

53:171 Water Resources Engineering
Lesson 13: Risk and Economic Analysis

Problem

A small stream subject to heavy spring floods runs through a town. One of the bridges crossing the stream has been found unsafe and must be rebuilt.

Three alternative plans are being considered. Which one should be selected (based on economic criteria only)? Assume the design life is 40 years and the interest rate is 8%.

	Plan A	Plan B	Plan C
Crest height (feet)	5	8	12
Return Period (years)	50	100	200
Capital Cost to Build	\$350,000	\$400,000	\$450,000
O&M	\$9500	\$9500	\$9500
Capital Cost to Rebuild	\$350,000	\$200,000	\$100,000