

Status of the Fairway Rehabilitation and Maintenance Master Plan for the Danube and its navigable tributaries

(dated 23-11-2018)

Key achievements since the endorsement of the Master Plan in 2014

The **Fairway Rehabilitation and Maintenance Master Plan for the Danube and its navigable tributaries** was developed by the EU Danube Region Strategy's Priority Area 1a Steering Group based on the Luxemburg Declaration (2012). It highlights the national needs and mid-term measures required to realise harmonised and stable fairway conditions on the Danube river and its tributaries, in line with the existing international legal framework and the related PA 1a targets.

With the **Ministerial Conclusions signed in Brussels on 3 December 2014**, the vast majority of the Danube Transport ministers adopted the Master Plan and agreed to take the necessary measures foreseen in the plan. **The Transport Ministers reconfirmed their commitment** with the Ministerial Conclusions signed in **Rotterdam on 20 June 2016**.

The European Union's involvement enabled an investment offensive, boosting the realisation of the Master Plan. At present, more than 95 million EUR have been invested through EU co-financed projects within the Connecting Europe Facility, the Operational Programme and the Instrument for Pre-Accession (IPA) between 2014 and 2022. Key implementation projects – **FAIRway Danube and other EU-co-financed initiatives** – were started and constitute a major share of the necessary investments. The results of these efforts are starting to bear fruit on the ground – fairway conditions are improving at several critical sections. Despite the fact that individual countries have recently also raised their budgetary commitment and operational activities, a major share of the accompanying national investment needs until 2020 – as stated in the Master Plan – is still to be secured.

Project initiatives for the implementation of the Master Plan

The Master Plan is realized through a rich portfolio of trans-national and national projects, all of which are listed in the PA 1a project database (<https://www.danube-navigation.eu/projects>).

Transnational projects triggered by the Master Plan

The most significant transnational project is FAIRway Danube. Seven partners from six countries invest 23.5 million EUR between 2015 and 2020 and use the co-funding of Connecting Europe Facility in order to jointly execute the first implementation phase of the Master Plan. Under the lead of the Austrian Ministry for Transport, Innovation and Technology, FAIRway Danube prepares the harmonized rehabilitation of the Danube and its navigable tributaries by means of the following activities:

- Elaborate coordinated national action plans, which constitute the operational planning tools for the implementation of the Master Plan;
- Procure the necessary equipment to carry out the pilots for the collection of basic data on critical locations, harmonizing water level forecasting and identification of the potential of fairway relocation.

Selected national projects

The Master Plan triggered a set of national projects, out of which a selection is presented below:

- **Austria:** The nationally financed Catalogue of Measures contains both procedures of maintenance activities and river engineering optimisation projects. This includes bedload management in order to stabilize surface and ground water levels as well as the optimisation of regulating structures (e.g. groynes) in order to ensure navigability also during low water periods and to reduce operating costs of waterway infrastructure. This optimisation process resulted in less dredging activity, whilst at the same time fairway conditions under low water conditions were improved significantly.
- **Slovakia:** Within the DaReM project, a list of priority work measures in the Hrušov reservoir will be defined and the consistency of the excavated material will be studied. Rehabilitation dredging measures are planned to be executed with the newly purchased equipment. A sustainable solution for the time after the project will be defined.
- **Hungary:** The fairway marking system will be modernised by means of a CEF funded project. Three full-functional marking vessels and three high-speed inspection boats as well as land- and waterside navigation signs will be procured and put into pilot operation.
- **Croatia:** Within the CEF funded project, the EIA study and design documentation for the river Sava are prepared. This includes the delivery of a main design covering works priority measures to be implemented along a critical section of the Sava and to issue construction permits and physical planning. The EIA and appropriate assessments for the sections where the priority works will be carried out.
- **Serbia:** River training and dredging works on critical sectors on the Danube River & Supervision and environmental monitoring of river training and dredging works on critical sectors on the Danube River are financed from the Instrument for Pre-Accession (IPA): River training structures and dredging works will improve the navigation conditions during low water periods at six critical locations along the Serbian sector of the Danube between Backa Palanka and Belgrade.
- **Romania and Bulgaria:** Maintenance dredging on the lower Danube improved the situation especially between Corabia and Bechet in Romania; the quantity of dredged material doubled in Romania between 2014 and 2018. After more than 20 years the Bulgarian waterway administration dredged significant quantities in 2018 in order to ensure appropriate fairway conditions.
- **Bulgaria:** The improvement of the navigational systems and topo-hydrographic measurements on the Danube River was financed from the Operational Programme. Within the project a specialized surveying vessel for hydrographic measurements in shallow and narrow sections was constructed. In addition, multi-functional dredging equipment will be procured, funded from the Operational Programme as well.
- **Romania:** Within the CEF funded project SWIM, smart and integrated waterway management solutions are developed. Following the obtaining of environmental permits from the CEF funded FAST DANUBE project, capital dredging measures will be executed in three critical locations (Calafat, Bechet and Corabia).

Flanking measures of the Master Plan

Investment in locks is equally necessary to achieve a good navigation status, which is prescribed by the TEN-T Regulation (EU) No 1315/2013. Navigational blocks caused by downtimes of locks pose a similar problem to navigation as serious low water periods. Investments in reliable lock systems are therefore important flanking measures:

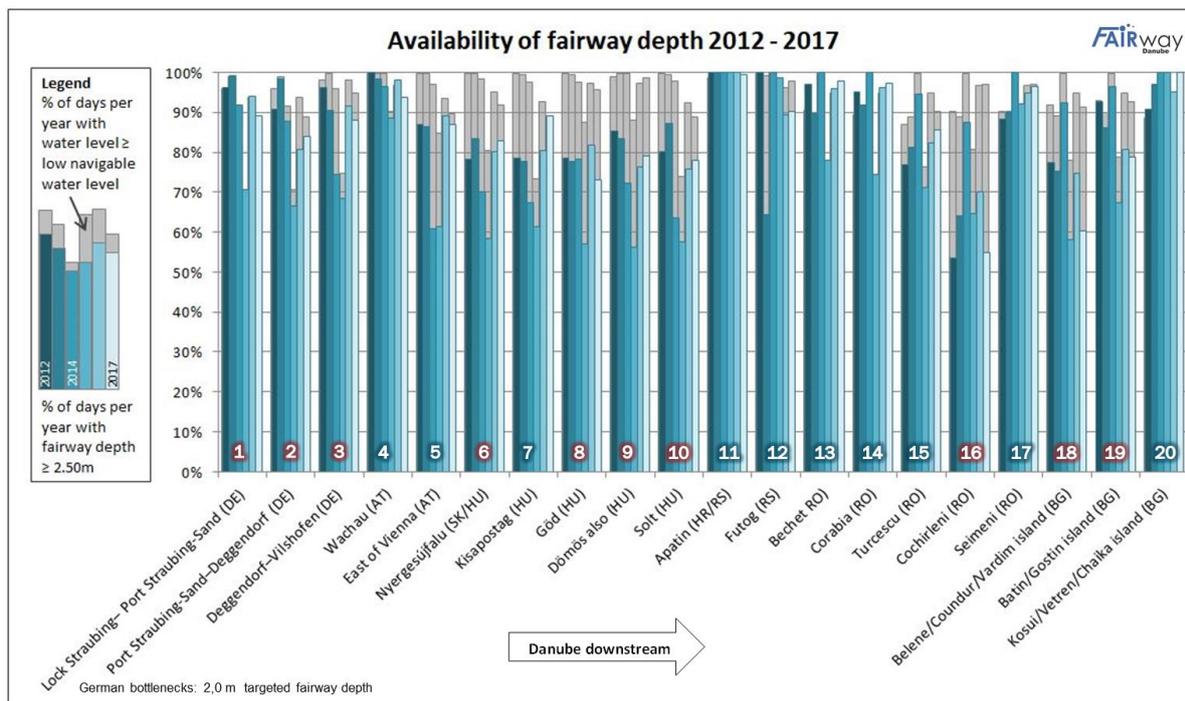
- **Upgrade of Gabčíkovo locks in Slovakia:** The CEF funded upgrade of the Gabčíkovo locks aims at the modernisation of the locks and consequently the provision of continuous and reliable navigation conditions for both of the Gabčíkovo lock chambers and to ensure a safe passage through the locks.
- **Rehabilitation of the Iron Gate I navigational lock in Serbia:** The navigation lock at the Serbian side of the dam at Iron Gate I has been in operation for about 40 years. The structural, mechanical and electric installations, which are necessary for proper lock operations, are in poor condition. The CEF funded project will rehabilitate the Iron Gate I navigational lock.
- **Rehabilitation of locks on the Danube-Black Sea Canal in Romania:** With funding of the Operational Programme, the locks on the Danube – Black Sea Canal and on the Poarta Alba – Midia Navodari Canal are currently rehabilitated to ensure the availability, reliability and safety of navigation in both lock chambers.

Effects of the initiatives on the fairway conditions

The operational investments and activities triggered by the transnational and national projects summarised above shall have positive impacts on the fairway conditions at critical locations along the Danube in the medium term.

The figure below summarises the development of fairway conditions between 2012 and 2017 for different critical locations along the Danube. The figure illustrates the gap between the available water levels and the actual fairway depths on potentially critical fairway sections (in downstream order):

- The blue bars depict the % of days per year on which a fairway depth of 2.50m was offered (determined by waterway management activities).
- The grey bars reflect the % of days on which the water level was above the low navigable water level (determined by natural processes like rainfall, which cannot be changed).



The agreed level of service is to offer 2.50m fairway depth at low navigable water level, with the exception of Germany, where the target value refers to 2.00m fairway depth. The respective targets are reached when the blue bars completely overlap the grey ones.

The sections for which the gap is the largest over the years show the biggest need for maintenance and/or rehabilitation interventions. Highly critical locations in terms of maintenance and rehabilitation can be identified: the Hungarian Danube, the area around Milka/Belene/Coundur (BG) and Cochirleni (RO). The section Straubing -Vilshofen (DE) is also critical in terms of navigation conditions. Formerly critical sections, which show a relative improvement over the last years include for instance East of Vienna (AT), Futog (RS) and Turcescu (RO).

In 2018, fairway conditions were favourable until the end of July, due to maintenance dredging works conducted especially on the Lower Danube. At the end of July the extremely dry summer caused water levels to drop rapidly. Until October 2018 water levels remained below Low Navigable Water Level, resulting in critical fairway conditions.

Summary and conclusion

Significant steps have been taken in the realisation of the Master Plan, especially through EU co-financed investment initiatives (Connecting Europe Facility, Operational Programme and the Instrument for Pre-Accession). In Romania and Bulgaria more than half of the national investment needs declared in the Fairway Rehabilitation and Maintenance Master Plan have been satisfied since 2014. Positive effects from the new equipment and the newly established river engineering structures will become effective as of 2018/2019 and will gradually enhance the fairway conditions. Complementing the new equipment (e.g. purchasing additional surveying vessels) where required and securing sufficient and regular operational budgets at the national level remain to be the key challenges for the next years.

In the mid-term the gradual optimisation or establishment of river engineering structures following an integrated approach will be the main objective.

The Danube Ministers of Transport will discuss the current status and agree on the next steps for the Master Plan on 3 December 2018. The related ministerial conclusions are expected to not only address the next steps concerning the implementation of the Master Plan, but also encourage the joint work on Security (PA 11) for simplifying, harmonising and digitalising border control procedures and the establishment of fleet modernisation programs.