

## Appendix 3 – Invergowrie NFM Study – Short List of Potential Options

Table 1: Option Appraisal Summary Table

	Option 1	Option 2	Option 3	Option 4	Option 5
	In channel measures to attenuate flows along the upper Fowlis Burn including riparian planting, leaky dams, and woodland management in Fowlis Den	Catchment wide measures including reforestation, distributed surface water storage, and sustainable land management practices	Structural measures including de-culverting sections of the Fowlis Burn, incorporating a bypass channel close to Fowlis, and removing embankments to reconnect the Fowlis Burn with its floodplain	Direct Flood Defences within Invergowrie including walls upstream and downstream of Main Street and Burnside Road	Non-structural measures such as more frequent and extensive inspection visits of structures in the upper catchment; the promotion of sustainable land management (such as enhanced flood water storage or woodland planting), property buy-back, awareness raising, and updates to local planning policies to consider flood plain management
<b>Properties protected in 1 in 200 year flood</b>	0	12	12	16	0*
<b>Initial Capital Cost</b>	£425,600	£2,032,240	£2,340,800	£2,128,000	£4,583,240
<b>Benefit/Cost Ratio</b>	0.00	0.21	0.30	0.08	0.20
<b>Assessment of Option</b>	<p>Option doesn't fully meet study objectives.</p> <p>Potential for the installation of leaky dams and riparian planting.</p> <p>Small ecological benefit noted, but unlikely to improve watercourse condition.</p> <p>Very limited benefit in terms of reducing flood risk.</p>	<p>Option doesn't fully meet study objectives.</p> <p>Modelling indicates that catchment wide measures would have a limited benefit in terms of reducing flood risk.</p> <p>Significant flood storage volume required to reduce flows reaching Invergowrie; this would be extremely large and benefit/cost would be low.</p> <p>Further issues noted with land ownership and maintenance.</p>	<p>Option doesn't fully meet study objectives.</p> <p>Measures are costly and would require extensive work on the watercourses.</p> <p>Option has a limited benefit in terms of reducing flood risk.</p>	<p>Option doesn't fully meet study objectives.</p> <p>Measures could potentially lead to a deterioration in the environmental status of the watercourse.</p> <p>Works would be intrusive and require substantial construction and land resources.</p> <p>Option has a limited benefit in terms of reducing flood risk.</p>	<p>Option doesn't fully meet study objectives.</p> <p>Option includes a mix of measures; the main benefit would be derived from buying (*not protecting) 28 properties &amp; re-naturalising flood plains over the longer term. Landownership would be a major constraint.</p> <p>Benefits would be realised over long term; requiring long term investment.</p> <p>Would provide wider benefits from education and engagement.</p>
	<b>Option 1 is not recommended</b>	<b>Option 2 is not recommended</b>	<b>Option 3 is not recommended</b>	<b>Option 4 is not recommended</b>	<b>Option 5 is not recommended</b>