**CE 374K Hydrology
Spring 2011**

**Homework #1
Jan 25, 2011**

1. Austin, Texas, has two lakes nearby, Lake Travis and Lake Austin which are created by dams on the river channel of the Colorado River that flows through Austin. Lake Travis is a large lake used for water supply, flood control, recreation and hydroelectric power generation. Lake Travis discharges into Lake Austin, a smaller lake located immediately downstream, whose level is kept relatively constant, which is used for recreation and hydroelectric power development. Downstream of Lake Austin, the USGS measures the flow of the Colorado River at Austin, Site 08158000. The volume of Lake Travis when full is 1,135,000 acre-ft, and the volume of Lake Austin when full is 21,725 acre-ft. The mean annual flow of the Colorado River at Austin from 1899 to 2010 was 2183 cfs. Determine the average residence time of water in Lake Travis (months) and in Lake Austin (days). 1 acre = 43560 ft2.

2. Problem 1.3.2 in Applied Hydrology

3. Problem 2.3.2 in Applied Hydrology

4. Problem 2.5.1 in Applied Hydrology

5. Problem 2.6.2 in Applied Hydrology

6. Problem 2.8.5 in Applied Hydrology