

Project History for Whitewater Riprap Project (Constructed length = 375 feet)

- Located at section 30 of Minneiska Twp., Wabasha County on Whitewater River, just U.S. of Weaver
- Drainage area to site 320 s.m.
- First "Fix" Landowner installed in 2003, cost approx. \$4000, Held well until 2007 flood



VIEW OF FLOODPLAIN FROM TOP OF BANK



Site Prior to First "Fix" Construction (pre- 2003)



Site after First "Fix" Construction (Summer 2006), installed summer 2003

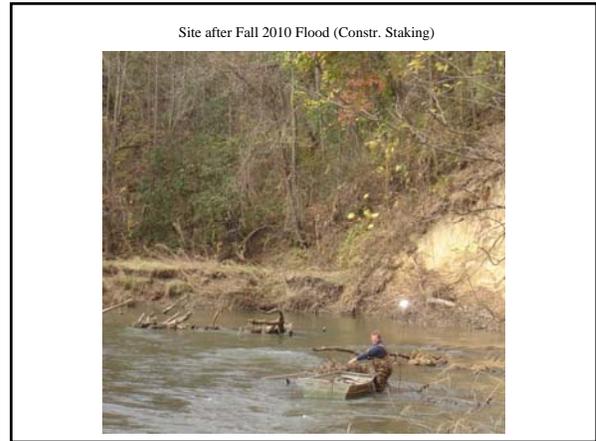
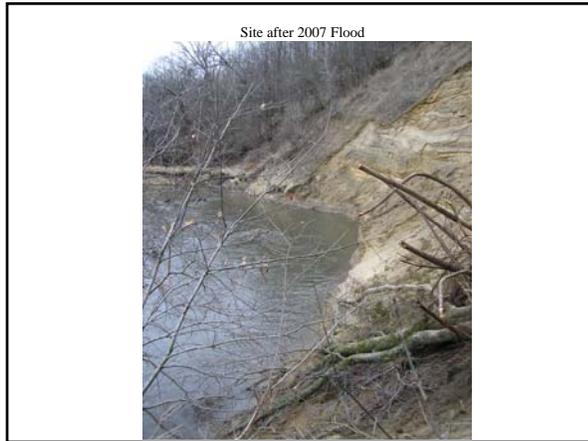


Site after First "Fix" Construction (Summer 2006), installed summer 2003



Site after First "Fix" Construction (Summer 2006), installed summer 2003





- Construction Fall 2010
- Used MN TR 3 to design
 - $Q_{baseflow}$ approx. 230 cfs, $Q_{bankfull}$ approx. 3000 cfs, $Q_{100 yr}$ = 22,000 cfs
 - Modeled with Hee Ras to insure flood elevation not changed radically (normally DNR allows max. of 0.5 feet increase) valley floor in area is approx. 3300 feet
 - Existing radius of Curvature 112 ft, As-Built 136 ft
 - Top Upper Bank approx. 170
 - Top Bank Lower Floodplain approx. 98
 - Top rock approx. 100 (101)
 - Toe rock approx. 87 (89)
 - Slope rock 2:1 (1.9:1)
 - D50 15"
 - Thickness = 38" design (45" As-Built)
 - Non-woven filter fabric used attempting to construct "Dutch Toe"
 - Lu required = 20 feet (40' As-Built)
 - Ld required = 115 feet (163 As-Built)
 - Ave cross sectional area recreated in as-built to emulate "natural" stream
 - Estimated 1250 c.y. rock
 - Estimated cost = \$118,000, final cost \$71,000 (estimated rock cost \$65 vs \$27 AB)
 - Estimate 2007 flood elevation at 106 @ 1500 feet D.S.



Construction Fall 2010



Construction Fall 2010



Construction Fall 2010



Construction Fall 2010



Construction Fall 2010



Questions

