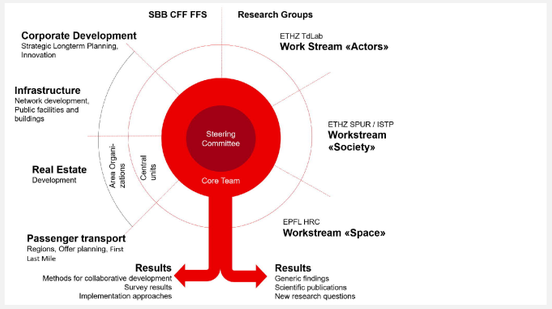
Co-Creating Mobility Hubs – A transdisciplinary research project of SBB together with ETH Zurich and EPF Lausanne.

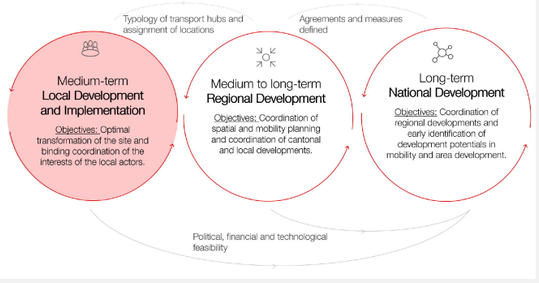
Stefan Müller[1], Philippe Stadler Benz[2], Cédric Wehrle[3], Michael Wicki[4]
[1]TdLab, ETH Zurich; [2]Real Estate Development, SBB; [3]HRC, EPFL; [4]ISTP/SPUR, ETH Zurich

1 Introduction

Mobility hubs with customer-oriented mobility solutions and integrated area developments make an important contribution to the careful use of scarce land resources and create livable urban space for the population.The transdisciplinary research project "Co-Creating Mobility Hubs" was mandated by the SBB Management Board in 2019.



Design of the transdisciplinary research project



Mobility Hub development: different perspectives and interaction of layers.

2 Workstream *Space* Developed Tools for Spatial Analysis of Mobility Hubs

Case study sites

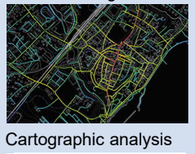
Bern Wankdorf

Ostermundigen

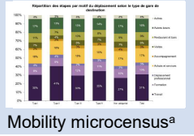
Nyon

Methods

Benchmarking



Cartographic analysis



Mobility microcensus[a]

Interpretative Matrix of space-related themes and guidelines

Themes	The Mobility Network as Context	The Mobility Hub as an Intermodality Node	The Station Building as a Public Space	The Neighborhood as a Piece of City	The Landscape as a Territorial Network
Guidelines	Hierarchized mobility networks lead to longer travel distances by car and more pressure on space in the main transfer hubs.	Despite its large land consumption, car use in hubs is already minimal and decreases with the centrality of the station.	The station is to be embedded in the neighborhood's network of paths through multiple access points, clear orientation and access to the platforms.	Legible and safe pedestrian connections to major neighborhood programmatic attractors should be emphasized.	Existing ecological networks that cross or run along railroad tracks should be emphasized.
	Social megatrends (more leisure-related travel, home office, and population aging) are leading to an increase in non-time-sensitive and predetermined travel patterns that are less reliant on main hubs.	The space required for bicycle parking is to increase fivefold by 2040; there is space for fast bicycle connections along the tracks. Possible conflicts with pedestrians and the spatial quality in the public areas must be taken into account.	The balance between space for pedestrians and mobility infrastructure should be clearly defined. Land reserves can be appropriated by the population through temporary experimental uses.	The existing buildings and uses around mobility hubs which cannot be found anywhere else in the city, should be recognized and valued.	Transportation hubs are highly sealed places that have a strong need for green space. The design of the public space should stage links to cultural and landscape features of the place.

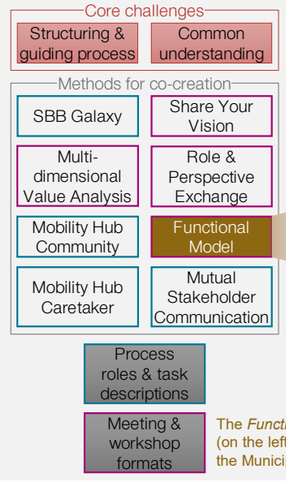
3 *Workstream Society* Conducted Surveys on Societal Demands

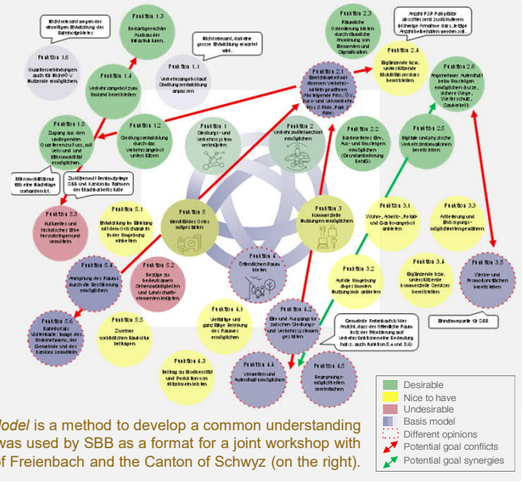
1. Evaluation attributes single functions → 2. Ranking individual functions → 3. Weighting individual functions

- Balancing functions from the user's point of view: customer needs and acceptance
  - **Public Transport** offer as a core concern
  - Importance of Mobility Hubs as (part of) **Public Space**: part of the neighborhood and its identity
  - **Services and facilities:** No major concern
  - Train stations as **Multimodal Transport Hubs**: understanding of **Micromobility** is lacking

4 Workstream *Actors* Developed and Validated Methods for Co-Creation

- Based on expert interviews (N=42), participant observations (N=12), and focus group sessions (N=11), we developed methods to address core process challenges.
- The method *Functional Model* (based on Zemp et al., 2011[b]) was implemented and validated by SBB for the mobility hub in Pfäffikon SZ.





The *Functional Model* is a method to develop a common understanding (on the left) and was used by SBB as a format for a joint workshop with the Municipality of Freienbach and the Canton of Schwyz (on the right).

Partner/Sponsor

References

a. Federal Office for Spatial Development ARE, Federal Statistical Office FSO (2017). 2015 Mobility and Transport Microcensus (MTMC). Bern and Neuchâtel.

b. Zemp, S., Stauffacher, M., Lang, D. J., & Scholz, R. W. (2011). Generic Functions of Railway Stations—A Conceptual Basis for the Development of Common System Understanding and Assessment Criteria. *Transport Policy*, *18*(2), 446-455. https://doi.org/10.1016/j.tranpol.2010.09.007