

FACTSHEET RISK REDUCTION MEASURES

Renewing of a pipe and inlet structure - Kirchsteigbachtal

Where was it implemented?

City of Meissen, Saxony, Germany

Fields of action

Watercourses

Related to measure from the catalogue of measures

Constructions for sediment and debris retention (sediment capture ponds, wooden rakes, trash racks)

Area characterisation

Area type: urban, settlement area

Landscape type: hilly



Renewed pipe and inlet rake at the lower part of the stream course
Source: Sabine Scharfe, LfULG

Problem

On 27 May 2014, the district Meissen-Triebischtal was affected by a heavy rain event of 40-60 l/m² precipitation per hour in the catchment area of the Triebisch river and its tributaries. Resulting floodings and mud flows on and from farmlands passed the forested valleys, reached the settlement area of Triebischtal and caused damages of 6 mio. Euro. With entry into the settlement area, the stream is piped, the intake became clogged and could not catch the water masses, which then flowed off as a flash flood.

Description and aim

At the lower end of the brook "Kirchsteigbach", the following measures were implemented:

- destroyed stream pipe was enlarged (from 1.00 m to 1.40 m in diameter) and replaced by a new, reinforced concrete pipe according to DN 1400
- inlet was adapted to the enlarged pipeline and equipped with an → rake for for sediment and debris retention
- the destroyed street got asphalted, a pavement was built and installation surfaces for clearing out and upkeeping close to the inlet structure were established

Effect of measure

The enlarged pipe enhances runoff. Discharge capacity was almost doubled. The inlet rake prevents from pipe blockage due to deposited debris. The enlarged pipe is no longer a narrow point for controlled water runoff in case of heavy rain events in the future.

Description of implementation

Costs: 971.000 €, 90 % funded by road and bridge construction projects of municipal building authorities (RL-KStB, 24 August 2010)

Effect horizon: long-term

Implementation: 09/2014-07/2015

Initiator / responsible: City of Meissen

Involved stakeholders: building department, lower nature conservation authority, lower water authority, regional authority for roadmaking and traffic, municipal utility "Meissener Stadtwerke GmbH"

Lessons-learned	
<p>Main success factor: Yet after the flood in 2013 which already caused damages in this area, the City of Meissen decided on the implementation of several measures, which in turn eased the realisation of further measures after the total destruction in 2014.</p>	<p>Main challenge: Since the measure is located in a special area of conservation (SAC), constraints by the nature protection authority were expected. The coordination between new plannings and objections of affected residents turned out to be another challenge.</p>
<p>Synergies / beneficial aspects: Due to necessary construction projects in the underground, the street got renewed and is now in better condition than before. Facilities for natural gas, electricity, street lighting, wastewater and drinking water destroyed by the damage event have been renewed additionally.</p>	<p>Conflicts / constraints: Fortunately, the measure was a substitution instead of a completely new construction and conflicts did not occur.</p>
Key message to others starting with a similar task	Contact
<p>Such massive constructions to improve discharge are especially reasonable in immediately surrounding settlement areas to protect and reduce risk in lower settlement areas. Those measures should be accompanied by other retention measures in the upper area of the catchment.</p>	<p>City of Meissen, Municipal Building Office, Markt 1, 01662 Meissen E-Mail: stadtbauamt@stadt-meissen.de</p>
<p>Further information (in German)</p>	<p>Steffen Wackwitz (2015): Das Starkniederschlagsereignis in Meissen im Sommer 2014, in: WasserWirtschaft 9/2015, URL: https://www.springerprofessional.de/das-starkniederschlagsereignis-in-Meissen-im-sommer-2014/6110106, 13.11.2019.</p>