

Turmoil in Temblorton

The sleepy seaside village of Temblorton is nestled at the foot of Kingpin Peak, on the western shore of the Abee Sea. In your opinion, the village has gotten even sleepier in recent years due to the influx of retirees who have put down roots there.

Late one Friday night your geotechnical firm is visited by the mayor of Temblorton, Troy ("Achy") Mann. The mayor has just arrived by plane from Temblorton. The burgeoning population there has prompted several heated Temblorton city council debates on a range of issues. One of the key issues is the need to develop a new water supply. In addition to local input, three national groups are vocally represented: the National Energy Regulatory District (NERD); the Coalition for Redesigning Urban Downtowns; and the Water, Agriculture, and Horticulture Institute for the Natural Environment.

The mayor wishes to retain your firm for a preliminary appraisal of the suitability of three proposed sites for construction of a reservoir for municipal water (and possibly hydroelectric power). Initial estimates are that the capacity of the reservoir be no less than 200 acre-feet. He then unrolls a yellowed map in front of you. The three prospective sites are marked A, B, and C on the map. Local construction firms are lobbying for either an earth fill embankment dam or a thin arch concrete dam at one of the three sites. The mayor is interested in the suitability of the proposed sites and dam designs regarding reservoir capacity requirements, availability of local construction materials, and site foundation characteristics. He also welcomes any other relevant recommendations you may have.

Your initial reaction is that the map does not appear to provide you with much to go on and looks largely incomplete. Mayor Mann notices the concerned look on your face and urges you not to worry; the map was prepared by his famous grandfather, Roger Strawback, esteemed dean of the School of Earth Sciences at the University of Diverse City. Dean Strawback was renowned for his accurate maps and his attention to detail. The explanation for the map was lost, but the mayor is adamant that standard mapping symbols were used on it. In addition, he distinctly recalls that one of the local geologic units, the Pliocene White Elephant Shale, contains numerous joints normal to the bedding planes, and that a water well drilled in Pollywog Bog encountered peaty materials to a depth of 100m. Soil mantles most of the outcrops; this accounts for the seemingly sparse geologic information.

Your firm clearly can help meet a pressing social need in Temblorton. Although your schedule is busy, you agree to provide the mayor with a written preliminary appraisal of sites and dams designs on Monday, March 1.

