



4855 Hamilton Street, Sacramento, CA 95841
(916) 482-8377 - Fax (916) 483-1320
Email: ucc@arcadecreekrecreation.com

June 19, 2008

California Regional Water Quality Control Board
Central Valley Region
Attn: Kim Schwab
Rancho Cordova, CA 95670-6114

Re: Comments on Sacramento MS-4 Tentative Order

Dear Ms. Schwab:

Thank you for the opportunity to comment on the Tentative Order (TO) for renewal of the Sacramento area NPDES Municipal Storm Water Permit (MS-4 permit). For the past four years, the Sacramento Urban Creeks Council has actively participated in the Upper Laguna Creek Collaborative Planning Process (ULCC), the Drainage Workgroup of the ULCC and the Laguna Creek Watershed Council. I have acted as the Sacramento Urban Creeks Council representative in these three efforts. As a result, I have become familiar with watershed hydromodification, an issue of great significance to urban creeks in Sacramento County.

Sacramento area stormwater agencies have failed to address one of the most destructive and irreversible impacts to the physical and biological integrity of local streams: the increases in volume and duration of stormwater flows resulting from watershed hydromodification (hydromod), mostly related to the increases in impervious surfaces from new development. (In this comment letter, the terms "new development" and "significant development" will be collectively referred to as "new development".) The often-cited reason for this failure is that it is not required by the Sacramento area stormwater permit. Based on expectations set by recent NPDES permits drafted by other regional boards, we expected that to be rectified with the Sacramento MS-4 permit.

We are disappointed to see that the Region 5 Water Quality Control Board (Regional Board) has not provided leadership to address this issue in the new MS-4 Tentative Order (TO). While we understood that the Board would not pursue a prescriptive permit, the Board appears to be abandoning its role to set meaningful, science-based benchmarks for

compliance with this TO. This TO lacks the basic criteria needed to guide the permittees in designing and implementing effective solutions to address hydromod. Given that our local governments have consistently resisted enacting or enforcing environmental protections unless mandated to do so, this is particularly disheartening.

We are focusing our comments on hydromod management in the hope that the Board will set clearer expectations to encourage local governments to pursue reform of new development practices to prevent continued degradation of our few remaining natural creeks, and minimize further degradation of those that are already impacted by urban development. Based on the current state of the science, these improvements appear to be technically and economically achievable within the term of this permit. Therefore, we expect that the bar for defining Best Management Practices (BMPs) and the Maximum Extent Practicable (MEP) should be set pretty high.

The Sacramento Urban Creeks Council recommends the following changes to clarify the TO and more strongly encourage meaningful progress toward mitigating the impacts of watershed hydromodification.

1. The TO does not recognize and promote the current understanding of the science of hydromodification, leading to some incorrect assertions about key concepts, which should be corrected throughout the document:
 - a. Previous studies have established that traditional runoff controls, such as peak flow and velocity controls are inadequate to mitigate for hydromod. Continuous hydrology analysis and flow duration control have proven to be necessary to protect streams from changes in watershed hydrology from new development. For examples of these misstatements, please see:
 - i. Section 5.2.2.5 under New Development: []...peak runoff controls can help to minimize the impacts of urban development on the local hydrology and aquatic environment.”
 - ii. Item 15(a)(ix) on page 47 under Water Quality and Design Principles: “control the post-development peak stormwater run-off discharge rates and velocities to prevent or reduce downstream erosion and to protect stream habitat (hydromodification concepts)”
 - b. The description of key concepts of LID in the section devoted to Low Impact Strategies is flawed by various inaccuracies which could lead to undesirable outcomes.
 - i. Page 47-49, Paragraph 1 of item 15(b) directs the permittees to “consider and implement all appropriate and applicable LID components and measures that have been successfully implemented in other municipal areas.” Since this TO lacks any measure or standards to define success, what constitutes “successful?”
 - ii. Page 19, Item 78: LID as traditionally practiced does not mimic predevelopment flows, but attempts to reduce flows. Flow duration controls and the commensurate analysis are needed to

- iii. Page 20, Item 79: The referenced study from San Diego by Horner provides a poor example to follow. In that study, Horner reduces runoff volume by 30% to 50%, as opposed to the 60% to 90% that flow duration control standards require to truly mimic the pre-project hydrology. LID practices alone do not equate to protecting the stream channel, particularly without a defined, measurable in-stream standard. Without in-stream evaluation and performance criteria, how does the Board propose to measure LID efficacy or any other approach proposed by permittees? How much LID is enough? The TO must require projects to demonstrate that the stormwater management strategy is adequately protective based on something real. Suggestions are provided later in this document.
 - iv. By defining fairly specifically what kinds of LID management strategies are required, the TO moves away from its non-prescriptive approach and risks encouraging methods that might be ineffective and/or less economical than other approaches. For example, advising permittees to address hydromod by minimizing impervious surfaces ignores the option of using flow control devices to more reliably and effectively achieve in-stream objectives.
 - v. We recommend modifying all references to methods to include flow duration control as well as LID to advance the best possible science and leave open options for new and better approaches. See pages 44-47 for examples.
2. The TO often refers to the permittees New Development Standards, SQIP, and Stormwater Quality Design Manual as if the implementation of these guidance documents can be expected to demonstrate achievement of protection of the chemical, physical and biological integrity of our streams. Since these documents do not include any provisions for addressing hydromod, these statements clearly over reach. They should be modified to reflect the fact that, as written, these plans are not sufficiently protective. We fail to see what criteria the Board and staff propose to use to evaluate whether the revised versions of these documents (and the mandated HMP work plan and final HMP plan) propose effective strategies to address hydromod. The TO itself is vague when it comes to providing criteria for effectiveness assessment. We see this as a shortcoming of

the TO that is apt to encourage the permittees to propose approaches to hydromod that are likewise vague, ineffectual and/or immeasurable.

3. Page 15 (c)(ii) specifies that the hydromod requirements are not applicable in some cases, citing examples (a) through (d). We recommend that the Board reconsider how exemptions are defined. The examples provide no criteria by which to measure projected impacts, inviting frightening differences in interpretation. They also ignore the reality that, while direct impacts to a particular receiving water might appear to be negligible, every stream flows into another. The cumulative impacts on higher order streams from hydrologic changes in their tributary watersheds will translate into impacts that are significant and avoidable.

Consistent with the studies conducted by the ULCC and other hydromod studies, Sacramento Urban Creeks Council recommends that hydromod requirements apply to any project that will increase (or decrease) runoff by a prescribed amount, based on the best available peer-reviewed science. We support a recommendation that runoff management be required whenever the projected erosiveness of flows from a project (or group of projects) within a given watershed can be reasonably expected to exceed the existing hydrologic conditions, as measured by plus or minus 20% of the Erosion Potential of the stream.

Regarding exemption (a): Comment: We recommend modifying this exemption to apply only to existing concrete channels and deleting “significantly armoured.”

Regardless of how well a particular reach might be armoured, the changes in flow volumes and durations will impact every other downstream watercourse to which it connects. Moreover, even relatively small changes in geomorphically significant flows can exert additional erosive forces on a stream channel given sufficient time.

As an example of how easy it is to misrepresent a stream as being “significantly armoured or resistant to erosion”: A few years ago a study conducted on behalf of the Sacramento County Department of Water Resources determined that Upper Laguna Creek was “resistant to erosion” and sufficiently armoured that area projects should not be required to implement flow duration controls. A subsequent study conducted by the Laguna Creek Watershed Council and the ULCC found that existing runoff from new development in the watershed had already significantly eroded the creek, a condition expected to be further exacerbated by the additional unmanaged stormwater flows of more development. This example demonstrates the need to define clear performance standards, particularly when defining criteria for exemptions.

Regarding exemption (b): The definition of rivers is too vague. If it means specifically the main stem of the American and Sacramento Rivers, it must assume that neither river will be impacted by unlimited, cumulative changes in

flow volumes, an assertion that downstream users might well contest. If the term “rivers” could be construed to mean streams, this exemption could encourage projects to promote the use of underground systems to discharge stormwater to any creek, despite the benefits of moving toward surface drainage methods that are more consistent with LID methods.

Regarding exemption (c): The non-defined use of the term “infill” is apt to leave too much room for interpretation. Large projects can be considered infill, particularly in the context of large specific plans, where any given project area could increase impervious surface in a watershed greater than 10%, the level known to induce impacts to receiving streams. Again, this example points out why the use of well-defined, scientifically-defensible criteria would lead to more certainty and better outcomes for developers and the environment.

Regarding exemption (d): Projects that do not create an increase in impervious area can, nonetheless, have a significant and destructive impact on stream channels. For example: The County of Sacramento proposes to create a “project” to open up a broad floodplain for development. If implemented as planned, the project would route all flows in Laguna Creek (above the 2-year event) to an existing mining pit. Such a project depletes the flows of the creek with significant impacts to sediment transport and channel processes, as well as habitat and water quality. Conceivably, this project could qualify for an exemption under (d).

This example points out the risks inherent in projects that would over-restrict or divert existing flows away from receiving water(s). Throughout the TO it is important to note that hydromod strategies must ensure that flows are maintained within the existing or pre-development range of geomorphically significant flows, which can be defined as “the critical flow for erosion and/or bed mobility up to and including the 10-year peak flow”. As it stands, the TO only addresses the excess flows resulting from projects.

Several provisions of the TO require the permittees to advance principles of stormwater quality management through their General Plans. We are not encouraged to believe that this will be effectively executed, when the Rancho Cordova City Council is actively working to weaken a modest provision protecting natural streams in its first General Plan, so as to approve projects that propose to relocate natural streams and/or line them with concrete. Surely this action is not consistent with provisions of the expiring stormwater permit, much less the MS-4 permit. When the Board consistently issues 401 Water Quality Certification to permit such projects, we have more cause to wonder if anyone is minding the store.

Page 50, Item 20: With respect to the provision to obtain waivers due to “unfavorable soil conditions for infiltration” or “severe space limitations” we find no mention of the option to achieve flow duration control through a low flow discharge below the critical flow to mobilize bed materials. This provision should also require mitigation for impacts to be

located as close as practicable to the source of the impacts, to reduce downstream impacts to the maximum extent practicable.

Page 17, Item 68: We recommend striking the paragraph that begins with “The Permittees submitted an antidegradation analysis in October 2007...” and additional references to the findings of that report. If retained, any referenced findings of the AA should be accompanied by clarifications that reveal the limited scope of the referenced Antidegradation Analysis (AA) of October 2007. It pertained to specific chemical pollutants, not the full spectrum of physical and biological impairments, many of which arise from hydromod. When taken out of context in the TO, assertions (quoted directly from the AA) imply that the Board accepts and promotes the premise that degradation of water quality from new development is necessary and unavoidable. This is certainly untrue if applied to sediment (as a pollutant) and other physical and biological impacts of new development on stream channels and habitat. Significant improvements to these impairments are technically and economically feasible, using currently available analytical tools and technologies. The TO should not assert that communities need to accept additional impairment from new development as an unavoidable cost of new growth.

Sections 17, 18 and 20 should include hydromodification by reference to ensure that it is included in these provisions.

On page 28 under “Discharge Prohibitions – Stormwater Discharges” section A.2.: Language should be added to expressly prohibit changes in the volume, frequency and/or duration of runoff discharged to a receiving water from new development or significant redevelopment, when those changes could be reasonably expected to cause an increase in the erosiveness of in-stream flows, as determined using the best available science. Alternatively, this might be appropriate in the section devoted to Receiving Water Limitations.

Thank you for your attention to these comments. Please contact me at 916 454-4544 if you have any questions or need clarification.

Sincerely,

Alta Tura, President