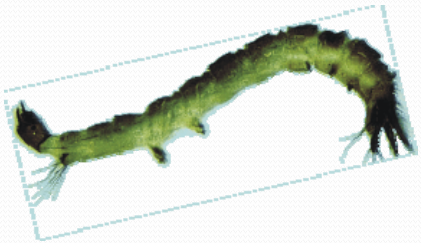
Bioassessment Monitoring



224

Bioassessment Monitoring

- Required for projects that meet all of the following:
  - Rated Risk Level 3
  - Directly discharges runoff to a freshwater wadeable stream that is either:
    - Listed by the State Water Board or USEPA as impaired due to sediment and/or
    - Tributary to any downstream water body that is listed for sediment; and/or have SPAWN & COLD & MIGRATORY beneficial use
  - Total project-related ground disturbance is > 30 acres.

225

Bioassessment Monitoring Exception

- If construction commences out of an index period, for the site location, the discharger shall:
  - Receive Regional Water Board approval for the sampling exception
  - Invest $7,500 x # of samples required into the SWAMP program as compensation (upon Regional Water Board approval).
    - Make a check payable to: Cal State Chico foundation or San Jose State Foundation (SWAMP Bank Accounts) and include the WDID number on the check for the amount calculated for the exempted project.
    - Must be documented in PRDs
    - Send a copy of the check to the Regional Water Board office for the site's region
  - Conduct bioassessment monitoring, as described in Appendix 3.

226

Bioassessment Monitoring

- Samples are to be collected within the sampling index period for both:
  - Before ground disturbance is initiated, and
  - After the project is completed.
- The "after" samples shall be collected after at least one winter season resulting in surface runoff has transpired after project-related ground disturbance has ceased.
  - NOT can be filed prior to collecting "after" sample if conditions for filing have been met per the permit requirements.

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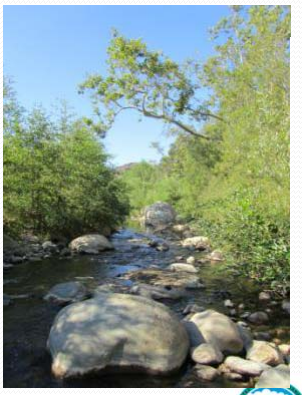
Bioassessment Monitoring

- Site Locations and Frequency
  - "Before" and "after" samples shall be collected both upstream and downstream of the project's discharge.
  - Upstream samples should be taken immediately before the sites outfall and downstream samples should be taken immediately after the outfall ("when safe").

228

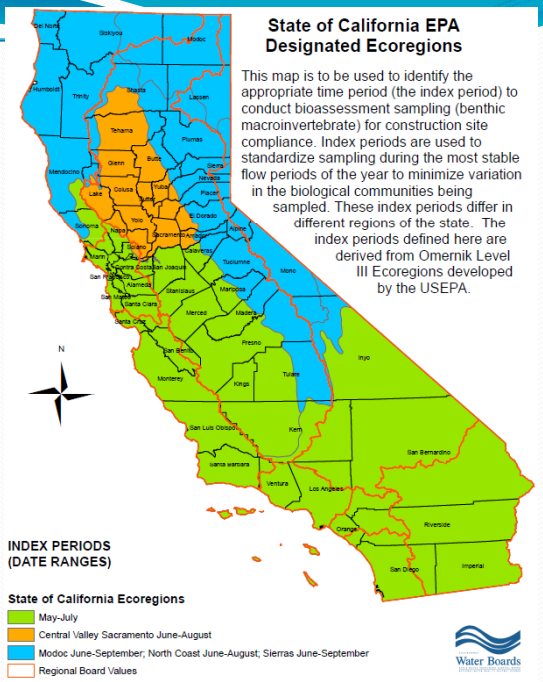
Bioassessment Monitoring

- Site Locations and Frequency
  - Samples should be collected for each freshwater wadeable stream that is listed as impaired due to sediment, or tributary to a water body that is listed for sediment.
  - Habitat assessment data shall be collected concurrently with all required macroinvertibrate samples.
- The macroinvertebrate results are to be submitted to the State Water Board in electronic format.



229

Designated Ecoregions Map



Module 9
SWPPP Preparation

231

Required Credentials
Qualified SWPPP Developer (QSD)

- CGP Order, Section VII:
- All SWPPPs shall be written, amended and certified by a Qualified SWPPP Developer (QSD)

232

What Does the CGP Say About SWPPPs?

- CGP Order Section XIV. The SWPPP shall be designed to address the following objectives:
- All pollutants and their sources are controlled
- All non-stormwater discharges are identified and eliminated, controlled, or treated
- Site BMPs are effective
- Calculations, design details, and BMP controls are complete and correct
- Post construction stabilization BMPs must be adequate

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SWPPP Development: Global Requirements

- Include Contact Information for:
  - LRP (required) or Approved Signatory (optional)
  - QSD
  - QSP
  - All Contractors and Sub-contractors
  - Inspector (if delegated by QSP)
  - Sampling and Analysis Personnel
  - Laboratory for Sampling Analysis

234

CGP Procedural Guidance

- Schedule of required inspections (quarterly, weekly, pre/during/post storm, REAP, weather monitoring report, etc, etc, etc)
- Proposed communication protocol for site QSP to communicate with Data Entry Persons and/or LRP
- Items that must be performed by the QSD
- Items that may be performed by the QSP

235

SWPPP Development

- Mapping/Drawings Include:
  - Site Layout
  - Construction Site Boundaries
  - Drainage Areas
  - Discharge Locations
  - Sampling Locations
  - Areas of Soil Disturbance
  - Location of Storage Areas

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SWPPP Development

- Mapping/Drawings Include:
  - BMP Locations
    - Erosion control
    - Sediment control
    - Runoff
  - ATS Location (if applicable)
  - Protected or Non-disturbed Areas
  - Post Construction BMP locations

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SWPPP Development

- Minimum BMPs (including Housekeeping BMPs)
- All Risk Level Dischargers are required to implement Erosion, Sediment, and Runon-Runonff Control BMPs
- Sediment basins must be designed by a registered CA Civil Engineer

238

SWPPP Development

- Minimum Inspector Duties and Monitoring Duties will be outlined in the SWPPP
  - Documented Weekly inspections and observations
  - Quarterly Inspections Non Stormwater Discharge
  - Sampling for Non Visible Pollutants in the Event of Breach, Leak, Spill, or BMP Malfunction
- SWPPP Will Document Notice of Termination (NOT) Requirements

239

SWPPP Development
Risk Level 2

- Risk Level 2 Numeric Action Level requirements include
  - pH NAL of 6.5-8.5
  - Turbidity NAL of 250 NTUs
- NAL compliance will drive site operations

240

SWPPP Development
Risk Level 2

- Additional Sediment Control BMPs
- Critical Slope/Sheet Flow Length

Slope Percentage:	0-25%	25-50%	Over 50%
Sheet flow length not to exceed:	20 feet	15 feet	10 feet

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SWPPP Development
Risk Level 2

- On Risk Level 2 and 3 Sites, REAPs should be initially prepared for implementation based on phase of construction.
- The QSP may need to modify the REAP during implementation based on site conditions.
- Additional Monitoring (subject to NALs)

242

SWPPP Development
Risk Level 3

- All of the Above (Risk Level 1, 2 +)
- Risk Level 3 Numeric Action Level and Numeric Effluent Limitation requirements include:
  - pH NAL of 6.5-8.5
  - Turbidity NAL of 250 NTUs
  - pH NEL of 6.0-9.0
  - Turbidity NEL of 500 NTUs
    - Projects That Utilize ATS Systems Have Stricter Discharge Standards – Daily Average 10 NTU, with 20 NTU Single Sample Maximum
  - SWPPP Includes Provision to Monitor Compliance and Report Findings

243

Module 10
Project Closeout

244

Basis of Termination

- A project may be terminated if any one of the following are satisfied:
  - The permitted construction project is entirely complete
  - Construction activities have been suspended (note if you restart the project you will have to re-file for permit coverage)
  - The site cannot discharge to waters of the United States (check with your Regional Board)

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Construction Project is Entirely Complete

- Prior to Termination, the site must meet the following general conditions:
  - Annual Report has been submitted in SMARTS (if required)
  - All elements of the SWPPP are complete
  - There is no potential for construction-related pollutants to be discharged into site runoff
  - Construction materials and waste have been disposed of properly
  - The site is in compliance with all local storm water management requirements
  - A post-construction storm water operation and management plan is in place
  - Final stabilization has been reached

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The Permitted Construction Project is Suspended

- Prior to Termination, the site must meet the following general conditions:
  - Annual Report has been submitted in SMARTS (if required)
  - All elements of the SWPPP have been completed.
  - Construction materials and waste have been disposed of properly
  - All disturbed areas and other areas of potential erosion are stabilized
  - An operation and maintenance plan for erosion and sediment control is in place
  - The site is in compliance with all local storm water management requirements

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Construction Site Cannot Discharge to Waters of the US

- Check with your Regional Board if you want to terminate on this basis.
- If approved by your Regional Board the site must meet one of the following conditions:
  - Annual Report has been submitted in SMARTS (if required)
  - All storm water is retained on site
  - All storm water is discharged to evaporation or percolation ponds offsite

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Lunch Break

- Please do not disconnect from the webinar.
- We will resume at 1 PM
- Continue to submit questions. Responses will be provided at the end of the webinar.

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Overview of Afternoon Session

- Caltrans Transition to CGP
- September 2, 2011 Requirements
- Caltrans Staff /Contract QSD/QSP
- Design Guidance
- Construction Guidance
- Question/Response Session

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Caltrans CGP Updates

- Projects initiated before July 1, 2010, were grandfathered into Risk Level One
- September 2, 2011:
  - All grandfathered, Risk Level One projects will have RL reanalyzed, may have higher risk level
  - All Caltrans projects require contractor responsibility for QSP/QSD

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QSP/QSD
Caltrans construction projects

- Caltrans staff is not required to be QSP/QSD
- Caltrans construction staff have their authority under the contract to enforce the contract, including working for a licensed professional
- Contractors develop the SWPPP, and physically implement the plan on the Caltrans projects, and will be the QSP/QSD.

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Legally Responsible Person (LRP)

- The LRP on a Caltrans sponsored/funded project is the District Director or a District Deputy. This legal responsibility has always been the District Director for projects within their district, however the title is new. The LRP will designate Approved Signatories in their districts, typically the Resident Engineer.
- The LRP on a locally funded/measure project is the Executive Officer of that local entity. This will be established in the Coop agreements in future projects. The LRP will designate an Approved Signatory within their chain of command.
- An official memo is being developed at HQ to explain this issue.

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Updates on Caltrans guidance

We will continue with updates to Caltrans guidance in Design and Construction. Please continue to type in your questions. Questions not answered at this webinar will be posted shortly after the presentation. Thanks for listening.

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Design

- Timothy Sobelman, PE
  - Chief - Office of Storm Water Management – Design
  - Division of Design
- Jack Broadbent, CPESC
  - Chief - Office of Roadside Management & Landscape Architecture Standards
  - Landscape Architecture Program

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Design Guidance for CGP Implementation

Project Risk Level Determination Guidance

www.dot.ca.gov/hq/oppd/stormwtr/risk-guidance.htm

- **Caltrans "Stand-Alone" Risk Level Determination Guidance**
  - **Topography Tool**
  - **Risk Level Determination Webinar**
- **Websites to gather RL Information**
  - WQPT
  http://www.water-programs.com/wqpt.htm
  - District 8 GIS (Caltrans internal only)
  http://sv08arcgis/CGP2009/

Project Risk Level Determination Guidance

June 2011

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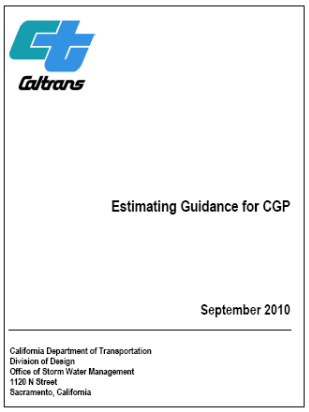
Design Guidance for CGP Implementation

Estimating Guidance for CGP


Caltrans

Estimating Guidance for CGP

September 2010

California Department of Transportation
Division of Design
Office of Storm Water Management
1120 N Street
Sacramento, California

New Pay Items -

- Rain Event Action Plan (BEES Item: 074056)
- Storm Water Annual Report (BEES Item: 074057)
- Storm Water Sampling and Analysis Day (BEES Item: 074058)

http://www.dot.ca.gov/hq/oppd/stormwtr/swdr2010/Estimating-Guidance-for-CGP-092010.pdf

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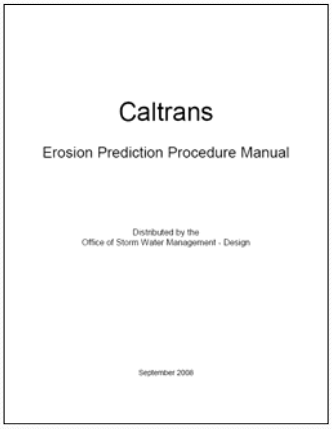
Design Guidance for CGP Implementation

Erosion Prediction with RUSLE2 – Use for NOT

- **Caltrans RUSLE2 Software** – software can be downloaded from this website including instructions on how to download the software.
- **Erosion Prediction Procedure** – defines a method to predict erosion rates. A manual is available to download at this website.
- **RUSLE2 Training -** an 8 hour, advanced course presents RUSLE2 A Powerpoint presentation and exercises is available to download at this website.

http://ww.dot.ca.gov/hq/oppd/stormwtr/rusle2.htm


Caltrans

Erosion Prediction Procedure Manual

Distributed by the
Office of Storm Water Management - Design

September 2008

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Design Guidance for CGP Implementation

Other Design Training Available

- **Storm Water Data Report Workshop** – goes over what is expected to be included in a Storm Water Data Report.
- **PPDG On-line Training (fall 2011)** – This course introduces the Storm Water Quality Handbook, Project Planning and Design Guide (PPDG) to Design Engineers. This training will also be available as reference tool.
- **PPDG Lab (fall 2011)** – a 4-hour classroom venue containing lecture on new or complex topics including exercises and group activities to demonstrate an understanding of PPDG.

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Design Guidance for CGP Implementation

Storm Water Specifications

2006 Standard Specifications - Section 7 and various SSPs

www.dot.ca.gov/hq/esc/oe/specifications/SSPs/2006-SSPs/

2010 Standard Specifications - Section 13 and some SSPs

www.dot.ca.gov/hq/esc/oe/specifications/std_specs/2010_StdSpecs/

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Design Guidance for CGP Implementation

Other Guidance Available:

- **SWDR Examples**
- **Rainfall Erosivity Waiver**
- **NOT Guidance (Draft)**
  - Covers three methods documenting termination of coverage
  - Including RUSLE2/Erosion Prediction and final stabilization

Storm Water Data Report Examples

Example Number	Project Type	Project Phase	Short Form	Long Form	EPA Waiver R factor	Treatment BMPs	T-1 Tools	Risk level Calculation	RUSLE II	SWDR Tracking Form	Multiple Location Project
1	Micro surfacing	PID PSE PAED	X							X	
2	Cold plan and overlay	PID PSE PAED	X								
3	Road rehabilitation and shoulder backing with **over 1 acre disturbed soil area** (DSA)	PID PSE PAED		X				X	X	X	
4	Road rehabilitation with shoulder backing with	PID PSE PAED	X							X	

http://www.dot.ca.gov/hq/oppd/stormwtr/examples/index.htm

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Notice of Termination (NOT) Guidance

Notice of Termination (NOT) Guidance

Disturbed Soil Areas

For purposes of "final stabilization," the site will not pose any additional sediment discharge risk than it did prior to the commencement of construction activity.

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Notice of Termination (NOT) Guidance

CGP language: Notice of Termination (NOT)

Caltrans language: Notice of Completion of Construction (NOCC) Form CEM-2090

CGP language	Caltrans language
1) 70% final cover method	1) 70% final cover method
2) Custom method	2) Custom method A
3) RUSLE or RUSLE2 method	3) Caltrans RUSLE2 method

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Notice of Termination (NOT) Guidance

Project Conditions	Method
No background vegetation Or DSA will be covered with non-degradable materials	70 % Final Cover Method
•Background vegetation • DSA will be vegetated within three years • 0–20 inches of rain	Custom Method A (Caltrans RUSLE 2 conditionally)
• Background vegetation • DSA will be vegetated • 20+ inches of rain	Caltrans RUSLE 2

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Notice of Termination (NOT) Guidance

- NOT / NOCC Certified by Resident Engineer with supporting documentation:
  - RE File:
    - SWDR
    - Completed Method Demonstration Form
  - Additional supporting information, as needed:
    - Final Stabilization Memo
    - Site review by Landscape Architect
    - Photo documentation
    - Erosion Control Report

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Tools for Erosion Control

- Erosion Control Tool Box
  - http://www.dot.ca.gov/hq/LandArch/ec/index.htm

http://viewer.zmags.com/publication/b10cb17c#/b10cb17c/1

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Tools for Erosion Control

- Preserving existing vegetation
- Duff and Topsoil

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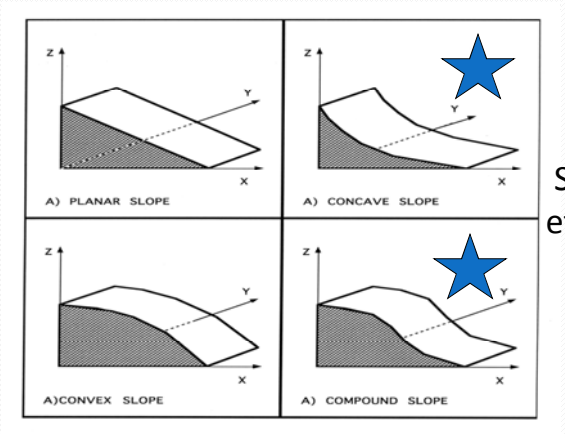
Tools for Erosion Control



Slope design will effect slope stability

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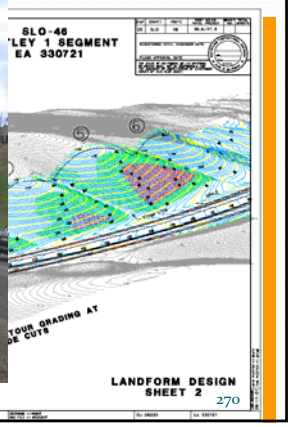
Tools for Erosion Control

- Contour Grading and Slope Rounding



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Training for Erosion control

- Training
  - Key Concepts of Sustainable Erosion control
  - Advanced Sustainable Erosion Control
  - Revised Universal Soil Loss Equation - RUSLE2

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Construction

- Rob Effinger
  - Chief – Office of Training, Environmental Compliance
  - Division of Construction

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Currently

- CGP applies to most currently active projects and future projects
- Some projects operating under old permit as "Grandfathered" projects
  - CPD 10-4 Implementation of New CGP Risk Level 1
  - CPD 10-9 Implementation of New CGP Risk Levels 2 and 3
- Full CGP requirements after September 1
  - CPD 11-2 Grandfathered Risk Level 1 Projects Continuing Past September 2, 2011

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Guidance

- CPD 10-4 Implementation of New CGP Risk Level 1
- CPD 10-9 Implementation of New CGP Risk Levels 2 and 3
- CPD 11-2 Grandfathered Risk Level 1 Projects Continuing Past September 2, 2011
- SWPPP-WPCP Preparation Manual June 2011
  - SWPPP Template
  - WPCP Template
- Forms

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In Process

- Construction Site BMPs Manual
- Construction Site Monitoring Program Guidance Manual
  - SAP Included

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SMARTS

- Storm water Multiple Application and Report Tracking System
  - Not applicable to Caltrans at this time
  - Some exceptions
  - Tied to NPDES permit approval
  - Use by Caltrans
    - Training webinar on September 8
    - January 1

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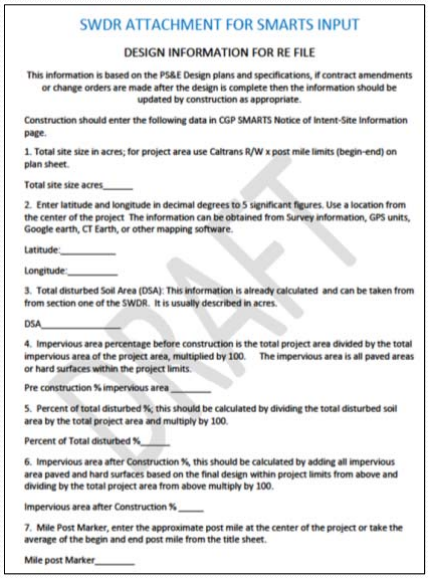
SMARTS

- Changes
  - Input by Construction Staff
  - NOC vs. NOI
  - NOCC vs. NOT
  - Ad Hoc and Annual Reporting



SWDR ATTACHMENT FOR SMARTS INPUT

DESIGN INFORMATION FOR RE FILE

This information is based on the PS&E Design plans and specifications, if contract amendments or change orders are made after the design is complete then the information should be updated by construction as appropriate.

Construction should enter the following data in CGP SMARTS Notice of Intent-Site Information page.

1. Total site size in acres; for project area use Caltrans R/W x post mile limits (begin-end) on plan sheet.

Total site size acres_____

2. Enter latitude and longitude in decimal degrees to 5 significant figures. Use a location from the center of the project. The information can be obtained from Survey information, GPS units, Google earth, CT Earth, or other mapping software.

Latitude:_____

Longitude:_____

3. Total disturbed Soil Area (DSA): This information is already calculated and can be taken from from section one of the SWDR. It is usually described in acres.

DSA_____

4. Impervious area percentage before construction is the total project area divided by the total impervious area of the project area, multiplied by 100. The impervious area is all paved areas or hard surfaces within the project limits.

Pre construction % impervious area _____

5. Percent of total disturbed %; this should be calculated by dividing the total disturbed soil area by the total project area and multiply by 100.

Percent of Total disturbed %_____

6. Impervious area after Construction %, this should be calculated by adding all impervious area paved and hard surfaces based on the final design within project limits from above and dividing by the total project area from above multiply by 100.

Impervious area after Construction % _____

7. Mile Post Marker, enter the approximate post mile at the center of the project or take the average of the begin and end post mile from the title sheet.

Mile post Marker_____

DRAFT

QSP/QSD

- Contractors preparing and implementing WPCP and SWPPP require:
  - QSP on WPCP Projects
  - QSD on SWPPP Projects
- Caltrans staff need not have QSD/QSP certification(s)
- Caltrans projects require Contractors to have QSD/QSPs on all projects

Glossary of Acronyms

- ATS – Advanced Treatment System
- BMP – Best Management Practice
- CGP – Construction General Permit
- CWA – Clean Water Act
- CPSWQ – Certified Professional StormWater Quality (EnviroCert)
- DIs – Drainage Inlets
- DSAs – Disturbed Soil Areas
- EPA – Environmental Protection Agency
- CWA – Clean Water Act
- ESAs – Environmentally Sensitive Areas
- LRP – Legally Responsible Person
- LUPs – Linear Utility Projects
- M&RP – Monitoring and Reporting Program
- NICET – National Institute for Certification in Engineering Technology
- NOAA* – National Oceanic & Atmospheric Administration
- NOC – Notice of Correction

* Only weather reports from NOAA are accepted.

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Glossary of Acronyms

- NOC – Notification of Construction
- NOI – Notice of Intent
- NOT – Notice of Termination
- NOV – Notice of Violation
- PPE – Personal Protective Equipment
- REAP – Rain Event Action Plan
- RECP – Rolled Erosion Control Product
- RWQCB – Regional Water Quality Control Board
- SWPPP – Storm Water Pollution Prevention Plan
- SWRCB – State Water Resources Control Board
- QA/QC – Quality Assurance / Quality Control
- QSD – Qualified SWPPP Developer
- QSP – Qualified SWPPP Practitioner
- WDID – Water Discharge Identification (Number)
- WPCD – Water Pollution Control Plan

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Questions/Answers

- Responses to submitted questions
- FAQs on the website will be updated to include written responses

http://www.dot.ca.gov/hq/env/stormwater/cgp/index.htm

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Speakers

- Chief Environmental Engineer: Scott McGowen
  - Scott_McGowen@dot.ca.gov
- Stormwater Program Implementation: Joyce Brenner
  - Joyce_Brenner@dot.ca.gov
- Design: Tim Sobelman
  - Timothy_Sobelman@dot.ca.gov
- Landscape Architecture: Jack Broadbent
  - Jack_Broadbent@dot.ca.gov
- Construction: Robert Effinger
  - Robert_Effinger@dot.ca.gov
- Scott Taylor, RBF
  - staylor@rbf.com
- Anna Lantin, RBF
  - alantin@rbf.com

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Caltrans Construction General Permit Compliance

THANK YOU FOR ATTENDING

Presented by the Caltrans Stormwater Program
August 17, 2011

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