NMBU, Spring 2022, GLA304

# Post-disaster landscape design approaches

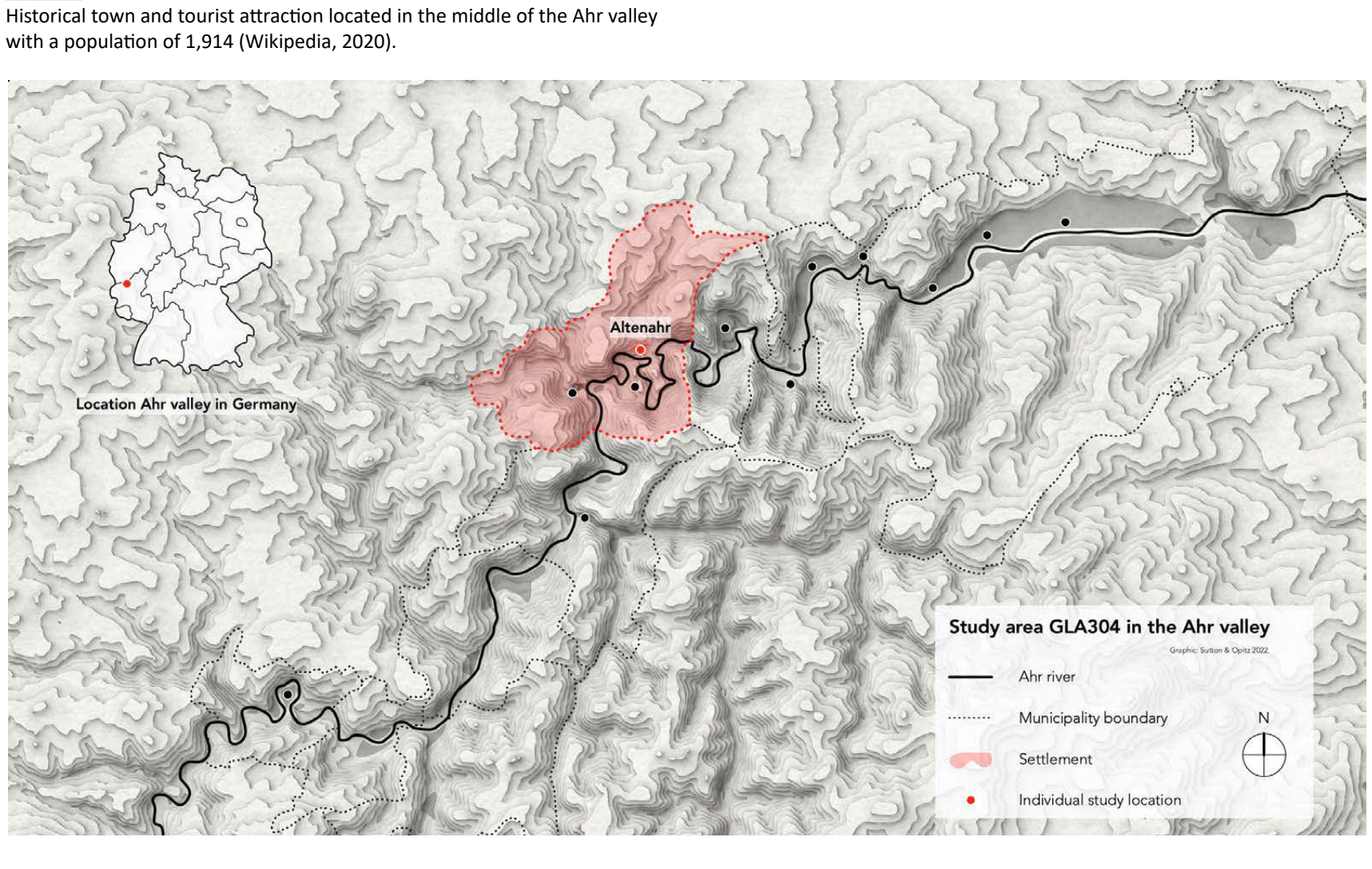
## Case: Altenahr

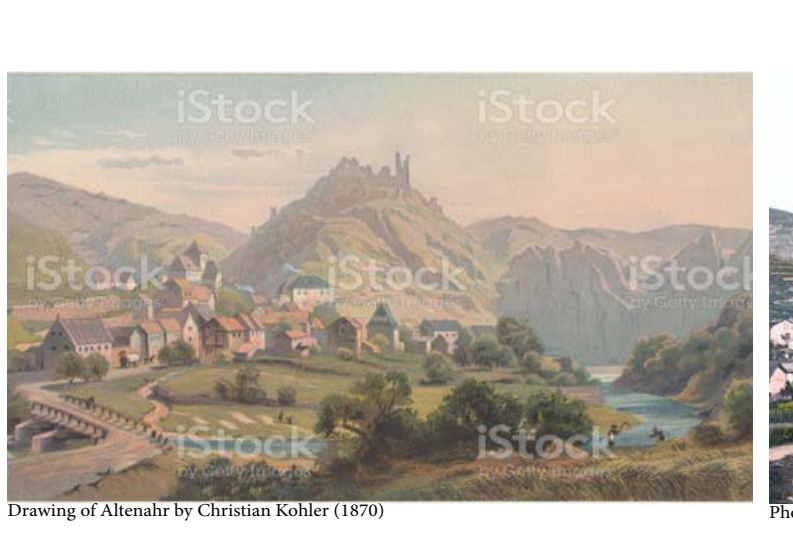
By Jonas André Johannessen

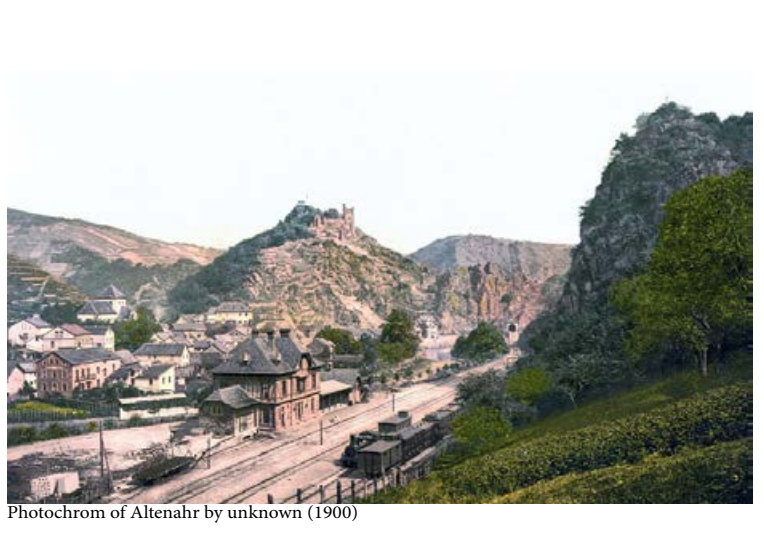
Torsten Silz/AFP 2021

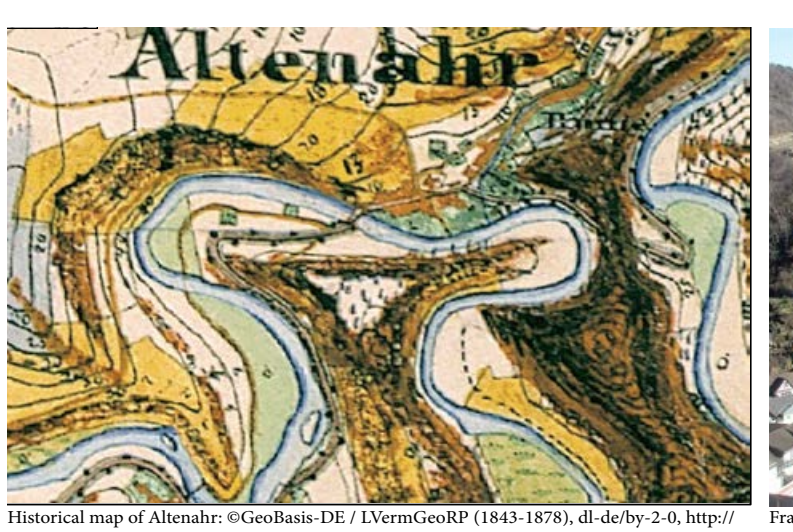
## Workshop 1: What happened?

**Altenahr**
Historical town and tourist attraction located in the middle of the Ahr valley with a population of 1,914 (Wikipedia, 2020).

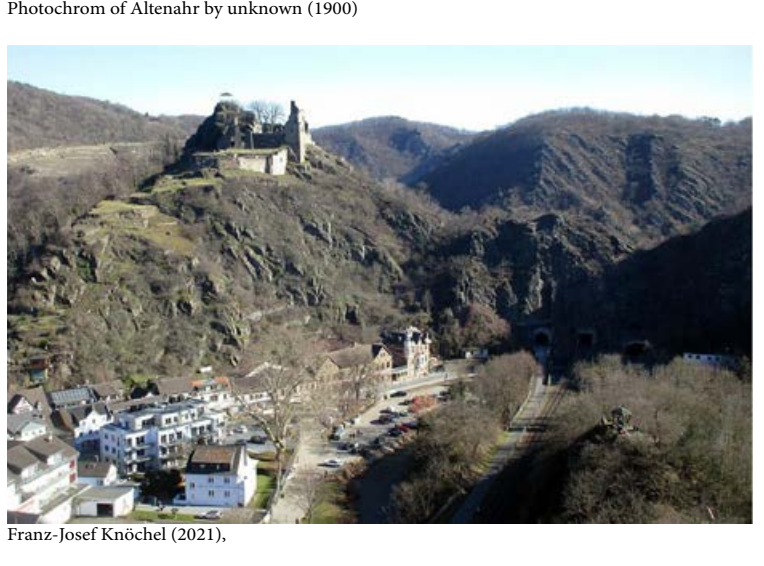

Location Ahr valley in Germany
Altenahr
Study area GLA304 in the Ahr valley
Graphic: Sutton & Opitz 2022
Ahr river
Municipality boundary
Settlement
Individual study location
N

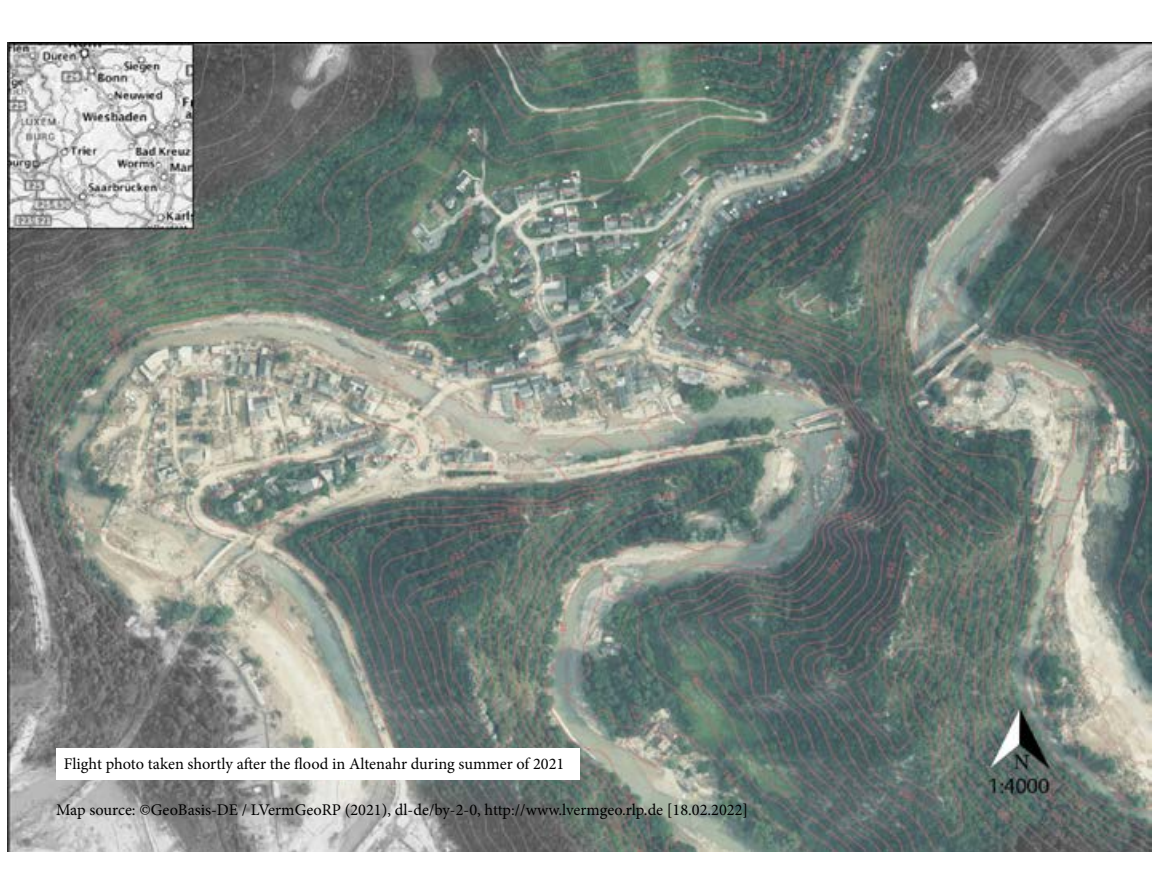

Drawing of Altenahr by Christian Kohler (1870)

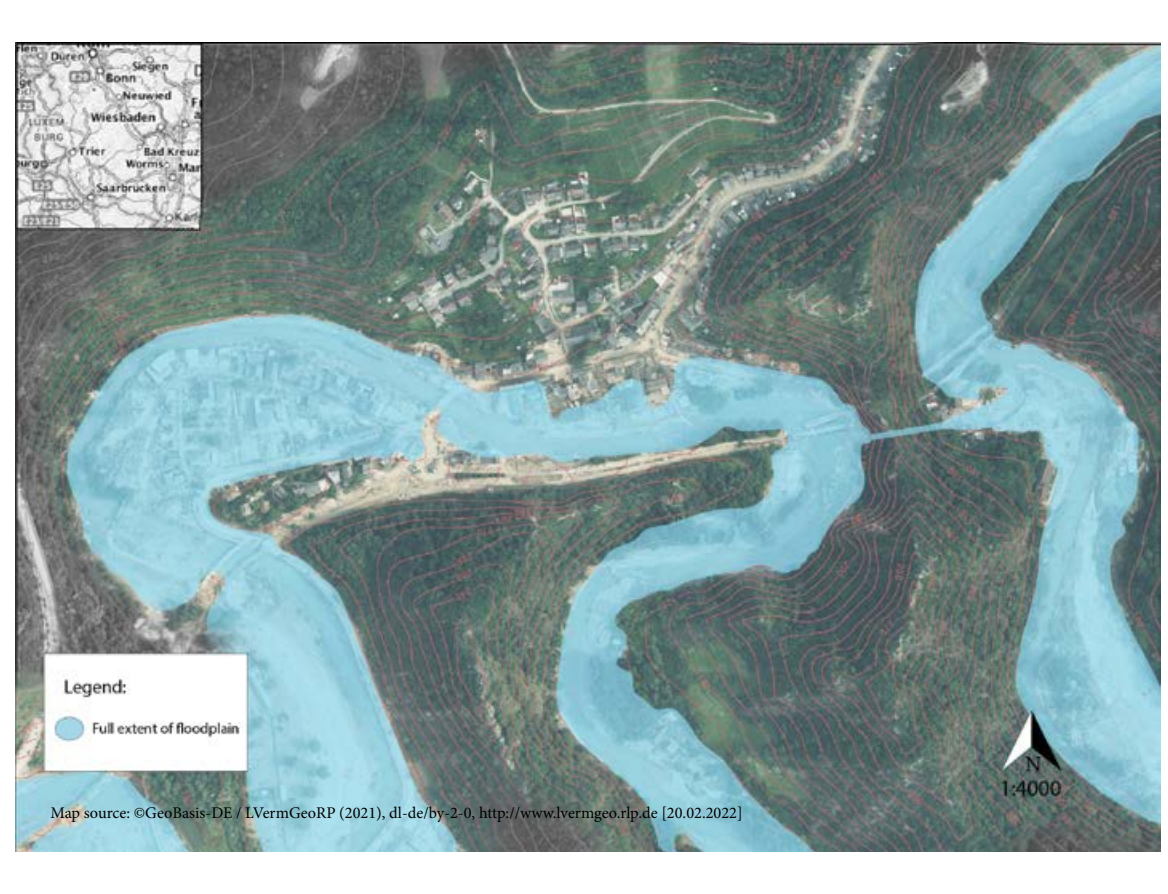

Photochrom of Altenahr by unknown (1900)

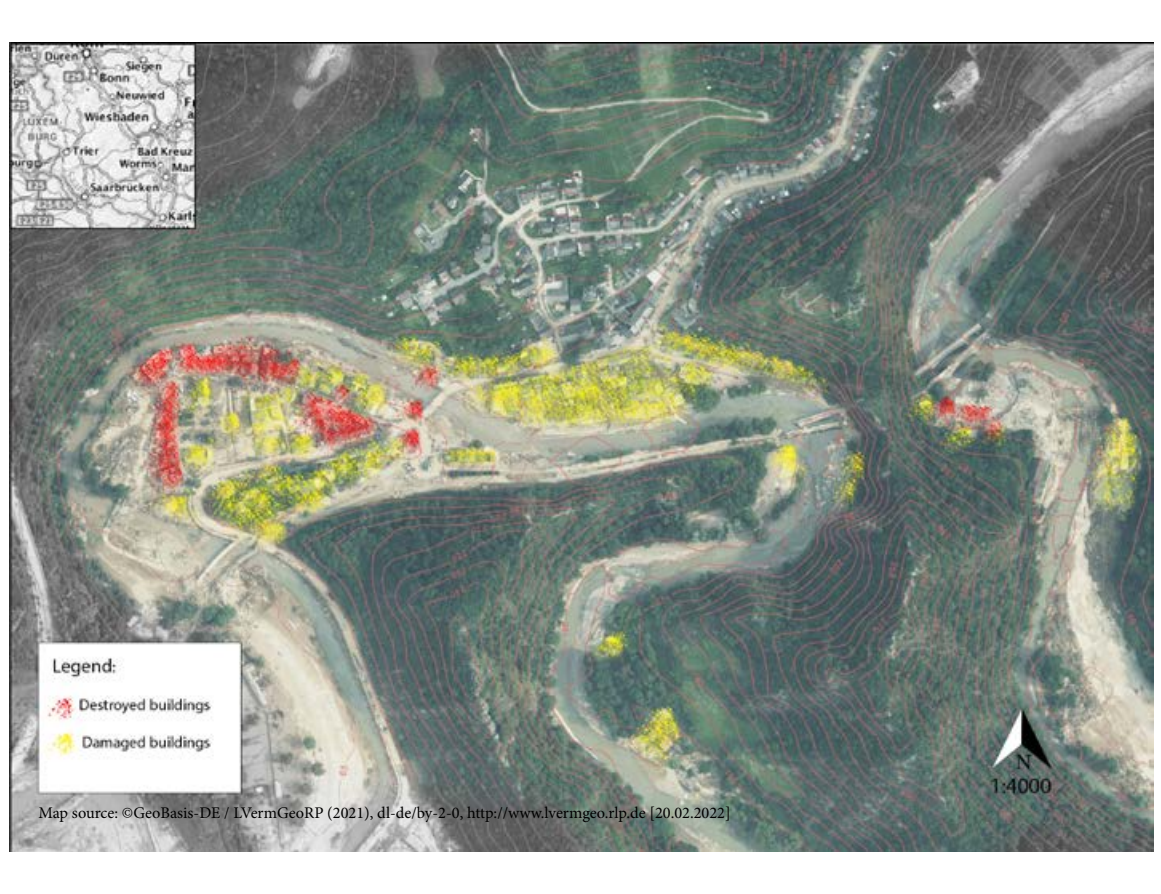


Historical map of Altenahr: ©GeoBasis-DE / LVermGeoRP (1843-1878), dl-de/by-2-0, http://www.lvermgeo.rlp.de [22.02.2022], Originals owned by the Berlin State Library.

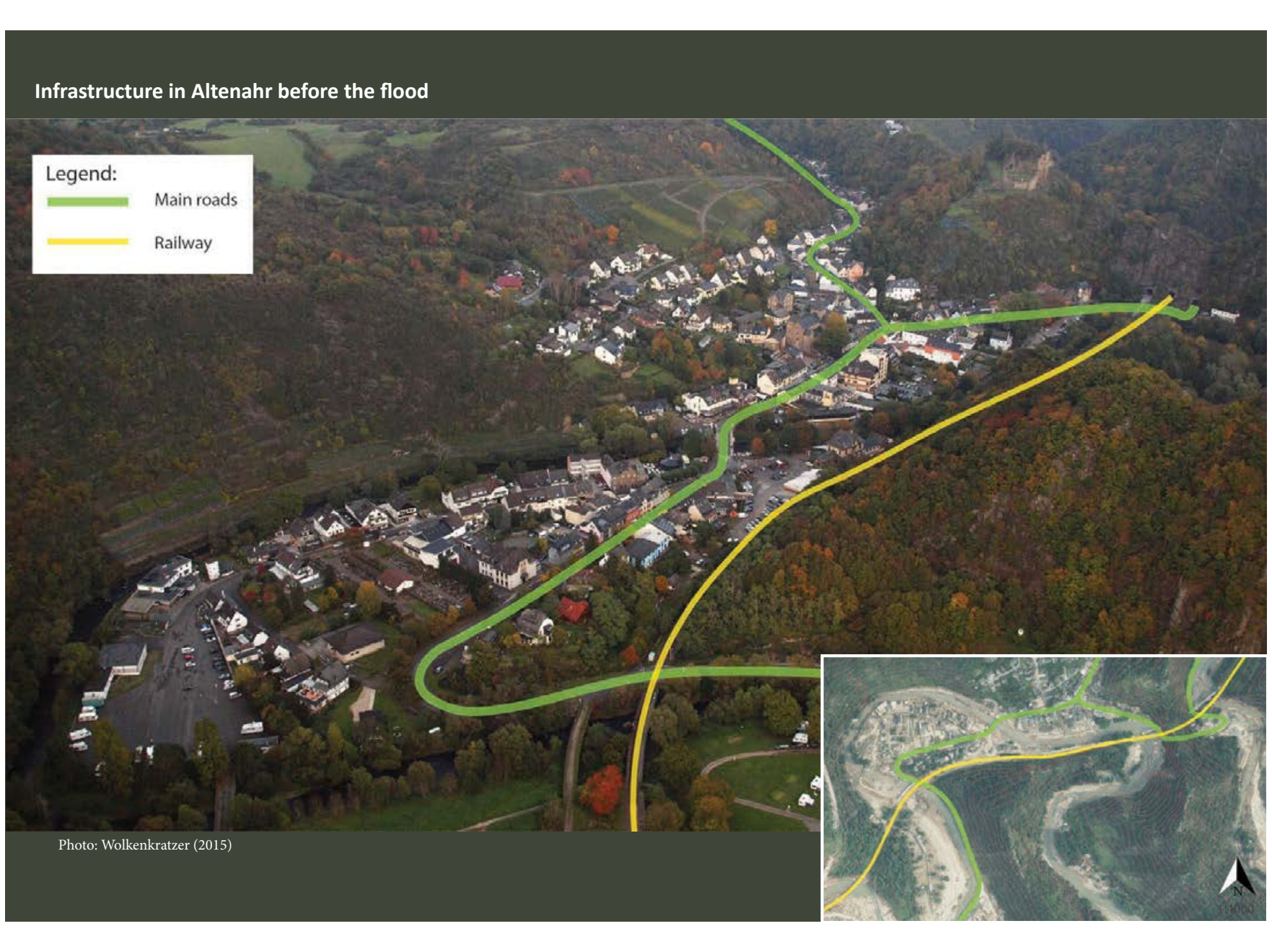

Franz-Josef Knöchel (2021).


Flight photo taken shortly after the flood in Altenahr during summer of 2021
N
1:4000
Map source: ©GeoBasis-DE / LVermGeoRP (2021), dl-de/by-2-0, http://www.lvermgeo.rlp.de [18.02.2022]

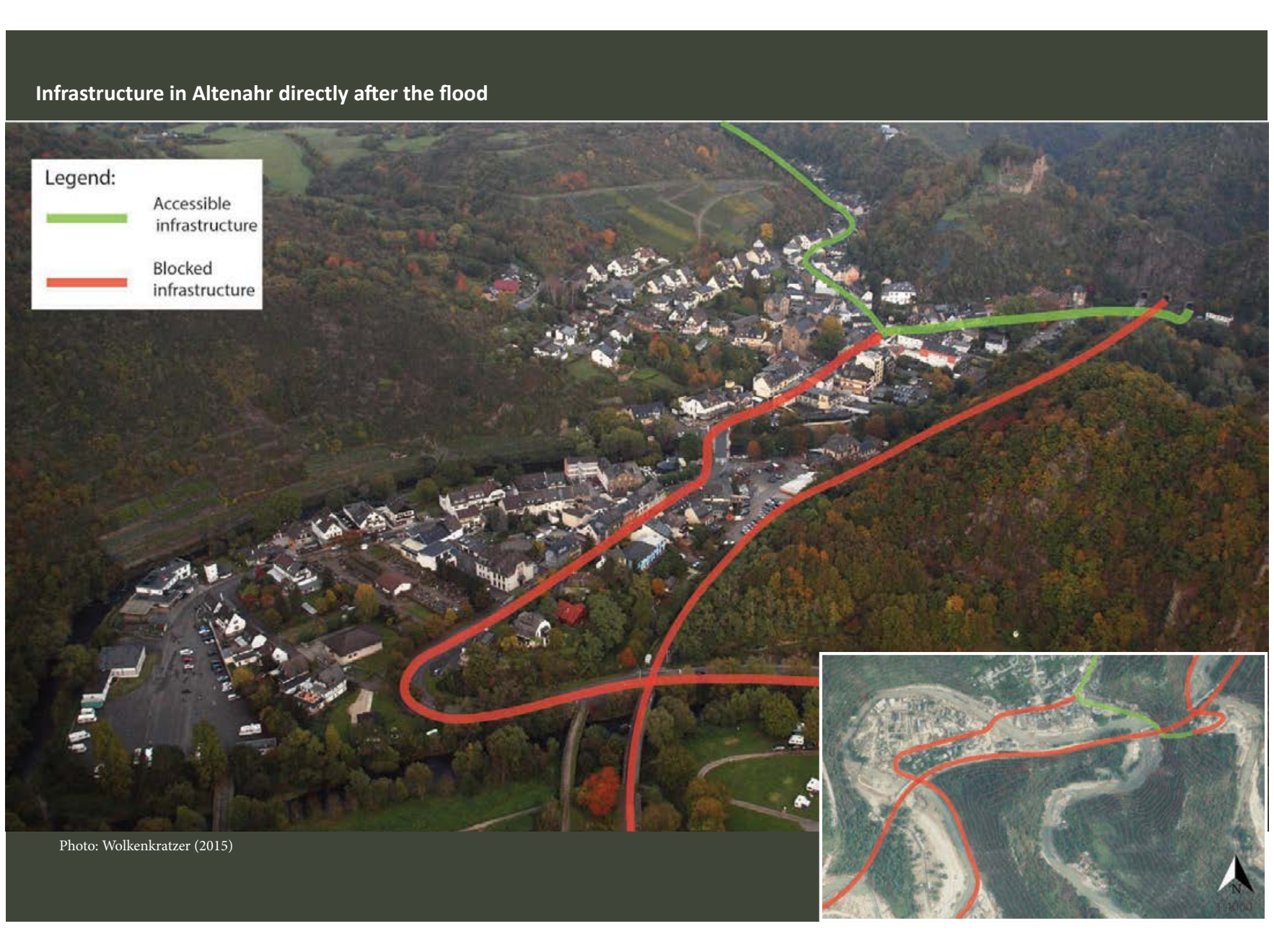

Legend:
Full extent of floodplain
1:4000
Map source: ©GeoBasis-DE / LVermGeoRP (2021), dl-de/by-2-0, http://www.lvermgeo.rlp.de [20.02.2022]


Legend:
Destroyed buildings
Damaged buildings
1:4000
Map source: ©GeoBasis-DE / LVermGeoRP (2021), dl-de/by-2-0, http://www.lvermgeo.rlp.de [20.02.2022]

### Infrastructure in Altenahr before the flood


Legend:
Main roads
Railway
Photo: Wolkenkratzer (2015)

### Infrastructure in Altenahr directly after the flood


Legend:
Accessible infrastructure
Blocked infrastructure
Photo: Wolkenkratzer (2015)

### Altenahr flood-overview

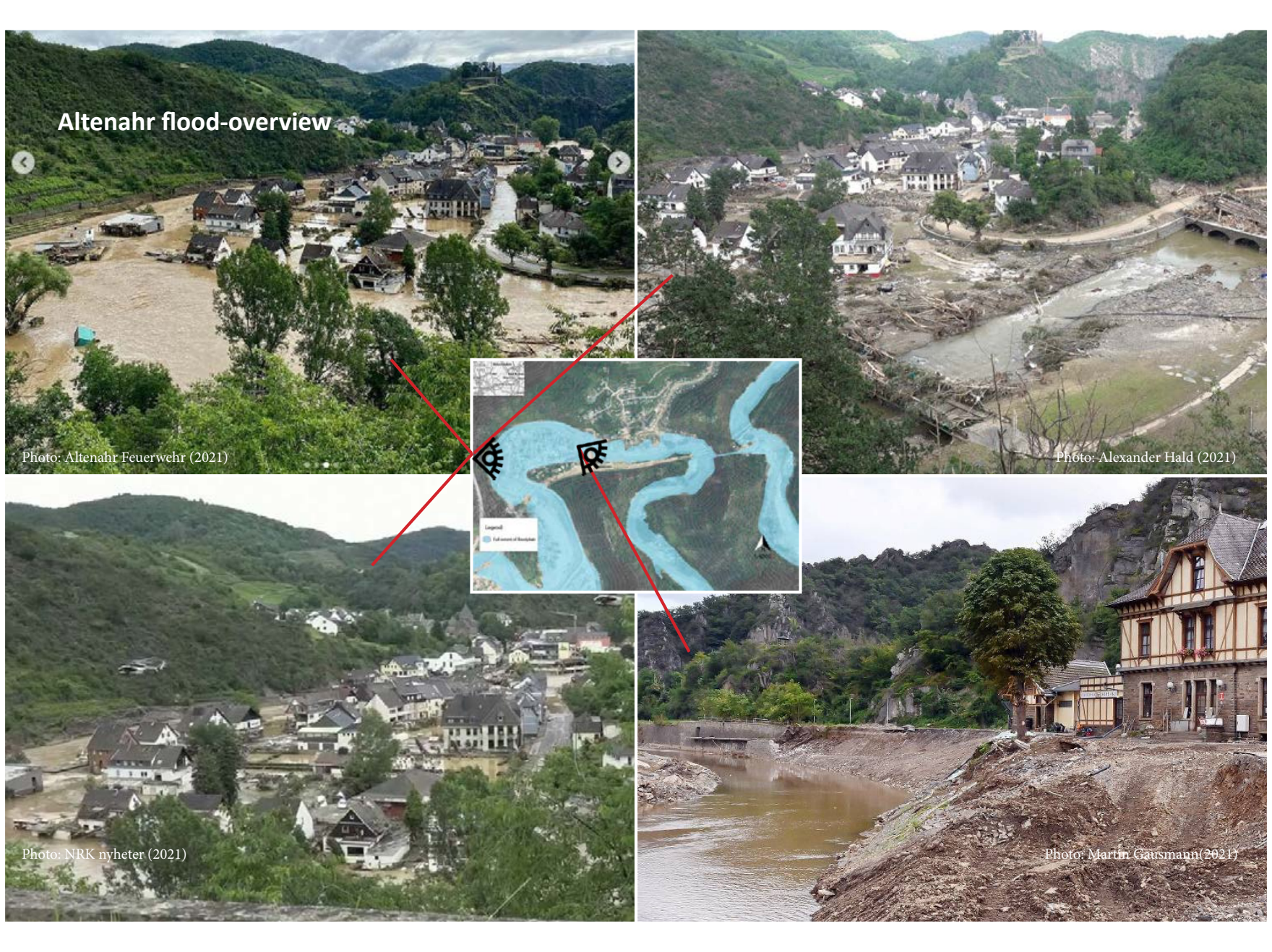


Photo: Marcus Feuerwehr (2021)
Photo: Alexander Hald (2021)
Photo: K.F. Schulter (2021)
Photo: Martin Gausmann (2021)

### Hotel zur Post Altenahr

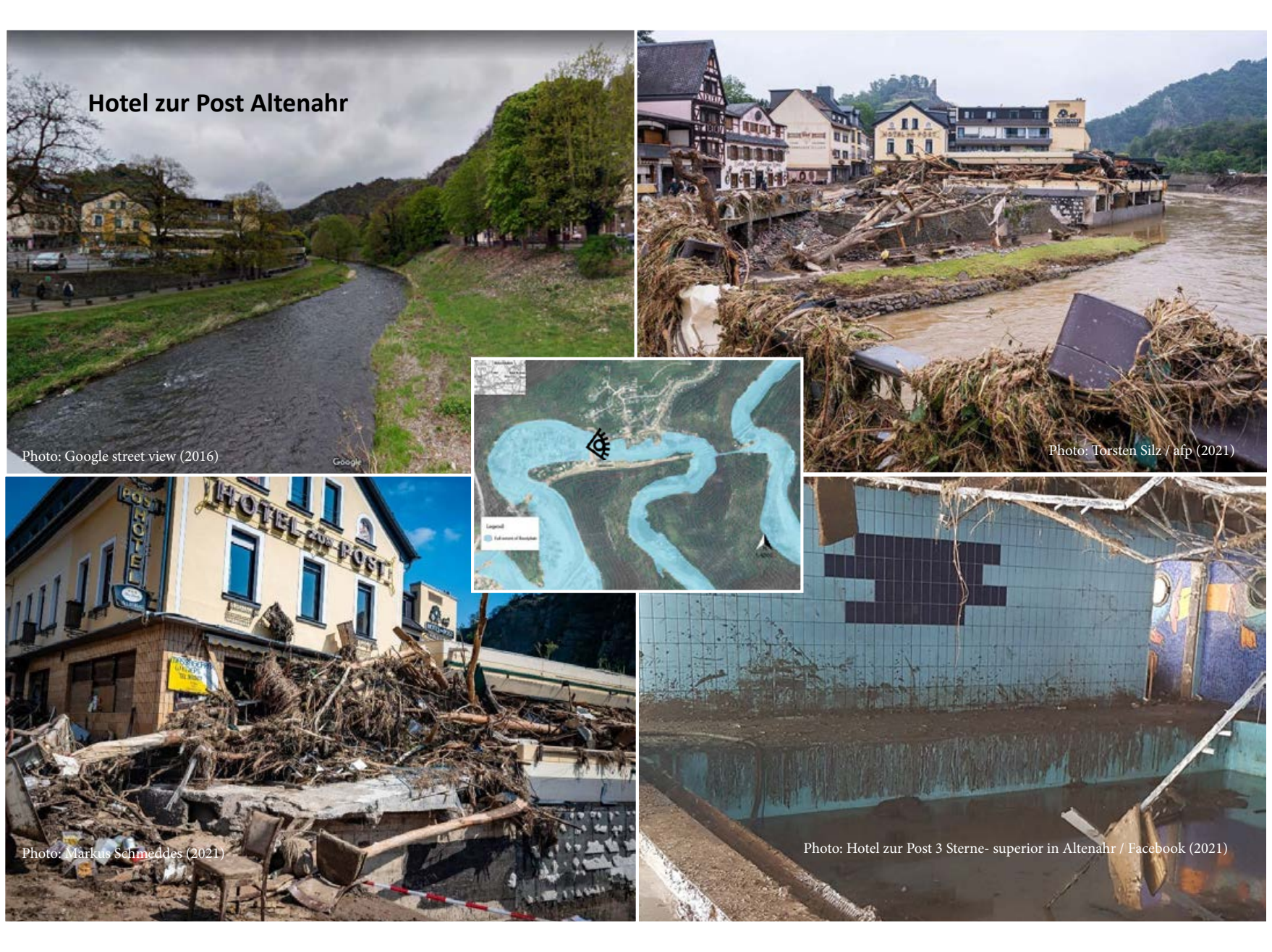


Photo: Google street view (2016)
Photo: Torsten Silz / afp (2021)
Photo: Hotel zur Post 3 Sterne- superior in Altenahr / Facebook (2021)

### Historical Bridges

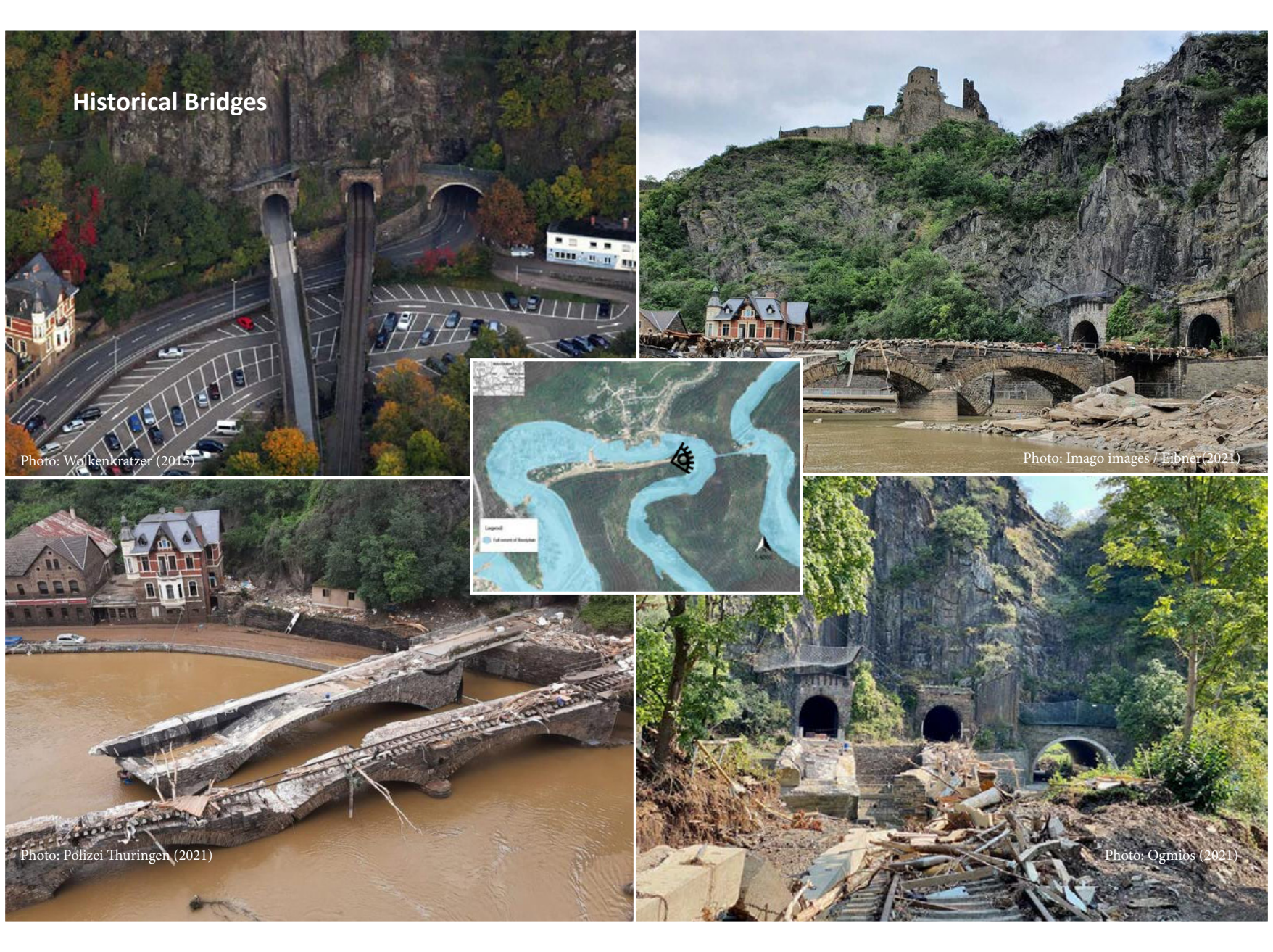


Photo: Wolkenkratzer (2015)
Photo: Imago images / Eibner (2021)
Photo: Polizei Thuringen (2021)
Photo: Ogmios (2021)

### Engelslay-Tunnel

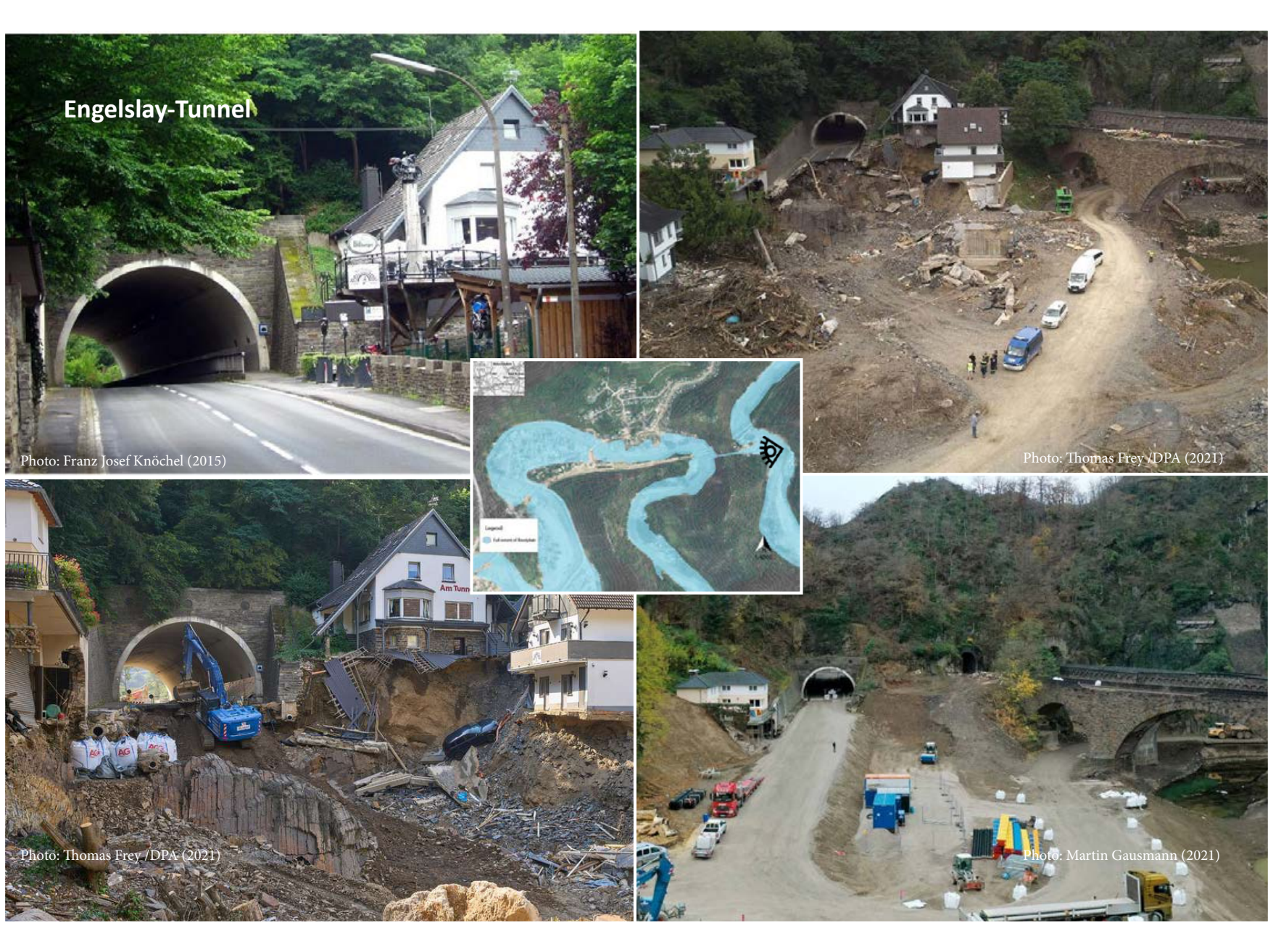
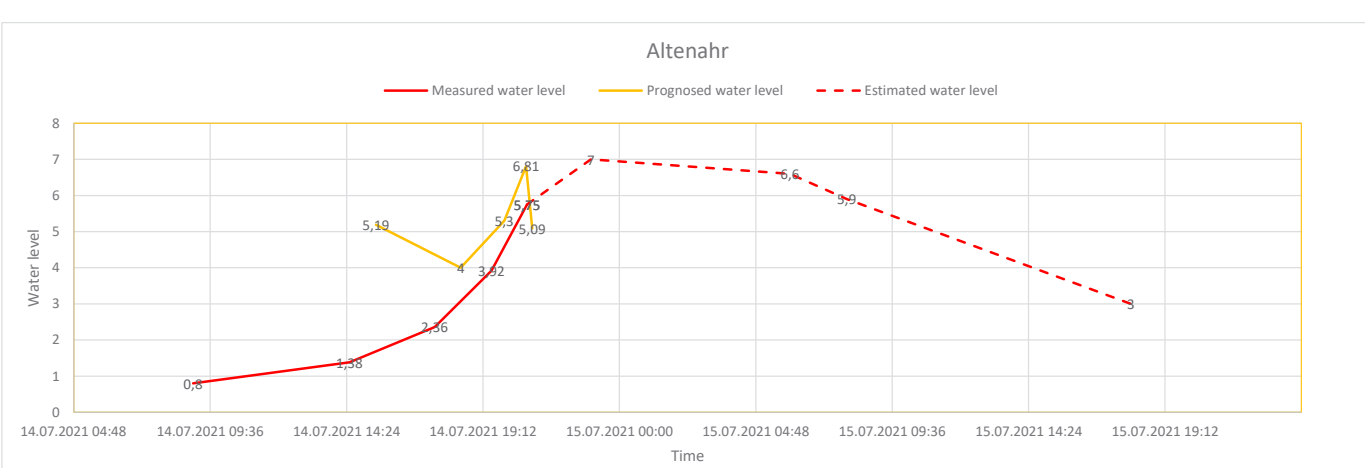
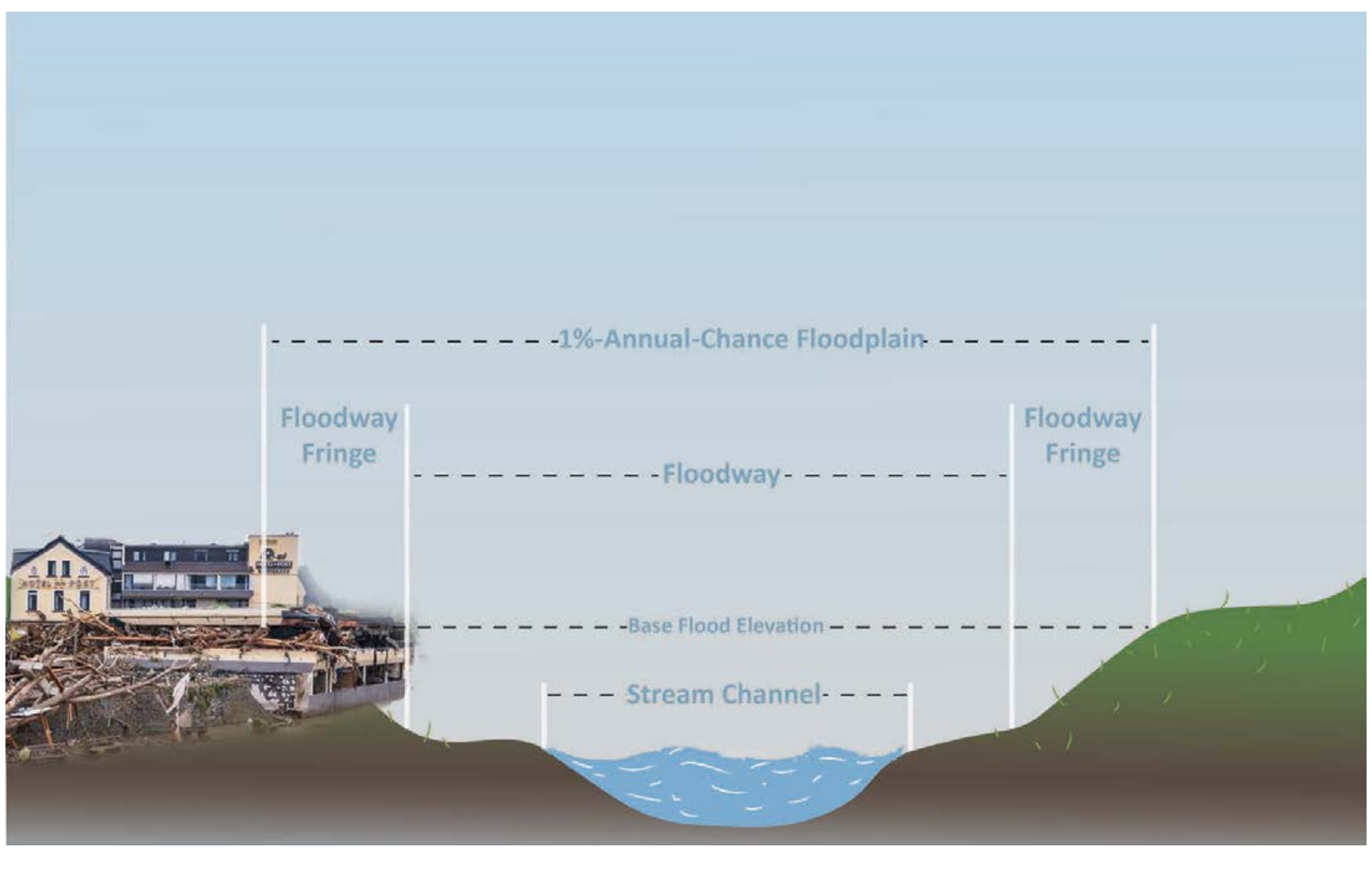


Photo: Franz Josef Knöchel (2015)
Photo: Thomas Frey/DPA (2021)
Photo: Thomas Frey/DPA (2021)
Photo: Martin Gausmann (2021)

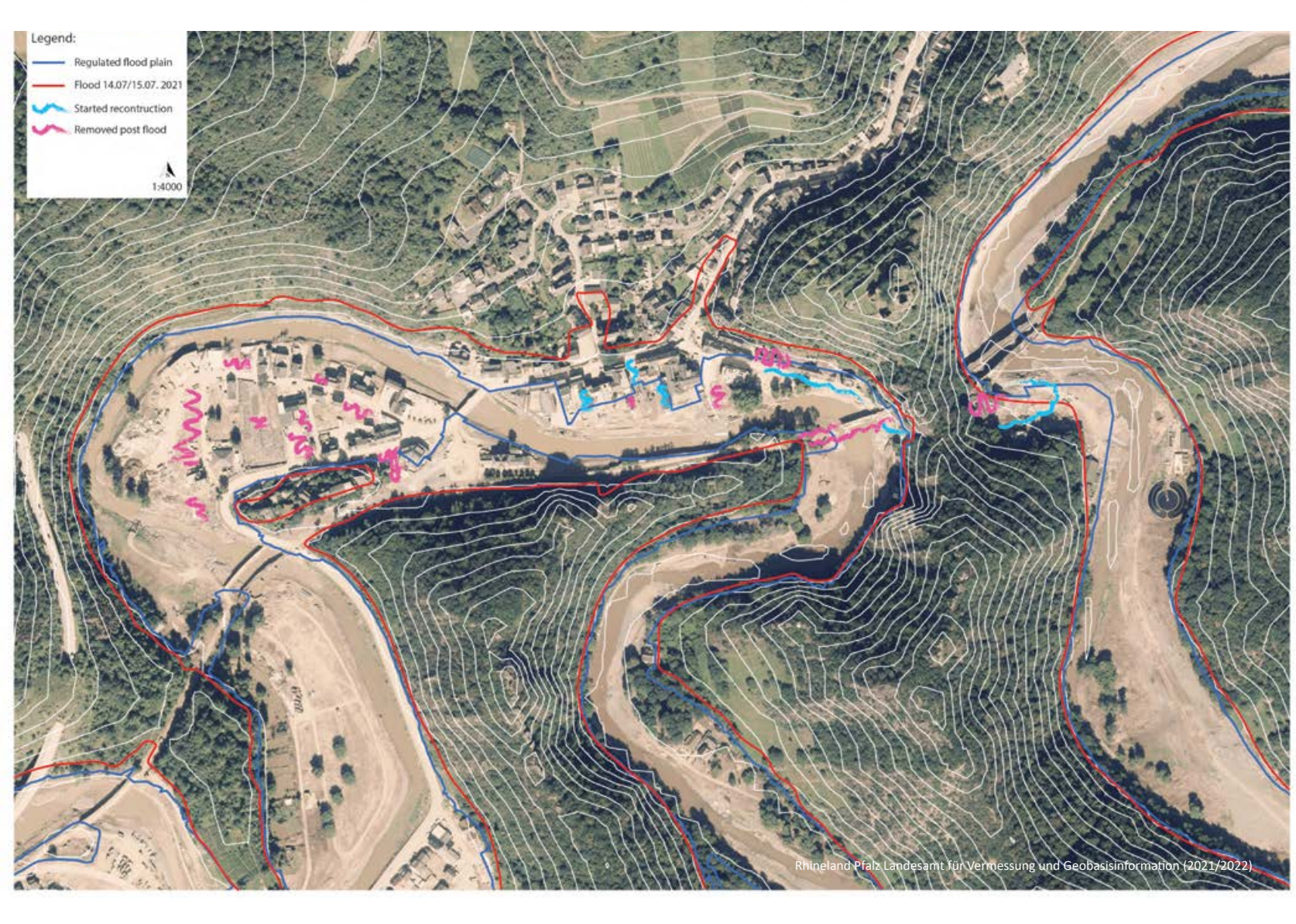


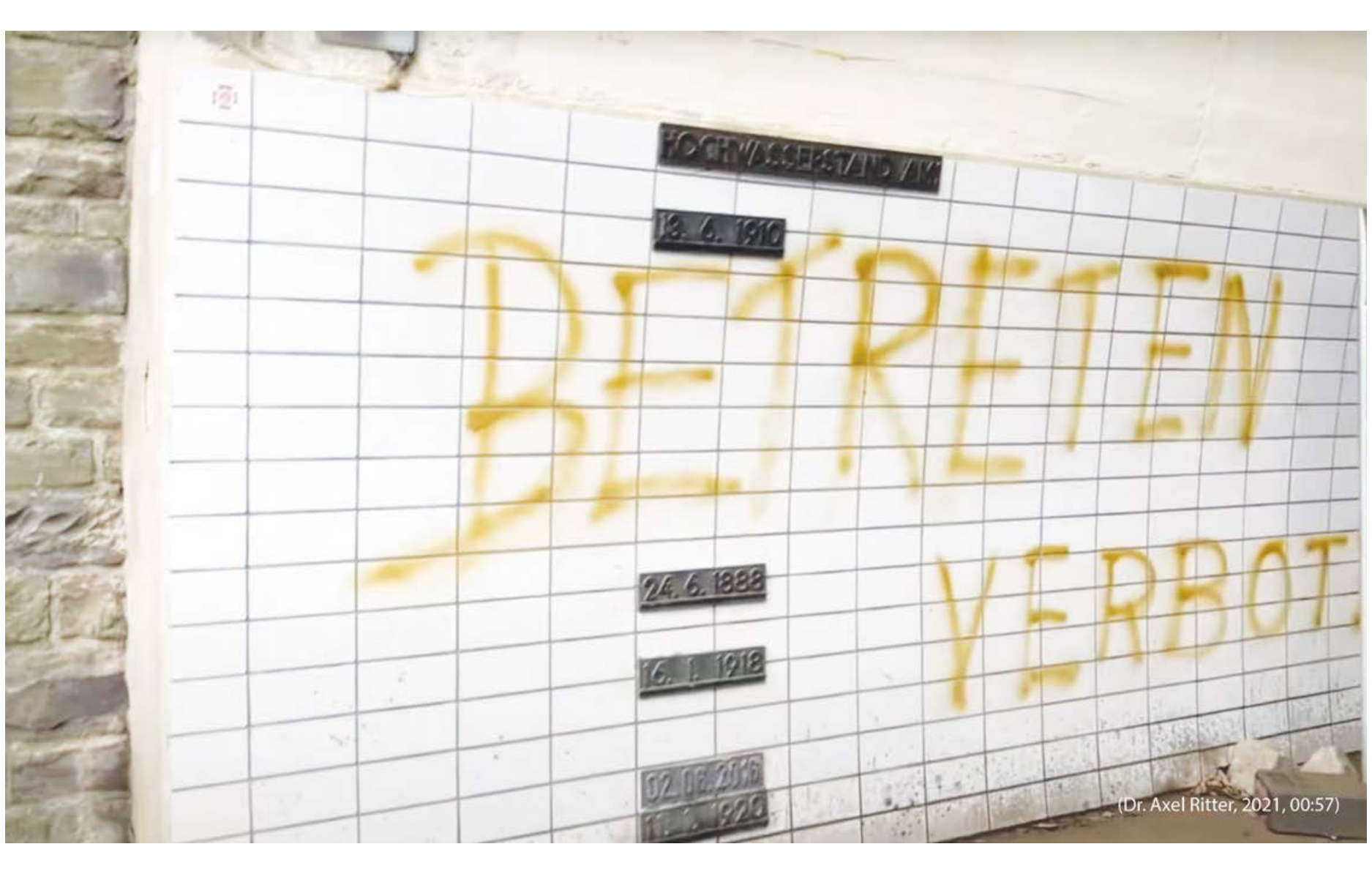
Altenahr water-level meassurement station was destroyed during the flooding, recording its' last meassurement at 20:24, 14.07.2021.

Photo: WDR.de


1%-Annual-Chance Floodplain
Floodway Fringe
Floodway
Floodway Fringe
Base Flood Elevation
Stream Channel

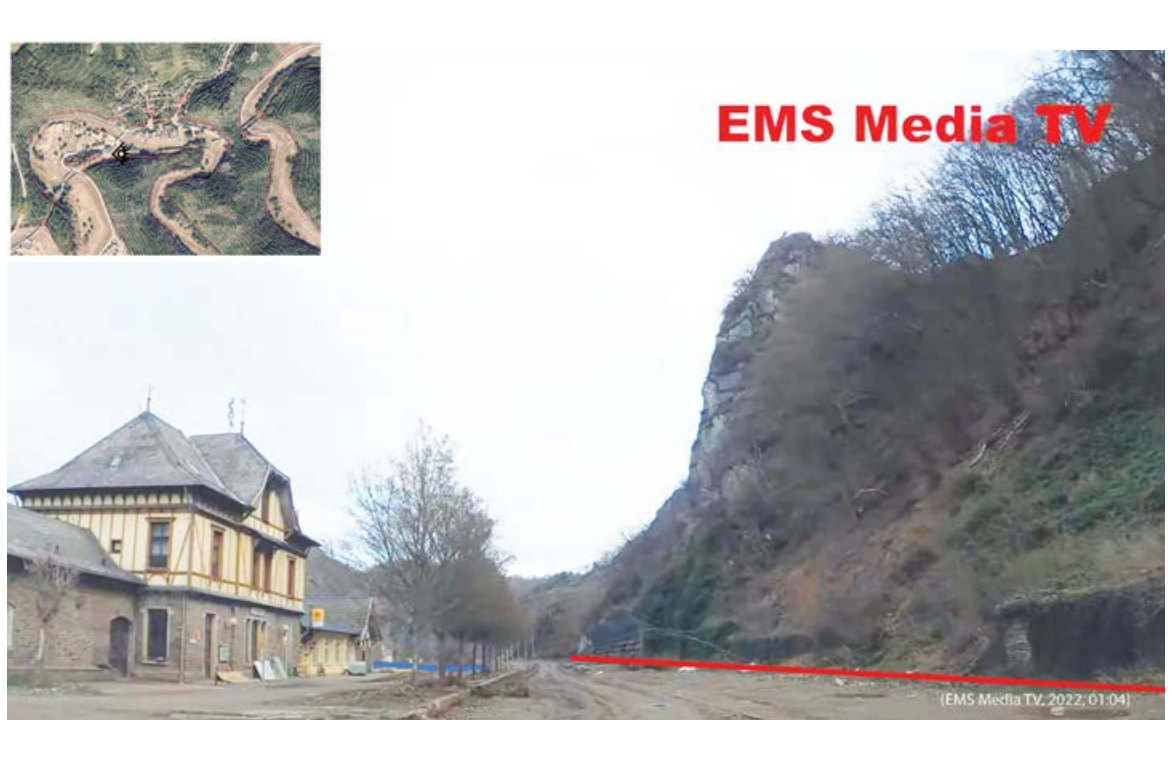
## Workshop 2: What happens?


Legend:
Regulated flood plain
Flood 14.07/15.07. 2021
Started recontruction
Removed post flood
1:4000


HOCHWASSERSTAND VOM
BETRETEN VERBOT
13. 6. 1910
24. 6. 1888
16. 1. 1918
(Dr. Axel Ritter, 2021, 00:57)

EMS Media TV

EMS Media TV

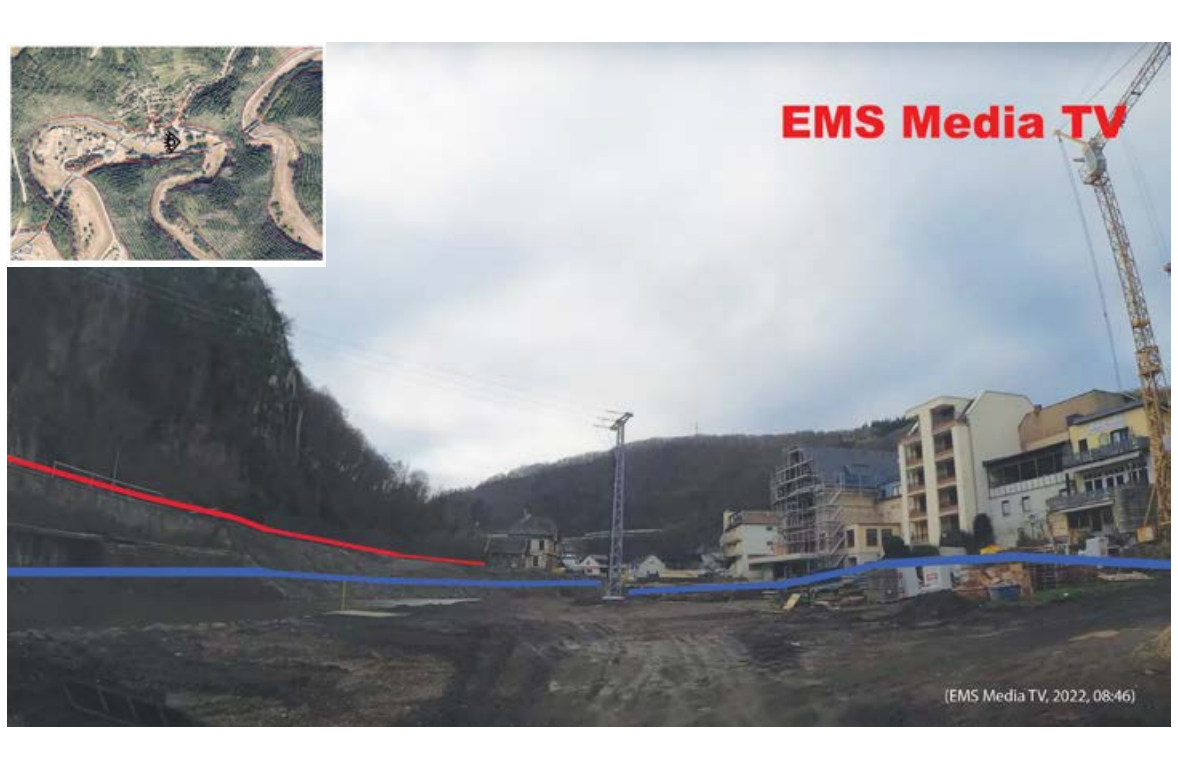

EMS Media TV

EMS Media TV

EMS Media TV

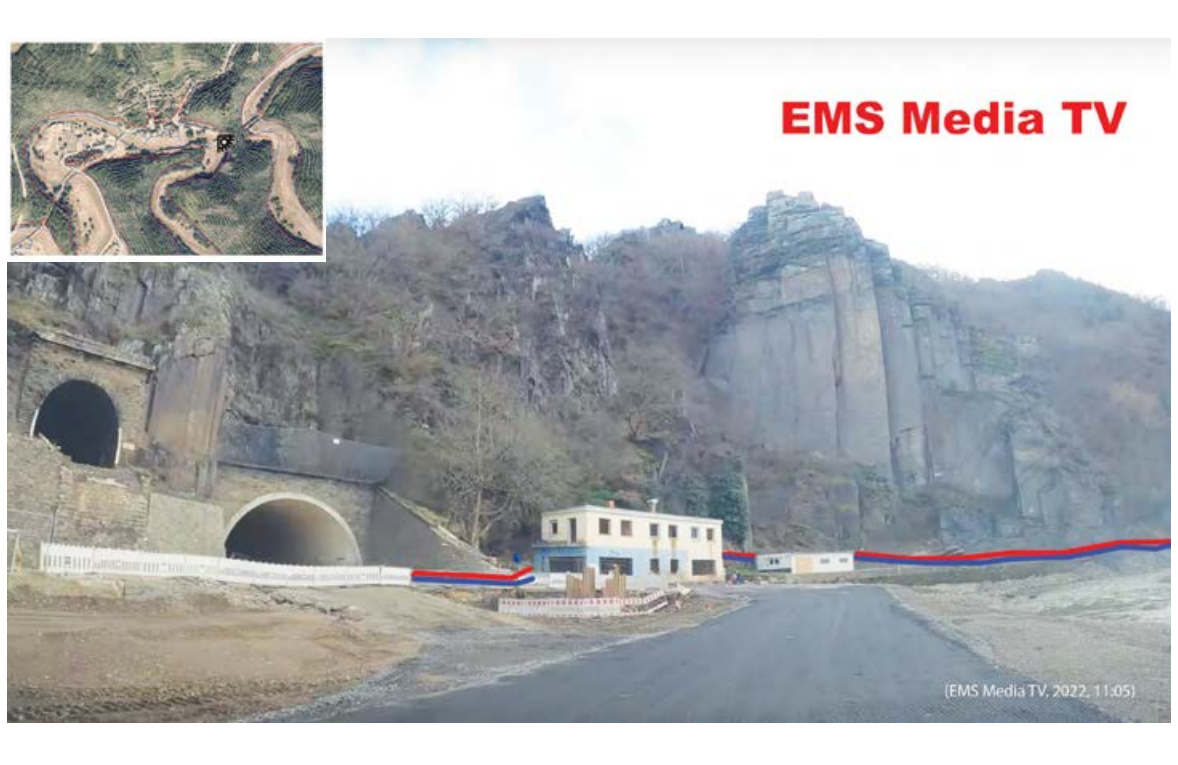
EMS Media TV

EMS Media TV
DANKE

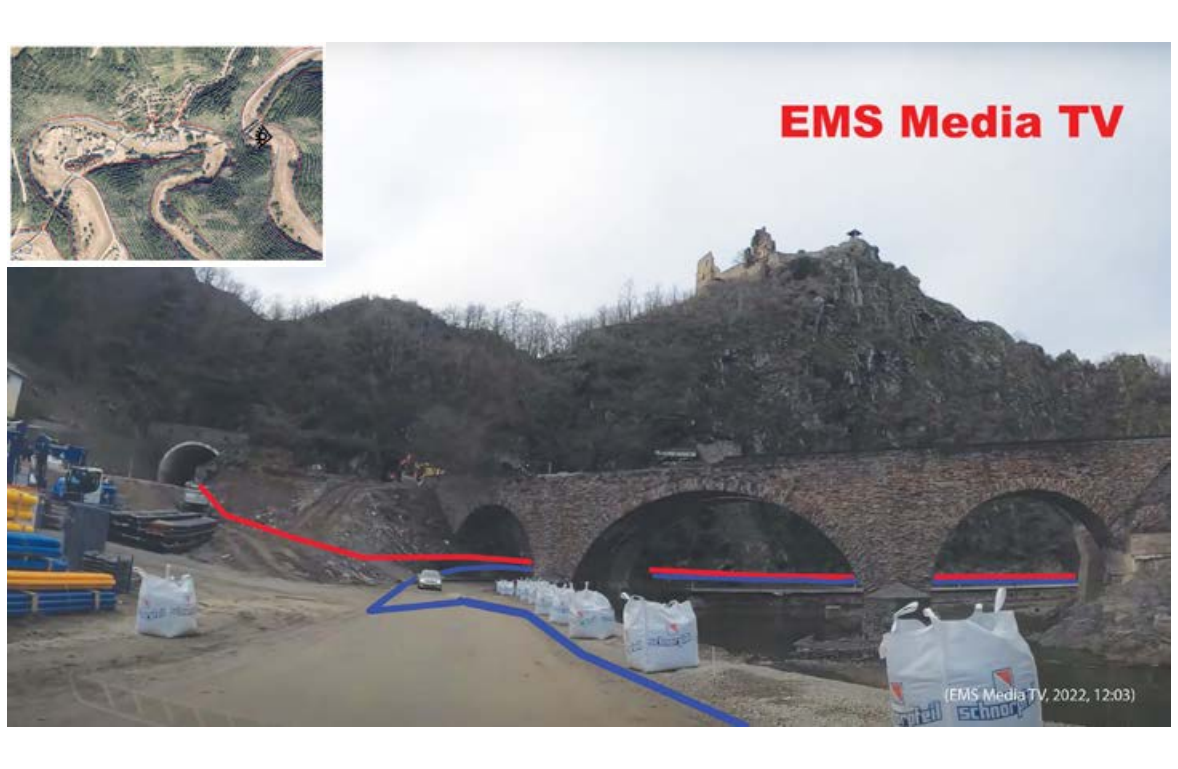

EMS Media TV

EMS Media TV

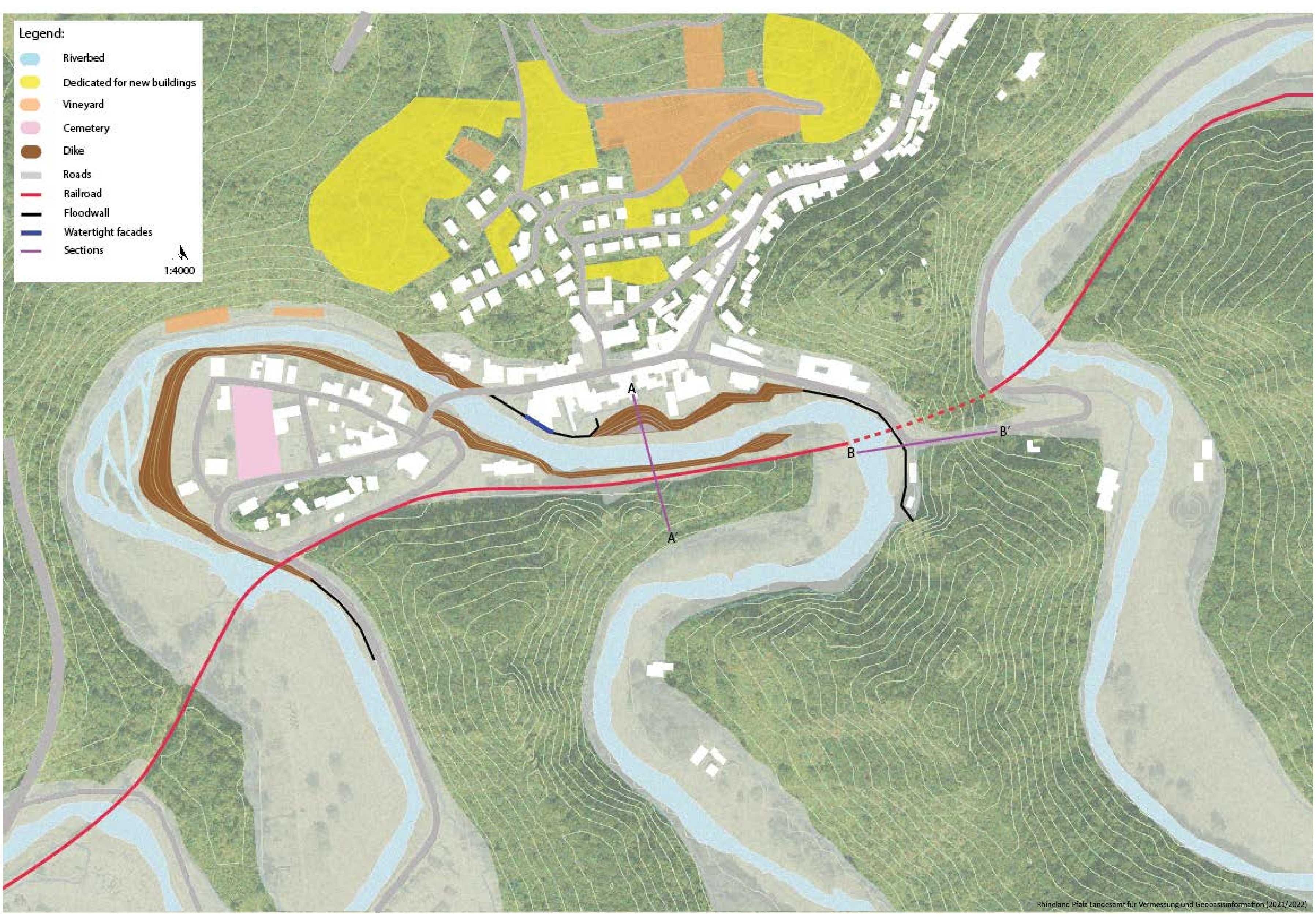
EMS Media TV

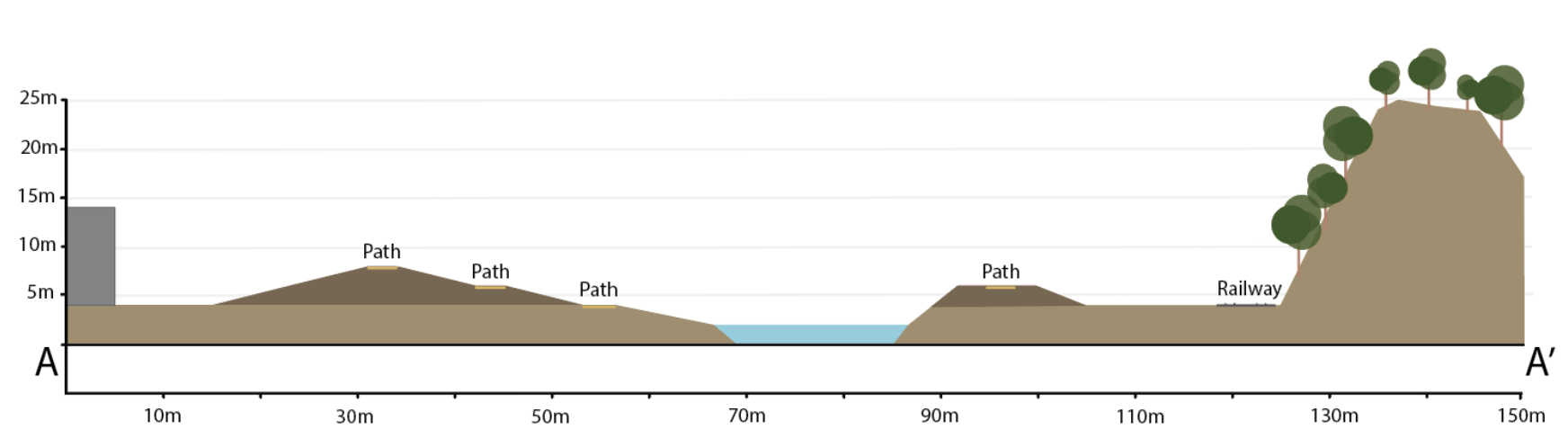

EMS Media TV

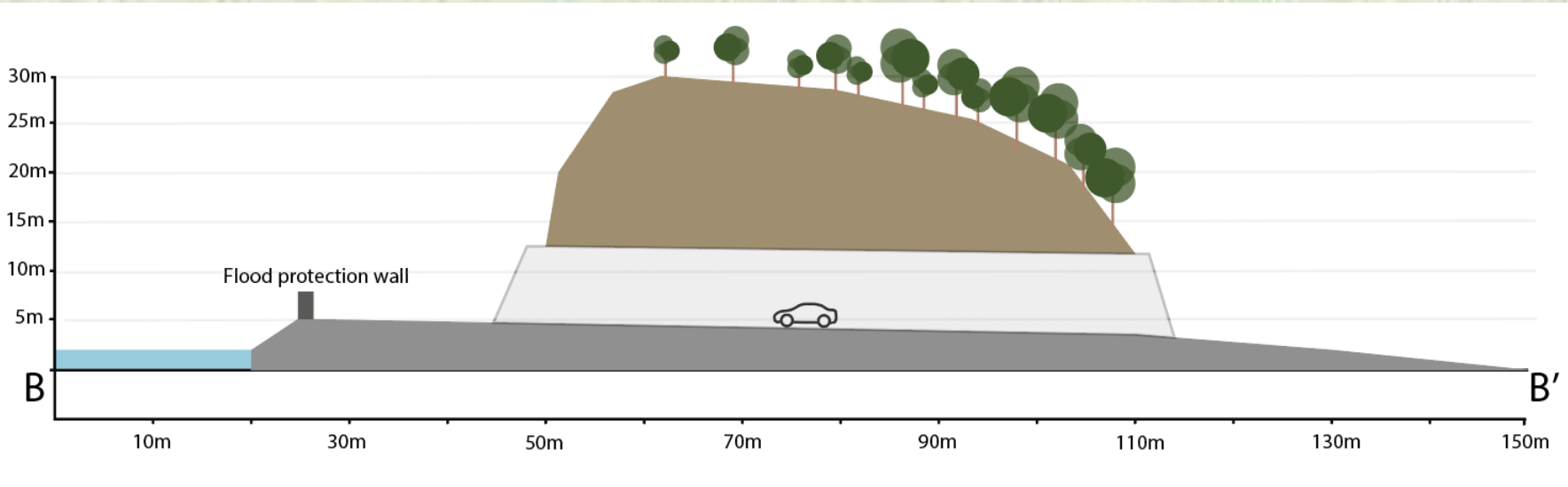
EMS Media TV


EMS Media TV

## Workshop 3: What should happen?


Legend:
Riverbed
Dedicated for new buildings
Vineyard
Cemetery
Dike
Roads
Railroad
Floodwall
Watertight facades
Sections
1:4000
A
A'
B
B'
Rhineland Pfalz Landesamt für Vermessung und Geobasisinformation (2021/2022)


25m
20m
15m
10m
5m
Path
Path
Path
Path
Railway
A
A'
10m
30m
50m
70m
90m
110m
130m
150m


30m
25m
20m
15m
10m
5m
Flood protection wall
B
B'
10m
30m
50m
70m
90m
110m
130m
150m

Frey/dpa, 2021

*Nature reclaims – humans rebuild*
- Johannessen, J.A., 2022

Gausmann, 2021

**Litterature:**

Anna-Lara Weidinger / SWR (2022) Was ist in der Flutnacht passiert? - Ein Protokoll. Available from: https://www.swr.de/swraktuell/rheinland-pfalz/flut-rekonstruktion-ahrtal-protokoll-100.html?fbclid=IwAR0nFIExJpeJbqSQcq9aPX4sBp2ud6uCtkLRiZhfnAFiAb80s8EbzIJbl1s (retrieved: 14.02.2022)

Dr. Axel Ritter (2021) Es wird weiter zugeschüttet und aufgefüllt! - tunnel in altenahr ohne flutentlastungsmassnahme. Available from: https://www.youtube.com/watch?v=Bydn4NMo-FAw&list=PLl08QP7yGyJfqbOwYnwndNOBt67wGKrc9&index=2 (Accessed: 01.03.2022).

EMS Media TV (2022) Neujahrsfahrt duch Altenahr- am 01.01.2022. 04.01.2022. Available from: https://www.youtube.com/watch?v=qHyE7UrmK3E&list=PLl08QP7yGyJfqbOwYnwndNOB-t67wGKrc9&index=1 (Accessed: 01.03.2022).

GeoBasis-DE / LVermGeoRP (2021), dl-de/by-2-0, http://www.lvermgeo.rlp.de [retrieved: 20.02.2022]

Handelsblatt (2021) Flutkatastrophe: Mehr als die Hälfte sieht Zusammenhang mit Klimawandel. Available from: https://www.handelsblatt.com/technik/thespark/extremwetter-flutkatastrophe-mehr-als-die-haelfte-sieht-zusammenhang-mit-klimawandel/27473330.html?ticket=ST-6386470-uTQt0WZ7yRXg2pOf7sqe-ap2 (retrieved: 08.02.2022).

Historical map of Altenahr: ©GeoBasis-DE / LVermGeoRP (1843-1878), dl-de/by-2-0, http://www.lvermgeo.rlp.de [22.02.2022], Originals owned by the Berlin State Library

Manfred Niekisch /Frankfurter Rundschau (2021) Die Chance nach der Flutkatastrophe: Schluss mit Tricksereien und falschen Kompromissen! Available from: https://www.fr.de/meinung/kolumnen/flutkatastrophe-die-chance-danach-90960012.html (retrieved: 08.02.2022).

Merle Göddertz / WDR (2021) Ahrtal unter Wasser. Available from: https://reportage.wdr.de/chronik-ahrtal-hochwasser-katastrophe?fbclid=IwAR25umkFpukF2NudfqvkY74hScA7JNSC-n9zdixJ-Ta9QdREkSTq3gmFhkPQ#chronik-hochwasser-im-ahrtal (retrieved: 14.02.2022).

North Dakota State Water Commission / FEMA (n.d.) Regulating Within a Floodway. Available from https://www.co.ward.nd.us/DocumentCenter/View/2920/FAQ-Regulating-Within-a-Floodway?bidId= (retrieved: 16.02.2022)

Patrick Drexler / Universität Koblenz-Landau (2015) Engelslay-Tunnel an der Bundesstraße B 267 bei Altenahr. Available from: https://www.kuladig.de/Objektansicht/O-117916-20150313-8 (retrieved: 09.02.2022).

Rhineland Pfalz Landesamt für Vermessung und Geobasisinformation (2021/2022).

Stavanger Aftenblad (2021) Uværet har krevd minst 118 liv i Tyskland og Belgia. Available from: https://www.aftenbladet.no/utenriks/i/bz82kA/uvaeret-har-krevd-minst-118-liv-i-tyskland-ogbelgia (retrieved: 21.02.2022).

Wikipedia (2021) Altenahr. Available from: https://en.wikipedia.org/wiki/Altenahr (retrieved: 08.02.2022).