

Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Implementation of the Isar-Plan in Munich

presented by:

Daniela Schaufuß

City of Munich,
Department of Civil Engineering

27./28. June 2018

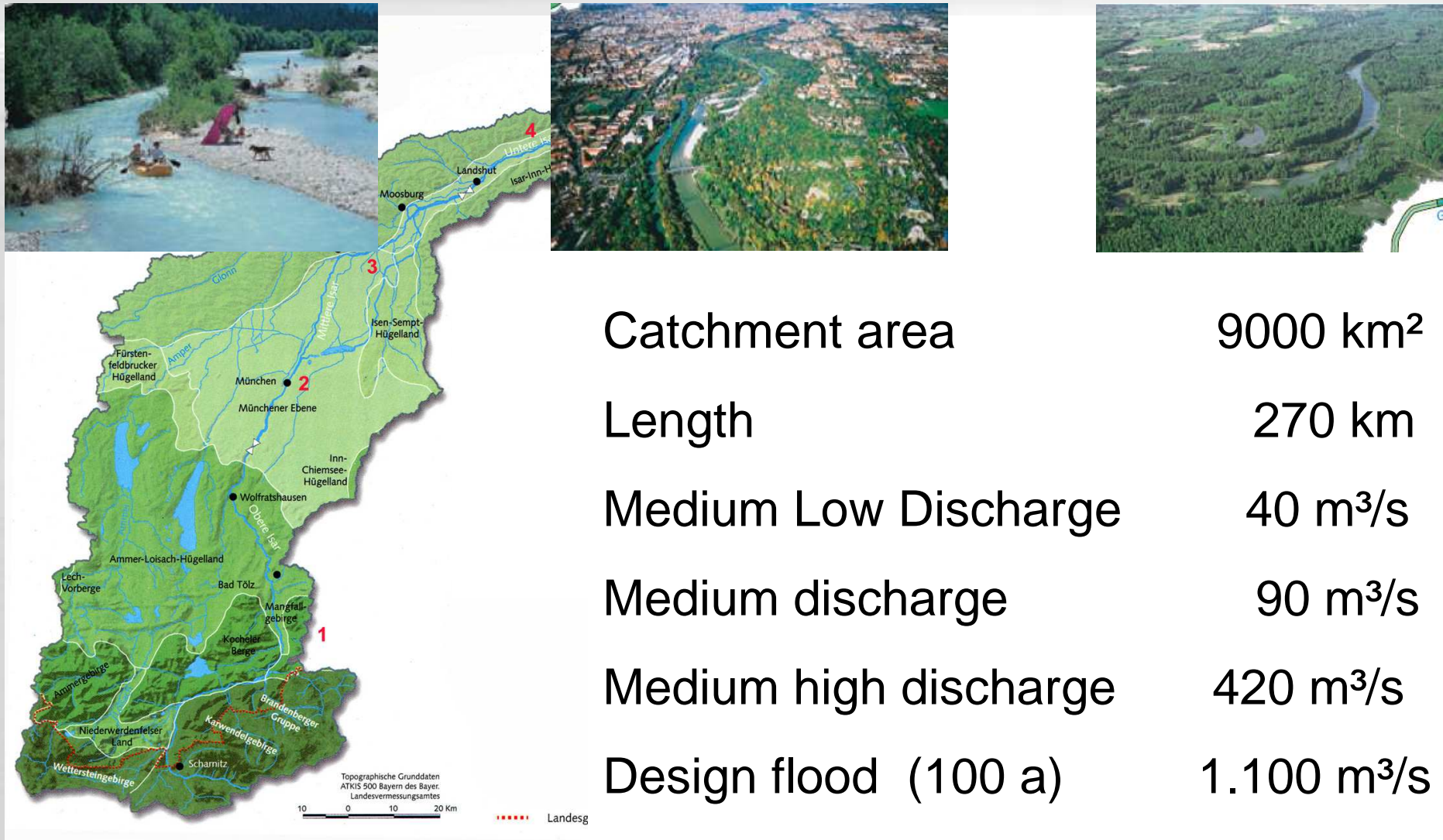
Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



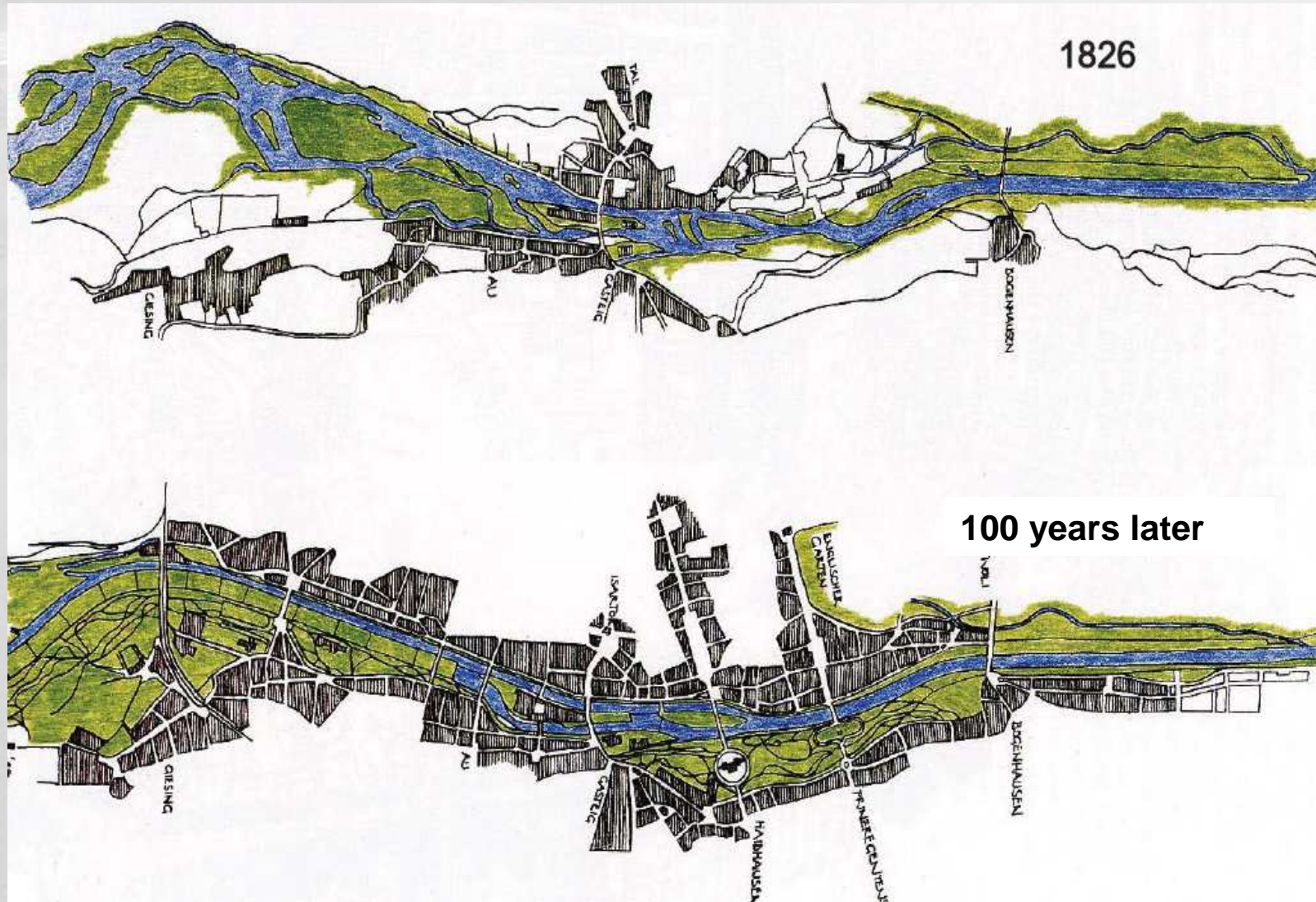
Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Former Isar River until 2011: a canalized water course

Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Historic Floods:
collapse of Ludwigsbridge
13.09.1813

collapse of Prinzregentenbridge
1899



Major Deficits of „civilized“ Rivers

Straightened and Dammed

Loss of ecological functions, habitats + groundwater interaction

Reduced morphological processes

Interruption of physical continuity

Minor water quality

Cut off floodplains with flood risks

No Access to waterline

Disturbed interaction between river bed and
surrounding landscape

“Over-Use”

Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

But: What it is.....

Area of waterway

Flood plains

Habitats

Grass as protection

Dykes for flood protection

Maintenance sidewalks

Electric power plants

important recreational area

Reference: Flaucher

What it is used

going by boat

swimming

walking

horse riding

barbecuing

cross-country skiing

toboggan

partying

cycling

walking the dog

sun bathing

Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

Targets of Isar-Plans:

1. Improving flood protection
2. Nature related shaping of the river Isar
3. Improving possibilities for recreation



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

- **Flood Control**
 - Water Retention Capacity
- **Restoration**
 - Ecological Upgrading of the river Isar
 - Morphological processes
 - Longitudinal and lateral continuity
 - Natural habitats, biodiversity, water quality
- **Recreation**
 - Access to waterline
 - Attractive landscape and views

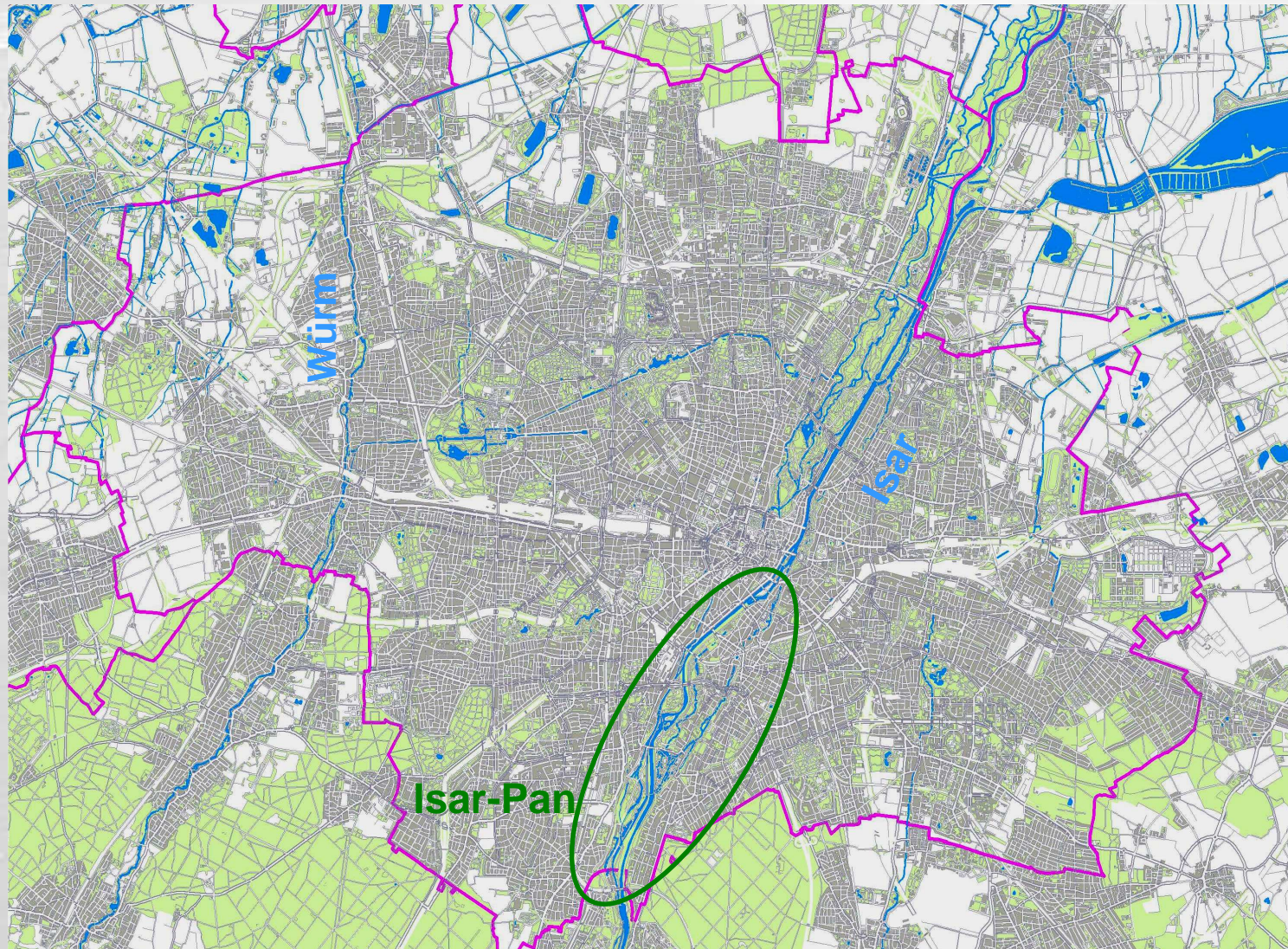
Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

What happened?

- Widening the riverbed from 50 m up to 90 m



Isar-Plan Munich

Implementation of the Isar-Plan in Munich

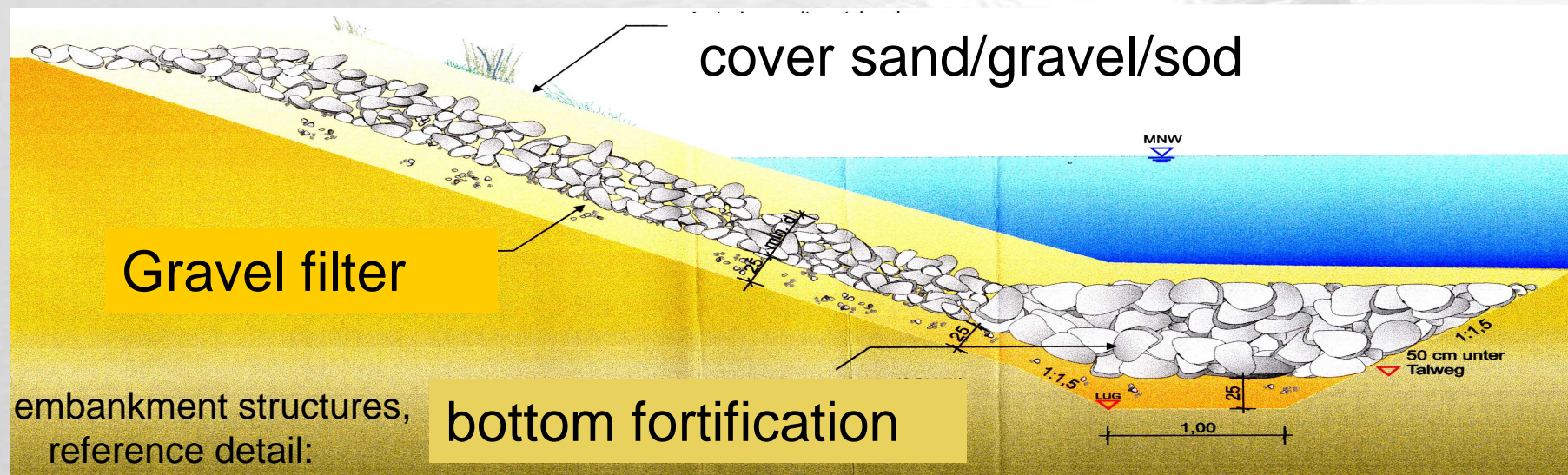


Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

What happened?

- Widening the riverbed from 50 m up to 90 m
- rebuilding banks (flattening, fixing and covering with gravel)



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



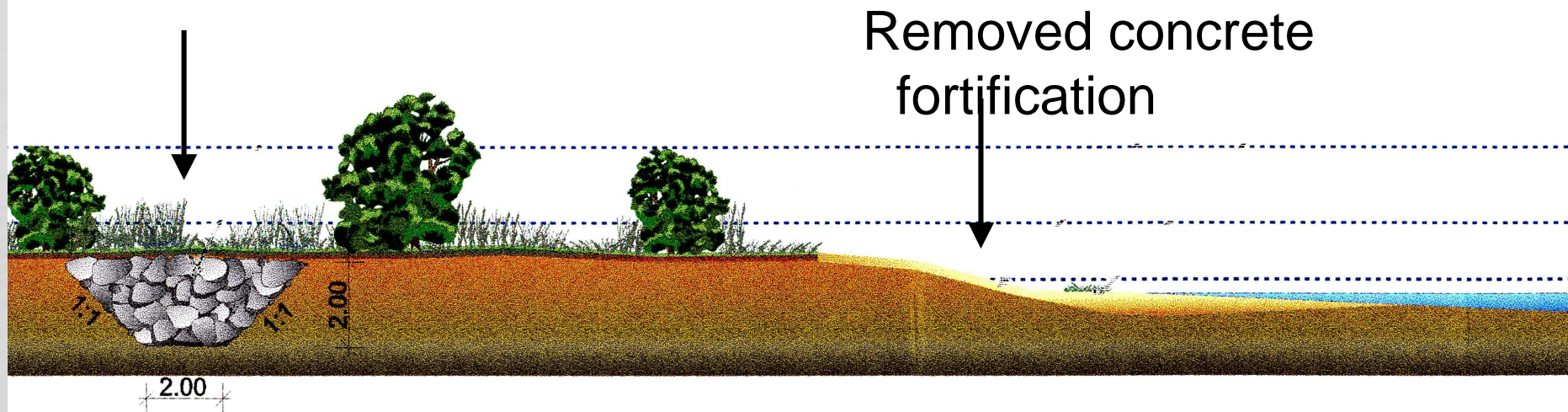
Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

Restored embankment

Space for morphological processes

Backward „hidden“ protection



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

Dynamic River Bed Processes



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

What happened?

- Widening the riverbed from 50 m up to 90 m
- rebuilding banks (flattening, fixing and covering with gravel)
- removing river barriers / sills



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Fish ladder

Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

What happened?

- Widening the riverbed from 50 m up to 90 m
- rebuilding banks (flattening, fixing and covering with gravel)
- removing river barriers / sills
- Enhancing dykes



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Enlarging and clearing from trees (under construction)

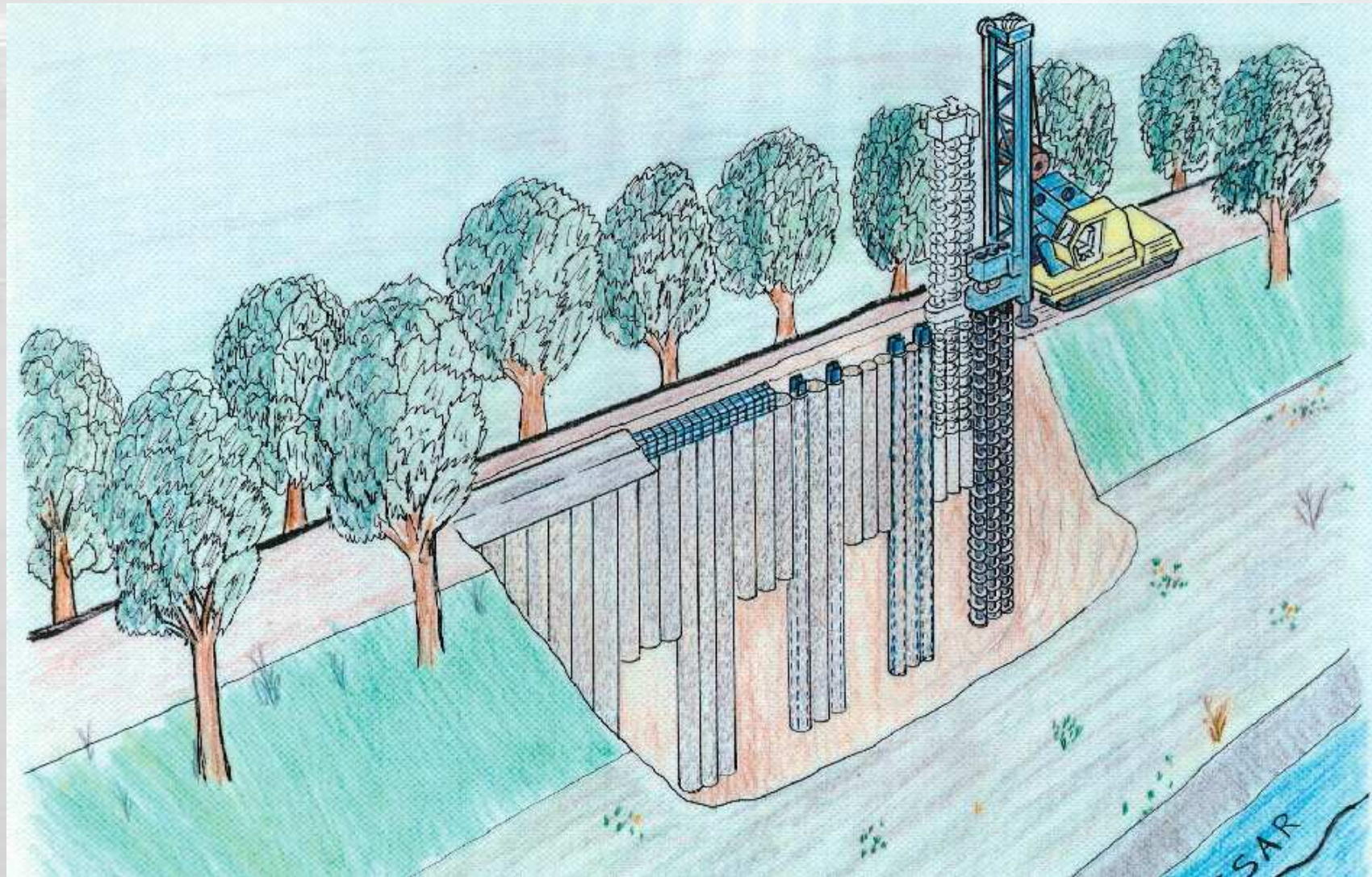
Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



View from the Tower of the
“Deutsches Museum”

Model of the Present Situation in Obernach



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Spring 2006



Summer 2013

Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Fish ladder: bypass for
fishes, playground for kids



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

Competing Interests:

Costs

Flood Protection

Hydrological Suitability

Natural design

Maintenance

Biological Quality

Urban Planning

Recreational Usage

General Usage

Possibilities for Sport

Safety

Special Interests

Competition / Workshops / Round Tables:

- all imaginable participants as soon as possible involved
- all forms of participation, e.g. Mediation
- Many different Participants:
 - Politicians
 - NGO's
 - citizens
 - neighbors
 - sportspersons of different interests
 - and so on
- Joint Venture

Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering



Modeling the Future:

The Art of how to flow –
The Art of showing how

Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

Internet Platform

Info-Brochures

Excursions

Mediation

Workshop

Public Participation

Landeshauptstadt München
Wasserwirtschaftsamt München

Neues Leben für die Isar - Umgestaltung im Bauabschnitt 1

Liebe Bürgerinnen, liebe Bürger!

Mit dem Baubeginn am 7.2.2000 ist der erste Schritt zur Umsetzung der Isar-Pläne getan.

Als **Bauabschnitt 1** wird das Hochwasserbett der Isar im Bereich unmittelbar südlich des Marien-Klostergebäudes auf einer Länge von ca. 900 m umgestaltet.

Die Maßnahmen dienen **drei Zielen**:

- Hochwasserschutz
- Natur
- Erholung

Im einzelnen werden

- das Flussbett aufgeweitet
- die Uferböschungen abgeflacht und somit besser zugänglich
- die Schluffsteine in naturnahe Substraten umgebaut, d. h. für Fische u. a. Grundwasserorganismen passierbar gemacht
- Inseln und Kiesbänke angelegt
- die Deiche sicherer gemacht
- die Hochwassererweiterung gestrichelt in verteiltem Höhenstufenbau von Erholung und naturnaher Ausentwicklung umfassen offene Bereiche mit Liegewiesen, Stützbänken und gut zugänglichen Ufern neben Bereichen mit wildtypischer Eigenvegetation und Lebensräumen bedeckter Tier- und Pflanzenarten

Die Baumaßnahme wird bis Ende Mai dieses Jahres abgeschlossen sein. Die Landschaft aber wird sich danach laufend verändern, der Fluss darf seine Kleinfischen künftig selbst gestalten.

Möchten Sie mehr wissen?

Mehr Informationen zum Isar-Plan erhalten Sie unter:

- IDNr. 21233-300

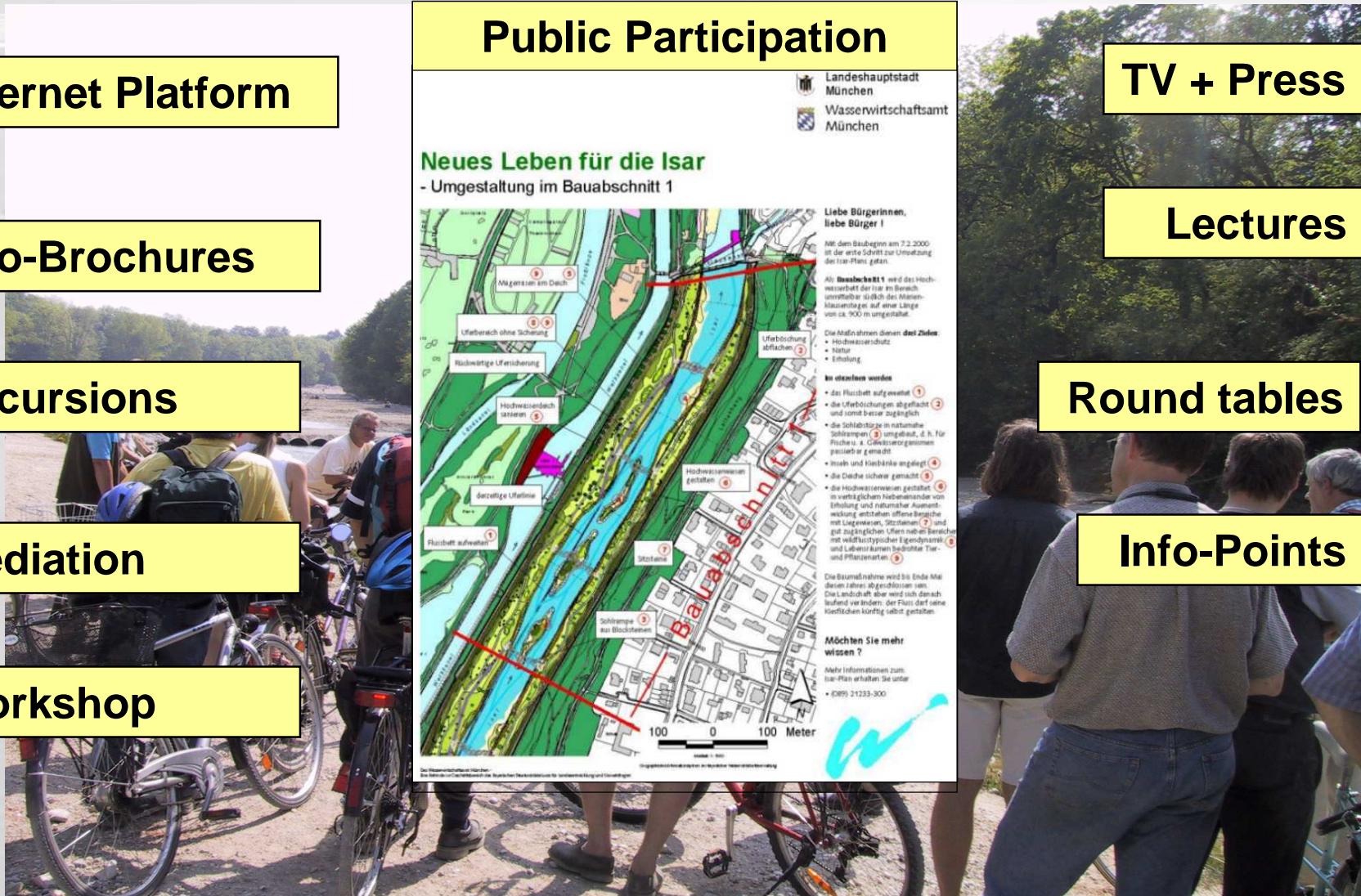
100 0 100 Meter

TV + Press

Lectures

Round tables

Info-Points



Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

now a (restored) river



Gravel banks, riffles and pools
Natural river slopes
River bottom rock ramps / slides
Fish bypasses
New habitats for flora and fauna
Attractive recreation areas

Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

FAQs

- Total length ca. 8 km
- Begin of construction: 2000
- Finished in June 2011
- A Joint Venture of the State of Bavaria and the City of Munich
- Total cost: 35 Mio. €

Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

Keep an Eye on Maintenance!

- Who cares for your Project in future?
- Who pays for your Project in future?
- How should your Project look like in future?

Resources needed!

Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

Isar-Plan Munich

Implementation of the Isar-Plan in Munich



Landeshauptstadt
München

City of Munich,
Department of Civil Engineering

- Raising and reinforcement of river dikes
- Removal of concrete embankments
- Widening of the river cross section
- Increase of capacity in river runoff
- Natural river bottom rock ramps or slides with riffles and pools, instead of linear low weirs
- Initialization of dynamic river bed processes; development of natural river structures
- Longitudinal river continuity to allow river organisms, e.g. fish, to swim upstream
- Establishment of typical river habitats