

IMPROVING WINTER SERVICE ON BICYCLE PATHS

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Research project

- Ongoing research project
 - Encouragement of Bicycle Traffic in Winter by Optimised Winter Service
- Project is carried out at the request of the Federal Ministry for Transport and Digital Infrastructure, represented by the Federal Highway Research Institute (BAST)
- Project partners:
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htw saar

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Purpose

- Transformation of transport networks in municipalities
- Changes in the modal split
- Cyclists are much more exposed to weather conditions
- Recommendations for promoting bicycle traffic in winter, in particular through optimised winter service



Methods

- National and international literature review
- Online questionnaire about cycling in winter with different stakeholders / user groups
- International workshops for experience exchange
- Monitoring winter service in 3 different cities in Germany
- Recorded bike tours with wintry road conditions
- Measurement of the spreading of gritting materials on cycle paths



Winter service on bicycle facilities in Germany

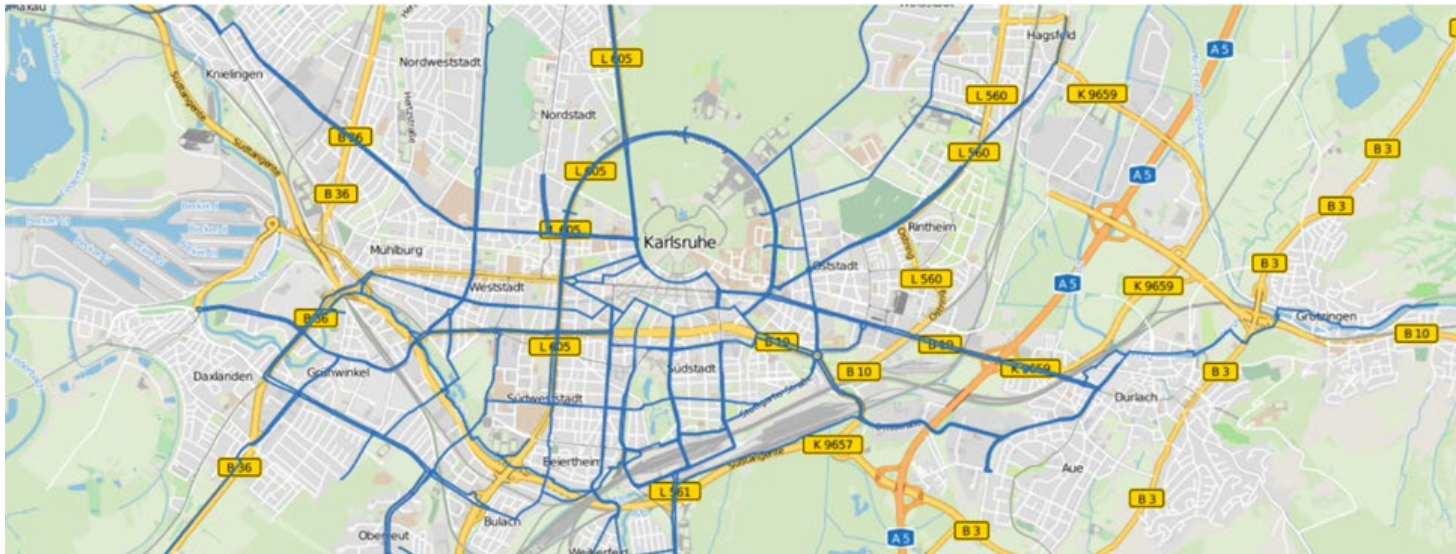
- Use of abrasive or de-icing materials in winter maintenance on bike paths.
- Cyclists are complaining the use of abrasive materials on bike paths, because of damaging the tyre and the danger of slipping in curves or in case of harder breaking.
- Ongoing evaluation of using brine, pre-wetted salt or dry salt



Source CYPRA

Winter service on bicycle facilities in Germany

- Due to different widths, changing surfaces, obstacles such as barriers and posts, more and more so called narrow gauge vehicles are being used for winter maintenance on cycle paths.
- For encouragement cycling in wintertime special winter bicycle networks in cities are treated with a level of service like the road network.



Source: <https://www.karlsruhe.de/b3/mobilitaet/radverkehr/radnetz.de>

Analysis of winter service operations

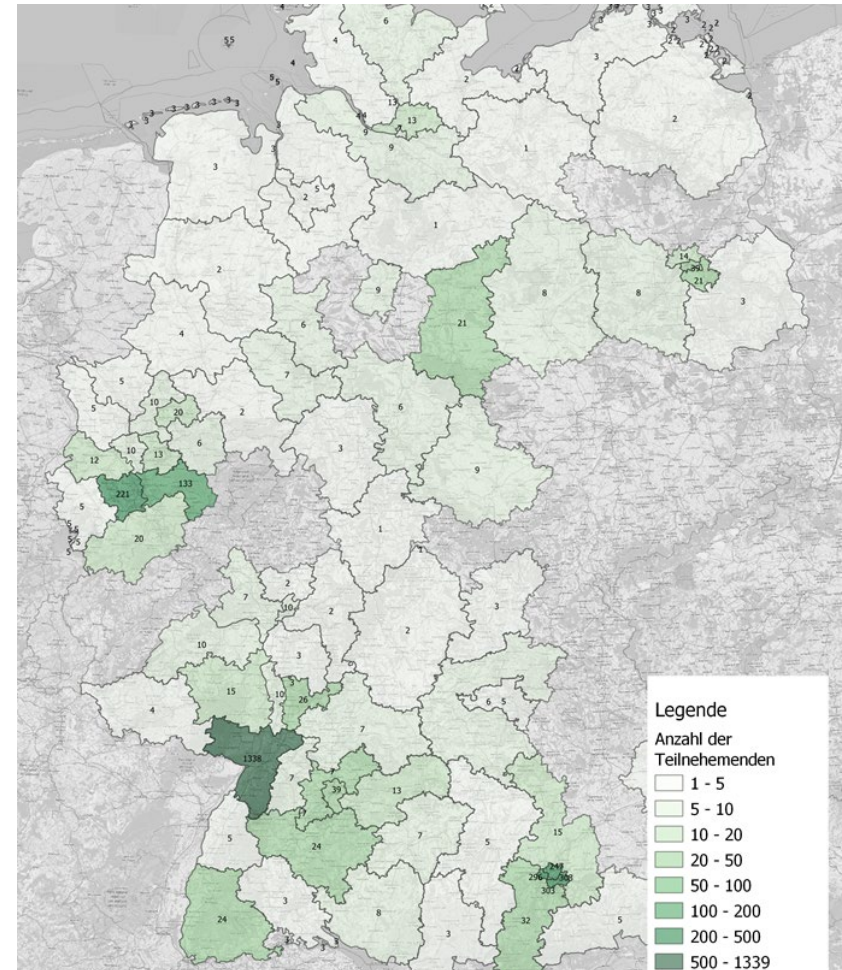


Analysis of winter service operations



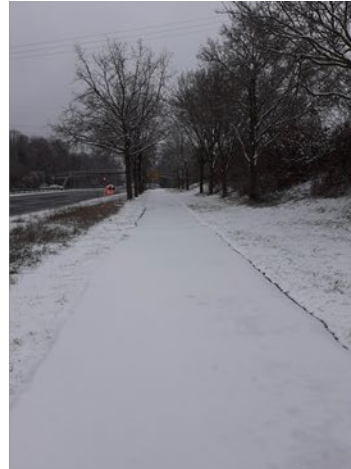
Online Survey

- 2.944 participants
- Mostly experienced cyclists
- 72 % use the bicycle (almost) daily in winter
- Only 38 % rather or very satisfied with the condition of the local cycling infrastructure in winter



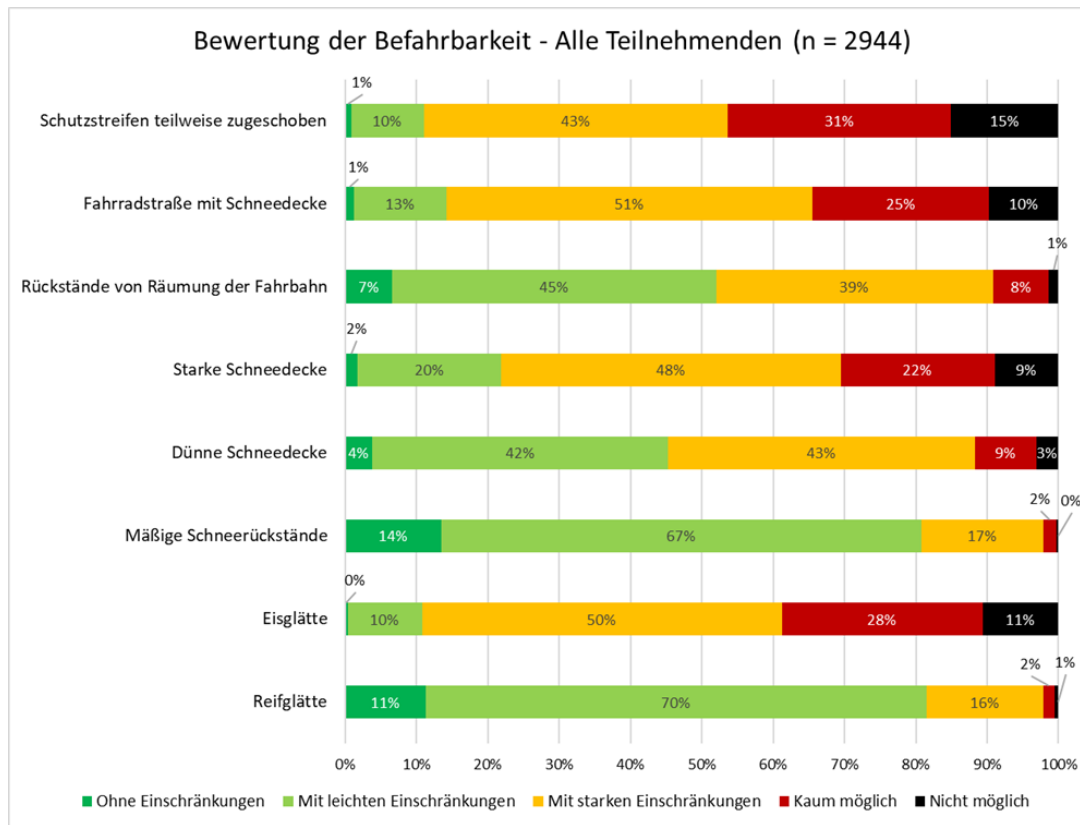
Online Survey

– Expected behaviour



Online Survey

– Effect of surface conditions on the rating of rideability



Cycling in wintry conditions



Source WIESLER



Source CYPRA



Source CYPRA

Cycling in wintry conditions



Source CYPRA



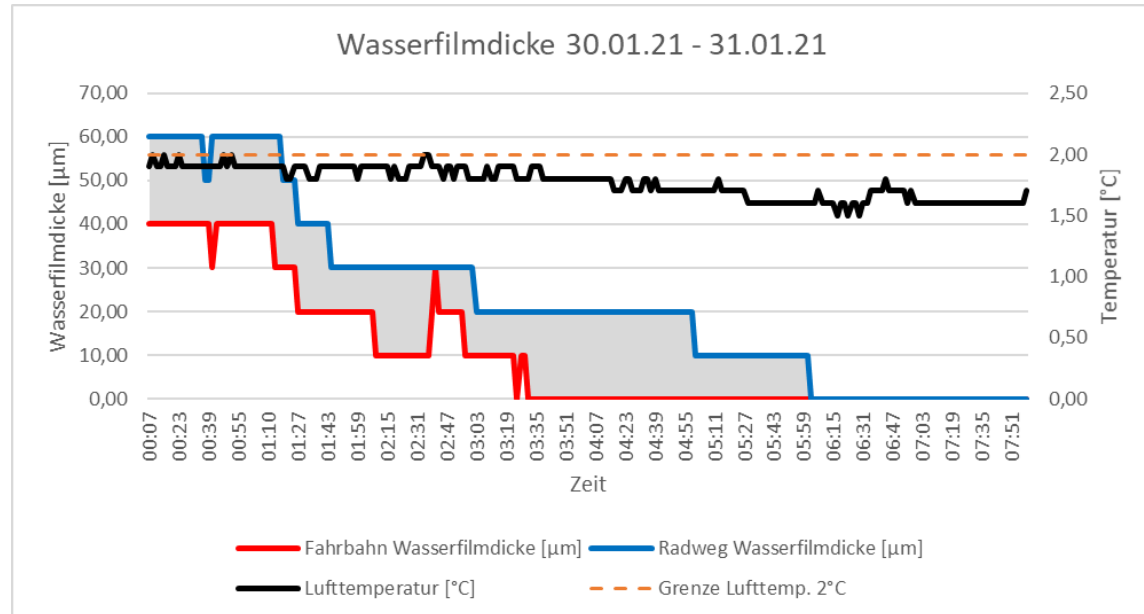
Source CYPRA



SIRV Source CYPRA

Road Surface Measurement

– Waterfilm thickness road - bikepath



Conclusions

- Differentiated recommendations and requirements will be developed for an optimized winter service on bicycle routes in future.
- These recommendations will be evaluated and finally assessed based on a cost-benefit analysis. The recommendations will focus in:
 - Optimising winter service operations, equipment and management
 - Proposals for road design and construction
 - Optimising user information and driving behaviour



Working for encouraging bicycle traffic
as a whole year type of transport !



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