So this is one of those problems I call a "snap-solve." I read it, I instantly see that at the mathematical limit of an infinite number of messengers this flow graph problem devolves into an input to Prim's or Dijkstra's algorithm, the minimal spanning tree variants. Of all minimal spanning trees rooted at the capitol what is the minimum height? Our first seperation of concern is the translation of an adjacency matrix on disk into an adjacency list in RAM, then we find the distance of the minimizing route between the capitol and each city, the maximum length is an exact upper and

lower bound on the minimum height of the minimal spanning trees.

End note: Graph.h is something I wrote earlier as a lesson for a student. I spend most of my time on file IO and fixing mistakes from being out of practice in C++. I enjoyed this assignment, but graph theory is one of my favorite branches of mathematics so idk if that says much, total time 3 hours.