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

STAFF REPORT FOR REGIONAL BOARD MEETING ON DECEMBER 3, 2004
Prepared on November 10, 2004

ITEM: **14**

SUBJECT: **Regional Water Quality Planning and Priorities – Information and Board Discussion**

SUMMARY

At the October 22, 2004 Regional Board meeting in Santa Barbara, Owen Dell provided a presentation on pervious concrete and the incorporation of "water quality friendly" design in urban and residential developments. Mr. Dell's presentation was well received, initiating extensive discussion both during and after the Board meeting. The following Monday, at the Water Quality Coordinating Committee meeting in Ontario, Board Members discussed a need for Regional Boards to discuss longer range water quality policy, priorities, and planning, rather than devoting all Board meeting time to immediate issues, such as permitting. Chair Young discussed this idea with Executive Officer Briggs and asked for Mr. Briggs to add an agenda item for planning/priorities discussion. This item is an outgrowth of that discussion, and provides:

- Additional follow up information on Low Impact Development and pervious surfaces, including examples of training and implementation of these design concepts within the Region;
- Suggested priority water quality issues for similar technical presentations and/or Board discussions at future Regional Board meetings; and
- An opportunity for Board discussion of big picture topics

DISCUSSION

Low Impact Development and Pervious Surfaces: Impervious urban surfaces transfer storm water combined with the associated pollutant load, through conveyance systems, directly to surface water. With this hardscape design, more water runs off the land and watershed, increasing downstream erosion where that water finally hits soil. When the runoff reaches the creek, the peak flows are higher because the watershed is "flashier" due to the absence of retention and infiltration of storm water. With higher peak flows, the creek bed itself will erode more – via side-bank erosion and down cutting. Greater erosion leads to downstream water quality degradation – sediment-induced turbidity affecting habitat and aesthetics, smothering of spawning beds, filling of water ways, increased need for dredging, etc. This down cutting can also create fish barriers, eliminating the availability of spawning areas. Side cutting can destroy riparian vegetation, raising stream temperatures, and affecting habitat (higher stream temperature and fewer hiding places for fish).

Flashier creek flows are also more effective carriers of pathogens and trash (including plastics) to the ocean. Plastics cause more significant problems than simply aesthetics issues. Plastic bits are mistaken by marine life for plankton and get into the food chain. This uptake by smaller organisms is complicated by the fact that organic compounds, like PCBs, adsorb to these plastic bits and are also concentrated in the food chain. Viewed in the largest sense, reductions of peak stream flows provide benefit not only to streams and associated riparian corridors, but also to the ocean and all organisms that depend on it for their food supply (including humans).

On the groundwater side of the equation, more hardscape decreases recharge. Decreased recharge reduces both the quantity and quality of groundwater available for water supply uses. Decreased recharge also reduces groundwater levels, which reduces base-flow in creeks. Reduced

base flow reduces fish habitat (stream flow quantity; more ephemeral creeks, warmer overall water temperature), riparian vegetation, and typically reduces stream water quality.

In his presentation, Mr. Dell used examples that integrated pervious surfaces as part of storm water runoff management and valued storm water as a resource rather than a waste product. At the same time, he showed that Low Impact Development serves to protect surface and groundwater resources through retention and filtration of storm water. This retention strategy replaces more traditional storm water conveyance approaches, where impervious structures including pipes, ditches, curbs, streets, and gutters, convey storm water rapidly down slope to the nearest surface water body.

Consistent with the themes discussed by Mr. Dell, Regional Board staff apply Low Impact Development concepts through several avenues within the Region. Some examples of applications of these concepts include the following:

- The Santa Barbara Natural History Museum received a Proposition 13 grant from this Regional Board for a project that includes construction of both an engineered, semi-permeable parking area and a storm water runoff design that drains to a bioswale treatment/retention basin. This project will decrease the storm water contribution from the Museum's parking lot area to Mission Creek. Additionally, the Museum project will serve as highly visible example of Low Impact Development design for the Santa Barbara City area. Storm water-type grant proposals utilizing Low Impact Development design concepts have received priority consideration during our grant proposal reviews, relative to proposals that do not incorporate these designs.

- Storm water staff utilize the State's General Phase II Municipal Separate Storm Sewer Permit (General MS4 Permit) to encourage use of Low Impact Development design implementation. The Post Construction Minimum Control Measure (MCM) in the General MS4 Permit requires that municipalities implement Best Management Practices (BMPs) to reduce the amount of storm water flowing from new developments and re-developments. 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

  By the end of the five-year General MS4 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.

- As part of the October 2003 Santa Barbara Board Meeting, the Regional Board toured UCSB's Manzanita Housing Project. The Manzanita Project incorporates several Low Impact Design components, including bioswales to retain and percolate storm water runoff, thereby better protecting water quality in the adjacent campus lagoon. The Manzanita Project serves as one of the most visible Low Impact design projects in the Region. As such, this Region's storm water program staff hosted a recent training on low impact development. This training was targeted at local planning and permitting agencies, as well as Regional Board staff to enhance understanding of the benefit of low impact design.

Looking toward the future, Regional Board staff plan the following to further implement low impact concepts:

- To further promote understanding of low impact design and pervious surface uses, storm water program staff will include professionals like Owen Dell and statewide experts on pervious concrete at upcoming MS4 workshops. Along these lines, a national professional engineering organization currently offers a course on detention pond design for parking lots and urban drainage that includes bioswales in the curriculum. Through dialogue with this group, our hope is to expand the course curriculum to include other quality design issues including pervious concrete technology.

- Further explore how existing grant funding opportunities such as Clean Beaches and coastal and watershed nonpoint source funds can be better targeted at quality storm water

projects that contain critical low impact design elements.

- Further identify potential or existing quality storm water projects that could serve as Supplemental Environmental Projects (SEPs). These projects would then be linked to the SEP portion of our web site.

- Continue to encourage MS4 entities to push the envelope in terms of "storm water friendly" low impact design, and perhaps even foster friendly regional competition. The Regional Board could initiate a competition and recognize the participants in the same way we present water quality awards each year.

- Proceed with development of a riparian buffer or protection policy, as discussed at this year's off-site meeting. Buffer strips provide pervious surfaces adjacent to creeks, which provide all the benefits discussed above for pervious surfaces.

The discussion that Mr. Dell's presentation triggered was fruitful both during and following the October Regional Board meeting. Staff will continue seeking ways to incorporate this important issue into our "toolkit" of approaches to protecting water quality.

Water Quality Planning Topics: Owen Dell's presentation on Low Impact Development and the resulting Board and staff discussion about pervious surfaces provided an excellent opportunity to delve into an important issue that might not otherwise have happened during the course of normal Board business. Board Chair Jeff Young has suggested that long-range planning issues and other "bigger picture" topics be taken up by the Board for discussion and brain-storming on an occasional basis. Many issues could serve as interesting and relevant topics, and the ensuing discussion may ultimately lead to new ideas and innovative problem solving, both for staff and the Board.

Several planning documents are attached to this agenda item that may be useful in evaluating issues for discussion that are considered of high priority to the Region. Attachment A includes summary information from the 2004 Watershed Management Initiative Chapter. Repeatedly in this document, the importance of agricultural waiver implementation, TMDL development and implementation, and riparian and wetland protection are emphasized. The attachment includes priority types of targeted activities by watershed. Attachment B is a regional prioritization exercise conducted recently by all Regional Boards. This exercise prioritized three types of issues: those considered critical for protection of water quality, those related to external expectations (stakeholders), and those which resulted in improved program efficiencies. It describes the programs related to each issue, measurable milestones, affected watersheds, and potential funding sources. Again, pollutants associated with agriculture are considered a high priority. Other important issues include pathogens (such as those impacting the southern sea otter population), point source threats to surface and groundwater, salts in groundwater, and impacts associated with runoff (sediment, stormwater pollutants, etc.). The third planning document is the Basin Planning Triennial Review List from 2001. This list will be updated at a Board meeting this winter. Some of the priorities are editorial in nature, but others are more substantive. For example, surface water issues include updating of our Nonpoint Source Policy, development of a riparian policy, and development of nutrient criteria. Groundwater issues include development of nitrate management plans and salts objectives.

Though any of the items on these priority lists provide a topic warranting further discussion, the Board may also consider related issues or newly emerging issues such as the following:

- Riparian Buffer Zones
- Low impact development
- Innovative stormwater management
- Fire management
- Endangered Species management
- Salts management in critical Basins
- Residual pesticides
- Newly emerging pesticides
- Endocrine disruptors
- Pharmaceuticals and other emerging chemicals impacting water quality
- Innovative monitoring tools
- Sub-lethal toxic effects
- Biocriteria
- Bioengineering

- CCAMP monitoring results
- Local research findings

Staff suggests that the Board select several items of interest for group discussion. Staff will provide background information on the item, and in some cases may invite an expert to talk on the subject briefly. We assume these items will typically take from fifteen to thirty minutes to discuss.

Recommendation Provide staff with preferred meeting interval for agendizing long-term planning topics, and provide several topics of interest to the Board for staff to prepare for future Board meetings.

Attachments

A. 2004 WMI Priorities
B. Central Coast Regional Priorities
C. 2001 Triennial Review List

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