



STATE OF  
WASHINGTON

Dix Lee Roy  
Governor

DEPARTMENT OF ECOLOGY

1200 Water Tower Center, Olympia, WA 98501

MEMORANDUM  
December 30, 1980

Publication No. 80-e10

WA-09-1000

To: Mike Blum  
From: Joseph Joy  
Subject: Longfellow Creek water quality Index Calculation  
Segment: 04-09-05

An overall water quality index (WQI) rating has been calculated for Longfellow Creek at your request. Data were used from the *Longfellow Creek Rehabilitation Study - Appendix: Water Quality Data*<sup>1</sup>, collected in July and December of 1976.

The index was calculated in a manner similar to intensive survey indices described in the attached memorandum of June 6, 1980. The paucity of available data made it necessary to modify the calculation in this manner to generate a WQI. Two sets of monthly mean WQI values were calculated from results of sampling along the course of the creek. These parametric indices for July and December were used to generate the overall WQI rating of 26.7. Parameters and corresponding WQI values are presented in Table 1.

Table 1

<u>Parameter</u>	<u>July</u>	<u>December</u>	<u><math>\bar{x}</math> Parameter Index</u>
Dissolved Oxygen	10.6	16.0	13.4
pH	10.7	6.8	8.8
Fecal Coliform	30.3	24.2	27.2
Trophic	28.2	20.5	24.4
Aesthetics	1.5	3.7	2.5
Weighted monthly $\bar{x}$	30.6	21.6	
<u>Overall Index Rating:</u>			26.7

The trophic and coliform parameter indices were responsible for elevating the overall rating. The data indicated that there were high levels of ammonia, copper, zinc, and lead. These parametric categories lacked adequate accessory data and were not included in the calculation.

Since the overall rating for Longfellow Creek is based on so few data points, it should be used conservatively. However, this rating is

<sup>1</sup>Kramer, Chin and Mayo, Inc., Consulting Engineers. *Longfellow Creek Rehabilitation Study Appendix: Water Quality Data*, February 1977.

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similar to WQI values of other urban streams such as Miller and DesMoines creeks which have historical data available for their WQI calculation.

If I can be of further assistance, please feel free to call. My phone number is 3-2834.

JJ:cp

cc: John Bernhardt  
Lynn Singleton