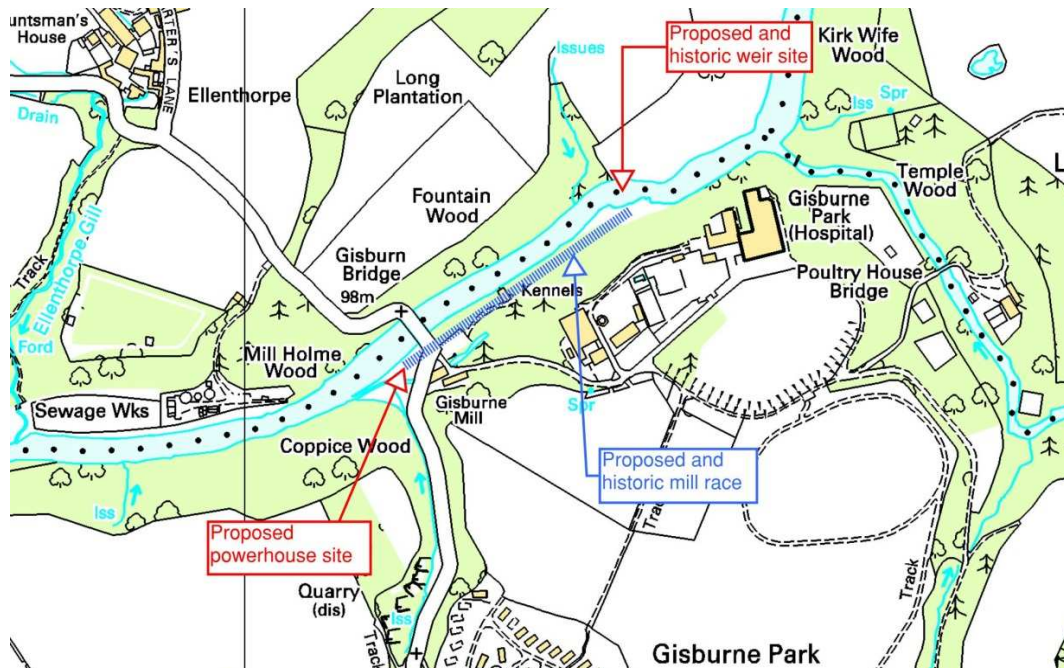


Site 30: Ribblesdale Park, Gisburn

Site Assessment

Figure 1 Map showing general layout



Gisburne Corn Mill is shown on the first OS edition 1:10,560 map (which means it is pre-1853), and is part of the original Gisburne Park Estate. It seems to have originally been fed by a leat running from a weir on the River Ribble to the east, but the weir has been washed away and only a fragment of the head and tail race now survive. It is proposed that the best scheme here would be to rebuild the historic scheme. This would involve a new weir at the approximate site of the old one, and a mill race running downstream alongside the river and under the bridge to a turbine in the garden of Gisburne Mill.



Figure 2 The probable location of the weir, now washed away



Figure 3 The leat is overgrown in places

Catchment Analysis

Intake Grid Reference	382420, 449750
Powerhouse Grid Reference	382110, 449550
Catchment Area	277.0 km ²
Annual Rainfall	1369 mm

Hydropower Analysis

Gross Head [m]	1.2
Net Head [m]	1.14
Design Flow [m ³ /s]	3.2 m ³ /s
Rated Capacity [kW]	27 kW
Average Annual Energy Output [MWh]	175 MWh
Average annual Carbon Dioxide offset	400 tonnes

Conclusions

The total budget cost for the whole scheme is likely to be nearly **£1M**. The total value of the generated electricity would be 20.8 p/kWh, giving an average annual value of approximately **£36,000**. The simple payback is at least **25 years**.

This site theoretically provides good hydro potential, with a significant and consistent amount of flow, and historically there has been power generated here from water. There is historical benefit to the development of a scheme here. However, there are likely to be many modern obstacles to re-building this scheme. The re-building of a weir on this size of watercourse would require the provision of significant mitigation measures, including a well-designed fish pass. There would be a potential increase in flood risk to upstream land with the installation of the weir here, and this would need to be thoroughly investigated. The cost and logistics of constructing a weir in this size of watercourse with modern and vastly improved health and safety regulations are significant. Politically and environmentally this scheme is likely to come under intense scrutiny as the UK is committed to reducing the number of engineered structures in rivers through the European Water Framework Directive.

Further Information

This site report is produced by Inter Hydro Technology on behalf of Forest of Bowland AONB, and funded by a partnership including Lancashire County Council, Lancaster & District Local Strategic Partnership, Pendle Borough Council and Ribble Valley Local Strategic Partnership.

This site report should be read in conjunction with the rest of the Forest of Bowland AONB Hydro Feasibility Study which can be downloaded at <http://www.forestofbowland.com/climatechange#hydro>