



An indicator-based approach for the identification of critical road infrastructures

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- **What is „Critical road infrastructure“?**
- **Identification of critical road infrastructure**
 - **Indicator Framework**
 - **Some indicators in more detail**
- **Outlook**

Critical road infrastructure

„Critical infrastructures are organisations or facilities of key importance to public interest whose failure or impairment could result in detrimental supply shortages, substantial disturbance to public order or similar dramatic impact.“

German Federal Office for Information Security (BSI) (2004)

Here:

Criticality is a combination of the disruption hazard and the indirect loss potential of a network component.

own definition

Concept of risk applied to roads

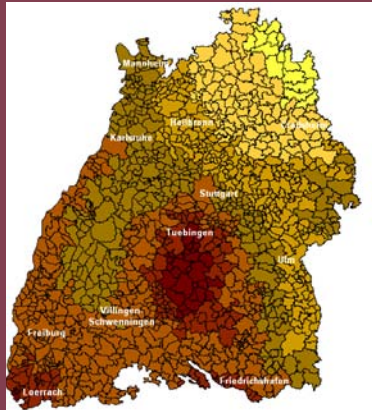
Hazard

x

Vulnerability

x

values



Structural

Functional

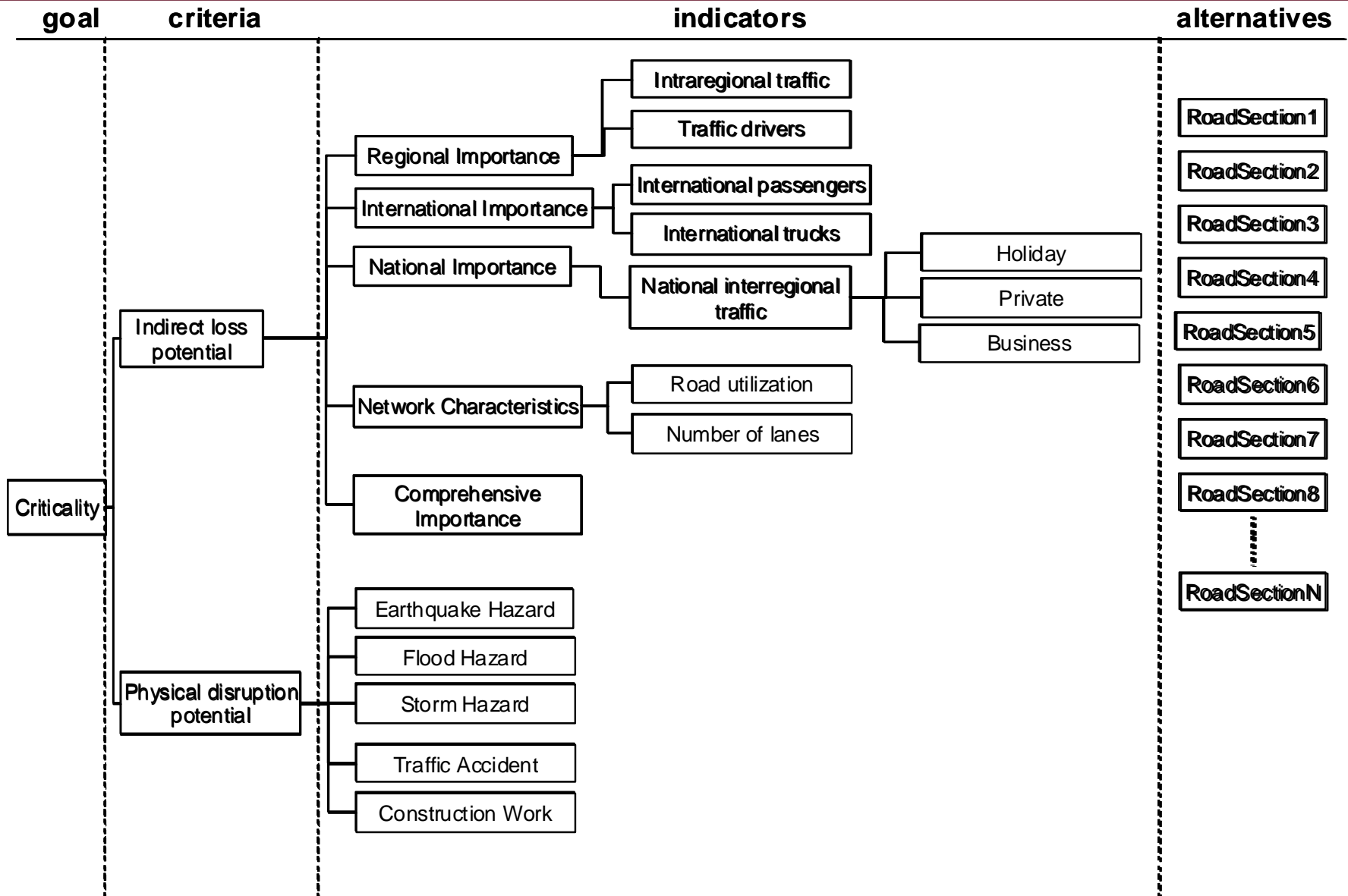


Probability for intensity

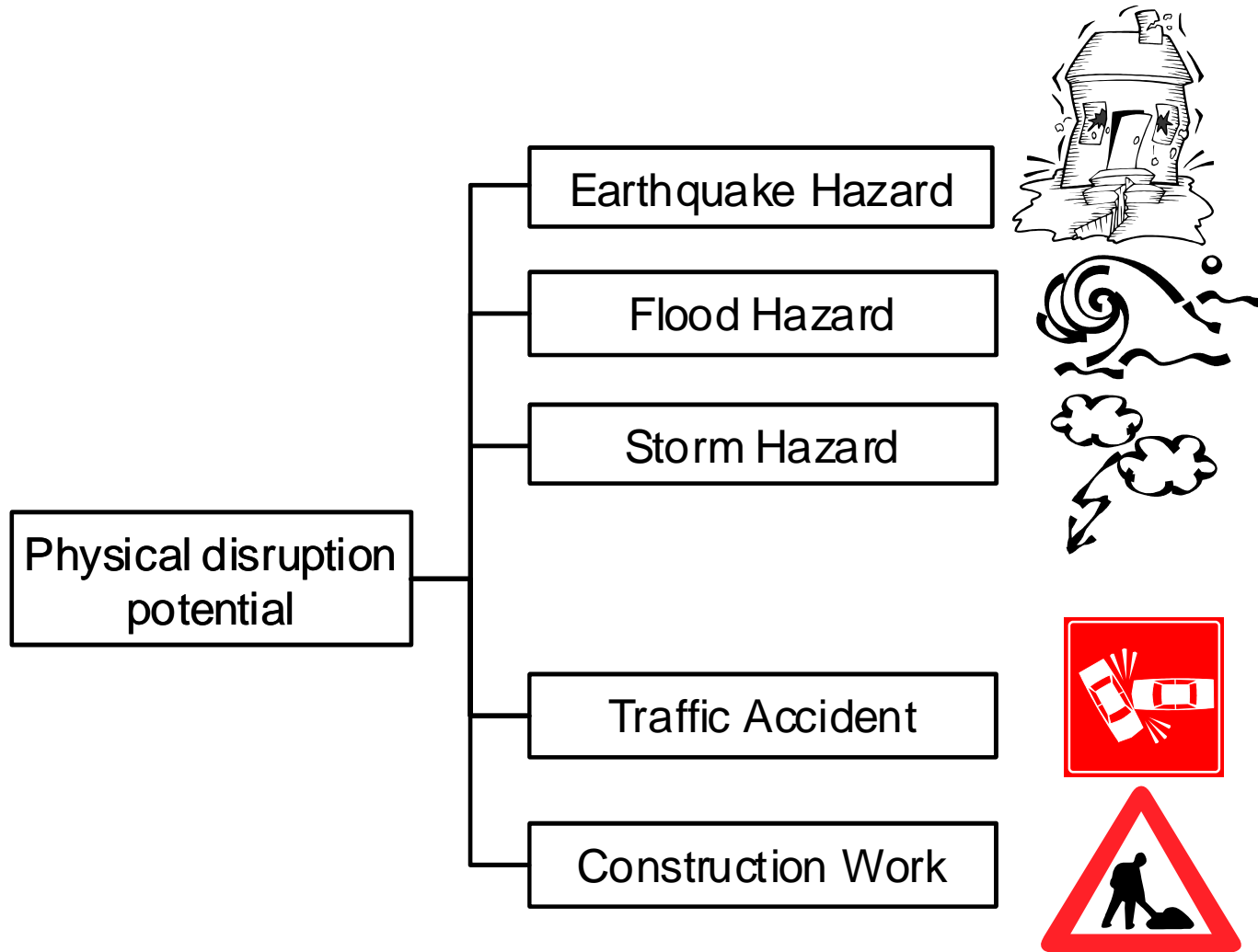
Damage degree and duration
Capacity constraint and duration

Repair- and reconstruction costs
Detour costs

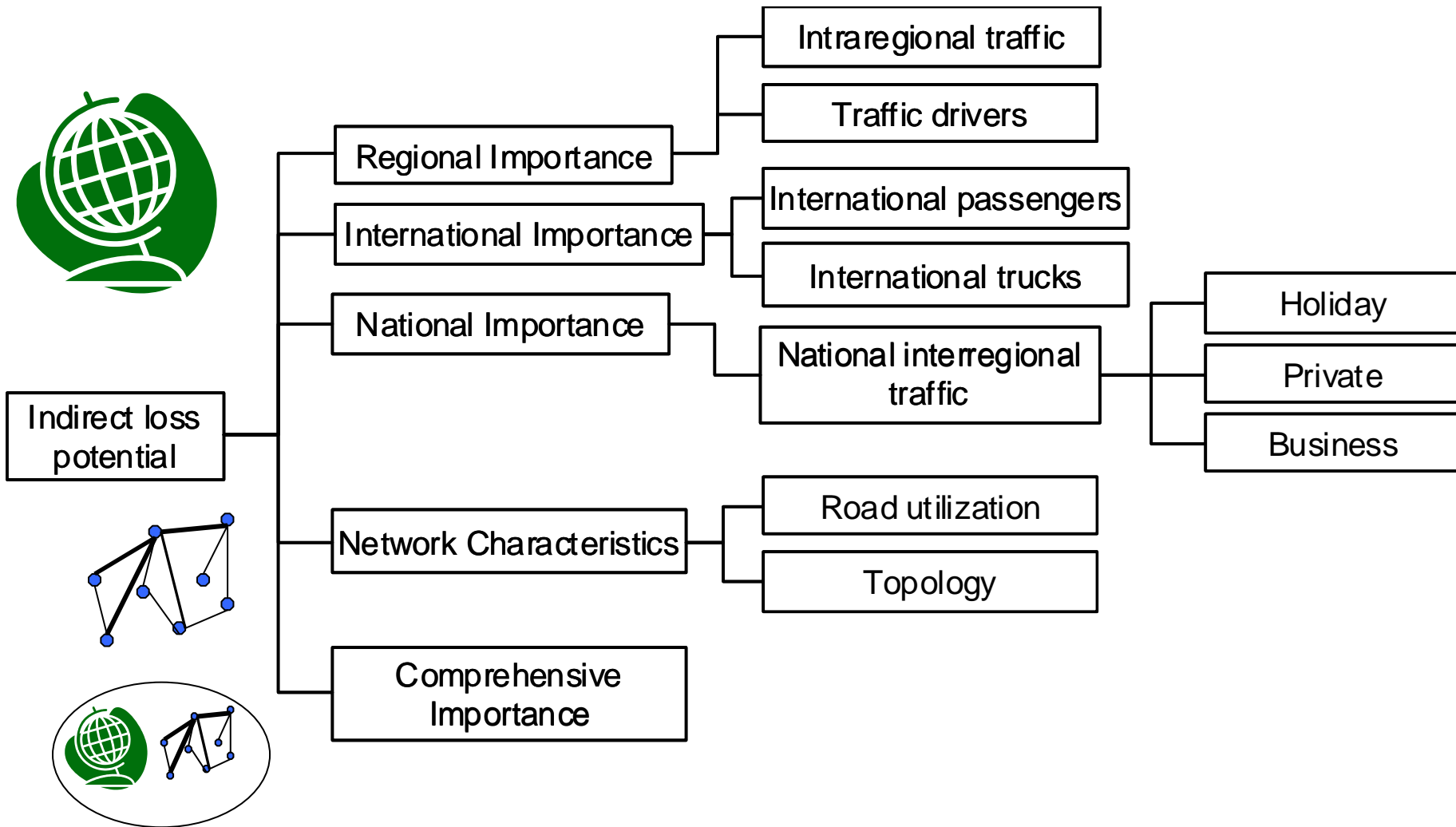
Indicators Framework



Physical Disruption Potential

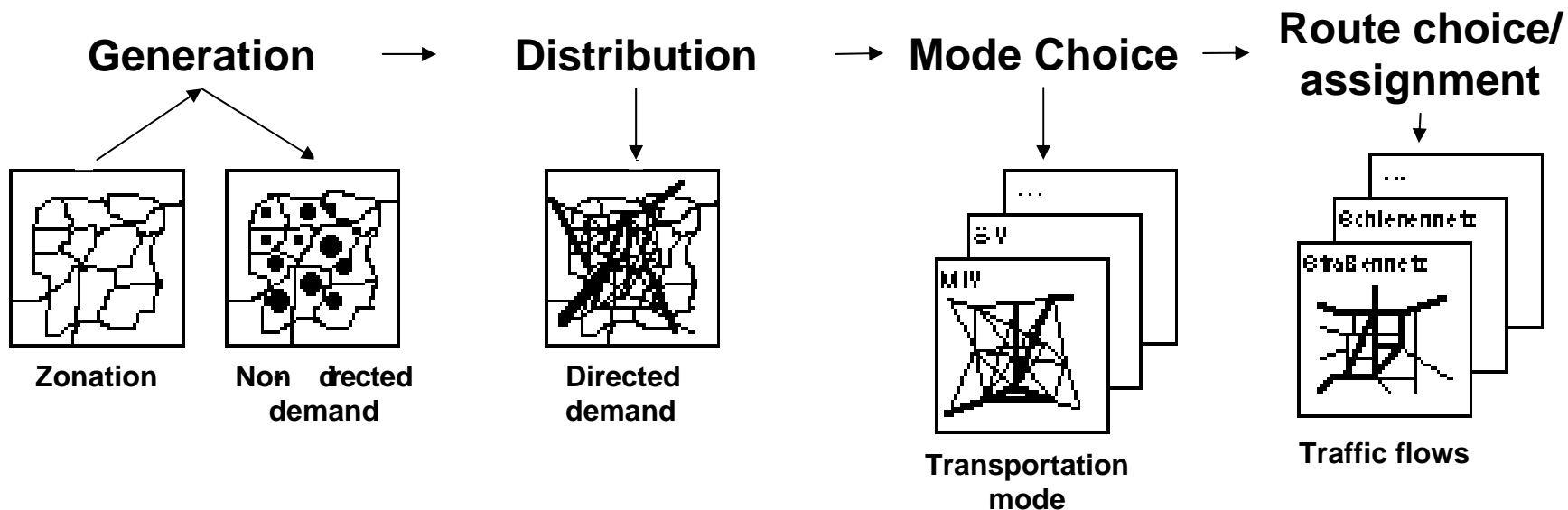


Indirect Loss Potential



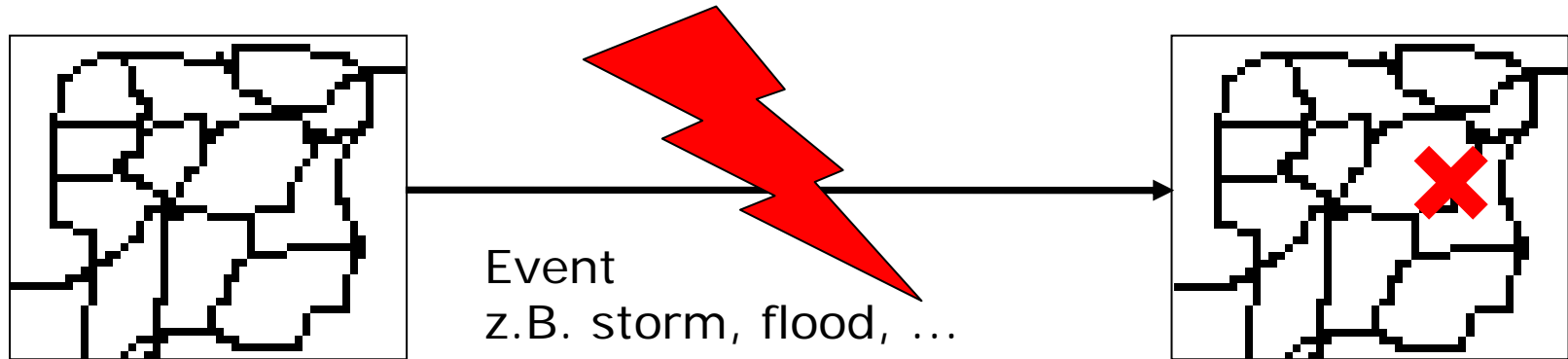
What is „comprehensive importance“?

4-step Approach in transport modelling



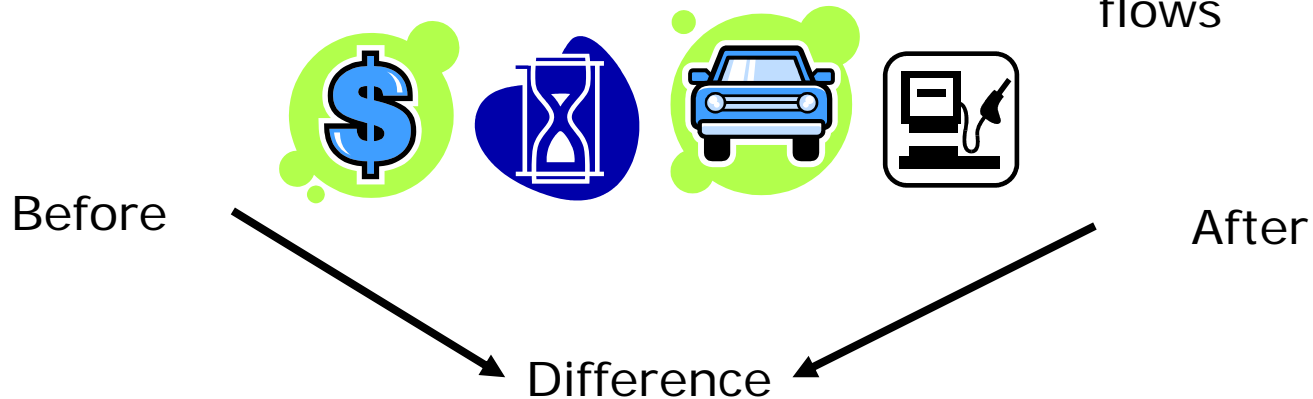
What is „comprehensive importance“?

Relative importance of a network component

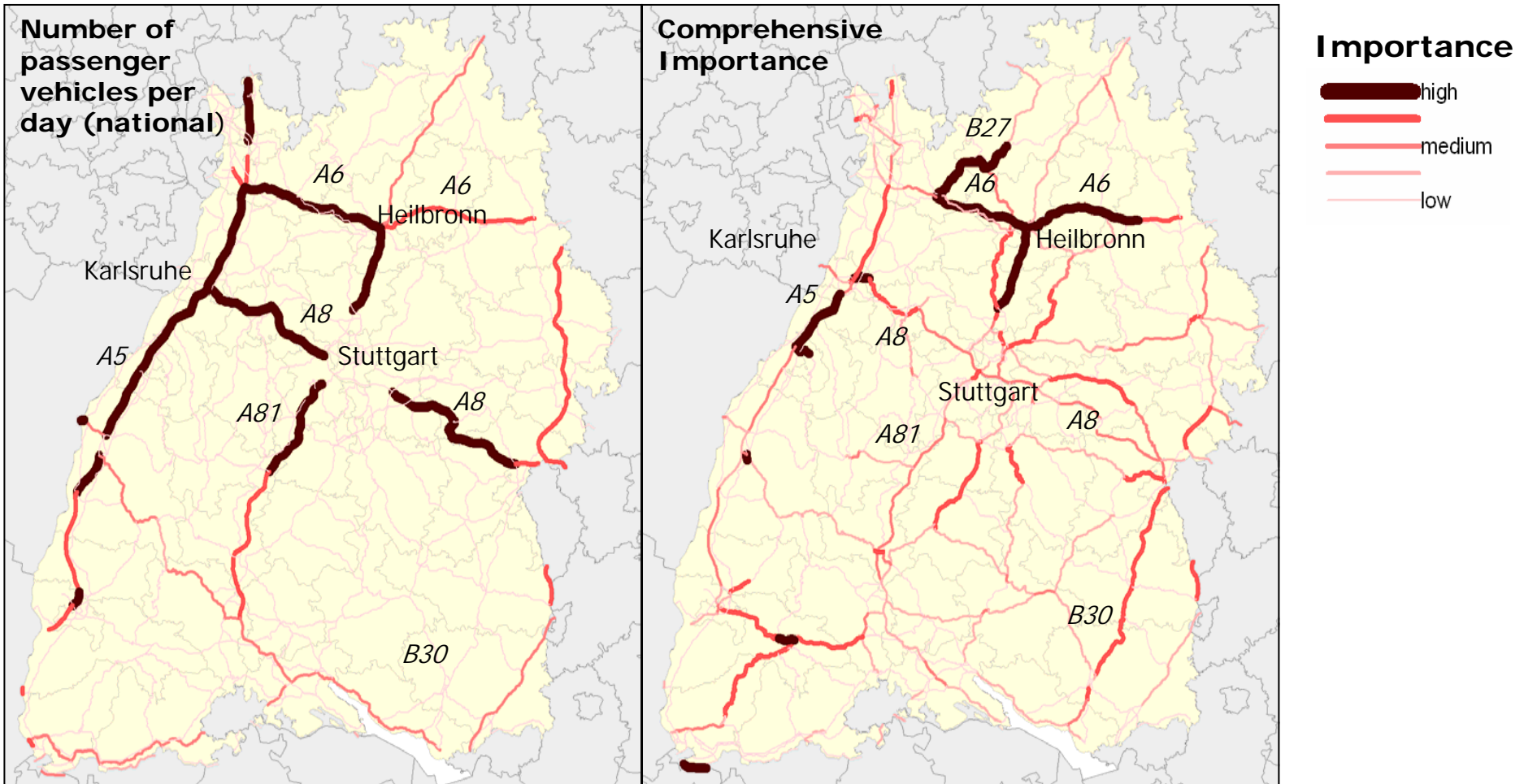


Complete network
with assigned traffic
flows

Incomplete network
with assigned traffic
flows



Comparison between 2 indicators



Outlook

- **Collection** of necessary data
- **Densified road network** for transport modelling
- **Adjustments** to existing multiple-criteria tools
- Results may serve policy makers as **guidance in decision making process**

**Thank you
for your attention!**

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