

OPTIONS FOR MARKET CAR PARK RIVER REDESIGN

From Frome River Strategy

By Bob Sargent

5.1 Market Car park

The Market carpark is the centre of town and the area most visitors will stop and gain their first impressions of Frome. At present it is an expanse of tarmac with the river channeled round it in what is effectively a reinforced trough (Figure 2). The potential for improving this area has been well recognized and schemes have been devised in the past to do so.



Figure 2 The river from the Market car park, showing the Chateau Gontier overflow in operation

Improvement of this area should aim to:

- Provide an attractive setting, with sympathetic planting and softening of the current hard channel and landscaping
- Allow easier access for the public to reach and enjoy the river, providing seating, potential picnic spaces etc
- Improve biodiversity and channel form
- Not compromise the flood conveyance properties of the current channel, and enhance them if possible
- Provide for erosion, particularly around the outside of the channel bend adjacent to Chateau Gontier walk
- Manage the current storm water overflow which enters below Chateau Gontier walk
- Provide a relatively low maintenance area to ensure a good appearance can be maintained in the future.

Development of an attractive waterside area in the town centre is heavily constrained. The two existing footbridges restrict the space available for channel widening and the water level is determined by Welshmill Weir, and hence dependent on any future changes to this structure. The channel sides are quite steep (Figure 3), making access for both maintenance and members of the public difficult. Opening out of the channel is likely to use car parking spaces and hence remove revenue generation, whilst large scale removal of (potentially contaminated) spoil with no obvious nearby disposal site will be expensive.

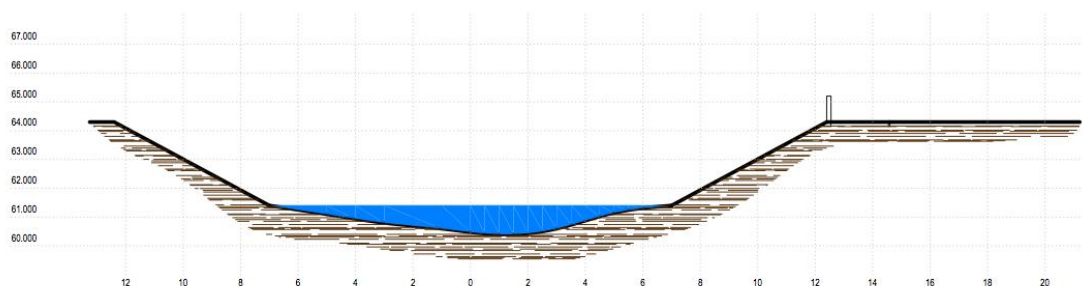


Figure 3 Cross section through existing channel between the two pedestrian bridges

For these reasons several options are considered to cover a range of potential funding situations. These all assume the river level will remain as at present and Welshmill Weir is not removed. The options also assume that the Chateau Gontier bank remains essentially unchanged. Should the Westway shopping area be redeveloped then some modification of this bank could also occur, and a new shopping area could take better advantage of its waterfront location.

Option 1: Minor Improvements

The town centre area could be improved by new planting and a changed maintenance regime. This could include the following elements:

- Tree and/or shrub planting between the existing pathway on the right bank (opposite Chateau Gontier Walk) and the car park
- Seating between the car park and the river
- Planting of aquatic and emergent flora in the river channel – in gabion baskets anchored to the channel structure to ensure stability in high flows.

These measures would achieve softening of the river channel in the key central section of the river channel at moderate costs. Planting along the river footpath could be integrated with wider measures to improve the car park as a whole, which could include a greening and softening of the current hard surface and replacement of the tarmac with higher quality materials (Figure 4).

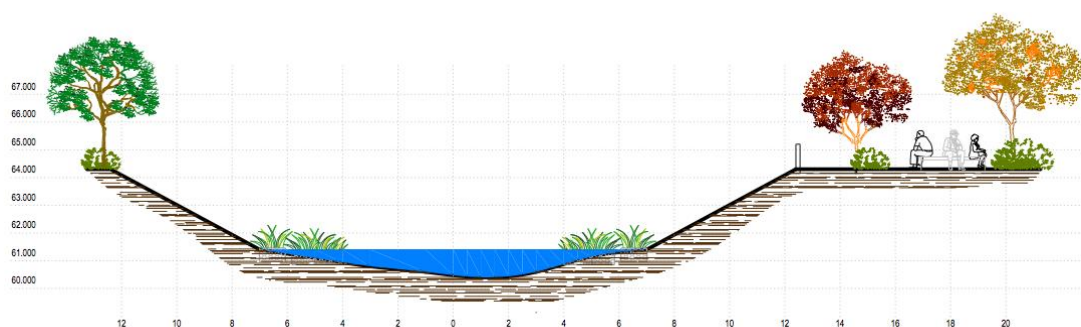


Figure 4 Option 1 - greening and softening the existing channel

Maintenance of the river channel itself should include mowing in spring and regularly through the summer to weaken and discourage growth of nettles and brambles. Planting of the higher parts of the river channel could also be considered subject to a survey of the channel structure and giving consideration to maintenance access requirements.

Planting in the channel and installation of gabion planters should be designed in consultation with the Environment Agency and assessed for their impact on flood level. These are expected to be minor if the proposals are relatively modest and focused on the car park side, which is the inside bend of the channel and away from the main current. Planting on the outside of the bend could be beneficial in reducing erosion of the bank, and provide some protection for the under-cut bank of the channel at this point.

Option 2 Channel Widening

The above planting and softening proposals would be increasingly effective if the channel were to be widened to give more room for improvement works. This would result in the right bank being considerable less steep than at present, and would reproduce a more natural river bend, where the outside bend is steeper than the inside due to natural patterns of erosion and deposition.

Making the right bank more shallow would provide room for access and planting at lower level and would work well with the town centre low level footpath (proposal 4.1) which could run within a platform in the channel slope. This would also improve maintenance access for the proposed planting at the top of the channel side (Figure 5).

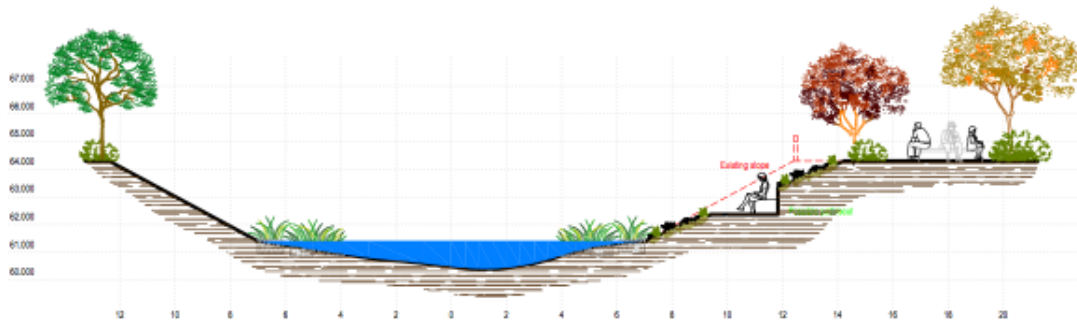


Figure 5 Option 2 - widening of the channel slope and low level footpath

The remodeled channel slope could reduce the current slope of 30-35 degrees to an overall slope of 20 degrees with a bench set partway up, above most flood flows, for seating and the proposed low level footpath. An option to provide a lower level platform in the channel, providing shallow pools in normal summer flow conditions, could also be considered. This has been proposed by the Environment Agency as a means to encourage biodiversity, and would also help with planting of emergent aquatic vegetation and general softening of the hard channel.

A similar scheme has been built in Calne, where a post-industrial section of river has been opened up and public access provided. This site is illustrated in Figure 6 below, shown shortly after construction, and has proved a popular recreational spot in the centre of the town.



Figure 6 Remodeled channel in Calne

The remodeling would be limited to between the two pedestrian bridges, with transition to the existing channel slope at the bridge abutments. It would increase channel volume and therefore not reduce flood flow capacity.

The excavations needed to achieve this option would be relatively modest and provide most of the benefits of the more extensive option 4 below, but at lower

cost. Using survey data collected for this study, an excavation volume of 585 m³ would be required to achieve a 20 degree average slope between the two pedestrian bridges.

The risk of encountering contaminated land is also reduced with this option compared to extensive remodeling as only relatively shallow infill would be removed. There is no information at present on contamination levels, if any, in the infill. From old maps it appears this area has only ever been a market area and not subject to industrialization so the likelihood of contamination is low. Suitable samples should be taken to assess this possibility before excavations take place.

Option 3 An Urban Waterfront

This option would aim to celebrate the urban nature of this section of the river, rather than soften it. Central Frome is densely urbanized as befits a working town with medieval roots, so an urban river section would be in keeping with the essential qualities of the town. A good quality urban section in the car park area would work well with the surroundings, particularly the modern pedestrian crossings, reflect the history of Frome and make a striking contrast with the rural nature of the rest of the river corridor.

Improved amenity and appearance could still be achieved though, by careful design and use of high quality materials. Such approaches are quite common in mainland Europe (Figure 7) where urbanism does not have so many undesirable connotations, and high quality urban design is more common.



Figure 7 Hard landscaping in the centre of Hagan, Germany

The main element of this option is to replace the existing hard channel with a new one in superior materials. These should be natural and low maintenance, using stone (particularly limestone blocks to reflect local resources), good quality timber and stainless steel. Use of concrete should be minimised and Tarmac banned.

The new channel could be stepped to provide easy access to the river, and effectively provide continuous seating along the river channel (Figure 8).

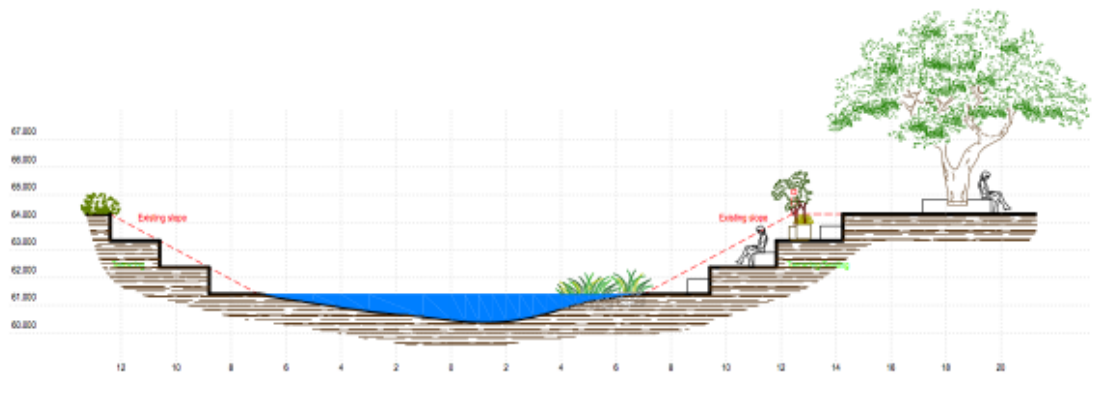


Figure 8 Option 3 - a high quality urban waterfront

Some planting could be incorporated in constructed planters and particularly striking species selected. The incorporation of public art in the design (or even play, Figure 9) would reflect the creative side of Frome, and a competition to design and install it would create public interest and promote Frome in the wider artistic community.



Figure 9 Play encourages inter-action with the river

The volume of excavation needed for this option would be similar to option 2, with an overall slope of 20 degrees. To be completely successful the left, Chateau Gontier bank would also need to be rebuilt using similar materials.

If well-executed an urban waterfront could be a signature site for Frome – a statement of its urban, creative orientation and optimism for the future. The key is to have high design and construction values and use good materials. This means the works are not cheap, but the costs of excavation would be minimised and subsequent maintenance costs could be reduced. However they would not be zero.

Option 4 Extensive Remodeling

A major re-modeling of the car park area has been suggested in the past to improve the town centre as a whole. This involves removal of a large quantity of material in the car park, estimated at 3000 m³, between the two pedestrian bridges to provide a lower level river area filling the sector of bend between the two pedestrian bridges. The larger area created provides an amphitheatre-shaped mini-park, ample room for planting and easy ramped access for disabled visitors.

The original design for this approach is shown in Figure 10 as developed by Katy Duke for Mendip District Council. Further embellishments could be added to integrate with any proposals to re-develop the wider car park and the town centre as a whole. It could also incorporate the shallow channel section suggested by the Environment Agency and aquatic planting to enhance biodiversity.

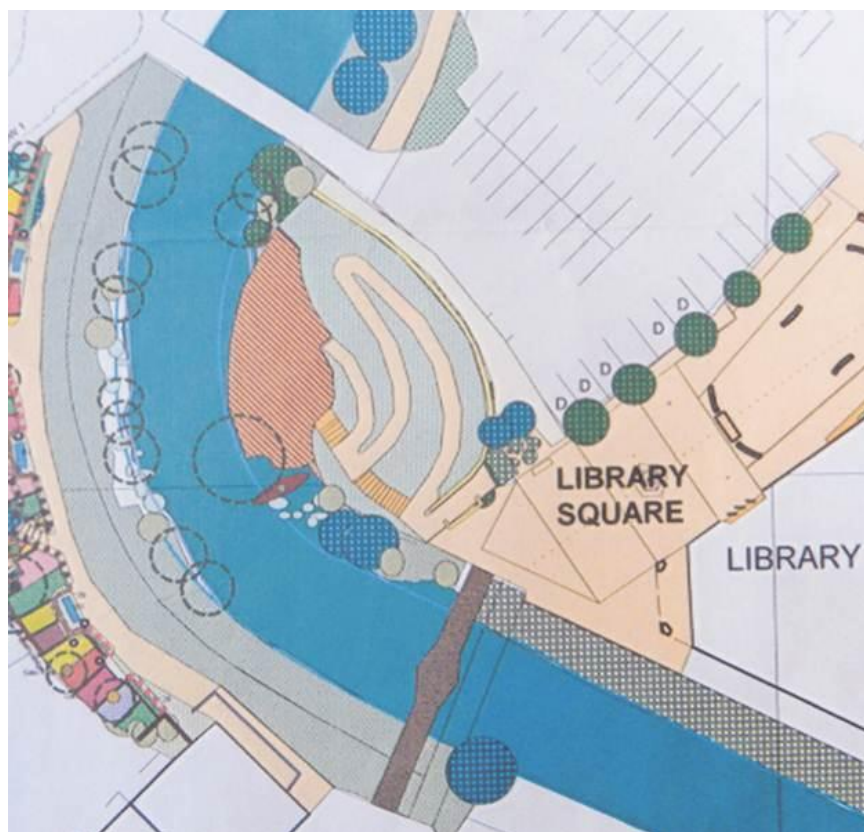


Figure 10 An extensive remodeling option for the town centre

This option provides ample opportunity to enjoy the river with installed seating and easy access to the water. It incorporates a much shallower slope on the left hand bank (Figure 11) and therefore requires the excavation and disposal of a larger quantity of material, some of which could be contaminated, plus the loss of 11 car parking spaces.

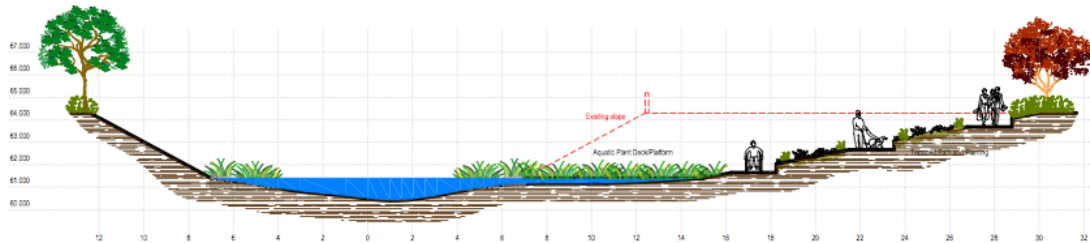


Figure 11 Option 4 - Large scale redevelopment of the left-hand bank

The overall cost of this option is therefore higher than the others but it could provide an exciting space in the centre of the town and have a much larger impact than the other options.