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GAIL FARBER, Director

# COUNTY OF LOS ANGELES

## DEPARTMENT OF PUBLIC WORKS

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January 24, 2013

IN REPLY PLEASE  
REFER TO FILE **WM-9**

Dr. Cindy Lin (WTR-2)  
U.S. Environmental Protection Agency  
Southern California Field Office  
600 Wilshire Boulevard, Suite 1460  
Los Angeles, CA 90017

Dear Dr. Lin:

### **COMMENT LETTER – MALIBU CREEK AND LAGOON SEDIMENTATION AND BENTHIC EFFECTS TOTAL MAXIMUM DAILY LOAD**

On behalf of the County of Los Angeles and the Los Angeles County Flood Control District, thank you for the opportunity to comment on the Malibu Creek and Lagoon Total Maximum Daily Load for sedimentation and nutrients to address benthic community impairments. Enclosed are our comments for your review and consideration.

If you have any questions, please contact me at (626) 458-4300 or [ghildeb@dpw.lacounty.gov](mailto:ghildeb@dpw.lacounty.gov) or your staff may contact Ms. Angela George at (626) 458-4325 or [ageorge@dpw.lacounty.gov](mailto:ageorge@dpw.lacounty.gov).

Very truly yours,

GAIL FARBER  
Director of Public Works

GARY HILDEBRAND  
Assistant Deputy Director  
Watershed Management Division

GA:jtz

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Enc.

cc: Chief Executive Office (Dorothea Park)  
County Counsel (Judith Fries)

# Comments of the County of Los Angeles and the Los Angeles County Flood Control District on Malibu Creek and Lagoon TMDL for Sedimentation and Nutrients to address Benthic Impairments

## 1. The effects of wildfire and invasive species should not be downplayed

Given the historic recurrence of wildfires in Malibu Creek watershed<sup>[1]</sup> and the documented ecological impact of wildfires, we respectfully disagree with staff's assertion that wildfires are not a significant contributing factor to benthic community impairments in Malibu Creek and Lagoon. The TMDL does not provide evidence to substantiate eliminating wildfires as a significant contributing factor. Based on our research, wildfires may be a significant cause of physical channel alterations and biological impairments observed in Malibu Creek and Lagoon. Dramatic increases in flow and sediment delivery following wildfires have been documented in literatures<sup>[2,3]</sup>. Wildfires are often followed by sediment-laden flows or mudflows, especially in high gradient streams such as Malibu Creek, and can lead to habitat destruction<sup>[4,5]</sup> as well as increased pollutant loading into streams<sup>[6,7]</sup>. Wildfires are not new but rather very common in Los Angeles Basin. For example, the 2009 Station Fire in the San Gabriel Mountains sent more than 2 million cubic yards of sediment into several debris basins during the subsequent rain season. Other wildfires have had similar effect over the years.

The TMDL also inappropriately downplays the impact invasive species have on the biological community. Invasive species, such as the New Zealand Mud Snail, have been a major concern in Malibu Creek, and their negative impact on biological communities is well documented<sup>[8]</sup>. The TMDL maintains that invasive species are not a primary stressor, because Malibu Creek was listed for biological impairment before the Mud Snail invasion. We do not believe that this is sufficient justification to exclude invasive species as a primary stressor because, although they may not be the primary cause of the original impairment, the presence of invasive species undeniably harms the overall health of the biological community in the watershed.

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<sup>[1]</sup> Wildfire occurrences in Malibu Creek since 1950s is presented in Appendix B-3 of the staff report.

<sup>[2]</sup> Ice et al (2004): Effects of wildfire on soils and watershed processes.

<sup>[3]</sup> Pierson et al: Impacts of fire on hydrology and erosion in steep mountain.

<sup>[4]</sup> Rinne and Miller: Wildfire in the southwestern USA: Effects on rare, native fishes, and their habitats.

<sup>[5]</sup> Bond and Bradley: Impacts of the 2003 southern California wildfires on endangered species.

<sup>[6]</sup> Bitner et al (Los Alamos National Laboratory): Review of wildfire effects on chemical water quality.

<sup>[7]</sup> Burke et al (2011): Dynamics of pre- and post-fire pollutant loads in urban fringe watershed.

<sup>[8]</sup> See <http://mudsnails.com/>; and <http://www.invasivespeciesinfo.gov/>

Therefore, a TMDL that is intended to address benthic impairment in Malibu Creek and Lagoon must adequately address the impact of wildfires and invasive species, which are primary contributing factors to the biological impairment.

## **2. The proposed nutrient targets are unattainable and not supported by evidence**

We are very concerned about the nutrient targets of 0.6 mg/L total nitrogen and 0.1 mg/L total phosphorus being proposed by the TMDL. These targets are extremely low and cannot be achieved even at natural sites. Moreover, the TMDL's analysis does not provide sufficient evidence to justify the use of nutrient targets and allocations that are lower than those used in the 2003 Malibu Creek Nutrient TMDL. It is our understanding that the Regional Water Board is in the process of developing an implementation plan for the Malibu Creek Nutrient TMDL, and revisions to the targets and allocations, if warranted, could be considered at that time. We request that the nutrient targets and allocations in the current TMDL be consistent with the existing Malibu Nutrient TMDL.

If EPA insists on revising the nutrient targets now, the new targets should be no more stringent than the concentrations measured at reference sites in the Malibu Creek watershed. Page 10-10 of the draft staff report states:

*“The NNE framework makes it clear that the appropriate nutrient targets cannot be less than natural background. ...the natural background concentration for total nitrogen in the watershed is below 0.67 mg/L outside of the Modelo formation and approximately 1.3 mg/L within the Modelo formation, both greater than the NNE target. ...a natural background concentration of 0.14 mg/L of total phosphorus outside of the Modelo formation and 0.6 mg/L with the Modelo formation, both well in excess of the target yielded by the NNE analysis. ...The information on natural background concentrations suggests that attaining the NNE target of 150 mg/m<sup>2</sup> chlorophyll-a is likely not feasible in this watershed.”*

Also, page 7-23 of the draft staff report states:

*“The median total nitrogen at a [reference] station (draining Modelo formation) is 1.33 mg/L in summer and 1.73 mg/L in winter.”*

In line with the above findings, the nutrient targets for Malibu Creek watershed should not be less than the following background concentrations.

<b>Season</b>	<b>Areas draining Modelo formation</b>		<b>Areas draining non-Modelo formation</b>	
	TN (mg/L)	TP (mg/L)	TN (mg/L)	TP (mg/L)
Summer	1.30	0.60	0.67	0.14
Winter	1.73	0.60	1.00	0.14

Further, the nutrient waste load allocations (WLA) should be expressed as mass instead of concentration. Concentration-based allocations are not only infeasible to address using available best management practices, but they are also counter to the current trend towards reducing stormwater pollution through runoff volume reduction. Stormwater dischargers are increasingly encouraged to reduce pollutant loading by infiltrating or capturing and reusing stormwater runoff. While a mass-based WLA is consistent with this approach, a concentration-based one is not. Moreover, it is the mass of total nutrient input, as opposed to instantaneous concentrations, that matters when it comes to reducing algal coverage and protecting beneficial uses.

Lastly, the targets for benthic algal coverage should be set as an alternative target to the TN and TP targets, not as a target to be achieved in conjunction with TN and TP targets. These targets should be set based on observations at reference sites. The 30 percent and 60 percent thresholds for floating and mat algal coverage, respectively, are not achievable in Malibu Creek watershed due to its unique natural geology that contributes to elevated algal coverage.

**3. The linkage between sedimentation and benthic community impairments is not supported by evidence**

The TMDL analysis provides little evidence to link sedimentation and biological impairment in Malibu Creek; yet, the TMDL identifies sedimentation as the primary cause of the biological impairment and sets allocations based on sediment load. While the IBI scores (which are a measure of the biological health in the Creek) shows very poor to poor conditions (see Figure 8-3 of staff report), the physical habitat scores (which are a measure of sedimentation and other physical conditions in the Creek) are reported to be in the marginal to optimal range (see Figure 8-22 of staff report), which are generally considered acceptable habitat condition. No poor physical habitat scores have been reported for Malibu Creek. This appears to indicate the absence of correlation between IBI and habitat scores; and, thus, sedimentation as a less likely cause of biological impairment in the Creek. The TMDL’s conclusion that sedimentation is the primary cause of biological impairment is, therefore, unsupported by evidence. In the absence of a substantiated linkage, the TMDL should not establish allocations for sedimentation.

Further, the TMDL erroneously assumes that more sediment loading comes from urban discharges than from undeveloped areas. Though urbanization tends to increase flow, it does not necessarily increase sediment load in stormdrain discharges. On the contrary, discharges from urbanized areas typically contain less sediment than that from natural areas. This is why in urbanized watersheds, stream bank stabilization controls such as concrete- or riprap-reinforced banks are commonly constructed to protect against the erosive effects of sediment-hungry flows. By assigning sediment waste load allocations to MS4 discharges, the TMDL may inadvertently exacerbate hydromodification by further decreasing the amount of sediment in MS4 discharges, which makes the water more “sediment-hungry” and more erosive. The TMDL should be revised to remove the sediment waste load allocations assigned to MS4 discharges.

#### **4. The impact from State Parks and National Forest lands should be recognized**

The California Department of Parks and Recreation has land management and ownership responsibility not only for the Malibu Lagoon but also for the State Parks in Santa Monica Mountains that drains to Malibu Creek. The land area under state jurisdiction accounts for about 8.5 percent of the Malibu Creek watershed. Additionally, about 10 percent of the watershed is under the jurisdiction of the National Forest Service. A map that shows the different jurisdictions within the watershed is attached.

Park and forest land management involve various activities including road or trail construction and maintenance, recreational activities, and timber management. As described in the “*Waiver of Waste Discharge Requirements for National Forest System Lands in California*”<sup>[9]</sup>, these activities are known to cause significant sediment and pollutant delivery to streams as well as removal of riparian vegetation resulting in water temperature and habitat changes. The County and cities have no control over the state and federal lands. Therefore, the impact of park and forest management activities on the Malibu Creek should be recognized in the TMDL, and the State and National Parks/Forest Services should be named responsible parties. Also, Figure 4-1 in the draft staff report should be revised to reflect the jurisdictional areas as indicated in the attached map.

#### **5. The TMDL should only use reference sites within Malibu Creek Watershed**

The TMDL uses Lachusa Creek and Solstice Creek as reference sites for assessing the water quality and biological conditions in Malibu Creek. We believe these are not appropriate reference sites because they are located outside of Malibu Creek

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<sup>[9]</sup> [http://www.waterboards.ca.gov/board\\_info/agendas/2011/dec/120611\\_17usfs\\_waiver.pdf](http://www.waterboards.ca.gov/board_info/agendas/2011/dec/120611_17usfs_waiver.pdf)

Watershed, and their geologic characteristics differ significantly from the Malibu Creek Watershed. Malibu Creek Watershed is unique in its geology. Much of the northern headwaters of the watershed drain areas primarily dominated by the *Monterey or Modelo formation*, a natural petroleum-bearing geologic formation (see Figure 4-4 of the draft staff report).

The impact of Modelo formation on water quality and aquatic life is well-documented<sup>[10,11]</sup>. This unique geologic formation is known to be associated with high levels of metals, nutrients, selenium, sulfate, total dissolved solids, and algae. It is also often characterized by poor benthic microinvertebrate and fish community. These effects have been observed in Malibu Creek and can be seen by comparing water quality and benthics data from undeveloped sites with Modelo formation (e.g., Cheseboro Creek) and non-Modelo formation (e.g., Cold Creek) as presented in Figures 7-18, 8-3, 8-6, and 8-9 of the draft staff report.

Given the clear evidence for the impact of Modelo formation on water quality and aquatic habitat throughout the Malibu Creek and its tributaries (except Cold Creek), the use of non-Modelo impacted sites (Lachusa and Solstice Creeks) from outside the watershed for reference is unjustified. The TMDL should be revised to use Cheseboro Creek and Upper Las Virgenes Creek as reference sites for all sites within the watershed, except for Cold Creek.

## **6. The impact of Modelo Formation is not limited to areas within the Modelo Formation: It extends to downstream reaches**

In analyzing the impact from Model formation, the draft staff report treats only sites within Modelo formation as Modelo-impacted sites (see Figures 7-14, 7-18, 8-9, and 8-10). In reality, though, all sites downstream of the Modelo formation, including MC-1, MC-12, MC-15, and the lagoon, are also influenced by the Modelo formation. Therefore, the TMDL's assessments and associated discussions should be revised accordingly. For example, the shaded area for the Modelo formation in Figures 8-9 and 8-10 should be revised to include MC-1, MC-12, MC-15, and TR-17.

## **7. The TMDL should clarify the waterbodies being addressed**

As stated in Section 2.2 and several places thereafter in the draft staff report (e.g., page 8-10, section 9.3), this TMDL appears to address only the main stem of Malibu Creek (downstream of Malibou Lake) and Malibu Lagoon in accordance with the

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<sup>[10]</sup> USGS (2002): Hazardous trace elements in petroleum sources rocks – the Monterey Formation.

<sup>[11]</sup> LVMWD (2011): An analysis of the impacts of Modelo Formation on water quality and aquatic life in Malibu Creek Watershed.

requirements of the consent decree. The 2010 amendment to the consent decree removes the requirement to complete TMDLs for Malibu Creek tributaries at this time. On the other hand, some sections of the staff report (e.g. the TMDL allocations) appear to include tributaries. The TMDL should be revised to clearly and consistently identify which waterbodies are being addressed.

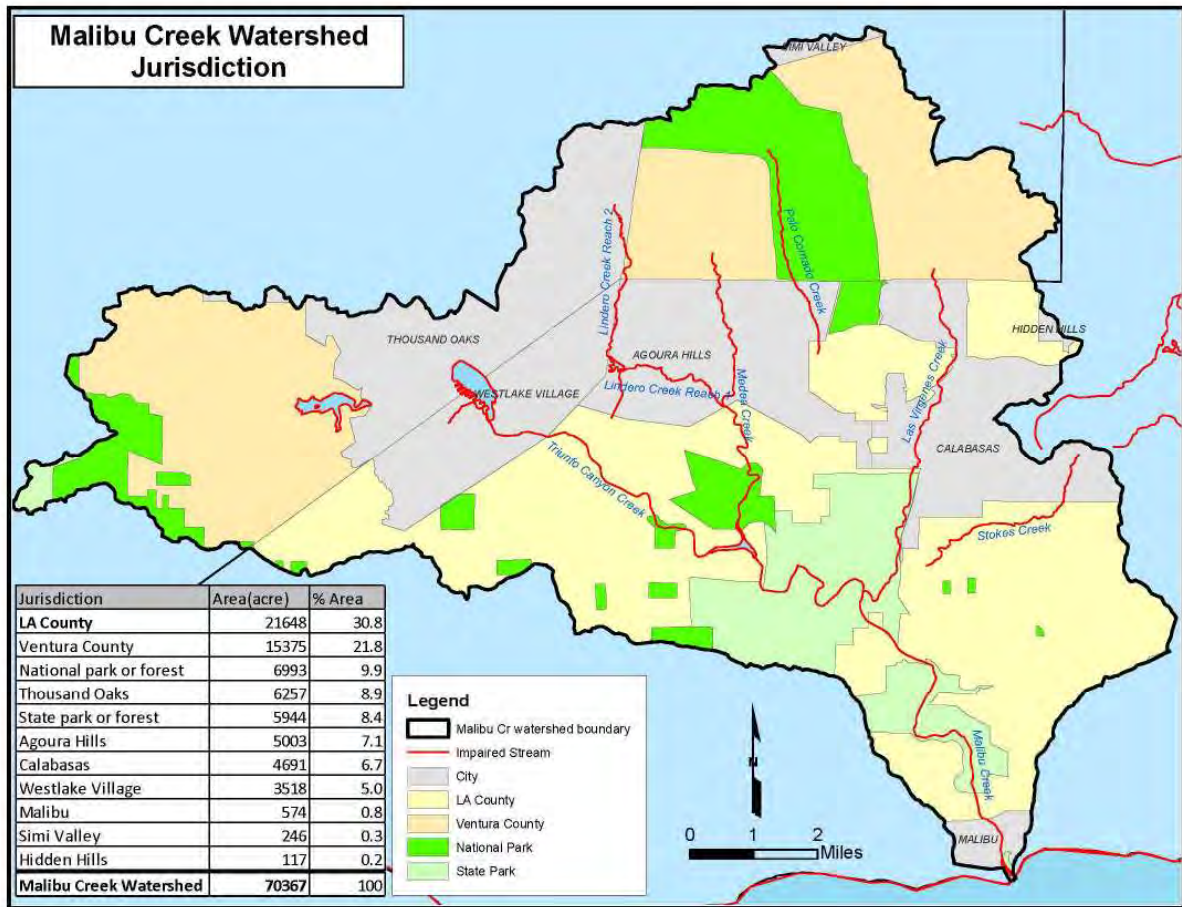
#### **8. The TMDL should establish interim targets until adoption of the statewide biological objective policy**

The State Water Resources Control Board (State Water Board) is currently in the process of developing a statewide biological objective (bio-objective) policy<sup>[12]</sup>, which is expected to be adopted in about a year. The criteria to be established in the bio-objective policy will affect all benthic community TMDLs in the state. To our knowledge, Malibu Creek benthic TMDL is the first of its kind in California. Given USEPA's obligation under the consent decree to develop this TMDL by March 2013, we understand this TMDL must be adopted prior to the adoption of the bio-objective policy. In the absence of biological criteria, however, the TMDL should only establish interim targets that guide management actions until the state policy is adopted. Upon the adoption of the state's policy, the TMDL should be reconsidered to set the proper final targets and allocations consistent with the state policy.

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<sup>[12]</sup> [http://www.waterboards.ca.gov/plans\\_policies/biological\\_objective.shtml](http://www.waterboards.ca.gov/plans_policies/biological_objective.shtml)





**Figure: Jurisdictional Boundaries in Malibu Creek Watershed.**