

## The Water Environment (Controlled Activities) (Scotland) Regulations 2011

# Licence Application Form E

## To be completed for Engineering Activities

#### The Data Protection Act 1998

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The information provided will be processed by the Scottish Environment Protection Agency to deal with your application, to monitor compliance with the licence/permit/registration conditions, to process renewals, and for maintaining the relevant public register(s).

We may also process and/or disclose it in connection with the following:

- offering/providing you with our literature/services relating to environmental affairs
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, Local Authorities, Emergency Services, Scottish Executive) on environmental issues
- carrying out statistical analysis, research and development on environmentalissues
- providing public register information to enquirers
- $\bullet \quad \text{investigating possible breaches of environmental law and taking any resulting action} \\$
- preventing breaches of environmental law
- assessing customer service satisfaction and improving our service.

We may pass it on to our agents/representatives to do these things on our behalf.

You should ensure that any persons named on this form are informed of the contents of this Data Protection Notice

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## 1: ASSOCIATED or DEPENDENT ENGINEERING ACTIVITIES (Please complete for all applications)

List all engineering activities which are being applied for under this application. Enter the number of each activity at each level of authorisation. Associated activities applied for under a single authorisation will be subject to reduced charges. Activities upon which another controlled activity depends (e.g. bed reinforcement associated with a bridge) are classed as dependent engineering activities and will not be subject to charges. All dependent and associated activities should be included below.

Activity Category	Activity Type	Registration	Simple Licence	Complex Liceno
RIVER and LOCH	Bridges	1		
CROSSINGS See Sheet E1	Bridging culverts			
	Causeways			
	Fords			
	Pipeline/cable crossings			
	Removal of crossings			
IN-STREAM or LOCH STRUCTURES	Jetties, platforms, marinas			
See Sheet E2	Boat slips			
	Boulder placements			
	Croys, groynes, flow deflectors			
	Bed reinforcement			
	Removal of structures			
CHANNEL MODIFICATIONS	Straightening and/or resectioning			
See Sheet E3	Realignment			
	Culverting for land gain			
	Removal of land gain culvert			
	Flood by-pass channel			
SEDIMENT MANAGEMENT	Sediment removal (<50% channel width affected)			
See Sheet E4	Dredging (>50% channel width affected)			
	Sediment introduction			
	Sediment manipulation			
BANK MODIFICATIONS	Green bank protection (soft)		2	
See Sheet E5	Grey bank protection (hard)			1
	Bank re-profiling			
	Set-back reinforcement			
	Embankments			
	Floodwalls		3	3
	Removal of bank modifications		1	
OTHER ENGINEERING ACTIVITIES See Sheet E6	Please see guidance for definition of other activities			

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#### 2: ENGINEERING ACTIVITIES - DETAILS

The following information is required for ALL activities listed in Section 1. If there is more than one engineering activity being applied for under this application, and the information in the relevant sections below varies between each activity, then the relevant sections must be copied and completed separately for each activity.

#### 2.1 Best Practice

SEPA promotes general good practice for any works; however this specific test will only apply to licensed activities:

- which cause a failure of an environmental standard
- proposed on a water body already below Good Status or close to the lower class boundary.

This table provides evidence that you have considered Best Practice for the proposed activity. Guidance on Best Practice for a range of activities is available from your local SEPA office.

#### 2.1.1 Justification for Activity.

Please indicate the reason the proposed activity is being undertaken. Also indicate where relevant the underlying nature or cause of the problem being addressed.

Comrie has a history of flooding associated with the River Lednock, the Water of Ruchill and the River Earn. Flood waters from these watercourses have historically resulted in flood damage.

The Comrie FPS will provide protection against a 1/200 year flood event + freeboard.

The activities within this document are required as part of the Comrie Flood Protection Scheme (FPS). The objectives of the FPS will be addressed using a design based on traditional Walls and Embankments. This will comprise:

### Flood walls and embankments - Water of Ruchill, River Earn and River

Proposed newflood walls and embankments will be constructed along the banks of the Water of Ruchill, River Earn and River Lednock. These structures are required as part of the Flood Protection Scheme. They will provide flood protection to properties on the dry side of the walls/embankments.

#### Grey bank protection - River Earn right bank (Strowan Road)

This work is required to provide the steep river bank of the River Earn with toe stability, and to protect the slope protection from erosion. The Design flood event created velocities that would put this slope at risk of erosion. This slope would have been at risk of destabilising which would have in turn caused the Flood Protection walls to be destabilised.

#### Root Wad Revetment - Water of Ruchill right bank

The activity is being undertaken on a section of bank on the Water of Ruchill to maintain public access along a footpath and prevent ongoing erosion from impacting private properties. Furthermore, the proposed works will reduce the number of trees that fall into the river due to ongoing erosion, reducing the demand on the council to remove them.

The ongoing erosion is caused by historic bank protection measures that were not fit for purpose. The location of the existing grey bank protection transfers the energy of flow towards the bank further downstream. As a result, significant erosion has taken place.

The grey bank protection is going to be removed and replaced with rootwad revetments. The rootwads will be placed strategically along the bank at locations informed by modelling to alleviate the erosional pressures of the high energy system.

#### Green bank protection - River Earn north bank

This is for landscaping purposes.

#### River Lednock - Temporary Bridge

This activity will be the installation of a temporary bridge across the River Lednock at approximately NN 77617 22055. The Bridge will be 6m wide, and this results in 12m of river bank affected. The River Lednock at this location is >5m in width. There will be no construction on the river bed. This temporary bridge is required to divert construction traffic away from the narrow residential lanes off the A85 Commercial Lane, Ancaster Lane, and Manse Lane. It is anticipated this activity will require a Registration (Registration form provided in application pack, and form E1 completed within this document).

Please continue on separate sheet if required.

Document name/reference:

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#### 2.1.2 Alternative Approaches.

Please detail all the alternative approaches that have been considered to address the need identified in Section 2.1.1 above.

Studies have been undertaken to investigate potential flood alleviation options which could be implemented at Comrie. Flood prevention works/options were required to achieve the following objectives:

- Reduce economic damages to residential and non-residential properties in Comrie caused by flooding from the River Earn and River Lednock;
- Reduce the physical or disruption risk related to the transport network for roads;
- Accept that significant flood risk in Dalginross is being managed appropriately;
- Maintain existing actions that reduce flood risk in Dalginross caused by flooding from the Water of Ruchill;
- Reduce overall flood risk: and
- · Avoid an overall increase in flood risk.

A long list, and short list of options to meet these objectives were considered and included:

- Walls and Embankments;
- Upstream storage on the water of Ruchill and embankments;
- Upstream storage on the River Earn with walls and embankments; and
- River stabilisation Techniques.

Natural Flood Management (NFM) techniques were considered as part of the initial feasibility studies commissioned by Perth and Kinross Council (PKC) and assessed as part of the long list of interventions to address flood risk within Comrie.

Following social, environmental and economic appraisal, the preferred option selected for the Scheme was traditional Walls and Embankments. A number of alternate approaches were considered during the design of the Walls and Embankments option. These alternate approaches are listed below and were considered to be inferior to the proposed approaches outlined in 2.1.1 above:

#### Water of Ruchill flood wall

Rely on existing masonry wall for flood protection, or construct a flood bund.

#### - River Earn and River Lednock flood walls

Leave as existing or Install flood bunds.

#### - Root Wad Revetment - Water of Ruchill

The alternative to green bank protection, is grey (hard) bank protection.

Grey bank protection is already in-situ along a section of the bank identified for works. This has become undermined by the high energy river system. The use of grey bank protection could result in similar erosion patterns already found on site.

Alternative green bank protection measures were also considered including: Coir Rolls/Pallets; and Willow planting. However, these measures were deemed insufficient to protect the bank from erosion and had a high likelihood of being washed away.

#### - Grey bank strowan road

Alternatives include: leave as existing; in stall Rock Rolls along slope base; or Install gabion baskets along base.

#### - Green bank protection - River Earn north bank

Leave as existing.

Please continue on separate sheet if required.

#### Document name/reference:

#### 2.1.3 Selected Approach.

Please state why your selected approach represents the best practical environmental option.

Please state why any alternatives given in section 2.1.2 above were rejected. Where cost is given as a reason, please provide details.

#### (Note red text in dicates areas/details that require development)

It was found that NFM would only have a limited impact on peak river flows and design flood levels in the 'at risk' area of the catchment.

The preferred option (Floodwalls and Embankments) was chosen primarily based on the benefit cost ratio for the scheme being above 1.0 (i.e. the benefits of the scheme are greater than the total scheme costs) with the other shortlisted options considered having benefit cost ratios of 1.0 or below 1.0. Without a benefit cost ratio for the scheme being above 1.0, justification for scheme funding from central government cannot be demonstrated and therefore the flood scheme would be considered financially unviable.

The selected approach for the individual elements of the prefered option (Floodwalls and Embankments) is outlined below:

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#### Water of Ruchill flood wall

The existing masonry wall is in a poor condition with frequent cracking to mortar and loose/missing masonry. The structure would not withstand a design flood event. The footprint of a bund in this location would have cut off the land at the narrow section where the River Ruchill meanders close to the rear of the residential properties. The proximity of the River also put this type of defence at high risk or erosion. The selected wall option has a maintains the land in much the way it is now as popular walking route. The smaller footprint makes the solution less intrusive and provides Dalginross with adequate protection from future flood events.

#### - River Earn and River Lednock flood walls

The Design Flood Event would cause flood damage to the properties if there is no protection provided. The footprint of a flood bund in this location would have required far more land take. The installation would have been far more intrusive and more difficult to maintain accessibility.

#### - Root Wad Revetment - Water of Ruchill

To achieve a sustainable, long-term solution for the site a 'process-based' ap proach has been adopted, allowing the design to be developed within the context of the physical process regime of the wider catchment. This philosophy essentially promotes designs that work with river processes, rather than forcing a condition that may not be appropriate for the design site.

The use of large wood structures (LWS) has been proposed as part of the design. The advantage of using LWS (i.e. comprising of trees with root plate attached) is that the complex structure of the root plate presented to the flow actively dissipates hydraulic forces, rather than just translating that energy downstream (i.e. as is the case for large rock bank protection structures, where bank erosion is often displaced to the next section of unprotected bank downstream). The use of large wood also provides so me ecological benefits due to the localised change in hydraulics around the root plate and cover for juvenile fish (large rock bank protection greatly reduces bankside habitat opportunity) whilst also improving riparian / bankside habitats as vegetation establishes.

The alternative options given in section 2.1.2 are not suited for a high energy river system. They could easily wash away, and the result would cause even more erosion.

#### - Grey bank strowan road

The Design flood event created velocities that would put this slope at risk of erosion. The slope would have been at risk of destabilising which would have in turn caused the Flood Protection walls to be destabilised. Rock Rolls were viewed as less robust and would have required periodic maintenance. They also did not provide additional stability to the toe of the slope. Gabion baskets were discounted due similar maintenance requirements and a less aesthetically pleasing appearance. The mass stone block proposal provides the best long term protection with a natural material requiring less in river working over the lifetime.

Please continue on separate sheet if required.

Document name/reference:

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SHEET E1: RIVER AND LOCH CROSSINGS (This activity will be the installation of a temporary bridge across the River Lednock at approximately NN 77617 22055.), Activity 11 (see FPO Overall Layout 2021-06-29\_Revised 03-22 and Application Summary spreadsheet\_Revised 03-22)

Please complete Sheet E1 for river and loch crossings. A separate sheet should be used for each individual activity.

PART 1 - please complete	for all rive	r and loc	h crossi	ng ac	tivitie	S							
1. Type of activity (please tick)	Bridge				$\boxtimes$	Fore	d						
	Bridgin	g culvert				Pipe	eline/Ca	ble					
	Causew	/ay					noval (p		lso i	ndicate \	which		
2. Type of licence (please tick)	Simple	Simple licence				Con	Complex licence						
3. Type of surface water affected (please tick)	River	River				Loc	Loch						
" ,	Wetland	t				Can	al/Lade						
4. Name of surface water	Riv	er Ledno	ock										
5. Planned start date of activity (dd/mm/yyyy)	Late September 2022				6. Placetive	anned er vity	nd date	of	tbc	:			
7. National grid reference of activity (10 characters e.g. XY 1234 5678)	N	N	7		7	6	1	2		2	0	5	
8. Width of the surface water (m) (at the point	10m					es the a	_	YE	YES				
where the activity is to occur) As measured from the toe of one bank to the toe of the opposite bank						consent? (please tick)							
10. Planning reference number	Plan	ning Pern	nission	deem	ed to I	oe grante	ed						
11. Are there any other works associated with the activity? <sup>1</sup>	alongs Applic spread This to Ledno left an	ectivity is side all sation S dsheet empora ock flood d right	other a umma provid ry brid d walls	activ iry_l ed v ge v wh	rities Revis vithin vill be ich ex	listed v sed 03-2 the sup situate xtend u	vithin t 22 (C <i>i</i> pportir ed adj ipstrea	his fo AR Ad ng inf acent am fro	orm etivitorm totom	E, and ty Schenation.  the new this local	the edule to w Rive ation c	ab) r on the	
PART 2 - please complete		SES											
12. Number of in-channel supports (if none, please enter '0')	0				13. T abut	otal lenç ments (r	gth of n)			n width foutment.	or each		
PART 3 – please complete	for BRIDG	SING CUL	VERTS										
14. Length of culvert (m)	n/a					Diameter/ Ilvert (m)		ions		n/a			
16. Type of culvert (please tick)	Box				Pipe				Ar	ch			
PART 4 – please complete	for FORD	S & CAUS	SEWAYS	3									
17. Length of bed affected (measured parallel to bank/shore)	n/a				18. F	Predomin I	ant ma	terial		n/a			
PART 5 - please complete	for PIPEL	INE/CABI	ECRO	SSING	3S								

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19. Diameter of pipeline/cable (m)	n/a			nannel olease	n/a		
21. Position of pipeline/cable (please tick)	Below bed		Submerged		Above channel		

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the crossing – e.g. bank reinforcement, bank re-profiling, bed reinforcement, sediment removal etc. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

#### SHEET E2: IN-STREAM OR LOCH STRUCTURES

Please complete Sheet E2 for in-stream and loch structures. A separate sheet should be used for each individual activity.

**Engineering Activities** 

each individual activity.											
PART 1 – please complete for	r all in-stream and loch struct	ures									
1. Type of activity (please tick)	Jetties, platforms, marinas	Croys, groynes, flow deflectors									
	Boat slips	Bed reinforcement									
	Boulder placements	Removal (please also indicate which type of structure)									
2. Type of licence (please tick)	Simple licence	Complex licence									
3. Type of surface water affected (please tick)	River	Loch									
" ,	Wetland	Canal/Lade									
4. Name of Surface Water											
5. Planned start date of activity (dd/mm/yyyy)	1 1	6. Planned end date of activity / /									
7. National grid reference of activity (10 characters e.g. XY 1234 5678)											
8. Width of the surface water (m)? (at the point		9. Does the activity require planning									
where the activity is to occur) As measured from the toe of one bank to the toe of the opposite bank		consent? (please tick)									
10. Planning reference number											
11. Are there any other works associated with the activity? <sup>1</sup>											
12. Does the activity qualify as an environmental service? (please tick)	YES	NO									
13. If Yes, please provide justification on separate sheet	Document name/reference:										
PART 2 - please complete for	r JETTIES, PLATFORMS, MAF	RINAS AND BOAT SLIPS									
14.Total length of bank/shore affected (m)		15. Length extending into surface water (m)									
16. If relevant, total area of Loch/Wetland affected (m <sup>2</sup> )		17. Type of structure (not required for boat slips)									
, ,		(please tick) Stilted									
PART 3 – please complete for	r BOULDER PLACEMENTS										
18. Total length of reach affected (m)		19. Total number of boulders added									
PART 4 - please complete for	r CROYS, GROYNES, FLOW [	DEFLECTORS									
20. Length of bank affected (m)		21. Length extending into surface water (m)									
PART 5 - please complete for	r BED REINFORCEMENT										
22. Length of reinforcement (measured parallel to banks) (m)		23. Predominant material used									

<sup>1</sup>Please list any dependent activities associated with the structure – e.g. bank reinforcement, bank re-profiling, bed reinforcement, sediment removal etc. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

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#### SHEET E3: CHANNEL MODIFICATIONS

Please complete Sheet E3 for all channel modification activities. A separate sheet should be used for each individual activity.

PART 1 – please complete fo	or all channel modifications								
1. Type of Activity (please	Straightening,		Pemova	al of land g	ain cı	ılvert			
tick)	resectioning		Kemova	ar or land g	aiii c	aiveit			
	Realignment		Flood by	y-pass cha	annel				
	Culverting for land gain								
2. Type of licence (please tick)	Simple licence		Comple	x licence					
3. Type of surface water affected (please tick)	River		Loch						
,	Wetland		Canal/Lade						
4. Name of surface water									
5. Planned start date of activity (dd/mm/yyyy)	1 1	6. Planr activity	ned end d	ate of		1 1			
7. National grid reference of activity (10 characters e.g. XY 1234 5678)									
8. Width of the surface water (m)? (at the point where the activity is to		require	the activi	_	YES	3			
occur) As measured from the toe of one bank to the toe of the opposite bank		consen	consent? (please tick)				NO		
10. Planning reference number									
11. Are there any other works associated with the activity? <sup>1</sup>									
12. Does the activity qualify as an environmental service? (please tick)	YES			NO					
13. If Yes, please provide justification on separate sheet	Document name/reference:								
PART 2 - please complete fo	or STRAIGHTENING, RESEC	TIONING A	ND REALI	IGNMENT					
14. Length of original channel affected (m)			levant, ler annel (m)						
PART 3 - please complete fo	r CULVERTING FOR LAND	GAIN							
16. Length of culvert (m)		17. Typ (please	e of culve	rt	Pip	е			
		(piease	tickj		Вох	(			
					Arc	h			
PART 4 - please complete fo	r FLOODBY-PASS CHANN	ELS							
18. Length of by-pass channel (m)			gth of orig						
20. Operational return period (e.g. 1 in 5 years)			chment tr		YES	3			
poriou (e.g. i ili o years)		invoive	d? (pleas	e tick)	NO				
22. If Yes to Q21, please provide information on separate sheet.	Document name/reference:								

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the works – e.g. bank reinforcement, bank re-profiling, bed reinforcement etc. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

#### SHEET E4: SEDIMENT MANAGEMENT

Please complete Sheet E3 for all channel modification activities. A separate sheet should be used for each individual activity.

PART 1 – please complete for	Sediment Manager	nent Activ	rities						
1. Type of Activity (please tick)	Sediment remova	I		Sedimen	t manipu	lation			
,	Dredging			Sedimen	t additior	n/Re-introduction			
2. Type of licence	Simple licence			Complex licence					
3. Type of surface water affected	River			Loch					
	Wetland			Canal/Lade					
4. Name of surface water									
5. Planned start date of activity (dd/mm/yyyy)	1 1		6. Plani activity	ned end dat	te of	1 1			
7. National grid reference of activity (10 characters e.g. XY 1234 5678)									
8. Width of the surface water (m)? (at the point where the activity is to			require	the activity planning at? (please)		YES			
occur) As measured from the toe of one bank to the toe of the opposite bank			0000						
10. Planning reference number									
11. Are there any other works associated with the activity? <sup>1</sup>									
12. Does the activity qualify as an environmental service? (please tick)	YES			NO					
13. If Yes, please provide justification on separate sheet	Document name/reference:								
PART 2 - please complete for	SEDIMENT REMOV	AL AND	REDGIN	G					
14. Length of watercourse (m) or area of Loch/Wetland affected (m²)			15. Volu remove	ume to be ed (m³)					
16. Frequency of activity (please tick)	Yearly		Single			Other			
17. If Other, please provide information on separate sheet	Document name/reference:								
PART 3 - please complete for	SEDIMENT MANIPU	JLATION							
18. Length of watercourse (m) or area of Loch/Wetland affected (m²)			19. Volu affected	ume of sedi d (m³)	iment				
PART 4 - please complete for	SEDIMENT ADDITION	ON/RE-IN	ITRODCU	ЛION					
20. Length of watercourse (m) or area of Loch/Wetland affected (m <sup>2</sup> )				ume to be a troduced (r					

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the works. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

SHEET E5: BANK MODIFICATIONS (New flood wall on Right bank of River Earn Dalginross Bridge to NE end of Dalginross - 593m. This is the section of new flood wall from NN 77384 21888 to NN 77915 22029), Activity 1 (see FPO Overall Layout 2021-06-29\_Revised 03-22 and Application Summary spreadsheet\_Revised 03-22)

Please complete Sheet E5 for all bank modification activities. A separate sheet should be used for each individual activity.

PART 1 – please complete for bank modifications												
1. Type of activity (please tick)	Greer	n bank pro	otection				Emba	ankmen	t			
	Grey	bank pro	tection				Floor	dwall			$\boxtimes$	
	Bank	re-profili	ng				Remo		cate whicl	n type of		
	Set-b	ack reinfo	orcement					modification is being removed)				
2. Type of licence (please tick)	Simp	le licence	,				Com	plex lice	nce		$\boxtimes$	
3. Type of surface water affected (please tick)	River					$\boxtimes$	Loch	Loch				
	Wetland					Cana	I/Lade					
4. Name of surface water	Riv	er Earn										
5. Planned start date of activity (dd/mm/yyyy)	Late September 2022 6. Planned activity					l end	date of	tbe	С			
7. National grid reference of activity (10 characters e.g. XY 1234 5678)	N	N 7 7			6		1	2	1	9	7	
8. Width of the surface water (m)? (at the point where the	21 m t	o 26m		9. Does				YE	:S		$\boxtimes$	
activity is to occur) As measured from the toe of one bank to the toe of the opposite bank	21m t	o 36m		conser				NC	)			
10. Planning reference no.	PI	anning	Permis	sion de	em	ned t	o be g	ranted				
11. Are there any other works associated with the activity? <sup>1</sup>	along Appl tab)  1 No cross protes surce flood bour (time adec temp temp	Planning Permission deemed to be granted  This activity is part of the wider Comrie Flood Protection Scher alongside all other activities listed within this form E, and the Application Summary_Revised 03-22 (CAR Activity Schedule tab) spreadsheet provided within the supporting information.  1 No. waste water and 3 No. Surface Water Outfalls will be crossed by the wall alignment. These are to remain insitu with protection slabs constructed where there is a change in surcharge or the fill between the utility and the formation of the flood wall is <0.3m. Site clearance includes demolition of the boundary structures to the rear of the residential properties (timber fences/masonry walls). Additional measures to ensure adequate plant access may be required. These may be temporary installations which fill in areas of local bank scour. T temporary installations could possibly be bulk gravel bags.  (note red text indicates areas/details that require development)								e le ith the e re		
12. Does the activity qualify as an environmental service? (please tick)	YES				N	NO				$\boxtimes$		
13. If Yes, please provide justification on separate sheet	Docu name	ment /referenc	e:	N/A								
PART 2 - please complete for SE	T-BACK	REINFO	RCEMEN	Т								

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14. Distance from bank top (m)	N/A	15. Length of set-back reinforcement (m)	N/A	
16. Type of set-back reinforcement (please tick)	Green (Soft)	17. Bank affected (viewed looking downstream)	Left	
	Grey (Hard)		Right	
PART 3 – please complete for GR	EEN AND GREY BANK RE	INFORCEMENT		
18. Length of reinforcement (m)	N/A	19. Bank affected (viewed looking downstream)	Left	
		(please tick)	Right	
PART 4 – please complete for EM	BANKMENTS & FLOODW	ALLS		
20. Length of modification (m)	593m	21. Bank affected (viewed looking downstream)	Left	
		(please tick)	Right	$\boxtimes$
22. Distance from bank top (m)	3m to 5m	23. Raised height (m) (above natural bank)	2m	
PART 5 - please complete for REI	MOVAL OF BANK MODIFI	CATIONS		
24. Length of modification removed (m) N/A		25. Bank affected (viewed looking downstream)	Left	
	19/4	(please tick)	Right	

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the bank modifications. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

SHEET E5: BANK MODIFICATIONS (New flood wall on Left Bank of River Earn Dalginross Bridge to River Lednock confluence with River Earn - 251m. This is the section of new flood wall from NN 77364 21939 to NN 77606 22018.), Activity 2 (see FPO Overall Layout 2021-06-29\_Revised 03-22 and Application Summary spreadsheet\_Revised 03-22)

Please complete Sheet E5 for all bank modification activities. A separate sheet should be used for each individual activity.

PART 1 – please complete for ba	nk modifications							
1. Type of activity (please tick)	Green bank protection			Embank	ment			
	Grey bank protection			Floodwa	all			
	Bank re-profiling			Remova		-4 la ! a lı		
	Set-back reinforcement					ate which s being re		
2. Type of licence (please tick)	Simple licence			Complex	x licen	се		
3. Type of surface water affected (please tick)	River			Loch				
arrostoa (picase tion)	Wetland			Canal/Lade				
4. Name of surface water	River Earn							
5. Planned start date of activity (dd/mm/yyyy)	Late September 2022	6. Planne activity	d end d	ate of	tbc			
7. National grid reference of activity (10 characters e.g. XY 1234 5678)	N 7	7 5	,	1 2		1	9	8
8. Width of the surface water (m)? (at the point where the	21m to 27m	9. Does the			YES			$\boxtimes$
activity is to occur) As measured from the toe of one bank to the toe of the opposite bank	21111027111		consent? (please tick) NO					
10. Planning reference no.	Planning Permis	sion deer	med to	o be gran	nted			
11. Are there any other works associated with the activity? <sup>1</sup>	This activity is part alongside all other Application Summtab) spreadsheet put 1 No. waste water a reinforced grass 22015).	activities ary_Revi rovided v utility dive	listed sed 03 within ersion	within th 3-22 (CA the supp . Installa	nis fo AR Ac Portin	orm E, a ctivity S g inforr of a flo	and the chedu mation od gate	e le e and
12. Does the activity qualify as an environmental service? (please tick)	YES		NO					$\boxtimes$
13. If Yes, please provide justification on separate sheet	Document name/reference:	N/A						
PART 2 – please complete for SE	T-BACK REINFORCEMEN	Ţ						
14. Distance from bank top (m)	N/A	15. Lengt reinforce				N/A		
16. Type of set-back reinforcement (please tick)	Green (Soft)	17. Banka looking d			Left			
, , ,	Grey (Hard)	(please ti		ou,	Rig	ht		
PART 3 – please complete for GF	REEN AND GREY BANK RE	INFORCEM	IENT					
18. Length of reinforcement (m)	N/A	19. Banka looking d			Left			
			please tick)			Right		
PART 4 – please complete for EN								
20. Length of modification (m)	251m	21. Bank	affecte	d (viewed	Left			

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		looking downstream) (please tick)	Right	$\boxtimes$
22. Distance from bank top (m)	1.2m	23. Raised height (m) (above natural bank)	1.6m	
PART 5 - please complete for RE	MOVAL OF BANK MODIFI	CATIONS		
24. Length of modification removed (m)	N/A	25. Bank affected (viewed looking downstream)	Left	
· ,	N/A	(please tick)	Right	

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the bank modifications. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

SHEET E5: BANK MODIFICATIONS (New flood wall on right bank of River Lednock immediately north of Bridge of Lednock - 110m. This is the section of new flood wall from NN 77575 22304 to NN 77600 22192), Activity 3 (see FPO Overall Layout 2021-06-29\_Revised 03-22 and Application Summary spreadsheet\_Revised 03-22)

Please complete Sheet E5 for all bank modification activities. A separate sheet should be used for each individual activity.

PART 1 – please complete for bank modifications												
1. Type of activity (please tick)	Greei	n bank pr	otection				Emba	nkm	ent			
	Grey	bank pro	tection				Flood	lwall				
	Bank	re-profili	ng				Remo		dia	oto which	tuno of	
	Set-b	ack reinfo	orcement				(pls also indicate which type of modification is being removed)					
2. Type of licence (please tick)	Simp	le licence					Comp	olex l	icen	ice		
3. Type of surface water affected (please tick)	River					$\boxtimes$	Loch					
,	Wetla	ınd					Canal	I/Lad	е			
4. Name of surface water	Riv	er Ledn	ock									
5. Planned start date of activity (dd/mm/yyyy)	Late	Septembe	er 2022	6. Planr activity		end o	date of		tbc			
7. National grid reference of activity (10 characters e.g. XY 1234 5678)	N	N	7	7	5		9	2		2	2	5
8. Width of the surface water (m)? (at the point where the	10m	to 17m		9. Does require					YES	3		$\boxtimes$
activity is to occur) As measured from the toe of one bank to the toe of the opposite bank					consent? (please tick)					NO		
10. Planning reference no.	Plar	nning P	ermissi	on deen	ne	d to	be gra	ntec	t			
11. Are there any other works associated with the activity? <sup>1</sup>	alon Appi tab) RIG dive	gside a lication spread HT BAN rsion of	II other Summa sheet p NK - Ins	of the vactivities ary_Revrovided tallation gower power to the control of the con	s li vise wi of	isted ed 0 thin 1 N	I withir 3-22 (0 the su Io. new / to St	n this CAR Ippo V Wa Mai	s fo R Ac rtin ater	orm E, a ctivity S g inforr Main a ret's Ch	and the chedu mation and nurch.	e ile Take
12. Does the activity qualify as an environmental service? (please tick)	YES				N	0						
13. If Yes, please provide justification on separate sheet		ment e/referenc	e:	N/A								
PART 2 – please complete for SE	T-BAC	( REINFO	RCEMEN	T								
14. Distance from bank top (m)	N/	A		15. Len						N/A		
16. Type of set-back reinforcement (please tick)	Greei	n (Soft)		17. Ban looking			d (viewe	d	Left	t		
	Grey (Hard)				tick	<b>(</b> )			Rig	ht		
PART 3 – please complete for GR	EEN A	ND GREY	BANKRE	INFORCE	ME	NT						
18. Length of reinforcement (m)	N/	A		19. Ban looking			d (viewe ream)	d	Left	t		
				(please	tick	()			Rig	ht		
PART 4 – please complete for EM	RANKI	/IENIS&	FLOODW	ALLS								

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20. Length of modification (m)	110m	21. Bank affected (viewed looking downstream)	Left	
		(please tick)	Right	$\boxtimes$
22. Distance from bank top (m)	1m to 3m	23. Raised height (m) (above natural bank)	1.4m	
PART 5 - please complete for RE	MOVAL OF BANK MODIFI	CATIONS		
24. Length of modification removed (m)	N/A	25. Bank affected (viewed looking downstream)	Left	
	11//	(please tick)	Right	

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the bank modifications. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

SHEET E5: BANK MODIFICATIONS (New flood wall on Left bank of River Lednock immediately north of Bridge of Lednock - 74m - This is the section of new flood wall from NN 77617 22270 to NN 77610 22193.), Activity 4 (see FPO Overall Layout 2021-06-29\_Revised 03-22 and Application Summary spreadsheet\_Revised 03-22)

Please complete Sheet E5 for all bank modification activities. A separate sheet should be used for each individual activity.

PART 1 – please complete for bar	nk modi	fications												
1. Type of activity (please tick)	Green	bank pr	otection					Emba	nkm	ent				
	Grey l	oank pro	tection					Flood	wall					$\boxtimes$
	Bank	re-profili	ng					Remo		ndic	ato whic	h typo o		
	Set-ba	ack reinf	orcement											
2. Type of licence (please tick)	Simpl	e licence				$\boxtimes$		Comp	lex l	icen	ice			
3. Type of surface water affected (please tick)	River	River				$\boxtimes$		Loch						
,	Wetland						Canal	/Lad	Indicate which type of tion is being removed)  licence  tbc  2  YES  NO  ted  od Protection Scher is form E, and the R Activity Schedule orting information.					
4. Name of surface water	Riv	er Ledn	ock											
5. Planned start date of activity (dd/mm/yyyy)	Late S	Septemb	er 2022	6. Planr activity		d end	da	ite of		tbc				
7. National grid reference of activity (10 characters e.g. XY 1234 5678)	N	N	7	7	6		1		2		2	2	4	
8. Width of the surface water (m)? (at the point where the	40			9. Does				:y		YES	3		$\triangleright$	3
activity is to occur) As measured from the toe of one bank to the toe of the opposite bank	10m require p							tick)		NO				
10. Planning reference no.	Pla	anning	Permis	sion de	en	ned t	to	be gr	ant	ed				
11. Are there any other works associated with the activity? <sup>1</sup>	alono Appl	gside a	ll other Summa	activitie ary_Re	es vis	listed sed 0	d v )3-	within -22 (C	thi:	s fo R Ao	orm E, a	and the	e ıle	me
12. Does the activity qualify as an environmental service? (please tick)	YES	•			N	10		•					$\triangleright$	3
13. If Yes, please provide justification on separate sheet	Docui	ment /referenc	e:	N/A										
PART 2 – please complete for SE	Г-ВАСК	REINFO	RCEMEN	Ť										
14. Distance from bank top (m)	N/A	4		15. Len reinford							N/A			
16. Type of set-back reinforcement (please tick)	Green	(Soft)		17. Ban looking					k	Lef	t			
" ,	Grey (	(Hard)		(please			u C	um,		Rig	ht			
PART 3 - please complete for GR	EEN AN	ID GREY	BANK RE	INFORCE	EΜ	ENT								
18. Length of reinforcement (m)	NI/			19. Ban					k	Lef	t			]
	N/A	•		(please			0	u,		Rig	ht			
PART 4 – please complete for EM	BANKN	IENTS&	FLOODW	ALLS										
20. Length of modification (m)	74m			21. Ban looking	j do	ownst			i	Lef				]
				(please	tic	k)				Rig	ht			1
22. Distance from bank top (m)	1m to	3m		23. Rais (above						1.4	4m			

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PART 5 – please complete for REMOVAL OF BANK MODIFICATIONS										
24. Length of modification removed (m)	NI/A	25. Bank affected (viewed looking downstream)	Left							
	N/A	(please tick)	Right							

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the bank modifications. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

SHEET E5: BANK MODIFICATIONS (New grey bank protection on Right Bank of River Earn - 120m. This is the section of new grey bank protection from NN 7742 2192 to NN 7752 2195), Activity 5 (see FPO Overall Layout 2021-06-29\_Revised 03-22 and Application Summary spreadsheet\_Revised 03-22)

Please complete Sheet E5 for all bank modification activities. A separate sheet should be used for each individual activity.

Caerr marviadar activity:														
PART 1 – please complete for bar	nk modi	ifications												
1. Type of activity (please tick)	Greer	n bank pr	otection					Emba	nkm	ent				
	Grey	bank pro	tection			$\boxtimes$		Flood	wall					
	Bank	re-profili	ng					Remo		ndic	ate which	n type o		
	Set-b	ack reinfo	orcement											
2. Type of licence (please tick)	Simpl	le licence						Comp	lex l	licen	ce			
3. Type of surface water affected (please tick)	River					$\boxtimes$		Loch						
	Wetla	Wetland						Canal	/Lad	le				
4. Name of surface water	River Earn													
5. Planned start date of activity (dd/mm/yyyy)	Late S	Late September 2022 6. Planned activity					dat	e of		tbc				
7. National grid reference of activity (10 characters e.g. XY 1234 5678)	N	N	7	7	4		8		2		1	9	3	
8. Width of the surface water (m)? (at the point where the	00			9. Does				/		YES	3		$\boxtimes$	
activity is to occur) As measured from the toe of one bank to the toe of the opposite bank	28m requir conse							ick)		tbc  1 9  YES  NO  ed  od Protection Sches form E, and the R Activity Schedule orting information.				
10. Planning reference no.	PI	anning	Permis	sion de	en	ned t	to	be gr	ant	ed				
11. Are there any other works associated with the activity? <sup>1</sup>	along Appl	gside a	ll other Summa	activitie ary_Rev	es vis	listed ed 0	d v )3-	vithin 22 (C	thi CAF	s fo R Ao	e ile			
12. Does the activity qualify as an environmental service? (please tick)	YES				N	10						$\boxtimes$		
13. If Yes, please provide justification on separate sheet	Docu	ment /referenc	e:	N/A										
PART 2 - please complete for SE	T-BACK	REINFO	RCEMEN	Т										
14. Distance from bank top (m)	N//	A		15. Leng							N/A			
16. Type of set-back reinforcement (please tick)	Greer	n (Soft)		17. Ban looking					d	Left	ŀ			
. ,	Grey	(Hard)		(please			00	,		Rig	ht			
PART 3 - please complete for GR	EEN AN	ND GREY	<b>BANK RE</b>	INFORCE	ΞMI	ENT								
18. Length of reinforcement (m)				19. Ban					d	Left	t			
	120m			looking (please			trea	am)	j	Rig	ht			
PART 4 – please complete for EM	BANKN	MENTS &	FLOODW	ALLS										
20. Length of modification (m)	N/A			21. Ban	ka	ffecte	ed (	viewe	d	Left	i i			
				looking (please	j do	ownst				Rig				
22 Distance from healthan (m)								, .						
22. Distance from bank top (m)	N/A			23. Rais						N/A				

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PART 5 – please complete for REMOVAL OF BANK MODIFICATIONS										
24. Length of modification removed (m)	NI/A	25. Bank affected (viewed looking downstream)	Left							
, ,	N/A	(please tick)	Right							

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the bank modifications. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

SHEET E5: BANK MODIFICATIONS (New green bank protection on Left Bank of River Earn - 80m. Construction of 80m of rock roll and seeded roll river bank including geotextile erosion protection and ancillary works such as soft landscaping. This is the section of new green bank protection from NN 77699 22042 to NN 77771 22058.), Activity 6 (see FPO Overall Layout 2021-06-29\_Revised 03-22 and Application Summary spreadsheet\_Revised 03-22)

Please complete Sheet E5 for all bank modification activities. A separate sheet should be used for each individual activity.

PART 1 – please complete for bar	nk modi	fications	i								
1. Type of activity (please tick)	Greer	n bank pr	otection		$\boxtimes$	Embar	ıkm	ent			
	Grey	bank pro	tection			Floody	wall	ndicate which type of ion is being removed)  licence  tbc  2 0 4  YES			
	Bank	re-profili	ng			Remov		a di a	oto whiol	h tuma at	
	Set-b	ack reinf	orcement								
2. Type of licence (please tick)	Simpl	le licence				Compl	lex I	icen	ce		
3. Type of surface water affected (please tick)	River					Loch					
arrested (production)	Wetla	Wetland				Canal/	Lad	indicate which type of tion is being removed)  licence  tbc  2 0 4  YES  NO  Ited  Dod Protection Schemals form E, and the R Activity Schedule orting information.			
4. Name of surface water	Riv	er Earn									
5. Planned start date of activity (dd/mm/yyyy)	Late	Septemb	er 2022	6. Planne activity	ed end c	late of		tbc			
7. National grid reference of activity (10 characters e.g. XY 1234 5678)	N	N 7 7 7				2	2		2	0	4
8. Width of the surface water (m)? (at the point where the	20			9. Does t				YES	;		$\boxtimes$
activity is to occur) As measured from the toe of one bank to the toe of the opposite bank	36m require pla							NO			
10. Planning reference no.	PI	anning	Permis	sion dee	med t	o be gra	ant	ed			
11. Are there any other works associated with the activity? <sup>1</sup>	along Appl	gside a	ill other Summa	activities ary_Rev	s listed ised 03	l within 3-22 (C	thi:	s fo R Ac	orm E, a ctivity S	and the Schedu	e ile
12. Does the activity qualify as an environmental service? (please tick)	YES				NO						
13. If Yes, please provide justification on separate sheet	Docu name	ment /referenc	e:	N/A							
PART 2 - please complete for SE	T-BACK	REINFO	RCEMEN	Т							
14. Distance from bank top (m)	N//	4		15. Leng reinforce					N/A		
16. Type of set-back reinforcement (please tick)	Green	(Soft)		17. Bank		d (viewed		Left			
,	Grey	(Hard)		(please t		cuiii,		Rig	ht		
PART 3 - please complete for GR	EEN AN	ID GREY	<b>BANK RE</b>	INFORCE	MENT						
18. Length of reinforcement (m)	80m			19. Bank		d (viewed ream)		Left	ŀ		$\boxtimes$
	55111			(please t		,		Rig	ht		
PART 4 - please complete for EM	BANKN	IENTS &	FLOODW	ALLS							
20. Length of modification (m)	N/A			21. Bank looking	downst			Left			
				(please t				Rig	ht		

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22. Distance from bank top (m)	N/A	23. Raised height (m) (above natural bank)	N/A	
PART 5 - please complete for RE	MOVAL OF BANK MODIFI	CATIONS		
24. Length of modification removed (m)	N/A	25. Bank affected (viewed looking downstream)	Left	
,	N/A	(please tick)	Right	

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the bank modifications. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

Form E

SHEET E5: BANK MODIFICATIONS (New flood wall on left bank of River Lednock adjacent to caravan park near confluence of River Earn and River Lednock - 36m. This is the section of new flood wall from NN 77633 22056 to NN 77626 22095.), Activity 7 (see FPO Overall Layout 2021-06-29\_Revised 03-22 and Application Summary spreadsheet\_Revised 03-22)

Please complete Sheet E5 for all bank modification activities. A separate sheet should be used for each individual activity.

PART 1 – please complete for bar	nk modi	fications								
1. Type of activity (please tick)	Green	bank pr	otection			Embank	ment			
	Grey I	bank pro	tection			Floodwa	all			
	Bank	re-profili	ng			Remova		the dicate which type of on is being removed) itence  to 2 0  YES  NO  ed  od Protection Sches form E, and the Activity Schedulerting information.  N/A  Left  Right  Left		
	Set-ba	ack reinfo	orcement							
2. Type of licence (please tick)	Simpl	e licence			$\boxtimes$	Complex	k licen	ice		
3. Type of surface water affected (please tick)	River				$\boxtimes$	Loch		ndicate which type of ion is being removed) licence  tbc  2 0  YES  NO  ted  od Protection Sche is form E, and the R Activity Schedule orting information.		
, , ,	Wetland				Canal/La	ide				
4. Name of surface water	Riv	er Ledn	ock							
5. Planned start date of activity (dd/mm/yyyy)	Late S	Septembe	er 2022	6. Planne activity	d end d	ate of	tbc			
7. National grid reference of activity (10 characters e.g. XY 1234 5678)	N	N	7	7 6		3 2		2	0	8
8. Width of the surface water (m)? (at the point where the	0m			9. Does th		ity	YES	6		$\boxtimes$
activity is to occur) As measured from the toe of one bank to the toe of the opposite bank	8m require place consent?				etick)	NO				
10. Planning reference no.	Pla	anning	Permis	sion deer	med to	be grar	nted			
11. Are there any other works associated with the activity? <sup>1</sup>	alono Appl	gside a	ll other Summa	activities ary_Revi	listed sed 03	within th 3-22 (CA	nis fo .R Ad	orm E, octivity S	and the Schedu	e Ile
12. Does the activity qualify as an environmental service? (please tick)	YES				NO			$\boxtimes$		
13. If Yes, please provide justification on separate sheet	Docui	ment /referenc	e:	N/A						
PART 2 – please complete for SE	T-BACK	REINFO	RCEMEN	Т						
14. Distance from bank top (m)	N/A	4		15. Lengt reinforce				N/A		
16. Type of set-back reinforcement (please tick)	Green	(Soft)		17. Bank			Left	t		
. ,	Grey (	(Hard)		(please ti		ouiii,	Rig	ht		
PART 3 – please complete for GR	EEN AN	ID GREY	BANKRE	INFORCEM	IENT					
18. Length of reinforcement (m)	N/A			19. Banka looking d			Left	t		
	IN/A			(please ti		,	Rig	ht		
PART 4 – please complete for EM	BANKN	IENTS &	FLOODW	ALLS						
20. Length of modification (m)	36m			21. Bank			Left	t		$\boxtimes$
				(please ti	ck)		Rig	ht		
22. Distance from bank top (m)	2.5m			23. Raise (above na			0.7r	m		

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PART 5 – please complete for REMOVAL OF BANK MODIFICATIONS										
24. Length of modification removed (m)	N/A	25. Bank affected (viewed looking downstream)	Left							
, ,	N/A	(please tick)	Right							

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the bank modifications. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

SHEET E5: BANK MODIFICATIONS (New flood wall on Left bank of River Earn immediately south of caravan park - 65m. This is the section of new flood wall from NN 77759 22073 to NN 77702 22060), Activity 8 (see FPO Overall Layout 2021-06-29\_Revised 03-22 and Application Summary spreadsheet\_Revised 03-22)

Please complete Sheet E5 for all bank modification activities. A separate sheet should be used for each individual activity.

,										
PART 1 – please complete for ba	nk modification	s								
1. Type of activity (please tick)	Green bank p	rotection			Emba	nkmen	it			
	Grey bank pro	otection			Flood	wall				
	Bank re-profi	ling			Remo		icate which	n type of		
	Set-back rein	forcement	i				is being re			
2. Type of licence (please tick)	Simple licence	е			Comp	lex lice	ence			
3. Type of surface water affected (please tick)	River				Loch					
	Wetland				Canal	/Lade				
4. Name of surface water	River Earn									
5. Planned start date of activity (dd/mm/yyyy)	Late September 2022 6. Planned activity				date of	tb	С			
7. National grid reference of activity (10 characters e.g. XY 1234 5678)	N N	7	7	7	3	2	2	0	6	
8. Width of the surface water (m)? (at the point where the	20		9. Does t			YE	ES		$\boxtimes$	
activity is to occur) As measured from the toe of one bank to the toe of the opposite bank	36M	36m require consen				N	0			
10. Planning reference no.	Planning	Permis	sion dee	med t	to be gr	ranted	ed d Protection Scheme			
11. Are there any other works associated with the activity? <sup>1</sup>	alongside a	all other Summ	activities ary_Rev	s listed ised 0	d within 3-22 (C	this t	ood Protection Sche his form E, and the AR Activity Schedule porting information.			
12. Does the activity qualify as an environmental service? (please tick)	YES			NO						
13. If Yes, please provide justification on separate sheet	Document name/referen	ce:	N/A							
PART 2 – please complete for SE	T-BACK REINF	ORCEMEN	T							
14. Distance from bank top (m)	N/A		15. Leng reinforce				N/A			
16. Type of set-back reinforcement (please tick)	Green (Soft)		17. Bank			d Le	eft			
	Grey (Hard)		(please t		,	Ri	ght			
PART 3 – please complete for GR	REEN AND GRE	BANK RE	EINFORCE	MENT						
18. Length of reinforcement (m)			19. Bank looking			d Le	eft			
	N/A		(please t	ick)	i <del>c</del> aiii)	Ri	ght			
PART 4 - please complete for EM	IBANKMENTS 8	FLOODW	ALLS							
20. Length of modification (m)	65m		21. Bank looking			d Le	eft		$\boxtimes$	
			(please t		i Gaill)	Ri	ght			
22. Distance from bank top (m)	10m		23. Raise (above n			1.9	1.9m			

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PART 5 – please complete for REMOVAL OF BANK MODIFICATIONS										
24. Length of modification removed (m)	N/A	25. Bank affected (viewed looking downstream)	Left							
, ,	N/A	(please tick)	Right							

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the bank modifications. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

SHEET E5: BANK MODIFICATIONS (This activity will be the removal of a 40m length of existing grey bank (boulder) protection on the right bank of the Water of Ruchill. This is required to facilitate installation of green bank protection.), Activity 10 (see FPO Overall Layout 2021-06-29\_Revised 03-22 and Application Summary spreadsheet\_Revised 03-22)

Please complete Sheet E5 for all bank modification activities. A separate sheet should be used for each individual activity.

PART 1 - please complete for bar	nk modi	fications									
1. Type of activity (please tick)	Greer	n bank pr	otection			Embar	nkme	ent			
	Grey I	bank pro	tection			Floody	wall				
	Bank	re-profili	ing			Remov		ndicate	$\boxtimes$		
	Set-ba	ack reinfo	orcement			which modifi being	ty catio	pe of on is	Grey Bai removal	nk	
2. Type of licence (please tick)	Simpl	Simple licence				Comp	lex li	cence			
3. Type of surface water affected (please tick)	River	River				Loch					
	Wetla	nd				Canal/	Lade	е			
4. Name of surface water	W	ater of	Ruchill								
5. Planned start date of activity (dd/mm/yyyy)	01/0	05/2022		6. Planne activity	ed end o	late of		10/07/	2022		
7. National grid reference of activity (10 characters e.g. XY 1234 5678)	N	N	7	7	2	3	2	1	7	0	
8. Width of the surface water (m)? (at the point where the	110m			9. Does t				YES			
activity is to occur) As measured from the toe of one bank to the toe of the opposite bank	110111	110m require planning consent? (pleas						NO			
10. Planning reference no.	Pla	nning F	Permiss	ion deen	ned to	be gra	nte	d			
11. Are there any other works associated with the activity? <sup>1</sup>	along Appl	gside a	all other Summa	of the wactivities ary_Revirovided w	s listed ised 0	l within 3-22 (C	this AR	s form E Activity	E, and th	e ule	
12. Does the activity qualify as an environmental service? (please tick)	YES				NO					$\boxtimes$	
13. If Yes, please provide justification on separate sheet	Docu	ment /referenc	e:	N/A							
PART 2 – please complete for SET	Г-ВАСК	REINFO	RCEMEN	T							
14. Distance from bank top (m)	N/A			15. Leng reinforce				N/A			
16. Type of set-back reinforcement (please tick)	Green	(Soft)		17. Bank looking	affecte	d (viewed		Left			
" ,	Grey (	(Hard)		(please t		Julia		Right			
PART 3 - please complete for GR	EEN AN	ID GREY	BANK RE	INFORCE	MENT						
18. Length of reinforcement (m)	N/A			19. Bank looking o				Left			
				(please t		,		Right			
PART 4 – please complete for EM	BANKN	IENTS &	FLOODW	ALLS							
20. Length of modification (m)	N/A			21. Bank looking				Left			
	14/7			(please t	ick)			Right			

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$-\alpha$	rrm	_

22. Distance from bank top (m)	N/A	23. Raised height (m) (above natural bank)	N/A		
PART 5 – please complete for REMOVAL OF BANK MODIFICATIONS					
24. Length of modification removed (m)	40 m	25. Bank affected (viewed looking downstream)	Left		
, , , , , , , , , , , , , , , , , , , ,	40 III	(please tick)	Right		

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the bank modifications. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

SHEET E5: BANK MODIFICATIONS (This activity will be undertaken on a ~225 m extent of the right bank of the Water of Ruchill. This work forms part of the wider Comrie Flood Protection Scheme (FPS), and will form sustainable protection of an eroding section of the river.), Activity 9 (see FPO Overall Layout 2021-06-29\_Revised 03-22 and Application Summary spreadsheet\_Revised 03-22)

Please complete Sheet E5 for all bank modification activities. A separate sheet should be used for each individual activity.

PART 1 – please complete for bank modifications												
1. Type of activity (please tick)	Green bank protection				$\boxtimes$	Embankment						
	Grey bank protection				Floodwall							
	Bank	re-profili	ing				Removal					
	Set-back reinforcement					(pls also indicate which type of modification is being removed)						
2. Type of licence (please tick)	Simpl	le licence	)			$\boxtimes$	Complex licence					
3. Type of surface water affected (please tick)	River					$\boxtimes$	Loch					
" /	Wetla	nd					Canal/Lade					
4. Name of surface water	W	ater of	Ruchill									
5. Planned start date of activity (dd/mm/yyyy)	01 /	05/2022		6. Planr activity		end da	ate of		10/07/2022			
7. National grid reference of activity (10 characters e.g. XY 1234 5678)	N	N	7	7	2		3	2		1	7	0
8. Width of the surface water (m)? (at the point where the	110	9. Does the activity require planning										
activity is to occur) As measured from the toe of one bank to the toe of the opposite bank	110m			consent? (please tick)				$\boxtimes$				
10. Planning reference no.	Planning Permission deemed to be granted											
11. Are there any other works associated with the activity? <sup>1</sup>	This activity is part of the wider Comrie Flood Protection Scheme alongside all other activities listed within this form E, and the Application Summary_Revised 03-22 (CAR Activity Schedule tab) spreadsheet provided within the supporting information.											
12. Does the activity qualify as an environmental service? (please tick)				$\boxtimes$								
13. If Yes, please provide justification on separate sheet	Document N/A name/reference:											
PART 2 - please complete for SE	Г-ВАСК	REINFO	RCEMEN	Т								
14. Distance from bank top (m)	15. Length of set-back reinforcement (m)				N/A							
16. Type of set-back reinforcement (please tick)	Greer	(Soft)	17. Bank affected (viewed looking downstream)		t							
Grey (Hard) (please tick)					Right							
PART 3 – please complete for GREEN AND GREY BANK REINFORCEMENT												
18. Length of reinforcement (m)	~225	m		19. Bank affected (viewed looking downstream) (please tick)						Left		
	~223											
PART 4 - please complete for EMBANKMENTS & FLOODWALLS												
20. Length of modification (m)	N/A		21. Bank affected (viewed looking downstream)			Lef	t					
				(please tick)				Rig	ht			

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22. Distance from bank top (m)	N/A	23. Raised height (m) (above natural bank)	N/A		
PART 5 – please complete for REMOVAL OF BANK MODIFICATIONS					
24. Length of modification removed (m)	N/A	25. Bank affected (viewed looking downstream)	Left		
	N/A	(please tick)	Right		

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the bank modifications. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

Please complete Sheet E5 for all bank modification activities. A separate sheet should be used for

#### SHEET E6: OTHER ENGINEERING ACTIVITIES

Please complete Sheet E6 for other engineering activities (not defined above). A separate sheet should be used for each individual activity. Before completing this application, please check with your local SEPA office that an application is required. SEPA would normally only require an application for activities not defined elsewhere in the CAR practical guide, if a significant adverse impact was likely.

PART 1 - please complete fo	r all activities	
1. Type of activity (please provide detail of the type of activity being applied for).	N/A	
Continue on separate sheet if necessary	Document name/reference:	
2. Type of licence (please tick)	Simple licence	Complex licence
3. Type of surface water affected (please tick)	River	Loch
	Wetland	Canal/Lade
4. Name of surface water		
5. Planned start date of activity (dd/mm/yyyy)	1 1	6. Planned end date of activity / /
7. National grid reference of activity (10 characters e.g. XY 1234 5678)		
8. Width of the surface water (m)? (at the point where the activity is to		9. Does the activity require planning
occur) As measured from the toe of one bank to the toe of the opposite bank		consent? (please tick)
10. Planning reference number		
11. Are there any other works associated with the activity? <sup>1</sup>		
12. Does the activity qualify as an environmental service? (please tick)	YES	NO
13. If Yes, please provide justification on separate sheet.	Document name/reference:	

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<sup>&</sup>lt;sup>1</sup>Please list any dependent activities associated with the works – e.g. bank reinforcement, bank re-profiling, bed reinforcement etc. Please provide separate details in relevant sections of application form. Note: no charges are made for dependent activities.

#### 3: ADDITIONAL INFORMATION

In addition to completing the relevant sections above, the following information MUST be clearly referenced and submitted with this application.

Please provide the following	for all activities:	
1. Accurate SCALE DRAWINGS of any design structures or proposed modifications	Document name(s)/reference(s):	See contents of Supporting Information folder which includes the following documents:  • FPO Overall Layout 2021-06-29_Revised 03-22  • 20220119 FPO Plans and Drawings (folder)  • CRSSS022-BBR-GEN-DR-W-0001 - Temporary Bridge - P02 (DRAFT)  • 21-1036_Comrie_Bank Protection Plan View Sketch_21.01.22  • 21-1036_Comrie_Green Bank Protection_cbec Design Method Statement_v2.0_21.01.2022
2. PHOTOGRAPHS of area where activity is to be carried out	Document name(s)/reference(s):	Photographs and associated Photo Location Plan are within the Supporting Information folder – Photographs.
3. METHOD STATEMENT detailing how each activity is to be carried out, any temporary construction works associated with controlled activities, details of any machinery to be used and a biosecurity plan to prevent the spread of invasive non-native species as a result of the activity <sup>1</sup> .	Document name(s)/reference(s):	(Note red text indicates areas/details that require development)  - Root Wad Revetment – Water of Ruchill See Supporting Information – Rootwad - Method Statement - 21-1036_Comrie_Green Bank Protection_cbec Design Method Statement_v2.0_21.01.2022  - Flood Defence - Water of Ruchill flood wall  Construction (Sheet Pile) - Vegetation clearance as required Removal of any obstructions (concrete, tree stumps, extraneous debris etc.) located within the designated sheet pile wall location Excavation works and utility diversions - Installation of sheet piled wall via excavator with pile driving / vibratory equipment (for sheet pile installation) Reinstate natural drainage ditch, located at the front of the sheet pile wall, via long reach excavator Install temporary formwork and install Reckli 2/164 Brabant finish (or similar approved) formliner prior to the pouring of concrete required for sheet pile facing Pour concrete into formwork.

<sup>1</sup> For example the check, clean, dry procedure as outlined in the GB non-native species secretariat website (http://www.nonnativespecies.org/checkcleandry/biosecurity-for-everyone.cfm) and guidance set out in GPP5 (http://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf?utm\_source=website&utm\_medium=social&utm\_campaign=GPP5%2027112017)

Biosecurity and management of invasive non-native species for construction sites and Controlled Activities

(https://www.sepa.org.uk/media/163480/biosecurity-and-management-of-invasive-non-native-species-construction-sites.pdf)

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- -Excavated ground is reinstated with imported granular fill or top soil that meets the British Standard for top soil, BS3882:2015.
- -Remove formwork and install pre-cast concrete coping type B on top of in-situ concrete facing.

#### Construction (RC Cantilever Wall)

- -Vegetation clearance as required.
- -Removal of any obstructions (concrete, tree stumps, extraneous debris etc.) located within the designated sheet pile wall location.
- -Excavation works and utility diversions
- -Reinstate natural drainage ditch, located at the front of the sheet pile wall, via long reach excavator.
- -Install temporary formwork and install Reckli 2/164 Brabant finish (or similar approved) formliner prior to the pouring of concrete required for RC Cantilever Wall.
- -Pour concrete into formwork.
- -Excavated ground is reinstated with imported granular fill or top soil that meets the British Standard for top soil, BS3882:2015.
- -Remove formwork and install pre-cast concrete coping type B on top of in-situ concrete facing.
- -Temporary works To be developed by Balfour Beatty as detailed design and ECI progresses.
  - Grey bank protection River Earn Right Bank, Strowan Road

#### Construction

- -Clear slope of vegetation
- -Install a steel sheet pile cofferdam to create a dry working area at base of slope
- -Level the river bed at the slope to e to create a formation level -Install geotextile membrane over slope and an chor using mini
- soil nails.
  -Install precast concrete wall base and reinstate granular river
- bed material to face of the wall base
- -Install two levels of stone block slope protection
- -Remove steel sheet pile cofferdam
- To be developed by Balfour Beatty as detailed design and ECI progresses
- -Temporary works Steel sheet pilecofferdam along the Right bank of the River Earn to create a dry working area 2-3m in width from the toe of the slope. To be developed by Balfour Beatty/Sweco as detailed design and ECI progresses.
  - Flood Defence River Earn Right Bank flood wall

#### Construction (Sheet Pile)

- -Vegetation clearance as required.
- -Removal of any obstructions (concrete, tree stumps, extraneous debris etc.) located within the designated sheet pile wall location.
- -Excavation works and utility diversions
- -Installation of sheet piled wall via excavator with pile driving / vibratory equipment (for sheet pile installation).
- -Reinstate natural drainage ditch, located at the front of the sheet pile wall, via long reach excavator.
- -Install temporary formwork and install Reckli 2/164 Brabant finish (or similar approved) formliner prior to the pouring of concrete required for sheet pile facing.
- -Pour concrete into formwork.
- -Excavated ground is reinstated with imported granular fill or topsoil that meets the British Standard for topsoil, BS3882:2015.
- -Remove formwork and install pre-cast concrete coping type B on top of in-situ concrete facing.
- To be developed by Balfour Beatty as detailed design and

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#### ECI progresses

Construction (RC Cantilever Wall)

- -Vegetation clearance as required.
- -Removal of any obstructions (concrete, tree stumps, extraneous debris etc.) located within the designated sheet pile wall location.
- -Excavation works and utility diversions
- -Reinstate natural drainage ditch, located at the front of the sheet pile wall, via long reach excavator.
- -Install temporary formwork and install Reckli 2/164 Brabant finish (or similar approved) formliner prior to the pouring of concrete required for RC Cantilever Wall.
- -Pour concrete into formwork.
- -Excavated ground is reinstated with imported granular fill or top soil that meets the British Standard for top soil, BS3882:2015.
- -Remove formwork and install pre-cast concrete coping type B on top of in-situ concrete facing.
- To be developed by Balfour Beatty as detailed design and ECI progresses
- -Temporary works -Additional measures to ensure adequate plant access may be required. These may be temporary installations which fill in areas of local bank scour. The temporary installations could possibly be bulk gravel bags. To be developed by Balfour Beatty/Sweco as detailed design and ECI progresses

#### - Flood Defence - River Earn Left Bank flood walls

Construction (Sheet Pile)

- -Vegetation clearance as required.
- -Removal of any obstructions (concrete, tree stumps, extraneous debris etc.) located within the designated sheet pile wall location.
- -Excavation works and utility diversions
- -Installation of sheet piled wall via excavator with pile driving / vibratory equipment (for sheet pile installation).
- -Reinstate natural drainage ditch, located at the front of the sheet pile wall, via long reach excavator.
- -Install temporary formwork and install Reckli 2/164 Brabant finish (or similar approved) formliner prior to the pouring of concrete required for sheet pile facing.
- -Pour concrete into formwork.
- -Excavated ground is reinstated with imported granular fill or top soil that meets the British Standard for top soil, BS3882:2015.
- -Remove formwork and install pre-cast concrete coping type B on top of in-situ concrete facing.
- To be developed by Balfour Beatty as detailed design and ECI progresses

Construction (RC Cantilever Wall)

- -Vegetation clearance as required.
- -Removal of any obstructions (concrete, tree stumps, extraneous debris etc.) located within the designated sheet pile wall location.
- Excavation works and utility diversions
- -Rein state natural drainage ditch, located at the front of the sheet pile wall, via long reach excavator.
- -Install temporary formwork and install Reckli 2/164 Brabant finish (or similar approved) formliner prior to the pouring of concrete required for RC Cantilever Wall.
- -Pour concrete into formwork.
- -Excavated ground is reinstated with imported granular fill or topsoil that meets the British Standard for topsoil, BS3882:2015.
- -Remove formwork and install pre-cast concrete coping type B on top of in-situ concrete facing.
- To be developed by Balfour Beatty as detailed design and ECI progresses
- -Temporary Works additional measures to ensure ad equate plant access may be required. These may be temporary

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Engineering Activities

4. Details of any other	Document	installations which fill in areas of local bank scour. The temporary installations could possibly be bulk gravel bags. To be developed by Balfour Beatty/Sweco as detailed design and ECI progresses.  - Flood Defence - River Lednock flood walls  Construction (Sheet Pile) - Vegetation clearance as required Removal of any obstructions (concrete, tree stumps, extraneous debis etc.) located within the designated sheet pile wall location Excavation works and utility diversions - Installation of sheet piled wall via excavator with pile driving / vibratory equipment (for sheet pile installation) Rein state natural drainage ditch, located at the front of the sheet pile wall, via long reach excavator Install temporary formwork and install Reckli 2/164 Brabant finish (or similar approved) formliner prior to the pouring of concrete required for sheet pile facing Pour concrete into formwork Excavated ground is reinstated with imported granular fill or topsoil that meets the British Standard for topsoil, BS3882:2015 Remove formwork and install pre-cast concrete coping type B on top of in-situ concrete facing To be developed by Balfour Beatty as detailed design and ECI progresses  Construction (RC Cantilever Wall) - Vegetation clearance as required Removal of any obstructions (concrete, tree stumps, extraneous debis etc.) located within the designated sheet pile wall location Excavation works and utility diversions - Reinstate natural drainage ditch, located at the front of the sheet pile wall, via long reach excavator Install temporary formwork and install Reckli 2/164 Brabant finish (or similar approved) formliner prior to the pouring of concrete required for RC Cantilever Wall Pour concrete into formwork Excavated ground is reinstated with imported granular fill or topsoil that meets the British Standard for topsoil, - BS3882:2015.
existing or past ENGINEERING WORKS, STRUCTURES OR OTHER MODIFICATIONS located within 250m upstream and	name(s)/reference(s):	- Root Wad Revetment – Water of Ruchill  There is an existing stone revetment. This will be removed as part of the works (Activity 10).

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## downstream of the proposed works Flood Defence - Water of Ruchill flood wall There is an existing stone revetment. This will be removed as part of the works (Activity 10). Grey bank protection - River Earn Right Bank, Strowan Road Existing stone revetment immediately downstream from the works. Weir feature 90m downstream, Dalginross Bridge 45m upstream. Flood Defence - River Earn Right Bankflood Existing stone revetment immediately downstream from the works. Weir feature 90m downstream, Dalginross Bridge 45m upstream. Flood Defence - River Earn Left Bank flood walls Dalginross Bridge immediately up stream. Weirfeature and historic gas works immediately Downstream. Flood Defence - River Lednock flood walls RIGHT Bank - Existing mass concrete wall along the top of the bank. St Margaret's Church adjacent. LEFT Bank - Buried Septic Tank, St Serfs Church. Lednock Bridge is immediately Downstream.

Please note, in particular circumstances SEPA may require further information on the justification for your proposals, their environmental impact and necessary mitigation measures. To avoid delays in processing your application, please discuss with your local SEPA office if your activity is likely to require these assessments.

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