

Abstract Submitted  
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**Buck Creek River Flow Analysis** YASAS DHANAPALA, ELIZABETH GEORGE, JOHN RITTER, Wittenberg University — Buck Creek flowing through Springfield Ohio has a number of low-head dams currently in place that cause safety issues and sometimes make it impossible for recreational boaters to pass through. The safety issues include the back eddies created by the dams that are known as drowning machines and the hydraulic jumps. In this study we are modeling the flow of Buck Creek using topographical and flow data provided by the Geology Department of Wittenberg University. The flow is analyzed using Hydraulic Engineering Center - River Analysis System software (HEC-RAS). As the first step a model of the river near Snyder Park has been created with the current structure in place for validation purposes. Afterwards the low-head dam is replaced with four drop structures with V-notch overflow gates. The river bed is altered to reflect plunge pools after each drop structure. This analysis will provide insight to how the flow is going to behave after the changes are made. In addition a sediment transport analysis is also being conducted to provide information about the stability of these structures.

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