

LAND USE AND TRANSPORTATION PLANNING

Land Use and Transportation Engineering: Transportation modeling in Planning; Models and their role; Characteristics of Transport demand and supply; Equilibrium of supply and demand; Modeling and decision making. Issues in Transportation modeling and structure of the classic transport model.

Land Use Transportation and Activity Models: Introduction to Land Use Planning; Relation between Transportation and Land Use Planning; The economic base mechanism and allocation mechanism; Spatial allocation and employment interrelationship; Garin Lowry models.; Activity modeling

General Travel Demand Models and Regional Transport Models: Aggregate, Disaggregate models ; Behavioral models; Recursive and direct demand Models; Linear, Non-Linear models; Logit, discriminant and probit models; Mode split models - Abstract mode and mode specific models. Regional Transport Models: Factors affecting goods and passenger traffic; Prediction of traffic; Growth factor models; Time function iteration models; internal volume forecasting models.

Regional Network Planning: Problems in Developing Countries, Network Characteristics - Circuitry, Connectivity, Mobility, Accessibility and Level of Service Concepts - Network Structures and Indices - Network Planning - Evaluation - Graph Theory - Cut sets - Flows & Traversing - Optimum Network - Inter-modal Co-ordination. - Rural Road Network Planning.; User equilibrium concepts

Advanced Spatial analysis Modelling: Applications of Artificial Neural networks, Cellular automata, Fuzzy logic systems, Genetic algorithms, artificial intelligence concepts to transportation Modelling

References:

1. Modelling Transport by Jan De Dios Ortuzar. Luis E. Willumsen. John Wiley & Sons. 1970/1975.
2. Urban Development Models - Ed. By R. Baxter, M. Echenique and J. Owers; The Institute of Transportation Engineering, University of California.
3. Economic Models and Economic Forecast - Robert S. Pindyck, Daniel L. Rubin Field; McGraw Hill.
4. Introduction to Transportation Engineering and Planning, Morlok EK, McGraw Hill

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