

MULTI OBJECTIVE FRAMEWORK TO OPTIMISE PLANNING OF ROAD WORKS

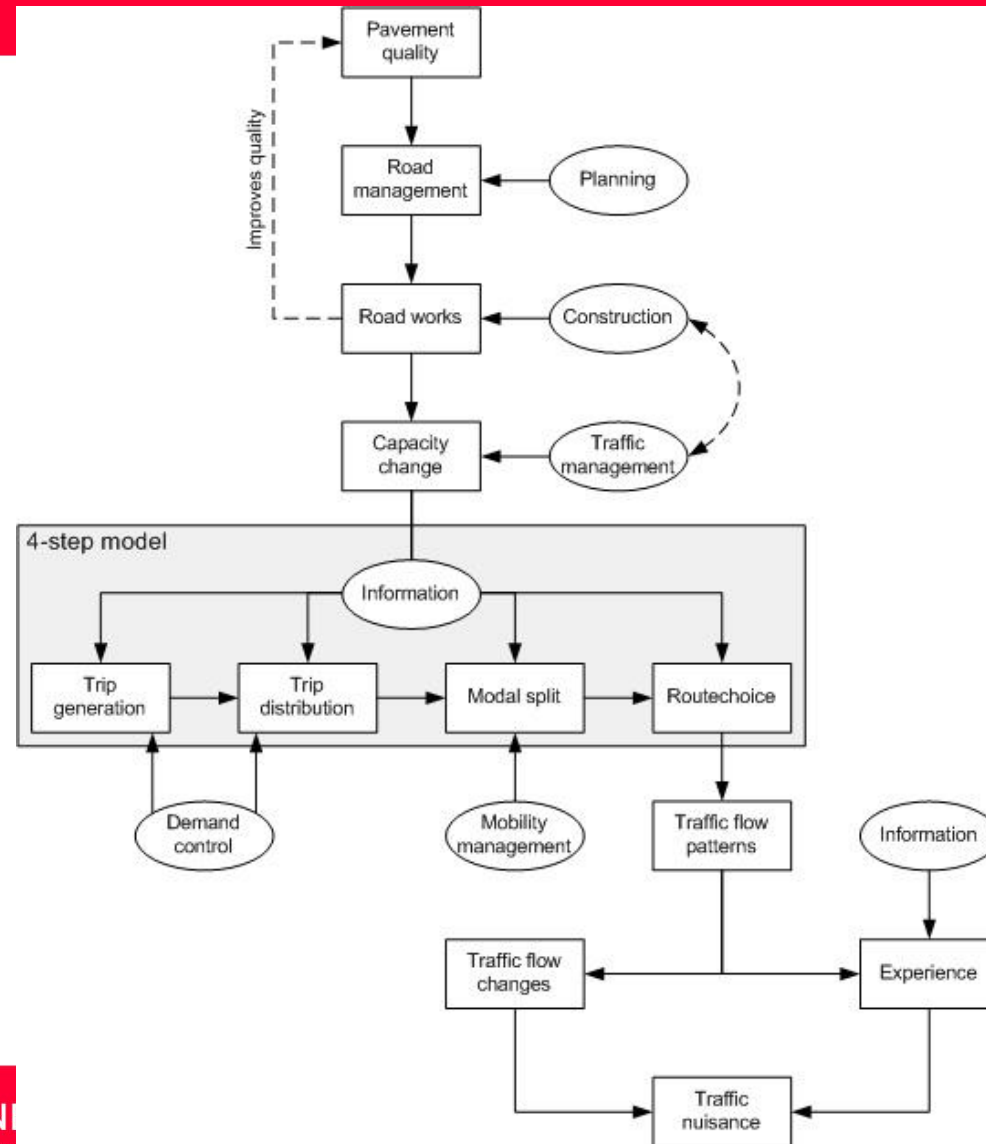
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Outline

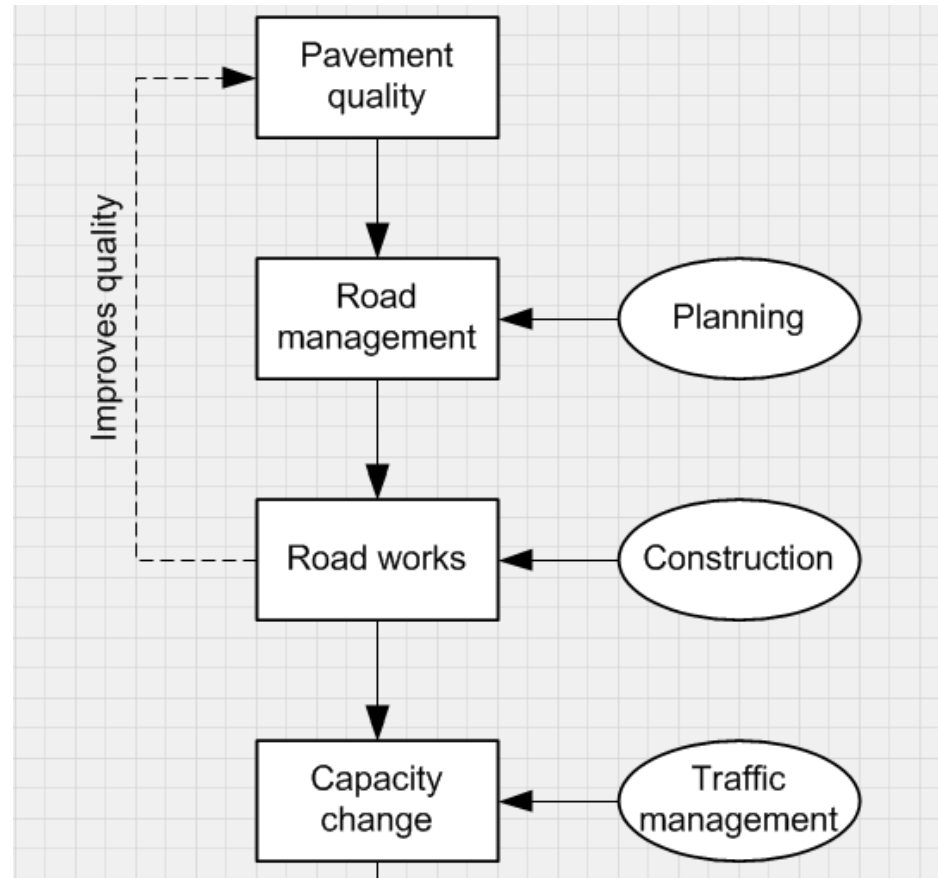
- Introduction
- The Theoretical Framework, within:
 - road management and maintenance
 - traffic effects: 4-step model
 - externalities hindrance and nuisance
- Using the developed framework
- Conclusions



Framework Lay Out



Road management and maintenance: Theoretical Framework: part i



Road management and maintenance: Construction phase of Road works

Considering the balance between:

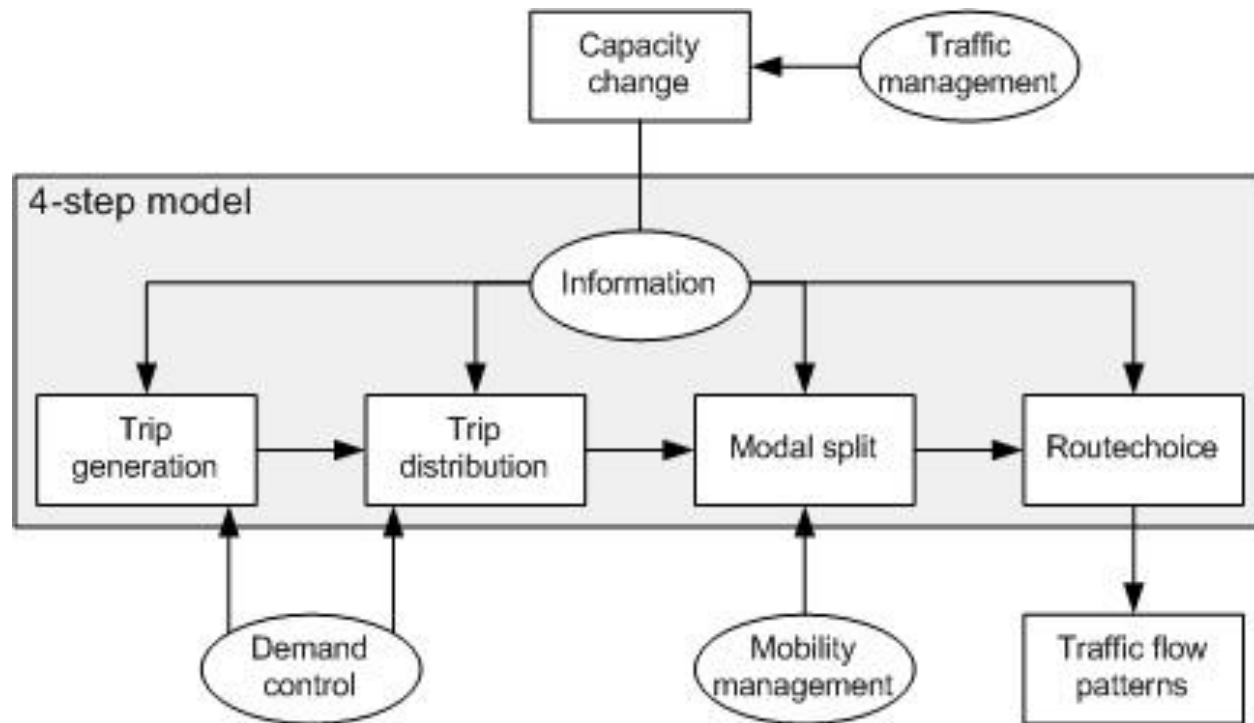
- Construction method, and,
- Remaining traffic throughput.

Construction method: following factors may be included:

- Procedures and work hours,
- Equipment needed,
- Day or night,
- Planning,
- Etc.



Traffic effects during Road works: theoretical framework part ii



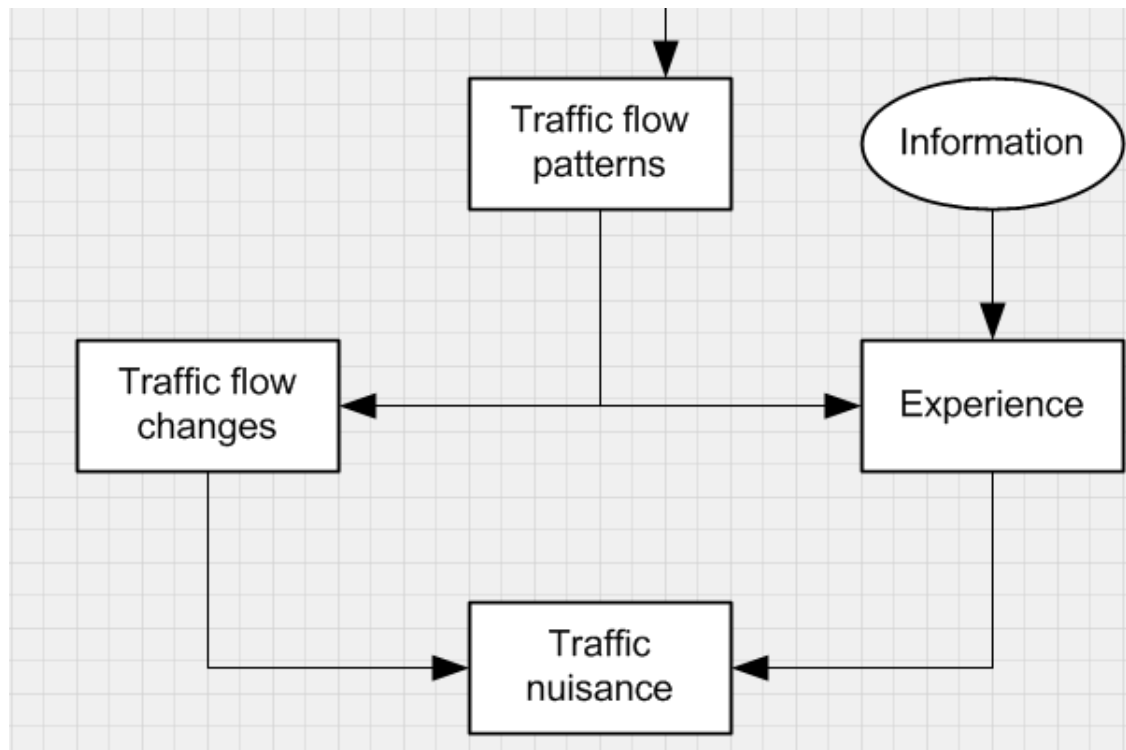
Traffic effects: the 4 step model

Availability of the network and links:

1. travellers make a trip (Trip generation),
2. destination of trip (Trip distribution),
3. which transport mode (Mode choice), and,
4. what route (Route assignment).



Externalities hindrance and nuisance; theoretical framework part iii



Hindrance vs Nuisance

Objective Hindrance: Three levels:

- Area based
- Network based
- Traveller based

Subjective hindrance: Nuisance

- Information provision
- Credibility of administration and/or contractor
- Duration road block
- Time day or night



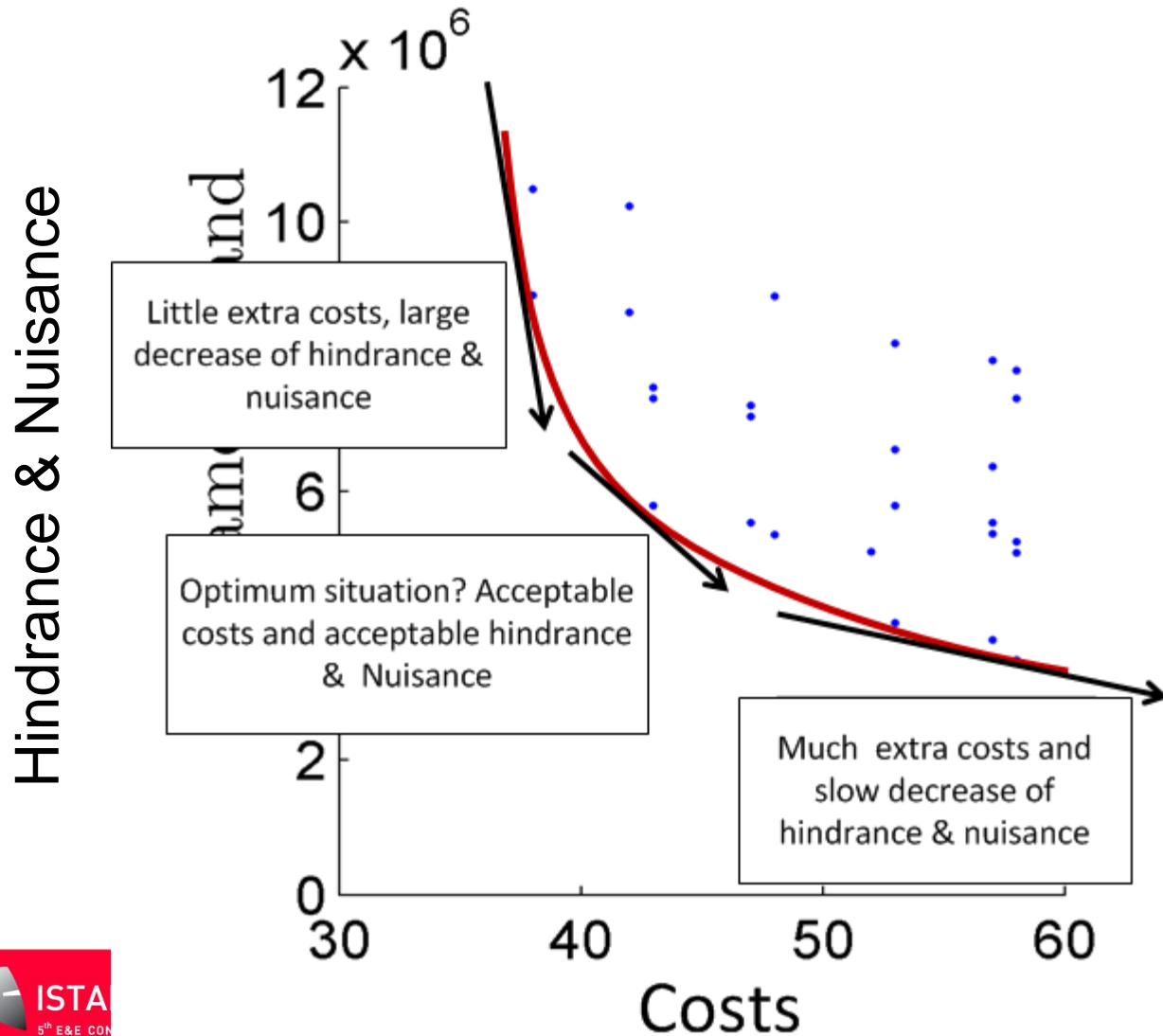
Using the framework

6 process steps

- planning road maintenance,
- method construction work be done,
- traffic management, capacity change
- manipulate level trip generation/trip distribution,
- mobility management on mode choice
- information on travel times, road blocks & re-routing,.



Using the framework: Presentation of the model calculation results:



Conclusions

- Model is good usable for cyclic road maintenance planning and gives idea about costs and hindrance and nuisance.
- 4 step model plays a central role within theoretical framework
- Two extensions:
 1. deals with road works management,
 2. deals with changed traffic flows; hindrance & nuisance,
- Model is usable for LCA analysis (also sustainability issues)
- Makes clear to politics what best choices are related to costs, Hindrance and Nuisance.

