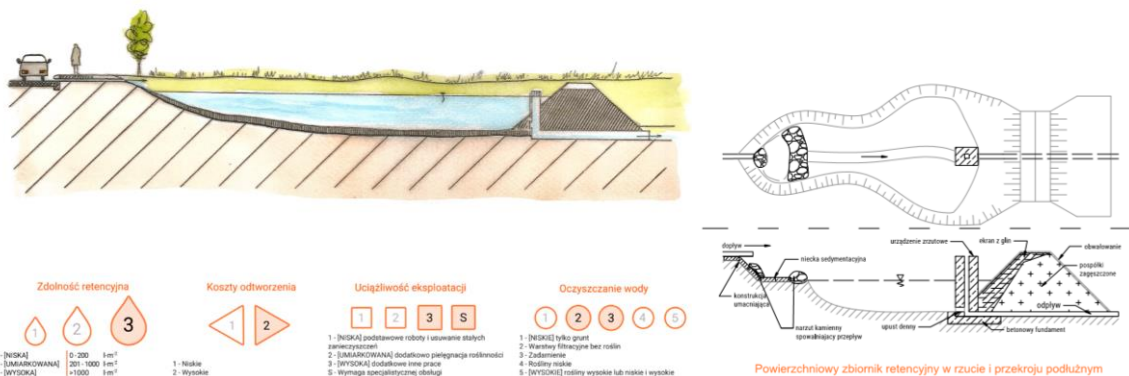


4.2.15 Reservoirs

Retention type: Reservoirs

R/13 – POWIERZCHNIOWY ZBIORNIK RETENCYJNY



R/13 – POW. ZBIORNIK RETENCYJNY

Figure: 44. Reservoirs (source: Lejcuś K. at all "Katalog dobrych praktyk zasady zrównoważonego gospodarowania wodami opadowymi pochodzącymi z nawierzchni pasów drogowych. Wrocław 2017")



Figure 45. Reservoirs (source:

<https://architektura.um.warszawa.pl/sites/default/files/files/04%202017%2001%2019%20Ma%C5%82a%20Retencja%20w%20LP.pdf>)



Figure 46. Reservoirs (source: Majewicz R. Wpływ działań retencyjnych w Lasach Państwowych na obszary rolnicze i zurbanizowane, dobre przykłady, Wrocław 14.12.2016)

Land use	Semi Urban/Semi-rural/Rural		
Catchment area	0-10 km ²		
Dimensions	The maximum size of the pond should be based on the catchment area, which is 10 km ² . It requires the 3-7% percent of the upstream catchment size.		
Location	Anywhere at semi urban/semi-rural/rural catchments, where the terrain and land use is suitable. Reservoirs are typically sited at a lowest point in the catchment where it can receive drainage by gravity		
Target group	Municipalities, Farmers		
Effects of measure		Size of effect	Description
	Slow/Store runoff	HIGH	Reservoirs reduce runoff peak through storage. These facilities retain rainwater coming from surface runoff. They must be sized to cope with the 100 years flood volume. Usually these reservoirs have a certain amount of water permanently, but there is extra capacity in case of floodings.
	Increase Evapotranspiration	LOW	
	Increase Infiltration	HIGH	
	Increase soil water retention	HIGH	
	Reduce pollutant sources	HIGH	
	Reduce erosion	LOW	

	Achieve Good Surface Water Status	YES	
Maintenance requirements	Ensuring storage capacity. Remove of the sediment, and debris occasionally after floods. Cutting the grass, and shrubs every year.		

Polish approach comments dedicated especially to rural and forest areas:

In document - Good practices in the implementation of small retention facilities in the mountains [Dobre praktyki ... 2010] are advices on creating reservoirs with more emphasis on the indication of important environmental information (because this document is dedicated to rural areas → forest). There are comments that small water reservoirs are characterized by the following parameters:

- water damming up to 1.5 m
- surface up to 10 ha,
- flow up to 2.0 m³/s,
- for permanent retention reservoirs, the depth should exceed 1.5 m in the deepest places (conditions enabling the wintering of fish and amphibians).

The shoreline of the reservoir should be as varied and irregular as possible with respect to nature:

- bays,
- headlands,
- varied slope of slopes (1: 1.5-1: 10).

It is also recommended to create shallows and islands (among others for amphibians, patches), as well as large areas that will be flooded or uncovered as water levels change.