Flood Alleviation Scheme

RHONDDA CYNON TAF

Glenboi Flood Alleviation Scheme

Flood Alleviation Scheme delivered to reduce the risk of ordinary watercourse and surface water flooding to 24 residential properties in the Mountain Ash area.

Scheme Summary	
Strategic Flood Risk Area	Mid Cynon 2
Location	Glenboi, Mountain Ash
Properties benefiting	24 residential properties
Type of scheme	Pumping Station
Cost	£1,406,000
Contractor	Envolve Infrastructure Ltd & Hydrock
Status	Completed
Scheme Completion Date	September 2023
Funding Source	Welsh Government FCERM Capital Grant

Image of Glenboi Pumping Station under construction.

Scheme Background

The community of Glenboi falls within the Aberwmboi community area which is noted as the 130th most at risk community for ordinary watercourse and surface water flooding in Wales according to the Communities at Risk Register (CaRR) which was developed by Natural Resources Wales (NRW) to provide an objective means of identifying risk and prioritising flood risk management activities at a Wales-wide, community level.

The Glenboi area has been subject to several flooding events in recent years, the most significant incident occurred on the 15th and 16th February 2020 following Storm Dennis, where 9 properties internally flooded with a further 15 properties experiencing external flooding. This flooding event was the 4th event following Storm Bronagh & Callum which occurred during 2018 which identified the same level of internal flooding.

The primary source of flooding at Glenboi is attributed to the network of ordinary watercourses to the south of the village which are heavily culverted beneath Fernhill and Glenboi and discharge into the River Cynon north of Glenboi. Exceedance flows from the culverted watercourses drain towards the low point at Glenboi, resulting in surface water accumulation and the over capacitation of the existing pumping station.

Scheme Description

The Glenboi flood alleviation scheme aims to mitigate flood risk by replacing the existing highway pumping station with an **enhanced structure** to accommodate overland flows from surface water and ordinary watercourses which enter into the low point within Glenboi highway. The aim of the scheme is to provide a more efficient and higher capacity pumping system to **reduce the risk of flooding** to adjacent housing at Glenboi, whilst also **reducing the peak flows** to the downstream existing culvert which falls within an area of high flood risk.

The scheme involved decommissioning and enhancing the existing highway pumping station to **improve performance** and **increase the capacity** of the pumping station. A new rising main was installed across Aberdare Road, which is a pipe that carries wastewater or stormwater from a lower to higher elevation, helping **manage water flow** across different areas and prevent flooding.

The highway drainage infrastructure within the Glenboi highway was **upgraded to enhance its efficiency**, and **overland flow interception** drainage was installed within the highway, **designed to capture, and redirect** surface water runoff, **reducing the accumulation** of surface water on the road surface.

Improvements were made to the pumping station compound and site access, making the site **more accessible for maintenance** and **improving the safety and efficiency** of the station's operation. The pumping station's outfall headwall was also upgraded, **improving the control of water discharge**, and **reducing erosion** and **potential damage** to the infrastructure.

Finally, a bioretention basin was installed as part of the scheme to **manage surface water**. These landscaped depressions or shallow basins are **used to slow and treat** on-site surface water runoff, **improving water quality** by filtering pollutants and **contributing to biodiversity** of the area.

Scheme Benefits

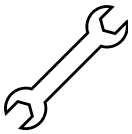
24 **properties at reduce flood risk** and **reduce the impact of isolation for a further 491** residential properties

Provides a **Q100 + 40% climate change Standard of Protection**

Increased the capacity of the Pumping Station to manage the flow of water and improve resilience to the community.

Enhanced the Highway Drainage within Glenboi to reduce the risk of surface water flooding on the highway.

Natural Flood Management techniques utilised with the installation of a bioretention basin.



Improved access to the pumping station to enhance the operation of the site and enable continued maintenance.