

Last month's issue discussed activities required during geometric development in Part I of Incorporating Storm Water Pollution Control into the PS&E. This issue continues with Part II and addresses key storm water activities during detailed design.

Design Activities during Detailed Design (Milestones 220-300)

Once the geometric alignment is established, base maps are prepared, and right of way engineering is initiated, the designer must select and design final storm water quality controls. The data compiled for drainage design will provide much of the information necessary to design storm water controls. However, selection and design of several common storm water controls often require additional site-specific information:

- Mean seasonal rainfall and evapotranspiration (Used by Landscape Architecture to determine whether there is sufficient natural moisture to maintain the selected vegetation.)
- Hydrologic and runoff data for the 2-year storm (Used to check increased streambank erosion.)
- Hydrologic and runoff data for sizing permanent detention or retention basins, if needed.
- Drainage Area Physical Attributes. Refer to tables 4-2 and 4-3 of the Planning and Design Staff Guide (PDSG) for a list of attributes, their effect on storm water pollution control, and for a worksheet example. These attributes may affect control selection, siting, and design considerations.

The PDSG provides guidelines for selecting and designing site-specific structural and vegetative controls, including treatment controls, streambank erosion controls, and temporary controls.

Effective design requires close coordination with drainage facility design and collaboration with other functional units, including landscape architecture, hydraulics, environmental, construction, and maintenance. Once again, review and update control requirements to account for any significant changes in the project. Also review the project's environmental documents, including the Water Quality Assessment Report, to ensure that the project design incorporates Caltrans' environmental commitments and any required mitigation measures.



Require the contractor to show temporary control practices on the progress schedule.

Incorporating Storm Water Pollution Control into the PS&E (Part II)

Ensure that the project design incorporates Caltrans' environmental commitments and any required mitigation measures.

This bulletin is prepared monthly as an information resource on storm water quality issues related to the planning and design of transportation infrastructure.

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Scheduling

For most of California, rainfall follows seasonal patterns with relatively dry summers and wet winters. This is reflected in both the NPDES general construction permit and Caltrans' construction practices, which require the contractor to deploy additional temporary control practices during the winter. For many projects, designers can use this to Caltrans' advantage by timing major soil-disturbing activities to coincide with the drier summer months. Even though the detailed construction schedule is largely in the contractor's domain, with the approval of the project manager, there are a few things a designer can do to exert influence:

- Adjust the project's duration and its bidding and award schedule so that major soil-disturbing activities are more likely to occur during the summer.

- Edit the water pollution control special provisions to require the contractor to show temporary control practices on the progress schedule. This will likely be required by the next NPDES general construction permit and included in the next version of the storm water-related standard special provisions.
- Use the Order of Work special provisions to require the contractor to phase construction so that disturbed soil areas are brought to final grade and permanent erosion and sediment controls are installed prior to the rainy season.
- Consider the seasonal planting "window" for the seed mix(es) selected for permanent erosion control. The beginning and ending dates of the planting windows are specified in the erosion control SSPs.