

Rebuttal Report of Bert Krages to
Willamette River Newberg Pool Towed Water Sport Zone and Wake Surfing and
Water Skiing Zone River Bank Erosion Documentation and Evaluation
(David Gorman, PE, Ecological Engineering, LLC)

This a rebuttal to the report prepared by David Gorman regarding the cause of erosion in the Newberg Pool. Although the Gorman report was prepared on September 10, 2021, it was not submitted as testimony until about one hour before the commencement of the legislative hearing on SB 1589 held on February 9, 2022. Due to the limited time available to prepare and submit responsive testimony, this rebuttal is necessarily short.

It is important to recognize that Mr. Gorman’s observations were directed primarily at failure in the upper bank regions and did not focus on the zone where the river interacts with its bank. The deficiency with this approach is that his solution to the “problem,” which is to develop an educational program for residential property owners, fails to recognize that the primary problem is the scouring of the river banks by boat wakes which leads to extreme levels of turbidity in the critical nearshore habitat regions of the river. The report further deflects attention from this issue by mischaracterizing the wave scarps, which are the source of the turbidity, as “minor bank erosion.”¹ Notably, Mr. Gorman stated at the legislative hearing that he did evaluate water quality issues during his observations on the river.

A major flaw of the study is that it was conducted on a Tuesday (August 17) during a time when no appreciable wake boat activity was occurring. Another flaw, which is apparent from the photographs in the report, is that he did not inspect the river banks up close. The statement in the report that “[r]iver banks associated with an agricultural land use within the study area almost exclusively had stable banks with healthy riparian vegetation” further suggests that he did not examine these areas closely, because I readily found wave scarps in these areas. In any case, had Mr. Gorman made his observations during a period of even moderate wake boat activity, it should have been apparent that the issues in the Newberg Pool are not limited to catastrophic bank failure but include ongoing bank scour that visibly impairs water quality.

When wake boats are active, the scour caused by the wakes releases soil from the river bank which forms a turbid zone that can extend past the edge of the nearshore sediment zone. The following photograph shows an area in the wakesurfing zone delineated by Buoys B and C where the turbidity extended over 70 feet into the river.²

¹ This made even more apparent by his definition of “major bank failure,” which he considers to be “significant soil loss, often to the top of the bank, with a clear threat to property.”

² Note also that a Clackamas County Marine Patrol boat is in the background, chasing down a wake boat that was violating boating laws.



The following photograph shows a wave scarp on undeveloped Willow Island in the same wakesurfing zone. This is an example of a scarp that would likely go unnoticed when viewed from a distance away from the shoreline during a period of relatively calm water. Notably, the Gorman report does not include observations of Willow Island.



The report also downplays bank scour as a primary problem by characterizing wave scarps as “minor bank erosion.” In reality, these scarps are releasing soil particles into the nearshore region where they adversely affect water quality and nearshore sediments, where they settle onto the river bottom and make the sediments less habitable to native species. Senator Kennemer testified about this in his own way during the 2021 regular session when he talked about how the shallow areas used to support children wading in the river, but have since turned into lifeless mud that ensnares them.

The photographs mostly focus on areas with upper bank issues and fail to look at the Newberg Pool as a whole. At the beginning of the section with photographs, the report shows “baseline” photographs taken at RM 46–49 in the area to the west of the buoy D-E wakesurfing zone, but fails to show any photographs of the substantial wave scarps that are present adjacent to the agricultural areas between the public boat ramp at Newberg and the St. Paul Bridge. An example of one of these scarps in this area is depicted below.



Several of photographs in the Gorman report show significant wave scarps. However, many are taken from such a distance from the shoreline that the resolution at the shoreline-river interface is too low to determine if scarps are present. Some of the photographs fail to depict the shoreline-river interface altogether. Due to time limitations, it is impossible to discuss all the photographs, but some examples that depict scarps include:

- Photos WR2-A and WR2-C, albeit characterized in the report as having “little or no erosion or bank failure.”
- Photo WR3-C appears likely to encompass a scarp, but it would need to be examined at higher resolution to verify this.
- Photos WR3-D and WR4-A show scarps, despite being taken at a distance from the shoreline.
- Photo WR-7B shows a scarp. The report states that the cause of the erosion may be boat wakes, but asserts there is no obvious cause. This is an instance where conducting the observations during boating activity would have been highly informative.
- WR-12A shows a scarp cutting into a vegetated area.
- Photos WR-15B and WR-16A show scarps.
- Photos WR-16B and WR-16 C show scarps.
- Photo WR-17E shows a scarp. Note that although the report describes a upper bank failure, wave scarps can occur in such areas irrespective of whether they are the cause of the upper bank failure.
- Photos WR-26A, WR-26B, and WR-26C are examples of how observations taken at a

distance can obscure the presence of scarps. This is an area where scarps are prevalent, yet they cannot be seen in photos A and C and are barely perceptible in photo B.

- Photo WR-28B is interesting in that it is characterized in the report as depicting minor erosion. In my opinion, this photo depicts an aggressive scarp is in progress.

Conclusion

To assess whether boat wakes are a cause of erosion in the Newberg Pool, it is necessary to do the following:

1. Conduct observations on a day when wake boats are at least moderately active;
2. Concentrate on the zone where the river meets the shoreline;
3. Approach to within a few feet of the shoreline to assess the presence of scouring;
4. Proceed slowly along the shoreline (i.e., kayak speed) instead of targeting instances of upper bank failure to investigate, otherwise the extent of scarps may be overlooked; and
5. Factor water quality parameters into the opinion, or at least make a visual assessment of the presence of turbidity.

The fact that these steps were not followed is reflected in the conclusions of the Gorman report. It is my opinion that boat wakes are the cause of the turbidity and the wave scarps seen at the edges of the Newberg Pool. I base this opinion on having conducted observations and taken measurements during periods when wake boats were active, and by proceeding along the nearshore areas at a pace conducive to making careful observations.

Bert Krages
February 10, 2022