

Prioritizing transportation development proposals



To help the Swiss Canton of St.Gallen process a multitude of proposals in the area of transportation planning and development, we devised a method of assessing their cost effectiveness and applied the method along with various tools to help the canton arrive at a sound prioritization.

The Canton of St.Gallen's 17th Transportation Development Program (TDP) includes funding for various areas of transportation development, including road construction, traffic management, bike-path expansion, and enhanced pedestrian access. While the TDP does not include any specific, finalized projects, it does include a list of proposals that were submitted by various municipalities within the canton. Altogether, we assessed and prioritized 400 proposals in terms of their cost and utility.

Prioritizing a multitude of different proposals

Perhaps the biggest challenge we faced was the sheer range of different proposal types, including:

- Pedestrian traffic: sidewalks, crossings, underpasses
- Bicycle traffic: bike lanes, bike paths, truck turning assistants, bike waiting areas
- Redesigning of frequent-accident locations
- Traffic hubs: use of traffic circles or new traffic lights
- Lane expansions
- Road design and operation concepts
- Bus prioritization and railway separation
- Bus stops

Client

Canton of St.Gallen, Department of Civil Engineering

Facts

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Moreover, we were also tasked to complete the prioritization within four months.

Cost-effectiveness analysis as a basis for decision making

We used a cost-effectiveness analysis to arrive at our prioritization. Based on the relationship between potential utility and costs, we drafted a ranking of the proposals. The method essentially consisted of the following components:

- Use of a goal and indicator system with 15 indicators for all of the proposals
- Partially automated and GIS-based data analyses with the ascertainment of measurement parameters for each indicator
- Calculation of each proposal's potential utility
- Drafting a cost estimate for each proposal
- Extensively automated creation of a proposal ranking

In addition to the list of the prioritized proposals, we also provided the Canton of St.Gallen with a manual and the tools necessary for making GIS and other data analyses. This will enable the Canton to apply the method and tools on its own when assessing future proposals.