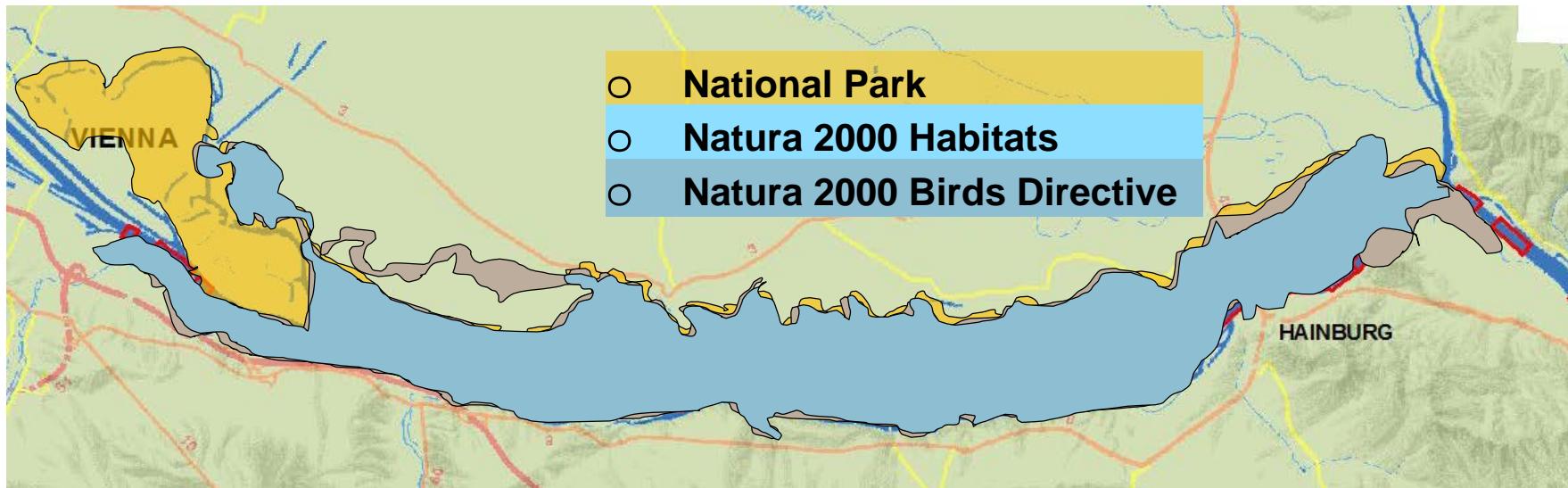


Integrated River Engineering Project Catalogue of Measures for the Danube east of Vienna

10th Joint Statement Meeting; Budapest; 11.-12. September 2019

viadonau

Danube east of Vienna

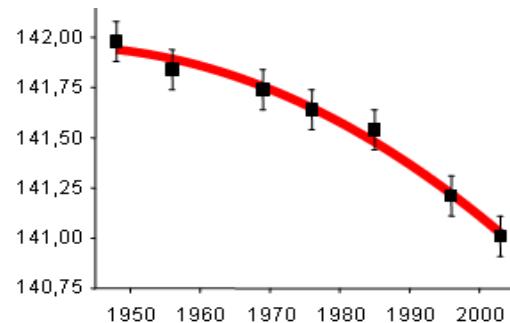


Part of the Rhine-Danube Corridor and a protected area.

- Approx. 48 km long
(river-km 1,921.0 Freudenau Power plant to
river-km 1,872,7 Austrian-Slovak border)
- Height difference: approx. 18 m (40 cm/km)
- Mean discharge MQ: 1,930 m³/s
- Fluctuations in water levels: up to 7 m

Danube East of Vienna – major challenges

Riverbed degradation



decoupling of river and floodplains, falling groundwater levels

→ **Stabilization of water levels**

river in National Park area



habitats of typical local flora and fauna are at risk

→ **Improvement of environmental conditions**

Inadequate fairway depths



limited competitiveness of inland waterway transport

→ **Improvement of fairway conditions / opt. waterway infrastructure**

High diversification of objectives
interdisciplinary approach, stakeholder participation

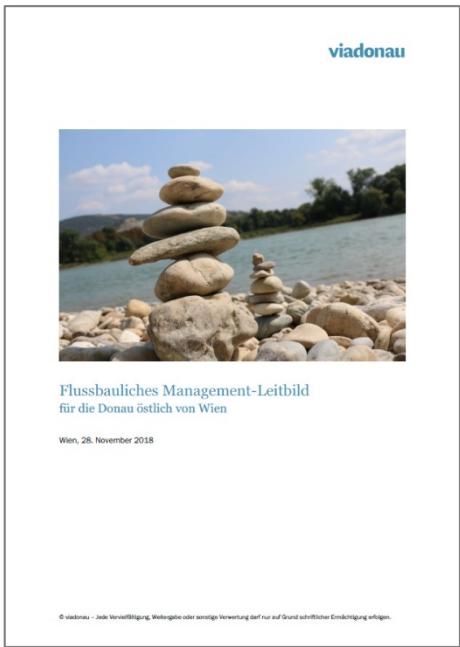
Integrated River Engineering Project - Catalogue of Measures

- The results of the **pilot phase** (6 pilot projects) have been combined with **new developments** in waterway management (WAMS) and traffic management (DoRIS Services).
- The **implementation strategy** was adopted to the findings: modified maintenance processes in combination with ‘small’ optimization projects.
- **Realization in order by priority**
 - First measures implemented in 2016
 - Priority 1: Realization by 2022 (Action Programme Danube of the MoT)
 - Priority 2: Realization by 2030

(updated / new)

viadonau

General orientation (“Leitbild”) & guiding principals on river engineering



Flussbauliches Management-Leitbild
für die Donau östlich von Wien

Wien, 28. November 2018

© viadonau – Jede Vervielfältigung, Weitergabe oder sonstige Verwertung darf nur auf Grund schriftlicher Einräumung erfolgen.

TEIL A - LEITBILDER

Leitbilder

Sektorale Leitbilder „Ökologie“ und „Wasserstraße/Schifffahrt“ und ihre Zusammenführung
in einem integrativen Managementleitbild

TEIL B - STRATEGISCHE ZIELE UND MANAGEMENT-GRUNDSÄTZE

Aktionsfeld Wasserstraße

Strategische Ziele:

Verbesserung Wasserstraßen-Infrastruktur

Management-Grundsätze:

- Donau als Wasserstraße verstehen
- Durchgängige Fahrwasser-verhältnisse herstellen
- Optimierungspotentiale durch Digitalisierung nutzen
- Sicherheit gewährleisten

Aktionsfeld Lebensraum

Stabilisierung Wasserspiegel

Verbesserung Lebensraum

- Niederwasser- und Mittelwasserspiegel erhalten und wieder anheben
- Kooperationen ausbauen
- Hochwasserspiegel nicht erhöhen, wenn möglich, senken
- Donau als Lebensraum verstehen und erhalten
- Dynamik zulassen - Natürliche Prozesse schützen und verstärkt ermöglichen
- Charakter der freien Fließstrecke bewahren

- Coordinated and written with the stakeholder forum („navigation“ & „ecology“)
- Decided unanimously by the stakeholder forum in late 2018

www.lebendige-wasserstrasse.at

ung und Eingriffsminimierung
enweiser Ansatz
maßnahmen und Optimierungsprojekten
ensweise Ökologie, Schifffahrt
stakeholder und Zivilgesellschaft
ung/Wissenschaftliche Begleitung

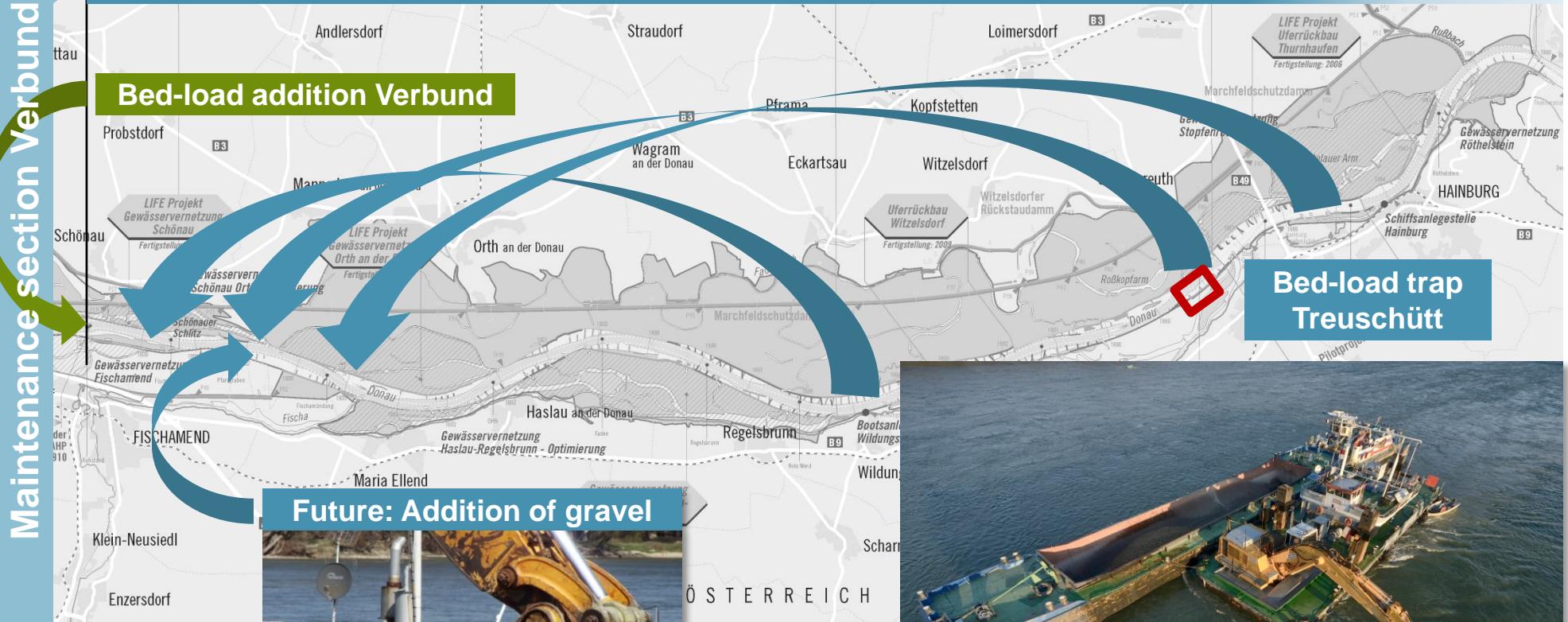
© via donau I 5

Catalogue of Measures – Maintenance processes to counteract river bed erosion

Catalogue of Measures Integrative Sediment Management

viadonau

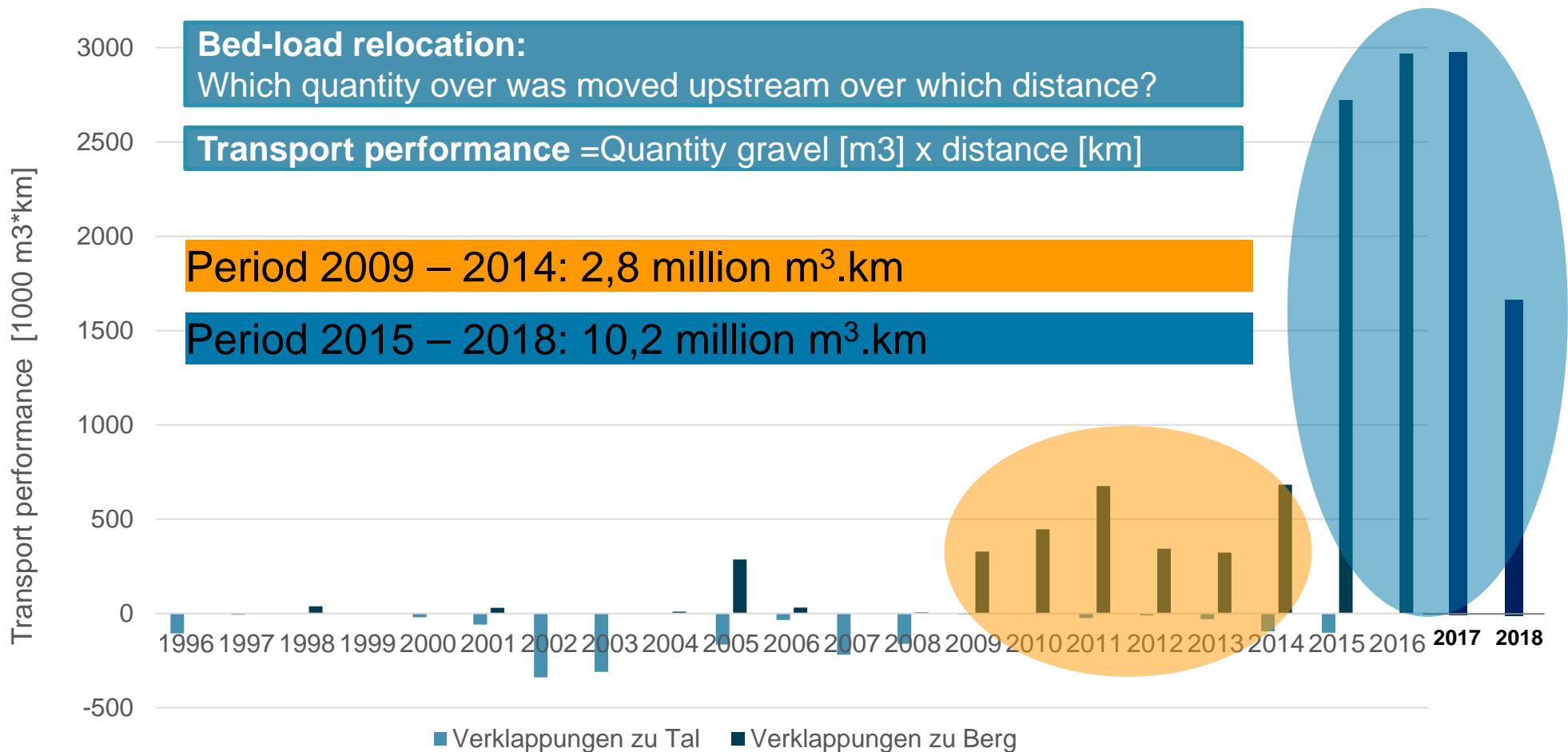
Maintenance section viadonau (Stream-km 1910,0 – 1872,7)



Maintenance section Verbund

Bed-load relocation

Since 2015: Relocation of the dredged gravel over distances up to 20 km to keep the material longer in the stretch. Effect on riverbed degradation similar to an external gravel addition.



Catalogue of Measures – Current optimization projects

Catalogue of Measures Optimization projects

viadonau

Step-by-step approach in order by priority



Low-water regulation



Sidearm reconnection



Riverbank restoration



Small-scale Measures



Stabilisation critical
scours



Optimizing regulation structures:
„More“ in critical fords
„Less“ in sections with river bed
degradation

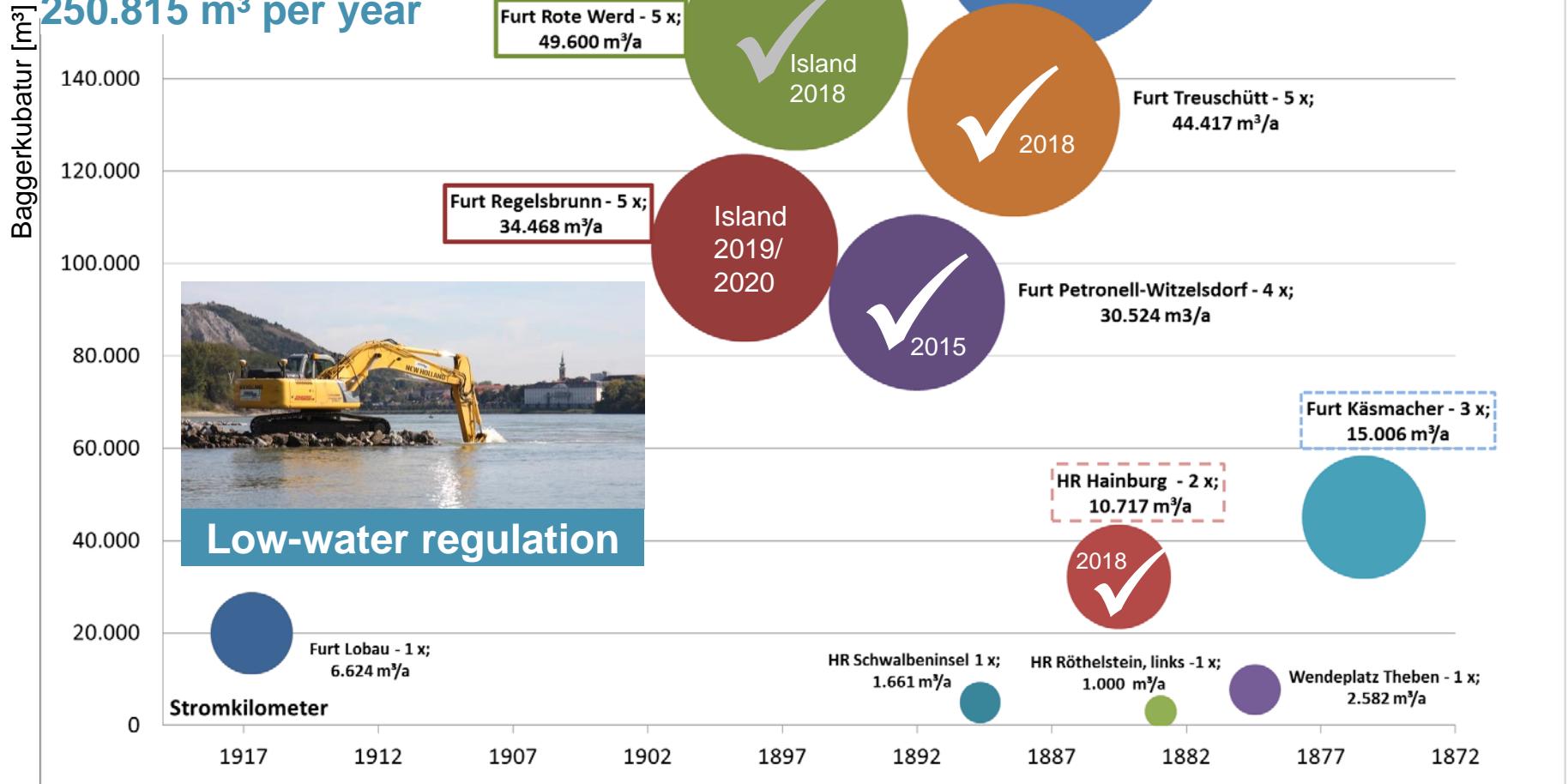
Small-scale measures are
modifications of piers, traffic
management measures, etc.▶

Optimization of critical fords

Dredging east of Vienna 2014-2016

752.444 m³ in 3 years

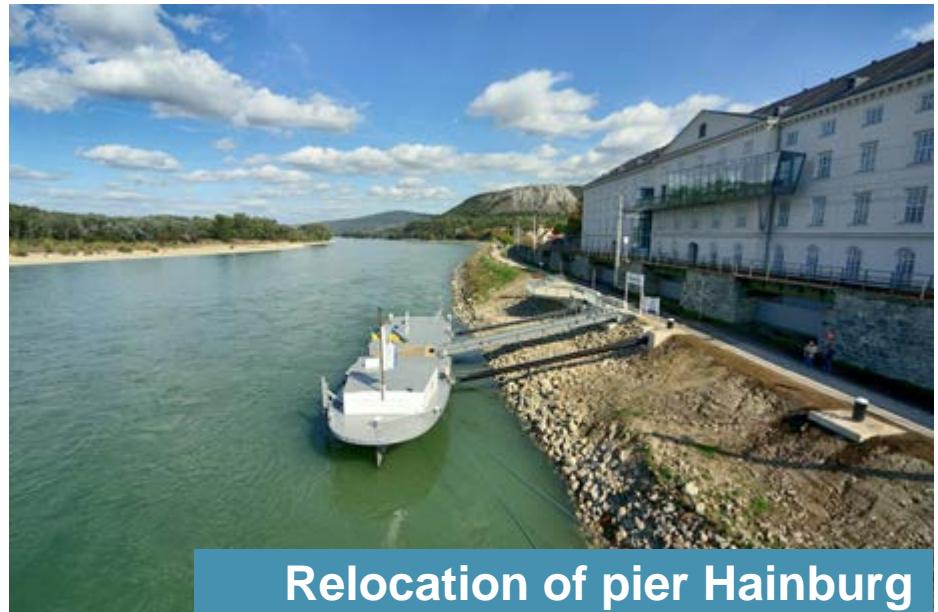
250.815 m³ per year



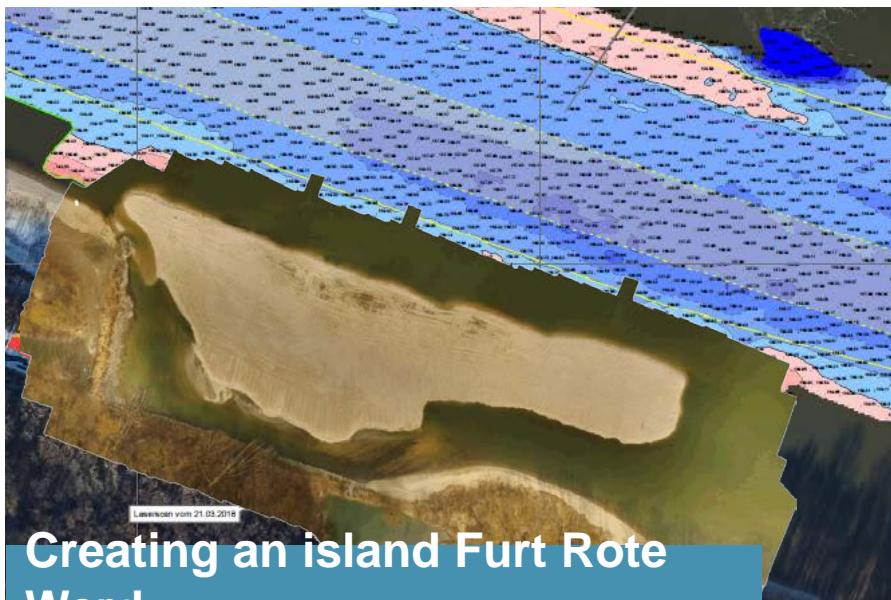
Realized in 2018



Groyne optimization Furt
Treuschütt



Relocation of pier Hainburg



Creating an island Furt Rote
Werd



Groyne optimization Furt
Petronell

Gravel piles Fischamündung & Wildungsmauer



Redistribution of both gravel piles into the Danube:

- **Fischamündung** (river-km 1904,8; ca. 40.000 m³)
Status: returned in February/March 2019 (see pictures)
- **Wildungsmauer** (river-km 1895,1; ca. 45.000 m³)
Status: prepared, implementation in fall 2019



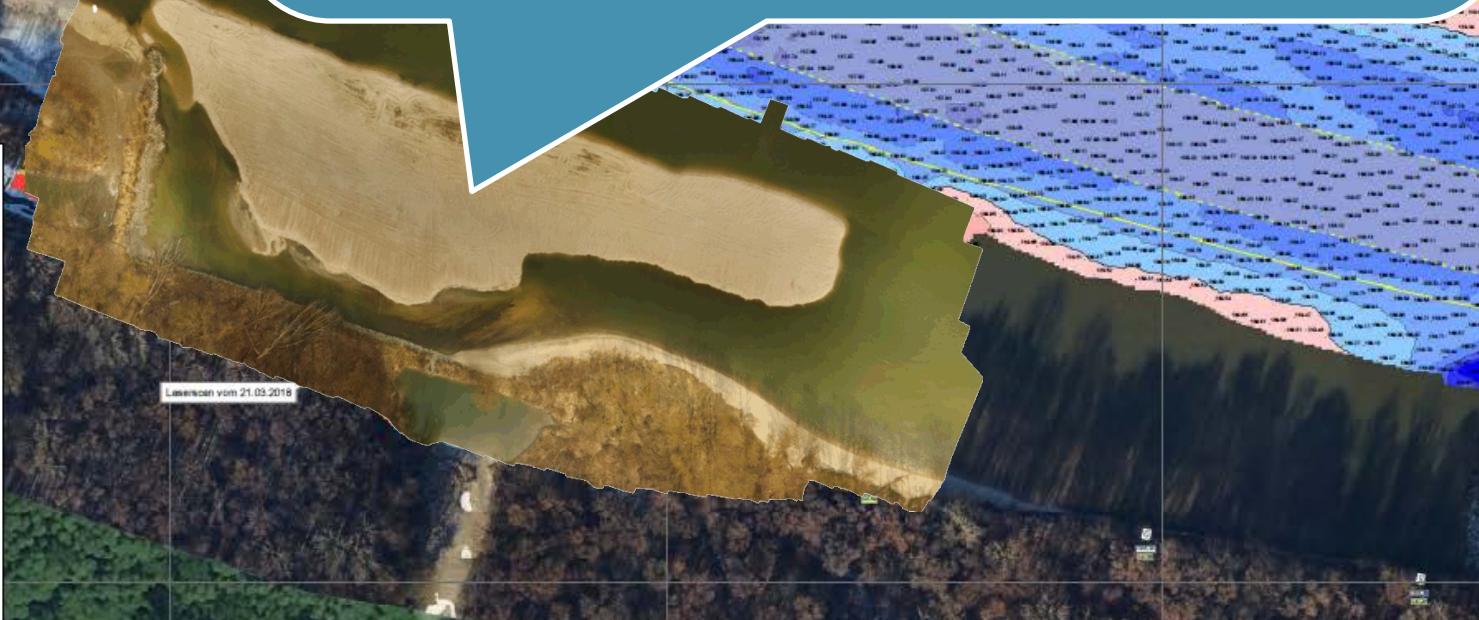
Critical ford Rote Werd

Creating an island by using excavated gravel

viadonau



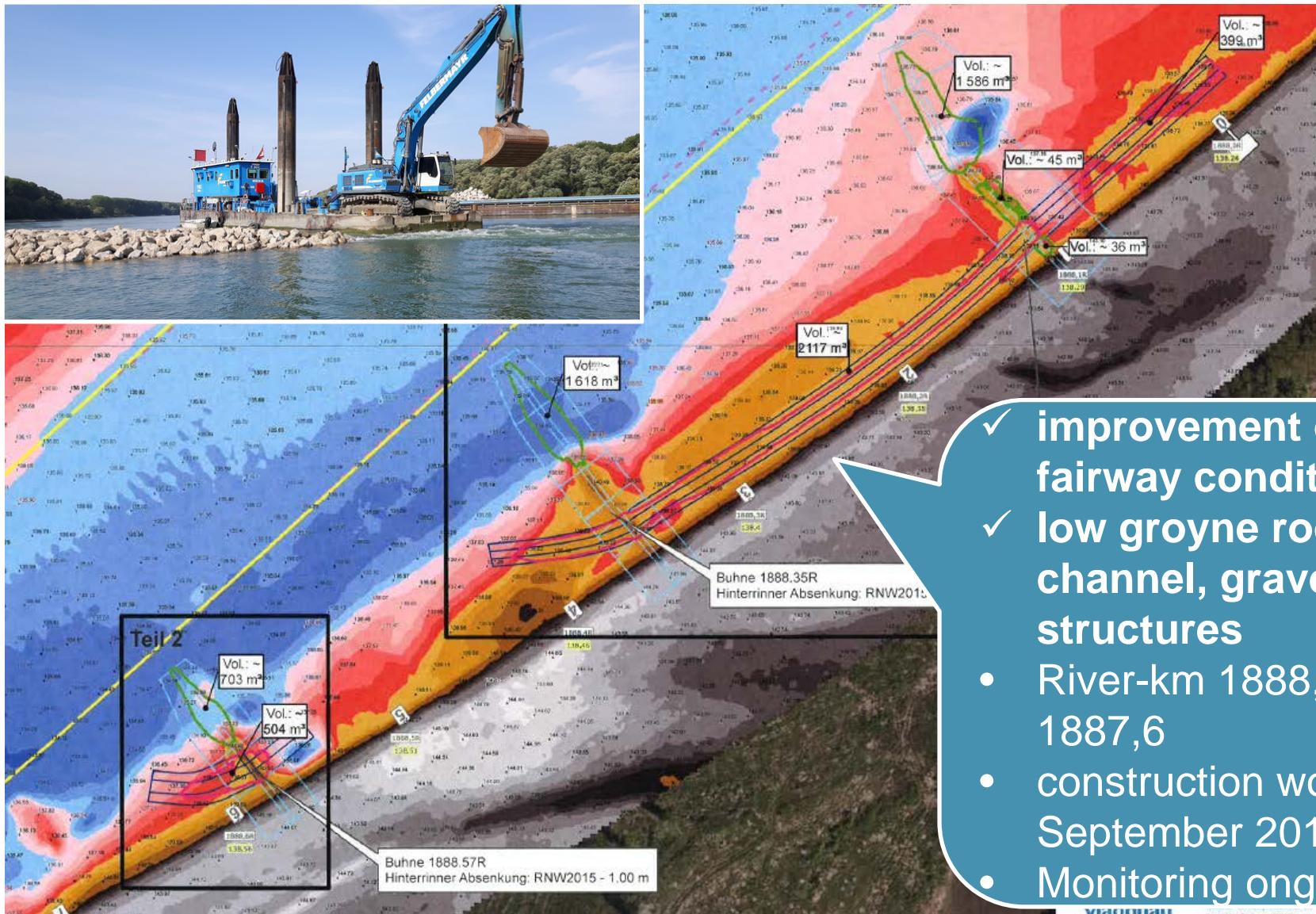
- ✓ improvement of fairway conditions
- ✓ island and side channel as habitats (gravel breeding birds, fish)
- river-km 1896,2
- nearly 50.000 m³ gravel from maintenance dredging
- construction works: February-March 2018
- Monitoring ongoing



| | |
|---|---|
| viadonau | |
| Österreichische Wasserstraßen-Gesellschaft mbH | |
| 1220 Wien • Donau-City-Straße 1 • tel +43(0)504321-1000 • fax-DW 1050 | |
| www.viadonau.org • office@viadonau.org | |
| Projekt: | |
| Inselschüttung Furt Rote Werd | |
| Strom-Km 1896,7 – 1895,8 | |
| Art der Aufnahme: | |
| Muldeneinmessung/LAS Befliegung Drohne | |
| Aufnahmenr.: | Ausgewertet: |
| Datum: | Name: |
| 08.03.2018 MBL | W. Lahr |
| 21.03.2018 LAS | 30.03.2018 Name: Mag. Yasup Cevik Mag. Christian Heissinger |
| Meßzettel: | Rheinpegel: RWW 2010 |
| Datumsfestlegung: | 2018-03-21 10:00:00 |

Critical ford Treuschütt Groyne optimization

viadonau



An aerial photograph of a wide river, likely the Danube, showing a prominent sandbar curving into the water. The river is surrounded by lush green forests and fields under a clear blue sky.

Optimization Furt Treuschütt

Critical ford Treuschütt Groyne optimization

viadonau



Pilot Project Bad Deutsch-Altenburg as role model.

Pier Hainburg

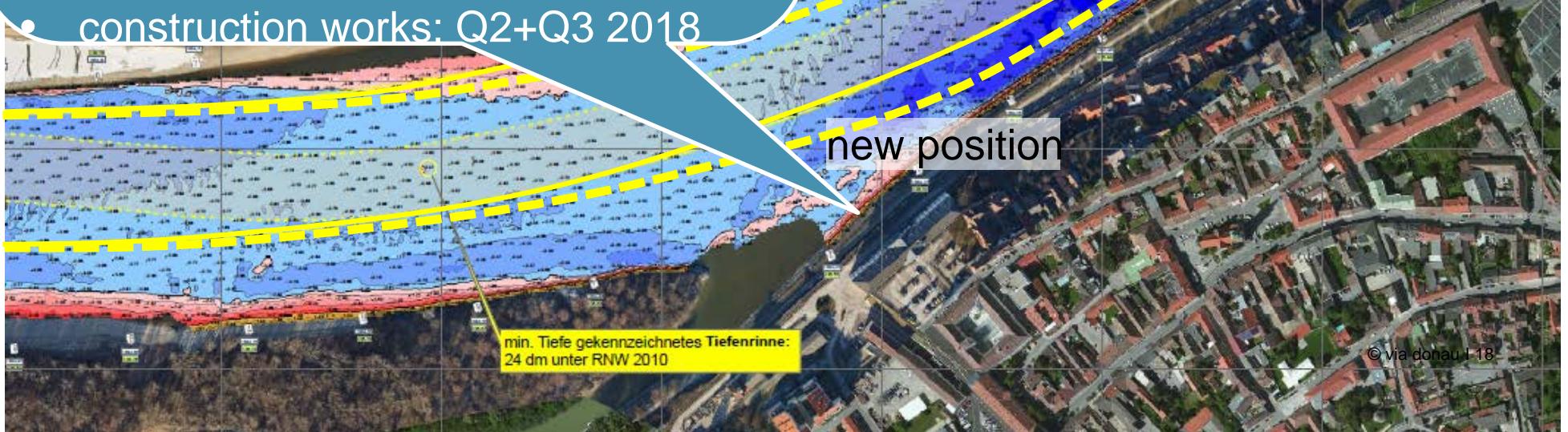
Relocation of the pier

viadonau

- ✓ Relocation away from fairway to increase traffic safety
- ✓ room to move the navigation channel to deeper areas → maintenance dredging is minimized.

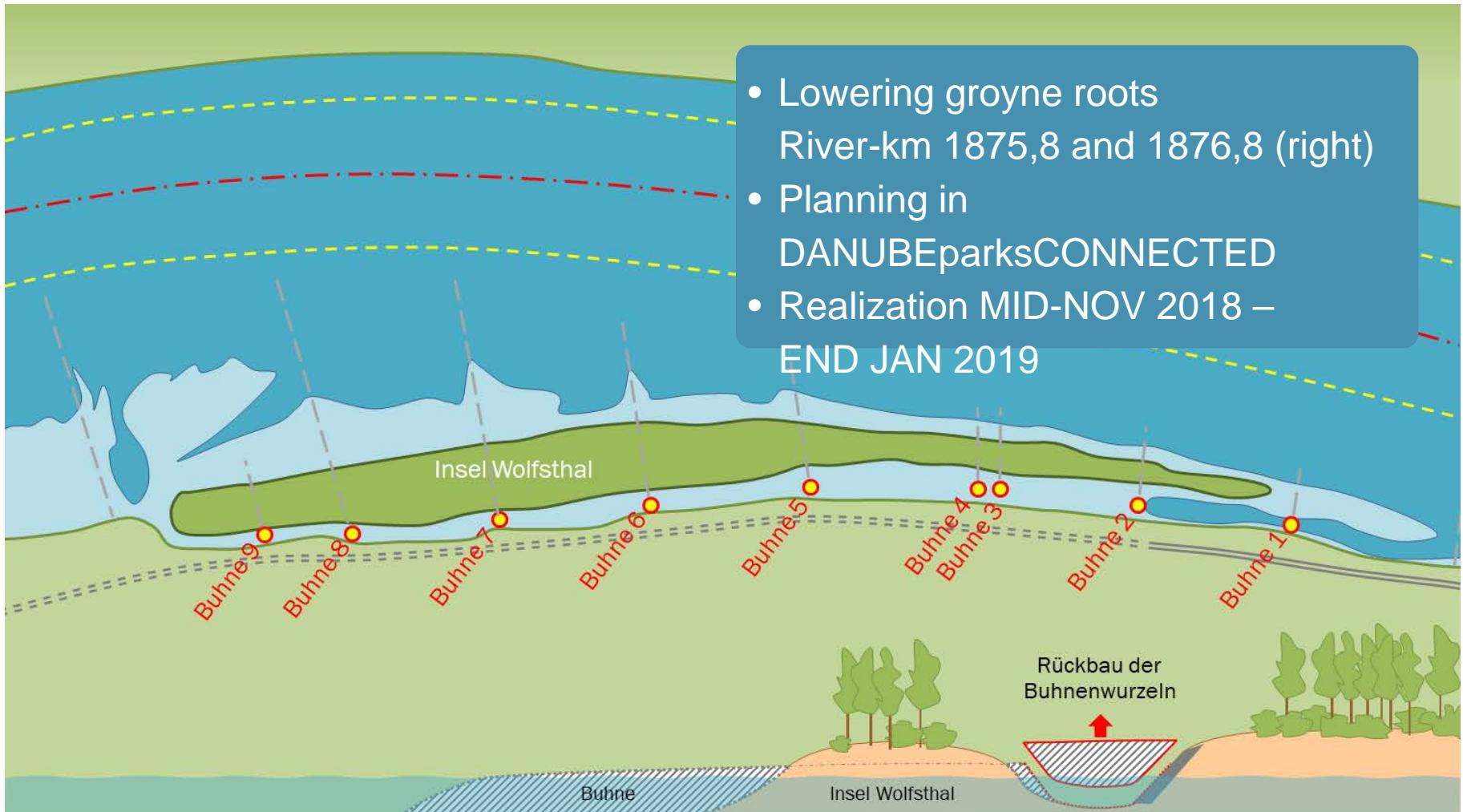
This saves costs and reduces the need for intrusion into the ecosystem.

- construction works: Q2+Q3 2018

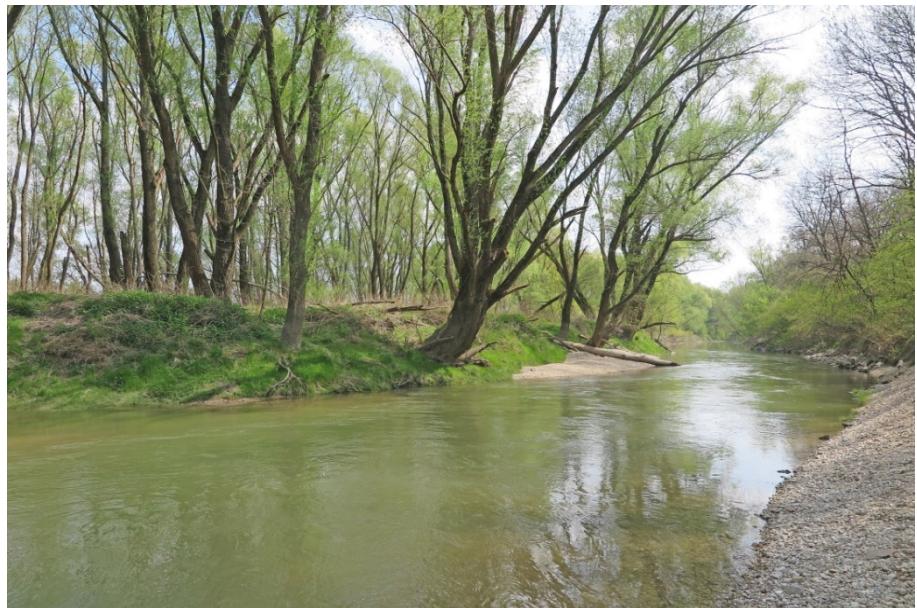


Insel Wolfsthal

viadonau



Island Wolfsthal



Measures Johler Arm

- Bioengineering measures to secure the Hollitzer Allee and wastewater-pressure line
- 130 m long; larch (Lärchen) & robinia (Robinien) wood
- Completion 15.11.2018
- Realization by viadonau
- Participation Dl. Dr. Rauch (Ingenieurbiologie und Landschaftsbau), Nationalpark, WWF

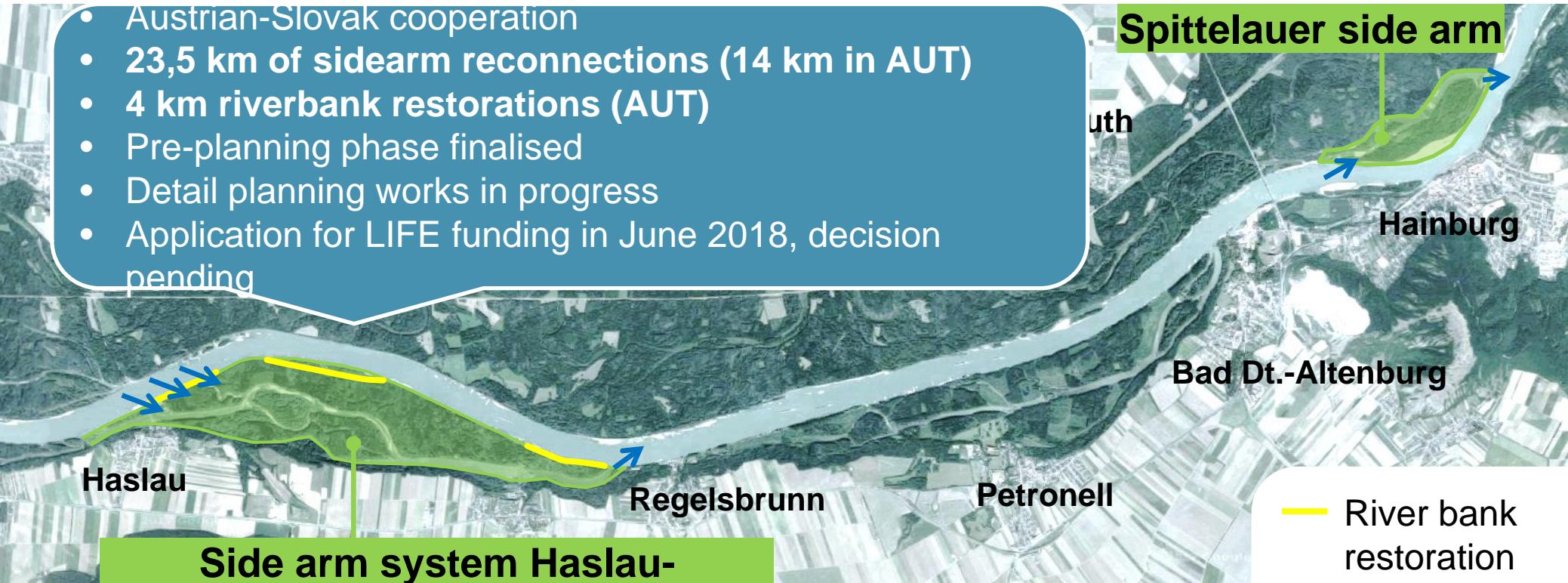


Measures Johler Arm



Dynamic LIFE Lines Danube

- Austrian-Slovak cooperation
- **23,5 km of sidearm reconnections (14 km in AUT)**
- **4 km riverbank restorations (AUT)**
- Pre-planning phase finalised
- Detail planning works in progress
- Application for LIFE funding in June 2018, decision pending



PRIFUK &
NLC

Fischa – Renaturation of the river mouth

River bank restoration
river-km 1904



- Work package of Interreg „Alpine Carpathian River Corridor“ (Lead: Nationalpark Donau-Auen)
- Official Kick-Off 17.05.2018
- Tendering procedure finalised on 09.09.2019
- Construction works winter 2019/2020



Thank you for your attention!

Robert TÖGEL

Head of Team Integrated River Engineering
Project

T +43 50 4321-2612

robert.toegel@viadonau.org

Donau-City-Straße 1, 1220 Vienna, AUSTRIA

www.lebendige-wasserstrasse.at

www.viadonau.org



The Integrated River Engineering Project and its Pilot Projects Bad-Deutsch Altenburg and Witzelsdorf were co-financed by the European Union within the Trans-European Transport Network (TEN-T)

