Level of Service and Design Traffic Volume

Using the excel spreadsheet available on the course website (the same one you used for Homework 1 and which shows data for traffic in <u>2 lanes</u> in the same direction of an urban freeway), provide the following:

Assume you can use the freeway LOS calculation and this is NOT bridge data.

Provide the following:

1. The Level of Service. Calculate FFS directly from loop detector data. Use the observed 20-second volume data to determine the PHF. Assume 10% of the traffic stream are trucks and busses, and the freeway runs over level terrain. The area is heavily used by commuters, and RVs can be neglected.

2. If traffic volume is expected to grow at a rate of 4% per year for the next 5 years. What will LOS be in 5 years (assuming no other changes)? The following equation can be used for estimating traffic volume after n years with an average yearly growth rate of i: $V_n = V(1+i)^n$

3. How many lanes should be added to ensure LOS A in 5 years? Use Figure 6.7 in the text to estimate K.