UNIT-VII

HIGHWAY ECONOMICS AND FINANCE

ECONOMIC EVALUATION :- Economic evaluation of Highway aims to improve impacts of expenditures economically and provide benefits to the road users by reducing the costs.

NEED OF ECONOMIC EVALUATION :- The purpose of economic evaluation is given below…….

- Preparation of highway plans at the low costs and the high benefits.
- Reduction in the vehicle operation cost.
- Reduction in the travel time and resultant benefits in terms of time cost of vehicles and passengers.
- Reduction in the accidents rates.
- Ease of driving and improved level of services.
- increased comfort to the passengers.

METHOD OF ECONOMIC EVALUATION :- There are several methods of economic evaluation. Some of the common methods are ------

- ANNUAL COST METHOD
- BENEFIT COST RATIO METHOD
- RATE OF RETURN METHOD

BENEFIT COST RATIO METHOD :-

The principle of this method is to assess the merit of a particular scheme by comparing the annual benefits with increase in annual cost.

Benefit cost Ratio =

ANNUAL BENEFITS FROM IMPROVEMENT / ANNUAL COST OF IMPROVEMENT

Also Benefit cost Ratio = ($R - R_1 / H - H_1$)

Where----

R = Total annual road user cost for existing highway

R_1 = Total annual road user cost for proposed highway improvement

H = Total annual cost of existing road

H_1 = Total cost of proposed highway improvement

RATE OF RETURN METHOD :-

There are no. of variations for the determination of rate of return of a highway improvement.

In the Rate of Return Method , the interest rate at which two alternate solutions have equal annual cost is found .

Road Research Laboratory (London) has recommended a simplified procedure of Rate of Return Method--------

The percentage rate of return is given by ---------

$$\{ (O + A - M) / P \} \times 100$$

Where ----

O = Savings in annual road user costs

A = Annual savings in accident costs

M = Additional maintenance cost per annum

P = Capital cost of improvement

ANNUAL COST METHOD : -

In this method the annual cost of each component of the highway improvement project is calculated by multiplying the capital value with some appropriate capital recovery which is calculated for the given life span. Annual cost may be found by the following relation:

$Cr = P[\{i(1+ i)^n\}/\{(1+ i)^n - 1\}] = P\ (CRF)$

Total annual cost of an improvement is sum of all annual costs of capital recovery(Cr) plus annual maintenance and road user costs.

HIGHWAY FINANCE :-

The management of large amount of money especially by govt. or any other agency for development of highway construction projects such as roads, bridges , tunnels , railways etc. is known as highway finance.

Also the funds for these are generally recovered from the road users in the form of the direct and indirect taxation.

Highway finance deals with various methods of raising and or providing money for the highway projects.

HIGHWAY USER BENEFITS :

The objective of collecting highway finance is to provide an efficient , quick and safe transportation to the users and counted the following benefits as road user benefits ……………..

- **Savings in V.O.C.(Vehicle Operation Cost)**
- **Savings of travel time**
- **Savings in terms of accident costs**
- **Savings in the cost of maintenance etc.**

SOURCES OF REVENUE :

The various sources from which the funds necessary for highway development and maintenance may be made available, are listed below:

- **Taxes on motor fuel and lubrication**
- **Vehicles registration taxe**
- **Property taxes**
- **Toll taxes**
- **Special taxes on commercial vehicles**
- **Fees on driving licenses**
- **Other road user taxes**
- **Other funds set apart for highways.**

Thnks……