

Runoff from highways and highway related facilities may contain a wide variety materials (or constituents) other than rain water. A constituent becomes a pollutant if it enters receiving water in sufficient quantity to impair beneficial use. Each receiving water has unique characteristics that contribute to the beneficial use and type and quantity of constituents that would impair its use. Research indicates that for Caltrans facilities, the primary constituents of concern include materials resulting from soil erosion (sediments), petroleum by-products from maintenance stations, and roadside trash and debris.

### Approach

Caltrans effort to reduce pollutants in runoff from its facilities is focused on integrating permanent storm water quality controls into project throughout the project development process. Storm water quality controls to be considered include:

- **Permanent Controls** are those required to reduce the long-term discharge of pollutants from the completed facility. These controls designed and constructed as an integral part of the project are considered for all new facilities, and for the expansion or reconstruction of facilities, which alter or increase the capacity of storm water drainage facilities.
- **Temporary Controls** are those required to address a short-term storm water quality threat during construction. Typically the contractor selects the controls, however planning and design staff may elect to specify certain critical temporary controls under specific conditions.

### Selection

The flow chart in Figure 2-1 of the Caltrans Storm Water Quality Handbooks – Planning and Design Staff Guide (Handbook) is a step-by-step guide for evaluating which types of controls may be needed on a particular project. In general, the process in Figure 2-1 applies to new facilities and expansion and reconstruction projects that alter storm drain facilities or increase peak runoff rates. Note that Figure 2-1 directs planning and

design staff to “consider” certain control categories. In most cases further research and analysis, as described in sections 3 and 4 of the Handbook, is needed to determine if the controls are required.



*Permanent storm water drainage control structure*

**Soil Stabilization Practices** must be taken into account if there is any land disturbance. A strategy for permanently restabilizing all disturbed areas of every project is critical.

**Streambank Erosion Controls** must be considered if the drainage will result in a significant increase in downstream stream flow, velocity, or potential streambank erosion.

**Sediment Treatment Controls** (including detention and retention basins) are only appropriate under limited circumstances.

**Non Storm Water Management Controls** should be evaluated at maintenance yards, rest areas, park-and-ride lots, weigh stations, etc. Permanent spill containment for hazardous material storage areas, material storage controls, oil/water separators must be considered.

**Other Mitigation Measures** may be required as a result of project-specific review processes required by California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), or other various federal, state and local regulations.

Caltrans long-term goal is to assure that the costs of appropriate water quality management practices are incorporated during the PSR so that these costs can be accommodated within the funding programmed for the projects.

## Design Goals for Storm Water Quality Controls

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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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