

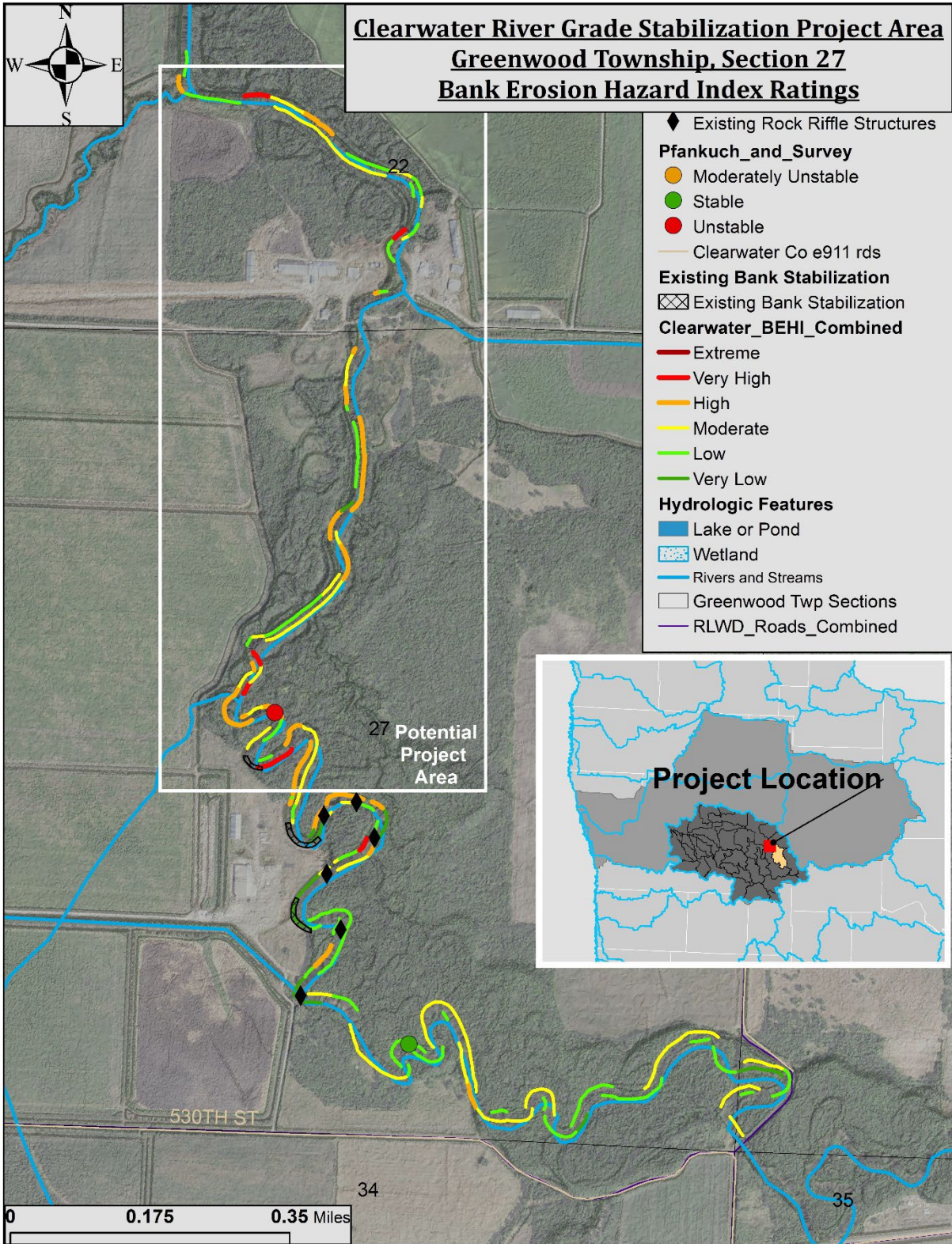
Clearwater River Grade Stabilization – Greenwood 27 Phase III

Previous Clearwater River grade stabilization work in Section 27 of Greenwood Township installed 5 rock riffle and cross-vane weir structures along the upstream extent of channel degradation caused by the transition in slope between the channelized section of the river and the natural channel upstream. The previous work (completed two phases in 2001-2003) also involved streambank stabilization and the installation of structures to slow the development of cross-floodplain channels and restore the floodplain.

Though the previously completed project has been mostly successful, channel/streambed degradation has alarmingly continued downstream of the extent of the Greenwood 27 project. Geomorphology reconnaissance and detailed Bank Erosion Hazard Index (BEHI) assessments identified a striking contrast between channel and bank stability indicators recorded upstream and downstream of the installed structures. There is a section of channel that has evidence of headcutting along with rapidly eroding banks between the existing grade stabilization structures and the confluence with Ruffy Brook. Evidence of channel degradation can be seen in layers of shell fragments and pebbles that have been revealed in eroded banks, 3-5 feet above the current streambed. Deep gouges in the channel bottom were discovered during the geomorphology reconnaissance effort, a short distance downstream of the last cross-vein weir rock structure. The channel degradation in the project area needs to be addressed to ensure success of any bank stabilization projects. The landowner in the project area is in favor of the project if the grade stabilization structures do not impact drainage.

The primary focus of this stabilization project will be addressing the underlying cause of erosion by halting channel degradation and establishing a stable gradient through the natural-to-channelized transitional area. Additional streambank stabilization and floodplain restoration work may be needed, as recommended by project engineers after a detailed study of the project area. Disturbance of well-vegetated, stable streambanks during construction should be minimized. LiDAR data shows some evidence of channel formation across the floodplain in this area, so the need for restoration/stabilization of the floodplain could be examined. A floodplain structure from the previously completed work may need to be repaired.





Scouring and channel degradation



Pebbles and shell fragments in the face of an eroded streambank



Previously installed cross-vane weir grade stabilization structure



Eroding streambanks

