

Abstract

Flood defence concept Danube Straubing-Vilshofen

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The existing flood defence system on the Danube between Straubing and Vilshofen currently only exhibits a safe degree of protection of just HW 30.

In the event of extremely high water, there is a high risk of dykes being breached, coupled with the danger of flooding in many large and smaller places in addition to the A3 federal motorway Regensburg/Passau.

In accordance with the objectives of the regional planning authorities, a flood defence system is to be built for high-value usages, such as residential areas, important transport links and infrastructure installations. The safeguarding of this necessary flood defence system takes the form of a combination of raising existing dykes and building new ones along a new route. The future dyke heights are governed by the height of the HW 100 water level plus a freeboard of 1.0 m.

In this regard, the line of new main dykes is to be routed as far as possible in the immediate vicinity of the areas to be protected. The existing dykes will be preserved either unchanged, or they will be removed. In areas where the existing dykes are to be preserved, extensive flood control spaces remain, which flood in instances of extremely high water as in the past by water overflowing these dykes.

In areas where the existing dykes are to be removed, setting the dykes back creates new areas of foreland which are flooded on a regular basis. These new foreland areas significantly enlarge the drainage cross-sections at high water, thereby effectively lowering the high water levels. At the same time, these foreland areas create new flood zones, which are structured in accordance with technical nature conservation aspects. In these flood zones, agricultural crop land is transformed into grassland, and new flood plain forest areas, succession areas, oxbow channels and backwaters are created.

Improving the flood defence system helps to preserve existing natural flood plains in their function as flood control spaces and new regularly flooding foreland areas are created. Altogether, this allows ecologically valuable fluvial plains to be further developed and sustainably preserved.