

The design bankfull discharge for a stream is estimated to be $50 \text{ m}^3/\text{s}$. The slope of channel upstream and downstream of the restoration site is 0.0005 m/m and channel roughness (f) is 0.075 .

- a) Verify that this should have a meandering river channel planform.
- b) Design a stable channel for these conditions assuming a width (in m) to depth (in m) ratio of 20.
- c) Estimate of the meandering wavelength (λ) (in m) using stability analysis for two different grain sizes of 0.1 mm and 2 mm .
- d) Estimate of the meandering wavelength (λ) (in m) using an empirical analysis.