ABSTRACT

TITLE:	Design of a Low Cost, Field Constructed Pipe Entrance to Improve Flow Capacity
AUTHOR(S):	Oliver, Christopher G.
PRESENTED AT:	5th Annual Natural & Behavioral Sciences Undergraduate Research Symposium, Fort Lewis College

ABSTRACT: The Fort Lewis College Engineering Without Borders Program (EWB), works in developing countries around the world designing and constructing community improvement projects. Water systems are commonly designed and constructed as part of these projects. In at least one case, the water system that was constructed in an area had less capacity than desired. In examining the system for possible bottlenecks, the pipe inlet used was identified as a likely culprit. In this study, past research on pipe entrances' affect on pipe flow was explored. Based on the findings of past research, low cost, field constructed pipe inlet prototypes using improved pipe entrance designs were constructed. The prototypes were experimentally evaluated for their flowrate as a function of head and the minor head loss coefficients of the inlets were calculated. The minor head loss coefficients of each prototype were than compared to make a recommendation as to which prototype entrance design was superior. This recommendation can be used in designing new water systems and improving old ones.