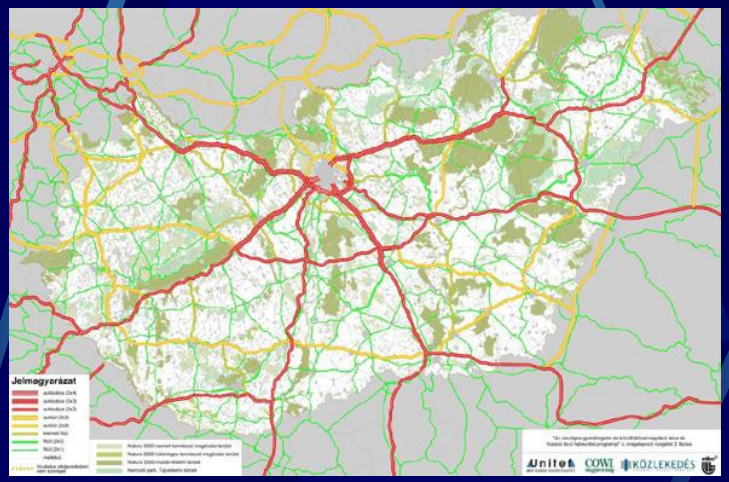
Transport network development, road hierarchy and road types



Urban Transport 3.
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Content

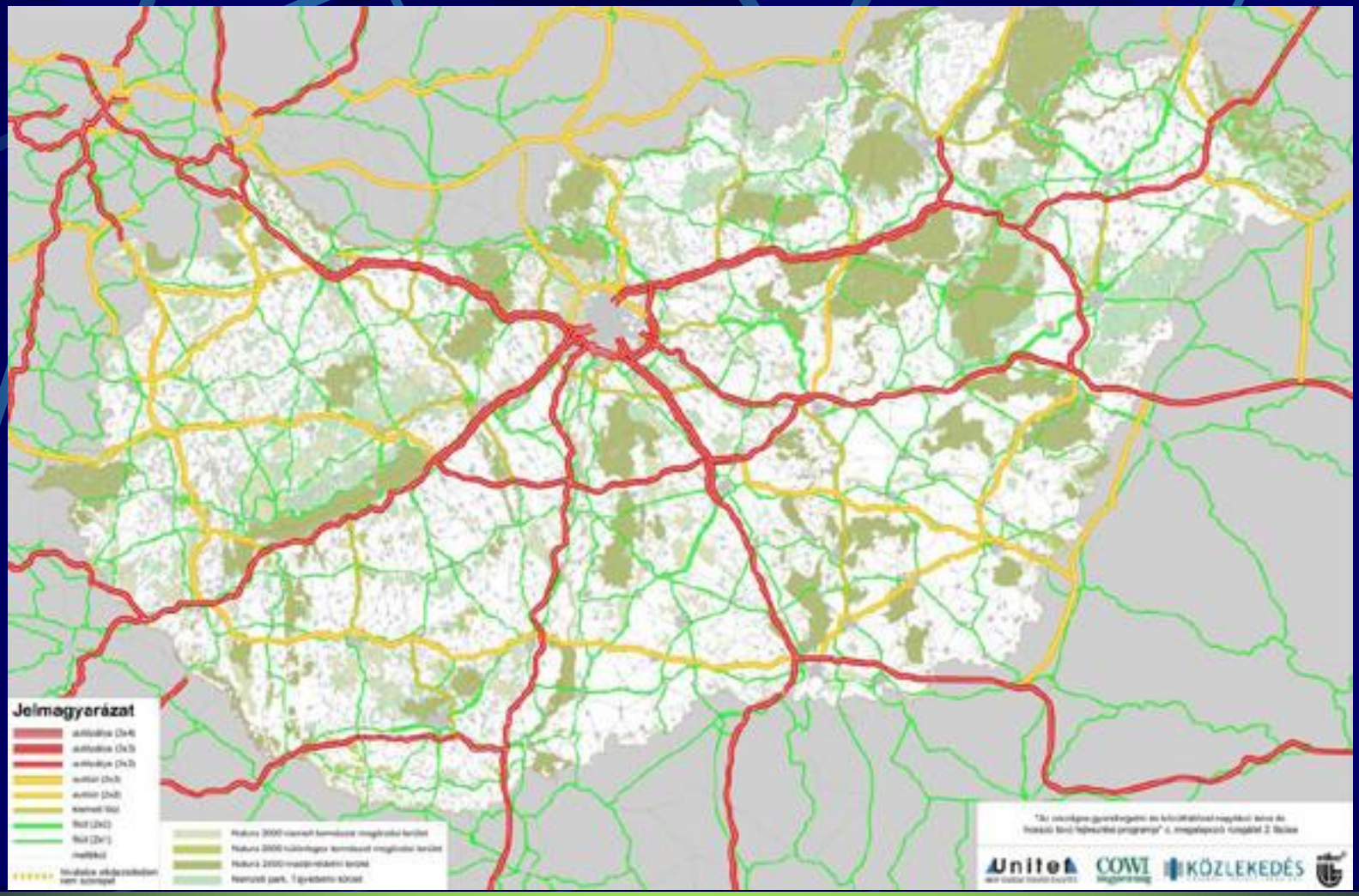
- Transport network development
- Road network types and examples
- Road hierarchy
- Road class types and examples

Transport network development

Main transport network characteristics:

- Number of junctions and sections,
- Network density (km / km^2, km / 1000 lakos),
- Capacity of network elements,
- Volume and composition of traffic,
- Traffic performance (Σ section length * volume),
- Travel times (between given points),
- Network sensitivity (critical sections),
- Traffic control (one-way sections, turning possibilities at junctions, constraints etc.)

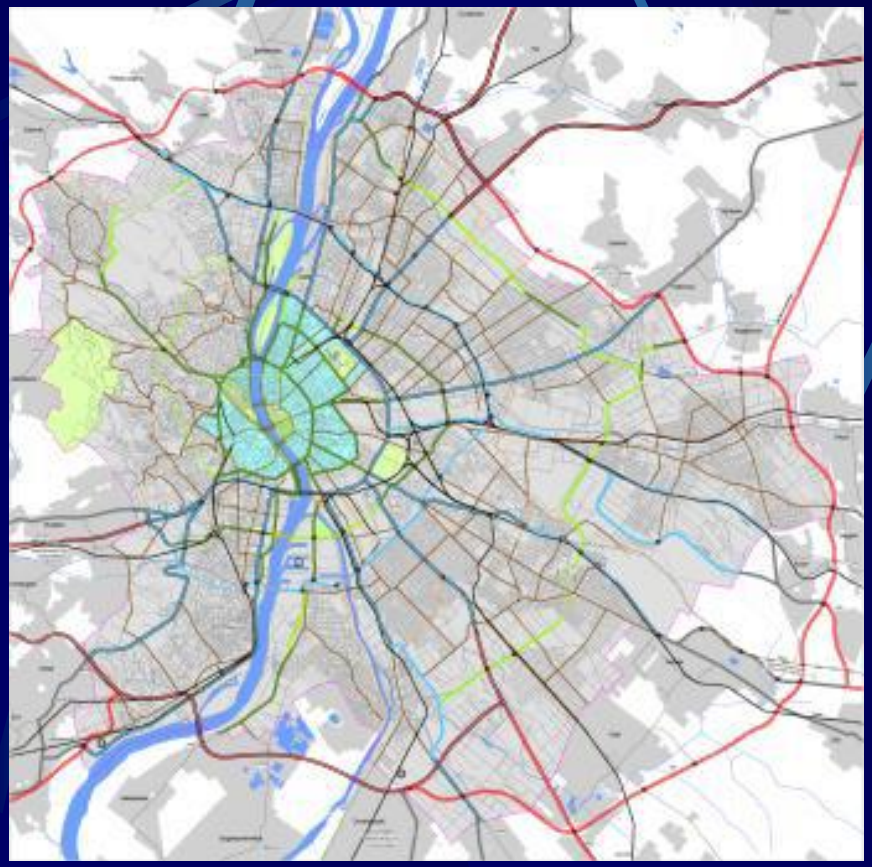
Transport network development - Hungary



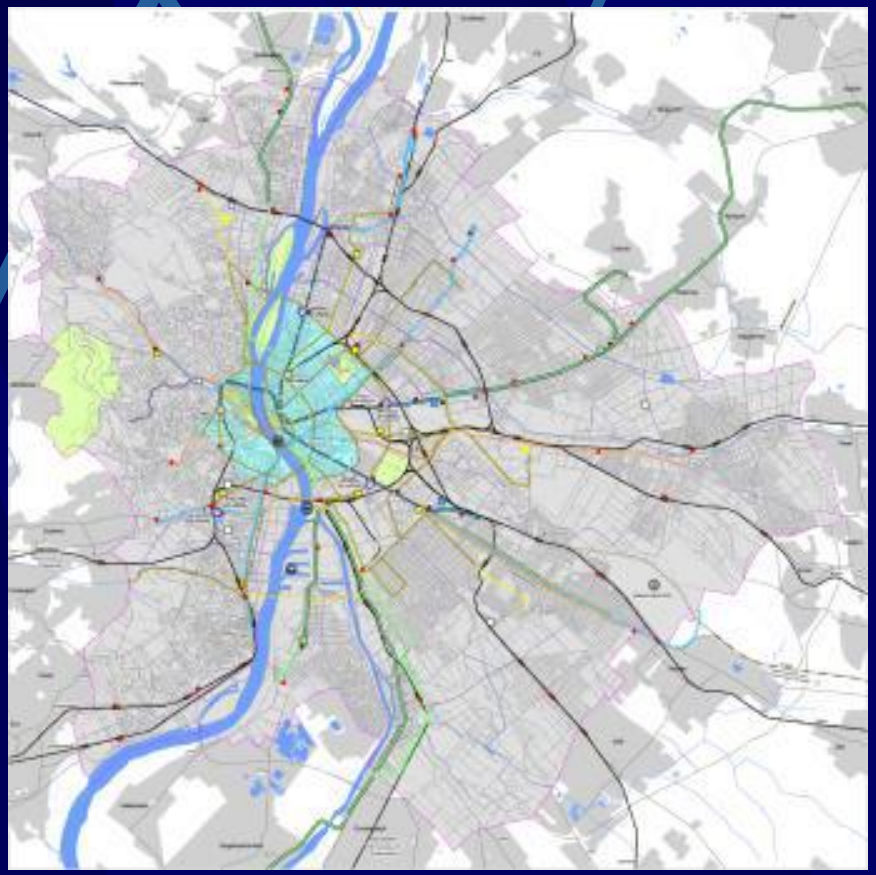
High-speed road network

Transport network development - Budapest

Road network



public rail transport network



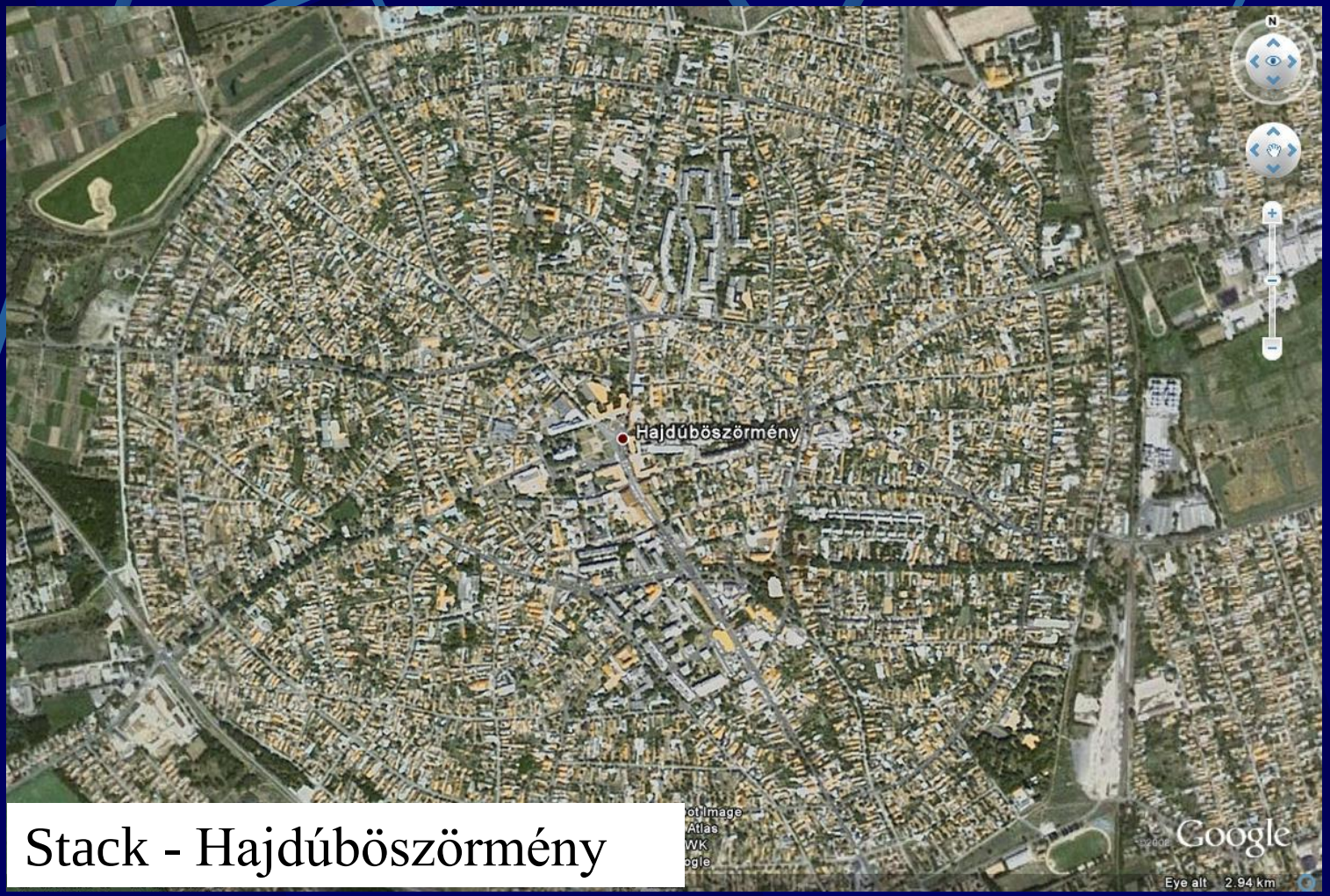
Road network types

Basic structural network types:

- **Stack-like (irregular) structure**
- **Linear structure**
- **Radial - ringed structure**
- **Grid pattern (chessboard) structure**

Coordinated land-use and transport network development requires clear connections and co-operation in planning.

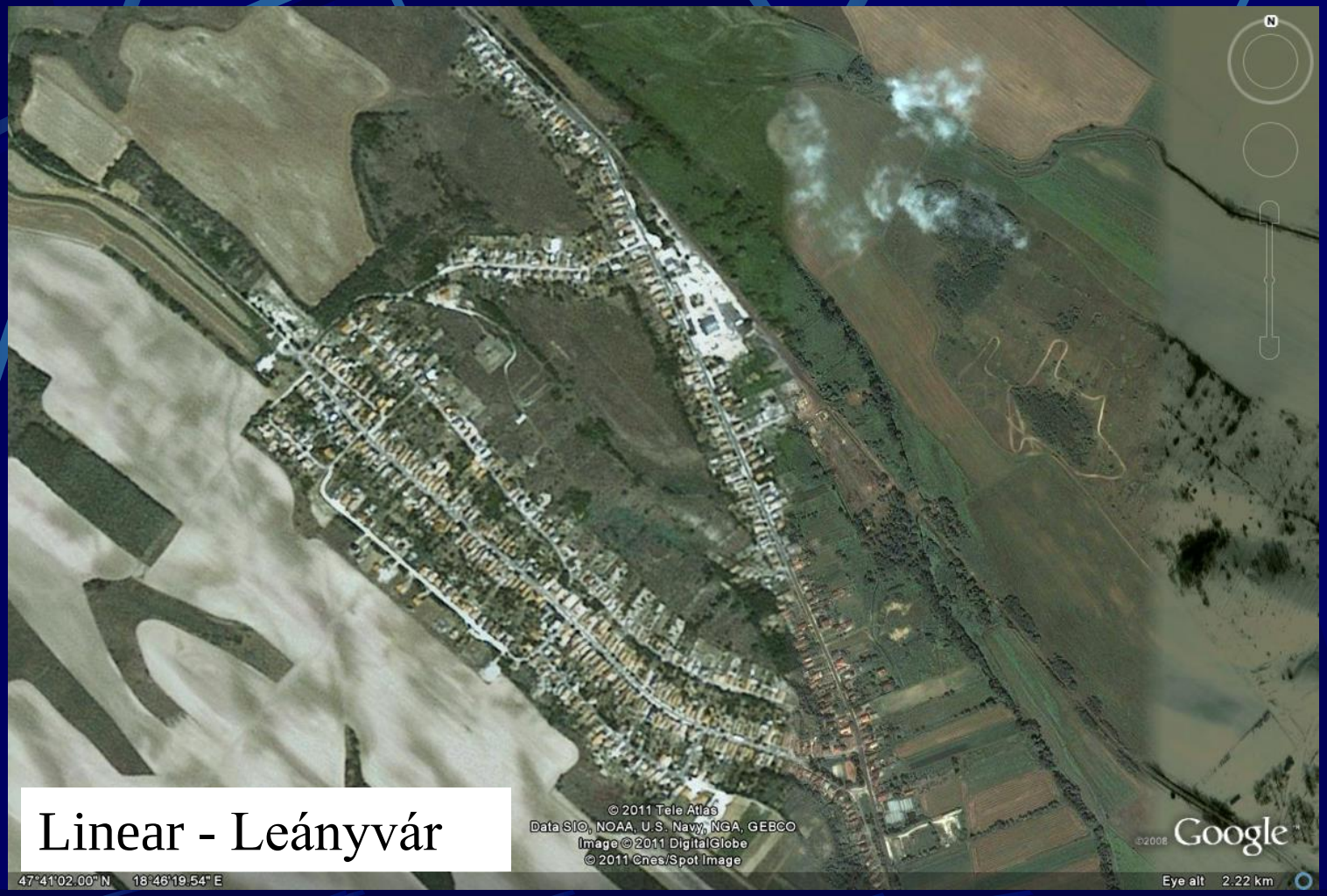
Road network types



Stack - Hajdúböszörmény

Source: Google Earth

Road network types



Source: Google Earth

Road network types

Radial - ringed - Szeged

Source: Google Earth

Road network types

Grid - Pestszentimre

Source: Google Earth

Road network types

In case of new land-use (especially habitation area) a good solution is the prohibition of through traffic. Service roads may connect the main roads at a few well defined points.

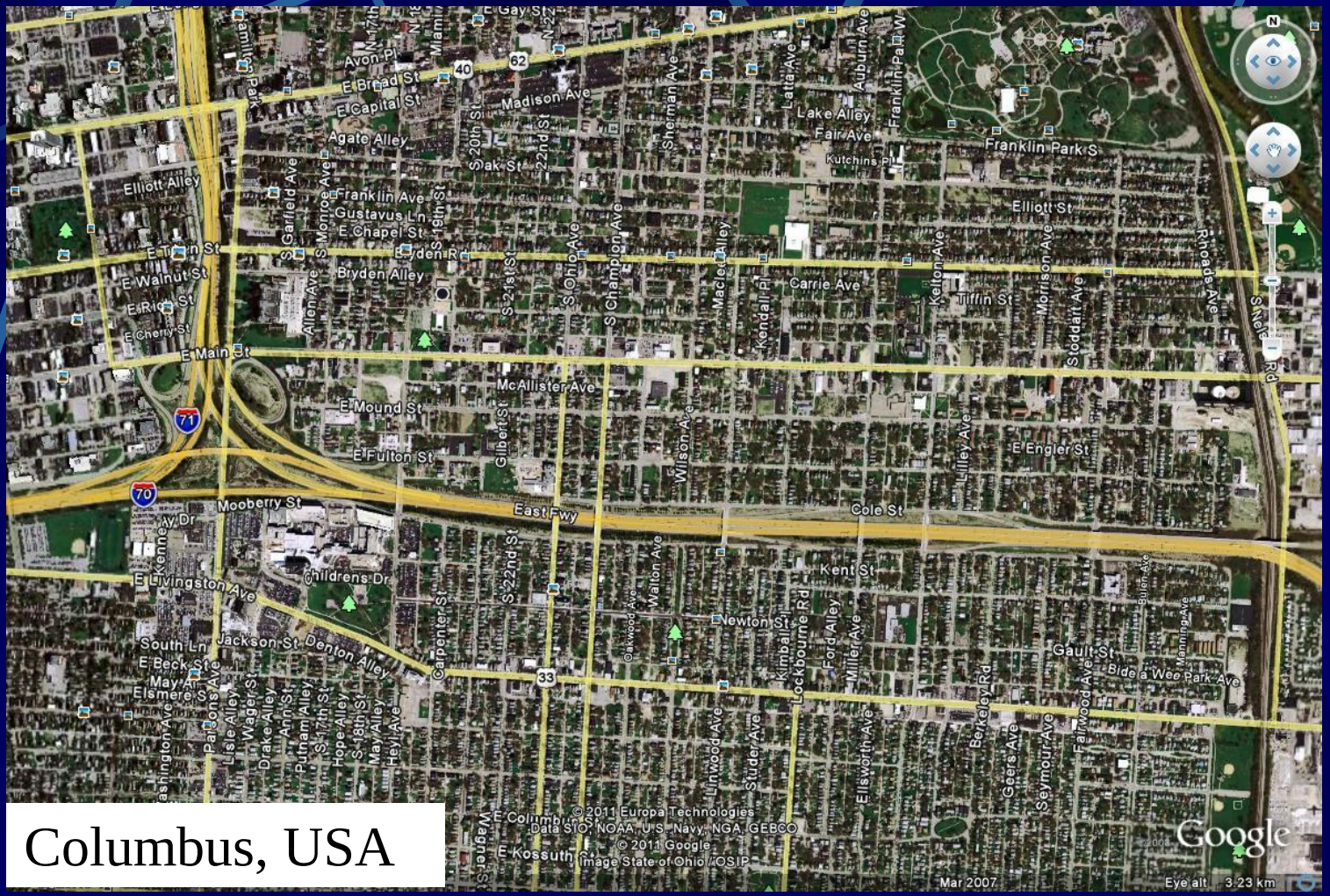
High-speed roads are dysfunctional in the city structure with all disadvantages of the through traffic and separation of city areas. Nowadays a not recommended solution.

Road network types

Rákoshegy Helikopter habitat

Source: Google Earth

Road network types



Source: Google Earth

Road hierarchy

The urban road network is connected but it has different functional elements providing a road hierarchy.

The function and category (class) of a well constructed and maintained road is clearly recognisable by the users.

Roads of different categories alter mainly in their width, number of lanes and alignment as well as service facilities (bus stops, parking etc.).

Road class types

Road classes of an urban network

- **High-speed roads (urban motorways)**
- **National main roads**
- **Urban main roads**
- **National secondary roads**
- **Local secondary roads**
- **Service roads in habitation and recreation areas**
- **Service roads in other areas (industrial, commercial)**
- **Bicycle path**
- **Pedestrian path**

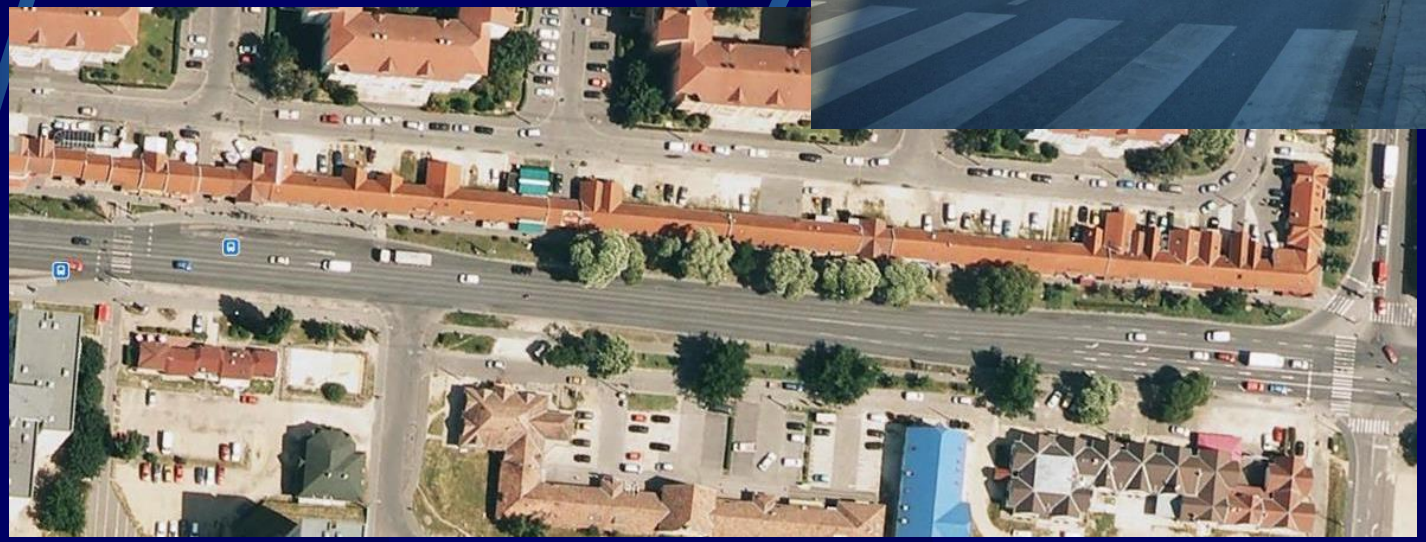
Road class types

Required width of transport network elements

1. High-speed roads	60 m
2. National and urban main roads	40 m
3. National secondary roads	30 m
4. Local secondary roads	22 m
5. Service roads	12 m
6. Bicycle path	3 m
7. Pedestrian path	3 m
8. Railway line with two tracks	20 m
9. Railway line with one track	10 m

Road class types

Urban main road (Rákoskeresztúr)



Road class types

National main road (Soltvadkert)

Pavement condition - rutting

Bicycle and pedestrian paths are parts of the main road

Road class types

Local secondary road
(Soltvadkert)

Service road
(Soltvadkert)

Summary

Coordinated land-use and transport network development requires connections and co-operation in planning.

The urban road network is connected but it has different functional elements providing a road hierarchy.

The function and category (class) of a well constructed and maintained road is clearly recognisable by the users.

Thank you for your attention!

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