

CE474: Traffic Systems Design-Fall 2004

Class 23 – Highway classifications
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Exam 2- Review

- Covers All materials covered in class and design projects 2 and 3
 - Isolated actuated operations
 - Coordination concepts – Manual calculations
 - Trnasyt optimization concepts
 - Actuated coordination calculations [permissive periods]
 - ITS corridor management applications and their potential benefits
 - ITS architecture, standards and protocols
 - Diamond interchanges
 - Roadway classification

The Concept of Highway Function Classification

Group street and highways according to the type of service they are intended to provide

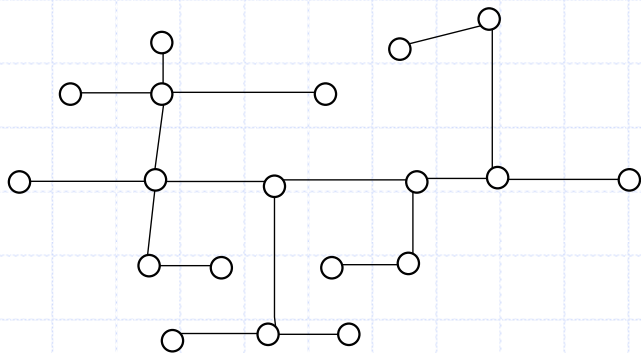
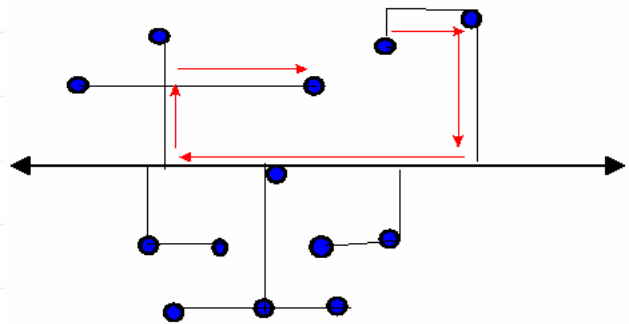
Highway network role:

- *Provide access to properties*
- *Provide travel mobility to users*

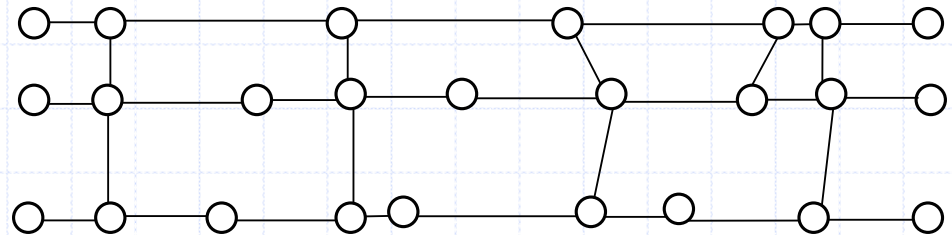
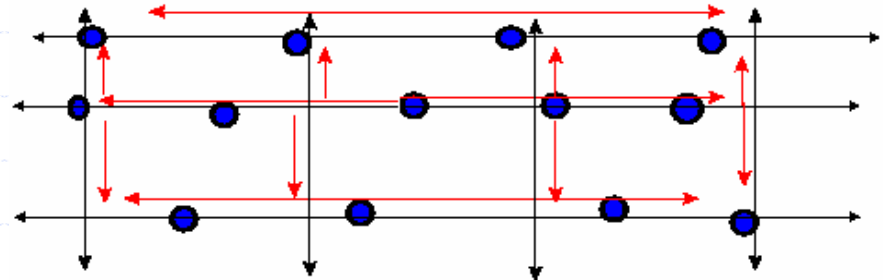
Problem:

- *conflict between serving through movements and providing access to the dispersed pattern to trip origin and destination.*

The neighborhood network



Hierarchical Road Network



Grid Road Network

Road Category groups

◆ Classification Criteria:

- Location: inside (urban) or outside (rural) build-up areas
- Degree of concentration of access points on the road: low or high
- Design function (mobility-connectors), access (collectors), or local and pedestrian use

Road Category Groups

- Group A: Rural principal arterials (freeways and interstates), linkage between cities,...etc
- Group B: Primary arterials-Suburban areas
- Group C: arterials used as collectors in urban areas
- Group D: urban roads that provide access to areas adjacent to the road
- Group E: Local urban roads

The Trend: Context Sensitive Design (CDS)

- ◆ Context sensitive design (CSD) is a collaborative, interdisciplinary approach.
- ◆ It involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources while maintaining safety and mobility.
- ◆ How CSD is different that the “normal” design process, or is it?

Road Classifications: How about Speed limit?

- ◆ Speed zoning is the establishment of **safe** and **reasonable speed** limits for certain special zones or sections of highway where the statutory speed limits do not fit the roadway and traffic conditions.
- ◆ Discuss speed zoning methods used by five different states to set speed limits in rural and urban highways.