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Flying high in urban ropeways
Chances and obstacles of urban ropeway systems in Germany

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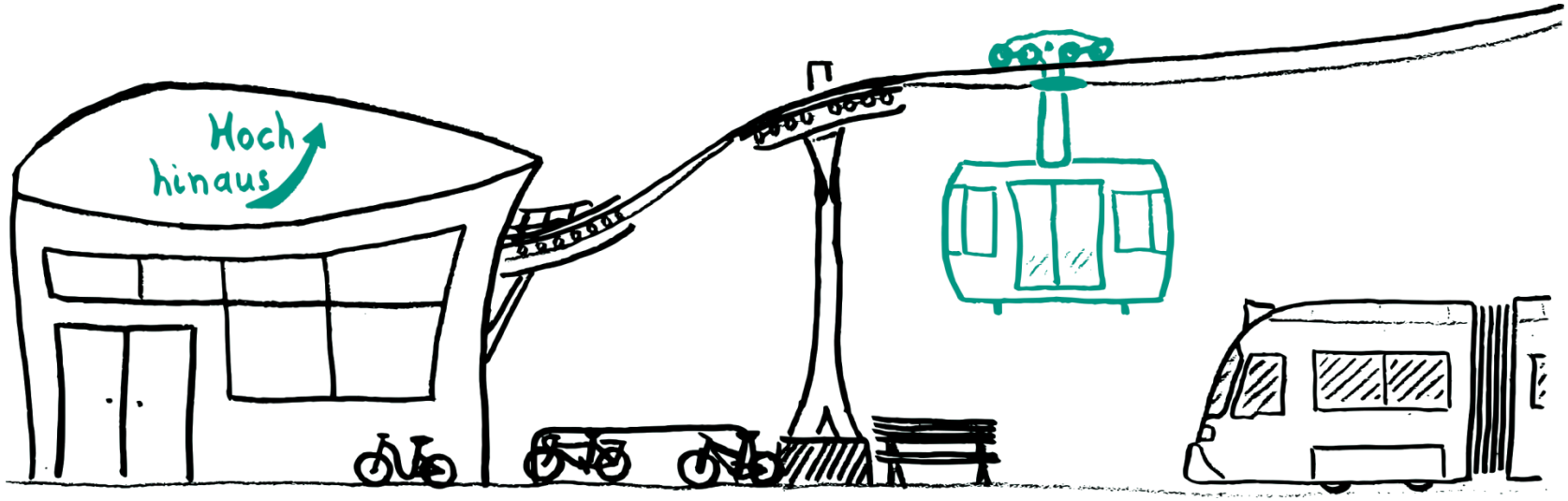
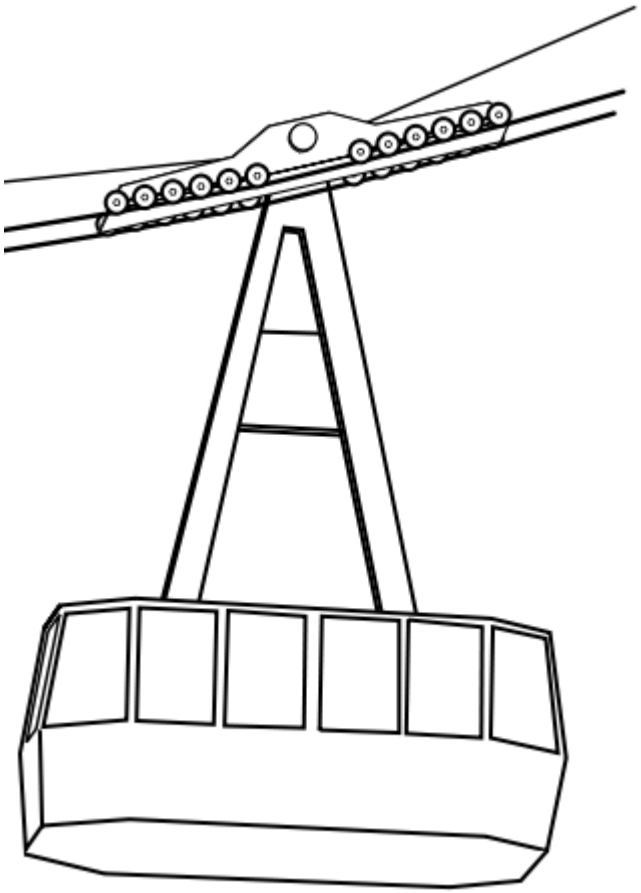


Outline

- Urban ropeways
  - Definitions
  - Characteristics
- Our research perspective
- Results (preliminary)
  - Established routines
  - Integration into urban landscape
  - Integration into public transport planning
- Outlook: Will we fly across German cities in the future?

Urban ropeways: definitions



- Urban ropeways use existing technology in a new context
- Wording:
  “cable cars”, “gondolas”, “ropeways”, “aerial tramways”
- Current applications mainly for tourist purposes, e.g. skiing

Wikimedia commons: Daniel Schwen, Opendrek

Urban ropeways: definitions

- Urban ropeways use existing technology in a new context

No pure tourist attractions in urban environments

No public transport ropeways outside urban environments

“Urban ropeways are ropeways that operate in an **urban environment** and serve **public transport purposes**”

Challenging insertion into urban landscape

Challenging operating conditions

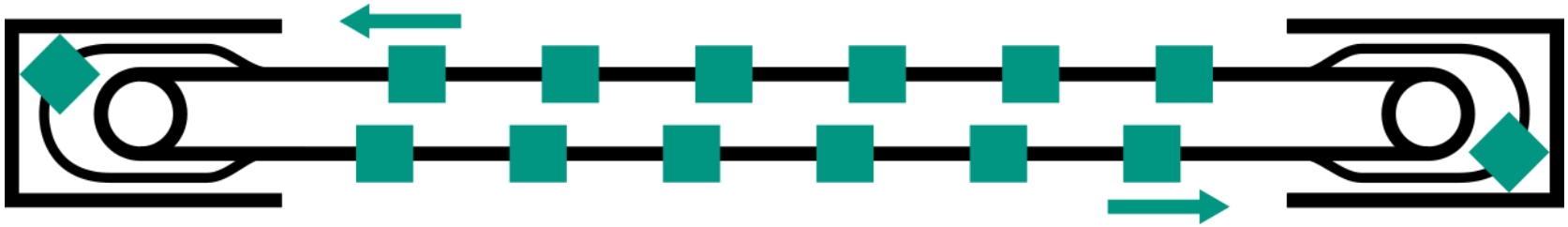
Urban ropeways: characteristics

Two main technologies:

- Aerial tramways

Big cabins, intermittent operation (timetable)

- Detachable gondolas



Small cabins, continuous operation (cabins stop at stations)

Urban ropeways: characteristics

- Cross topographical barriers on the shortest route
- Connect major points of interest

Emirates Air Line, London (United Kingdom)

http://finchleyarrow.co.uk/News/east-london-to-get-cable-car

Urban ropeways: characteristics

- Cross topographical barriers on the shortest route
- Connect major points of interest

Portland Aerial Tramway
(Oregon, USA)

Wikimedia commons: Another Believer

Urban ropeways: characteristics

- Connect peripheral areas
- Close public transport gaps

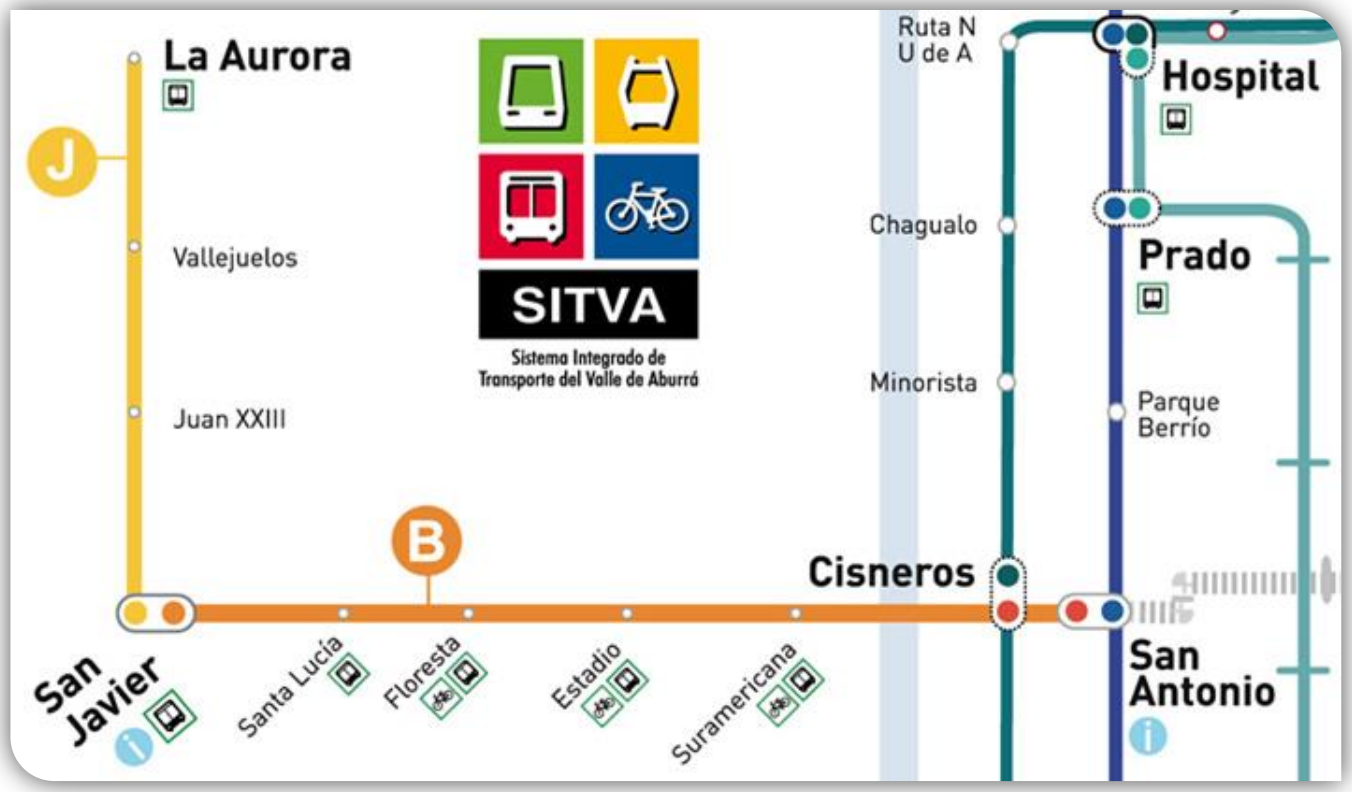
Teleférico do Alemão, Rio
(Brazil)

http://metro.co.uk/2013/05/30/taking-to-the-skies-over-rios-favelas-before-the-forthcoming-world-cup-and-olympic-games-3814352

Urban ropeways: characteristics

- Connect peripheral areas
- Close public transport gaps

Metro Medellín
(Colombia)



https://www.metrodemedellin.gov.co/index.php?option=com_content&view=article&id=497%3Amapas-metro&catid=1&Itemid=50&lang=es

Urban ropeways: characteristics

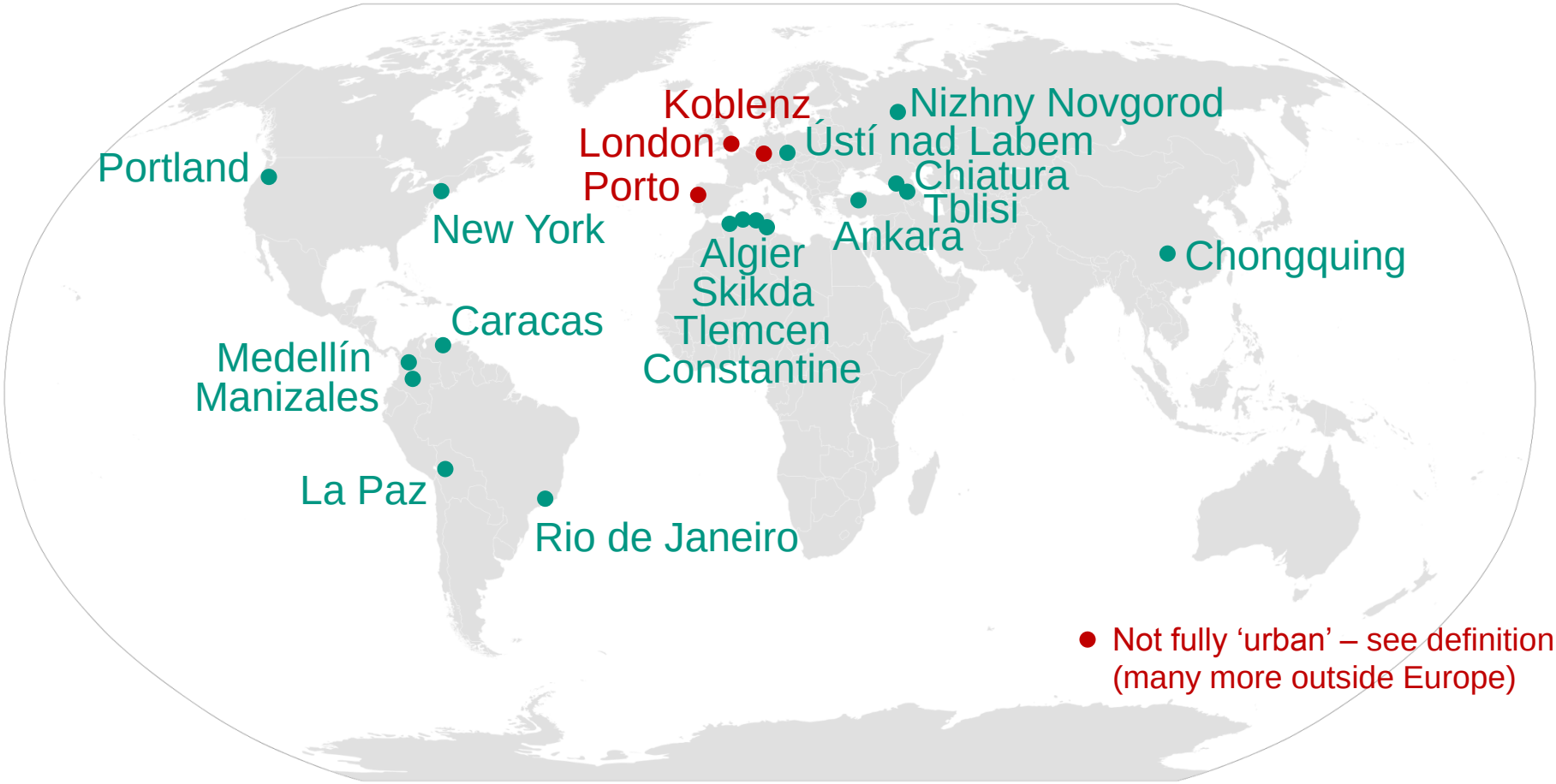
- Relieve overloaded public transport

Şentepe / Yenimahalle ropeway, Ankara (Turkey)

http://www.handelsblatt.com/technik/das-technologie-update/frage-der-woche/verkehrschaos-sind-seilbahnen-ein-allheilmittel-gegen-stau-und-smog/10949082.html

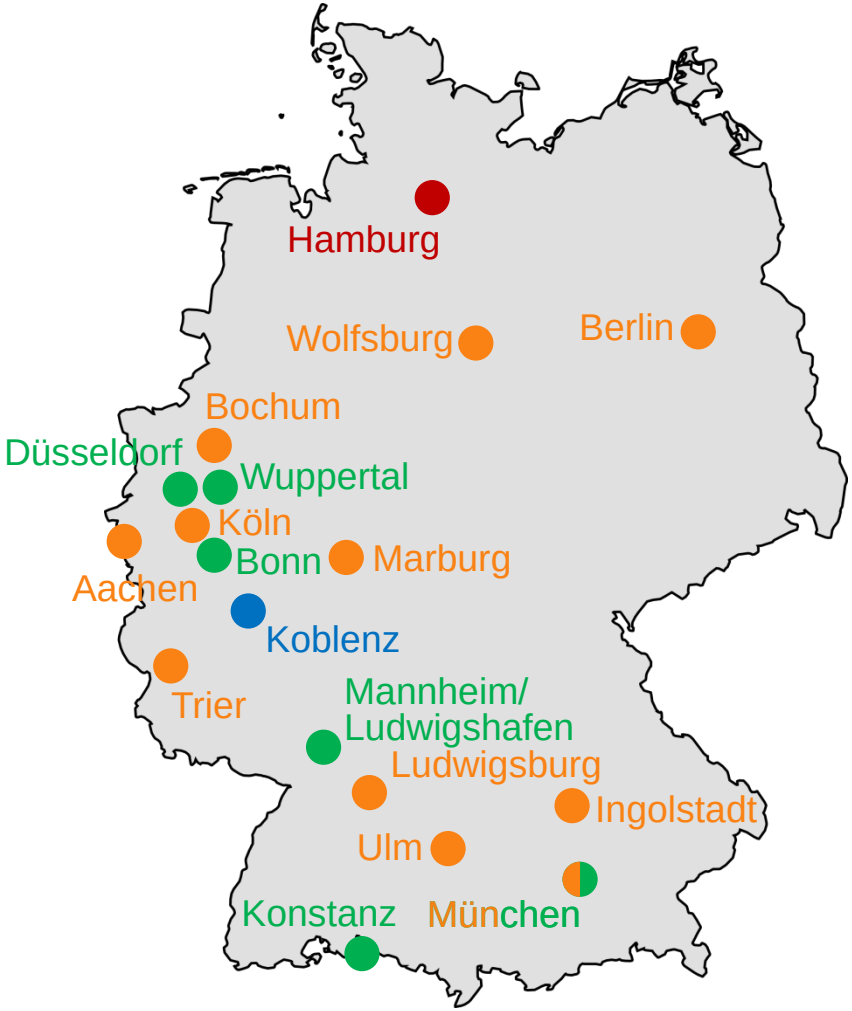
Our research perspective

- Various urban ropeways worldwide – only few in Europe



Our research perspective

- Germany: No ‘real’ urban ropeway until today



- Operating ropeway
- Current studies (early stages)
- Former plans/ideas, currently not pursued
- Rejected (public vote)

own collection, projects in very early idea stages & old projects (> ~10 years) may be missing

Our research perspective

- Rather open approach to understand the specific characteristics of urban ropeways in public transport planning procedures

- Are ropeways only rarely implemented because of…

  - *Established routines (and ideas) of public transport planners?*

  - *Established actors blocking innovative solutions?*

  - *Challenging integration into urban landscape?*

  - *Ropeway ideas not fitting to local transport needs?*

Our research perspective

- Expert interviews with transport planning professionals
  (3 completed)

- Expert interviews with ropeway manufacturers
  (1 completed, 1 missing)

- Interviews with various actors in cities with ropeways / ropeway plans
  (2 cities completed, 1 city missing)

Results (preliminary)

- *Established routines (and ideas) of public transport planners; established actors blocking innovative solutions*
- **Yes**, this is a problem for ropeways…
  - Urban ropeways only rarely part of transport engineers' education
  - Urban ropeways not mentioned in standard literature
  - General lack of literature, reference cases, standard values, etc.
  - Example: KIT library – search term "Seilbahn"…

Results (preliminary)

- *Established routines (and ideas) of public transport planners; established actors blocking innovative solutions*
- **Yes**, this is a problem for ropeways…
  - Public transport operators are often skeptical about new kinds of infrastructure – like urban ropeways
  - Planners often have ‘conventional’ ideas already in mind when looking at a transport problem (buses, trams, subways…)
  - Example: Trier – connecting the train station with university campus; operator favoured bus extension, nothing was built in the end

Spiekermann AG Consulting Engineers. (2012). *Petrisbergaufstieg Trier Potentialuntersuchung*, Düsseldorf. Retrieved from https://info.trier.de/bi/vo020.asp?VOLFDNR=6665

Results (preliminary)

- *Established routines (and ideas) of public transport planners; established actors blocking innovative solutions*
- …and **No**, this is (mostly) not ropeway-specific!
  - Actors (and planners) need to learn about every innovation in early years – like prioritization of trams / light rail systems, good cycling infrastructure, etc.
  - Not every plan is implemented – be it a tram, a road or a ropeway (e.g. for financial reasons)
  - Big infrastructure investments always face resistance from some actors
  - *Quite the contrary:*
    Great openness among our interviewees – despite lacking experience
    - fascinating transport method
    - great views
    - additional tourist potential
    - …

Results (preliminary)

- *Challenging integration into urban landscape*
- **Yes**, this is a problem for ropeways.
  - Urban ropeways offer direct links and require few infrastructure on the ground – but still cross this ground!
  - Conflicts with:
    - Private property owners (viewing into backyards)
    - Cultural heritage, landscape (e.g. München Thalkirchen)
  - Conflicts are often smaller compared with alternative transport solutions, but still relevant – and different from those in mountains
  - Example: Wuppertal – house owners protest against ropeway line

Results (preliminary)

- *Ropeway ideas not fitting to local transport needs?*
- **Yes**, this is sometimes a problem for ropeways.
  - Ropeway ideas often ‘pop up’ erratically (e.g. for exhibitions, major sport events)
  - Some do not fit into wider transport planning
  - Transport operators are sometimes not asked or included in the process
  - Some miss real needs for improved public transport
  - Example: Hamburg – first plans could have been public transport, later plans (dismissed) would have resulted in just one more tourist attraction

http://www.ndr.de/nachrichten/hamburg/Hamburger-geben-Seilbahn-keine-Chance,seilbahn270.html

Results – excursus: Koblenz

- Ropeway connecting the city centre with the Ehrenbreitstein fortress (crossing the river Rhine)
- Built for the “Bundesgartenschau” 2011 (BUGA, gardening exhibition)
- Great success since then – initially planned closure was cancelled

Fitz, R. (2011). *The success story of the ropeway in Coblence. More than 4.6 million passengers transported in 6 months. Presentation at the OITAF Congress 2011 in Rio de Janeiro*. Retrieved from http://www.oitaf.org/Kongress%202011/Referate/Doppelmayr%20Fitz.pdf

Results – excursus: Koblenz

- The current question:
  Should the ropeway be integrated into public transport?
- Idea is regularly coming up –
  but integration cannot be expected in the near future
  - High cost of integration (extension of operating hours and months; compensation for current operator)
  - Connection to public transport network is not optimal
  - Not first priority of improving public transport in Koblenz:

    “Das nahverkehrliche Leistungsangebot […] innerhalb der Stadt […] bekommt von mir die Note ‘erbärmlich’.“
    (Interview with regional public transport association)

  - Lack of political vision (regarding public transport in general)

Will we fly across German cities in the future?

- Current kind of most planning processes is criticised by experts:

  “[Ein] Strich, zwei Punkte und alles ist schon fertig”
  (Interview with transport planning expert)

- Drawing just one line into a plan is insufficient
- Ropeway plans should be derived from a structured search for improvement needs in a city’s public transport network – considering all types of public transport

- Taken seriously, ropeways should become one option among others
- Ropeways will not solve every transport problem – but if considered in early stages, they may sometimes be the best solution

Will we fly across German cities in the future?

- There are signs that things are about to change:
  - Some public transport laws explicitly consider ropeways
  - Planners start to consider ropeways as serious alternatives
  - More ideas are brought up, often by politicians or city officials themselves
- Example 1: München – connecting airport to trade fair

Baumgartner, Kantke & Schwarz. (2011, 12. Mai). *Bahnknoten München. Ein Konzept aus einem Guss: Fernbahn, Regionalbahn, Güterbahn, S-Bahn, U-Bahn, Seilbahn und Tram*, München. Retrieved from http://s-bahn-plus.de/documents/110512-BKS-BahnknotenMUC-20110512_000.pdf

Will we fly across German cities in the future?

- There are signs that things are about to change:
  - Some public transport laws explicitly consider ropeways
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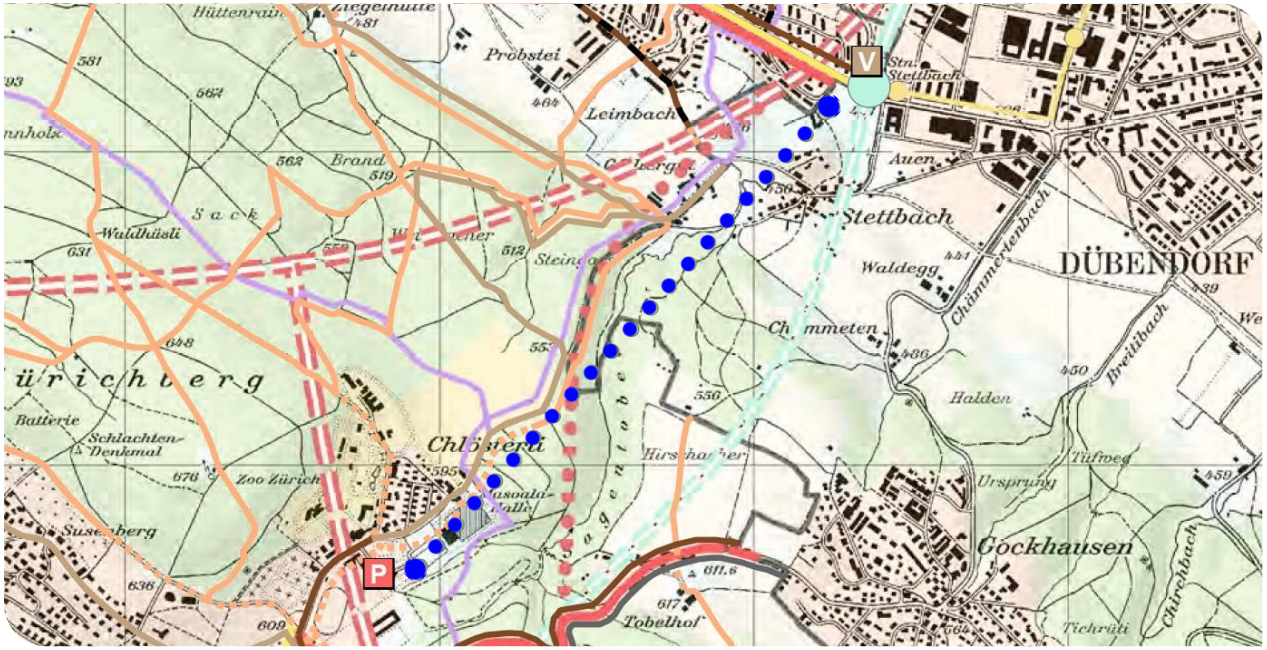
- Example 2: Zürich – ropeway links included in land utilization plan



Stadt Zürich. (2014). *Regionaler Richtplan Stadt Zürich. Richtplankarte Verkehr*, Zürich. Retrieved from https://www.stadt-zuerich.ch/hbd/de/index/staedtebau_u_planung/planung/richtplanung/richtplan.html

Discussion

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