

# TRAFFIC ENGINEERING

Civil Engineering Department

Lecturer Sady Abd Tayh  
Lecturer Rana Amir Yousif

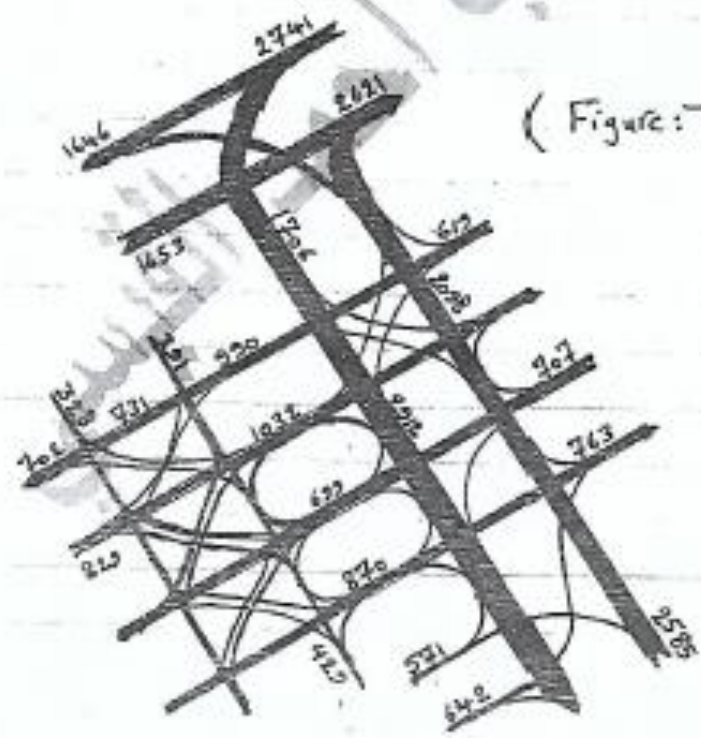
Third Class

2018-2019

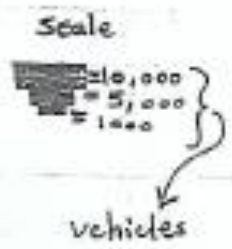
# Traffic Volume Data Presentation

The data collected from traffic volume counts may be presented in one of several ways, depending on the type of count conducted and the primary use of data.

1. Traffic flow maps: show traffic volumes on individual routes. The volume of traffic on each route is represented by width of a band, which is drawn in proportion to the traffic volume it represents. When the flow is different on opposite directions, it is advisable to provide a separate band for each direction. (see Figure below).

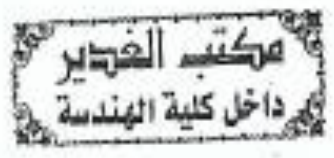


( Figure: Traffic Flow Map)



2. Intersection Summary Sheets: graphic representation of all volume and directions of all traffic movements through the intersection. These volume may be ADT or PHV depending on the use of data. (see figure).

3. Time-Based Distribution charts: these charts show the hourly, daily, monthly or annual variation in traffic volume. Each volume is percentage of the average volume. (see figure).



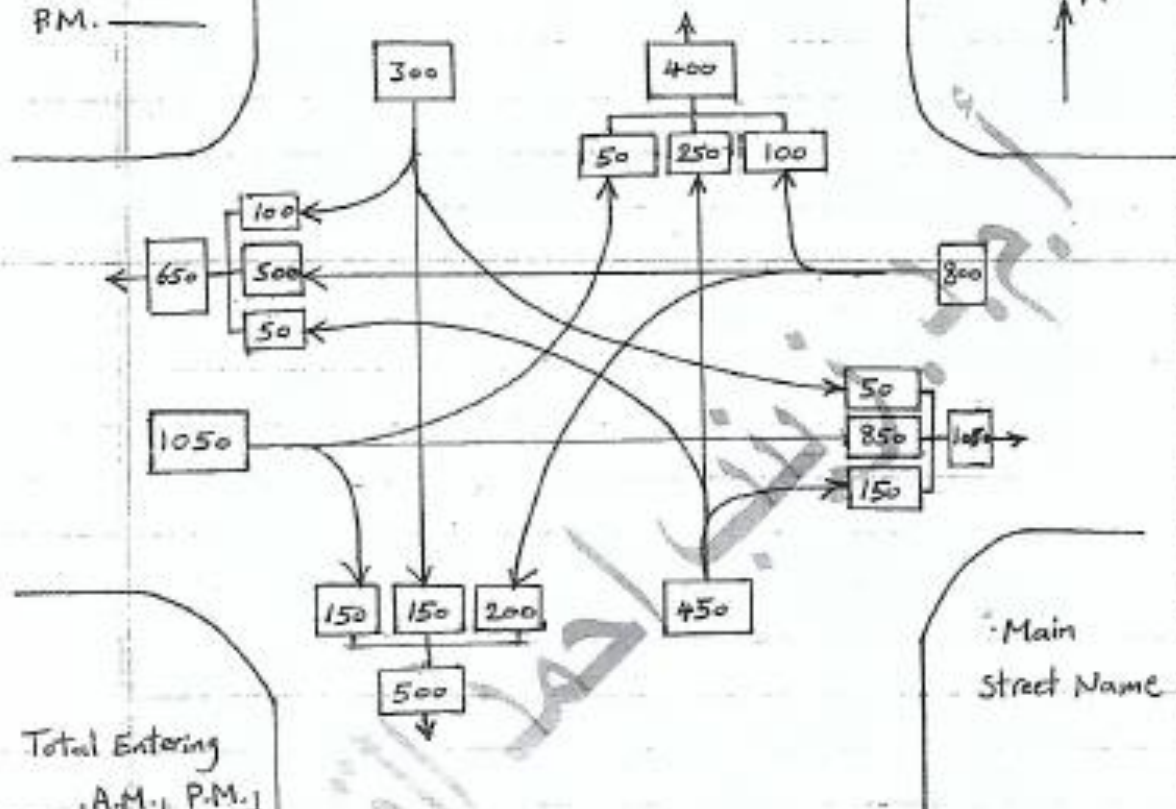
4. Summary Tables: which gives a summary of traffic volume data such as PHV, VC, and ADT in tabular form. (see table).

# Graphic Summary of Vehicle Movements

Intersection: Al-wazeriya  
 observer: Student  
 City: Baghdad

Date: \_\_\_\_\_ Day \_\_\_\_\_

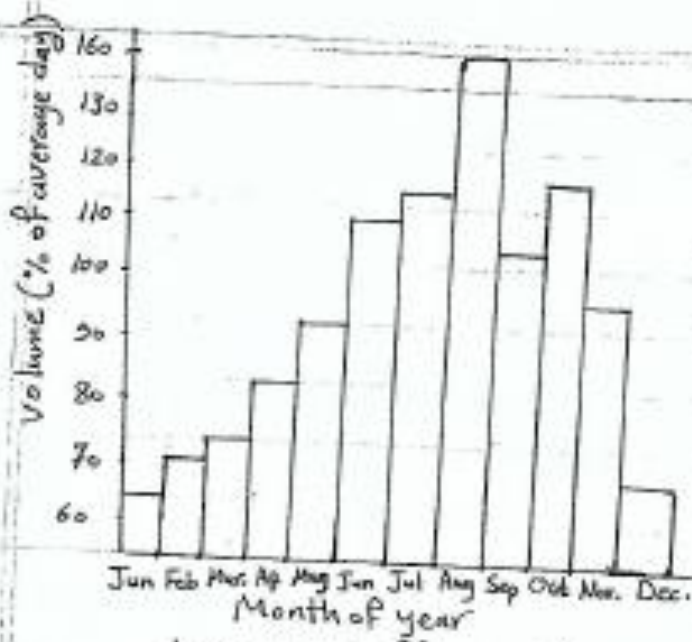
Time  
 A.M. 8:00  
 P.M. \_\_\_\_\_



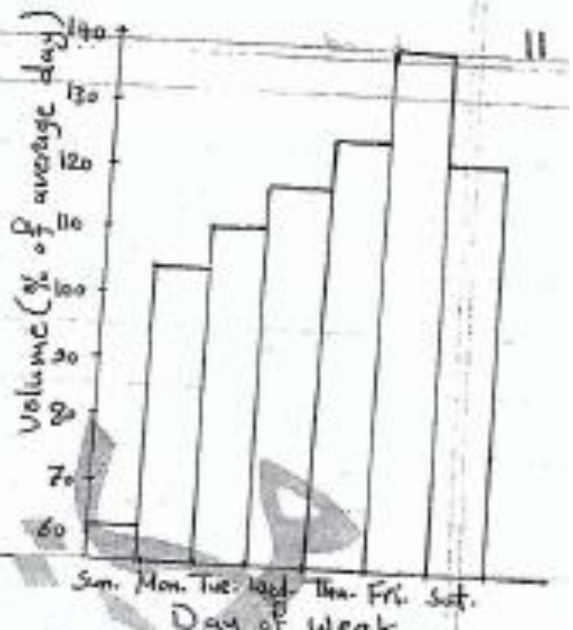
Total Entering

	A.M.	P.M.
N/S	750	
E/W	1850	
Total		

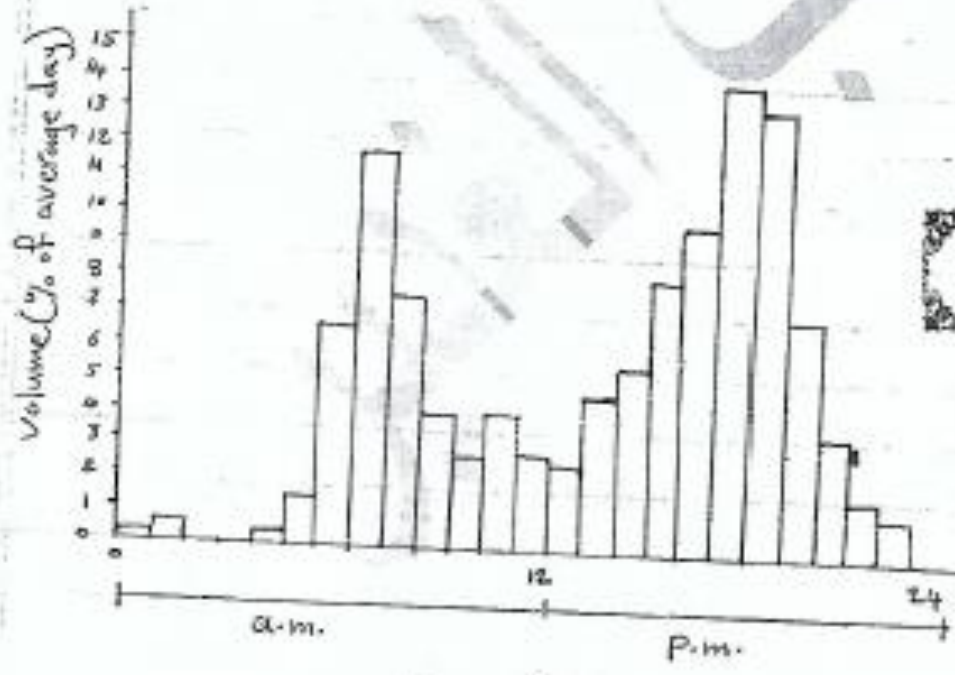
Figure: Intersection Summary Sheet.



a) Monthly traffic variation



b) Daily traffic variation



c) Hourly traffic variation

Figure: Traffic Volumes on an urban Highway.

مركز الخبير  
داخل كلية الهندسة

(Summary of Traffic Volume Data for Highway Section)

PHV	430
ADT	5375
<u>Vehicle classification</u>	
Passenger cars	70%
Two-axle trucks	20%
Three-axle trucks	8%
Other trucks	2%

← Passenger Car Unit (PCU) :

The different vehicle classes have a wide range of static characteristics such as length, width, etc. and dynamic characteristics such as speed, acceleration, etc. It is rather difficult to estimate the traffic volume and capacity of roadway under mixed traffic flow, unless the different vehicle classes are converted to one common standard vehicle unit. It is common to consider the passenger car unit (PCU).

<u>PCU</u>	<u>PCU</u>
1 Bus (≤ 24 passenger)	1.25
1 Bus (> 24 passenger)	2-3
1 Truck	2
1 motorcycle	0.33
1 Bicycle	0.25
light good vehicle	1-1.25

Heavy vehicle       $\frac{PCU}{3.0}$

Example: For the following traffic composition

- passenger car = 50%
- Buses (25 passenger) = 5%
- heavy vehicle = 42%
- motorcycle = 3%

Determine the equivalent passenger car unit if the total number of vehicles passing is 8500.

Solution:

$$\text{No. Passenger cars} = 8500 \times \frac{50}{100} = 4250$$

$$\text{No. of Buses (25 passenger)} = 8500 \times \frac{5}{100} = 425$$

$$\text{No. of heavy vehicle} = 8500 \times \frac{42}{100} = 3570$$

$$\text{No. of motorcycle} = 8500 \times \frac{3}{100} = 255$$

$$\begin{aligned} \text{Total equivalent passenger car} &= 4250 \times 1 + 425 \times 2.5 \\ &\quad + 3570 \times 3 + 255 \times 0.33 \end{aligned}$$

$$\begin{aligned} \text{Total No. equivalent passenger} &= 4250 + 1062.5 + 10710 + 84.15 \\ \text{car} &= 16107 \end{aligned}$$