

Hansen Dam Wetlands Restoration Project

Abstract:

The Hansen Dam Wetlands Restoration Project is a sub-regional stormwater mitigation project at Hansen Dam in Los Angeles, which will divert and mitigate stormwater runoff from a 57-acre sub-watershed through construction of stormwater best management practices (BMPs), including infiltration basins and vegetated swales. In the existing condition, the sub-watershed's surface runoff discharges untreated via two channels to the Hansen Dam Wetlands, which provides habitat for the federally-endangered least-Bell's vireo. Currently, planning and engineering phases of the project are complete and agency approvals and construction bidding are underway.

Initial planning involved assessment of project constraints, including environmental mitigation requirements, site and soil conditions, existing infrastructure, surface hydrology, construction schedule and budget, and various permitting and jurisdictional requirements including Streambed Alteration and NPDES General Construction Permits from the SWRCB (State Water Resources Control Board) and Grading and Building Permits from the LADBS (Los Angeles Department of Building and Safety). Initial planning also involved preparation of the Environmental Assessment to be in compliance with CEQA (California Environmental Quality Act). Given the project constraints, final planning focused on evaluation of alternative BMP conceptual designs and set clear design requirements for engineering design. The selected BMP is a combination of infiltration and detention basins.

The primary engineering addressed grading and drainage of two large infiltration basins and multiple vegetated swales, which intercept and treat low-flows from the two channels and a large adjacent parking lot. The infiltration basins were designed to detain and infiltrate stormwater runoff for the first $\frac{3}{4}$ " of rainfall volume tributary to the natural channels. The vegetated swales were designed to capture and direct runoff from the existing parking lot area to one of the infiltration basins. For each infiltration basin, a low-flow diversion structure with trash rack and an overflow structure, sediment forebays for each inlet locations for pre-treatment, and multiple erosion control devices, including riprap and erosion control blankets, were designed. The other engineering components addressed re-paving and re-configuration of the existing parking lot, and planting and irrigation design of the infiltration basins and vegetated swales.



STORMWATER BMP DESIGN FEATURES

- ① PARKING LOT #2 - REDUCED
- ② VEGETATED FILTER STRIP AND SWALE
- ③ BMP INLET STRUCTURE
- ④ INLET SWALE
- ⑤ SEDIMENT FOREBAY
- ⑥ INFILTRATION/DETENTION BASIN