

Urban Planning

Land use:-

It is use of land by human.

Land use analysis:-

It is ranking or prioritization of human use of land. (or it is ranking or prioritization of land use by human).

- Land use analysis help us to understand which land is suitable for what purpose.
- Different activities on land has different requirement, impacts.

For e.g. residential area slope = 5%

For other projects slope = 25%

Important Terminologies:-

- Location:- where the site is located in spatial coordinate system.

Activity purpose, use of land.

Natural Qualities surface, subsurface characteristic

Improvement:- Human modification of land.

Intensity of land use. Activity per unit area.

- Land tenure:- ownership of piece of land.
- Interrelation:- The access to land is related to activity ^{on} it.

Purpose of LUA:-

- What should be built (built)
- Where it should be built
- When & how " " "
- What will be its impacts

Human Modification of Land:-

Human modify land for different purposes i.e. for shelter, for industries for making roads etc. In short term it profits but we human not the impacts of it which will pay by our future generation.

- For eg. Increasing water consumption by human will cause shortage of water.
- Increase of impervious surface as a result of roads may cause loss of life & property during natural disasters.

Factors of LUSA:-

- Physical constraints such as slope, soil, ground water resources.
- Access mean road to destination. It includes all transportation, pipe lines, sewerage etc.
- Cost & benefits of development.

Set of Factors for ranking (5 steps).

The study of ranking or selection of land use consist of 5 steps.

- ① Select a land for analysis.
- ② Select factors to be considered & attribute values for each factor.
- ③ Find score of each factor.
- ④ Weigh the factor.
- ⑤ Calculate Composite score from attribute values.
- ⑥ Rank the Combined scores to establish suitability level.
- ⑦ Identify available land based on existing land use.
- ⑧ Compare with Comprehensive plan, zoning or other land use control to further remove unavailable land.

Step #02 select factors & attribute values for each factor
 it includes 5 factors. (Analyzing location & physical attributes or characteristic of land).
 i) slope, flood plain, Soil features, distance to roads, distance to sewer.

Step #03

After determining factor, attributes are to be determined.
 Attributes → Variation → Any 4 level.

Nominal, ordinal, Interval & Ratio

Step #05

Calculate Composite Score & weight:-

$$S = \sum S_i w_i$$

To find $S = ?$

For

Slope score = 2

Flood plain score = 5

weight = 0.25

slope weight = 0.3

Sewer score = 3.5

weight = 0.25

Soil score = 3

weight = 0.15

High way score = 4

weight = 0.1

$$S = (2 \times 0.3) + (5 \times 0.25) + (3 \times 0.15) + (5 \times 0.25)$$

$$+ (4 \times 0.1)$$

$$= 3.7$$

Step #06

and

Rank the Combine Score to establish suitability

If Combine Score "S" more $\rightarrow$ suitable for project

If less "S" $\rightarrow$ not suitable

0-1 $\rightarrow$ least suitable

4-5 not suitable

Lowest score:-

$$= (1 \times 0.3) + (1 \times 0.2) + (1 \times 0.15) + (2 \times 0.25) + (2 \times 0.1)$$

$$= 1.25 \text{ (less suitable)}$$

Step #07 Identify available land from existing
for e.g. we have to select such land
which are not cultivated for e.g. barren
land & take into account
• Land suitability is taken into account.

Step #08

Compare it with comprehensive planning,
zoning etc.
Planning should be done in area where
there is permission not done where the law
is specify for other purposes.
For e.g. In us ~~red~~ residential is not
allowed within 400m of major highway

Advantage of LUSA:-

- select the suitable land.
- Exclude unsuitable
- Helping tool in zoning (Help us in zoning).
- Helping tool for future development.
- Conserve environment & help us in sustainability

Chapter # 06

Transportation.

Transportation is mobility of human & goods.

play major role in development of country
bcoz all transaction & industries depend on

problem.

Urban planner about transportation ~~planner~~:-

Urban planner about transportation problem
should be solve in such way that is.

- practically acceptable
- socially credible
- Environmental sensitive
- Analytical based. / ~~total~~ economically sound

Transportation ~~the~~ solution should be

safe, convenient, rapid, economical, comfortable.

& eco friendly for both material & people.

Four critical dimension of change in
transportation can be classified.

(1) Change in demand:-

When change occur in population, income
& land use pattern, there also change in
demand in transportation.

2) Change In Technology:-

For urban transportation we have two sources or mode i.e. Bus & Rail transit.

But now a days OMni bus, Careem, Uber or other are more alternatives.

(3) Change In operational Policy:-

Variety of policy option design to improve efficiency such as incentive for car pooling; bus fare etc.

(4) Change In value & public:-

In this case if there is change in any policy all people of state will effected either rich or poor all.

- Transportation planning (Present & future planning)
- Geometric design → (Road height, depth, width.)
- Pavement design:-
- Traffic engineering:-

Transportation modelling or forecasting:-

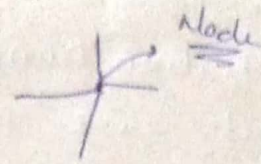
is the process of ~~est~~ estimating no. of vehicle or people that will used specific transport in future.

Street Network:-

All surface roads connected to each other & other human activities places.

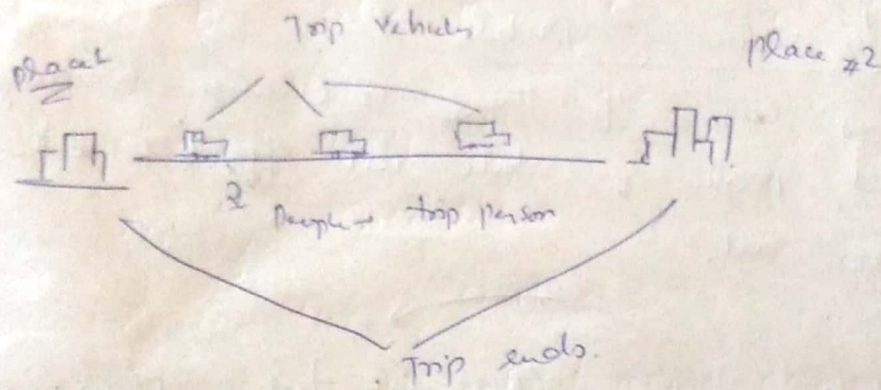
Node:-

Where two or more roads
connected or end of street.



Trip - The path taken from one place to other.

Any movement from one place to other
which is more than 300m from origin to
destination.



Travel time Index:-

Ratio of peak hour & non peak hour trip time

Design Capacity:-

Max. no. of vehicle pass on trip without

causing any traffic.

Design Speed:- Max. speed of vehicle which cause
not delay. Depend on physical & economical cond.

Design speed on flat > on steep or slope road.

ARCHITECTURE.

Architecture:-

"It is the art and science of designing and erecting buildings."

or

"The style and method of design & construction."

or

"Orderly arrangement of parts or structures of building."

5 points of Architecture:-

1. Free Plan:-

Separation of structure & enclosure allow rooms to flow from one to another.

2. Free Facade:-

Separation of structure & enclosure also allow uninterrupted windows.

3. Pilotis:- Raising building from ground, save it from dampness & open it to light & air.

4. Ribbon Window:-

Continuous windows provide broad views creating visual & psychological link with outdoor.

5. Roof Terrace :- Flat roofs allow more space to be functional & to provide private & protected outdoor space.