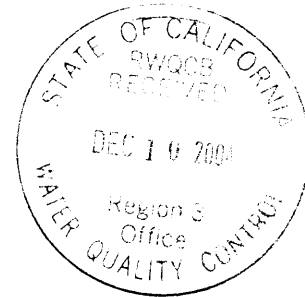


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December 10, 2004



Mr. Bruce Fujimoto
Ms. Jarma Bennett
Division of Water Quality
State Water Resources Control Board
PO Box 1977
Sacramento, CA 95812-1977

Ms. Jennifer Bitting
Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401

Re: Storm Water Management Program, County of San Luis Obispo

Dear Mr. Fujimoto, Ms. Bennett, and Ms. Bitting:

At the request of the Natural Resources Defense Council (NRDC) I reviewed San Luis Obispo County's Storm Water Management Program ("SWMP"). I wish to submit the following comments on my evaluation. I first provide a general overview of my opinion. Following a summary of my background and qualifications to perform the review, I then submit more detailed comments and recommendations. I wish to qualify my intentions by clearly stating that it is not my role, and I have not set out, to delineate every alteration or improvement of the SWMP that should be made. I do want to exemplify some elements both to bolster my critique and contribute to future progress.

The SWMP presents an organized structure that could form a good foundation for a strong program. However, it lacks some crucial elements and, more broadly, overly delays implementation of many initiatives. My comments note a number of instances of both shortcomings. Thoroughly addressing those points would produce a program capable of safeguarding San Luis Obispo County's important regional aquatic resources.

With the missing elements and delays, it is my opinion that the SWMP falls short of the level it must reach to achieve the ultimate goal required of regulated entities by the State Water Resources Control Board's ("SWRCB") Water Quality Order No. 2003-0005-DWQ ("the Order"), which is to reduce the discharge of pollutants to the maximum extent practicable ("MEP"); comply with discharge prohibitions; and, in the case of larger entities, lead to attainment of receiving water objectives.

The County already has a population in the vicinity of 250,000, is growing comparatively rapidly (with a growth rate of 29.3% in this decade projected by the California Institute of Governments), and drains to waters that are sensitive to continuing and increasing pollutant discharges. The combination of already substantial size, rapid growth, and sensitive waters demands the development and execution of a stormwater management program of the highest level.

BACKGROUND AND QUALIFICATIONS

In evaluating the SWMP I applied the experience of my 27 years of work in the urban stormwater management field and 11 additional years of engineering practice. During this period I have performed research, taught, and offered consulting services on all aspects of the subject, including investigating the sources of pollutants and other causes of aquatic ecological damage, impacts on organisms in waters receiving urban stormwater drainage, and the full range of methods of avoiding or reducing these impacts.

I received a Ph.D. in Civil and Environmental Engineering from the University of Washington in 1978, following two Mechanical Engineering degrees from the University of Pennsylvania. Although my degrees are all in engineering, I have had substantial course work and practical experience in aquatic biology and chemistry. For 12 years beginning in 1981 I was a full-time research professor in the University of Washington's Department of Civil and Environmental Engineering. I now serve half time in that position and have adjunct appointments in two additional departments (Landscape Architecture and the College of Forest Resources' Center for Urban Horticulture). While my research and teaching continue at a somewhat reduced level, I spend the remainder of my time in private consulting through a sole proprietorship. My full credentials are available upon request.

I have conducted numerous research investigations and consulting projects together involving all aspects of stormwater management. Serving as a principal or co-principal investigator on more than 40 research studies, my work has produced two books, approximately 30 papers in the peer-reviewed literature, and over 20 reviewed papers in conference proceedings. I have also authored or co-authored more than 75 scientific or technical reports. In addition to graduate and undergraduate teaching, I have taught many continuing education short courses to professionals in practice. My consulting clients include federal, state, and local government agencies; citizens' environmental groups; and private firms that work for these entities, primarily on the West Coast of the United States and Canada but in some instances elsewhere in the nation.

I have helped to develop stormwater management programs in Washington State, California, and British Columbia and studied such programs around the nation. I was one of four principal participants in a U.S. Environmental Protection Agency-sponsored assessment of 32 state, regional, and local programs spread among 14 states in arid, semi-arid, and humid areas of the West and Southwest, as well as the Midwest, Northeast, and Southeast. This evaluation led to the 1997 publication of "Institutional Aspects of Urban Runoff Management: A Guide for Program Development and Implementation" (subtitled "A Comprehensive Review of the Institutional Framework of Successful Urban Runoff Management Programs").

My background includes over 11 years of work in Southern California, where I have been a federal court-appointed overseer of stormwater program development and implementation at the city and

county level and for two Caltrans districts. I was directly involved in the process of developing the 13 volumes of Los Angeles County's Stormwater Program Implementation Manual, working under the terms of a settlement agreement in federal court as the plaintiffs' technical representative. My role was to provide quality-control review of multiple drafts of each volume and contribute to bringing the program and all of its elements to an adequate level. I have also evaluated the stormwater programs in Orange, Riverside, San Bernardino and Monterey Counties and been involved in extensive discussions with Orange County leading to upgrading its program. At the recommendation of San Diego Baykeeper, I have been a consultant on stormwater issues to the City of San Diego, the San Diego Unified Port District, and the San Diego County Regional Airport Authority.

SWMP ASSESSMENT

General Comments

1. The stormwater programs of the County and its seven incorporated cities are poorly integrated and coordinated.

The SWMP covers interjurisdictional relationships in one brief paragraph in section 1.7, saying only that regional cooperation and planning are envisioned. The lack of integration and coordination is a significant weakness of all jurisdictions' programs. The area constitutes a single MS4 with substantial sharing of aquatic resources and interconnection of hydrologic systems. For the SWMP to ignore this biogeophysical reality is to court failure. The document must take up this issue with much more thoughtfulness and comprehensiveness. Preferably, all jurisdictions will join in developing an umbrella program and SWMP.

2. Incompleteness and vagueness in specifying some best management practices bring the SWMP up short of the MEP standard. This criticism applies especially to Minimum Control Measures 4 and 5 (Construction Site Runoff Control and Post-Construction Storm Water Management).

A bedrock standard on which programs are to be judged under the Order is MEP. Although this standard is flexible and evolving, experience with applying it over the last decade has solidified some tenets that program developers, and agencies and citizens that evaluate the results, can use in gauging compliance.

One of the tenets of applying the MEP standard that has come to the fore is the technical feasibility of prospective best management practices ("BMPs"). The Order states (on page 9) that to meet the standard a permittee must employ all applicable BMPs, except those that are not technically feasible or whose cost exceeds potential benefit. It is my strong opinion that the stormwater management field has developed to the point that the technical feasibility, benefits, and costs of a whole host of BMPs are well established. Ample basis thus exists for San Luis Obispo County to build its SWMP around these practices.

Phase I municipalities, as well as some that fit into Phase II, have employed these BMPs; now all Phase II permittees must do so as well, although on the extended schedule allowed for Phase II. The County hence has not only the means but also the obligation to enunciate clearly in its SWMP what standards it will apply to the adoption and implementation of BMPs. The present draft does not do so

in key instances, especially in the cases of Minimum Control Measures 4 and 5. My specific comments below cite examples in these and other areas.

3. The relatively advanced state of development of the stormwater management field does not justify delay of many key SWMP objectives until the fourth or fifth year of implementation.

Much of developmental work necessary to move swiftly toward getting programs and BMPs in place occurred during the more than 10 years of operating the Phase I programs. These programs, in fact, often involved smaller entities, in the specified Phase II size categories, as parts of large urban complexes. Comprehensive guidance exists to apply dozens of BMPs in all six Minimum Control Measure areas. These accomplishments are readily transferable to San Luis Obispo County and can cut years from the anticipated schedules. The present SWMP draft does not take advantage of some of the best resources that not only can add detail and specificity but also speed achievement of results. My specific comments again elaborate.

Specific Comments

The companion letter by NRDC comments extensively on the SWMP's treatment of the six minimum control measures. I agree with those comments but do not generally reiterate them in my letter. Instead, I concentrate on some points closest to my own experience to comment upon and offer recommendations for improvement. I again want to state that I do not regard these recommendations as comprehensive, but instead as examples of the changes needed to meet the MEP standard.

1. Section 2.2, SWMP Program Development

This section outlines a BMP decision matrix that appears to be a promising basis for building the program around applicable BMPs, as I have advocated. When I read to this point, I expected that I would see a well developed program of this type, with the basis for BMP specifications well illuminated for my consideration and agreement or disagreement. Instead, the results of using the matrix never appear. In fact, as I have said, the BMPs themselves often do not appear. The authors are obligated to expose the results of using a method they have described for evaluation by their readers.

2. Minimum Control Measure No. 1: Public Education and Outreach

This measure lacks two important elements: (1) more direct and proactive means of disseminating educational materials to reach all County residents (e.g., mass mailings), and (2) providing training for regulated commercial, industrial, and institutional establishments. Perhaps a more basic criticism is that nowhere does the SWMP specifically identify and classify the establishments as a basis for tailoring approaches to them in implementing the various Minimum Control Measures.

The implementation schedule is too delayed for BMP#2 and 7. In both cases completion of the initial rounds of education will not occur until the end of the fourth year.

3. Minimum Control Measure No. 2: Public Participation and Involvement

The proposed schedules for BMP#10 and 11 are too slow and do not even reach a state of completion after five years. Only 45 percent of streams will be covered at that point. Stencils will be applied to only 75 percent of catch basins. Stenciling is an elementary activity that should be completed by the end of the second year at the very latest.

4. Minimum Control Measure No. 3: Illicit Discharge Detection and Elimination

This measure lacks several important elements entirely:

- A preventive program to ensure that new illicit connections will not occur in new construction and reconstruction. This preventive program should involve both plan review and site inspections.
- A program for responding to leaks or spills of potentially polluting materials from vehicles, businesses, and the sanitary sewer system.
- A program and procedures for eliminating detected illicit connections.
- A system of enforcement and penalties.

A number of BMPs are inadequate, have overly extended schedules, or both. It is not acceptable to take five years for full system mapping (BMP#13). BMP#14 should include sanctions against non-complying septic systems and should require the inspection of all systems well before the passage of five years (the schedule is to inspect only 80 percent by that time). Under BMP#15 all catch basins should be stenciled and all drainage channels signed. It is fine to prioritize according to recognized problem areas, but the entire system should be covered. As already noted with respect to BMP#10 and 11, the schedules should also be greatly shortened. BMP#16 does not completely cover the needs for properly managing sanitary sewers. The BMP should embrace spill prevention, response procedures to use if a spill occurs, isolating a spill to prevent or minimize flow to a storm sewer, and clean-up procedures. BMP#17 seems to anticipate only on-site inspection. However, other techniques are very likely to be needed (e.g., as-built plan review, video inspection, field screening, dye testing, discharge sampling).

5. Minimum Control Measure No. 4: Construction Site Runoff Control

This extremely important area is incomplete and vague overall. Construction site runoff control is a well-developed field that could be represented in a comprehensive fashion in the SWMP. Moreover, the sketchy coverage of the SWMP gives little confidence that comprehensiveness will ultimately be achieved. Any number of existing programs and technical resources could be consulted for program structure templates and guidance to formulate a sound program quickly.

Although examples are plentiful around the nation, San Luis Obispo County does not even have to look beyond California for sources. Los Angeles County issued Implementation Manuals for private and public agency construction projects in February 1998. These manuals encompass: (1)

requirements applying to construction projects in different categories, (2) design review, (3) permit approval, (4) inspection and enforcement, (5) legal authority, (6) training and outreach, (7) candidate BMPs, and (8) program evaluation. These elements represent the core of a complete program, and materials already produced by Los Angeles County and others are good models allowing easy adaptation to local circumstances.

For technical guidance California has one of the best and most up-to-date set of stormwater management handbooks in the nation. The Construction Handbook is available for referencing, so that the County does not have to produce the BMP selection, design, installation, and maintenance specifications themselves. With these resources at hand the lack of comprehensiveness and vagueness are unnecessary and unacceptable.

BMP#22 provides a case in point. It requires no review and inspection of BMPs until the fourth year and provides no idea of what the review and inspection standards will be at any point. Hundreds of communities all over the nation, many far smaller than San Luis Obispo County, fully implemented such a program years ago.

6. Minimum Control Measure No. 5: Post-Construction Runoff Control in New Development and Redevelopment

Like Minimum Control Measure No. 4, this area is also incomplete and vague overall. Missing considerations include urban stormwater mitigation planning; guidance for the planning process; the applications and selection of various classes of BMPs (site design, source control, runoff quantity control, and runoff treatment); and how to design, build, and maintain these BMPs. This is the most engineering-intensive aspect of the stormwater management program. In addition, it involves such programmatic considerations as design review and approval, inspection and enforcement, legal authority, and program evaluation.

Fortunately, once again this is a well-developed field with copious models and resources. All of the urban counties of southern California have worked through the process and built their post-construction programs around standard urban stormwater management plans ("SUSMPs") for specified development categories. These plans provide minimum requirements, templates, and guidance but still allow flexibility in selecting specific BMPs to be most appropriate for site conditions. The SUSMP structure is particularly useful in highlighting different cases in residential, commercial, and industrial land use and activity and relating them to appropriate BMP selections. For technical guidance, again the recently updated California stormwater handbooks, in this case the Municipal Handbook, supply all necessary detail for implementing BMPs.

The strong foundation available already would allow the San Luis Obispo County to produce a full program within the two years anticipated just to write an ordinance. The County must outline such a path now, provide sufficient information to convey confidence in what the result will be, and commit to finishing the job within two years.

BMP#25 and 26 provide cases in point regarding the inadequacy of this measure. As drafted, they would accomplish no infrastructure or land use planning for stormwater pollution planning until the

fourth year. Once again, hundreds of jurisdiction passed well beyond this point to have fully developed post-construction stormwater management programs years ago.

Another weakness of this measure is the requirements associated with "redevelopment." According to Appendix G, if the redevelopment increases impervious surface less than 50 percent, the SWMP's requirements would apply only to the addition and not the remainder. Such a loose standard fails to take advantage of the rare and important opportunity that redevelopment affords to bring stormwater management up to modern standards. A community normally redevelops at a rate of roughly 1 or 2 percent a year, meaning opportunities on average only occur once or twice a century. Lacking strong redevelopment requirements is not only counterproductive environmentally but is also unfair to newly developing properties subject to all requirements and can be manipulated to avoid compliance. These requirements must be substantially threatened.

7. Minimum Control Measure No. 6: Pollution Prevention and Good Housekeeping for Municipal Operations

To be complete and adequate a municipal operations program must include stormwater-related aspects of the management and maintenance of: (1) the storm drain system, (2) the sanitary sewer system (prevention of flow to storm drains), (3) streets and bridges, (4) parks and recreation facilities, (5) airports (if present and operated by a permittee), and (6) corporation yards. Each location has its characteristic activities, potential pollutants, and appropriate BMPs to avoid or minimize pollutant releases. Each must be analyzed and be specified in terms of the BMPs and how they should be used. Common potential pollutant sources for these locations are vehicles (fueling, maintaining, cleaning, and parking), materials used in the work, and wastes produced. BMPs typically isolate pollutant sources from contact with rainfall or runoff. As with other elements, programmatic considerations of training, inspection and enforcement, and program evaluation must also be developed.

The SWMP goes only part way in formulating such a program. Just as with Minimum Control Measures 4 and 5, it is incomplete and vague on the BMPs to be applied in these diverse areas. One example of this inadequacy was already cited earlier, prevention of contamination by sanitary sewer spills. This area should be covered comprehensively in terms of spill prevention, response procedures to use if a spill occurs, isolating a spill to prevent or minimize flow to a storm sewer, and clean-up procedures.

Other examples of BMPs that should be included and are not are:

- Street and parking lot sweeping and maintenance BMPs (e.g, covering saw cutting, paving, striping);
- Pesticide reduction and proper application when used; and
- Vehicle fueling and maintenance BMPs (along with washing, already mentioned in the SWMP).

Mr. Bruce Fujimoto, Ms. Jarma Bennett, and Ms. Jennifer Bitting

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The County should prepare stormwater pollution prevention plans for its corporation yards. These plans should lay out all measures to be taken to prevent contact between rainfall or runoff and potentially polluting materials and wastes.

As also seen with Minimum Measures 4 and 5, others have already developed complete municipal operations stormwater programs. Los Angeles County's first Implementation Manual for county facilities came out in December 1998. The Municipal Handbook in the California stormwater handbooks set contains specifications for a number of BMPs that serve potential problem areas in municipal facilities. With these resources there is no reason why San Luis Obispo County cannot have a complete program in operation within one to two years.

A number of BMPs are inadequate, have overly extended schedules, or both. There is no justification for taking four years to train all County employees, and BMP#28 is silent on training new employees and retraining for refreshment and updating. It is unacceptable to take five years to get to the point of cleaning 90 percent of storm drains (BMP#29), especially with this activity already occurring. Also not warranted are taking five years to inspect all County facilities (BMP#31) and hazardous waste storage locations (BMP#32). Even less understandable is using five years to get to only 50 percent implementation of street and parking lot cleaning (BMP#36) and properly washing County vehicles (BMP#38). All of these schedules can and must be greatly shortened.

8. Water Quality Monitoring

The collection and analysis of water samples is a complex activity that will surely produce few usable results if not conceived and executed well. Section 5 briefly describes a program that seems diffuse and without any design. The County should assume the responsibility of getting a well designed, systematic monitoring program in place.

I would be pleased to discuss my comments and elaborate on the examples I have given. I invite you to contact me if you wish.

Sincerely,

A handwritten signature in cursive script that reads "Richard R. Horner". The signature is written in black ink and is positioned above the printed name.

Richard R. Horner