STATE OF CALIFORNIA
CALIFONIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGIONAL BOARD MEETING ON OCTOBER 22, 2004
Prepared on September 16, 2004

ITEM: **18**

SUBJECT: **Information Item – Permeable Surfaces Improve Water Quality**

DISCUSSION

Conventional approaches to managing urban runoff have regarded rainwater as a waste product rather than as a resource, as traditionally engineered projects utilize imperviousness surfaces such as pipes, ditches, curbs, streets and gutters to quickly convey storm water down hill and away from the property to the nearest surface water body. There are several undesirable side effects associated with increased levels of runoff that occur when new developments and redevelopments replace soil with impervious surfaces.

Impervious surfaces prevent natural groundwater recharge by preventing water from percolating into the soil during rain events. This lack of permeability frequently causes creeks to spill over their banks and results in downstream flooding. Limiting groundwater recharge reduces dry-season stream flow, thereby impairing riparian corridor habitat. In addition, storm water picks up pollutants from impermeable urban surfaces and directly transports these untreated pollutants to surface waters, such as creeks, rivers, lakes and oceans.

Making urban surfaces pervious to water allows rainwater to percolate into the soil instead of running off into waterways. The Post Construction Minimum Control Measure (MCM) of Phase II Municipal Separate Storm Sewer (MS4) Permits requires that municipalities implement Best Management Practices (BMPs) to reduce the amount of storm water flowing from new developments and redevelopments.

More information regarding the State's General MS4 Permit, including the General Permit, and a Frequently Asked Questions page, can be found at:

http://www.swrcb.ca.gov/stormwtr/phase_ii_municipal.html

Guidance and specific information on post-construction BMPs are provided at:

http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post.cfm

By the end of the five-year MS4 General Permit cycle, cities and counties are required to ensure that homes, commercial or public buildings, parking lots and roads are designed in a way to maximize permeability, and thereby filter pollutants, while simultaneously minimizing runoff.

Integrating storm water concerns into new developments and redevelopments requires knowledge from individuals with expertise in sustainable building practices and low-impact development. Please see the following websites for more information regarding low-impact development and storm water management resources.

http://www.lid-stormwater.net/

http://www.stormwatercenter.net/

Mr. Owen R. Dell is a Licensed Landscape Architect, Licensed Landscape Contractor, author, instructor, environmental activist, and owner of County Landscape and Design in Santa Barbara. Mr. Dell has been at the forefront of sustainable integration of environmental principles as demonstrated by his projects which combined measures to remove pollutants from storm water runoff with the overall project designs and serve as models for future development in areas with Mediterranean climates.

Examples of storm water design measures Mr. Dell has included in projects include vegetated bioswales, constructed wetlands, and the use of permeable paving, such as pervious concrete, pervious asphalt, decomposed granite, crushed rock, Turf Block and similar systems. Many of these are

less costly than conventional concrete paving but just as functional and can be incorporated into most projects. Examples of specific low-impact development designs, along with information, can be found at:

http://www.owendell.com/

Because the Central Coast Regional Water Quality Control Board supports and encourages integration of water pollution control measures into development projects, Owen Dell will provide a brief presentation on sustainable environmental development practices at the October 22, 2004 Regional Board meeting in Santa Barbara.

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