Name(s)	Project Number
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Project Title

Are More Cell Phone Towers Needed in Newbury Park?

Abstract

Objectives/Goals

The Thousand Oaks Planning Commission approved putting 12 cell phone antennas from Sprint and Cingulair on the Orbis water tank on one of the hills behind my house. I wanted to see if we really need more cell phone antennas. I also wanted to see if we currently have adequate coverage, and if not, which areas of Newbury Park have the weakest coverage. I believe that Newbury Park does need more cell phone antennas, but maybe not in that particular spot.

Methods/Materials

To test my hypothesis, I used three cell phones, from Sprint, Verizion, and AT&T. I went to 110 pre-determined spots in my city surrounding the water tower, and measured the signal strengths of all 3 phones at each spot. I then recorded the strengths on a spreadsheet in Microsoft Excel on my computer at home. Then, I used Matlab (a computer program that uses formulas to perform difficult math-based tasks) to plot the strengths on a color-coded map.

Results

My results were that Sprint, with an average of a 43% signal strength throughout the city, had the worst coverage out of the three phones. Coming in second was Verizion, with an average of 83% strength. Last, AT&T had the best coverage, with an average 94% strength throughout the city. As a whole, all the signals are unmistakably worse south of the water tower. The only point where any of the phones reached zero was in one area about the size of a street block, directly south of the water tower. In this spot, there are two points where Sprint dropped to zero coverage.

Conclusions/Discussion

In conclusion, I believe that the proposed towers are needed, but not where they are proposed to be. If they are put on the water tower, they will face and direct their signal northward. I believe they would cover more of the city if they are placed in an area south of the water tank, where we need them the most. Therefore, my hypothesis is correct.

Summary Statement

My project is to see if Newbury Park really needs a group of proposed cell phone antennas, which I tested by taking signal strengths around my city with three different phones in 110 different locations.

Help Received

My parents drove me to the 110 locations, my father taught me how to use Matlab, and my neighbors lent me their cell phone.