

**GY 260 Geomorphology
Block 2, 2006**

Monument Creek Hydraulics Problem

PreLab Questions

Tomorrow afternoon we will be working on a field/computer/lab project concerning “bankfull” flow of Monument Creek. Bankfull flow occurs at the point when a stream has completely filled its channel and is just beginning to spill over its banks onto the floodplain. Many workers believe that bankfull discharge is the critical discharge in shaping the channels because bankfull events are of sufficient magnitude that they have considerable power to do geomorphic work within the channel, and at the same time occur quite frequently.

In the project we will examine the both the channel geometry of Monument Creek and discharge records kept by the USGS to try to determine (a) the velocity and discharge of the creek at bankfull stage and (b) the approximate frequency of bankfull discharge.

You will need to prepare for tomorrow’s work by using your book, or any of the other texts in the room, to answer one of the following three sets of questions. I’ll divide the class into thirds and assign a set of questions to each. Be prepared to answer your third’s questions tomorrow morning.

1 – What data would we need to collect in the field to determine the bankfull discharge using the Manning equation?

2 -- How could we determine the Manning roughness coefficient for modern stream flow? What data would we need to collect to do this?

3 – Assuming that we have used the Manning equation to determine bankfull discharge, what additional data would we need to determine how frequently bankfull discharge occurs on the stream, using the flood recurrence interval approach (Weibull Method)?