

# Synergetic Flood Retention for the River Wandse

HafenCity University Hamburg (3/4)

## Potentials of Secondary Floodplains Establishment

Focus of the investigation was to determine areas adjacent to the watercourses, where an establishment of a secondary floodplain is possible regarding topography and existing concurrent uses.

## Approach

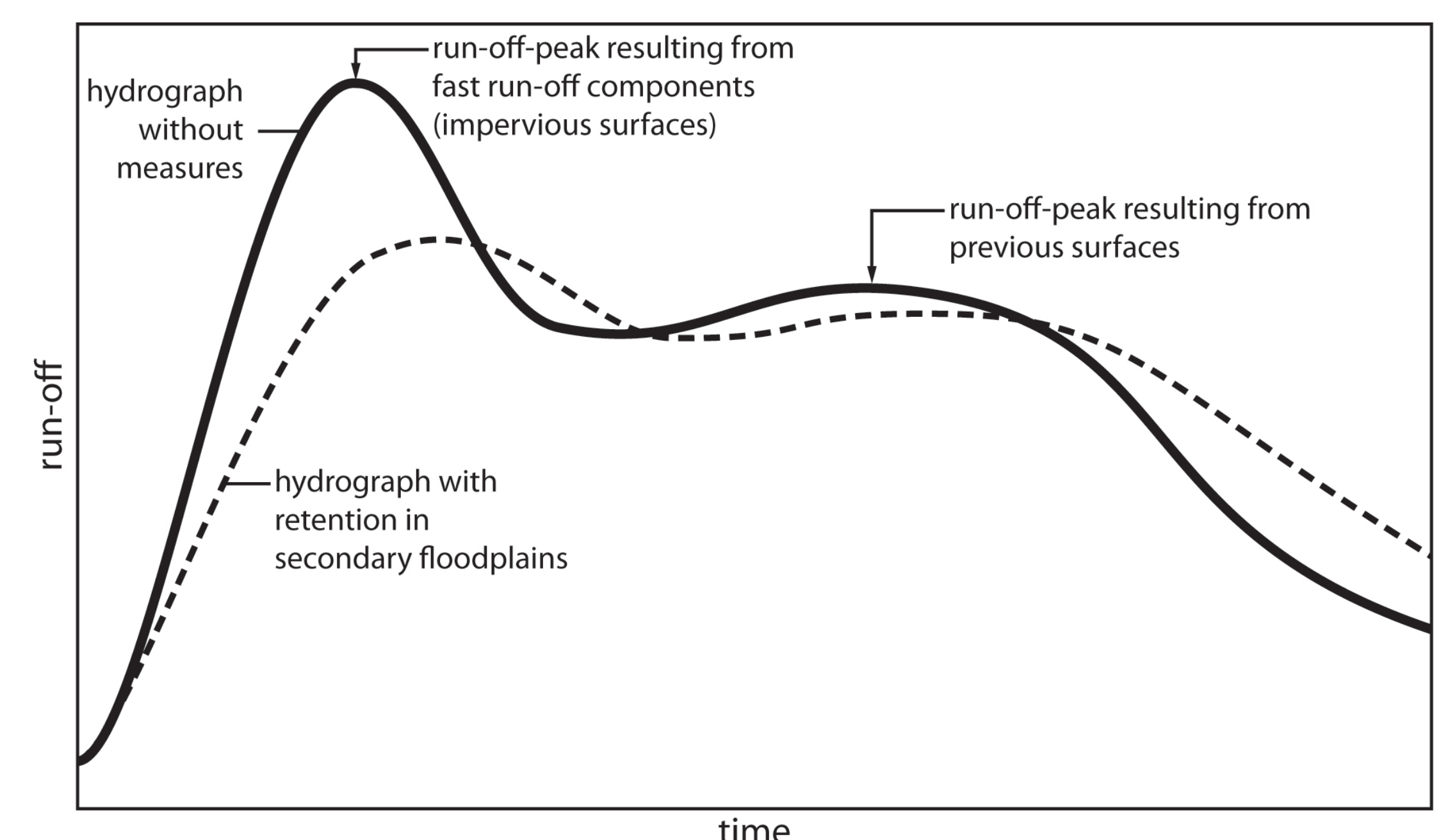
Checking topography, ownership, administrative responsibility, land-use, existing infrastructure and vegetation in a 40 meter corridor around the watercourses using GIS and site inspection.

## Results

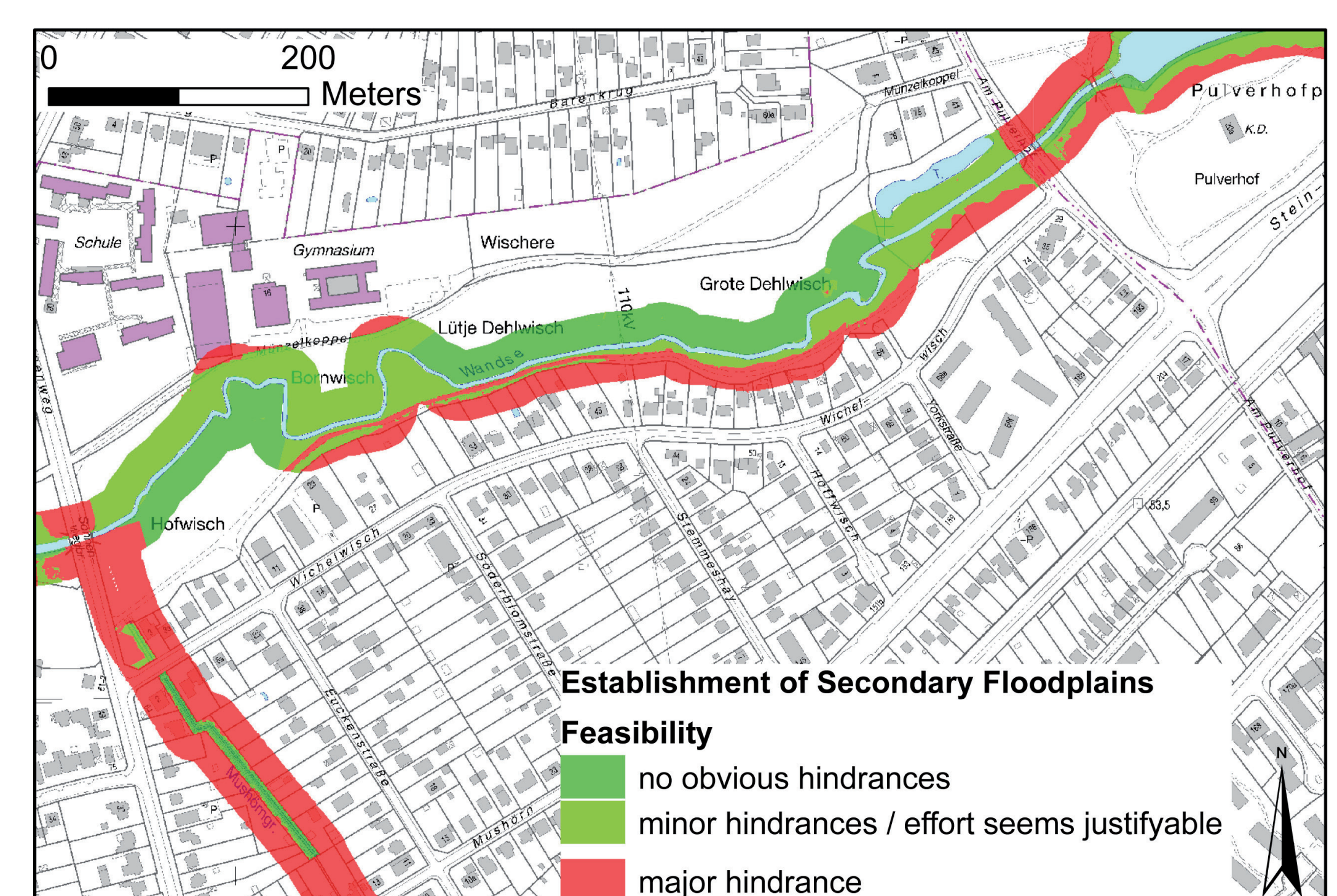
1. Establishment of secondary floodplains is limited along the smaller tributaries of the River Wandse, mostly because of private property.
2. Along the River Wandse main course and the Berner Au stream network (a major tributary) the establishment of secondary floodplains still seems feasible on 30 % of the adjacent areas.
3. If secondary floodplains could be realised as well structured core habitats in an extent mentioned above, it is very likely to notably ameliorate ecological potential of a large part of the watercourse network.
4. Because of small catchment size and low gradient flood retention in near-natural floodplains will be comparatively effective for the River Wandse stream network.
5. Resulting reduction of flood peak run-off is estimated to reach a minimum of 5-10 % for severe events.
6. Effectiveness of retention in near-natural floodplains even increases for stronger floods as a larger part of the run-off is stored and slowed down in the flood plains.
7. Acceptance of the establishment of near-natural floodplains is highly dependend on a development of the green corridors allowing for a high quality with regards to recreational purposes as well.



Apart from restoration of habitat structure and flood retention, secondary floodplains in urban areas should be designed regarding amenity values.



Flood discharge is slowed down by secondary floodplains, run-off peaks are flattened.

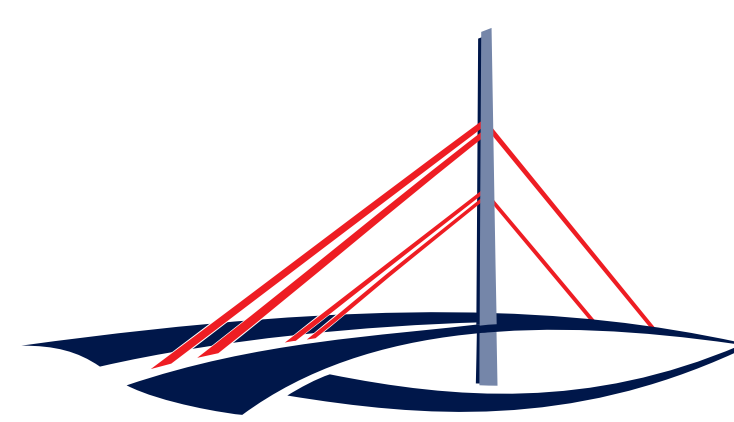


One result of the investigation is a map showing the areas in which the establishment of secondary floodplains appear to be feasible.

## Partners

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und Gewässer