SF 71: Optimising road network and transport routes for traffic distribution.

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2	2			8	6	18

Beispiel:
Tokyo: One of the main objectives of the Tokyo Metropolitan Government is the optimisation of the road network and thus the acceleration of the movement of people and goods and the strengthening of the links between road, sea, rail and air. The extension of the three main ring roads and nine radial roads will lead to a reduction of through traffic in the city, a reduction in journey times due to route optimisation and to an increase in distribution efficiency.

1. Differentiated description of the key field

In most cities, a good road network forms the basis of reliable freight and passenger traffic. Especially in densely populated cities, there is ever more traffic chaos, which has to be avoided or reduced in the long term by, among other things, optimising the road network.

2. Reference to sustainability:

From an ecological perspective, the optimisation of the road network leads to a reduction in travel times and routes, which in turn leads to a reduction in total CO2 emissions.
For the economic situation of a city, distribution channels should be substantially shortened, taking logistical aspects into consideration. In addition, the infrastructural requirements of urban enterprises must be met on the part of the city. If these are not observed, this may lead to an exodus of enterprises and thus to a loss of jobs.
When planning roads, one should take into account that fact that alternative roads have to be provided. In the event of a disaster (e.g. an earthquake) things could otherwise quickly lead to an overburdening of the road network and so to an additional risk to the population.

In general, transport planning has an impact on the attractiveness of the city and thus on the well-being of the general population.

3. Relevance to industrial sectors?

Mobility:	High
Energy:	Medium
Production & logistics:	High
Security:	Medium
ICT:	Medium
Water infrastructure:	Low
Buildings:	Low
Governance:	Low

Brief description of the high level of importance:
A well-developed road network is the foundation of a reliable and flowing movement of goods and passengers; it is thus particularly important for the production and logistics and mobility sectors.

4. Impact (positive & negative)

Transport planning has a direct impact on urban development
Town districts can be consciously promoted by good road connections
By providing links to airports, train stations and ports, the networking of transport media can be improved.

5. Implementation measures:

The following steps are recommended in order to optimise the road network:
1.) Analysing road usage
2.) Identification of bottleneck roads and non-relevant streets
3.) Calculation of the best routes for the shortest ways (e.g. concentric roads around the city centre)
4.) Promote citizen participation
5.) Cost-benefit analysis taking sustainability indicators into account
6.) Planning and implementation.

6. Actors: Who can shape things?

City: is the lead agency responsible for the calculation of optimal routes and road planning
Enterprises: should actively shape and incorporate infrastructural requirements.
Sustainability unit, department or office for sustainability: assessment of road design with sustainability in mind
Statistical Office: provides much of the road usage data
Political sphere, citizens and city council: participation in road construction.

7. Prerequisites:

No specific prerequisites necessary.

8. Obstacles/barriers:

- Lack of a reliable basis for data collection regarding road usage
- Existing administrative structures - do not allow cross-sectional analysis
- Conflicts with citizens when building roads

- Intrusion upon the environment

9. Indicators:

- Modal split (private and freight transport)
- Number of vehicles per day and road
- Average congestion time per day and road
- Driving time for ordinary routes
- Number of alternative options for typical journeys

10. Special features/remarks:

Although the optimization of the road network brings with it significant advantages, such as the reduction of CO2 emissions, road construction in particular can adversely affect the ecological aspects of a city. The impact on the city's sustainability must be assessed individually.