SOUTHERN CALIFORNIA

ASSOCIATION of GOVERNMENTS

Main Office

818 West Seventh Street

12th Floor

Los Angeles, California

90017-3435

t (213) 236-1800

f (213) 236-1825

www.scag.ca.gov

Officers: President: Councilmember Ron Roberts, Temecula • First Vice President: Supervisor Hank Kuiper, Imperial County • Second Vice President: Mayor Toni Young, Port Hueneme • Immediate Past President: Councilmember Bev Perry, Brea

Imperial County: Hank Kuiper, Imperial County • Jo Shields, Brawley

Los Angeles County: Yvonne Brathwaite Burke, Los Angeles County • Zev Yaroslavsky, Los Angeles County • Jim Aldinger, Manhattan Beach • Harry Baldwin, San Gabriel • Paul Bowlen, Cerritos • Tony Cardenas, Los Angeles • Margaret Clark, Rosemead • Gene Daniels, Paramount • Mike Dispenza, Palmdale • Judy Dunlap, Inglewood • Eric Garcetti, Los Angeles • Wendy Greuel, Los Angeles • Frank Gurulé, Cudahy • James Hahn, Los Angeles • Janice Hahn, Los Angeles • Isadore Hall, Compton • Tom LaBonge, Los Angeles • Bonnie Lowenthal, Long Beach • Martin Ludlow, Los Angeles • Keith McCarthy, Downey • Llewellyn Miller, Claremont • Cindy Miscikowski, Los Angeles • Paul Nowatka, Torrance • Pam O'Connor, Santa Monica • Alex Padilla, Los Angeles • Bernard Parks, Los Angeles Jan Perry, Los Angeles • Beatrice Proo, Pico Rivera Ed Reyes, Los Angeles • Greig Smith, Los Angeles Dick Stanford, Azusa • Tom Sykes, Walnut • Paul Talbot, Alhambra • Sidney Tyler, Pasadena • Tonia Reyes Uranga, Long Beach • Antonio Villaraigosa, Los Angeles • Dennis Washburn, Calabasas • Jack Weiss, Los Angeles • Bob Yousefian, Glendale • Dennis Zine, Los Angeles

Orange County: Chris Norby, Orange County • Ronald Bates, Los Alamitos • Lou Bone, Tustin • Art Brown, Buena Park • Richard Chavez, Anaheim Debbie Cook, Huntington Beach • Cathryn DeYoung, Laguna Niguel • Richard Dixon, Lake Forest • Alta Duke, La Palma • Bev Perry, Brea • Tod Ridgeway, Newport Beach

Riverside County: Marion Ashley, Riverside County • Thomas Buckley, Lake Elsinore • Bonnie Flickinger, Moreno Valley • Ron Loveridge, Riverside • Greg Pettis, Cathedral City • Ron Roberts, Temecula

San Bernardino County: Paul Biane, San Bernardino County • Bill Alexander, Rancho Cucamonga • Edward Burgnon, Town of Apple Valley • Lawrence Dale, Barstow • Lee Ann Garcia, Grand Terrace • Susan Longville, San Bernardino • Gary Ovitt, Ontario • Deborah Robertson, Rialto

Ventura County: Judy Mikels, Ventura County • Glen Becerra, Simi Valley • Carl Morehouse, San Buenaventura • Toni Young, Port Hueneme

Orange County Transportation Authority: Charles Smith, Orange County

Riverside County Transportation Commission: Robin Lowe, Hemet

Ventura County Transportation Commission: Bill Davis, Simi Valley

Printed on Recycled Paper 559-5/20/04

MEETING OF THE

WATER POLICY TASK FORCE

Thursday, September 9, 2004
10:00 a.m. – 12:00 p.m.

SCAG Offices
818 W. 7th Street, 12th Floor
Riverside B Conference Room
Los Angeles, California 90017
213. 236.1800

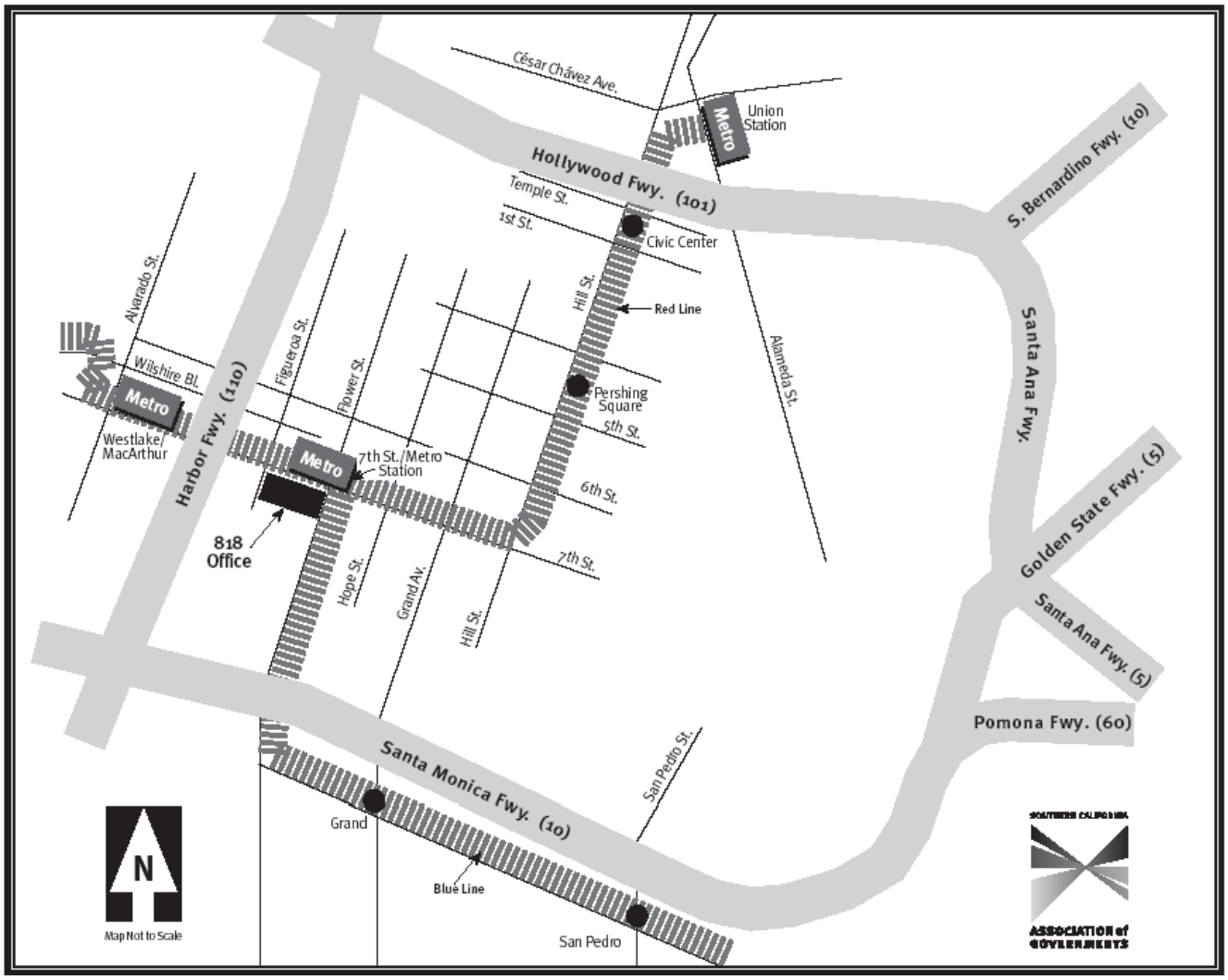
Agenda & Map Enclosed

If members of the public wish to review the attachments or have any questions on any of the agenda items, please contact Dan Griset at 213.236.1895 or griset@scag.ca.gov.

SCAG, in accordance with the American with Disabilities Act (ADA), will accommodate persons who require a modification of accommodation in order to participate in this meeting. If you require such assistance, please contact SCAG at (213) 236-1868 at least 72 hours in advance of the meeting to enable SCAG to make reasonable arrangements. To request documents related to this document in an alternative format, please contact (213) 236-1868.

DOC #99334 v1

How to get to the Southern California Association of Governments



To Get to the 818 Building

- Harbor Freeway (110) Exit on 6th Street, turn right on Flower.

By Transit…

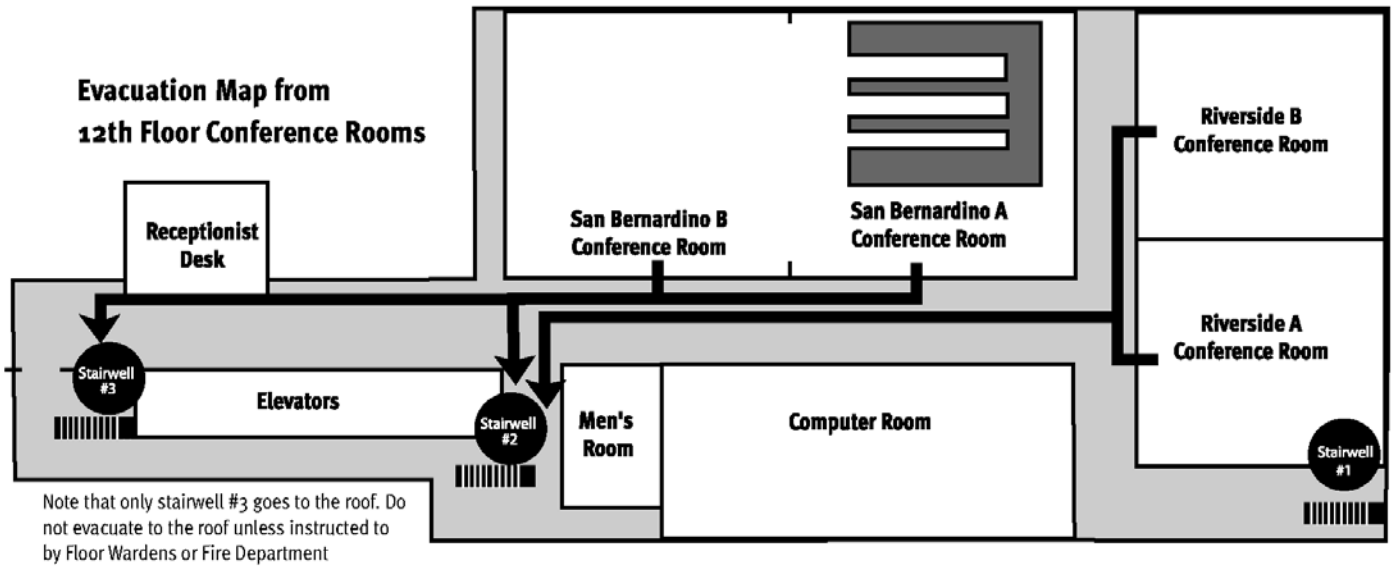
- SCAG is accessible by all Metrolink Service to Union Station. Transfer to the Metro Red Line (free transfer with Metrolink ticket) and get off at 7th and Metro Station. Metro Line Service to SCAG is also available from Alvarado Station.

- SCAG is accessible by the Blue Line. Get off at 7th and Metro Station.

- SCAG is served directly by DASH Routes A and B. Bus Service via MTA, Foothill, Santa Monica, Orange County is available to downtown. Call 1-800-COMMUTE for details.

SCAG Main Office:
818 West 7th Street, 12th Floor, Los Angeles, CA 90017-3435 (213) 236-1800 fax: (213) 236-1825
http://www.scag.ca.gov

Emergency Evacuation Procedures:



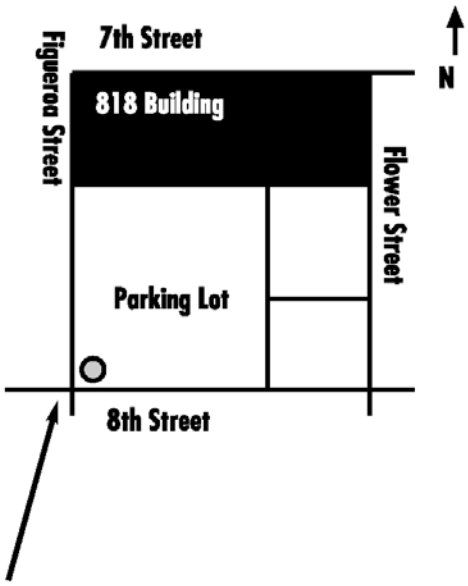
Note that only stairwell #3 goes to the roof. Do not evacuate to the roof unless instructed to by Floor Wardens or Fire Department Personnel.

1) SCAG offices will always totally evacuate when an alarm sounds, even if it is thought to be a false alarm.

2) The evacuation stairwells are shown above.

3) Take the stairs to the ground floor. Upon exiting the building walk to the corner of 8th and Figueroa and meet at the Northeast corner. See dot in the map to the right. Do not leave the area without making contact with a floor warden, who will be wearing an orange vest.

4) SCAG safety officers will be wearing an orange vest during an emergency. Please follow their instructions.



SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

1385 11/01

AGENDA
WATER POLICY TASK FORCE
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

September 9, 2004
10:00 a.m.
SCAG Offices: Riverside B Meeting Room

Page #

1.0 CALL TO ORDER

2.0 PUBLIC COMMENT PERIOD

Members of the public desiring to speak on an agenda item or agenda items not on the agenda, but within the purview of this committee, must notify the Secretary and fill out a speaker's card prior to speaking. Comments will be limited to three minutes. The Chair may limit the total time for comments to twenty (20) minutes.

3.0 APPROVAL OF MINUTES

Approve the minutes of the June 10, 2004 meeting. (Minutes will be available at the meeting and just prior to the meeting on the Task Force website: http://www.scag.ca.gov/wptf/index.htm.)

4.0 PRESENTATION ITEMS FOR THE TASK FORCE

4.1 Stormwater Management Update — 6

Bo Cutter, a Task Force member and Professor at UCR (Department of Environmental Sciences), will provide an update on two key areas of storm water management: on-site retention alternatives and financing strategies for storm water initiatives.

4.2 Total Maximum Daily Loads (TMDL) for Metals in the Los Angeles River and Ballona Creek — 7

On September 2, 2004 the Los Angeles Regional Water Quality Control Board is scheduled to hold a workshop on a metals pollution control plan (TMDL) for the Los Angeles River and Ballona Creek. The Board is expected to adopt a TMDL at a future meeting. A panel of speakers will brief the Task Force on the Board's proposed plan for the Los Angeles River. The panel will include Melinda Becker (Regional Board staff), Clayton Yoshida (City of Los Angeles), Dan Lafferty (County of Los Angeles), Rodney Andersen (City of Burbank), Bob Wu (Caltrans District #7) and Richard Watson (consultant to cities in the Coalition for Practical Regulation).

4.3 TMDL Planning in Calleguas Creek Watershed: Controlling Metals Pollution **8**

Don Kendall, General Manager of Calleguas Municipal Water District, will brief the Task Force on the Metals TMDL planning approach being used in the Calleguas Creek Watershed

5.0 CHAIR'S REPORT

6.0 STAFF REPORT

7.0 TASK FORCE INFORMATION SHARING

8.0 COMMENT PERIOD

10.0 ADJOURNMENT

Docs 102844v1

MEMORANDUM TO THE WATER POLICY TASK FORCE

September 9, 2004

TO: ***Members of the Water Policy Task Force***

FROM: ***Daniel E. Griset, Sr. Regional Planner, X895, griset@scag.ca.gov***

SUBJECT: ***Stormwater Management Update***

RECOMMENDATION:

Receive for future policy consideration.

BACKGROUND:

Bo Cutter, a Task Force member and Professor in the Department of Environmental Sciences at the University of California, Riverside will discuss recent developments in on-site runoff retention practices, along with recent developments in financing of stormwater management programs.

Many of the recent studies of urban stormwater management point to the high costs associated with meeting water quality standards in the SCAG region. The approaches studied feature large-scale collection and treatment systems, systems that are particularly costly when used in the dense urban watersheds of southern California. One study commissioned by Caltrans that assumed the use of larger scale collection and treatment facilities resulted in a cost estimate for water quality compliance of more than $50 billion in Los Angeles County alone.

These costs have prompted many to look more closely at the potential for compliance with the use of small, on-site systems, rather than relying only on regional facilities. This strategy for runoff management is being considered for use on existing properties, as well as on new infill developments. A small-scale approach plays off of the extraordinary cost of real estate in the region (a key impediment for large collection and treatment facilities) and the increased public involvement fostered by systems and practices that are immediate to individual properties.

Since traditional public works solutions for water quality compliance tend to favor larger-scale systems the on-site approach to stormwater management remains more of a novel idea for special situations than a practical and proven alterative for routine application. As current efforts continue and as financial incentives operate in tandem with public policies the potential for small-scale systems will become increasingly feasible.

A memo prepared by Dr. Cutter is included in the Agenda attachments.

MEMORANDUM TO THE WATER POLICY TASK FORCE

September 9, 2004

TO: ***Members of the Water Policy Task Force***

FROM: ***Daniel E. Griset, Sr. Regional Planner, X895, griset@scag.ca.gov***

SUBJECT: ***Total Maximum Daily Loads (TMDL) for Metals in the Los Angeles River and Ballona Creek range County's Ground Water Replenishment System***

RECOMMENDATION:

Receive for future policy consideration.

BACKGROUND:

A federal consent decree reached in 1998 requires USEPA and the Regional Board to prepare and adopt a large number of pollution control plans for impaired water bodies in Ventura and Los Angeles Counties. The plans, known as Total Maximum Daily Loads (TMDLs), are expected to determine the pollutant carrying capacity of these water bodies and then prevent any pollution beyond this threshold. This process has been organized to comply with a court-determined schedule by which selected reaches in the rivers, streams and creeks in our urban watersheds will be evaluated for pollutants and their sources. Once the sources are identified the TMDL will require the various pollutant sources to reduce the discharges enough to eliminate the impairment to the affected water body.

The Regional Board, acting for USEPA in this court mandate, has recently prepared a draft control plan for reducing the metals pollution in the Ballona Creek and Los Angeles River. Instead of adopting its Metals TMDL at its meeting on September 2, the Regional Board held a workshop for those wishing to offer comments on the proposal. The Board indicated that it will adopt a Metals TMDL at a subsequent meeting.

The Task Force will be briefed on the Los Angeles River portion of this important proposal by a panel of speakers. The panel will include Melinda Becker (Regional Board staff), Clayton Yoshida (City of Los Angeles), Dan Lafferty (County of Los Angeles), Rodney Andersen (City of Burbank), Bob Wu (Caltrans District #7) and Richard Watson (consultant to cities in the Coalition for Practical Regulation).

The formal written comments from these entities on the draft TMDL for the Los Angeles River are included in the Agenda attachments, preceded by an introduction of the draft Plan by the Regional Board staff.

MEMORANDUM TO THE WATER POLICY TASK FORCE

September 9, 2004

TO: ***Members of the Water Policy Task Force***

FROM: ***Daniel E. Griset, Sr. Regional Planner, X895, griset@scag.ca.gov***

SUBJECT: ***TMDL Planning in Calleguas Creek Watershed: Controlling Metals Pollution***

RECOMMENDATION:

Receive for future policy consideration.

BACKGROUND:

During the past two years the Task Force has been periodically briefed on the TMDL issues and planning process occurring within the Calleguas Creek Watershed. First initiated by the Callegaus Municipal Water District, the effort has grown into a watershed-wide planning program with many stakeholders. Critical in this program, the stakeholders have worked with the Regional Board to develop TMDLs on a more comprehensive basis in order to create a consistency between early planning and later planning. The idea of a comprehensive approach is to develop pollution control plans and related investments that will be compatible with other controls for pollutants that may require management at some future time.

To date the Calleguas Creek Watershed has accomplished more with comprehensive TMDL planning that any other area of the SCAG region. Though it is still relatively early in their process the effort has made unmistakable gains since the initial controversy over their water bodies impaired by chlorides.

Don Kendall, General Manager of Calleguas Municipal Water District, will discuss with the Task Force the way in which their process is integrating control plans for metal pollutants, including chromium, zinc, nickel, and silver.

Attachments

Memorandum by Dr. Bowman Cutter

Date: **September 9, 2004**

TO: **SCAG WATER POLICY TASK FORCE**

FROM: **BOWMAN CUTTER**

SUBJECTS: **On-Site Stormwater BMPs and Financing Update**

1. ON-SITE STORMWATER BMPs

Several new developments have occurred which make incentive-based implementation of on-site BMPs more likely. (By on-site BMPs I mean ones that would collect runoff from typical residential, commercial, and industrial parcels rather than serving a drainage area as a whole.) The Santa Monica Bay bacteria TMDL plan seems like it will include on-site BMPS in its implementation plan – and financial incentives for these BMPs were discussed at the last workshop. Also, Orange County is contemplating adding a storm water utility fee. Stormwater utilities are an ideal structure for setting up financial incentives for on-site stormwater management. Finally, an EPA team is investigating options for incentive-based, on-site, runoff control and is interested in exploring the ideas in Southern California.

There are two separate questions involved in the decision to implement small-scale runoff solutions: 1) cost effectiveness vis-à-vis larger, regional scale, projects; and 2) the method to implement on-site solutions. Options for implementing additional on-site capacity include building code regulation, tradable stormwater permits, and an auction format I will discuss below.

The desirability of on-site stormwater BMPs (i.e. rain gardens, rock wells, leach fields, cisterns, etc.) –no matter the method used to implement them- is enhanced by the likely large costs of constructing public treatment or detention facilities. Studies by Caltrans and others have demonstrated that treatment costs for any significant fraction of stormwater runoff is likely to be very expensive. Public detention or diversion is also likely to be very expensive given land costs in much of Southern California. Though there are likely some low-cost public infrastructure solutions, these low-hanging fruit will disappear quickly. *The high cost of public infrastructure implies that we should seek out possibilities for developing private capacity where the costs of development are lower than the cost of building additional public infrastructure*.

Flexibility is another advantage of small-scale solutions. It is uncertain how much control and treatment will be necessary to comply with the TMDLs in development and implementation. Since these TMDLS incorporate long implementation time horizons there is space for experimenting with different options. A difficulty with jumping straight to large, public infrastructure options is that they have large fixed costs so that, once installed, there is a high cost to increasing their capacity, but building too much capacity initially would be very wasteful. On-site capacity is ideal for use as a first step in TMDL implementation because capacity can be gradually added, and if it turns out there is too much on-site capacity, contracts could be allowed to lapse and capacity could be decreased.

However, it is difficult to say a priori how expensive it would be to persuade land-owners to install and maintain stormwater BMPs. The actual construction and maintenance costs are fairly well-known. However, these costs would be much less than average if, for example, the landowner built the BMP in the course of on overall landscaping effort. The cost to the landowner of dedicating a certain portion of the lot to a stormwater BMP is much more difficult to estimate. The market value of the land could be a decent approximation, but might not be accurate. For example, BMPs such as rain garden might not take up any more land than landscaping that the owner would install in any case. On the other hand, a landowner might value a portion of the site at higher than the market land value for aesthetic reasons. This *opportunity cost of land* is something that cannot be known until site owners are given the opportunity to decide at what price (or cost avoided) they would be willing to install the BMP. To a lesser degree the construction costs to a particular landowner are difficult to ascertain as well. An incentive-based regulatory structure is well-suited to take advantage of these uncertainties because it gives the landowners the opportunity to signal their own valuation of costs.

There are several practices used nationwide to induce landowners to add onsite capacity. The most common method to induce landowners to install stormwater BMPs is to add requirements for detention/retention capacity to building codes and construction permits. Another method is to build credits (fee rebates) for detention capacity into a stormwater utility fee. A new proposed option is to run an auction where private landowners would bid for a subsidy (lowest bids win) to add detention/retention capacity. Tradable stormwater permits are a final option for on-site control, but for a variety of reasons they may be inappropriate in Southern California and I will not discuss them in this memo.

Building Code and Construction Regulation

Building code regulation generally only affects new construction or redevelopment. In much of coastal Southern California the majority of land has already been developed and there is a limited amount of redevelopment. Therefore, regulations applying only to new or redevelopment are unlikely to apply to a large percentage of parcels for some time. It is possible that new regulations could be promulgated to require some portion of existing development to put in place detention/retention capacity. The benefits of this approach are that the additional capacity would come at little additional public costs.

However, this approach could run into legal difficulties in that it could be argued that existing landowners have the right to allow stormwater to runoff their properties. A more subtle failing is that such regulation would not distinguish between landowners who can install additional control capacity cheaply and landowners who would face high costs of installation. Because many landowners might face high costs of installation and/or maintenance; monitoring and enforcing the new regulations would be difficult.[1] A final negative aspect of this approach is that new costly regulations will create an incentive for developers to place their projects elsewhere, thereby further decreasing parcel turnover.

Fee/Credit Programs

The next two options (fee/credits and subsidy auctions) are designed to add stormwater control capacity through the use of decentralized economic incentives. These instruments differ in important ways, but they are similar in that they rely on increasing the financial rewards to landowners for voluntarily building stormwater control infrastructure. An incentive-based implementation would find those landowners with low opportunity costs of land or those who can construct BMPs cheaply because they are the ones who would tend to use credits or submit the lowest bid in auctions. In other types of pollution control, economists have found that private parties will find cheaper than expected pollution control options when they are motivated by a well-designed incentive structure. A recent paper (Thurston 2004) shows that decentralized, on-

[1] For this reason, some cities (Austin, Texas is one example) have fee in-lieu-of programs that allow developers to pay a fee rather than install BMPs.

site control, could offer cheaper stormwater control than large public projects in the case of Cincinnati.

Another benefit of an incentive-oriented approach is that landowners who have low control costs and volunteer are much more likely to follow-through on their commitments and therefore the problems of monitoring and enforcing the maintenance and upkeep of stormwater BMPs is likely to be less than with mandatory solutions such as building codes.

Nationwide, many cities and counties have stormwater utility fees where landowners pay a fee based on estimated runoff as a function of parcel size, land use, and/or impermeability. Because the fee amount is based on the amount of stormwater runoff from the parcel, it is natural to include credits for landowners who install detention/retention capacity. These credits are usually a function of both the volume of stormwater detained and the peak flow reduction.

The stormwater fee/credit system has the advantage that, taken together, it generates revenue for the responsible city or county. In addition, credits provide financial incentives for those who pay stormwater fees to put in detention capacity. Credits also enhance the perceived fairness and equity of a stormwater utility fee and are often part of the plan to achieve public acceptance of a new stormwater utility.

Credits on their own, however, seldom provide sufficient incentive to mobilize a significant amount of new private detention capacity. Stormwater fees are generally so low that even a 100% credit does not do much to defray the cost of a stormwater BMP. The cities I have been able to contact have had very few landowners take up the credit option.[2] Stormwater fees would have to be significantly higher and credit options more streamlined and better publicized for a pure stormwater credit option to recruit a significant amount of additional on-site capacity.

Stormwater Auctions

Stormwater auctions would motivate private participation in stormwater detention by giving out subsidies for BMP construction and possibly maintenance. An auction would be held where the lowest bids (in terms of dollars per a combination of total and peak runoff control) for the construction of standard BMP designs would be reviewed by city engineers and, if approved,

[2] Most cities with credit/fee programs are more concerned with volume than quality problems and are reluctant to rely on private detention to solve flooding problems. Stormwater engineers worry that the "carrot" of a small yearly credit on the stormwater fee will not be enough to ensure continued upkeep of a stormwater BMP. Of course

win the subsidy. The contract would be for a specified amount of time and contingent on proper maintenance or perhaps include an easement to allow the city to perform maintenance. Auctions could also be targeted towards hot spots where stormwater control would be more effective at controlling pollution or where large scale options are difficult or expensive to place. The EPA team which is examining on site control is working toward implementing an auction-based approach to on-site stormwater management.

Stormwater auctions and credit/fee programs would need public funds. However, if they are able to provide detention capacity at a lower price than public infrastructure options the additional money would be well spent. Stormwater utility fee credits and stormwater BMP auctions could also be coordinated by having the subsidy consist of first a credit against the utility fee and a possible additional subsidy on top of the credit.

There are a number of implementation decisions on stormwater credits or auctions that are the province of the local government, such as:

- Eligibility: i.e., commercial/industrial properties, public agencies, and residential property owners. The city or county would need to decide their capacity for ensuring maintenance for different types of land-uses and sizes of parcels.
- Maintenance: Local government or landowner?
- BMP design specification.
- Length of contract/terms.

Summary

On-site, private, stormwater solutions may provide significant cost-effectiveness and flexibility advantages over large public infrastructure solutions-particularly in already-developed areas. However, it is not clear how to tap into this capacity. Standard changes in building and land use codes will not fully take advantage of opportunities for on-site stormwater control. Credits against stormwater utility fees or subsidies in the form of BMP auctions are two encouraging possibilities. I (and an EPA team) view BMP auctions, perhaps combined with a credit, as the most promising idea. However, there are many decisions each city or county will have to consider to tailor the auction approach to their situation.

---

with higher fees and therefore larger credits, the financial incentive might be high enough to ensure continued upkeep of BMPs.

2. UPDATE ON STORMWATER-RELATED FINANCE ISSUES

Several recent developments reveal new possibilities for financing stormwater programs. Orange County is in the very preliminary stages of considering a stormwater utility fee. Also, a bill to place a $6 fee on automobile registration to fund stormwater programs in Northern California presents an interesting new financing possibility. Finally, a case involving Proposition 218's property-related fees was decided in local governments' favor.

Various reports indicated that some Orange County local government entities are considering a stormwater utility fee. This appears to be one of several financing options under discussion rather than an actual proposal. There has been no detailed staff work on a stormwater utility fee and a proposal will have to wait until it is clear which jurisdictions would participate. Separately, the Orange County Business Council and Cal State Fullerton polled Orange County residents on a possible stormwater fee and found 59.3 percent would pay $5/month. This is below the two-thirds threshold for a vote of the entire electorate, but it is also on the high end of stormwater utility fees.

Two bills advanced in the legislature to increase funding for stormwater runoff programs. ACA 10, advanced by Assembly Member Harman, would have excluded stormwater runoff fees from the voter approval requirements of Proposition 218. However, this bill received little support from either party and was placed in the inactive file. Another interesting bill is Assembly Member Nation's A.B. 204, which would have allowed nine bay area counties to place a $6 increase on vehicle registration fees in their area to fund stormwater runoff mitigation activities. It did not make it all the way through the legislature this session, but it is an interesting financing possibility that members of the task force may want to consider.

The Proposition 218 definition of a property-related fee as it relates to stormwater fees is still a somewhat open legal question despite the adverse decision in the *Salinas* case, 98 Cal.App.4th 1351 (2002). The decision in *Apartment Association of Los Angeles County, Inc. v. City of Los Angeles,* 24 Cal. 4th 830 (2001) indicated that the key test is whether the fee could be avoided without selling the property ("voluntariness" test). This reasoning was confirmed by the California Supreme Court in *Richmond v. Shasta Community Services District,* 32 Cal. 4th 409 (2004). The *Richmond* case considered water capacity and connection fees and found that they are not property related if the fees are contingent on the property owner voluntarily seeking the service. This is distinct from charges such as monthly service charges for water services that might be deemed property-related fees. This decision leaves open the possibility that a well-constructed stormwater utility fee with a sufficiently voluntary nature would pass the "voluntariness" test-though of course any stormwater fee would likely be challenged if it is not subject to a vote.

These finance developments do not hold the promise of immediate new funds to assist local governments in meeting their stormwater mandates. However, task force members may want to consider whether to support legislative action along the lines of ACA 10 or A.B. 204. Particularly, a financing proposal along the lines of A.B. 204 would need substantial development and effort from task force members in order to craft a proposal for Southern California.

Introduction to Metals TMDL
Regional Board Staff Report

TOTAL MAXIMUM DAILY LOAD FOR METALS
LOS ANGELES RIVER AND TRIBUTARIES

U.S. Environmental Protection Agency
Region 9

California Regional Water Quality Control Board
Los Angeles Region

July 9, 2004

TABLE OF CONTENTS

1. INTRODUCTION **7**

1.1 Regulatory Background *8*

1.2 Environmental Setting *10*

1.3. Elements of a TMDL *14*

2. PROBLEM IDENTIFICATION **15**

2.1 Water Quality Standards *15*

2.2 Water Quality Data Review *21*

3. NUMERIC TARGETS **26**

3.1 Dry-Weather Targets *27*

3.2. Wet-Weather Targets *31*

4. SOURCE ASSESSMENT **33**

5. LINKAGE ANALYSIS **40**

5.1 Development of the Dry-Weather Model *40*

5.2 Development of the Wet-Weather Model *45*

6. POLLUTANT ALLOCATION **53**

6.1 Dry-Weather Loading Capacity *53*

6.2 Dry-Weather Allocations *55*

6.3 Wet-Weather Loading Capacity *58*

6.4 Wet-Weather Allocations *59*

6.5 Margin of Safety *61*

7. IMPLEMENTATION **62**

7.1 Integrated Resources Plan *64*

7.2 Potential Implementation Strategies *65*

7.3 Implementation Schedule *68*

7.4 Cost Analysis *69*

8. MONITORING **76**

8.1 Ambient Monitoring *77*

8.2 Compliance Assessment Monitoring *77*

8.3 Special Studies *80*

10. REFERENCES **82**

LIST OF TABLES

Table 1. Segments of the Los Angeles River and tributaries listed as impaired for metals..... 7
Table 2. Beneficial uses in listed reaches of the Los Angeles River (LARWQCB, 1994)..... 17
Table 3. Water quality objectives established in CTR.. 19
Table 4. Coefficients used in formulas for calculating CTR standards 20
Table 5. Summary of ambient water quality data for total metals relative to chronic values..... 21
Table 6. Summary of ambient water quality data for total metals relative to acute values. 22
Table 7. Summary of stormwater data for dissolved metals relative to chronic and acute criteria.. 22
Table 8. Summary of hardness data for specific reaches of the Los Angeles River during dry weather.. 28
Table 9. Numeric targets for TMDL during dry weather (adjusted for hardness by reach).. 29
Table 10. Relationship between dissolved and total metals in dry-weather data..... 30
Table 11. Range of potential numeric targets for wet weather.. 32
Table 12. Relationship between dissolved and total metals expressed as a percent. 32
Table 13. Annual metals loadings from three POTWs 36
Table 14. Summary of permits in Los Angeles River Watershed..... 36
Table 15. Relative Loading (%) of metals by rource to the Los Angeles River during dry-weather conditions..... 37
Table 16. Seasonal stormwater loadings (kg/yr) to Los Angeles River watershed..... 39
Table 17. Estimates of direct and indirect deposition (kg/year) 40
Table 18. Los Angeles River segments modeled for linkage analysis..... 41
Table 19. Flows used in the calibration and validation of the dry-weather model. 42
Table 20. Flow and concentrations for point source discharges used in model calibration..... 43
Table 21. Flows and concentrations for tributaries used in model calibration 43
Table 22. Flows and concentrations for point source discharges used in model validation 44
Table 23. Flows and concentrations for tributaries used in model validation..... 44
Table 24. Land use distribution in the watershed..... 47
Table 25. Hourly rainfall data. 48
Table 26. Stream gage stations used for calibration and validation of flow data. 50

Table 27. Volumes (acre-feet) and relative error of modeled flows versus observed flow for the Los Angeles River at Wardlow (10/1/1989 – 3/3/1998) 51
Table 28. A comparison of different load allocations for entire river based on three critical flows at Wardlow. 54
Table 29. Dry-weather loading capacity for the Los Angeles River and listed tributaries based on area weighting of median flows at Wardlow (145 cfs). 54
Table 30. Proposed waste load allocations for the three POTWs required to meet TMDL targets 55
Table 31. Remaining dry-weather waste load capacity for the Los Angeles River and listed tributaries to be allocated among stormwater and other permittees. 57
Table 32. Concentration-based dry-weather waste load allocations ……..…….58
Table 33. Concentration-based wet-weather waste load allocations ……61
Table 34. Land use contributions to total metal loads from surface runoff form the Los Angeles River watershed 63
Table 35. Implementation Schedule 69
Table 36. Estimated costs for two types of street sweepers 71
Table 37 Annualized sweeper costs, including purchase price and operation and maintenance costs ($/curb mile/year) 72
Table 38. Estimated costs for infiltration trenches 74
Table 39. Estimated costs for Austin and Delaware sand filters 75
Table 40. Total estimated costs of phased implementation approach. 75
Table 41. Ambient monitoring points……..……77

LIST OF FIGURES

Figure 1. Map of the Los Angeles River watershed and listed reaches. 86
Figure 2. Sampling stations in the Los Angeles River watershed. 87
Figure 3. Data collected by the City of Los Angeles Watershed Monitoring Program. 88
Figure 4. Location of stream gages in the Los Angeles River watershed. 89
Figure 5. Validation of dry-weather hydrography. 90
Figure 6. Calibration and validation of the dry-weather model 91
Figure 7. Los Angeles River sub-watershed delineation used in wet-weather model. 93
Figure 8. Location of precipitation and meteorological stations used in the wet-weather model 94
Figure 9a. Validation of wet-weather hydrography. Comparison of monthly flows. 95
Figure 9b. Validation of wet-weather hydrography. Regression of monthly flows. 95
Figure 10. Flows at Wardlow (1998-2000) 96
Figure 11a. Load-duration curve for copper 97
Figure 11b. Load-duration curve for lead 98
Figure 11c. Load-duration curve for zinc 99
Figure 11d. Load-duration curve for cadmium 100
Figure12. Regression analysis of storm flows verses rainfall for the Los Angeles River (below Wardlow Rd.) 101

LIST OF ACRONYMS

ACF	Acute Conversion Factor
BLM	Biotic Ligand Model
BMPs	Best Management Practices
Caltrans	California Department of Transportation
CCF	Chronic Conversion Factor
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CTR	California Toxics Rule
CWA	Clean Water Act
EFDC1D	Environmental Fluid Dynamics Code 1-D
EMC	Event Mean Concentration
FHWA	Federal Highway Administration
GWR	Ground Water Recharge
HSPF	Hydrologic Simulation Program-Fortran
IPWP	Integrated Plan for the Wastewater Program
IRP	Integrated Resources Plan
LACDPW	Los Angeles County Department of Public Works
LARWQCB	Los Angeles Regional Water Quality Control Board
LSPC	Loading Simulation Program in C++-
MCLs	Maximum Contaminant Levels
MGD	Million Gallons Per Day
MS4	Municipal Separate Storm Sewer System
MUN	Municipal Supply
NCDC	National Climatic Data Center
NHD	National Hydrography Dataset
NPDES	National Pollutant Discharge Elimination System
POTW	Publicly Owned Wastewater Treatment Works
SCAG	Southern California Association of Governments

SCCWRP	Southern California Coastal Water Research Project
SIP	State Implementation Plan
TMDL	Total Maximum Daily Loads
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOCs	Volatile Organic Compounds
WASP5	Water Quality Analysis Simulation Program
WDRs	Waste Discharge Requirements
WER	Water Effect Ratio
WLA	Waste Load Allocation
WMP	Watershed Monitoring Program
WQBELs	Water Quality Based Effluent Limits
WQOs	Water Quality Objectives
WRPs	Water Reclamation Plants

1. INTRODUCTION

Segments of the Los Angeles River and its tributaries exceed water quality objectives for a variety of metals. These segments (*i.e.,* reaches) of the Los Angeles River and tributaries are included on the California 303(d) list of impaired waterbodies (LARWQCB, 1998a and 2002). The Clean Water Act requires a Total Maximum Daily Load (TMDL) be developed to restore the impaired waterbodies, including the Los Angeles River, to its full beneficial uses. Table 1 summarizes the stream reaches of the Los Angeles River watershed included on the California 303(d) list for metals.

Table 1. Segments of the Los Angeles River and tributaries listed as impaired for metals (LARWQCB, 1998a and 2002)

Listed Waterbody Segment	Copper	Cadmium	Lead	Zinc	Aluminum	Selenium
Aliso Canyon Creek						X
Dry Canyon Creek						N
McCoy Canyon Creek						N
Monrovia Canyon Creek			X			
Los Angeles River Reach 4 (Sepulveda Dam to Riverside St.)			X			
Tujunga Wash (from Hansen Dam to Los Angeles River)	X					
Burbank Western Channel		X				
Los Angeles River Reach 2 (from Figueroa St. to Carson St.)			X			
Rio Hondo (from the Santa Ana Fwy to Los Angeles River)	X		X	X		
Compton Creek	X		X			
Los Angeles River Reach 1 (from Carson St. to estuary)	N	N	X	N	N	

X: listed as impaired in 1998 303(d) list and part of analytical unit 13. N: New waterbody listing based on 2002 303(d) list, not part of analytical unit 13

The goal of this TMDL is to develop pollutant allocations for metals and an implementation plan to meet the water quality objectives in the Los Angeles River and listed tributaries. This TMDL complies with 40 CFR 130.2 and 130.7, Section 303(d) of the Clean Water Act and U.S.

Environmental Protection Agency (EPA) guidance for developing TMDLs in California (USEPA, 2000a). This document summarizes the information used by the EPA and the California Regional Water Quality Control Board, Los Angeles Region (Regional Board) to develop allocations for metals. The TMDL also includes an implementation plan and cost estimate to achieve the allocations and attain water quality objectives (WQOs) in the Los Angeles River. The California Water Code (Porter-Cologne Water Quality Control Act) requires that an implementation plan be developed to achieve water quality objectives. Figure 1 shows the waterbodies addressed in this TMDL.

1.1 Regulatory Background

Section 303(d) of the Clean Water Act (CWA) requires that each State "shall identify those waters within its boundaries for which the effluent limitations are not stringent enough to implement any water quality objective applicable to such waters." The CWA also requires states to establish a priority ranking for waters on the 303(d) list of impaired waters and to establish TMDLs for such waters.

The elements of a TMDL are described in 40 CFR 130.2 and 130.7 and Section 303(d) of the CWA, as well as in the U.S. Environmental Protection Agency guidance (USEPA, 2000a). A TMDL is defined as the "sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background" (40 CFR 130.2) such that the capacity of the waterbody to assimilate pollutant loads (the loading capacity) is not exceeded. A TMDL is also required to account for seasonal variations and include a margin of safety to address uncertainty in the analysis (USEPA, 2000).

States must develop water quality management plans to implement the TMDL (40 CFR 130.6). The EPA has oversight authority for the 303(d) program and is required to review and either approve or disapprove the TMDLs submitted by states. In California, the State Water Resources Control Board (State Board) and the nine Regional Water Quality Control Boards are responsible for preparing lists of impaired waterbodies under the 303(d) program and for preparing TMDLs, both subject to EPA approval. If EPA disapproves a TMDL submitted by a state, EPA is

required to establish a TMDL for that waterbody. The Regional Boards also hold regulatory authority for many of the instruments used to implement the TMDLs, such as the National Pollutant Discharge Elimination System (NPDES) permits and state-specified Waste Discharge Requirements (WDRs).

The Regional Board identified over 700 waterbody-pollutant combinations in the Los Angeles Region requiring TMDLs (LARWCQB, 1996, 1998a). These are referred to as "listed" or "303(d) listed" waterbodies or waterbody segments. A schedule for development of TMDLs in the Los Angeles Region was established in a consent decree (Consent Decree) approved on March 22, 1999 (Heal the Bay Inc., et al. v. Browner, C 98-4825 SBA). For the purpose of scheduling TMDL development, the decree combined the more than 700 waterbody-pollutant combinations into 92 TMDL analytical units. The 303(d) list was updated in 2002. These updates and changes are not reflected in the Consent Decree.

This TMDL addresses Analytical Unit #13 of the Consent Decree which consists of segments of the Los Angeles River and tributaries with impairments by metals (cadmium, copper, lead, selenium, and zinc). Table 1 identifies the listed waterbodies by the metals causing impairments. The Consent Decree schedule requires that this TMDL be completed by March 22, 2004. If the Regional Board fails to develop the TMDL, EPA must promulgate the TMDL by March 22, 2005. It is the Regional Board's intent to complete this TMDL prior to EPA promulgation. The 2002 303(d) listings approved in 2003 are not required to be addressed per the Consent Decree; however where appropriate, this TMDL addressed those listings as well.

This report presents the TMDL for metals and summarizes the analyses performed by EPA and the Regional Board to develop this TMDL. This report does not address the metals TMDLs required for four lakes in the Los Angeles River watershed as part of Analytical Unit #20. These four lakes (Lake Calabasas, Echo Lake, Lincoln Park Lake and Peck Road Lake) are not hydrologically connected to the Los Angeles River or the listed tributaries. The TMDLs for these lakes are not scheduled in the Consent Decree but must be established by March 22, 2012. This report does not address metals impairments for Los Angeles Harbor or San Pedro Bay

required under Analytical Units #75 and #78, respectively. These TMDLs have not been scheduled in the Consent Decree.

1.2 Environmental Setting

The Los Angeles River flows for 55 miles from the Santa Monica Mountains at the western end of the San Fernando Valley to Queensway Bay located between the Port of Long Beach and the City of Long Beach. It drains a watershed with an area of 834 square miles. Approximately 44% of the watershed area can be classified as forest or open space. These areas are primarily within the headwaters of the Los Angeles River in the Santa Monica, Santa Susana, and San Gabriel Mountains, including the Angeles National Forest, which comprises 250 square miles of the watershed. Approximately 36% of the land use can be categorized as residential, 10% as industrial, 8% as commercial, and 3% as agriculture, water and other. The more urban uses are found in the lower portions of the watershed.

The natural hydrology of the Los Angeles River Watershed has been altered by channelization and the construction of dams and flood control reservoirs. The Los Angeles River and many of its tributaries are lined with concrete for most or all of their lengths. Soft-bottomed segments of the Los Angeles River occur where groundwater upwelling prevented armoring of the river bottom. These areas typically support riparian habitat.

The mainstem of the Los Angeles River begins by definition at the confluence of Arroyo Calabasas (which drains the northeastern portion of the Santa Monica Mountains) and Bell Creek (which drains the Simi Hills). McCoy Canyon Creek and Dry Canyon Creek (listed for selenium) are tributary to Arroyo Calabasas. The river flows east from its origin along the southern edge of the San Fernando Valley. The Los Angeles River also receives flow from Browns Canyon, Aliso Creek (listed for selenium) and Bull Creek which drain the Santa Susana Mountains. The lower portions of Arroyo Calabasas and Bell Creek are channelized. Browns Canyon, Aliso Creek and Bull Creek are completely channelized.

Reach 5 of the Los Angeles River runs through Sepulveda Basin. The Sepulveda Basin is a 2,150-acre open space designed to collect floodwaters during major storms. Because the area is periodically inundated, it remains in natural or semi-natural conditions and supports a variety of low-intensity land uses. The D.C. Tillman Wastewater Reclamation Plant, a publicly owned wastewater treatment works (POTW) operated by the City of Los Angeles, discharges directly to the Los Angeles River just below the dam and also via two lakes in the Sepulveda Basin that are used for recreational and wildlife habitat. The POTW has a treatment design capacity of 80 million gallons per day (mgd) and contributes a substantial flow to the Los Angeles River. There are no listings for metals in Reach 5 of the Los Angeles River.

Reach 4 of the Los Angeles River runs from Sepulveda Dam to Riverside Street. This section of the river is listed for lead. Pacoima Wash and Tujunga Wash are the two main tributaries to this reach. Both tributaries drain portions of the Angeles National Forest in the San Gabriel Mountains. Pacoima Wash is channelized below Lopez Dam to the Los Angeles River. Tujunga Wash (listed for copper) is channelized for the 10-mile reach below Hansen Dam. Some of the discharge from Hansen Dam is diverted to spreading grounds for groundwater recharge, but most of the flow enters the channelized portion of the stream.

Reach 3 of the Los Angeles River, which runs from Riverside Street to Figueroa Street, is not listed for metals. The two major tributaries to this reach are the Burbank Western Channel and Verdugo which drain the Verdugo Mountains. Both tributaries are channelized. The Western Channel receives flow from the Burbank Water Reclamation Plant, a POTW with a design capacity of 9 mgd. Burbank Western Channel is listed for cadmium.

At the eastern end of the San Fernando Valley, the Los Angeles River turns south around the Hollywood Hills and flows through Griffith Park and Elysian Park in an area known as the Glendale Narrows. This area is fed by natural springs during periods of high groundwater. The river is channelized and the sides are lined with concrete. The river bottom in this area is unlined because the water table is high and groundwater routinely discharges into the channel, in varying volumes depending on the height of the water table. The Los Angeles-Glendale Water

Reclamation Plant, operated by the City of Los Angeles, has a design capacity of 20 mgd and discharges to the Los Angeles River in the Glendale Narrows.

Reach 2 of the Los Angeles River, which runs from Figueroa Street to Carson Street, is listed for lead. The first major tributary below the Glendale Narrows is the Arroyo Seco, which drains areas of Pasadena and portions of the Angeles National Forest in the San Gabriel Mountains. In wet periods, rising stream flows in the Los Angeles River above Arroyo Seco have been related to the increase of rising groundwater. There is up to 3,000 acre-feet of recharge from the Pollock Well Field area that adds to the rising groundwater. For the 2000-01 water year, the total rising groundwater flow was estimated at 3,900 acre-feet (ULARA Watermaster Report, 2000-2001 Water Year, May 2002).

The next major tributary is the Rio Hondo. The Rio Hondo and its tributaries drain a large area in the western portion of the watershed. Flow in the Rio Hondo is managed by the Los Angeles County Department of Public Works (LACDPW). At Whittier Narrows, flow from the Rio Hondo can be diverted to the Rio Hondo Spreading Grounds. During dry weather, virtually all the water in the Rio Hondo goes to groundwater recharge, so little or no flow exits the spreading grounds to Reach 1 of the Rio Hondo. During storm events, Rio Hondo flow that is not used for spreading, reaches the Los Angeles River. This flow is comprised of both stormwater and treated wastewater effluent from the Whittier Narrows Water Reclamation Plant. Reach 1 of the Rio Hondo is listed for copper, lead, and zinc. Monrovia Canyon Creek is also listed for lead. This creek, located in the foothills of the San Gabriel Mountains in the National Forest, is a tributary to Sawpit Creek which runs into Peck Lake and ultimately to Rio Hondo Reach 2 above the spreading grounds.

Reach 1 of the Los Angeles River, which runs from Carson Street to the estuary, was listed for lead in 1998. Listings for aluminum, copper, cadmium, and zinc were added in 2002 based on exceedances of standards in stormwater samples. Compton Creek (listed for copper and cadmium) is the last large tributary to the system before the river enters the estuary. The creek is channelized for most of its 8.5 mile length. It receives up to 720 mgd of hydrotest and stormwater from Southern California Edison Company on an intermittent basis.

County of Los Angeles Comments

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
www.ladpw.org

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE
REFER TO FILE: WM-9

August 26, 2004

Ms. Jenny Newman
California Regional Water Quality Control Board
Los Angeles Region
320 West Fourth Street, Suite 200
Los Angeles, CA 90013

Dear Ms. Newman:

LOS ANGELES RIVER AND TRIBUTARIES METALS TOTAL MAXIMUM DAILY LOAD

The Department of Public Works appreciates the opportunity to comment on the proposed Los Angeles River and Tributaries Metals Total Maximum Daily Load. We would also like to thank the Regional Board staff for holding a public workshop on August 19, 2004. We look forward to continuing our working relationship. Enclosed are our comments addressing the proposed subject Total Maximum Daily Load.

If you have any questions, please contact Ms. Carrie Inciong at (626) 458-4346, Monday through Thursday, 7:30 a.m. to 6 p.m.

Very truly yours,

DONALD L. WOLFE
Interim Director of Public Works

Teri Grant for

ROD H. KUBOMOTO
Assistant Deputy Director
Watershed Management Division

ST:sw
C:\MyFiles\NPDES\TangS\1.doc

Enc.

cc: Dave Burhenn, Esq.
bc: Watershed Management (Inciong, Wu, Bapna)

COMMENTS OF THE COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS ON PROPOSED AMENDMENTS TO THE LOS ANGELES BASIN PLAN TO INCORPORATE A TMDL FOR METALS IN THE LOS ANGELES RIVER WATERSHED

General Comment

As an initial general comment, the Department of Public Works ("Public Works"), as staff of the County and of the Los Angeles County Flood Control District, wishes to note that insufficient time has been afforded the Department and other commenters to review and comment upon the proposed Basin Plan amendment. The proposed amendment and attached Staff Report were provided to the regulated community only after July 12, 2004, barely within the 45-day minimum period for review pursuant to the Government Code. In addition, the Regional Board also released for comment on the same day a similarly complex proposed Basin Plan amendment to incorporate a TMDL for metals in the Ballona Creek watershed.

The Department, as well as other stakeholders, formally requested that additional time be provided for our review and comment of these proposed Basin Plan amendments. This request apparently was denied by the Regional Board.

As we know staff is well aware, all TMDLs, including this one, must be based on sound science. The attached Flow Science report describes with more particularity some of the deficiencies of the proposed Basin Plan amendment. Moreover, we note that Health & Safety Code § 57004(b) requires the Regional Board to "conduct a scientific peer review of the scientific basis for any rule proposed for adoption by any board, department or office within [the California Environmental Protection Agency]." The proposed Basin Plan amendment falls within the definition of "rule," and, therefore, should be subjected to the requisite review prior to its adoption by the Regional Board.

At an August 19 workshop on the TMDL, Regional Board staff members, including the interim Executive Officer, indicated they would need to respond to a number of questions and issue raised by commenters. We anticipate that in addition to these comments, there will be a significant number of additional comments that will require Regional Board consideration. Unfortunately, by scheduling the consideration of the proposed Basin Plan amendment for the September 2 meeting of the Regional Board, staff will have almost no time to consider and respond in a useful way to the comments. In addition, if the comments cause staff to propose significant changes to the proposed Basin Plan amendment, it will be necessary for the Regional Board to re-notice the hearing for its consideration, so as not to be in violation of the notice requirements of state law.

In light of these facts, we suggest that it is a violation of the due process rights of the stakeholders for the Regional Board to consider this action, as well as the proposed Basin Plan amendment for Ballona Creek, on September 2. We renew our request that the proposed Basin Plan amendment be considered at a future hearing of the Regional Board.

SPECIFIC COMMENTS

1. Unsuitability of California Toxics Rule as Numerical Objective for TMDL in Wet Weather

The proposed Basin Plan amendment states that the TMDL "sets numeric water quality targets based on water quality objectives established by the California Toxics Rule (CTR)" for both dry and wet weather. Attachment A to Resolution No. 2004-XXX, Table 7-13.1. See also U.S. Environmental Protection Agency and Regional Board staff report, "Total Maximum Daily Loads for Metals Los Angeles River and Tributaries," July 9. 2004 ("Staff Report"), p. 18. We submit that the CTR is inappropriate as a standard for metals concentrations in stormwater on both regulatory and scientific grounds.

A review of the incorporation of the CTR into the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (known as the State Implementation Policy, or "SIP"), indicates that the policy never was intended to apply to the regulation of storm water discharges. See footnote 1 to the SIP (which document is attached as Exhibit 6 to the comments of Rutan & Tucker on behalf of a number of cities, filed concurrently herewith).

The SIP provides guidelines for determining when a discharge has a "reasonable potential" to cause or contribute to an excursion above an applicable priority pollutant concentration or objective. The SIP also provides a process for determining the appropriate effluent limitation for that pollutant. These calculation procedures are not, however, intended to apply to storm water discharges, and indeed, are inappropriate for such discharges. This is so due to the intermittent, highly variable and complex nature of a storm event. In most cases, sufficient data do not exist for storm water discharges to make a defensible analysis of "reasonable potential."

Moreover, a review of EPA's regulatory record accompanying the adoption of the CTR criteria indicates that the criteria were never intended to apply to storm water discharges, and were not intended to be applied without consideration of dilution. Moreover, the CTR criteria were not intended to be applied as never-to-be-exceeded values. Please see the attached Flow Science report regarding the regulatory record of the CTR rule.[1]

[1] Ironically, one of those comments was made by EPA to a comment made by the County of Los Angeles that application of the CTR to stormwater discharges would result

We anticipate that staff will respond to this comment by noting that because the CTR standard is intended for specified receiving waters, including those in the Los Angeles River watershed, it must be employed as the numerical objective for the TMDL. However, in wet weather conditions, it is plain that those very receiving waters, which serve as the flood control system for much of the Los Angeles Basin, are merely conduits for storm water flows. This is noted in the proposed Basin Plan amendment itself: Certainly, the Staff Report itself notes this fact: "Stormwater dominates the flows in the Los Angeles River when it rains." Staff Report, p. 31. The hardness values used for the calculation of the CTR "translators" were derived from stormwater sampling. *Id.*, pp. 31-32.

In summary, there appears to be no support for applying CTR criteria directly to storm water discharges in the context of a TMDL. Application of these criteria as never-to-be-exceeded end-of-pipe limitation, especially without consideration of dilution in the receiving water, was clearly never contemplated during the development of the CTR criteria. Were the Regional Board to adopt the CTR criteria as numerical objectives for wet weather flows in the Los Angeles River watershed, it would be doing so in clear violation of the rationale for the CTR criteria, without evidence in the record, and in an arbitrary and capricious manner.

2. Improper Application of TMDLs to Non-Listed Reaches

It is undisputed that TMDLs are required under federal law to be applied to waterways that are listed as "impaired" under Section 303(d) of the Clean Water Act. *See* 40 CFR § 130.7(c)(1) ("Each State shall establish TMDLs for the water quality limited segments identified in paragraph (b)(1) of this section . . . .")The proposed Basin Plan, however, proposes to include several reaches for all metals covered by the TMDL, even where such reaches are not listed as impaired for various metals.

The attached Flow Science report, in Table 1, reflects those reaches that are not impaired for metals. Those reaches include reaches 3, 5 and 6 of the Los Angeles River, which are unimpaired for any metals, as well as a number of reaches that are impaired for only a single metal.

Nevertheless, the proposed Basin Plan would establish wasteload allocations for the above-listed metals in these reaches, in plain violation of federal law. Moreover, the compliance assessment monitoring provisions in the proposed Basin Plan amendment, as well as the schedule for compliance with the TMDL,

---

in the application of numeric Water Quality Based Effluent Limits and the need to construct costly end-of-pipe controls. USEPA brushed backed the County's concern, stating that it was "premature to project that storm water discharges would be subject to strict numeric WQBELs" and that "[n]obody builds treatment for stormwater treatment in this country." See Exhibit 3 to Rutan & Tucker letter, Respone to CTR 002-017.

require that additional compliance monitoring locations be established throughout the watershed, including these reaches, to reflect compliance with the TMDL.

We note that the San Diego Superior Court recently held that the Regional Board abused its discretion when it included the Los Angeles River Estuary in the TMDL for trash, even though the Estuary had not been listed pursuant to Section 303(d) as being impaired for trash. See Statement of Decision and Judgment in *Cities of Arcadia et al. v. State Water Resources Control Board,* Case No. GIC 803631, at 9.

We therefore recommend that the Regional Board direct staff to revise the TMDL to remove those waste load allocations identified on Table 1 of the attached Flow Science report.

3. The Listing of Burbank Western Channel as Impaired for Cadmium is Improper

The Staff Report indicates that Burbank Western Channel was listed as impaired for a *single* exceedance of the chronic CTR criterion for dissolved Cadmium in 96 sampling events. Staff Report, p. 21. This represents a single exceedance in 24 years of monitoring, since this reach is monitored on a quarterly basis.

The CTR notes that a metals concentration is considered to violate the chronic metals criterion only if concentrations exceed the criterion more than once every three years. The exceedance recorded in the Burbank Western Channel does not exceed this criterion. The data collected also is problematic, as it recorded total Cadmium concentration not the dissolved Cadmium concentration contained in the CTR. Thus, it is possible that the datapoint may not even truly exceed the CTR chronic criterion.

Moreover, the grab sample that derived the one exceedance cannot adequately express an exceedance of the CTR chronic criterion, since that criterion is understood as a 4-day average concentration, not an instantaneous concentration. (While a grab sample is proper to assess exceedance of the CTR acute criterion, the Burbank sample in question did not exceed that acute criterion. Staff Report, p. 22.)

At the August 19 workshop, a USEPA representative was asked whether it would make more sense to petition for a delisting of the Burbank Western Channel for cadmium than to include that reach in the TMDL. Interestingly, the USEPA representative indicated that he would press for delisting. We therefore request that the Regional Board direct staff to revise the 303(d) listings upon which the TMDL is based to ensure that only those reaches truly impaired by metals contamination be included within the TMDL.

4. Failure to Include Load Allocations for Nonpoint Sources

The proposed Basin Plan amendment fails, in two significant ways, to follow the requirements laid down by USEPA to establish load allocations for non-point sources of metals. The first failure relates to the fact that the proposed Basin Plan amendment does not account for the significant impacts of atmospheric deposition of metals on the urbanized watershed, an effect well documented in scientific studies. Instead, the MS4 permittees must account for such deposition, because, according to the Staff Report, it is discharged (in the urbanized area of the watershed) into the MS4 system.

The second failure relates to the refusal of the Staff Report to even discuss, or for the proposed Basin Plan amendment to account for, the loadings of metals coming from the non-urbanized areas of the watershed. In the Los Angeles River watershed, these areas constitute some 44 percent of the total area of the watershed.

a. Failure to Account for Atmospheric Deposition in Urbanized Areas -- As the attached Flow Science report notes, aerial deposition from basin-wide sources "likely constitutes a significant portion of the trace metals found in storm water in the Los Angeles River watershed." Flow Science report, p. 8. We have attached as Exhibit A a study performed by Stolzenbach et al. (referred to in the Flow Science report) that documents that influence.

Moreover, as the Flow Science report also notes, the failure of staff to include this deposition as a non-point source beyond the control of the MS4 and Caltrans dischargers, may violate law. This was an issue in the recent case of *Communities for a Better Environment v. SWRCB,* 109 Cal. App. 4th 1089 (2003), where the Court of Appeals held that the imposition of strict dioxin limits on a refinery, limits which could not be met by the refinery due to ambient air deposition of dioxins, was unlawful.

Indeed, the Regional Board and the State Water Resources Control Board both have categorized atmospheric deposition in the Los Angeles River watershed as a non-point source in the "Draft Strategy for Developing TMDLs and Attaining Water Quality Standards in the Los Angeles Region," a copy of which is being attached to comments being filed by the Rutan & Tucker law firm, and which we hereby incorporate by reference.

b. Failure to Account for Runoff From Non-urbanized Areas – As the Flow Science report notes, the Staff Report assumes that loads from the non-urbanized areas of the watershed, such as the Los Angeles National Forest and areas of the Santa Monica Mountains, are insignificant sources of metals under both dry and wet weather conditions. Staff Report, pp. 58, 61. However, the Staff Report provides no empirical data or analysis to support this assertion.

And, in fact, as the Flow Science report notes, there is significant evidence that such areas *do* contribute significantly to metals loadings in the watershed.

In particular, Flow Science noted that Monrovia Canyon Creek, a sub-watershed dominated by natural and open land uses, is listed as impaired for lead. This fact alone suggests the potential influence of the natural areas for influencing metals loadings.

The Code of Federal Regulations requires that the formulators of a TMDL identify both appropriate waste load allocations for point sources and load allocations for nonpoint sources and natural background. 40 CFR §§ 130.2(e)-(i); 130.7(c). This identification also is required by USEPA guidance for the development of TMDLs in California. (See Exhibit 1 to Rutan & Tucker comment letter, filed concurrently herewith). The Regional Board's failure to identify such load allocations in the proposed Basin Plan amendment violates the Clean Water Act. Moreover, it is arbitrary and capricious for the Regional Board to assume, without any evidence or analysis, that metals sources in the non-urbanized areas may be ignored.

5. Inclusion of Construction Sites

As noted in the attached Flow Science report, there is little evidence that construction sites have any reasonable potential to contribute to exceedances of water quality standards. Moreover, applying waste load allocations to construction storm water runoff is inconsistent with previous State Board determinations that it is infeasible to impose numeric effluent limits on construction runoff. Also, as noted by the State Board in the fact sheet accompanying Water Quality Order 99-08-DQW, USEPA's evaluation of the literature on pollutants present in storm water discharges from construction sites only indicate the presence of sediment, TSS and turbidity.

6. The proposed Basin Plan Amendment Violates the Requirements of Water Code § 13242

Water Code § 13242 provides that the program of implementation for achieving water quality objectives "shall include, but not be limited to: (a) A description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private."

The proposed Basin Plan amendment contains no "description of the nature of actions which are necessary to achieve the objectives" of the metals TMDL. Instead, the Staff Report contains a series of loosely described non-structural and structural BMPs. Staff conducted no analysis of the ability of these BMPs to achieve compliance with the very minute concentrations of metals represented by the CTR criterion. The Basin Plan amendment states that "[a] phased implementation approach, using a combination of non-structural and structural best management practices (BMPs) *could be used* to achieve compliance with

the municipal stormwater waste load allocations." Attachment A to Resolution No. 2004-XXX, p. 7. The Regional Board provides, however, no guidance on what combination might work, and where.

Indeed, the proposed Basin Plan amendment calls upon the regulated community to develop the implementation plan through the MS4 permits for Los Angeles, Long Beach and Caltrans: "The administrative record and the fact sheets for the MS4 and Caltrans stormwater permittees must provide reasonable assurance that the BMPs selected will be sufficient to implement the waste load allocations in the TMDL."

Unfortunately, the BMPs noted in the Staff Report are vague and in some cases entirely unworkable. For example, one non-structural BMP suggested would be for MS4 permittees to support "legislative action with state and federal agencies to pursue the development of [non-copper] materials for brake pads." Staff Report, at 66. While this may be a laudable goal, the constituents of vehicle brake pads cannot be regulated by local agencies or the State of California. And, were the permittees to advocate such legislation, unsuccessfully, this "BMP" obviously would be of no use in reducing copper concentrations in the watershed.

The Staff Report repeatedly emphasizes the importance of source control, a point upon which we agree. However, the Report does not provide any guidance as to what types of sources (beyond general information on land use types) may be rich sources of pollutants. It is left to the regulated community to attempt to identify these sources.

With respect to structural BMPs, the Staff Report notes the potential use of infiltration trenches or filters "at critical points in the stormwater conveyance system." No guidance is provided, however, as to the size or type of such trenches or filters, nor is there any suggestion that such devices will ensure compliance, either on their own or in conjunction with non-structural and other structural BMPs. Also, the Staff Report provides no empirical basis for dischargers to assess whether installation of these types of structural BMPs will achieve compliance with the TMDL.

The Staff Report also discusses, in very vague terms, the use of diversion and treatment of waters. While the Staff Report suggests that modeling indicates that "loading capacity can be halved through the capture of a 0.5 inch storm," no information is provided as to the capital costs or maintenance costs involved in such facilities, much less the land acquisition costs required.

With respect to the potential effectiveness of BMPs, we direct your attention to the Flow Science report, in which there is a discussion of the relative effectiveness of various structural BMPs. As you can see, while such BMPs may

be quite effective at capturing total metals, dissolved metal capture is much less effective.

The Flow Science report notes that because of the relative inability of lower-cost BMPs, such as sand filters or biofilters, to remove dissolved metals, dischargers may ultimately be required to install a diversion and treatment technology to achieve compliance with the TMDL. At the August 19 workshop, a representative from one Publicly Owned Treatment Work indicated that the only way for his facility to meet the TMDL limit applied to that facility would be to install a reverse osmosis system. While Regional Board and US EPA staff strongly denied that such technology would be required for TMDL compliance, there is no discussion in the Staff Report as to the basis for such denial.

7. Monitoring Issues

As a general comment, Water Code § 13267 requires that an analysis be conducted of the costs and benefits of technical or monitoring program reports, and that the "burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports." Water Code § 13267(b)(1). Moreover, Water Code § 13225(c) requires a similar cost/benefit analysis if the Regional Board requires a local agency to investigate and report on technical factors involved with water quality. No such cost/benefit analysis has been conducted of the compliance/ambient monitoring programs called for in the proposed Basin Plan amendment, nor of the proposed special studies required under the amendment.

It may be noted that the San Diego Superior Court in the trash TMDL case invalidated that TMDL in part due to the Regional Board's failure to conduct such a cost/benefit analysis prior to adoption of that TMDL.

a. Compliance Monitoring -- As noted in the attached Flow Science report, there appears to be a difference of opinion as to the purpose of compliance monitoring in the proposed Basin Plan amendment. At the August 19 workshop, staff, including Interim Executive Officer Jon Bishop, indicated that the purpose of monitoring was to establish BMP effectiveness. If initial monitoring indicated that the waste load allocation was being exceeded, additional BMPs would be required, with further monitoring to establish the effectiveness of the additional BMPs.

Mr. Bishop agreed that this approach was consistent with the "iterative approach" interpretation of the NPDES MS4 permit. However, the proposed Basin Plan amendment instead requires permittees to "increase the number of compliance monitoring locations to demonstrate compliance with the phase implementation schedule for this TMDL." Attachment A to Resolution No. 2004-XXX, p. 8. This suggests instead that strict compliance with receiving waters limitations would be required of the permittees, an interpretation which, we believe, is belied by the

language of the MS4 permit and which violates the "maximum extent practicable" standard required of municipalities under the Clean Water Act.

We recommend that the proposed Basin Plan be modified to reflect the monitoring and compliance approach apparently advocated by staff at the August 19 workshop. Such an approach also could incorporate a BMP-centered compliance methodology, such as that suggested by the trash TMDL. For example, BMP implementation could be considered to meet the requirements of the TMDL if technology is installed that will remove the required percentage of metals for a given design storm. The installation and auditable maintenance of such a BMP would obviate the need for monitoring, at least downstream of that BMP.

b. Ambient Monitoring – The proposed Basin Plan amendment would require the MS4 permittees and Caltrans to conduct an ambient monitoring program throughout the Los Angeles River and its tributaries. The required monitoring is of reaches that are not listed as impaired for metals, as we noted above. These reaches include Reaches 3, 5 and 6 of the Los Angeles River and Arroyo Seco. Requiring monitoring of unimpaired reaches violates the requirements of Water Code § 13267. The Department also has comments regarding the time deadlines for this monitoring and other significant milestones in the proposed Basin Plan amendment, which are discussed separately below. Also, please note the comments of Flow Science with respect to the effectiveness of compliance monitoring of stormwater events.

8. Consideration of Impacts Under Water Code § 13241

Water Code § 13241 requires a regional board, when it establishes water quality objectives in water quality control plans (Basin Plans), to consider among other items, "economic considerations." Water Code § 13241(e). This factor, and others, including the past, present and probably future beneficial uses of water and the need for developing housing within the region, must be considered when each regional board establishes "such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance . . . ." Water Code § 13241. The Resolution proposing to adopt the Basin Plan amendment does not indicate that the Regional Board considered, or will consider, the factors set forth in Section 13241. Moreover, the Staff Report contains no assessment of economic factors beyond a cursory description of potential costs for certain non-structural and structural BMPs (a description which does not even include land acquisition costs).

The *Arcadia* court found that, because the TMDL represents an amendment of the Basin Plan, the Regional Board was required to conduct an evaluation of the economic factors set forth in Water Code § 13241. That court held that if "the TMDL was originally part of the Basin Plan it necessarily would have made

economic considerations under section 13241. It is certainly reasonable to conclude that when amending the Basin Plan the same considerations should be made." *Arcadia,* Statement of Decision, p. 13.

It may further be noted that State Water Resources Control Board Office of Chief Counsel has concluded that the Regional Board has an affirmative obligation to consider economics when adopting a TMDL. In particular, a memorandum prepared by Sheila K. Vassey of the Office of Chief Counsel (attached as Exhibit 4 to the Rutan & Tucker letter), it was concluded that the Regional Board must, in adopting a TMDL, determine what "methods of compliance are reasonably foreseeable to attain the allocations" and "what are the costs of these methods."

The analysis of economic impacts from the proposed Basin Plan amendment are insufficient. First, the cost estimates for constructing structural BMPs, such as infiltration trenches and sand filters, which themselves may underestimate the cost for design, installation and maintenance (the estimates do not, for example, appear to include the cost of permitting and obtaining other regulatory approvals), the estimates entirely neglect the cost of acquiring the land needed.

To illustrate this point, the Staff Report assumes one implementation scenario in which 20 % of the watershed would drain to infiltration trenches and 20% to sand filters. (Staff Report, p. 73). This amounts to 59,135 acres of watershed draining to each type of BMP, for a total of 118,270 acres. If one assumes, reasonably, that one percent of this area – 1183 acres – would be required for the BMPs, what is the cost of that land? This cost is not included in the Staff Report or the CEQA Checklist (discussed below). A rough estimate can be made, however. If one assumes that the median house price in Los Angeles County is approximately $400,000 and that there are 6.5 homes per acre, land acquisition costs would be approximately $3 billion.

While one may of course question these estimates, it cannot be argued that the Staff Report contains any attempt even to calculate the cost of land acquisition for BMPs.

Similarly, even though the potential for diversion/treatment BMPs is raised in the Staff Report, the report contains no estimate for the costs of such units.

9. Issues Regarding Compliance with California Environmental Quality Act

Regional Board staff has prepared a checklist which, according to the Interim Executive Officer, meets the requirements of a substitute environmental document under the California Environmental Quality Act ("CEQA"). We respectfully disagree with that conclusion. Moreover, we incorporate the comments of Rutan & Tucker on the CEQA compliance issues found in their comment letter, filed concurrently herewith.

It is significant that one of the chief implementation strategies considered in the Staff Report is the City of Los Angeles' Integrated Plan for the Wastewater Program, and specifically, the Integrated Resources Plan phase of the Program ("IRP"). Staff Report, p. 64. The City recently issued a Notice of Preparation of an Environmental Impact Report for the IRP. If this program, which Regional Board staff touts as a mechanism to achieve at least partial compliance with the TMDL, requires an EIR, how could the staff determine that there are feasible alternatives or feasible mitigation measures that would substantially lessen any significant adverse impacts of the entire TMDL, which encompasses a vaster area.

a. Improper Segmenting of Project – The Checklist notes, in several places, that a separate CEQA review process will likely be required. (E.g., see discussion of impacts on air emissions and water movements.) However, the Regional Board must analyze the entire "project;" it cannot avoid its CEQA responsibilities by deferring them to other agencies who will be legally bound (upon adoption of the TMDL and its incorporation into NPDES permits) to implement that project. The cases under CEQA are clear; an agency cannot split a "project" into segments and thus avoid discussing the environmental impacts of the split-off segments.

Moreover, the Checklist, in the discussion of deferring mitigation, staff has consistently assumed that there are, in fact, feasible mitigation measures for every potential adverse impact and has refused to acknowledge that some of the impacts may not be susceptible of any feasible mitigation. Future actions that will be required in order to carry out the TMDL may result in significant unavoidable impacts. A clear demonstration of this potential is the recognition by the City of Los Angeles that it must prepare an EIR for its IRP, the very program recognized by Regional Board staff as crucial to the implementation of the TMDL.

Through the use of improperly deferred mitigation measures, the Interim Executive Officer has impermissibly failed to disclose to the Regional Board that the proposed Basin Plan amendment may have a significant effect on the environment.

b. Failure to Note and Evaluate Environmental Impacts -- The Checklist fails on a number of counts adequately to note and evaluate the environmental impacts from the proposed Basin Plan amendment. We note that members of the regulated community provided voluminous comments on the potential and foreseeable impacts of implementation of the Basin Plan amendment, comments that were provided prior to the finalization of the Checklist. Unfortunately, many of these comments were ignored by staff.

In particular, we note comments submitted by Dr. Gerald Greene of the City of Downey, Eduard Schroder, P.E., of TECS Environmental and Kimberly Colbert of

Charles Abbott Associates, and a table that is found in those comments, detailing each environmental impact that, in the view of these individuals, would constitute a definite or possible significant environmental impact. We hereby incorporate those comments and that table as though set forth in full herein as a good overview of the deficiencies in the Checklist. (The comments and table may be found as Exhibit 16 to the Rutan & Tucker comment letter.) That table further notes that in a number of cases, environmental impacts that were characterized as having no or "maybe" significance will, in fact, be the subject of the EIR being prepared by the City of Los Angeles as part of the IRP.

c. The Checklist Does Not Meet the Statutory Requirements for a Substitute Environmental Document -- The Interim Executive Officer, in his Determination, found that while the proposed Basin Plan amendment "could have a significant adverse effect on the environment," there are "feasible alternative and/or feasible mitigation measures that would substantially lessen any significant adverse impact." The finding further states that such alternatives are discussed in the Checklist and in the Staff Report.

In fact, neither the Checklist nor the Staff Report provide any meaningful mitigation or alternatives, but merely vague assurances that have no empirical basis. For example, in discussing the potential impacts on soil displacement, while the Checklist concludes that potential adverse impacts could occur from increasing the rate at which water is discharged to the ground, "this potential adverse impact could be mitigated if structural BMPs are properly designed and sited in areas where risks to soil disruption are minimal." This "mitigation" is merely a pious hope that when TMDL implementation causes adverse environmental impacts, the implementing agencies will be careful. The Staff Report also does not provide any specific mitigation measures that could be adopted by dischargers.

CEQA requires more. While the Secretary of Resources has certified the basin planning process as exempt from certain requirements of CEQA, a certified regulatory program still must comply with CEQA's remaining policies and requirements. *Environmental Protection Information Center v. Johnson,* 170 Cal. App. 3d 604 (1985).

Importantly, the lead agency may not base a negative declaration or mitigated negative declaration on the presumed success of mitigation measures that have not been formulated at the time of project approval. In *Sundstrom v. County of Mendocino,* 202 Cal. App. 3d 296 (1988), the Court of Appeals overturned a negative declaration on the basis that the lead agency had assumed that other agencies would be able to devise means of avoiding potentially significant environmental impacts associated with soil stability, erosion and flooding. The Court of Appeals in *League for Protection of Oakland's etc. Historic Resources v. City of Oakland,* 52 Cal. App. 4th 896 (1997), similarly ordered that a mitigated negative declaration be set aside when the only mitigation measures for the

destruction of historic structures would be the inclusion of unspecified design elements in a modern shopping center to be built on the site. These are only two of a number of cases holding that a lead agency cannot evade the hard discussion of environmental impacts by deferring mitigation to another place and another time.

To pass muster under CEQA, the mitigation measures in the substitute environmental document must be real and they must be set forth in the environmental document prior to the adoption of the environmental document by the lead agency. *E.g., Quail Botanical Gardens Foundation, Inc. v. City of Encinitas,* 29 Cal. App. 4th 1597 (1994).

Neither the Checklist nor the Staff Report sets forth any specific mitigation measures for the identified and potential adverse environmental impacts in the Checklist. Given the ephemeral nature of the implementation "plan" (discussed above), this failing is not surprising.

Moreover, the Checklist and Staff Report do not discuss alternatives to the "project" represented by the TMDL, in direct violation of CEQA and the Regional Board's own regulations in Title 23 of the Code of Regulations.

10. Unfunded Mandates

Article XIII B, Section 6 of the California Constitution requires a state agency which mandates a new program or a higher level of service to provide a "subvention" of funds to reimburse local governments for the costs of the program or increased level of service. As noted in the Staff Report, the TMDL, when implemented, will require significant outlays of funds by local governments to design, install, construct and maintain both non-structural and structural BMPs. No funding mechanism has, however, been provided for the TMDL by the state. The TMDL also goes far beyond the specific requirements of the Clean Water Act or USEPA's regulations, and represents in fact a state program not a federal program. (In that regard, we note that the CTR criteria which form the basis for the TMDL numerical objectives, were adopted specifically as not creating a federal mandate on any state, local or tribal government, or on the private sector. *See* 65 Fed. Reg. 31682, 31708.

11. Comments Regarding Timing of Significant Milestones

As noted above, the Department has significant difficulties with the approach followed by the proposed Basin Plan amendment, the lack of evidence supporting the amendment and other more general deficiencies. In addition, we have the following comments on the timing of significant milestones:

a. Coordinated Monitoring Plan -- Table 7-13.2 of Attachment A provides only 120 days to prepare a coordinated monitoring plan for compliance

and ambient monitoring. We request that this be changed to provide for 300 days, or 10 months. Given our experience in establishing monitoring programs in other watersheds such as north Santa Monica Bay, which involve fewer municipalities and a less extensive watershed, it will take the MS4 permittees far longer to produce this plan that is afforded by the proposed Basin Plan amendment.

b. Draft Implementation Plan – The permittees are given only 12 months to produce a draft implementation plan. This is not enough time. The complexity of the TMDL and the watershed, the need to organize the cities and sanitation and water reclamation districts, and the length of time it takes to issue a cope of work, issue RFPs, interview consultants and draft agreements, all make the 12 month time frame far too short. It is unfortunate that Regional Board staff did not consult with the MS4 permittees and other regulated parties before imposing this requirement. We request that this schedule be expanded to 30 months.

c. Final Implementation Plan – We request that the final implementation plan be required 36 months, not 16 months, after adoption of the TMDL. As noted above, the size of the watershed, the need for coordination among a variety of cities and agencies, the complexity of the TMDL itself, the need to plan and design projects and the need to identify funding sources, all mandate that additional time be provided.

d. Special Studies Timeline – To the extent that the special studies will be conducted by the regulated community (an issue which requires a cost-benefit analysis under Water Code § 13267, which has not been done), we request that the studies be completed within five years of the effective date instead of four years.

e. Reopener – We request that the reopener be scheduled for five years, instead of six years, as this will coincide with the completion of the special studies.

f. Compliance Timelines -- For all of the reasons noted above, and also including the delays inherent in any project associated with environmental review and permitting, as well as finding funding, we believe that the first compliance deadline should be, at a minimum, 8 years after the effective date. We believe that the second compliance deadline should be 11 years after the effective date, that the third compliance deadline should be at 15 years after the effective date and that the final compliance deadline should be at 20 years. There is no discussion in the Staff Report as to why the compliance deadlines chosen in the proposed Basin Plan amendment are reasonable or are based on any realistic assessment of the tasks necessary to achieve TMDL compliance.

Flow Science Incorporated

723 E. Green St., Pasadena, CA 91101

(626) 304-1134 • FAX (626) 304-9427

TECHNICAL REVIEW OF PROPOSED METALS TMDLs FOR THE LOS ANGELES RIVER AND BALLONA CREEK WATERSHEDS

Prepared
for

County of Los Angeles
Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91803-1331

Reviewed By

Susan C. Paulsen, Ph.D., P.E.
Vice President, Senior Scientist

E. John List, Ph.D., P.E.
Principal Consultant

Prepared by

Aaron Mead, P.E.
Project Engineer

FSI 037056
August 26, 2004

TABLE OF CONTENTS

INTRODUCTION **3**

STORMWATER AND THE CALIFORNIA TOXICS RULE (CTR) **3**

INAPPROPRIATE IMPAIRMENT DESIGNATIONS **6**

TMDLs Developed for Unimpaired Reaches 6
Impairment Unsupported in Some Reaches 7

AERIAL DEPOSITION OF METALS **9**

METALS AND NATURAL AREAS **10**

APPLICATION TO CONSTRUCTION SITES **11**

COMPLIANCE MEASURES **12**

BMPs 12
Monitoring 13

MODELING ASSESSMENT **14**

Dry Weather Model 15
Wet Weather Model 16
Model Application 20

REFERENCES **22**

INTRODUCTION

This report summarizes Flow Science's technical review of proposed metals TMDLs for the Los Angeles River and Ballona Creek watersheds. The Los Angeles Regional Water Quality Control Board (Regional Board) has scheduled a hearing for September 2, 2004, to formally consider the adoption of these TMDLs. The Regional Board has solicited public comment in the period leading up to that hearing. The purpose of this report is to provide the Los Angeles County Department of Public Works (County) with a scientific evaluation of the documents that form the basis of the TMDLs, to facilitate the County's comments on the TMDLs.

STORMWATER AND THE CALIFORNIA TOXICS RULE (CTR)

The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (commonly known as the State Implementation Policy, or SIP) became effective on May 22, 2000. The stated goal of the SIP is to "establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency." The SIP established implementation provisions for priority pollutant criteria promulgated through the National Toxics Rule (NTR), the California Toxics Rule (CTR), and as established by Regional Water Quality Control Boards in their Water Quality Control Plans (Basin Plans). As noted in footnote 1 of the SIP, "This policy does not apply to regulation of storm water discharges."

The SIP provides guidelines for determining whether a discharge has a "reasonable potential" to cause or contribute to an excursion above an applicable priority pollutant concentration or objective. The SIP also provides a process for determining the appropriate effluent limitation for that pollutant. These calculation procedures are not intended to apply to storm water discharges, and indeed, are inappropriate for such discharges due to the intermittent, highly variable, and complex nature of storm events.

Unlike continuous point source discharges (e.g., POTWs), storm water discharges are variable in intensity and duration. The concentration of pollutants discharged at any one time is dependent on many variables. Obviously, the largest concentration of pollutants would be generally expected to discharge earlier in the storm event, and to taper off as discharges continued. Therefore, to calculate the potential for a storm water discharge to cause or contribute to an excursion above a water quality objective, the discharge would need to be sampled for water quality until most of the pollutants have been discharged. Multiple samples would be required over many hours. To determine the pollutant mass loading, the storm water discharged flow would have to be measured at the time each water quality sample is collected. Quantitative monitoring, as described above, would normally require the installation of automatic sampling devices and flow meters at each discharge location. In most cases, this kind of intensive, costly monitoring data is unavailable for storm water discharges. As a result, sufficient data do not exist to make a defensible analysis of reasonable potential for storm water discharges.

Further, a review of EPA's administrative record supporting the adoption of the CTR criteria indicates that these criteria were not intended to apply to storm water discharges, and were not intended to be applied without consideration of dilution or as never-to-be-exceeded values. EPA clearly stated in the documentation supporting the development and use of CTR criteria that:

- CTR criteria are not intended to be applied to storm water discharges as numeric water quality based effluent limits "which would be equivalent to criteria values and applied as effluent limits never to be exceeded, or calculated in the same manner that effluent limits are calculated for other point sources, such as POTWs."[1]

- "EPA believes that the final rule will not have a direct effect on sources not permitted under the NPDES program (e.g., nonpoint sources) or NPDES sources not typically subject to numeric water quality-based effluent limits (e.g., wet weather discharges)."[2]

- "EPA believes that the final CTR will not significantly affect the current storm water program being implemented by the State, which includes the requirement to develop best management practices to control pollutants in storm water discharges."[3]

- Water quality-based permitting and compliance should consider dilution.[4]

---

[1] See *California Toxics Rule Response to Comments Report, Volume II*, December 1999 (prepared by USEPA Office of Science and Technology and USEPA Region 9). Response to Comment CTR-001-007, p. 1248: "The commenter appears to assume that the storm water discharge would be subject to numeric water quality based effluent limits which would be equivalent to the criteria values and applied as effluent limits never to be exceeded, or calculated in the same manner that effluent limits are calculated for other point sources, such as POTWs. The commenter then appears to assume that such WQBELs would then require the construction of very costly end-of-pipe controls. EPA contends that neither scenario is valid with regards to developing WQBELs for storm water discharges or establishing compliance with WQBELs. EPA acknowledges that wet weather discharges are technically difficult to model and evaluate financially, because they are intermittent and highly variable. Wet weather discharges also occur under more diverse hydrologic or climatic conditions than continuous discharges from industrial or municipal facilities, which are evaluated under critical low flow or drought conditions. If the EPA had enough data to completely characterize all the conditions and do the necessary modelling, WQBELs would be developed using dynamic models to account for the intermittent loadings and exposures from the storm water discharges. In the absence of this data, EPA will continue to advocate the use of BMPs, as discussed in the CTR preamble… EPA will continue to work with the State to implement storm water permits that comply with water quality standards with an emphasis on pollution prevention and best management practices rather than costly end-of-pipe controls."

See also Response to Comment CTR-040-014b, at p. 1284: "EPA believes the applicability of water quality standards to storm water discharges is outside the scope of the rule."

[2] Ibid., Response to Comment CTR-034-014e, at p. 1268.

[3] Ibid., Response to Comment CTR-035-044c, at p. 1271.

[4] Ibid., Response to Comment CTR-040-004, at p. 1280: "The primary scenario described in the report [providing comments on proposed CTR objectives] (i.e., comparing projected worse case [sic] discharge concentrations directly to

- Storage and treatment of storm water were not anticipated to be necessary to comply with CTR criteria.[5]

- There is insufficient information to develop effluent limits for storm water discharges.[6]

Further, both the preamble to the CTR and the documentation accompanying the CTR demonstrate EPA's intent to allow periodic exceedances of CTR criteria. For example, EPA selected a return frequency of once in three years, establishing that periodic exceedances of CTR criteria are acceptable,[7] and that the concept of periodic exceedances should extend to storm flows.[8] The National Research Council, in a report to Congress in July 2001, also supported these concepts, recommending that water quality criteria be developed to include magnitude, frequency, and duration components. The NRC further recommended that the frequency component be defined in terms of a number of allowed excursions in a specified time period and not as never-to-be-exceeded limits.[9]

In summary, there is little or no support for applying CTR criteria directly to storm water discharges in the context of a TMDL. Application of those criteria as never-to-be-exceeded end-of-pipe limitations, especially without consideration of receiving water dilution, was clearly never contemplated. However, this is just what both the Los Angeles River and Ballona Creek and Estuary Metals TMDLs do. The Los Angeles River TMDL applies CTR concentration-based limits to all NPDES permit-holders except the POTW dischargers (see MODELING ASSESSMENT

---

chronic aquatic life and human health criteria with no allowance for dilution) is highly conservative in comparison with the water quality-based permitting and compliance procedures that would be implemented by EPA."

[5] Ibid., Response to Comment CTRH-001-001b, at p. 1309: "EPA disagrees with the cost estimates provided by the commenter as EPA does not believe that storage and treatment of stormwater would be required to ensure compliance with the CTR."

[6] Ibid., Response to Comment CTR-069-002a: "…evaluating agricultural nonpoint sources discharges and storm water discharges and their effects on the environment is highly site-specific and data intensive. Until this information is available, it is premature to project that the sources would incur any costs beyond those for which they are already responsible under the current regulations of the Clean Water Act."

[7] Ibid., Response to Comment CTR-020-016: "EPA's aquatic life criteria are based on three interrelated components which include magnitude, duration, and frequency. EPA's longstanding position is that the criteria may not be exceeded more than once every three years on average."

[8] Ibid., Response to Comment CTR-096-001b: "EPA agrees that its numerical exceedance frequency and design flow specifications are based on dry-weather conditions. Nevertheless, the rule provides for alternative development of averaging periods and exceedance frequencies, thereby allowing the extension of their applicability to wet-weather conditions."

[9] National Research Council, *Assessing the TMDL Approach to Water Quality Management*, National Academy Press, Washington, D.C., 2001, at p. 50.

section). Moreover, the mass-based load allocations prescribed for the Wardlow gaging station (Los Angeles River Staff Report Figures 11a-d) are based on CTR criteria and, as the x-axes of these plots demonstrate, explicitly apply to storm flows. Similar points could be made regarding the Ballona Creek and Estuary Metals TMDL. Clearly, these TMDLs apply CTR criteria to stormwater, contrary to CTR guidance.

INAPPROPRIATE IMPAIRMENT DESIGNATIONS

TMDLs Developed for Unimpaired Reaches

The proposed TMDLs for both the Los Angeles River and Ballona Creek watersheds specify metals waste load allocations for reaches that are not on the 303(d) list. For example, Table 31 (p. 57) of the TMDL specifies cadmium, copper, lead, and zinc waste load allocations for reaches 3, 5, and 6 of the Los Angeles River. However, as Table 1 (p. 7) of the TMDL makes clear, none of these reaches are listed as impaired. Thus, the Regional Board, if it adopts the proposed TMDL without change, would overreach its authority in establishing waste load allocations.[10] The TMDL specifies allocations for other constituents and other reaches that are not listed. These are summarized in Tables 1 and 2 for the Los Angeles River and Ballona Creek respectively.

Table 1 – L.A. River reaches and constituents for which the metals TMDL <u>improperly</u> develops waste load allocations.

River Reach	Copper	Cadmium	Lead	Zinc
Los Angeles River Reach 3	X	X	X	X
Los Angeles River Reach 4 (Sepulveda dam to Riverside St.)	X	X		X
Los Angeles River Reach 5	X	X	X	X
Los Angeles River Reach 6	X	X	X	X
Tujunga Wash (Hansen Dam to Los Angeles River)		X	X	X
Burbank Western Channel	X		X	X
Los Angeles River Reach 2 (Figueroa St. to Carson St.)	X	X		X
Rio Hondo (Santa Ana Fwy. To Los Angeles River)		X		
Compton Creek		X		X
Bell Creek	X	X	X	X

[10] We note that a recent court decision supports this conclusion. See Statement of Decision and Judgment in the Cities of Arcadia et al. v. State Water Resources Control Board, Case No. GIC 803631, at p. 9: "Petitioners correctly argue only impaired water bodies listed on the state's 303(d) list are subject to the TMDL process…The Court is unpersuaded by Respondent's contention that the Estuary should have been listed on the 303(d) list, and finds Respondents abused their discretion when they included the Los Angeles Estuary in the trash TMDL."

Verdugo Wash	X	X	X	X
Arroyo Seco	X	X	X	X

Source: Tables 1 and 31, Los Angeles River Watershed Metals TMDL (RWQCB, 2004).

Table 2 – Ballona Creek watershed water bodies and constituents for which the metals TMDL improperly develops waste load allocations.

Dry Weather						
Water Body	**Cadmium**	**Copper**	**Lead**	**Selenium**	**Silver**	**Zinc**
Ballona Creek	X				X	
Sepulveda Canyon Channel	X	X		X	X	X
Centinela Channel	X	X	X	X	X	X
Ballona Creek Estuary	X			X	X	
Wet Weather						
Water Body	**Cadmium**	**Copper**	**Lead**	**Selenium**	**Silver**	**Zinc**
Ballona Creek					X	
Sepulveda Canyon Channel	X	X		X	X	X
Centinela Channel	X	X	X	X	X	X

Source: Tables 1-1, 2-10, 6-1, and Figures C-1 through C-18, Ballona Creek and Estuary Metals TMDL (RWQCB, 2004).

Impairment Unsupported in Some Reaches

In some cases, the proposed TMDLs for the Los Angeles River and Ballona Creek watersheds develop allocations for reaches listed as impaired even though available data are inadequate to support such a listing. For example, in the Los Angeles River watershed the Burbank Western Channel is on the 303(d) list for cadmium (Los Angeles River TMDL Staff Report, p. 7). However, the data cited in support this listing indicate that of 96 samples taken in this reach, only one sample exceeded the CTR chronic dissolved criterion for cadmium (Ibid., p. 21). Since the City of Burbank samples the Burbank Western Channel only quarterly, this means that only one excursion from the CTR criterion was evident in 24 years of sampling. As the CTR rule itself notes, a metals concentration is considered to violate the chronic or acute metals criterion only if concentrations exceed the criterion more than once every three years on average. By this standard, the single exceedance in the sample collected in the Burbank Western Channel by the City of Burbank does not violate CTR regulations. The original basis for placing this reach on the 303(d) list is unclear, but available data clearly indicate that this reach is not impaired for cadmium.

The Staff Report's citation of data from the City of Los Angeles' Watershed Monitoring Program (WMP) (p. 23) is irrelevant since hardness was not sampled as part of the WMP, thereby precluding comparison with hardness-based CTR criteria. That the data are irrelevant is seems further supported by the fact that the WMP sampling returned a maximum cadmium concentration of 1.45 μg/L, and the lowest CTR chronic criterion calculated based on City of Burbank data was 3.4 μg/L. Even if hardness had been collected as part of the WMP, it appears unlikely that WMP cadmium measurements would have exceeded the CTR chronic criterion.

Moreover, the Staff Report notes that the data used to assess impairment in the Burbank Western Channel were expressed in terms of total concentrations, while the CTR criterion used for comparison is expressed in terms of dissolved concentration (p. 21). Since total metals concentrations are higher than dissolved metals concentrations, this suggests that the single measurement used to list the Burbank Western Channel as impaired for cadmium may not even truly exceed the CTR chronic criterion.

Furthermore, the CTR a chronic criterion is understood as a 4-day average concentration, not an instantaneous concentration. Therefore, it is inappropriate to use grab sample data to establish an exceedance of the CTR chronic criterion. While grab samples are proper for establishing an exceedance of the CTR *acute* criterion, there were in fact no exceedances of the acute criterion in any of the Burbank Western channel samples (Staff Report, p. 22).

Similar inappropriate impairment listings are evident in the Ballona Creek and Estuary Metals TMDL. For example, Ballona Creek is listed as impaired for cadmium under wet weather conditions (Ballona Staff Report, Table 2-10) when only one chronic exceedance and one acute exceedance out of 55 samples over seven years supports this listing (Ballona Staff Report, Table 2-9). As noted above, the CTR states that a metals concentration is considered to violate the chronic or acute metals criterion only if concentrations exceed the criterion more than once every three years on average. Similarly, Ballona Creek is listed as impaired for silver under dry weather conditions (Ballona Staff Report, Table 2-10) when only one acute exceedance out of 48 samples over two years supports this listing. This listing is not merited according to CTR.

Ballona Creek is also improperly listed as impaired for selenium (Ballona Staff Report, Table 1-1 and 2-10). This listing is supported by only two chronic exceedances out of 55 samples over seven years. While the TMDL rightly acknowledges that the wet-weather exceedance rate for selenium is complicated by the fact that detection limits for water quality samples were greater than the water quality criteria themselves (Ballona Staff Report, p. 14), this added complication and the uncertainty that it introduces do not warrant listing Ballona Creek for selenium. Moreover, the main reason that the Ballona Staff Report cites for this wet weather listing of selenium—namely, continuity with the 2002 303(d) list—provides no better justification for a continued listing. The fact remains that the 2002 303(d) listing was erroneously made based only on two explicit chronic exceedances over a seven year sampling period. By CTR standards, this is simply not enough evidence for listing.

Moreover, it is worth noting that Sepulveda Canyon Channel is inappropriately listed in the Ballona TMDL as impaired for lead under dry weather conditions (see Ballona Staff Report Table 1-1 and p. 30; however, note that Table 2-10 does <u>not</u> list this water body as impaired for lead). This listing is inappropriate because the only water quality data cited in the Ballona Staff Report for Sepulveda Canyon Channel indicates zero exceedances of CTR standards during dry weather (Table 2-7). Nowhere in the report is this listing for lead supported by data. Finally, it is also worth noting that the most recent dry weather data collected by SCCWRP in 2003 suggests that neither Ballona Creek nor Sepulveda Canyon Channel demonstrated exceedances of CTR criteria for any metals (Tables 2-

6 and 2-7).

Consistent with the NRC's recommendations to Congress,[11] 303(d) listings should be evaluated for appropriateness and consistency prior to TMDL development.

AERIAL DEPOSITION OF METALS

Aerial deposition from basin-wide sources likely constitutes a significant portion of the trace metals found in storm water runoff in the Los Angeles River watershed. A study completed by Stolzenbach et al. (2001) on trace metals loading to Santa Monica Bay from aerial deposition concluded that "the annual rate of atmospheric transport and deposition of trace metals to Santa Monica Bay, defined as the sum of direct and indirect (on the watershed) deposition, is significant relative to other inputs of metals to the Bay" (p. v). Given the proximity of the Santa Monica Bay watershed, aerial deposition is most certainly a significant source of trace metals loading in runoff from the Los Angeles River and Ballona Creek watersheds. It is inappropriate to require local storm water dischargers to assume responsibility for metals in storm water that originate from sources beyond their control.

A recent court case also supports this conclusion.[12] In this case, the court held that a stringent CTR-based water quality-based effluent limit (WQBEL) incorporated into a permit for a refinery located on the shore of Suisun Bay was "not appropriate" for the Refinery.[13] This permit limit was replaced with a less stringent performance-based limitation for two reasons: first, the determination that Suisun Bay was impaired required a region-wide cross-media assessment of the dioxin problem, which would result in a more balanced and more effective limitation for the Refinery.[14] Second, an investigation demonstrated that the Refinery was not the primary source of dioxins in Suisun Bay; rather, the dioxins entered the water by atmospheric deposition from sources such as motor vehicle exhaust and wood burning, sources beyond the discharger's control.[15]

---

[11] National Research Council, *Assessing the TMDL Approach to Water Quality Management* (Washington, D.C.: National Academy Press, 2001).

[12] *Communities for a Better Env't v. State Water Res. Control Bd.*, 109 Cal. App. 4th 1089 (1st Dist. 2003).

[13] *Id.* at 1101.

[14] *Id.* (quotation marks omitted).

[15] *Id.* at 1101 (emphasis added): [T]he Refinery has reduced the dioxins…in its discharge by 85 percent since CDO adoption. Despite this, the Refinery cannot comply with the numeric WQBEL. The root cause of the violations are not within the Refinery's control, and the next step of treatment will be overly burdensome and not cost effective relative to the benefits. The Refinery provided data in 1997 that supports its contention that the violations are caused by ambient air deposition of dioxins….Much of this is beyond the Refinery's control….The Refinery has estimated that $ 10 million may be necessary to implement the next step of reduction. The Refinery's mass contribution is minor compared to other storm water inputs into the Bay.

Thus, there is valuable precedent for Regional Boards to consider the fact that storm water dischargers do not have control over many sources of metals in storm water, including ambient air deposition. As a result, the root cause of certain CTR compliance violations may not be within the dischargers' control.

METALS AND NATURAL AREAS

The TMDL makes the assumption that loads from non-urban areas in the watershed—such as Angeles National Forest and open areas of the Santa Monica Mountains—would be insignificant under both dry weather and wet weather conditions (Staff Report, p. 58, 61). However, no data are used to support this assumption, and data from other sources suggest that this assumption may be invalid.

The Stolzenbach et al. (2001) study on trace metals loading to Santa Monica Bay from aerial deposition concluded that peak aerial deposition rates for metals in the Los Angeles Basin occurred just south of the San Gabriel and San Bernardino mountain ranges in Los Angeles and San Bernardino counties. If peak metals deposition rates occur at the foot of the San Gabriel Mountains, areas just to the north—in the mountains themselves—are likely also subject to relatively high rates of aerial metals deposition. Significant portions of the San Gabriel Mountains are part of the Los Angeles River watershed (e.g., the upper portion of the Arroyo Seco watershed). Thus, if aerial deposition on the Santa Monica Bay watershed is a significant source of trace metals in runoff to the Santa Monica Bay—as Stolzenbach et al. concluded—then aerial deposition in the Los Angeles River watershed, where metals deposition rates are higher than in the Santa Monica Bay watershed, including its natural areas, must also be a significant source of trace metals in storm water runoff. The same is true of the Ballona Creek watershed, though natural and open space areas constitute a far smaller proportion of the Ballona Creek watershed than they do in the Los Angeles River watershed.

In addition, native soils in natural areas of the Los Angeles River Watershed contain significant quantities of copper, lead, and zinc. Given that large quantities of these soils can be mobilized in large storm events, the natural areas may contribute a significant quantity of metals to storm water simply through natural sediment transport processes. A basic analysis of the metals concentrations that would result from the transport of soils from natural areas in the watershed under typical storm flow conditions confirms this. This analysis was based on a study of trace element concentrations in typical soils in southern California (Bradford et al., 1996) and is summarized in Table 2. Results suggest that metals from soils originating in natural areas of the watershed could account for between 3.9% and 14.8% of the CTR concentration-based waste load allocation for reach 1 of the Los Angeles River under typical storm flow conditions. This is not an insignificant proportion and should be accounted for in the TMDL waste load allocations.

Table 3 – Contribution of Natural Soils to Metals Concentrations in the Los Angeles River Under Typical Storm Flow Conditions.

Metal Element	Range of Natural Soil Concentration (mg metal/ kg soil)[1]	Stormwater Concentration, Assuming TSS = 100 mg/L[2] (μg/L)	Concentration-based Waste Load Allocation (WLA) for Los Angeles River, Reach 1 (μg/L)[3]	Percent of WLA Accounted for by Natural Soil Sediments
Copper	13.3 – 14.8	1.3 – 1.5	23	5.8 – 6.4 %
Lead	13.2 – 14.2	1.3 – 1.4	9.6	13.8 – 14.8 %
Zinc	92 – 170	9.2 – 17.0	233	3.9 – 7.3 %

[1] Natural soil concentrations from Bradford et al., 1996, Table 2. Lower end of range is for "Cajon fs" soil (San Bernadino County); upper end of range is for "Coachella fs" soil (Riverside County). Although soils from L.A. County were unavailable in this study, the soils selected for this analysis are the closest available and are similar to those in to the Los Angeles River watershed.
[2] 100 mg/L is a represents a typical TSS concentration at the Wardlow gage during storm flow (see TMDL Appendix C, Figures C-9 and C-10).
[3] Waste load allocations from Table 32 of the TMDL Staff Report (p. 58).

Moreover, natural soils may contribute even higher metals loads under post-fire conditions. Although little research has been conducted on the effects of wild fires on runoff water quality in Southern California, one study that compared stream sediment and water geochemistry before and after fires in undeveloped drainages in Central Idaho suggests that stream sediments discharging from recently burned areas have higher than normal levels of copper, lead, zinc, and several other constituents (Eppinger et al., 2000). Assuming this phenomenon also occurs in Southern California, where wildfires are relatively frequent in natural areas, would be an even more significant source of metals in storm water after a wildland fire.

Finally, it is instructive to note that Monrovia Canyon Creek is listed as impaired for lead in the TMDL Staff Report (p. 7). The fact that the Monrovia Canyon Creek sub-watershed is dominated by natural and open land use suggests that natural areas may in fact make significant contributions to metals concentrations in storm water.

Thus, the assumption in the Staff Report that runoff from natural areas has insignificant metals concentrations, which is unsupported by any data, is likely false.

APPLICATION TO CONSTRUCTION SITES

Through the application of the waste load allocations, the proposed TMDLs for both the Los Angeles River and Ballona Creek watersheds appear to require numeric effluent limits for storm water runoff from construction sites, at least for construction sites with new and reissued permits. There is little evidence that construction sites have reasonable potential to contribute to exceedances of water quality standards, and applying the WLAs to construction storm water runoff is contrary to the Clean Water Act and administrative and judicial precedent.

The application of WLAs to construction storm water runoff is inconsistent with previous determinations by the State Water Resources Control Board that it is infeasible to impose numeric

effluent limits on construction runoff.[16] The Staff Reports for the proposed TMDLs offer no evidence that it is now feasible or possible to impose numeric effluent limitations on construction storm water runoff. Needless to say, numeric effluent limitations are not required when they are infeasible, even when the receiving water body is impaired and a TMDL has been established.[17]

Moreover, there is no evidence construction storm water runoff has a "reasonable potential" to cause an excursion of water quality standards for metals in the Los Angeles River or Ballona Creek. In fact, the only evidence we are aware of suggests that construction storm water runoff *does not* contain problematic levels of metals.[18] The Staff Report provides no basis for assuming a reasonable potential for construction site pollutants to cause or contribute to an excursion of a water quality standard for metals, and NPDES permits (including permits for storm water runoff) for sources that do not have a reasonable potential to cause or contribute to an excursion of a State water quality standard should not be subject to numeric effluent limits.[19]

Because it would be infeasible to apply WLAs to construction storm water runoff and because there is no evidence that construction storm water runoff has a reasonable potential to cause an excursion of the metals water quality standards in the Los Angeles River or Ballona Creek, the numeric WLAs should not apply to permits for construction storm water runoff.

COMPLIANCE MEASURES

BMPs

In a 19 August 2004 workshop, Regional Board and USEPA staff stated that to achieve compliance with the Los Angeles River and Ballona Creek metals TMDLs, storm water dischargers will not be required to design, install and operate high-cost treatment measures such as reverse osmosis (RO) or

---

[16] *See, e.g.*, Ruling on Submitted Matter, San Francisco BayKeeper v. California State Water Resources Control Board, p. 6 (Jul. 27, 2000) ("the Board reasonably determined that numeric limitations [for the General Construction Permit] were not feasible and that narrative effluent limitations in the form of BMPs would be used instead.").

[17] *Communities for a Better Environment v. State Water Resources Control Board* (2003) 109 Cal. App. 4th 1089, 1106.

[18] *See, e.g.*, Fact Sheet for Water Quality Order 99-08-DQW, State Water Resources Control Board ("USEPA also conducted an extensive evaluation of the literature to identify pollutants present in storm water discharges from construction sites. They found that while the literature contains extensive information on pollutants present in storm water discharges from urban areas, there were little data available on pollutants present in storm water discharges from construction sites during the active construction phase, other than for sediment, TSS and turbidity. USEPA was not able to identify sufficient data in the literature to warrant development of controls specific to pollutants other than sediment, TSS and turbidity in storm water discharges from construction sites. Some literature suggests that pollutants adhere to sediment, so that regulating TSS should also act as a control for other pollutants.").

[19] 40 C.F.R. § 122.44(d).

precipitation systems. Furthermore, Regional Board staff expressed at the workshop the expectation that lower cost non-structural and structural BMPs—such as improved street sweeping, infiltration trenches, and sand filters—would enable dischargers to meet the TMDL requirements. Clearly, the Regional Board expects lower-cost, non-diversion and treatment BMPs to play a pivotal role in achieving TMDL requirements.

However, in the case of metals this expectation may overreach the actual capabilities of low-cost BMPs. Typical BMPs such as detention basins are not able to remove a significant proportion of dissolved metals from storm water. Most BMPs rely on physical settling to remove metals. For particulate metals or metals bound to sediment, settling may achieve substantial removal. However, dissolved metals are unaffected by physical settling and therefore largely remain in storm water, even after BMP treatment.

For example, according to BMP effectiveness data compiled by the American Society of Civil Engineers, the BMPs that are most effective at removing dissolved metals are retention basins, treatment wetlands, or biofilters (up to 44% of dissolved copper, 66% of dissolved lead, and 69% of dissolved zinc). However, treatment wetlands and biofilters are clearly inappropriate for the conditions that characterize Southern California storm water: plant species that provide crucial metals uptake in retention basins, treatment wetlands, and biofilters would not survive in the arid environment where stormwater inflows are intermittent. Moreover, it is impractical to design retention basins, treatment wetlands, or biofilters large enough to treat the enormous volumes of stormwater produced by a significant Southland storm.

More practical BMPs for Southern California—such as infiltration trenches, and sand filters—are only capable of 11% removal of dissolved copper, 21% removal of dissolved zinc, and 50% removal of dissolved lead. Therefore, if these BMPs alone were implemented, significant quantities of dissolved metals would remain in storm water before discharge to regulated receiving waters. This is especially true during large storms when BMPs would be able to filter only a small portion of the total storm water in the watershed. This issue is particularly pertinent since dissolved metal—not particulate metal—is the fraction that contributes to toxicity in receiving waters.

These limitations suggest that the installation of these types of BMPs alone, or even with the use of nonstructural BMPs, may not be adequate to achieve the requirements of the TMDL. If this becomes the case, the TMDL Staff Report states that "additional controls may be imposed" (p. 68). Moreover, the Staff Report refers directly to the possibility that diversion and treatment of storm water may be required (p. 66-67), though it characterizes potential treatment facilities as "small" without any justification for such characterization.

Monitoring

Regional Board staff stated in the 19 August 2004 workshop that the only official compliance point in the Los Angeles River watershed is the Wardlow station, and that other locations throughout the watershed would be regarded as "effectiveness monitoring stations" However, a review of the

proposed Basin Plan amendment appears to directly contradict this assertion:"[I]nitially, there will be a single compliance assessment point for stormwater at the Wardlow gage station. However, the co-permittess [sic] shall increase the number of *compliance monitoring locations* to demonstrate compliance with the phased implementation schedule for this TMDL…" (Attachment A to Resolution No. 2004-XXX, p. 8) (emphasis added). It appears, thus, that the co-permittees under the various MS4 permits will be required to establish additional compliance monitoring locations in addition to the Wardlow station.

However, the proposed Basin Plan amendment's requirement for additional compliance monitoring remains unspecified, as does the mode of determining whether a flow (or a particular discharger) is in or out of compliance with the TMDL. Leaving the determination of compliance up to the dischargers and failing to specify monitoring requirements potentially would create the need for very extensive monitoring.

For example, individual sites may be forced to collect composite or flow-weighted samples to determine compliance with CTR concentration-based "load allocations" in the form of EMCs. As noted previously, unlike continuous point source discharges (e.g., POTWs), storm water discharges are variable in intensity and duration. Therefore, multiple water quality and flow measurements over many hours would be required to determine the compliance or non-compliance of a storm water discharge with an EMC criterion. In the case of most storm water discharges, this kind of intensive monitoring program is not currently in effect and would be *very* expensive to implement given the high costs of both labor and equipment. Such costs are not considered in the economic evaluation of the TMDL.

MODELING ASSESSMENT

A review of the proposed Los Angeles River Watershed metals TMDL appears to indicate that the modeling was generally conducted according to sound engineering principles. However, very few data are available for the calibration and validation of modeling such as that conducted in support of the TMDL, and it was necessary for the modelers to make several major assumptions. Notably, the modeling makes gross assumptions that fail to capture the spatial and temporal variability that occurs in such a large, complex watershed as the Los Angeles River watershed. As a result, many of the calibrations and validations are poor, and, although the modeling represents a commendable effort, the model results fail to depict the variability that occurs within the watershed. Importantly, even though appropriate methodology was generally followed in performing the modeling, the modeling as presented in the TMDL Staff Report does not appear to be sufficient or appropriate for supporting the implementation actions proposed by the TMDL. Indeed, the modeling was not relied upon in any substantive way in determining the load or waste load allocations developed by the TMDL. The discussion that follows probes some of the assumptions and points out shortcomings of both the dry weather and wet weather modeling, and its application in the TMDL.

Dry Weather Model

The dry weather modeling employed two distinct models. The first, the one-dimensional version of the hydrodynamic model Environmental Fluid Dynamics Code (EFDC) was used to simulate water flow through the system. This model was linked to the second model, the Water Quality Analysis Simulation Model (WASP), which simulated metals concentrations throughout the watershed. The EFDC model was calibrated using a dataset collected on September 10 and 11, 2000 and validated using a dataset collected on July 29 and 30, 2001. The WASP model was neither calibrated nor validated for application to the Los Angeles River watershed; instead, model results were compared to measured results without adjustment of model parameters.

The dry weather modeling conducted in support of the Los Angeles River metals TMDL contains a flow calibration that appears to be inadequate. According to Figure 5 in the Staff Report (p. 90), the dry weather model best matched the maximum flow rates (not the median or average flow rates) recorded at three out of the four stream gages along the main stem of the Los Angeles River. Data from the fourth gage have such a small range that even though the model simulates the low end of the flow range at this gage, it is also quite close to the highest observed value. Moreover, the calibrated flows are significantly higher than the long-term median flows presented in the TMDL for the Tujunga, Firestone, and Wardlow gages (78 cfs, 124 cfs, and 145 cfs respectively). Either rational criteria for choosing to calibrate to the high end of the flow range should be presented, or it should be acknowledged that one weakness of the model is that it represents not average or median but high dry weather flow conditions. This is significant, since calibration to higher flows will tend to produce modeling results that over-estimate the total pollutant loads in the river.

Second, the water quality comparison of the dry weather model is also inadequate, as illustrated in Figure 6 of the Staff Report (p. 91). While the comparison of modeled and 'measured' data for cadmium and lead appear reasonable, there are very few data points available for cadmium and lead, and these plots compare model results to one-half the detection limit for these metals (i.e., the model results are 'compared' to concentrations of these elements despite a lack of measured data for all but one value). The model is not able to reproduce dry weather concentrations of copper or zinc with any precision. Moreover, in Figure 6, both copper and zinc are presented on graphs with y-axes that are longer than necessary, leaving the impression that observed data are clustered closer to the model results than is actually the case. If the y-axes for these plots covered only the range of values in the plots (e.g., 30 g/L for copper and 150 g/L for zinc), the calibration fit would look considerably worse than it does in the existing figures. Very similar comments can be made regarding the validation of the dry weather model (p. 92).

Finally, the Staff Report misstates the model calibration and validation results. . The Staff Report states that "Figure 5 presents comparisons of the measured versus simulated flows at…four stations located along the mainstem of the Los Angeles River for September 11, 2000 and July 29, 2001" (p. 42). Also, Figure 5 is labeled as "Validation of dry-weather hydrography." However, as demonstrated by the identical figure in Appendix I (Figure 3-12), the TMDL report Figure 5 in fact only presents *calibration* data for September 11, 2000, not validation data for July 29, 2001. The

TMDL report actually does not present the dry weather model validation data, though it is presented in Appendix I (Figure 3-14). This figure demonstrates significantly poorer agreement between measured and modeled flows, with most model predictions falling outside the range of measured flow data.

Wet Weather Model

Wet weather modeling was conducted using USEPA's Loading Simulation Program C++ (LSPC) to represent both hydrology and water quality within the Los Angeles River watershed. This model divides the watershed into a number of sub-watersheds and incorporates meteorological data, land use data, and information describing soils and individual reach characteristics. Where possible, this model estimates of input parameters from the Los Angeles River watershed (e.g., land use characteristics, reach geometry, soil type, meteorological data). Other parameters were derived from modeling conducted in the smaller Ballona Creek watershed (e.g., water quality parameters).

One significant concern with the wet weather modeling is that comparisons between modeled results and observed data were often made on the basis of timescales that do not allow a realistic assessment of the dynamic, arid, urban Los Angeles River watershed. Although the Staff Report states (p. 50) that the hydrographic calibration plots (e.g., Figure 9a) display "modeled and observed *daily* flows" (emphasis added), the caption for Figure 9a indicates that the figure compares *monthly* flows. A comparison of monthly wet weather flows is inadequate for such a dynamic watershed as that of the L.A. River, where response times for the watershed are on the order of days and more often hours and minutes.[20] Comparing monthly flow values drastically reduces peak flow rates for most storm events, making it impossible to determine whether or not the model is adequately simulating the actual hydrologic regime of the watershed. Also, as noted below, evaluation of TMDL compliance and water quality concentrations will likely be on significantly shorter timescales.

The most fundamental problem with the wet weather calibration is that the model does not adequately reproduce empirical data describing watershed hydrology and water quality. The TMDL statement that "during model calibration the model predicted storm volumes and storm peaks well" (p. 51), is misleading. In some cases the model did seem to reproduce *annual* flow volumes[21] and

[20] A recent draft report by SCCWRP ("Wet Weather Model Development for Trace Metal Loading in an Arid Urbanized Watershed: Ballona Creek, California," April 30, 2004) states, "In order to capture the dynamic processes of arid urban environments, simulations should be conducted on time scales of minutes. Understanding within storm processes is especially important if the resulting model is to be used for predicting the effectiveness of stormwater controls." Certainly the Los Angeles River watershed is an arid, urban environment and thus should be modeled on short timescales.

[21] For example, modeled and measured annual flow volumes are in reasonable agreement for Rio Hondo above Stuart and Gray Road, Table B-1; Burbank Western Storm Drain at Riverside Drive, Table B-3; L.A. River above Arroyo Seco, Table B-6; L.A. River below Firestone Boulevard, Table B-7.

average *monthly* flow rates[22] reasonably well. However, in multiple cases the model did a poor job at reproducing monthly flow rates and annual flow volumes[23]. Moreover, in most cases the model did a poor job of reproducing the observed average *daily* flow rate record for the selected gages[24].

The inadequacies of the calibration are perhaps most evident not on the time scale of the entire hydrologic record at each gage (as displayed in Appendix B), but on the time scale of individual storm events. For the storm events used in calibration—which occurred on the timescale of hours and days rather than months or years—the model was unable to adequately reproduce observed data. Almost every figure in Appendix C exemplifies this point. Figures C-1 through C-10 compare both observed data and model results—hydrology and water quality—for several storm events at several locations in the watershed. In all of the figures either the timing or the magnitude of the observed primary hydrograph peaks were inadequately reproduced by the model, and in most cases both the timing and the magnitude of the hydrograph peaks are off.

The water quality calibration displayed in the figures contained in Appendix C is even poorer than the hydrologic calibration. For none of the events and for none of the constituents modeled was the model able to reproduce observed data with any precision. It is telling that there is no quantitative evaluation of the fit between modeled and observed storm event data analogous to the more quantitative evaluation in Appendix B: such an analysis would likely further reveal the shortcomings of the water quality modeling.

In addition, the comparison of modeled and observed event mean concentrations (EMCs) in Figures C-11 through C-14 is misleading. At first glance these plots suggest that the calibration is somewhat reasonable for EMCs. However, the y-axis of these plots has a logarithmic scale that spans five orders of magnitude, making the model results look closer to measured values than they really are. In some cases, model results appear to be within 25% of observed data, but in fact they are over an order of magnitude different due to the logarithmic scaling. For example, Figures 1 and 2 on the following page show TMDL Figure C-14 plotted on logarithmic scales (as in the Staff Report) and on arithmetic scales for comparison. Logarithmic plots look slightly different from Staff Report Figure C-14 since the exact data used to produce these plots were unavailable. Flow Science used best estimates of these data based on actual model output files and 2001 LACDPW storm water quality data for the Wardlow gage. Figures C-11 through C-14, and all figures in Appendix D (D-1 through D-27), should be revised to include an arithmetic y-axis scale. It is also worth noting that

[22] For example, monthly flow rates are reasonably represented by the model at L.A. River at Tujunga Avenue, Figure B-8; Burbank Western Storm Drain at Riverside Drive, Figure B-12; L.A. River above Arroyo Seco, Figure B-24; L.A. River below Firestone Boulevard, Figure B-28; L.A. River below Wardlow River Road, Figure B-32.

[23] See, e.g., Rio Hondo above Stuart and Gray Road, Figure B-4; L.A. River at Tujunga Wash, Table B-2; Compton Creek near Greenleaf Drive, Figure B-16, Table B-4; Verdugo Wash at Estelle Avenue, Figure B-20, Table B-5.

[24] See, e.g., Rio Hondo above Stuart and Gray Road, Figure B-1; Burbank Western Storm Drain at Riverside Drive, Figure B-9; Compton Creek near Greenleaf Drive, Figure B-13; Verdugo Wash at Estelle Avenue, Figure B-17; L.A. River below Wardlow River Road, Figure B-29.

Staff Report Appendix Figure C-14 includes one storm event that is based on questionable data. The wet weather Appendix notes that data collected at Wardlow for the 10 February 2001 storm event are likely erroneous (Wet Weather Model Appendix, p. 21). Thus, wet weather water quality model results were compared to observed conditions for only one legitimate event at the Wardlow gage. This hardly seems an adequate basis on which to assess model performance.

One reason the modeled water quality results differ from measurements may be the use of the "potency factors." Regional potency factors for the Southern California area were developed previously by SCCWRP and were recently applied to the Ballona Creek watershed and used in the Los Angeles River watershed TMDL.[25] These potency factors were derived from correlations between suspended sediment and metals concentrations for Ballona Creek and the Los Angeles River. As assumed in the TMDL modeling, there is a clear relationship between TSS and metals concentrations. However, for a given TSS concentration, there is a large range in observed metals concentrations. For example, observed copper and zinc concentrations varied by at least an order of magnitude, and observed lead concentrations varied by approximately two orders of magnitude, for a given suspended solids concentration.[26] Use of a single potency factor for a given land use type precludes simulation of the variability in concentrations that certainly occurs and that may be dependent upon a variety of factors (e.g., time since last rainfall, rainfall intensity, etc.).

Further, the modeling used potency factors assuming that trace metals are "completely particulate-bound during washoff."[27] However, trace metals are conveyed from a site in both dissolved and particulate form, and the fraction that is dissolved has significant implications for toxicity and receiving water impacts. This distinction may become critically important in assessing compliance for individual industrial sites and individual construction sites, where a large fraction of metals in storm water runoff may be present in the particulate fraction, not in the more toxic dissolved fraction. Therefore, the use of potency factors may not be supported by a rigorous understanding of the

[25] Development of the potency factors is reported in Cross, J., K. Schiff and H. Schaefer, 1992. "Surface Runoff to the Southern California Bight." pp. 19-28 in: J. Cross (ed.), Southern California Coastal Water Research Project Annual Report 1989-1990. Long Beach, CA. Potency factors were updated with more current data and applied to the Ballona Creek watershed as reported in Ackerman, D., K. Schiff, E. Stein, 2004. "Draft: Wet Weather Model Development for Trace Metal Loading in an Arid Urbanized Watershed: Ballona Creek, California." Southern California Coastal Water Research Project. April 30.
[26] See Figure 2 at p. 17 of Ackerman, et al., 2004.
[27] Ackerman et al, at p. 8.

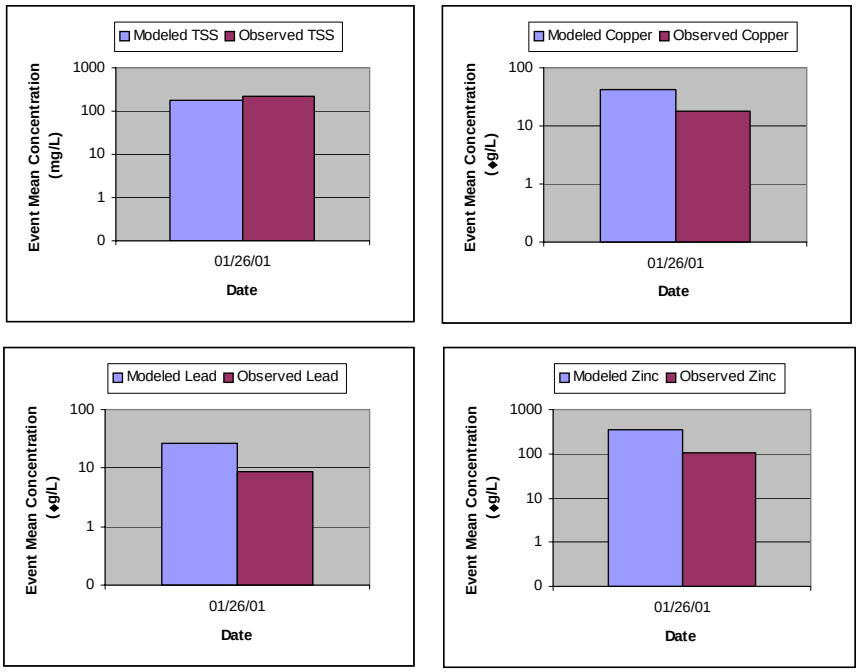


Figure 1 – Event Mean Concentrations on Logarithmic Scale

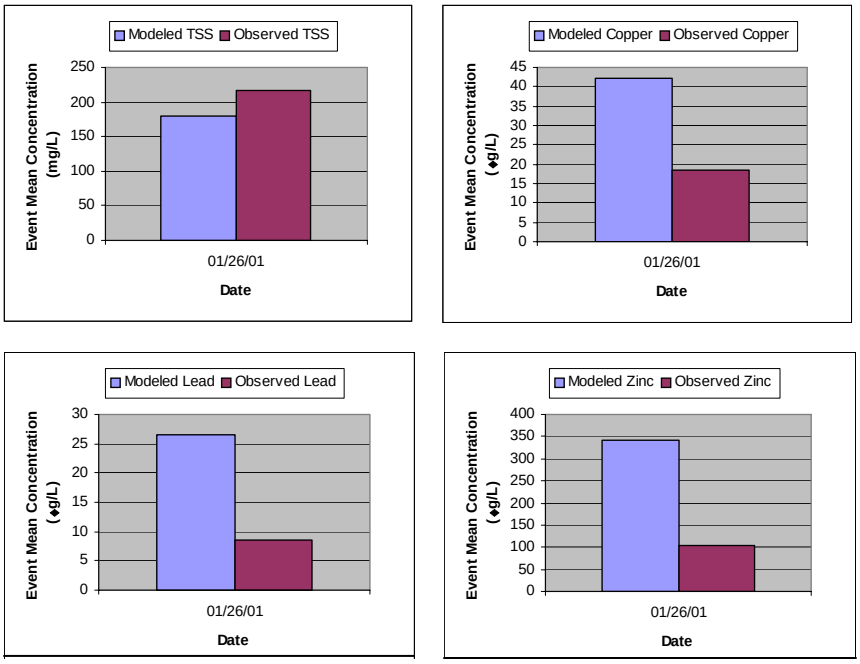


Figure 2 – Event Mean Concentrations on Arithmetic Scale

physical processes governing constituent transport in runoff, though they may yield appropriate model results given the linear relationship between sediment and metals.

Therefore, on the whole, while the wet weather model was formulated using sound methodology and the best available data, the model is not able to reproduce observed conditions with adequate precision or accuracy, particularly on timescales of days or hours, and particularly for smaller areas within the larger watershed. Therefore, the model appears to be inadequate for establishing fair and accurate waste load allocations. Moreover, unless vastly more data were available and utilized, it is unlikely that the inadequacies of the modeling can be addressed in a straightforward manner. In fact, it may be that attempting to quantify urban watershed processes that are so variable and uncertain with the kind of precision implied by a computer model is unrealistic and misguided. A less precise but still effective approach to water quality management in the watershed—such as establishing basic BMP strategies and working on manufacturing standards issues (e.g., eliminating copper in brake pads)—may be a preferable approach to managing metals concentrations in the watershed.

Model Application

It is crucial to understand how, if at all, the TMDL modeling was used to specify discharge requirements or load allocations for small dischargers in the upstream portion of the watershed, such as industrial sites. The short answer to this question seems to be that the modeling is in fact irrelevant to the TMDL requirements for small upstream dischargers. Mass-based dry weather allocations—for which the dry weather modeling should be applicable—were specified for select point dischargers (specifically the three POTWs, and a group mass-based allocation for L.A. County MS4, Long Beach MS4, and Cal Trans; p. 55). However, other dischargers—including industrial and construction sites—are simply required to meet CTR concentrations in their discharge during dry weather conditions (p. 57). The dry weather modeling conducted in support of the TMDL has no bearing on this requirement.

The only point in the watershed where the model was used to calculate specific wet weather water quality load requirements is at the Wardlow stream gage near the bottom of the watershed. Specific wet weather modeled load capacities have been developed only for the Wardlow gage location. At every other point or reach in the watershed, discharge requirements appear to be specified in terms of
CTR concentrations, with the exception that POTWs retain their dry weather mass-based allocations even during wet weather. The TMDL assumes that if all small dischargers simply meet CTR concentrations prior to discharge, the receiving water will comply with the CTR concentrations. In this way, CTR metals concentrations are the end-of-pipe requirements for small dischargers. The wet weather TMDL modeling has no bearing on this requirement.

In fact, it could even be argued that the modeling has no relevance to the downstream load capacity curves calculated for Wardlow. The load allocations at Wardlow are simply the modeled flow for a given storm event multiplied by the CTR concentration. In effect, these allocations mean that for any given storm event, the allowable metals load is that which would occur if the event mean concentration (EMC) were the CTR concentration. The TMDL could simply have specified that all events measured at the Wardlow gage must have an EMC that is no higher than the CTR concentration and staff could have forgone flow and water quality modeling altogether. Thus, the modeling is essentially irrelevant to the discharge requirements for small dischargers in the watershed. The TMDL simply imposes CTR concentration-based requirements on all but several select point sources in the watershed.

Ideally, modeling should provide a tool to evaluate which sub-watersheds are causing non-attainment of water quality objectives, and to develop proper and scientifically defensible allocations within the TMDL. Several reaches for which waste load and load allocations are specified are not included on the 303(d) list; available data for additional reaches that *are* included on the 303(d) list indicate that listing for these reaches is *not* warranted. (These assertions are fully detailed elsewhere.) If properly implemented and utilized by the Regional Board, both the dry and wet weather modeling could be used as tools to properly establish waste load and load allocations throughout the watershed, to identify the true sources of water quality impairment, and to establish allocations that are based on firm science and that are consistent with available data and known impairments.

REFERENCES

Bradford, G.R., A.C. Chang, A.L. Page, D. Bakhtar, J.A. Frampton, H. Wright, 1996. "Background Concentrations of Trace and Major Elements in California Soils" (Riverside, CA: UCR Printing), March. http://envisci.ucr.edu/faculty/acchang/kearney/Kearney_text.htm.

Eppinger, Robert (USGS), Paul Briggs (USGS), Betsy Rieffenberger (USFS), Carol Van Dorn (USFS), "Comparing Pre- and Post-Wildfire Stream Sediment and Water Geochemistry from Drainages Impacted by the Clear Creek and Wilderness Complex Wildfires of 2000," Poster presentation, Wildland Fire Workshop, Denver, CO, 2002. http://firescience.cr.usgs.gov/html/eppinger_abs02.html

Stolzenbach, Keith D. Rong Lu, Cheng Xiong, Sheldon Friedlander, Richard Turco, Ken Schiff, Liesl Tiefenthaler, 2001. "Measuring and Modeling of Atmospheric Deposition on Santa Monica Bay and the Santa Monica Bay Watershed," Final Report to the Santa Monica Bay Restoration Project, September. ftp://ftp.sccwrp.org/pub/download/PDFs/346_smb_atmospheric_deposition.pdf

City of Los Angeles Comments

COMMISSIONERS

VALERIE LYNNE SHAW
PRESIDENT

ELLEN STEIN
VICE PRESIDENT

RONALD LOW
CYNTHIA M. RUIZ
JANICE WOOD

JAMES K. HAHN
MAYOR

BUREAU OF SANITATION

RITA L. ROBINSON
DIRECTOR

JOSEPH E. MUNDINE
ENRIQUE C. ZALDIVAR
ASSISTANT DIRECTORS

433 SOUTH SPRING STREET
LOS ANGELES, CA 90013
TEL: (213) 473-7999
FAX: (213) 473-8100

August 25, 2004

Mr. Jonathan Bishop, Interim Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West Fourth Street, Suite 200
Los Angeles, California 90013

Alexis Strauss, Director
Water Division
U.S. EPA Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

COMMENTS ON THE DRAFT TOTAL MAXIMUM DAILY LOAD AND BASIN PLAN AMENDMENT FOR METALS IN THE LOS ANGELES RIVER

Dear Mr. Bishop and Ms. Strauss:

The City of Los Angeles (City) appreciates the opportunity to comment on the proposed Basin Plan revisions for the Total Maximum Daily Load (TMDL) for Metals in Los Angeles River. The City recognizes the importance of aquatic life, wildlife, and related beneficial uses in the river. The restoration and protection of these uses are very high priorities. As evidence of this, the City Council recently approved a bond measure for the November 2004 ballot, which will provide $500 million to address TMDLs in our watersheds. Furthermore, the City has taken the lead in pursuing the goals of our Integrated Resources Plan (IRP) and has initiated a Stakeholder-led process to oversee TMDL development and supporting studies.

Due to schedule constraints from the consent decree, the stakeholder-led process to support the development of information and studies leading to TMDL allocations was not possible for this particular Basin Plan Amendment. Nevertheless, the stakeholder-led process has now begun. Consistent with our commitment, we want assurances that the State Regional Water Quality Control Board (RWQCB) and U.S. Environmental Protection Agency (EPA) are also committed to utilizing the stakeholder-led process in an iterative approach of improving the allocations, the implementation plan and the critical knowledge of the water body. We are gratified by the

language on a phased approach to implementation (Table 7-13.1 Los Angeles River and Tributaries Metals TMDL: Elements) and we expect that this phased implementation will be coupled with language that will require reopeners of the allocations not only periodically, but affirmatively as new data are developed. As the lead stakeholder, the City is committed to working with you to produce data and analyses, including the effectiveness of BMPs , which will lead to modifications and improvements of this Basin Plan in order to achieve our mutual water quality objectives.

The City appreciated the opportunity to participate in stakeholder meetings held by the U.S. EPA and RWQCB to discuss the development of this TMDL. After review of the recently released draft TMDL, we have additional comments and concerns regarding the proposed allocations, implementation schedules and strategies, data gaps, and monitoring. These are presented in greater detail below.

1. **TMDL for unlisted waters and pollutants.** The Staff Report includes Table 1, which illustrates that none of the reaches are listed for all of the metals discussed in this TMDL. Only Reach 1 of the LAR is listed for five of the six metals discussed in the Staff Report. The Staff Report also contains an admission that there are no metals listings for Reach 3 and Reach 5, which are the two reaches of the river where the City of Los Angeles' POTWs discharge. (See Staff Report pgs. 11-12 and 86). Under the Clean Water Act, the State must establish a TMDL for waters identified on a State's 303(d) List. U.S.C. §1313(d)(1)(C). *A TMDL is not required where waters are not listed*.

   The State has no obligation or authority to perform a TMDL for waters not included on the State's 303(d) List. In order to develop a TMDL for a non-listed reach, the RWQCB must abide by a process agreed to by U.S. EPA in letters dated May 6, 2003, to the RWQCB (Dennis Dickerson) and City of Los Angeles (Hon. Nate Holden and Jan Perry, LA City Council). See Enclosures.

   The May 6, U.S. EPA Region IX letter to the RWQCB transmitted the following instructions:

   - If the Regional Board is adopting a TMDL for a segment or pollutant that is not included in the current 303(d) list, the Regional Board should clearly identify such segment as a water quality limited segment needing a TMDL for the identified pollutant:

   - The RWQCB should provide a specific record supporting the conclusion that this is a water quality limited segment.

   - The RWQCB should indicate why it is important to adopt a TMDL for this segment and pollutant at this time.

   - The Regional Board should public notice the identification of the segment as a water quality limited segment needing a TMDL either before or as part of the

public notice for the TMDL and the record of impairment should be available for public review during the public comment period. *Id.*

U.S. EPA Region IX wrote these letters as part of a settlement with the City (as plaintiff) for the Trash TMDLs lawsuit and recommended the above process as a way to ensure that TMDL development in the future is clear and transparent to the general public.

RWQCB and U.S. EPA did not present sufficient information to justify the inclusion and regulation of all metals in all reaches of LAR. Our preliminary data review shows the data analysis by RWQCB and U.S. EPA are distorted, and do not support inclusion of non-listed metals.

The TMDL should limit the WLAs and LAs for each pollutant to only those reaches of the River and its tributaries that have actually been deemed "impaired" and included on the 303(d) List. The Regional Board and U.S. EPA Region IX did not publicly notice additions to the 303(d) List, and therefore those additions cannot be added without renoticing for public comment.

Requested Action: The RWQCB and U.S. EPA should scale back the TMDL to apply only to reaches listed on the Impaired Waters List and only for the pollutants listed in those reaches. The RWQCB and U.S. EPA should use an iterative, transparent process where complete and adequate assessments are presented to justify a listing based on the proposed SWRCB Listing Policy, and the 303(d) listing public review process, which is projected by the SWRCB to begin in Fall 2004. The RWQCB and U.S. EPA must fully provide the information, public notice, and the transparency as instructed in U.S. EPA Region IX's letters to comply with the statutory requirements and the settlement agreements.

2. **Iterative/Adaptive process for POTWs**: In compliance with existing NPDES permits, the City has committed to completing a Water Effect Ratio (WER) study to assess protective copper water quality objectives directly downstream of the POTWs. Through review of the study workplan, stakeholders have expressed interest in WER studies further downstream and in the estuary. Recognizing that it will take time to scope and approve studies addressing the entire length of the Los Angeles River, including complexities of an estuarine environment, we recommend taking a phased, iterative, adaptive approach to implementation of numeric targets as effluent limits for POTWs.

Requested Action: Modify the Staff Report and proposed Basin Plan amendment to implement copper numeric targets as effluent limits in NPDES permits in three phases:

Phase 1: Impose interim, performance-based targets – **See Attachment 2 for recommended interim, performance-based effluent quality limits.**

Phase 2: Phase in targets based on Water Effect Ratio, translator, and hardness studies completed immediately downstream of the POTWs

Phase 3: Adjust WLAs based on Water Effect Ratio, translator, and hardness studies completed in all reaches of the River.

3. **Iterative/Adaptive process for stormwater and urban runoff:** The City supports the overall iterative process of BMP assessment and implementation. We recognize the RWQCB encourages the use of smaller BMPs that address pollutant sources in preference to end-of-pipe treatment. The RWQCB has also encouraged agencies to pursue sediment removal BMPs, since metals may be associated with particulates. In addition, BMPs targeted at potential pollutant sources, such as runoff from parking lots, show some promise. However, data needs to be gathered to fully evaluate such BMPs, and be able to provide assurances that standards will be met in receiving waters.

   Stormwater and urban runoff WLAs should be implemented as management practices (BMPs), or source control requirements. Under *Communities for a Better Environment v. State Water Resources Control Board, et al.* (2003) 109 Cal.App.4th 1089, 1106 [1 Cal.Rptr.3d 76], rehg. den., 2003 Cal.App. LEXIS 1082 (1st. Dist. June 27, 2003), cert. den., 2003 Cal. LEXIS 7251 (Sept. 24, 2003), the Court of Appeal found that alternative effluent control strategies, source control measures, and BMPs are valid alternatives to numeric effluent limits pursuant to 40 C.F.R. §122.44(k).

Requested action: Remove all references to numeric limits for evaluation of wet weather and urban runoff compliance by MS4 stormwater programs and CALTRANS, as there is insufficient evidence that numeric limits for stormwater can be feasibly attained or even scientifically monitored. In the proposed Basin Plan amendment, under Waste Load Allocations, heading MS4 and Caltrans Stormwater Permittees, remove the paragraph beginning with "For wet-weather conditions, a load reduction curve is developed…." Replace that paragraph with: "Compliance for urban runoff permittees for wet and dry weather will be assessed through benchmark objectives for BMPs specified by the compliance plan. The validity of these benchmarks will be assessed through provisions provided within the TMDL-required monitoring plan; these provisions will provide the RWQCB assurances that standards in the receiving water will be met to the maximum extent practicable. The benchmarks and monitoring provisions may be adjusted by the Executive Officer through an iterative and adaptive process as necessary data is obtained." Also make similar changes to section 6.4 of the Staff Report.

Requested action: In the proposed Basin Plan amendment and Staff Report, replace all references to "compliance points" within the river with "**TMDL effectiveness monitoring points.**" These locations will be selected during the development of the monitoring plan.

4. **Critical flow:** The proposed waste load allocations (WLAs) are greater than the load capacity of the river (Tables 28 and 29) because the proposed permit calculations were done using the total design flow for the POTWs. However, the WLAs for the river are based on a critical flow at Wardlow of 145 cfs, which is less than the combined design

flow of 169 cfs that the three treatment plants discharge to the river. We support the use of permitted plant design flow for the calculation of plant WLAs. *See accord* 40 C.F.R. §122.45(b)(1). These plants have been designed and permitted to handle these higher flows, which will translate into higher river flows when design capacity is met. Further, the IRP's public planning process is anticipating an increase in growth and associated water usage and disposal to the sanitary sewer and is considering expansion of the design capacity of these facilities to handle these increased flows.

The WLAs for the entire river should not be based on a flow that is less than the design flow of the three treatment plants. WLAs should be calculated on the basis of design flow plus some additive component for stormwater discharge, as this will be the minimum flow in the river during dry weather conditions in the future. Application of a number, which is based on historical median stream gage flows, unreasonably limits POTWs from fully utilizing existing capacity that has been approved and funded by U.S. EPA and permitted by the RWQCB.

A minimum critical flow based on POTW design flow plus an allocation for stormwater flow contribution (e.g. equivalent to 20-40% of historical stream flows considered in the development of this TMDL) is recommended, with periodic reassessment and adjustment of the TMDL and WLAs to account for treatment plant expansions due to growth.

A reconsideration of the critical flow for the entire river is warranted. As part of our continuous planning process, we need to know the total metals load that can be assimilated when the river has reached future flows already permitted through public process. With that information, we can plan POTW and stormwater infrastructure and management in a reasoned and rational manner that will protect beneficial uses now and into the foreseeable future.

Requested Action: Base the dry weather critical flow on current design flow from the POTWs, plus 20 percent of the current stream flows, because design flows have already been permitted through a public process and a minimum stream flow will be present.

Requested Action: Modify the Staff Report and proposed Basin Plan amendment so that periodic reassessment of the TMDL includes consideration of POTW expansion as part of the IRP implementation and adjusts the WLAs accordingly.

5. **Margin of Safety:** Because of existing conservative assumptions, there is no need to set the critical flow in the TMDL at less than design capacity. Dry weather flows in the Los Angeles River are by far represented by POTW flow. Setting the TMDL critical flow at less than design flow is tantamount to a growth cap for the City, absent significant upgrades to treatment processes.

Requested Action: Replace the text in the Margin of Safety section of the proposed Basin Plan Amendment according to the following underlined and struck out paragraph, and modify the similar paragraph in Section 6.5 of the Staff Report:

"There is an implicit margin of safety that stems from the following conservative assumptions: (1) the use of conservative values for the translation from total to the dissolved fraction during the dry and wet periods, ~~(2) the use of a dry-weather critical flow which is less than the combined design flow of the three treatment plants~~ (2) The use of conservative assumptions about the toxicity of metals to aquatic life (using default Water Effect Ratios of 1.0); and ~~(3) the wetweather metals loadings predicted by the model tend to overestimate the actual loadings. Therefore, the estimated percent reduction necessary to meet the waste load allocation is conservative, as quantified in Figures 17-13.1 – 17-13.3.~~(3) Water quality objectives already have implicit margins of safety in the way these criteria are developed. These compounded margins of safety are adequate to protect beneficial uses."

6. **POTW effluent allocations:** The RWQCB used the State Implementation Plan (SIP) procedure to calculate monthly average and daily maximum effluent limits and Waste Load Allocations (WLAs) for the POTWs. Daily maximum limits have been determined to be illegal (City of Los Angeles vs. State Water Resources Control Board, et al., Superior Court No. BS060957) and should not be a part of the waste load allocations or permit limits unless and until an impracticability analysis is done on longer term limits. *See* 40 C.F.R. §122.45(d)(2). Since the TMDL is based predominantly on chronic criteria (also knows as the criterion continuous concentration (CCC), which is "the highest concentration that could be maintained indefinitely in a water body without causing an unacceptable effect on the aquatic community or its uses." *See* Preamble to the California Toxics Rule, 65 Fed. Reg. 31691 (May 18, 2000) citing Technical Support Document at Appendix D-1.), there is no reason why longer-term average limits (e.g., monthly average) are not practicable as WLAs or effluent limits.

Requested Action: Remove all references to daily maximum limits throughout the document [e.g. Attachment A to the Resolution, Table 30 of Staff Report], unless an impracticability analysis is done and it can be demonstrated that longer-term averages will in fact cause aquatic toxicity. All WLAs based on chronic criteria should be set as monthly averages.

7. **Compliance for POTWs:**
Since the proposed allocations are to be adopted in permits after the effective date of the TMDL, there is no time provided to achieve compliance with these new limits. An evaluation of historical effluent data indicates that interim limits will be necessary for POTWs to meet the concentration-based limits required by the TMDL as well as mass limits when the treatment plants are at or near design capacity. POTWs may be required to construct new treatment facilities to meet these limits as proposed by the TMDL. In addition, these limits are based on factors such as translators, hardness, and water effect

ratios, which the TMDL acknowledges will require more study to clarify the technical uncertainties present in the calculations of these numeric targets. Although the TMDL allows time for re-openers, it makes these limits effective immediately, allowing no time for these initial limits to be verified by the additional data as required by the TMDL's implementation schedule. Adequate time must be provided to allow for accurate limits based on solid data considering the potential costs and time involved in constructing new treatment facilities to meet proposed limits in the TMDL.

Requested Action: Modify the TMDL so that numeric targets with significant uncertainties do not drive costly POTW infrastructural projects until technical uncertainties in the targets are resolved. This can be accomplished by establishment of interim, performance-based targets while uncertainties are resolved in the first phase of TMDL implementation.

8. **Load Capacity Curve:** The wet weather waste load allocations for the MS4 system are effectively derived from the load capacity curves for each metal, but these infer that all runoff from all storm events no matter how large must meet the concentration-based wet weather waste load allocations. The largest storms on the load capacity curves are in excess of 4.2 inches of rain, representing storm events that occur more frequently than once in 12 years. Most storm events in the Los Angeles area are smaller and more frequent, as recognized in the numerical targets for treatment controls for new development under the SUSMP requirements. Compliance with the TMDL as proposed would require the capture and treatment of large quantities of urban runoff over all storm events, with total load reduction estimates of over 70% for both copper and zinc according to Figures 11a through 11c. Thus, there is a need to clarify the maximum amount of volume or storm event size that MS4 dischargers are expected to capture and treat. In examining the wet weather model for Ballona Creek, the Southern California Coastal Water Research Project produced graphs showing inches of rain captured and treated (or infiltrated) versus percent exceedances of the metals targets. Such graphs can be used to provide insight to the levels of practicable effort needed to remediate a rain event. The important point here is that it is not feasible to try and manage stormwater from extreme events, because the volume of water is so large, nor is it necessary to meet numeric water quality objectives at all times (i.e., during extreme storm events), because acute and chronic objectives allow exceedances of numeric objectives at frequencies of once every three years or longer.

Requested action: Modify the Staff Report and proposed Basin Plan amendment to define a threshold storm event consistent with water quality standard calculations which account for magnitude, frequency, and duration, above which capture, treatment, or other action is not needed due to the allowable once-in-three years exceedance frequency, and also feasibility issues. City staff can provide information on the size of a three-year storm, as well as information on feasibility, if assistance is needed.

9. **Wet Weather Compliance and MEP**: It is difficult to understand how the load capacity curves will be used to determine compliance, and what actions should be taken if the compliance point at Wardlow Road is found to be out of compliance.

Requested Action: Modify the proposed Basin Plan amendment, including table 7-13.2 and Staff Report, including Table 35, so that load capacity curves will not be used to determine compliance by MS4s and CALTRANS. Define wet weather compliance as management of smaller, more frequent storm flows, to the Maximum Extent Practicable (MEP). Also, in both locations, insert the statement "Benchmarks for determining MEP will be provided in the compliance plan, and these benchmarks will be assessed through provisions in the wet weather section of the monitoring plan and revised as necessary when the TMDL is reconsidered."

Requested Action: Draw the loading capacity curves on a normal scale, not a log scale, so that the magnitude of the mandated load reductions is apparent to non-scientists. At a minimum, provide the data from your model well in advance of the public hearing so that the curves can be drawn to normal scale to show the public the true magnitude of load reductions being required.

10. **Load Capacity Curve for Lead:** The RWQCB staff should look at the lead data to see if some of the historical exceedances occurred when leaded gasoline was legal. If that is the case, perhaps the data set should be shortened to exclude those years. This is consistent with the draft 303(d) listing policy that discourages listings for historic loadings. Lead is also one of the trace metals that most easily produces analytical artifacts. Trace metal clean techniques have only recently been standardized, so only the most recent lead data should be used to evaluate exceedances.

Requested Action: Only consider lead data from the past five years to evaluate exceedances during wet weather.

11. **Monitoring plan schedule:** Due to the large number of stakeholders (i.e., responsible municipalities), the development of a monitoring plan is expected to take longer than 120 days, as specified in the TMDL implementation schedule. Each participating municipality must obtain their city's approval and budget for cost sharing. For ambient monitoring we may want to get the industrial permittees to participate in the process. In order to work cooperatively, it took one year for five agencies to work together for one of the Santa Monica Bay Bacterial TMDL Jurisdictions; we can expect the need for a longer period for the 30 different MS4 co-permittees along the Los Angeles River.

Requested Action: Due to the number of municipalities (MS4 NPDES co-permittees), we request that the monitoring plan schedule be extended to at least 12 months after the effective date (ED).

12. **Compliance plan schedule:** As with the monitoring plan schedule, due to the large number of stakeholders we require at least 24 months after the effective date (ED) (vs. 12 months) to draft the compliance plan and 30 months after the ED (vs. 16 months) to finalize the plan.

Requested Action: Modify the compliance plan schedule to extend the deliverable dates to 24 months after the ED for the draft compliance plan and 30 months after the ED for the final plan.

13. **Definition of a storm:** The TMDL defines the duration of a rain event as the start of rain until return to baseline flow of 145 cfs. The "wet weather condition" is indicated to be at 500 cfs. However, it is not clear if we have to wait until flows reach 500 cfs before wet weather compliance and sampling for wet weather begins. Many storms never reach the 500 cfs level. There is no need for prescriptive definition of the triggers in the TMDL Staff Report and proposed Basin Plan amendment. The appropriate place for the triggers to be defined is during submission and approval of the wet weather monitoring plan. That way, subsequent monitoring plans can be easily adapted as we learn what works best. Other information may be better for determining the start of a storm, such as a flow increase of a specified amount, combined with reports of actual measured rain. Furthermore, for practical reasons, it may not be necessary to sample for the duration of the entire storm. In order to be consistent among the TMDLs, the definition of a storm provided by the Santa Monica Bay Beaches Bacterial TMDL (0.1 inch of rain or better and the three days following a rain event) could be used as a starting point for a consistent definition of a rain event. Triggers for wet weather monitoring should consider both U.S. EPA's definition of a storm event (0.1 inch of rain or better and the three days following a rain event), and flow.

Requested Action: Modify the Staff Report and proposed Basin Plan amendment to remove all prescriptive definitions of wet weather monitoring triggers. Simply state that the triggers should consider both flow and rainfall, and should be defined in the wet weather monitoring plan.

14. **Copper translator for dry weather:** The City of Los Angeles proposed local dry-weather translator (conversion factors for calculating total metals targets from dissolved targets) numbers for copper for the areas downstream of the DCT (Reach 4) and LAG (Reach 3) water reclamation plants based on a study performed by Larry Walker and Associates (LWA, 2003). Thorough scientific and agency review resulted in a recommendation to use the translators derived in the City's study and as supported by the partition coefficient method for DCT. The TMDL should use the translators derived in the study: 0.57 for chronic and 0.72 for acute at DCT; 0.77 for chronic and 0.84 for acute at LAG. The TMDL should use the translator data developed by the City of Los Angeles in calculating WLAs for both plants. The studies performed by the City were done using SIP procedures based on a workplan approved by the RWQCB. RWQCB staff participated in the development and performance of the study. Even after questions arose regarding the translators during the development of the TMDL, the City submitted additional partition coefficient analysis to explain and verify the results of the study. This additional analysis showed that the study's original translator values for DCT were valid when Total Suspended Solids were taken into account. However, the RWQCB did not use the study's original translator values. No justification exists for not using LAG's translators considering that even U.S. EPA's analysis found a very strong correlation between LAG's translator and total and dissolved copper.

Requested Action: Use the original dissolved metal to total metal translator values for both Los Angeles-Glendale (LAG) and Donald C. Tillman (DCT) that were developed in the City of Los Angeles' Study.

Requested Action: Delete the sentence in the Staff Report "LWA proposed partition coefficients for use as copper translators." (Staff Report, page 30). Replace with "LWA used partition coefficients to validate the copper translator study. RWQCB staff decided to use the partition coefficients in lieu of the copper translator study coefficients."

Requested Action: Use the above-cited translators (from the original copper translator study) to calculate targets as they are the best available data and research done to date. The TMDL requires that additional data be collected to verify these results but in the interim, they should be used in calculating concentration targets for the plants. We would be happy to provide more detailed technical language for the TMDL explaining the rationale for the targets that should be utilized.

15. **Implementation and Reconsideration of the TMDL Wasteload Allocations and Implementation Schedule**– Waste load allocations for major POTWs are implemented through their NPDES permits. Although U.S.EPA policy allows wasteload allocations for storm water to be expressed in numeric form, it is not required. Specifically, EPA's 2002 Storm Water TMDL/Permitting Guidance states that, "EPA expects that most WQBELs for NPDES-regulated municipal and small construction storm water discharges will be in the form of BMPs, and that numeric limits will be used only in rare instances." *See accord* 40 C.F.R. §122.44(k)(2) and (3).

Requested Action: Remove all language specifying that U.S. EPA <u>requires</u> numeric limits for storm water (e.g., Page 63).

Also, the implementation schedule specifies that there will be 50% area compliance with the dry weather waste load allocations six years after the effective date of the TMDL. At the same time, the TMDL will be reconsidered by the RWQCB on the basis of new data or special studies. Since new data or results from special studies may affect either wasteload allocations or implementation methods, an additional year of data and information may be necessary in order to expand the studies and obtain a more reliable data set.

Requested Action: at the six-year point, in addition to reconsidering the WLAs, add **reconsideration of the *implementation schedule***.

Requested Action: Change the date for special studies to be finished from four years to five years after the effective date and provide a mechanism based on an iterative approach that will provide support for a planning process. Leave the first compliance date and reconsideration of the TMDL WLAs *and implementation schedule* at 6 years after the effective date of the TMDL.

16. **Monitoring:** Notwithstanding our request to measure compliance with BMP implementation rather than numerical limits for one or more compliance points along the river, it is not practical to take 24 discrete samples over 24 hours and then test 4 samples. This will not increase our knowledge of pollutant loading in the river. Selecting random grab samples to compare with chronic criteria is incorrect, since chronic effects take a longer time frame to occur. Furthermore, it usually takes weeks for the results of metals concentrations to be available from the lab (unlike bacterial analyses which take 24 hours to analyze). Thus, the lab would have to save the remaining samples until the first test results are available, and the waiting time for the second batch of tests may overlap with the next month's sampling. Further, the labor involved in analyzing four samples initially and then the additional samples in the event of an exceedance, is excessive. A single flow weighted composite is preferable. The State Water Code explicitly forbids the RWQCB from prescribing the method or manner of compliance with any requirement or order of the RWQCB, including a TMDL. Water Code §13360(a). Further, the burden of all monitoring requirements, including cost, must be weighed against the benefits to be obtained and the relationship between the two must be reasonable. Water Code §13267(b)(1) and §13225(c).

Requested Action: Remove all prescriptive monitoring requirements, unless and until the RWQCB has demonstrated that the burden of such requirements bears a reasonable relationship to the benefits to be obtained, and replace these requirements with general direction that allows the MS4 programs and CALTRANS to determine the most effective way to provide the needed monitoring information.

17. **Required Investigation in the event of an exceedance:** The RWQCB should require agencies to conduct source investigations until 6 years beyond the effective date of the TMDL, rather than immediately. This will give the responsible agencies time to install and implement BMPs before assessing sources per the TMDL-required monitoring plan.

Requested action: Modify the Staff Report and proposed Basin Plan amendment to require agencies to conduct source investigations per provisions in the monitoring plan beginning 6 years after the effective date of the TMDL (after the first compliance milestone), rather than immediately.

18. **Load Allocation Calculations:** The description of how the load allocations were derived for both the POTWs and stormwater permittees is not entirely clear. For example, data on the "percent area compromised by a particular reach" (page 54), which was applied in the area-weighted approach to assigning flows to reaches where there were no stream gage flow records, should be provided (also, the word "compromised" was not used correctly). In addition, the process for determining the "concentration-based permit limits required for each plant to meet the reach-specific water quality targets" (page 55) particularly where the reach was not deemed impaired for all metals. And, the reference to calculating the load allocation for stormwater permittees by subtraction (page 56) does

not clearly indicate that the flows are subtracted (as opposed to the mass allocation to the entire reach.)

Requested Action: Please clarify the language describing the derivation of load allocations for the POTWs and stormwater permittees, and provide missing data noted above.

19. **Consistent use of hardness:** On page 28 of the staff report, staff justified the use of the 10th percentile of hardness for acute criteria by citing the Policy for Implementation of Toxics Objectives for Inland Surface Waters, Enclosed Bays, and Estuaries, or SIP (SWRCB 2000a). The SIP and contains no hardness-related justification for using the 10th percentile of hardness. The closest statement in the document was related to the total to dissolved translator: "the translator shall be derived using the median of data for translation of chronic criteria and the 90th percentile of observed data for translation of acute criteria." That statement applies only to translators, not hardness. Therefore, since the selection of the 10th percentile of hardness is arbitrary, the median of the hardness data is more reasonable. Also, for wet weather, the acute target was based on the 50th percentile hardness, as shown in table 11 of the Staff Report.

Requested Action: Use median hardness to calculate acute water quality objectives for metals.

20. **Cost analysis:**
The Appendix III, on cost analysis for implementation of the TMDL, was not released until August 2, 2004 for public review and comment, 20 days after the release of the Staff Report and proposed Basin Plan amendment.

Requested Action: RWQCB should allow an extension of the commenting period in order to address overall difficulties in the review and commenting process caused by this delay.

<u>POTWs</u>:
The draft TMDL contained no information on the potential cost impacts of the proposed waste load allocations (WLAs) on the POTWs. To assist RWQCB staff, a cost analysis is presented in Enclosure 3. The cost analysis was conducted for achieving compliance with the proposed copper WLA for Tillman at its current rated capacity of 80 mgd. Three treatment alternatives were considered: 1) chemical coagulation and special filters, 2) chemical coagulation and microfiltration for 15 mgd sidestream, and 3) microfiltration followed by reverse osmosis for 12 mgd. The total capital costs ranges from $30 to $60 million at Tillman and $4 million at Los Angeles-Glendale.

These estimates include construction and non-construction markups as applied in the Integrated Resources Plan cost estimating approach.

Requested Action: Review and incorporate accurate cost estimates for POTW costs to implement the TMDL.

<u>Stormwater:</u>

The metals TMDL has set specific load allocations that will require large reductions in the total metals concentration from urban runoff within the LA River watershed for various metals. The draft TMDL acknowledges that meeting these load reduction targets will require extensive implementation of several activities including:

- Non-structural source control BMPs
- Structural treatment control BMPs

The TMDL includes limited cost estimates for BMPs that assumes that these BMPs alone are sufficient to meet the water quality requirements of the TMDL. The City is concerned that these cost estimates may be understated, but cannot adequately comment on the reasonableness of the estimates due to the lack of data that addresses the effectiveness of these or other BMPs, the limited amount of information in the staff report, and the lateness of the availability of Appendix III to better understand the basis for the cost estimates presented in the draft staff report.

The cost estimates for compliance are based on several key "building blocks", all of which have significant uncertainties including:

- The pollutant removal effectiveness and reliability of the various non-structural and structural BMPs that may be required to comply with the TMDL
- The unit cost basis for various BMPs, for example structural BMPs such as sand filters will require land that can be very expensive, and any capture and treatment option will require substantial operational storage and related infrastructure (only made available recently in Appendix III)
- The amount of flow that needs to be captured to achieve 100% compliance with the TMDL which, as currently written, allows no exceedances of the receiving water numerical targets as discussed in Comment 8.

See Enclosure 4 for additional comments.

Requested Action: Provide additional backup data for RWQCB estimates that will address the following:

- Data to support the effectiveness of each BMP specific to the land uses that exist in the City
- Cost data that was used to establish the per unit cost included in the BMP
- Assumptions that were used to determine the extent of BMP deployment and runoff capture to achieve the load allocation curves. This is potentially the most significant element of the overall cost estimates and is the least well-documented.

21. **Integrated Resources Plan** – The reference to a goal of 50% of the annual average wet-weather urban runoff is not entirely correct. The guiding principles for the IRP were developed during Phase 1, which was the Integrated Plan for the Wastewater Program, or IPWP. The specific guiding principle for stormwater planning was to "increase the amount of wet weather urban runoff that can be captured and beneficially used."

Requested Action: Replace language in Section 7.1 referencing a goal of using "50% of the annual average wet-weather urban runoff" with the more accurate IPWP goal of "increasing the amount of wet weather urban runoff that can be captured and beneficially used in Los Angeles."

22. **Critical calculation errors in the dry weather wasteload allocations:** The RWQCB staff should recheck their calculations for lead in Table 29 and zinc in Table 31. Also, RWQCB staff should check its calculations in Table 9 for copper, acute, and the results for the category "Reach 3 and Arroyo Seco." For Compton Creek, in Table 9, the acute numeric targets were calculated using the median hardness instead of the 10th percentile hardness (notwithstanding our request to use the median hardness).

    Also, in the proposed Basin Plan amendment in the table "POTW dry-weather WLAs," and Table 30 of the Staff Report, the 30-day and daily maximum targets for cadmium, lead, and zinc were calculated without applying the translator values. This means that the proposed permit limits for these metals are expressed in the dissolved, not total form. Copper was the only metal with the site-specific translator.

    Corrections for proposed POTW permit limits

	Correct Calculations (ug/L)				
		Cd	Cu	Pb	Zn
Tillman	AMEL	4	18	7	106
	MDEL	8	27.54	18	212
Glendale	AMEL	4	19	8	191
	MDEL	9	35	22	253
	In LA River Metals TMDL (ug/L)				
		Cd*	Cu	Pb*	Zn*
Tillman	AMEL	4	18	5	103
	MDEL	7	27	12	207
Glendale	AMEL	4	19	5	187
	MDEL	8	35	14	247

* These values are actually dissolved metals, not total metals

Requested action: Check and correct the above errors.

23. **Consideration of new data and the compliance schedule:** We support the reconsideration of the TMDL wasteload allocations based on new water effect ratios, new hardness data, new translator data, and more accurate flow data (including reevaluation of the critical flow), with the intent of developing more accurate, scientifically-based allocations.

Requested Action: Reconsider and revise the TMDL waste load allocations as soon as more accurate, scientifically based information on the copper Water Effect Ratio becomes available and the peer review is complete. Also, allow reconsideration of the compliance schedule so that

agencies will have additional time to modify the plan and to design and construct structural BMPs based on new waste load allocations.

24. **Air deposition:** The TMDL addresses air deposition by realizing that most of the air deposition washes into the MS4 system. Therefore, the assumption is that the air deposition will be treated by BMPs targeted at catch basins, parking lots, roads, etc. The City will attempt to "treat" deposited air emissions, which enter the MS4, in order to comply with this TMDL, but the RWQCB should recognize the importance of source prevention by gaining participation from agencies with authority over air issues.

Requested Action: Specify in the Staff Report and proposed Basin Plan amendment how source control for air deposition will be attained, and state the importance of gaining participation from agencies with authority over air issues. Alternatively, air sources should be treated as background sources and addressed as stated in the next section.

25. **Background sources of Metals**: The City supports the RWQCBs ongoing studies of reference systems in order to determine contribution of pollutants by the natural background. If reference systems are a significant source of background metals, the RWQCB should consider providing an allowance for naturally occurring metals without decreasing the wasteload allocations of the POTWs or MS4 system. A reference system approach was used for bacterial TMDLs in our region, in which a reasonable amount of exceedances was allowed for wet weather and winter dry weather.

Requested Action: Allow a reference system/antidegradation approach in the Staff Report and proposed Basin Plan amendment upon completion of reference system studies in our region, if such studies indicate that significant amounts of metals come from background non-anthropogenic sources.

26. **Peer Review Process:** The Public Notice did not include the legally required Peer Review [CA Health and Safety Code, §57004]. It is critical for the City of Los Angeles and all others who review this TMDL to see what the Peer Review panel has said about this Basin Plan Amendment. The Basin Plan Amendment cannot be completed without a Peer Review. The Regional Board cannot adopt this Basin Plan Amendment without a Peer Review and a public review of the Peer Review Report.

Requested Action: Provide access to Peer Review Report for public review and an adequate comment period prior to conducting a hearing for the adoption of this TMDL.

27. **Federal Register Notice.** The front cover and the Introduction of the Staff Report identify the U.S. EPA Region IX and the RWQCB as jointly issuing this document. In a letter to the Los Angeles City Council dated May 6, 2003 (see Enclosure 2), U.S. EPA Region IX agreed to publish draft TMDLs in the Federal Register. It does not appear that the U.S. EPA published notice of this draft TMDL in the Federal Register, as agreed.

Requested Action: The TMDL should be renoticed for public comment in the Federal Register.

28. **Improvements to stakeholder process:** Smaller cities were not involved in the development of this TMDL and may disagree with portions of the TMDL.

Requested Action: The RWQCB should continue its outreach to interested cities and address their concerns regarding the TMDL (a workshop was scheduled for August 19, 2004, but future outreach efforts may be necessary). The City has a collaborative stakeholder process that can support such outreach in the future.

A table with additional comments is enclosed. Technical comments on cost and interim limits are also enclosed, along with supporting letters.

If there are any questions, please feel free to call Ms. Donna Chen, TMDL Section Manager at (213) 473-8567 or Mr. Clayton Yoshida, Senior Chemist at (213) 473-8569.

Sincerely,

Rita L. Robinson, Director
Bureau of Sanitation

RLR:TJM:DC

Enclosure

cc: Melinda Becker, Regional Water Quality Control Board
Jenny Newman, Regional Water Quality Control Board
Terrence Fleming, U.S. EPA Region 9
Brian Williams, Mayor's Office
Jeff Catalano, CD 9
Ana Mae Yutan, City Administrative Office
Valerie Lynne Shaw, President, Board of Public Works
Cynthia Ruiz, Commissioner, Board of Public Works
Christopher Westhoff, City Attorney's Office
Rafael Prieto, Chief Legislative Analyst Office
Joseph Mundine, Bureau of Sanitation/EXEC
Masahiro Dojiri, Bureau of Sanitation/EMD
Adel Hagekhalil, Bureau of Sanitation/WESD
Shahram Kharaghani, Bureau of Sanitation/WPD
Traci Minamide, Bureau of Sanitation/RAD
Donna Toy-Chen,Bureau of Sanitation/RAD
RAD Central File/TMDL Section

R:\Main Files\TMDL Issues\LA River Characterization & TMDLs\LA River metal TMDL\comments Metals 2004\Final 8-20-04 LAR Metals Comment ltr.doc

Attachment 1, Additional Comments
LA River Metals TMDL

Comment #	**Document Reference** (Doc. #, Section #, Page #, Paragraph #)	Issue	Comments	Commenter
1	Page 57	Table 31	This table identifies the dry-weather loading capacities for all the Los Angeles River reaches and tributaries, even though not all the reaches and tributaries are listed on the 303 (d) list as impaired waterbodies. **Recommendation: Please revise this table to identify those reaches and tributaries that are listed versus non-listed since the waste load allocations should only apply to listed portions of the Los Angeles river.**	City of Los Angeles
2	Page 66, Para 2	A known source of copper is from brake pads. The permittees could sponsor legislative actions with state and federal agencies to pursue the development of alternative materials for brake pads.	The RWQCB should lead this charge. **Recommendation: add this sentence to the first full paragraph on page 66: "The RWQCB will take the lead in this effort by working with the permittees and federal legislative offices and seeking funding."**	City of Los Angeles
3	Page 67, Para 4	The permits should also provide a mechanism to make adjustments to the required BMPs as necessary to ensure their adequate performance.	This should read "selected BMPs" not "required BMPs" **Recommendation: change the text.**	City of Los Angeles

Comment #	**Document Reference** (Doc. #, Section #, Page #, Paragraph #)	Issue	Comments	Commenter
4	Page 69, Table 35	Responsible jurisdictions and agencies shall provide to the Regional Board results of the special studies conducted as part of the ambient monitoring program.	The re-evaluation of the TMDL waste load allocations does not occur until 6 years after the TMDLs effective date. **Recommendation: please adjust the special studies due date to 5 years after the TMDL effective date to allow more time for the studies to be conducted, thus allowing for a more thorough evaluation.**	City of Los Angeles
5	Page 69, Table 35	22 year Implementation plan vs. scheduled 15 yrs IP.	Fifteen years is not enough time to comply with the wet-weather portion of this TMDL. This TMDL requires extensive coordination effort among over than 30 agencies. Such effort would require: identifying and complying with the regulatory requirements by local, state, and federal agencies. Planning of sites, designing of facilities, siting of facilities, analysis of implementation alternatives, obtaining needed funds to construct such facilities, initiating selected capital improvement projects by developing a memorandum of Agreement (MOA) for cost sharing among many entities. This is reasonable in comparison with the Santa Monica Beaches Bacterial TMDL implementation schedule, which allows up to 18 years. More time is needed to identify properly the pollutant sources and appropriate control strategies among all stakeholders and then implementing what would work to meet the numeric target for receiving water. Determine whether the impairment even exists, and to conduct further water quality studies to augment the existing water quality objectives as listed in the TMDL document. In consideration of the above arguments, the City **requests 22 years** to comply with the wet-weather waste load allocations.	City of Los Angeles
6	Page 73, Para 3	Appendix III	As of Monday, August 2nd, Appendix III which provides an analysis of costs is not available on the RWQCB website.	City of Los Angeles

Comment #	**Document Reference** (Doc. #, Section #, Page #, Paragraph #)	Issue	Comments	Commenter
7	Page 75	Table 40	**Recommendation. Please provide a breakdown of the Total Construction and Maintenance Costs in this table based on BMP.** Also, is the 30% reduction from the IRP included?	City of Los Angeles
8	Page 77, Para 1	The City plans to extend their program to include metals sampling of the tributaries in the future.	Please modify this sentence to read: "The City plans to extend and modify their program…"	City of Los Angeles
9	CEQA Checklist		This CEQA Checklist does not identify or discuss the environmental impacts of siting and constructing a new stormwater treatment plant with RO, which may be required to comply with these new regulations. **Recommendation: address this issue.**	City of Los Angeles
10	Pg. 62 Section 7	Implementation	Because the LA River watershed incorporates such a large area and so many municipalities, it would be more advantageous and efficient if the watershed was broken down into two sub areas. Like Santa Monica Bay, creating 2 jurisdictional groups (upper LA River and Lower LA River) would make it easier to meet deadlines requirements and implement improvement projects. We recommend two subwatersheds for ease of coordination and implementation: one for upper LA and the lead would be the jurisdiction with the highest percentage area, one for lower LA and the lead would be the one with highest percentage area. Aroyo Seco Tributary discharging into LA river would be proposed to divide the Lower LA Subwatershed and Upper LA Subwatershed. **Recommendation: divide the watershed into 2 jurisdictional groups (upper LA River and Lower LA River), with Arroyo Seco as the dividing line.**	City of Los Angeles

Comment #	**Document Reference** (Doc. #, Section #, Page #, Paragraph #)	Issue	Comments	Commenter
11	Page 68, Section 7.3, 2nd Paragraph	Revision of the waste load allocations	"The Regional Board does not intend to revise the waste load allocations until reductions have been achieved." What if the results of special studies prove that the waste load allocations were set at an inappropriate level and need to be adjusted prior to the reopener or indication of any reductions. The Regional Board should not be restricted to revise the waste load allocations until some kind of reduction is achieved, but rather on the basis of any new data that is compiled from the special studies. **Recommendation: change the wording to include the possibility of revision of waste load allocations if new information from studies is obtained.**	City of Los Angeles
12	Pg. 70 Footnote 1	Watershed area for the TMDL	In the SMB Bacteria TMDL, the Regional Board has excluded large open space areas like the State owned Santa Monica Mountains on the basis that they did not contribute to the bacteria loading downstream. However, there is a clear correlation that metals are transported through sediment. With these large open spaces contributing to the watershed, they should be included. As stated in the TMDL Document Section 7.2 subtitled "Potential Implementation Strategies" during wet weather , the metal loading are predominately bound to sediment, which are transported with storm runoff…..etc. **Recommendation: include all state and national park system areas within the watershed as a part of the compliance area due to potential sediment contributions.** In addition, the approach that the Regional Board has taken to exclude atmospheric deposition in the areas except for what occurs directly over the river does not give a accurate representation of what is really happening. With a watershed this large, a large portion of the entire area needs to be accounted for.	City of Los Angeles

Comment #	**Document Reference** (Doc. #, Section #, Page #, Paragraph #)	Issue	Comments	Commenter
13	Pg.73 Infiltration trenches	Upper LA River Watershed area	The assumption the TMDL uses, "…20% of the watershed would be treated by infiltration trenches and 20% of the watershed would be treated by sand filters." may not be realistic. The Upper LA River watershed area may not be able to implement such projects throughout a majority of the area because of regulations set by the Watermaster that limit infiltration. **Recommendation: insert the last sentence in the paragraph above.**	City of Los Angeles
14	Attachment A, Page 9, Footnote 1	Storm Year Definition	The LACDPW water year is: October 1st through September 30th **Recommendation: make the correction.**	City of Los Angeles
15	Attachment A, Page 10	Special Studies	First bullet should read • Refined flow estimates for the Los Angeles River mainstem and tributaries where there presently are no flow gages and improved gaging of low-flow conditions **where needed**. It is our understanding that the low flow channelized gaging stations (e.g. Tujunga Ave) are accurate	City of Los Angeles
16	TMDL, Page 11	Reach 4 and 5 boundaries	Riverside St. should read Riverside Dr.	City of Los Angeles

Comment #	**Document Reference** (Doc. #, Section #, Page #, Paragraph #)	Issue	Comments	Commenter
17	Page 77, Para 1	An ambient monitoring program is required to assess water quality throughout the Los Angeles River and its tributaries. The MS4 and Caltrans stormwater NPDES permittees are jointly responsible for implementing the ambient monitoring program.	The ambient monitoring program should be a responsibility shared by **all** dischargers to the river, which includes not only MS4s and Caltrans but also all POTWs, minor and general NPDES dischargers, industrial permittees, and national forest and state parks. **Recommendation: insert the above statement into paragraph 1.**	City of Los Angeles
18	TMDL for Metals LA River and Tributaries. All pages that contain "total metals"	Definition of Total Metals in the entire document	There is a need to unequivocally define the term total metals. The currently used version of EPA Method 200.7 (metals by ICP-AES) contains a sample preparation procedure for "total recoverable metals" but not for total metals. Standard Method for the Examination of Water and Wastes contains sample preparation procedures for both total and total recoverable metals. The California Toxics Rule references total recoverable metals. **Recommendation: This document should contain a statement that the terms total metals and total recoverable metals are used interchangeably.**	City of Los Angeles

Comment #	**Document Reference** (Doc. #, Section #, Page #, Paragraph #)	Issue	Comments	Commenter
19	TMDL for Metals LA River and Tributaries. Page12, paragraph 4	it receives up to 720 mgd of hydrotest…	There may be a typographical error. **Recommendation: verify correctness of the statement.** The flow, 720 mgd, seems unreasonably large.	City of Los Angeles
20	TMDL for Metals LA River and Tributaries. Page 13, paragraph 2	The median flow… over a 12 year period (October 1998 to December 2000)…	There is a typographical error; either the dates of the time period are incorrect. Later in the paragraph the dates are listed as October 1988 to December 2000. There is probably a typographical error in the first listing of the dates. **Recommendation: make the correction.**	City of Los Angeles
21	TMDL for Metals LA River and Tributaries. Page 79, paragraph 1	will be analyzed for total metals, dissolved metals…	One assumes that the TMDL refers to the 303(d) listed metals. **Recommendation: This should be stated explicitly.**	City of Los Angeles
22	Section 2.2, page 21		"The City of Los Angeles measures metals and hardness in receiving waters from several locations upstream and downstream of its treatment plants (Figure 2) on a quarterly basis." This statement appears to refer to monitoring stations associated with the treatment plants, not the City's Watershed Monitoring Program (WMP). Because Figure 1 shows treatment plant locations and Figure 2 shows WMP stations, it would be more appropriate to reference Figure 1 rather than Figure 2 here. **Recommendation: reference figure 2.**	City of Los Angeles

Comment #	**Document Reference** (Doc. #, Section #, Page #, Paragraph #)	Issue	Comments	Commenter
23	Section 3, Numeric Targets, pp 26-27		This section discusses the merits of coordinating TMDL efforts to manage metals loadings from 3 watersheds and some harbor areas. This is desirable, but it requires the TMDLs for all of these areas to be developed. Some of these TMDLs are not scheduled in the Consent Decree for specific completion dates, but all must occur within the next few years. The implementation schedule for this TMDL extends over 10 (dry weather) to 15 (wet weather) years. Some efforts (e.g., non-structural BMPs) should be implemented regardless of the status of additional TMDL development, but it probably would be better if other efforts (e.g., major structural BMPs) were implemented after all relevant TMDLs are developed. Because of this, **we recommend the implementation schedule for this TMDL be reviewed when these other TMDLs are developed.**	City of Los Angeles
24	Section 4, Source Assessment, pg. 40		The following statement needs clarification: "Not all the metals deposited on the land from the atmosphere are loaded to the river. The mass loading in stormwater is typically 10 to 20% of the mass loading from atmospheric deposition (compare Table 16 and Table 17)." The percentages seem closer to one-third or more based on the "Typical year" values (SCCWRP) or the average of LACDPW data (Table 16). The LACDPW values are greatly increased by the high values from 97/98, but no evidence suggests this is true for the SCCWRP data. It appears indirect aerial deposition makes a larger contribution than suggested on page 40. At any rate, **the 10 to 20% estimate should be justified or changed.**	City of Los Angeles

Comment #	**Document Reference** (Doc. #, Section #, Page #, Paragraph #)	Issue	Comments	Commenter
25	Section 7. Implementation, page 62; Third paragraph		The reference to Table 33 in the sentence "Likewise, the concentration-based waste load allocations that apply to the Tillman, LA-Glendale and Burbank POTWs when flow exceeds their design capacities (Table 33) will also be implemented through their respective NPDES permits" appears to be wrong. On page 60, first full paragraph, it states "During wet weather, the POTWs will retain the waste load allocations assigned for dry weather." This suggests **the appropriate table to reference for the POTWs on page 62 is Table 30, not Table 33.**	City of Los Angeles
26	Section 7.2.1. Cost estimate …, page 70.		The first paragraph assumes compliance could be achieved in an urbanized portion of the watershed using an integrated resources approach (30%), non-structural BMPs (30%), and structural BMPs (40%). How were these percentages determined? **Recommendation: discuss how there percentages were determined.**	City of Los Angeles
27	Section 10. References, pp. 82-85	Incomplete	Not many of these references were found in the text. A brief scan of one of the appendices revealed that it contained its own reference section. The appendices of this and previous TMDLs contain mostly stand-alone documents, so one would not expect the staff report to contain their references. The staff report also contains a number of references (e.g., McPherson et al., 2004 on page 33) that are not included in the reference section. **The entire reference section should be reviewed and corrected for the final report.**	City of Los Angeles

City of Burbank Comments

CITY OF BURBANK
275 EAST OLIVE AVENUE, P.O.BOX 6459, BURBANK, CALIFORNIA 91510-6459
www.ci.burbank.ca.us

PUBLIC WORKS
DEPARTMENT

August 23, 2004

Mr. Jonathan Bishop
Interim Executive Officer
California Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, CA 90013

COMMENTS ON THE DRAFT TOTAL MAXIMUM DAILY LOADS FOR METALS FOR THE LOS ANGELES RIVER AND TRIBUTARIES

Dear Mr. Bishop:

The City of Burbank Public Works (Burbank) appreciates the opportunity to comment on the proposed Total Maximum Daily Load (TMDL) for metals in the Los Angeles River (LA River). Staff of the Los Angeles Regional Water Quality Control Board (Regional Board) should be commended for their ability to produce this document on a short timeline imposed by consent decrees affecting the United States Environmental Protection Agency (USEPA). The fact that the Regional Board had to rise to the challenge of developing a TMDL quickly and with very little high quality data means that there are many uncertainties and untested assumptions inherent in the proposed TMDL.

Burbank cannot make hasty and costly infrastructure decisions based on significant uncertainty. We care very much about water quality and the protection of beneficial uses, which is why we are offering this comment letter. Our desired outcome is to ensure that the implementation plan for the TMDL is a rational, stepwise approach that reduces planning uncertainties to tolerable levels before committing to major capital investments in our wastewater and stormwater infrastructure.

Burbank is supporting studies to reduce that uncertainty about copper targets in its immediate receiving waters. Burbank is also attending stakeholder steering committee meetings for the City of Los Angeles' collaborative program to support TMDL development. The information needed to reduce uncertainty is coming, but it is going to take time, and it will be important to secure the participation of other stakeholders in the LA River watershed.

Before embarking on costly projects necessary to move the monthly average copper concentration in POTW discharges down into compliance with effluent limits that are proposed based on current default assumptions about copper toxicity, it is important to be sure that the proposed limits are necessary to protect beneficial uses of water. We may find out that with respect to POTW infrastructure, we are already doing what is necessary to protect beneficial uses. The consequences of ignoring the uncertainties is that City resources could be could be misdirected towards capital improvements that aren't necessary, at the expense of more important infrastructural priorities such as sanitary sewer overflows.

Burbank appreciated the opportunity to participate in stakeholder meetings held by the USEPA and the Regional Board to discuss the development of this TMDL. After review of the recently released draft TMDL, we have additional concerns detailed below. Thank you for your careful consideration of these comments.

1. The proposed TMDL does not allow any time for the POTWs in the watershed to achieve compliance with the allocations

The TMDL asserts that, for the most part, historical monitoring has demonstrated that the POTWs can meet the (California Toxics Rule) CTR standards for the metals of concern in this TMDL: cadmium, copper, lead and zinc. This is certainly true for cadmium and zinc, where the historical dry-weather monitoring data at the receiving water stations around the POTWs indicate only *one* exceedance of each metal in approximately 200 measurments.

However, the lead and copper monitoring data indicate that the plants may not immediately comply with the proposed limits in the TMDL. Table 5 on Page 21 of the Staff Report indicates how many times each CTR chronic standard was exceeded for each metal. There are dry weather exceedances of both copper and lead. Added to that is the fact that the TMDL proposes to use a median historical waterbody hardness and the State Implementation Procedures to calculate monthly and daily limits, and the resulting limits cannot be met by the POTWs without additional treatment. The TMDL does not recognize this and requires the POTWs to comply with the allocations as of the Effective Date of the TMDL (Staff Report page 69).

The need for Interim Limits and an Implementation Schedule is supported by (a) the change in the way hardness is used to calculate freshwater chronic aquatic life criteria, (b) the recent upgrade to the Burbank Water Reclamation Plant, (c) the need to pursue reduction of the sources of metals by the pretreatment program, (d) the ongoing development of a Water Effects Ratio (WER) study being performed by the cities of Burbank and Los Angeles, (e) the development of the Integrated Resources Plan (IRP) by the City of Los Angeles, and (f) the necessary time required to design, bid, build and start-up an advanced treatment process for the reduction of metals in the discharge.

(a) There has been a change in the way hardness is used to calculate freshwater chronic aquatic life criteria

In July 2002, prior to the development of the LA River Metals TMDL, Burbank had a study performed to evaluate potential discharge limits using the CTR and the SWRCB's "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries in California" (SIP). Although the CTR procedures specifies that the receiving water hardness should be used in calculating freshwater criteria for several metal constituents, neither the CTR nor the SIP indicates which hardness value to use (i.e. the average, median or minimum hardness and whether it should be based on data collected upstream or downstream of the discharge).

At the time of the study, POTW discharge limits permit issued to the County Sanitation Districts of Los Angeles County utilized upstream hardness values where available. The NPDES permit for the Long Beach Water Reclamation Plant states, "Hardness values from samples collected in the receiving water upstream of the discharge point were averaged and used to determine the appropriate CTR WQO for those hardness-dependent metals." Since this was the current practice by the Regional Board, upstream hardness was used in calculating the freshwater chronic aquatic life criteria for the BWRP.

Using the upstream hardness in the appropriate equations, the future average monthly and maximum daily effluent limits for copper were calculated to be 24.5 ug/L and 43.3 ug/L, respectively. At that time, the data seemed to indicate that the discharge from the Burbank Water Reclamation Plant (BWRP) would be able to meet these limits. Average discharge copper concentrations at the time of the study were 16 ug/L. Therefore, additional upgrades to the BWRP did not appear necessary for this constituent.

Contrary to recent practices by the Regional Board in issuing NPDES permits, the TMDL calculates hardness for the chronic criteria based on the 50th percentile of the hardness data for each reach and the target for the acute criteria was based on the 10th percentile of the hardness data for each reach. This results in a much lower waste load allocation (WLA) than was previously anticipated. The new copper WLA of 12 ug/L cannot be met by the BWRP unless additional source control measures are implemented and/or advanced treatment is constructed. The effectiveness of source control measures is discussed under item 1(c).

(b) There has been a recent upgrade to the Burbank Water Reclamation Plant

Since this analysis was performed in July 2002, the Regional Board promulgated the *Total Maximum Daily Loads for Nitrogen Compounds and Related Effects – Los Angeles River and Tributaries and Water Quality Objectives* (Nutrient

TMDL). The Implementation Plan for the Nutrient TMDL necessitated the upgrade of the Burbank and Los Angeles POTWs to a nitrification / denitrification process. In order to comply with this Nutrient TMDL, the BWRP underwent a seven million dollar upgrade to a nitrification / denitrification facility. This successful upgrade resulted in the reduction of discharge ammonia concentration from 20 mg/L to less than 0.5 mg/L with no loss to the plant capacity.

Unfortunately, an unintended result of this upgrade was a decrease in the plant's copper removal efficiency. The five discharge samples collected immediately before the new process began indicated an average copper concentration of 15.7 ug/L. Post start-up of the nitrification / denitrification process, the five most recent samples showed an average copper concentration of 49.8 ug/L. The cause for this loss of copper removal efficiency is currently being investigated.

(c) There is a need to pursue reduction of the sources of metals by the pretreatment program

In the development of the Clean Water Act, Congress recognized that, unlike industries, the wastewater treatment systems used by POTWs are not designed to effectively treat toxic pollutants. (See 33 U.S.C. §1317.) Thus, to address toxic pollutants, the USEPA was required to promulgate "pretreatment standards" for categories of industrial sources discharging into the POTW to prevent pollutants from entering a POTW, which are "not susceptible to treatment by such treatment works, or which would interfere with operation of such treatment works." (See 33 U.S.C. §1317(b), (c); see also 33 U.S.C. §1314(g) (requires adoption and annual review of pretreatment guidelines for pollutants "not susceptible to treatment" by POTWs) (all emphasis added).)

Congress determined that "[i]n the long run, the only real solution to the problem of safe disposal of toxic or hazardous industrial pollutants is in their reuse and recycling by industry, not the transfer of such materials from one industrial waste stream into municipal waste streams." (See Sen.Rep. No. 95-370, 1st Sess. (1977), reprinted in U.S. Code Cong. & Admin. News, p. 4326, 4383.)

Sources of copper include copper pipe corrosion, metal finishers, vehicle service facilities, printers, copper sulfate additions to source water reservoirs, copper containing root control products, and laundry graywater. Programs targeting these sources have been conducted by several agencies[1] including the program in Palo Alto.

Palo Alto has worked for over 10 years on pollution prevention to control copper by focusing on one or two sources at a time. Even though the agency has an award winning pollution prevention program, the only way Palo Alto has been

[1] Water Environment Research Foundation. Residential and Commercial Source Control Programs to Meet Water Quality Goals. Project 95-IRM-1. 1998.

able to meet the copper limit derived from the CTR has been to adjust those limits to site specific conditions, through special studies similar to the WER study sponsored by Burbank and Los Angeles.

The Palo Alto experience demonstrates the limitations of pollution prevention and source control. Programs relying on voluntary cooperation cannot expect 100% of the targeted audience to make the recommended changes. Programs relying on voluntary cooperation cannot expect 100% of the targeted audience to make the recommended changes.

In addition, maximum participation may take years to achieve. Even programs with a regulatory element will not always achieve full participation in the first year. For example, with copper, several sources were identified, but not all of them were easily controllable. It was not possible to eliminate the largest identified source, corrosion of copper plumbing. Thus for copper, even though several sources were identified, the largest source – corrosion of copper plumbing – was not controllable, even with the addition of corrosion control chemicals to the water supply. For situations like this, an approach such as changing the state plumbing code to allow for the use of plastic rather than copper piping would be necessary. Changes like this cannot be made at the local level.

Therefore, the first strategy for the reduction of metals in the discharge from POTWs is implementation of tighter pretreatment standards and pollution prevention. Concurrently with the development of accurate metals targets and WLAs through WER studies, the initial work can begin on local limits for industrial discharges into the POTWs. This approach is the most reasonable method to achieve the water quality objectives in the Burbank Western Channel and the LA River.

(d) There is a Water Effects Ratio (WER) study being performed by the cities of Burbank and Los Angeles

The cities of Burbank and Los Angeles have committed over three hundred thousand dollars to perform a scientific study in the LA River and the Burbank Western Channel. The purpose of this study is to determine the Water-Effect Ratio[2] (WER) for copper in the LA River downstream of the discharges of each of three municipal tertiary wastewater treatment plants – two operated by the City of Los Angeles and one operated by the City of Burbank. The WER connects water quality objectives to beneficial uses. It is important to know what copper concentrations in the River are potentially harmful to aquatic life. National water quality criteria are based on toxicity data in laboratory dilution water. The WER converts national water quality criteria for copper to site-specific objectives based on observed toxicity in the River itself, rather than in laboratory dilution water.

[2] A WER is used to determine whether physical and chemical characteristics in the site water affect the bioavailability and toxicity of copper to aquatic organisms. WER = Species EC50 in site water ÷ Species EC50 in laboratory water.

The WER is an important factor used under the USEPA system of copper water quality criteria to customize national aquatic life threshold toxicity values to site-specific ambient water column conditions. A copper WER developed for specific reaches of the LA River, if approved by the the Regional Board / State Board, and USEPA Region 9, can be used in the future to:

- evaluate the 303(d) copper impairment status of the three River reaches,
- conduct Reasonable Potential Analyses (RPA) for copper, and
- calculate maximum allowable copper concentrations in effluent for municipal and industrial National Pollutant Discharge Elimination System (NPDES) permits such that aquatic life in the LA River will be protected.

The WER determined by this study will support development of a copper site specific objectives (SSO) for specific reaches of the LA River. The SSO can be formally included by the Regional Board, with the approval of the SWRCB and USEPA, in the Basin Plan for the LA River. Alternatively, if recommendations made by the SWRCB staff in August 2003 are implemented, the WER could be approved through the NPDES permit process as a site-specific modification to CTR copper criteria.

A preliminary WER Study completed by the City of Los Angeles in July 2003[3] for dry weather conditions showed that a WER using USEPA protocols could be successfully determined for the LA River. Preliminary results suggest that the WER is higher than 1.0. In other words, the default criteria in the CTR appears to be over-protective for aquatic life. To support the community's long term vision of enhanced habitat in the LA River, it is essential to establish water quality objectives that accurately reflect beneficial uses.

The results from the Copper WER study will ultimately help the community set priorities for different implementation actions, such as stream habitat enhancement, best management practices to reduce urban runoff copper loads, and treatment plant upgrades if necessary to comply with site-specific water quality objectives. If immediate compliance is required in the TMDL, there will not be sufficient time to perform the Copper WER study and will likely result in its termination.

(e) The development of the Integrated Resources Plan (IRP) by the City of Los Angeles is ongoing

The City of Los Angeles' Integrated Resources Plan (IRP) will describe a future vision of water, wastewater and runoff/storm water management in Los Angeles that explicitly recognizes the complex relationships that exist among the region's water resources activities and functions. Addressing and integrating the water, wastewater, and runoff needs of Los Angeles in the Year 2020, the IRP also

[3] Preliminary Copper Water-Effect Ratio (WER) Study for the Los Angeles River. LWA 7/31/03

takes an important step towards comprehensive basin-wide water resources planning in the Los Angeles area.

The Regional Board has been a part of this process and has frequently praised it for its multifaceted long-term approach. This TMDL discounts the development of this plan, and does not recognize the possibility for the expansion of treatment plants or the other various alternatives that are available. If interim limits are given in the TMDL and the Implementation Schedule includes a phased approach for POTWs, the IRP will continue to be a fruitful process.

(f) Time is necessary to design, bid, build and start-up an advanced treatment process for the reduction of metals in the discharge

If the TMDL is approved in its current form, the POTWs will fall into immediate non-compliance at the adoption of their next permits scheduled for July 2005 (Staff Report page 62). Even if a compliance schedule is given in the NPDES permit, the five years allowed for interim limits is insufficient to perform source control, pre-design, design, bid, build and start-up of a facility. If reverse osmosis is necessary for compliance and a brine line must be constructed, an even longer period is needed for the design, land acquisition, permitting and construction.

Due to these six reasons, interim limits should be created for the POTWs and the Implementation Schedule should reflect a phased approach. Exhibit 1 is a proposed Implementation Schedule that allows POTWs the necessary time to take the appropriate steps to bring their discharges into compliance with water quality objectives.

Recent data for the BWRP was analyzed for to determine the appropriate interim limits. Since the BWRP has upgraded its facility to a nitrification / denitrificaiton process, a significant change in copper effluent has been realized. At the same time, a minimum of ten data points are required for the statistical analysis of interim limits. Therefore, a limited number of data points prior to the upgrade are included in the analysis.

When the copper dataset is graphed and a best-fit line is drawn, it tends to be more accurate as an exponential line than a normal line. In other words, the data "fit" this model better if they're transformed to log values. Therefore, the interim limits are based on use of the lognormal transformed dataset and best-fit regression line equation.

The thirty-day average and daily maximum interim limits for total copper are based on the 95th and 99th percentiles of effluent performance data reported by dischargers. This was the same method used for the calculation of interim limits in the LA River Nitrogen Compounds and Related Effects TMDL. Exhibit 2 includes the proposed interim limits for the BWRP and language that can be included in the TMDL regarding the interim limits.

2. The proposed TMDL does not include any discussion regarding the implementation strategy or cost analysis for the POTWs in the watershed to achieve compliance with the allocations

Since the Regional Board assumed the POTWs could immediately comply with their allocations, the proposed TMDL does not include an implementation strategy or any associated costs of additional treatment that will be incurred at the POTWs to meet these allocations. Adding treatment to a land-locked existing POTW can be very costly and those costs should not be ignored or disregarded. Burbank recommends that the proposed TMDL include language in the TMDL that addresses these necessary upgrades and takes into account the projected costs of compliance. Exhibit 3 has been attached which provides the language that can be inserted into the TMDL.

3. The proposed TMDL includes allocations for metals where there are no impairments

The data presented in the TMDL clearly show that there is no existing impairment for cadmium and zinc in the LA River or the Burbank Western Channel. The first step of a TMDL should be the verification of an existing impairment. Where an impairment is not found to exist, WLAs should not be created.

In case of cadmium, there are dry-weather monitoring results for four waterbody reaches in the watershed (Staff Report Table 5). For three of the four reaches, there were zero exceedances of the CTR limits, when adjusted for hardness, for cadmium during dry weather." (See Staff Report at 23.) In the fourth reach, there was one exceedance out of 96 measurements. In all, there was only one exceedance of the CTR criteria in 202 dry-weather samples taken from four locations in the watershed.

In the stormwater monitoring data for cadmium (taken from only one station in the watershed), only three of forty-two measurements exceeded the CTR criteria. Clearly, a review of this impairment should be made, and the metal should be delisted from the two reaches in the watershed where the impairment is listed.

During the 2002 listing process, Burbank made comments to the State Water Resources Control Board (State Board) requesting the delisting of cadmium from the Burbank Western Channel. Instead of delisting the waterbody, the State Board chose to move the TMDL priority to low until more data were collected. Burbank was assured by State Board Members Baggett and Carlton that if additional data continued to show that water quality standards were being met, a TMDL would not be created for cadmium in this waterbody.

The data in the TMDL for zinc samples are similar to those for cadmium. Zinc exceeded the chronic criteria only seven times out of 240 samples. This data indicates that a TMDL for zinc is not justified and should also be delisted.

Although Burbank may not need to perform treatment plant upgrades to meet the WLAs in the TMDL for cadmium or zinc, there are substantial costs associated with the monitoring required to prove every source is in compliance. The resources that would need to be spent toward proving compliance could be better utilized toward solving real water quality impairments in the LA River.

4. The proposed TMDL should focus on Best Management Practices (BMPs) for stormwater rather than numeric limits and compliance monitoring

Although USEPA policy allows wasteload allocations for storm water to be expressed in numeric form, it is not required. Specifically, USEPA's 2002 Storm Water TMDL/Permitting Guidance states that, "USEPA expects that most WQBELs for NPDES-regulated municipal and small construction storm water discharges will be in the form of BMPs, and that numeric limits will be used only in rare instances." See accord 40 C.F.R. §122.44(k)(2) and (3).

Burbank supports the overall iterative process of BMP assessment and implementation. We recognize the Regional Board encourages the use of smaller BMPs that address pollutant sources in preference to end-of-pipe treatment. The Regional Board has also encouraged agencies to pursue sediment removal BMPs, since metals may be associated with particulates. However, data needs to be gathered to fully evaluate such BMPs, and be able to provide assurances that standards will be met in receiving waters.

The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) recently recognized this approach through stakeholder negotiations with stormwater programs over the mercury TMDL for San Francisco Bay. In the revised Basin Plan amendments scheduled to be heard by the SFRWQCB on September 15, 2004, language added by staff clearly states that compliance is determined by implementation of BMPs to the maximum extent practicable.

All references to numeric limits for evaluation of wet weather compliance by MS4 stormwater programs and CALTRANS should be removed, as there is insufficient evidence that numeric limits for stormwater can be feasibly attained or even scientifically monitored. In the proposed Basin Plan amendment, under Waste Load Allocations, heading MS4 and Caltrans Stormwater Permittees, remove the paragraph beginning with "For wet-weather conditions, a load reduction curve is developed…." Replace that paragraph with: "Compliance during wet weather will be assessed through benchmark objectives for BMPs specified by the compliance plan. The validity of these benchmarks will be assessed through

provisions provided within the TMDL-required monitoring plan; these provisions will provide the Regional Board assurances that standards in the receiving water will be met to the maximum extent practicable. The benchmarks and monitoring provisions may be adjusted by the Executive Officer through an iterative and adaptive process as necessary data is obtained." Similar changes to section 6.4 of the Staff Report should also be made.

5. The critical flow determined at Wardlow is below the permitted flow of the POTWs

The proposed waste load allocations (WLAs) are greater than the load capacity of the river (Staff Report Tables 28 and 29) because the proposed permit calculations were done using the total design flow for the POTWs. However, the WLAs for the river are based on a critical flow at Wardlow of 145 cfs, which is less than the combined design flow of 169 cfs that the three treatment plants discharge to the river. We support the use of permitted plant design flow for the calculation of plant WLAs. See accord 40 C.F.R. §122.45(b)(1). These plants have been designed and permitted to handle these higher flows, which will translate into higher river flows when design capacity is met. Further, the IRP's public planning process is anticipating an increase in growth and associated water usage and disposal to the sanitary sewer and is considering expansion of the design capacity of these facilities to handle these increased flows. Burbank is also in the pre-design phase of the construction of an equalization basin which will increase the design flow at this facility to 12.5 million gallons per day.

The WLAs for the entire river should not be based on a flow that is less than the design flow of the three treatment plants. WLAs should be calculated on the basis of design flow plus some additive component for urban runoff discharge, as this will be the minimum flow in the river during dry weather conditions in the future. Application of a number, which is based on historical median stream gage flows, unreasonably limits POTWs from fully utilizing existing capacity that has been approved and funded by USEPA and permitted by the Regional Board.

A minimum critical flow based on POTW design flow plus an allocation for urban runoff flow contribution (e.g. equivalent to 20-40% of historical stream flows considered in the development of this TMDL) is recommended, with periodic reassessment and adjustment of the TMDL and WLAs to account for treatment plant expansions due to growth.

A reconsideration of the critical flow for the entire river is warranted. As part of our continuous planning process, we need to know the total metals load that can be assimilated when the river has reached future flows already permitted through public process. With that information, we can plan POTW and stormwater infrastructure and management in a reasoned and rational manner that will protect beneficial uses now and into the foreseeable future.

6. Legal comments regarding the proposed TMDL

A. Comments on Resolution No. 2004-XXX:

(1). The Regional Board states that the "numeric targets in this TMDL are not water quality objectives and do not create new bases for enforcement against dischargers apart from the water quality objectives they translate." Res. 2004-XXX at para. 4.

The claim that the numeric targets are not water quality objectives conflicts with a later statement that "the amendment is consistent with the State Antidegradation Policy (State Board Resolution No. 68-16), in that the changes to the water quality objectives…" Res. 2004-XXX at para. 12 (emphasis added). The TMDL cannot on the one hand state that the targets are not objectives, and on the other hand say the changes made to the objectives are consistent with antidegradation. Either the objectives are being changed or not, and the Resolution must make clear which is the case. If the targets are new objectives, then the Regional Board must comply with Water Code §13241 prior to imposing requirements based upon these objectives.

The second claim that the targets create no new bases for enforcement is also unfounded since the following sentence is the link to new enforceable requirements. The next sentence states that "The targets merely establish the bases through which load allocations (LAs) and waste load allocations (WLAs) are calculated." *Id.* The problem arises in that the targets are the basis for the WLAs, and the effluent limits in permits must be "consistent with the assumptions and requirements of any available wasteload allocation for the discharge." 40 C.F.R. §122.44(d)(vii)(B). Thus, the TMDL's numeric targets are an indirect regulation of the discharges, and the above claim is not accurate.

(2). The Resolution is legally infirm for not complying with Government Code §11353.

The Resolution at paragraph 15 concludes, with no citation of evidence to support this conclusion, that the "regulatory action meets the 'Necessity' standard of the Administrative Procedures Act, Government Code, Section 11353, Subdivision (b)." Without evidence, the Regional Board has not included in the record of the rulemaking proceeding a demonstration by substantial evidence the need for this regulation to effectuate the purpose of the statute, court decision, or other provision of law that the regulation implements. Govt. Code §11349(a). It is unclear from the record how a TMDL for all metals is a necessity for waters that are not even included on the state's 303(d) for each of the metals, or why WLAs for each metal need to be applied to all point sources whether or not they are in compliance with the objectives underlying the TMDL, or discharging into reaches of the river or its tributaries that are not deemed impaired. As such, this claim that the Necessity standard has been met is suspect.

Further, the Regional Board need not only meet the Necessity standard. The Office of Administrative Law is also obliged to review this regulation to determine compliance with the standards of authority, clarity, consistency, reference and nonduplication as each are defined in Govt. Code §11349. It is not clear that the Metals TMDL can prove compliance with these standards given the issues raised herein.

B. Comments on Attachment A to Res. No. 2004-XXX:

(1). Problem Statement Needs Refining

The finding states that "the Regional Board has identified the Los Angeles River and its tributaries as impaired due to copper, cadmium, lead, zinc, aluminum and selenium." This should be corrected to read "the Regional Board has identified certain reaches of the Los Angeles River and its tributaries as impaired due to copper, cadmium, lead, zinc, aluminum and/or selenium. No reach of the River or the tributaries is listed for all of these metals."

In addition, the problem statement should state that the water supply (MUN) and groundwater recharge (GWR) uses do not exist throughout all reaches of the River and its tributaries. Most are designated only conditionally for MUN and this use cannot be used to drive regulation. The GWR use does not exist anywhere where the channels are concrete-lined and may not exist where the only reason that the channels are soft-bottomed is due to groundwater up-welling, and little to no recharge is occurring.

Finally, there needs to be some explanation of how each of these uses is impaired by each of these metals. Just because a criterion is exceeded, this is not necessarily conclusion of a use impairment since the CTR criteria were not set specifically to address waters that are effluent dominated and flow through concrete-lined channels.

(2) Numeric Target Issues

It is unclear why dry-weather numeric targets are necessary. For many reaches, there were "zero exceedances of the CTR limits, when adjusted for hardness, for cadmium during dry weather." (See Staff Report page 23.) The copper listings were based on stormwater data. *Id.* at 23. Lead was listed for sediment, and exceedances were primarily during storms. *Id.* at 24. Zinc was listed based on stormwater data, and the exceedances are during storm events. *Id.* at 24-25.

Since TMDLs are supposed to recognize seasonal variations (33 U.S.C. §1313(d)(1)(C)), the targets should only apply to each of the metals in the actual reaches that are impaired. Many of the impaired reaches are downstream from

reaches that are not deemed impaired. Therefore, there is no justification for applying the targets to these unimpaired upstream reaches and tributaries.

Some of the concentration targets for cadmium and copper are below the CTR criteria. Three of these instances are in reaches not listed for cadmium. Inadequate justification exists for the need for targets below the water quality criteria.

(3) Wasteload Allocations

The explanation of why both concentration and mass WLAs are needed is lacking as is whether the concentrations for the POTW loads are dissolved or total. The "Other Permitted Discharges" are specified as "expressed as total metals," but the POTW section is silent.

This section does not explain why both daily and monthly limits are needed. The daily WLAs may result in effluent limits that are inconsistent with 40 C.F.R. §122.45(d)(2), unless the Regional Board includes an analysis at some point as to why longer term limits are impracticable. Like the allocations for storm water, the POTW WLAs should be "met within the receiving water for each of the reaches rather than at the end-of-pipe." (See TMDL Attachment A page 5.)

(4) Load Allocations

The information contained in this section is not based upon substantial evidence. The findings containing phrases such as "unlikely to contribute significantly" and "believed to be minor" should be deleted if not supported by evidence in the record. See also Staff Report page 58 ("thought to be" and "expected to be") and 61 ("believed to be" and "do not believe").

(5) Implementation

The Implementation section is incorporating a regulatory requirement specifically rejected by the federal government. The requirement that the stormwater permittees "provide reasonable assurance" was part of the TMDL regulations promulgated by USEPA that were overturned by congressional order. Therefore, it is inappropriate to include such a requirement in this TMDL. (*See also* Staff Report page 67.)

(6) Compliance Monitoring and Assessment

All sources should have equivalent monitoring and compliance assessment requirements. Stormwater permittees are deemed "to be in compliance with the TMDL if the in-stream pollutant concentration at the first downstream compliance assessment location is equal to or less than the corresponding concentration- or

load-based wasteload allocation." (See MDL Appendix A page 8; see also Staff Report page 56.) This should be the standard for all sources.

The alternative compliance determination for stormwater of assessing compliance with targets at the storm drain outlet (TMDL Attachment A page 8), or the requirement of effluent monitoring for POTWs (TMDL Attachment A page 9) ignores that the TMDL and its WLAs are receiving water targets that should be based on the receiving water, not end of pipe for effluent or stormwater to which the CTR criteria do not apply. (See also Staff Report page 56.)

C. Comments on the Staff Report:

(1) The front cover and the Introduction of the Staff Report identify the USEPA Region IX and the Regional Board as jointly issuing this document. However, USEPA Region IX did not publish notice in the Federal Register of this draft TMDL.

In a letter dated May 6, 2003 (see attached Exhibit 4), USEPA Region IX agreed to publish draft TMDLs in the Federal Register. Since the USEPA Region IX is listed as jointly establishing this TMDL with the Regional Board, it did not comply with its agreement to publish this draft TMDL in the Federal Register.

(2) The TMDL improperly adopts a TMDL for unlisted waters and pollutants. The Staff Report includes Table 1, which demonstrates that none of the waters are listed for all of the metals discussed in this TMDL. Only Reach 1 of the LA River is listed for five of the six metals discussed in the Staff Report.

The Staff Report contains an admission that there are no metals listings for Reach 3 and Reach 5, which coincidentally are the two reaches of the river where the City of Los Angeles' POTWs discharge. (*See* Staff Report pages 11-12 and 86.) A TMDL is not required where waters are not listed.

The Clean Water Act requires states to identify waters within its boundaries for which the effluent limits required under sections 1311(b)(1)(A) and 1311(b)(1)(B) are not stringent enough to implement any water quality standard applicable to such waters. 33 U.S.C. §1313(d)(1)(A). This identification is known as the State's "303(d) List." For waters identified on a State's 303(d) List, the state must then establish a TMDL for those pollutants suitable of such calculation. 33 U.S.C. §1313(d)(1)(C). The State has no obligation or authority to perform a TMDL for waters not included on the State's 303(d) List.

USEPA Region IX should not have allowed this TMDL to be drafted to apply to non-listed waters. In fact, USEPA Region IX in a May 6, 2003 letter provided the following recommendation to this Regional Board stating the following:

- If the Regional Board is adopting a TMDL for a segment or pollutant that is not included in the current 303(d) list, the Regional Board should clearly identify such segment as a water quality limited segment needing a TMDL for the identified pollutant. *See* May 6th Letter to Dennis Dickerson from USEPA Region IX (attached as Exhibit 4) at page 1.

- The Regional Board should provide a specific record supporting the conclusion that this is a water quality limited segment.

- The Regional Board should indicate why it is important to adopt a TMDL for this segment and pollutant at this time.

- The Regional Board should public notice the identification of the segment as a water quality limited segment needing a TMDL either before or as part of the public notice for the TMDL and the record of impairment should be available for public review during the public comment period. *Id.* at 2.

USEPA Region IX wrote this letter as part of a settlement of the Trash TMDL and recommended this process as a way to ensure that TMDL development is clear and transparent to the general public. USEPA Region IX also stated that it "plans to follow this same process when developing any USEPA TMDLs." *Id.*

However, both the Regional Board and USEPA Region IX seem to be ignoring the statutory requirements as well as the recommendations and commitments made in this letter. The Metals TMDL should limit the WLAs and LAs for each pollutant to only those reaches of the River and its tributaries that have actually been deemed "impaired" and included on the 303(d) List. The Regional Board and USEPA Region IX have not publicly notice additions to the 303(d) List, and therefore those additions cannot be added without renoticing for public comment. In addition, the record does not demonstrate that there are,additional water quality limited segments for metals and instead recognizes that there are no impairments for most metals in most reaches. For these reasons, the TMDL must be scaled back to comply with statutory requirements.

(3) For those waters where it is determined that the TMDL is not required consistent with the federal requirements, the Regional Board should stop work on the TMDL and propose to delist the waterbody and/or pollutant. *See* May 6, 2003 Letter to Dennis Dickerson from USEPA Region IX (Exhibit 5).

In this case, the Regional Board found that there are no applicable water quality standards for aluminum being exceeded and thereby needing a TMDL. However, the Regional Board makes no attempt to de-list this water and merely states that there "are not water quality standards requiring TMDL development at this time." (See Staff Report pages 25-26.) Aluminum should not only not be part of this TMDL, it should be delisted from the waters that are currently identified (i.e., Reach 1 of the LA River).

Similarly, cadmium should be delisted. The Staff Report at pg. 23 states that there were zero exceedances of the CTR limits in Reaches 3, 4, and 5 and "apparent exceedances of the chronic criteria" in the Burbank Western Channel. But, the data only revealed "1 out of 96 samples exceeded the criteria." Staff Report at 23. This single exceedance should not be the basis for listing. Furthermore, although the Staff Report cites 12 detections out of 136 samples, the maximum concentration was 1.45 µg/L, far below the CTR freshwater chronic criteria of 2.2 µg/L. Further, the Staff Report at page 60 states that "there was little evidence of wet-weather exceedances and that estimates of wet-weather loadings were well below the allowable load." For these reasons outlined in the Staff Report, the listing for cadmium, which was highlighted as inappropriate in the 2002 listing cycle, should be overturned and all WLAs and LAs for cadmium removed from the TMDL.

(4) Other listings are suspect because the listings arose from applying the CTR criteria to stormwater samples. Staff Report at 23-26. CTR criteria are ambient water quality criteria [65 Fed. Reg. 31683 (May 18, 2000); 40 C.F.R. §131.38(a)], applicable to the receiving water not to direct samples of stormwater or wastewater that have not been fully mixed in the receiving water. Any listings of metals based on this comparison of effluent or stormwater to the CTR criteria should be overturned and not included in this TMDL. Only once actual receiving water data confirms the existence of regular exceedances of the applicable water quality standards should these waters/pollutants be returned to the 303(d) list. It is questionable whether episodic exceedances should be listed. The Staff Report at page 78 admits that a "review of the available water quality data suggests that applicable CTR limits are being met most of the time during dry weather, with episodic exceedances."

(5) By applying the Metals TMDL's WLA to municipal storm water discharges, the Regional Board and USEPA are inappropriately applying the Clean Water Act ("CWA") Section 303(d) TMDL program to discharges from municipal separate storm sewer systems ("MS4s"). The Clean Water Act expressly provides that permits for discharges from MS4s are not to require compliance with the requirements set forth in CWA sections 301(b) or water quality standards set forth in CWA sections 302 and 303, but rather, such permits shall contain the requirements set forth in CWA §402(p), namely controls to reduce discharges "to the maximum extent practicable." (*See* CWA §402(p)(3)(b)(iii); 33 U.S.C. § 1342(p)(3)(B)(iii).) The adoption of new requirements in the form of waste load allocations applicable directly to stormwater, at a cost of over $1 Billion to these dischargers, is hardly the equivalent of reducing discharges to the maximum extent practicable.

(6) The standard flow measurements are using the Wardlow River Road station. (*See e.g.,* Staff Report page 31.) However, the TetraTech Report (May 2004) on page 21 states that "it is presumed that this station is associated with

the incorrect flow measurements." It is unclear why this apparently incorrect station is being used as the flow gauge for the TMDL.

D. Other Legal Issues:

(1) The TMDL does not identify the actual uses of the waters to which it applies and how the applicable water quality standard is not being implemented.

CWA Section 303(d) requires states to identify those waters within its boundaries where the effluent limitations required are not stringent enough to implement any water quality standard applicable to such waters. 33 U.S.C. § 1313(d)(1)(A). The state must establish a priority ranking for such waters, "taking into account the severity of the pollution and the uses to be made of such waters." *Id.* (emphasis added).

Thus, TMDLs are to be developed for the waters identified on the 303(d) list, based on the actual "uses to be made" of the waters in issue. The Regional Board's Basin Plan includes uses for the LA River, including "existing," "potential," and "intermittent" beneficial uses. From these uses, the Regional Board must under CWA Section 303(d) identify the actual "uses to be made" of these waters, which would render "potential" uses irrelevant for TMDL purposes.

The plain language of CWA Section 303(d)(1)(A) that the use is one "to be made" in the water body, not mere theoretical uses, such as MUN. Thus, the TMDL must be narrowed and established based on those uses which the Regional Board has expressly determined will be made of the water bodies at issue. Then, for each use to be made, the Regional Board must identify the corresponding water quality criteria set specifically to protect that use and provide the data to show how both the use and criteria are "impaired."

No evidence exists in the record indicating the method by which the Regional Board determined how any particular level and type of metals impairs the beneficial uses of the LA River Watershed, and how that impairment figured into the allocations contained therein.

(2) The Metals TMDL is a "Rule" that must comply with the APA.

The California Administrative Procedures Act ("APA") establishes basic procedural requirements for the adoption, amendment, or repeal of administrative regulations. *See* Cal. Gov't Code §§ 11340 *et seq.* Defendants are state agencies subject to the APA. *See* Gov't Code § 11000; 23 Cal. Code Regs. § 649.1. The APA provides that no State agency shall issue, utilize, enforce, or attempt to enforce any guideline, criterion, bulletin, manual, instruction, order, or standard of general application unless first adopted as a regulation and filed with the Secretary of State. *See* Gov't Code § 11340.5(a). Unless promulgated in substantial compliance with the APA requirements and supported by substantial

evidence in the administrative record, administrative regulations are without legal effect. *Id.*

A "Regulation" is defined by the APA as "every rule, regulation, order, or standard of general application or the amendment, supplement, or revision of any rule, regulation, order, or standard adopted by any state agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure." *See* Cal. Gov't Code § 11342.600. However, the APA exempts the "adoption or revision of state policy for water quality control and the adoption or revision of water quality control plans and guidelines pursuant to Division 7 (commencing with Section 13000) of the Water Code" from the general requirements of the APA and instead, subjects these policies or plans to abbreviated alternative rulemaking procedures. *See* Gov't Code § 11353(a) - (b). The Regional Board attempts to avoid the more comprehensive requirements of the APA by asserting the adoption of the Metals TMDL is simply a revision to the Basin Plan; since the Regional Board claims that the numeric targets contained in the Metals TMDLs are not new water quality objectives and are not independently enforceable.

Contrary to these statements, the Metals TMDL for the LA River Watershed is not merely a water quality control policy or plan adopted pursuant to Sections 13000 *et seq*. of the Water Code. Rather, the Metals TMDL, and the numeric targets contained therein, are rules, regulations or standards of general application adopted to implement, interpret, and make specific requirements of the Clean Water Act. *See* CWA § 303(d)(1)(C) and 303(d)(2); *see also Sierra Club v. Environmental Protection Agency*, 162 F.Supp.2d 406, 419-20 (D. Md. 2001)(finding that development of a list or load [TMDL] under the Clean Water Act constitutes a rulemaking for which notice must be provided.); *see accord Asarco Inc. v. State of Idaho*, Order on Summary Judgment, Case No. CV-00-05760 (D. Id. 2001)(the establishment of the TMDL involved "rulemaking.")

Because the Metals TMDL is a stand alone regulations promulgated under the requirements of the Clean Water Act, and not policies or plans adopted independently pursuant to Sections 13000 *et seq.* of the Water Code, the Regional Board is not entitled to rely upon the alternative rulemaking procedures specified in Gov't Code § 11353(a)-(b) when adopting the TMDL. Instead, when promulgating this TMDL, the Regional Board is required to comply with the comprehensive rulemaking procedures specified in Gov't Code §§ 11340 *et seq*. The Public Notice did not include the legally required Peer Review [CA Health and Safety Code, §57004]. It is critical for Burbank and all others who review this TMDL to see what the Peer Review panel has said about this Basin Plan Amendment. Carrying out the peer review process required by the State Water Resources Control Board is not only a legal requirement, but could also greatly improve the TMDL report, which makes numerous unsubstantiated assertions and fails to scientifically state uncertainties and assumptions.

The adoption of a Basin Plan amendment to incorporate a TMDL into the Basin Plan prior to, and without, the USEPA's approval of the TMDL is contrary to CWA section 303(d)(2) and 40 C.F.R. §130.7(d)(2).

(3) The Regional Board's Metals TMDL violates the Foundational Requirements of the Clean Water Act.

The Metals TMDL violates the CWA in several ways. First, the State has not complied with the proper CWA foundational requirements prior to embarking on this TMDL. *See* CWA §§ 208(b), 303(e), 305(b). These foundational requirements include developing a Continuing Planning Process, approved by the USEPA, that meets the requirements of section 303(e) of the CWA; developing an approved area-wide waste treatment planning process pursuant to section 208(b) of the CWA ("208 Plan"); and developing a proper 305(b) Report that meets all of the statutory requirements. Additionally, the Metals TMDL attempts to impose standards under section 301 of the CWA to for discharges from municipal storm drains, while discharges from municipal storm drains are not subject to section 301-based standards, and are only subject to the requirements set forth in section 402(p)(3)(B) of the CWA.

The CWA mandates the listing of those waters for which effluent limitations required by sections 301(b)(1)(A) and section 301(b)(1)(B) "are not stringent enough to implement any water quality standard applicable to such waters." 33 U.S.C. § 1313(d)(1)(A) (CWA, § 303(d)(1)(A)). Once these waters are identified, the state must establish TMDLs for pollutants in those waters. 33 U.S.C. § 1313(d)(1)(C) (CWA § 303(d)(1)(C)).

Section 303(e) provides that each state must have a Continuing Planning Process ("CPP") approved by the USEPA which includes: (1) effluent limitations and schedules of compliance; (2) incorporation of all elements of any applicable area-wide waste management plans and applicable basin plans; (3) TMDLs; (4) procedures for revision; (5) adequate authority for intergovernmental cooperation; (6) adequate implementation, including compliance schedules, for revised or new water quality standards; (7) controls over disposition of residual waste from water treatment processing; and (8) inventory and ranking of needs for construction of waste treatment works. 33 U.S.C. § 1313(e). This CPP must be approved by USEPA before a state permitting program under Chapter IV of the CWA may be approved. 33 U.S.C. § 1313(e)(2). California currently does not have a current continuing planning process that meets all of the statutory requirements that has been approved by the USEPA. Thus, no permits may be issued pursuant to the Metals TMDL unless and until such a CPP has been approved.

Section 208(e) of the CWA similarly provides that "No permit under section 1342 of this title shall be issued for any point source which is in conflict with a plan approved pursuant to subsection (b) of this section." 33 U.S.C. § 1288(e).

Section 208(b) requires the preparation of a continuing area-wide waste treatment planning process "208 Plan." 33 U.S.C. § 1288(b). California has not prepared an annual updated and certified 208 Plan required by CWA section 208(b). Therefore, no permits may be issued to implement the Metals TMDL requirements until such a 208 Plan has been developed, so it can be determined whether the permit is consistent with that Plan.

Section 305(b) of the CWA mandates that states estimate the environmental impacts and economic and social costs and benefits of meeting the CWA's objectives, as well as the costs of implementing non-point source controls for pollutants. California's 305(b) reports have thus far failed to fully comply with these CWA mandates. As a statutory mandate that preceded the first required 303(d) list or TMDL, this requirement is an important foundational step in the adoption of TMDLs that has been ignored.

Finally, section 301 of the CWA imposes requirements for effluent limitations on certain point sources. However, the CWA expressly provides that permits for discharges from municipal storm drains are *not* subject to section 301, but rather such permits shall require controls to reduce discharges "to the maximum extent practicable." 33 U.S.C. § 1342(p)(3)(B)(iii); *see Defenders of Wildlife v. Browner*, 191 F.3d 1159 (9th Cir. 1999). In other words, the CWA does not impose section 301 requirements on municipal storm drains. In this case, however, the Regional Board is attempting to impose section 301 water-quality-based requirements on municipal storm drains through the Metals TMDL. Such action is contrary to, and therefore violates the CWA.

(4) The Regional Board failed to adequately comply with CEQA.

The California Environmental Quality Act ("CEQA") requires the preparation of an environmental impact report ("EIR") for projects having a potential significant effect on the environment, or a negative declaration if the initial environmental study reveals no potential for significant environmental effects. *See* Cal. Pub. Res. Code § 21000, *et seq.* The underlying purpose of CEQA is to "compel government at all levels to make decisions with environmental consequences in mind." *See City of Sacramento v. State Water Resources Control Board*, 2 Cal. App. 4th 960, 969 (1992).

When a public agency proposes to carry out or approve a project that may have a significant effect on the environment, the public agency must comply with the comprehensive requirements set forth in CEQA, including the preparation and certification of an EIR that considers the potential environmental impacts, alternatives, and mitigation measures. *See* Cal. Pub. Res. § 21100 *et seq.* The Regional Board is a public agency, subject to the requirements set forth in CEQA. *See* Cal. Pub. Res. Code § 21063.

The adoption of the Metals TMDL is a "project," which is defined as an activity by a public agency which may cause either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment. *See* Cal. Pub. Res. Code § 21065. The Regional Board failed to provide any evidence in the record of compliance with the requirements of Public Resources Code section 21100 *et seq*. when adopting this Metals TMDL.

At the time of the adoption of a rule or regulation requiring the installation of pollution control equipment, or a performance standard or treatment requirement, the Regional Board must, at the very least, perform an environmental analysis of the reasonably foreseeable methods of compliance. *See* Cal. Pub. Res. Code §§ 21159; 21159.4. The environmental analysis shall, at a minimum, include all of the following:

(a) An analysis of the reasonably foreseeable environmental impacts of the methods of compliance;
(b) An analysis of reasonably foreseeable feasible mitigation measures;
(c) An analysis of reasonably foreseeable alternative means of compliance with the rule or regulation; and
(d) A reasonable range of environmental, economic and technical factors, population and geographic areas, and specific sites. *See* Cal. Pub. Res. Code § 21159(a) and (c).

The Regional Board has not provided any evidence in the record that it complied with the requirements of Public Resources Code section 21159. The evidence in the record indicates that the Regional Boards' only attempt to comply with CEQA was to develop a deficient Environmental Impacts checklist to satisfy the more limited requirements for actions taken pursuant to a certified regulatory program under 14 C.C.R. sections 15250 *et seq*.

Even with a certified regulatory program, the Regional Board must specifically prepare a substitute document for an EIR or negative declaration, which includes at least the following items:

(a) A description of the proposed activity; and
(b) Either:
  (1) Alternatives to the activity and mitigation measures to avoid or reduce any significant or potentially significant effects that the project might have on the environment, or
  (2) A statement that the agency's review of the project showed that the project would not have any significant or potentially significant effects on the environment and therefore no alternatives or mitigation measures are proposed to avoid or reduce any significant effects on the environment. This statement shall be

> supported by a checklist or other documentation to show the possible effects that the agency examined in reaching this conclusion.

See 14 C.C.R. § 15252; *see also* 23 C.C.R. § 3777 (requiring a brief description of the proposed activity, reasonable alternatives to the proposed activity, and mitigation measures to minimize any significant adverse environmental impacts of the proposed activity).

Although recognizing the requirement to submit a written report which describes the proposed activity, the potential significant adverse impacts, the reasonable alternatives and the mitigation measures to minimize any potential significant adverse impacts (see cover to CEQA Checklist), the Regional Board's Environmental Impacts checklist and Discussion of Environmental Evaluation fail to satisfy the applicable requirements.

The Environmental Impacts checklist for the Metals TMDL inappropriately found no potential, short-term, cumulative, or substantial adverse environmental impacts resulting from the load allocations contained in this TMDL or from the implementation procedures for this TMDL. However, the Environmental Impacts checklist and Discussion of Environmental Evaluation failed to provide any explanation or grounds supporting the conclusions that no potential, short-term significant, or cumulative environmental impacts may be associated with this TMDL. Furthermore, these conclusions contradict the Regional Board's later declaration that "specific projects employed to implement the TMDL may have significant impacts," and defers these projects to a "separate environmental review." (*See* Discussion of Environmental Evaluation page 13.) This deferral of review is contrary to reviewing the cumulative impacts at the earliest possible point. *See* Pub. Res. Code §21003.1(a); §21083(b)(definition of "cumulatively considerable").

The Environmental Impacts checklist and Discussion of Environmental Evaluation are skeletal analyses that fail to set forth the requisite basis for the findings being made. The environmental review is a superficial analysis of the potential environmental impacts that will result from the TMDL. The Environmental Impacts checklist and Discussion of Environmental Evaluation are not supported by substantial evidence in the record.

The implementation of the Metals TMDL may cause potentially substantial adverse changes in the environment that have not been adequately addressed in Environmental Impacts checklist or the Discussion of Environmental Evaluation and for which no alternatives or mitigation measures have been analyzed, suggested, or required.

Thank you for the opportunity to submit comments. If you have any questions, please call me at (818) 238-3931.

Sincerely,

Rodney Andersen, Principal Civil Engineer

cc: Bruce S. Feng, City Manager/Public Works and Capital Projects
Bonnie Teaford, Chief Assistant Public Works Director – City Engineer

Caltrans Comments

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENVIRONMENTAL ANALYSIS, MS 27
1120 N STREET
P. O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 653-7507
FAX (916) 653-7757
TTY (916) 653-4086

Flex your power!
Be energy efficient!

August 25, 2004

Ms. Jenny Newman
California Regional Water Quality Control Board
Los Angeles Bay Region
320 West Fourth Street, Suite 200
Los Angeles, CA 90013

Email: jnewman@rb4.swrcb.ca.gov

RE: Comments on the "Proposed amendment to the Water Quality Control Plan for the Los Angeles Region to incorporate a Total Maximum Daily Load for Metals for the Los Angeles River and Tributaries"

Dear Ms. Newman:

The current draft staff report for "Total Maximum Daily Load for Metals Los Angeles River and Tributaries" and proposed Basin Plan amendment includes provisions pertaining to the Department of Transportation's (Department) responsibility for reducing metals loads to Los Angeles River and Tributaries. We are supportive in efforts to improve water quality in the Los Angeles River, but concerned with the numeric targets, implementation plan and economic analysis that are proposed.

The Los Angeles River is an effluent dominated system, which would have little or no flow during substantial parts of the year. Under natural conditions the LA River cannot support many of the designated uses assigned to it during dry weather, such as warm freshwater habitat. Consequently, the development of a TMDL for dry weather conditions to support aquatic life is not appropriate.

The TMDL draft staff report and the Basin Plan amendment acknowledge assigning load and waste load allocations based on watersheds. Approximately 6,950 acres of the Department's right-of-way within Region 4 drains to the Los Angeles River. This area represents approximately 1.3% of the total watershed (834 square miles) that flows to the Los Angeles River. Given the small fraction of the runoff that the Department contributes to this watershed, the Department's equitable annual loading and share allocation must be based on tangible data.

The economic analysis described in the TMDL staff report discounts the actual cost of installation of infiltration and sand filter systems documented by the Department. Although a third party study did find that reported costs were lower in other areas, only

the Department's facilities had actual bid costs for each site (Caltrans, 2001). In addition, the pre-bid engineer's cost estimate based on unit prices compiled from historical highway projects were very similar to the actual costs incurred. The TMDL draft staff project report grossly underestimates the cost of BMP implementation and does not consider lifecycle costs including operation and maintenance costs. Furthermore, the Department is limited in available land within its right-of-way. This may require purchase of additional land to accommodate the space required for installation of BMPs. Our preliminary cost to provide treatment to 40% of our drainage area is a minimum of $300 million (based on lifecycle unit cost for sand filters – Caltrans, 2004). This minimum cost estimate assumes treatment of 40% of the Department's contributing drainage area of 1.3% of the LA River watershed (5-acre area treated per sand filter site). The minimum cost does not consider land cost, design engineering, permitting and mitigation costs, or traffic control costs, which if needed may escalate the minimum cost by two to three times.

The following comments highlight some of our specific concerns regarding the report, modeling approach, results, and draft TMDL.

- The LA River is concrete lined over much of its length and would not fully support a natural aquatic system even if the water was of sufficient quality. Consequently, the TMDL proposed will not achieve the desired result.

- Calibration and verification of the low flow model is based on only the data for a single day. This is an insufficient sample on which to base a model.

- Although the report states that Publicly Owned Treatment Works (POTWs) "are generally discharging effluent that meets the water quality standards," it is clear from Table 20, in the TMDL Staff Report page 43, that these discharges routinely exceed water quality standards for dissolved copper.

- Since the dry weather model "is not able to represent all the temporal and spatial variability observed in the in-stream metals concentrations," it seems contradictory to conclude that the "model provides a reasonable assurance that we understand the relationship between in-stream loads and targets."

- The calibrated wet weather model also does a poor job at predicting stream concentrations and is not sufficiently accurate for developing a TMDL with the substantial costs associated with the retrofitting of stormwater drainage systems. An example between model output and observed values is shown in Figure 1 (Figure C-5 in Appendix C of Appendix II of the Staff Report). In general, the model predicts maximum concentrations that far exceed any observed concentrations.

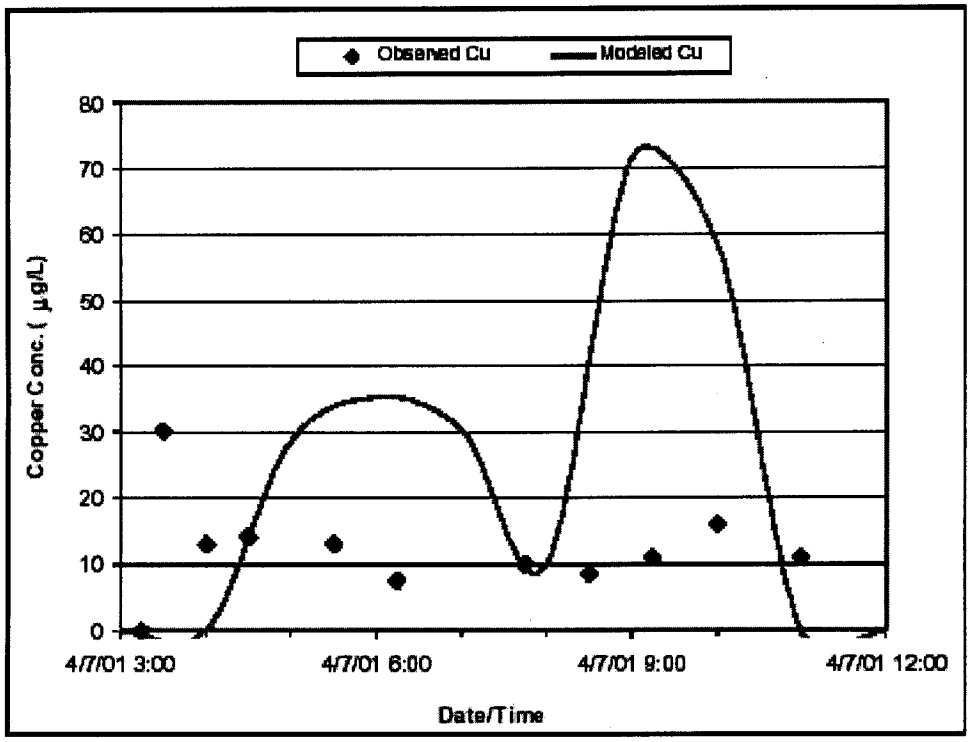


Figure 1 Observed and predicted Copper at Arroyo Seco

- Table 30, page 56 of the TMDL Staff Report, allows the POTW to discharge copper during dry weather at concentrations that exceed the water quality objective for copper. By allowing the POTWs to discharge a disproportionate share of the copper loading, the MS4 permittees are unfairly penalized.

- In Section 5.2 of the L.A. River TMDL, the hydrodynamic water quality model that was used to generate the wet-weather load duration curves is described. The model relies on several input parameters for its calculations to accurately predict actual hydrologic and hydraulic responses. One of the most important of the parameters is land use. There are seven unique land use categories that were entered into the model: residential, commercial, industrial, open, agriculture, water, and other. Transportation is not among these categories, but represents a hydrologically discrete land use that should be incorporated into the model. This is especially true since The Department and the MS4s are held to specific WLAs.

- The draft TMDL uses aquatic life water quality criteria based on the following factors: acute and chronic conversion factors, slope factors, intercept terms, hardness values, and water effects ratios. Water effects ratios are site-specific ecotoxicological coefficients that range from 0 to 1. The TMDL assumes a water effects ratio of 1, meaning that all of the measured metals are biologically available and toxic. This assumption may drastically over-state the actual toxicity of the concentrations that are observed onsite. A site-specific ecotoxicological evaluation

of the water effects ratios at L.A. River should be undertaken to ensure the accuracy of the aquatic life criteria. Lee and Jones-Lee (2000) assert that a basic problem with using US EPA water quality criteria as discharge limits includes the failure to properly incorporate the aquatic chemistry of constituents into their implementation as state standards. Further, ambient waters and their sediments contain a wide variety of constituents which detoxify/immobilize the toxic/available forms of potential pollutants such as heavy metals.

- The method of presentation of wet weather load reductions (i.e. the load–duration curve) is ineffective and confusing. The concentration-based targets that are supposedly derived from these model generated curves are apparent, but their determination is not clearly elaborated. More detail needs to be added to allow for comprehension of the model outputs.

- The TMDL reports that the wet weather "model tends to overestimate loads, actual reductions required to meet the waste load allocations are likely less than predicted by the load-duration curves." Consequently, the required reductions should be decreased to reflect this bias.

- The economic analysis is based on an unsubstantiated assumption that compliance can be achieved without structural controls for 60 percent of the watershed. The basis for this determination needs to be clarified.

- The economic analysis assumes that 20 percent of the watershed could be treated with infiltration facilities. The technical feasibility for implementing infiltration devices needs to consider site constraints such as soil characteristics, proximity to groundwater, potential groundwater contamination, adequate access, and safety for motorists along The Department facilities.

Thank you for the opportunity to comment. If you have any questions, please contact Keith Jones at (916) 653-2351 or Robert Wu at (213) 897-8636.

Sincerely,

MICHAEL FLAKE, Chief
Storm Water Policy, Planning and Permitting Office

c: Bill Reagan – D7
Paul Thakur – D7
Robert Wu – D7
Tom Mumley, San Francisco Bay RWQCB, 1515 Clay Street, Suite 1400, Oakland, CA 94612

References:

Lee, G. Fred., Jones-Lee, Anne. 2000. *Development of TMDL Goals and Wet Weather Standards for the Control of Heavy Metals in Urban Stormwater Runoff.* Proceedings of the Water Environment Federation's 73rd Annual Conference, Anaheim, CA, October, 2000, Online.

Caltrans. 2001. *Third Party BMP Retrofit Pilot Study Cost Review. Prepared for Caltrans Environmental Program*, Office of Environmental Engineering. May 2001

Caltrans. 2004. *BMP Retrofit Pilot Program – Final Report.* Report ID CTSW – RT – 01- 050. January 2004.