Chapter 3

Pre-Project Site Assessment

During the early planning stages of any project, a thorough site assessment can provide valuable information for planning the layout of site improvements. Developing a site layout considering storm water management to the extent feasible can provide substantial reductions in cost and improve the effectiveness of the project's storm water control measures. Consideration of terrain, required buffer areas, and other natural features can lead to efficient location of BMPs. Additionally, a site layout that keeps clean flows separated from contaminated flows can reduce the need for, and size of, downstream treatment controls. To the extent feasible, projects can be configured to direct storm water runoff from impervious surfaces to landscaped or natural areas, rather than to convey it directly to a discharge location, which may require a structural BMP.

3.1 Site Assessment

A site assessment must be completed for all Regulated Projects and considered for Small Projects during the earliest stages of project planning to appropriately plan the site layout for the capture and treatment of storm water runoff. The incorporation of storm water features is more effective, and often less costly, when site conditions such as soils, vegetation, and drainage characteristics are considered when determining the placement of buildings, paved areas, drainage facilities and other improvements. Site assessments consist of collecting and evaluating data from a variety of sources including, but not limited to, surveys, topographic maps, geotechnical investigations, groundwater records, and site-specific measurements and field observations. The site assessment should evaluate the following key site characteristics:

A careful evaluation of a site's pre-developed condition is key to minimizing the impacts of development.
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- Soil, Geologic, and Groundwater Characteristics;
- Topography, Hydrology, and Drainage Characteristics;
- Existing Vegetation and Natural Areas;

- Contaminated Soil or Groundwater;
- Existing Improvements and Easements; and.
- Opportunities and constraints for preserving or enhancing existing natural resources.

The subsections below provide reference information and guidance for evaluating each key site characteristics and incorporating the results into the layout of improvements and the development of a site plan.

3.1.1 Soil, Geologic, and Groundwater Characteristics

Soil and geologic characteristics and information are necessary for determining the feasibility of infiltrating storm water runoff on a site and will assist in identifying appropriate locations for proposed improvements and the required storm water management measures. Where feasible, buildings, pavement, and other impervious surfaces should be located in areas where soils have lower infiltration rates while infiltration facilities should be installed in more permeable soil areas where there is an average separation of 10 feet between the bottom elevation of the infiltrating BMP and the groundwater surface elevation. At no time shall the separation between the bottom elevation of the infiltrating BMP and the seasonal high groundwater surface elevation be less than 5 feet.

Some information regarding soil types and their potential suitability for infiltrating storm water can be obtained from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS) at the following website:

http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

Soils are categorized into one of four Hydrologic Soil Groups (HSGs) A, B, C or D based on their capacity to percolate water. Type A soils are well drained and highly permeable, while Type D soils consist of low permeability materials such as clays that infiltrate water very slowly. A soils map illustrating the HSGs and their general locations in West Placer region is provided in Figure 3-1. As shown, much of the region's soils are classified as Types C and D indicating high clay content with slow to very slow infiltration rates. Although not ideal for infiltration, LID measures can still be implemented effectively on sites with HSG C and D soils as long as these constraints are considered during the design process. Ideally, site designs allow infiltration to occur to the maximum extent that the native soil will accept and allow for the safe bypass of overflows. In some cases, native soils can be amended to increase their storage and infiltration capacity by mixing organic mulches and/or sandy materials with the less permeable native soils. Additional information on the use of soil amendments is provided in the Fact Sheet SDM-2 in Appendix B.

The WSS provides planning level information such as soil type, HSG, typical infiltration rates, saturated hydraulic conductivity, typical depth to restrictive layers, and typical