

**Proposed Amendment to the Water Quality Control Plan  
for the Los Angeles Region to Prohibit On-Site Wastewater  
Disposal Systems (OWDSs) in the Malibu Civic Center Area**

Testimony by Chad Nelsen,

Environmental Director at the Surfrider Foundation

November 5, 2009

**INTRO:**

Chairperson Lutz, Board members and Staff-

My name is Chad Nelsen and I am the Environmental Director of the Surfrider Foundation. I am also a doctoral candidate at UCLA's School for Public Health, where I am studying the economics of coastal recreation.

I am here to make two important points about the economics

of water quality impairment in Malibu. First, I will describe the economic costs of the public health burden resulting from water quality contamination in Malibu. Second, I will describe some of the potential economic benefits of improving water quality.

### **ECONOMICS OF WATER QUALITY IMPAIRMENT:**

According to a 1999 Haile et al. study based on Los Angeles beaches, water quality contamination can cause skin rash, eye and ear infections, significant respiratory disease and Gastrointestinal (GI) illness. These illnesses have a variety of economic costs to those affected -- ranging from medical expenses to lost time at work to non-market impacts.

In their 2006 study, Given and Pendleton estimated the regional public health costs of contaminated coastal waters. Their study (based on data from 2000) estimated just under 2

million beach visitors a year to Malibu beaches. Based on official water quality results and two standard epidemiological models they estimate **excess** GI illness (meaning above typical levels at clean beaches) at Southern California beaches, including Malibu. They estimate between 25,000 and 100,000 excess illnesses per year in Malibu due to ocean pollution. This results in \$1.1 to \$4.2 million in public costs annually due to illness associated with contaminated water in Malibu. This represents a significant public health burden both in terms of both number of GI cases and costs of GI. The corollary to this finding is that water quality improvement in the City would result in public health benefits.

### **ECONOMICS OF WATER QUALITY IMPROVEMENT:**

The good news is that water quality improvements in Malibu will provide economic and societal benefits.

In the 2004 Southern California Beach Valuation study, Hanemann & Pendleton looked at economic benefits of improving beach water quality at Malibu Surfrider Beach. Using a very robust economic model, they estimated the benefit of moving the water quality up one Heal The Bay letter grade -> from a 2 (C-grade) to a 3 (B-grade).

This improvement in water quality at Malibu Surfrider would have two impacts on beach goers. First, the number of trips taken to Surfrider beach would increase by 1,538 visits per year. The second major impact of an improvement in water quality is the annual consumer's surplus of beach users improves by more than \$140,000/ year. The majority of these benefits accrue to local residents (i.e., residents of Los Angeles County).

In addition, the total **economic impact** (local spending), including the multiplier impacts (indirect plus induced

impacts) results in an estimated increase in sales/output of over \$45,000/year.

Remember, these figures are for only a **one** letter grade improvement. The economic benefits would be higher if the water quality improvement was more dramatic, say from an F to a B.

In conclusion, improving the water quality in Malibu by prohibiting new septics and phasing out of current septics in the area surrounding Surfrider Beach will significantly reduce the high public welfare burden associated with poor water quality and result in increased visits, increased societal benefits (consumer surplus benefits) and increase economics impacts (spending associated with beach visits).

These costs and benefits accrue annually, so every year that the water quality remains poor the costs and will be felt and

the economic benefits of improved water quality will be lost.

Thank you.

**Additional notes:**

Nonmarket benefits represent the value society places on resources, such as beaches, beyond what people have to pay to enjoy these resources – basically it a measure of their willingness to pay to enjoy the beach above and beyond their transportation costs.

Evidence from a 1995 epidemiology study at Surfrider Beach translates this failure to meet water quality criteria into a specific increase in human illness rates: 39 of every 1,000 swimmers at Surfrider Beach are expected to contract gastrointestinal illnesses. This illness rate is in excess of a standard of 19 illnesses per 1,000 people.

Each illness has a cost ranging from \$33.35 (\$2000: Dwight 2005) to \$280 (\$2000: Mauskopf and French 1991). This estimates above conservatively used the lower bound (references from Given and Pendeton 2006).

### **References:**

Given, S., L. H. Pendleton, et al. (2006). "Regional Public Health Cost Estimates of Contaminated Coastal Waters: A Case Study of Gastroenteritis at Southern California Beaches." Environmental Science and Technology **40**: 4851-4858.

Haile, R.W.; Witte, J.S.; Gold, M.; Cressey, R.; McGee, C.; Millikan, R. C.; Glasser, A.; Harawa, N.; Ervin, C.; Harmon, P.; Harper, J.; Dermand, J.; Alamillo, J.; Barrett, K.; Nides, M.; Wang, G. Y. The health effects of swimming in ocean water contaminated by storm drain runoff. *Epidemiology* 1999, 10, 355-363.

Hannemann, M.; Pendleton, L.; Mohn, C.; Hilger, J.; Kurisawa, K.; Layton, D.; Vasquez, F. Using Revealed Preference Models to Estimate the Affect of Coastal Water Quality on Beach Choice in Southern California; National Oceanic and Atmospheric Administration, Minerals Management Service; The California State Water Resources Control Board, California Department of Fish and Game: Sacramento, CA, 2004.