

Tutorial 5

CVG 4150



Question 1)



A section of a six-lane (three lanes in each direction) freeway on level terrain is to be designed to carry a heavy volume of 3000 veh/h, consisting of 80% passenger cars, 10% trucks, 2% buses, and 8% recreational vehicles. The PHF is 0.95. The base free-flow speed is 110 km/h, there is a lateral obstruction 1.5 m from the pavement on the right side of the road, and interchange spacing is 2 km. Lane width is 3.6 m and drivers population factor is 0.8.

Determine the level of service (LOS)





Question 2)

Determine the value of PTSF for a 9.66 km two-lane highway in rolling terrain. Traffic data are as follows.

- Volume 1600 veh/h (two-way)
- Percent trucks 14
- Percent RVs 4
- Peak hour factor 0.95
- Percent directional split 50 – 50
- Percent no-passing zones 50



Question 3)



Use the data provided in Q2 to estimate the average travel speed (ATS). Assume that the base free-flow speed (BFFS) is the posted speed of 96.6 km/h. The section length is 9.66 km, lane width is 3.36 m, shoulder width is 1.22 m, and there are 12 access points per km.

