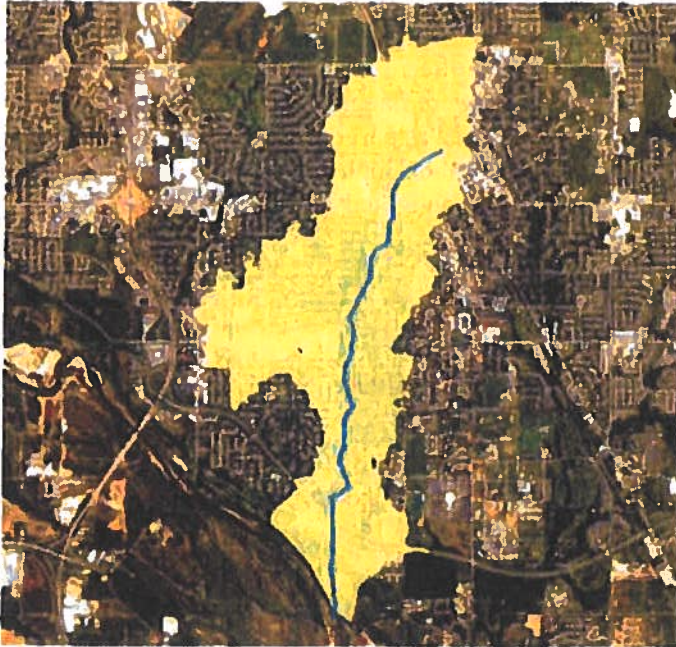
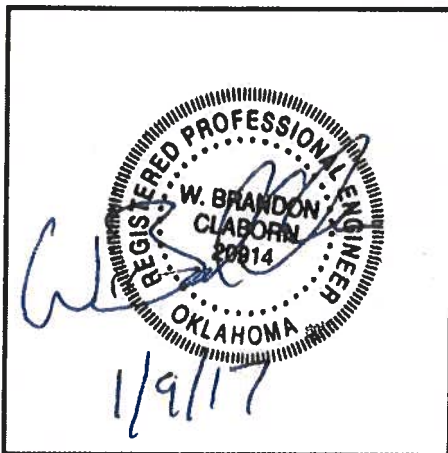


# LOWER IMHOFF CREEK HYDRAULIC & HYDROLOGIC STUDY PROJECT Norman, Oklahoma

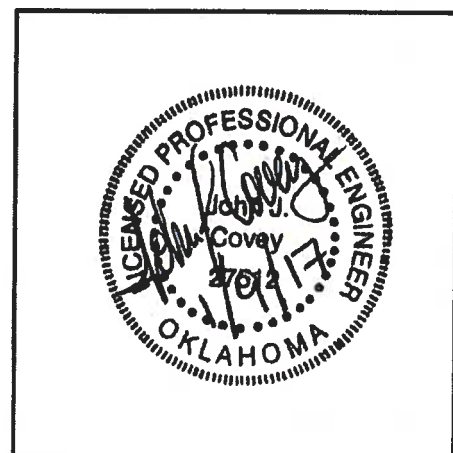


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private landowners. Further discussion and details of this recommendation are provided in the Improvement Concepts section of this report.

6. A strong ammonia odor was observed at station 10+39 of the new survey profile established by Lemke. This is approximately 500 feet downstream of the pedestrian bridge.
7. During the field investigation it was noted that it will be difficult to address the problem immediately downstream of Imhoff Drive on the left descending bank without addressing at least 450 ft of channel. The proposed mitigation improvements discussed in later sections of this report include improvements for this whole stream reach to address this issue.

In addition to the field investigation Amec Foster Wheeler also performed a review of the topographic information to highlight potential problem areas. These areas were identified by developing slope grids of the available topography using GIS processes. Areas identified during the field investigation were used as reference points during the analysis. Multiple areas were flagged in which unstable vertical streambanks were present. The conceptual solutions developed as part of this project were then selected to address these locations. Figure 3 below depicts in yellow an example of some of the locations that were identified as problem areas in the analyses. The areas highlighted in yellow indicate locations in which excessive bank erosion and instability exist.

*Figure 3: Example of Site Problem Area*



Finally during the field investigation it was noted that Imhoff Creek has likely down cut over time. As part of this study in channel field survey was collected and coupled with detailed LiDAR data of the channel surface. This combination of data was used to evaluate the channel profile. Figure 4 below illustrates the stream bed profile from SH-9 through Imhoff Road to the end of the improved articulated block wall using sample points of the channel survey and LiDAR data.



# Imhoff Creek - 100-Yr Floodplain





# Imhoff Creek - 100-Yr Floodplain





Figure 15: Floodplain Comparison - Upstream Imhoff Road

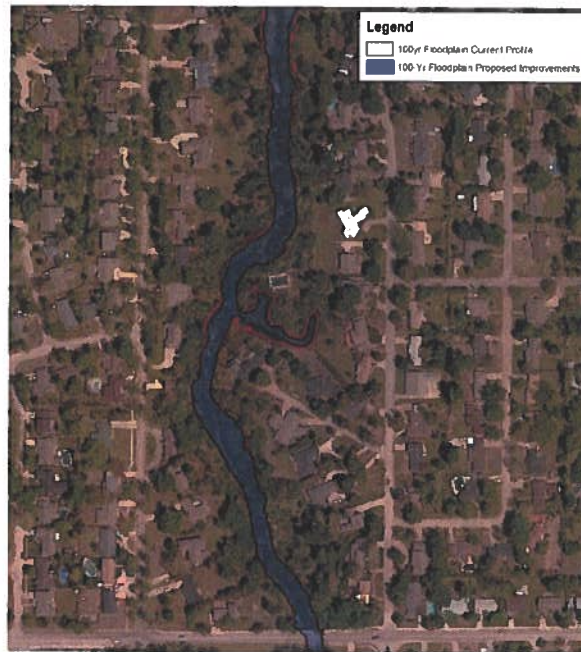


Figure 16: Floodplain Comparison - Downstream Imhoff Road



## COST ESTIMATES

The following provides “concept level” estimated costs for the recommendations and improvement options described previously.