

Committee A2A03 - Paper 01-3263

Word Count: 4627 (6377 including 250 per table/figure)

Practicability of Detention Basins For treatment of Caltrans Highway Runoff
Based on a Maximum Extent Practicable Evaluation

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ABSTRACT - The Clean Water Act requires discharges of point source pollutants to be treated through implementation of Best Management Practices (BMPs) to the Maximum Extent Practicable (MEP). A BMP meets MEP if: 1) installation of the BMP is technically feasible, 2) installation of the BMP does not compromise compliance with applicable State and Federal laws, and 3) the cost of installing and maintaining the BMP does not greatly outweigh the probable benefit associated with the increase in receiving water quality. This paper evaluates whether detention basins meet the cost/benefit aspect of MEP by using a beneficial use valuation procedure developed by the University of California at Davis. The procedure involves identifying receiving water beneficial uses, quantifying the value of these uses, and determining the portion of that value attributable to improvements in water quality resulting from the hypothetical installation of a detention basin. Detention basin cost and the incremental increase in beneficial use valuation are determined for six sites throughout California. Based on this

information, detention basin costs greatly outweigh associated benefits unless: 1) required land is available at little or no cost, 2) a high proportion of the total flow in the receiving water is from California Department of Transportation rights-of-way, 3) there exists the potential for substantial amounts of high value habitat in the receiving water, and 4) resources are available to operate and maintain the basin.