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Severn Valley Flood Risk Management Scheme
Phase 2

Pre-feasibility Report – Phase 2 Final

Date: June 2009

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1 INTRODUCTION

1.1 Background

In 2002 the Environment Agency (Agency) commissioned the Upper Severn Integrated Flood Relief & Wet Washlands Scheme (Wet Washlands Scheme) to assess the viability of creating a wet washland in the Upper Severn valley capable also of reducing local flood risk.

The study was completed in 2005, concluding that a flood control structure and dam, across the River Severn immediately upstream of Shrewsbury could be potentially viable. However, there were a number of associated constraints including the scheme's financial viability, which was estimated to have a benefit-cost ratio of approximately 1.46 and a Defra Priority Score of 5. This was significantly less than Defra's funding threshold, which required a Priority Score of 25 in 2007/08.

In 2007, the possibility of a flood control structure upstream of Shrewsbury was resurrected by the Agency, when Shropshire County Council enquired whether such a structure could be integrated with the Shrewsbury North West Relief Road (Relief Road), which was crossing the Severn valley at a location near the proposed structure. Jacobs were commissioned to undertake the Severn Valley Flood Risk Management Pre-feasibility Study (Severn Valley FRM Phase 1 - 2008).

The Phase 1 study's final report was issued in June 2008 and concluded that integrating a flood control structure with the Relief Road was potentially viable. However, before finalising its viability and progressing to the next stage of appraisal, a number of further activities were recommended, including:

- Undertaking more detailed hydraulic modelling to confirm the extent of influence for any flood control structure.
- Further economic appraisal work to establish a greater certainty of the PV benefits and costs.

Therefore, under the Environment Agency's National Engineering & Environmental Consultancy Agreement (NEECA2), Jacobs have been commissioned to undertake the Severn Valley Flood Risk Management Pre-feasibility Study – Phase 2 (Severn Valley FRM Phase 2 – 2009) specifically to address these two recommendations.

1.2 Study Objectives

This Severn Valley FRM Phase 2 – 2009 study has been prepared in accordance with FCDPAG and is currently at the re-feasibility study stage. It should be borne in mind that even if these pre-feasibility study conclusions are favourable there are still a number of different appraisal stages to navigate before construction can commence.

This commission develops upon the findings of the Severn Valley FRM Phase 1 – 2008 commission using. The findings of the Phase 1 – 2008 study are not duplicated in this report and it is advisable that the Phase 1 – 2008 Final Report¹ is read alongside this report.

The specific scope of works for this Severn Valley FRM Phase 2 – 2009 study is as follows:

¹ Severn Valley Flood Risk Management Scheme, Pre-feasibility Final Report, Jacobs, June 2008.

1. *Hydraulic Model Review:* Review of the existing hydraulic models of the River Severn. This included the models used for the Wet Washlands Scheme and the Severn Valley FRM Scheme.
2. *Existing Conditions Model:* Merge the existing hydraulic models of the River Severn to produce a single, continuous ISIS model of the River Severn capable of producing a suite of ‘existing condition’ design event peak water levels.
3. *With Scheme Model:* Assess the hydraulic impact of the flood control structure using the improved ISIS model, to produce a suite of ‘with scheme’ design event peak water levels.
4. *Scheme Benefits:* Update the FCDPAG economic spreadsheets developed during the Severn Valley FRM Phase 1 – 2008 Study with the peak water levels from the improved hydraulic modelling. For the ‘flood control structure integrated with the Relief Road’ scheme, confirm the economic benefits for the associated flood alleviation elements. The scheme benefits to be calculated in accordance with FCDPAG and flood damages determined from Middlesex University Flood Research Centre’s ‘Multi-Coloured Manual’ publication.
5. *Scheme Costs:* Estimate the costs for the flood alleviation elements of the proposed integrated scheme.
6. *Integrated Scheme Business Case:* Liaise with Mouchel (Shropshire County Council Engineers designing the Relief Road) to determine the ‘combined’ economic business case for the ‘flood control structure integrated with the Relief Road’ scheme.
7. *Outcome Measures Priority Score:* Apply Defra’s Outcome Measures for the flood alleviation elements of the integrated scheme to determine its potential priority and whether there is economic justification for seeking FDGiA funding.

1.3 Study Area

The River Severn rises in the Welsh Hills near Llanidloes and flows 285km through the counties of Ceredigion, Powys, Shropshire, Staffordshire, Worcestershire and Gloucestershire before entering the Severn Estuary at Gloucester.

This Severn Valley FRM Studies (Phases 1 and 2) are appraising the viability of a flood control structure and dam, across the River Severn immediately upstream of Shrewsbury. The dam will result in more flood water being stored in the natural valley as far upstream as River Vyrnwy. However, during a 1% AEP event, levels downstream of the dam will be reduced; potentially as far downstream as Worcester.

The study area for this Severn Valley FRM Study is therefore the river Severn’s natural floodplain from the River Vyrnwy confluence (NRG SJ328158), to Worcester (NRG SO847490). This is a total river centreline distance of 136km (refer to Figure 1).

1.4 Definitions

A number of acronyms are included in this report. Their definitions are outlined below.

Defra	Department of Environment, Food and Rural Affairs
% AEP	% Annual Exceedance of Probability. The likelihood of a flood occurring (previously considered as a 1 in X yr return period).
FCDPAG	Flood and Coastal Defence Project Appraisal Guidance. Defra guidance notes for the appraisal of flood risk management schemes.
Flood Cell	A discrete area adjacent to the floodplain into which floodwater spills. This area may or may not be protected by flood defences.
LiDAR	Light Detection and Ranging (LiDAR) is an airborne mapping technique which uses a laser to measure the distance between the aircraft and the ground, allowing a map to be produced of digital elevation.
Hydraulic Model	A simplified representation of flow within a river system. Used within the project to test the influence of flood risk management measures on flooding.
CFMP	Catchment Flood Management Plan. This is a catchment wide, broad-brush assessment of risks, opportunities and constraints.
CESMM	Civil Engineering Standard Method of Measurement (CESMM) 3 Price Database 1999/2000.
NPD2005	National Property Database 2005. This is a geo-referenced dataset containing information such as address, property type, value and floor area for every property in England and Wales.

2 PREVIOUS STUDIES AND DATA COLLECTION

2.1 Wet Washlands Scheme

In 2002, the Environment Agency joined with the Royal Society for the Protection of Birds (RSPB), English Nature (EN, now Natural England), Shropshire Wildlife Trust, the Rural Development Service of the Department for Environment, Food and Rural Affairs (Defra) and the Countryside Agency (Severn-Vyrnwy Land Management Initiative) to form 'The Upper Severn Wet Washlands Option Group'.

The group's purpose was to identify locations along the Upper Severn valley suitable for wetland habitat creation, or 'Wet Washlands'.

A report summarising the findings of the Wet Washlands Study was issued in October 2005. Entitled 'A Preliminary Assessment of the Scheme's Potential Impact on the Environment', the report concluded that:

- The most suitable location for the creation of a wet washland was in the natural River Severn floodplain immediately upstream of Shrewsbury.
- The wet washland would be created by installing a control structure across the River Severn, near Shelton, which would allow floodwater to be stored upstream.
- The scheme's major opportunities are that it could create approximately 200ha of new wetland habitat and reduce the flood risk to properties in Shrewsbury and further downstream (possibly as far as Worcester).
- The scheme's major constraints are an increased flood risk to properties upstream of the flood control structure (within the wet washland area), the potential impact of the control structure on the river's ecological status and migratory fish, and the potential negative impact the structure may have on the existing landscape.

2.2 Shrewsbury North West Relief Road²

There are high levels of traffic in and out of Shrewsbury town centre and over the past 20 years Shropshire County Council (SCC) has been exploring the possibility of a Shrewsbury North West Relief Road (NWRR) as a possible solution to some of these transport problems.

Over recent years a detailed study investigated a number of potential alignments for the NWRR. Their assessment included the development of a traffic model, a detailed analysis of the environmental impacts and an economic cost-benefit analysis.

In January 2007, Shropshire County Council (SCC) selected a single preferred route for the NWRR, which was refined in December 2007 following further design and site investigation.

Mouchel is the NWRR designers working on behalf of Shropshire County Council. Jacobs and Mouchel met on a number of occasions during the development of this Severn Valley FRM Phase 2 – 2009 Report, with the purpose of determining the 'combined' economic business case for the 'flood control structure integrated with the Relief Road' scheme.

² All information on the Shrewsbury North West Relief Road has been kindly provided by Shropshire County Council and their appointed designers, Mouchel.

2.3 Severn Valley Flood Risk Management Scheme

In 2007, the Environment Agency (Agency) commissioned the Severn Valley Flood Risk Management Scheme (Severn Valley FRM Phase 1 – 2008) to re-assess the viability of a large storage area immediately upstream of Shrewsbury with the specific remit of reducing the downstream flood risk.

The study considered both the viability of a stand alone flood control dam and also the option to integrate the dam with the Shrewsbury North West Relief Road (NWRR). The conclusions were that both options were technically possible, but that the stand alone flood control dam is not robustly economic. The option to integrate the dam with the NWRR has a better economic justification as it would allow for shared economic and environmental benefits.

The Final Report (June 2008) made a number of recommendations including:

- The Environment Agency should seek clarification on funding criteria for the joint scheme proposal and confirm whether there is willingness from all parties to develop and find a joint appraisal.
- Determine whether there are any other definite funding partners, for example, property developers.
- Undertake much more detailed hydraulic modelling to maximise the performance of the storage area and confirm the scheme's extent of influence. This should be accompanied with work to establish a greater certainty of the PV Benefits and Costs, with particular attention paid to the incremental benefit/cost ratio.
- Further engineering and environmental assessment to confirm the integrated elements of the scheme and any mitigation measures for the environmental impacts.
- A partnership could be formed to move forward with this project. The structure of this partnership would need to be developed by agreement between the Environment Agency and Shropshire County Council.

2.4 Available Data

A considerable amount of information was previously collected for the Wet Washlands, NWRR and Severn Valley FRM Phase 1 - 2008 schemes. All relevant, existing data has been re-used and improved for this study.

The most critical, new dataset received for this study is LiDAR for the Worcester area. Figure 2 shows the location of the new LiDAR tiles received for this study.

3 METHODOLOGY AND SCHEME OPTIONS

3.1 Methodology

The Severn Valley FRM Phase 1 – 2008 study was a pre-feasibility study to assess a number of flood risk management storage options. It appraised the options for the Upper Severn valley in accordance with Defra's FCDPAG guidance using the following simple criteria:

- technical: 'Is there any reason why the option can not be built?'
- economic: 'Do the benefits of doing the project outweigh the costs?'
- environmental: 'Are the effects on the environment acceptable?'

This Severn Valley FRM Phase 2 – 2009 study is specifically looking to refine the 'technical' and 'economic' conclusions of the Phase 1 study through more detailed hydraulic modelling and an updated economic business case. Due to the pre-feasibility nature of the study this Phase 2 study has not considered the impacts of climate change on the scheme's viability. This would need to be considered should the study we taken forward for further, more detailed appraisal.

The Phase 1 study's conclusions on environmental acceptability are still applicable. It did not form part of this Phase 2 study's scope to review or amend these conclusions.

3.2 Scheme Options

This Severn Valley FRM Phase 2 – 2009 study was commissioned solely to re-appraise the technical and economic viability of integrating a flood control structure, or dam, with the proposed Shrewsbury NWRR. To achieve this and comply with the Defra FCDPAG guidance, the following flood risk management options have been considered:

- Option 1: Do-nothing.
- Option 2: Do-minimum.
- Option 3: With scheme - Flood Control Structure Integrated with Shrewsbury NWRR.

The following paragraphs describe these options in more detail.

Option 1: Do-nothing

In accordance with Defra's guidance, the 'do-nothing' option is the benchmark for the economic appraisal and all options are compared to it.

For this option, all flood risk management operations would cease throughout the study area, including maintenance of any existing defences, clearance of debris and flood warning. This would result in the gradual deterioration of the river channel and banks. The risk of flooding would increase slightly with time as a result of this and the potential impacts of climate change

Option 2: Do-minimum

For this option, the river and any associated defences would continue to be adequately maintained to the current level.

Option 3: 'With Scheme' - Flood Control Structure Integrated with Shrewsbury NWRR

The 'with scheme' option assumes a dam is integrated with the Shrewsbury NWRR by combining the earth embankment needed to impound the flood water with the elevated road crossing of the valley.

It incorporates a flood control structure which will reduce the river's downstream flow during a 1% AEP event.

As reported in Severn Valley FRM Phase 1 – 2008 study, there are properties upstream of the dam that are within the impounded area and will require separate flood defences (or secondary defences) to ensure they have no increased flood risk. Table 3.1 summarises the locations where secondary defences are required.

Table 3.1. Location and Approximate Design of Secondary Flood Defences

Location	No. of properties having an increase in flood risk	Defence Design	
		Length	Maximum height
Pentre	30	2.2km	2.3m
Shrawardine	1	0.1km	2.6m
Montford Bridge	18	1.0km	3.6m
Bromley's Forge	3	0.8km	4.4m
River House	1	0.2km	6.0m

Figure 3 shows the location of the proposed dam, flood control structure and associated secondary defences.

The Flood Control Structure Integrated with Shrewsbury NWRR is the only 'with-scheme' option considered by this study.

4 ‘WITH SCHEME’ CONCEPT DESIGN OPTIONS

Mouchel were commissioned by Shropshire County Council to develop a ‘concept’ design for the ‘with scheme’ option: Flood Control Structure Integrated with the Shrewsbury NWRR.

Mouchel lead the design process with Jacobs providing the design criteria for the flood control structure and associated impounding embankment, or dam.

4.1 Dam and Flood Control Structure Design Criteria

The design criteria for the flood control structure and associated dam is unchanged from that presented in the Severn Valley FRM Phase 1 – 2008 study. In summary, the key design criteria are therefore as follows:

- The flood control structure will provide a 1% (1 in 100) AEP standard of protection to those properties downstream.
- The dam is designed for a ‘safety flood’ with a 0.01% (1 in 10,000) AEP.
- The emergency spillway level of the dam is at a level of 59.2mAOD.
- The emergency spillway does not have to be immediately adjacent to the flood control structure.
- The level of the remaining, non-overflow section of the dam is dependent on the length of the emergency spillway level and the freeboard allowance. However, typically this level is between 62mAOD – 65mAOD.
- As the structure and embankment falls within the ambit of the Reservoirs Act, a separate access road is required to the flood control structure to allow regular inspections. In addition, access would be required to the emergency spillway to inspect and maintain the erosion protection.
- A footbridge is required across the flood control structure to enable access to both river banks.

4.2 Integrated Concept Design

4.2.1 Final Design

Using the design criteria outlined above and those required by Shropshire County Council for the NWRR, Mouchel has developed a number of different ‘concept’ designs for the With Scheme Option 3. The options developed and given final consideration by Mouchel for the Flood Control Structure Integrated with the Shrewsbury NWRR, were as follows:

- Option 5: Flood control structure and access road situated to the north of the NWRR.
- Option 6: Flood control structure and access road situated to the south of the NWRR.

Appendix A provides the concept design drawings for these two ‘integrated’ options. Both options present the NWRR raised above the flood impounding embankment, or dam, on a series of piers.

Option 6 was the concept design preferred by Mouchel. It is this design that has therefore been selected as the With Scheme option during the integrated business case assessment; refer to Section 6.4 of this report.

4.2.2 Comment on the Integrated Concept Design

It did not form part of this project's scope to review or comment on the preferred 'concept' design developed by Mouchel. However, we believe, it is appropriate to do so as the Agency are potentially a funding partner for the 'integrated' scheme.

It is recognised that the flood control structure and associated dam impose a number of design constraints on the integrated 'concept' design. However, the preferred design - Option 6 - does not appear to be a fully integrated design as there are very few elements of the design that truly have a dual purpose.

Should the scheme be taken forward for further consideration there would appear to be opportunities to refine the current concept design to harmonise the flood control structure, dam and NWRR design requirements. Examples of these opportunities, which may reduce the scheme construction and operation costs, are as follows:

- Investigate possibilities of incorporating the emergency spillway into the relief road. This could potentially be on one, lowered carriageway.
- Potentially increase the number of flood control gates to enable extreme floods to be discharged through the gated structure, rather than over the embankment.
- The current design has a bend in the overflow spillway embankment. This is likely to cause erosion problems through the concentration of flow where the direction of flow from the two embankments meets.

5 HYDRAULIC MODELLING

5.1 Existing Models

It is understood that an ISIS one-dimensional river modelling software based mathematical model of the River Severn was previously developed in 2005 for the Fluvial Severn Flood Risk Management Strategy ('the Strategy') by Mott MacDonald. The Strategy assessed flood risk management options over 275km of the River Severn from its source in the Welsh Hills near Llanidloes, to its tidal limit at the weirs just upstream of Gloucester.

The mathematical models calculate water levels and flows along the river system and can be used to assess the technical viability of different flood risk management options. Five separate hydraulic models were developed by Mott MacDonald for the Strategy covering different reaches of the Severn. These are:

- Model 1: Upper Severn model – Llanidloes to Buttington.
- Model 2: Shrewsbury model – Buttington to Buildwas.
- Model 3: Link model A – Buildwas to Bewdley.
- Model 4: Link model B – Bewdley to Worcester.
- Model 5: Worcester to Gloucester model.

Models 1, 2, 3 and 4 cover this project's study area.

5.2 Methodology

5.2.1 Phase 1 – 2008 Approach and Conclusions

The proposed methodology for the Phase 1 – 2008 study, was to assess the impact of the proposed dam by using the hydraulic model developed for the Wet Washlands Scheme.

However, a high level review of the Wet Washlands hydraulic modelling was undertaken and it concluded that suitable final results for the With Scheme option were only available to Attingham, despite initial results suggesting water levels could be reduced as far as Worcester. In addition, the modelled operation of the flood control structure did not appear to maximise the storage potential of the impounded area during extreme flood events.

For the Phase 1 – 2008 study, therefore, the assumption was made that water levels could be reduced as far as Worcester. The peak water levels throughout the study area were estimated by assuming a standard decrease/increase change, relative to chainage from the flood control structure.

However, it was a recommendation of the Phase 1 – 2008 study to undertake more detailed hydraulic modelling to maximise the performance of the storage area and confirm the scheme's extent of influence.

5.2.2 Review of Available Models

The following existing hydraulic models of the River Severn were available for review:

- Fluvial Severn 'Strategy' Models. As detailed in Section 5.1 of this report there are five separate hydraulic models of the Severn which were developed by Mott McDonald.

- Wet Washland Models. These were copies of the relevant Mott McDonald ‘Strategy’ Models, with amendments to represent the flood control structure. The Wet Washland Models were developed by Jeremy Benn Associates (JBA).

The available models were run using ISIS Version 3.01 and although the majority performed adequately, the Wet Washland Model’s 3 and 4 were unable to compute any ‘With Scheme’ results.

With the need to determine the extent of influence for the proposed flood control structure, the conclusion of the review was to develop a project specific, continuous model of the River Severn between the River Vyrnwy (30km upstream of Shrewsbury) and River Tern (downstream of Worcester).

5.2.3 Existing Conditions Model

A continuous model of the River Severn has therefore been built between Abermule and Worcester for this Severn Valley FRM Phase 2 – 2009 study. This ISIS v3.01 hydrodynamic 1-D model of the River Severn was built by merging the ‘Strategy’ Models 2, 3 and 4.

The Phase 2 – 2009 model results were verified by comparing the 1% AEP existing condition results with the corresponding, and available, ‘Strategy’ Model results. Table 5.1 summarises this verification process and confirms the Phase 2 – 2009 model is suitable for this pre-feasibility study.

Table 5.1. Summary of Model Verification Process for a 1% AEP

Model Node	Location	Predicted Peak Water Level (mAOD)		Difference (m)
		Strategy Model	Phase 2 Model	
24318	Shwaradine former Rail Bridge	59.91	60.07	+0.16
23683	Montford Bridge	57.38	57.51	+0.13
22109	Proposed Flood Control Structure	53.10	53.40	+0.30
21626	Shrewsbury – Welsh Bridge	52.57	52.65	+0.08
21423d	Shrewsbury - English Bridge	51.83	52.06	+0.23
20712	Rail Bridge	48.78	48.94	+0.16
20196	Old Atcham Bridge	46.89	46.69	-0.20

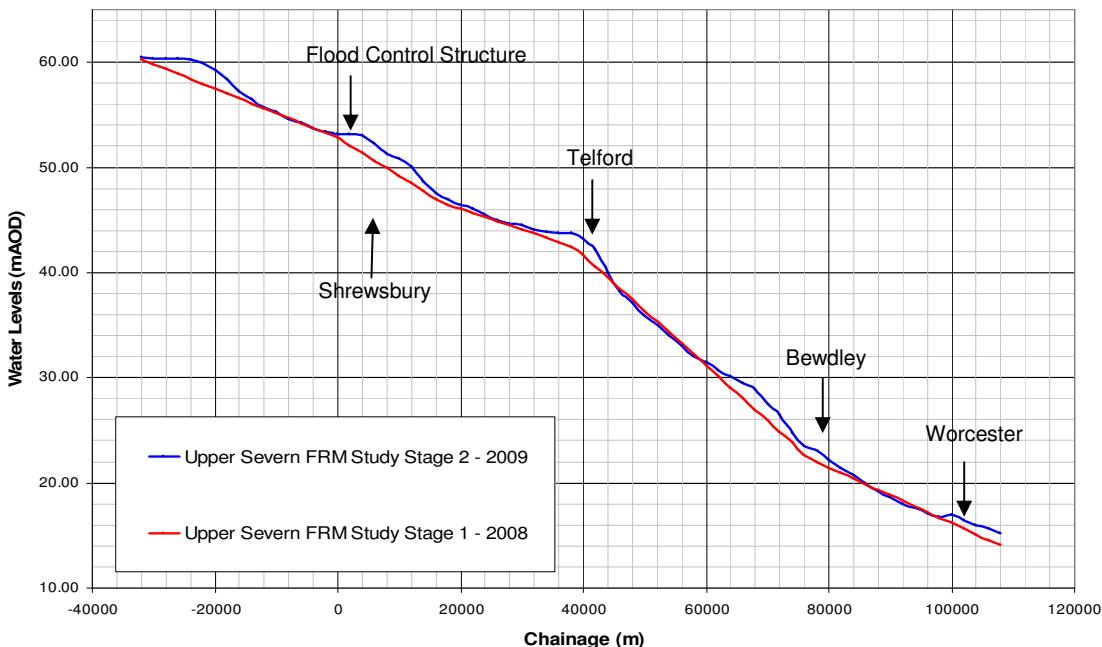
A review of the Strategy Study model results indicated that storm events used for the calibration of the model had durations of up to 330 hours. In this situation it was considered that a design event with 144hours-duration is likely to be most representative of the flood conditions in the River Severn.

Consequently, the Phase 2 – 2009 study model of the River Severn has used a 144-hour duration storm to assess the existing peak water levels for a range of flood events.

Figure 4 compares the 1% AEP ‘Existing’ conditions (or ‘Do-minimum’) peak water levels for the Phase 1 – 2008 and Phase 2 – 2009 studies. As discussed in Section

5.2.2, no modelling was carried out for the Phase 1 – 2008 study and the differences in results shown are all attributable to the more detailed modelling undertaken for this Phase 2 – 2009 Study.

Figure 4: Longitudinal section comparing the 1% AEP Existing Condition Results from the Phase 1 and Phase 2 Upper Severn FRM Studies



5.2.4 With Scheme Model

A ‘With Scheme’ model was required to identify the extent of influence of the proposed flood control structure and optimise the performance of the upstream impounded area.

The ‘Existing’ conditions model was therefore altered to develop the ‘With Scheme’ model of the River Severn for this Phase 2 – 2009 study, using the following design criteria:

- The current approximate threshold of flooding in Shrewsbury, without the operation of its demountable flood defence system, is during a 4% AEP event.
- It was therefore considered that the proposed flood control structure should be able to pass-forward flows for a 10% AEP flood event without restriction. This is a maximum pass-forward flow of approximately $420\text{m}^3/\text{s}$.
- To achieve this a flood control structure would be required comprised of 4 separate gates, each 8m wide.
- The sill level of the flood control structure was placed at 47.0mAOD and it was assumed that gates would be always raised to a height of 2.1m above the sill level.
- The gates would operate depending on the water levels in the storage basin upstream.
- The emergency spillway level of the dam was 59.2mAOD.
- The upstream extent of influence for the impounded area should not extend beyond the River Wyrnwy confluence.

5.3 Peak Water Level Results

For the economic analysis, peak water levels are needed for the ‘Existing’, ‘With Scheme’ and ‘Do-Nothing’ scenarios. For each scenario, these results are needed for a 20%, 10%, 5%, 2%, 1% and 0.5% AEP events.

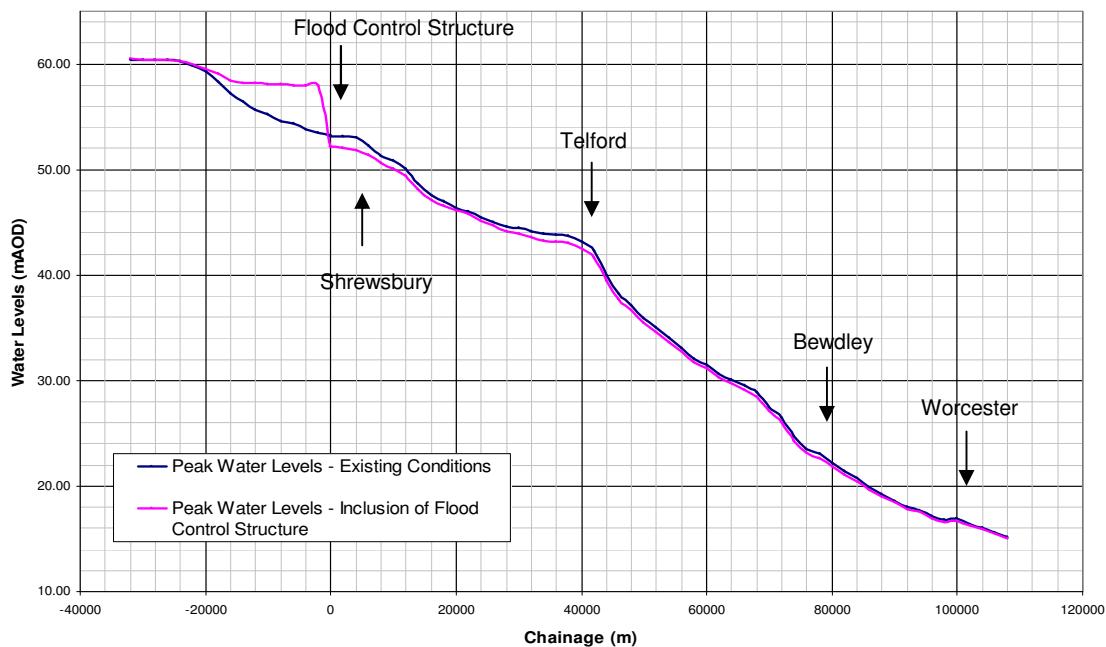
The ‘Do-nothing’ water levels were calculated by adding a constant 0.1m to the ‘Existing’ levels. This 0.1m value is the average increase reported in the Wet Washlands scheme when the models Manning’s frictional coefficient was increased to represent the potential deterioration of the river channel from no future maintenance.

Appendix B provides the peak water levels within the study area for all design events and scenarios. Table 5.2 summarises the peak water levels results at key locations for a 1% AEP event. Tables 5.3 and 5.4 summarise the results at the same locations for the 2% AEP and 5% AEP events respectively.

As shown in Table 5.2, during a 1% AEP event, the inclusion of a flood control structure when integrated with the Shrewsbury NWRR will reduce peak water levels in Shrewsbury by a maximum of 1.10m. The reduction in downstream water levels continues as far as Worcester (103km) where it is estimated the levels are reduced by a maximum of 0.13m, as shown in Figure 5.

Table 5.2. Summary of the Peak Water Levels for a 1% AEP

Model Node	Location	Predicted Peak Water Level (mAOD)		Difference (m)
		Existing	With Scheme	
25314	Crew Green Bridge	60.88	60.88	0.00
24318	Shwaradine former Rail Bridge	60.07	60.15	0.08
23683	Montford Bridge	57.51	59.03	1.52
22109	Flood Control Structure US	53.43	58.55	5.12
21626	Shrewsbury – Welsh Bridge	52.90	51.79	-1.10
21525	Shrewsbury - Kingsland Bridge	52.40	51.46	-0.94
21423d	Shrewsbury - English Bridge	52.25	51.36	-0.89
20712	Rail Bridge	48.94	48.38	-0.56
20196	Old Atcham Bridge	46.69	46.35	-0.33
18148	Buildwas Bridge	43.41	42.75	-0.65
14662	Victoria Bridge	24.53	24.19	-0.34
12621	Holt Fleet Bridge	17.39	17.23	-0.16
11420	Worcester - Diglis Weir	15.46	15.33	-0.13

Figure 5: Long Section showing Existing and With Scheme 1% AEP Peak Water Levels**Table 5.3. Summary of the Peak Water Levels for a 2% (1 in 50) AEP**

Model Node	Location	Predicted Peak Water Level (mAOD)		Difference (m)
		Existing	With Scheme	
25314	Crew Green Bridge	60.79	60.79	0.00
24318	Shwaradine former Rail Bridge	59.83	59.87	0.04
23683	Montford Bridge	57.30	58.37	1.07
22109	Flood Control Structure US	53.10	57.91	4.81
21626	Shrewsbury – Welsh Bridge	52.49	51.68	-0.81
21525	Shrewsbury - Kingsland Bridge	52.07	51.40	-0.68
21423d	Shrewsbury - English Bridge	51.95	51.31	-0.64
20712	Rail Bridge	48.76	48.35	-0.42
20196	Old Atcham Bridge	46.58	46.33	-0.26
18148	Buildwas Bridge	43.13	42.63	-0.50
14662	Victoria Bridge	24.33	24.07	-0.26
12621	Holt Fleet Bridge	17.25	17.12	-0.12
11420	Worcester - Digris Weir	15.31	15.22	-0.09

Table 5.4. Summary of the Peak Water Levels for a 4% (1 in 25) AEP

Model Node	Location	Predicted Peak Water Level (mAOD)		Difference (m)
		Existing	With Scheme	
25314	Crew Green Bridge	60.68	60.68	0.00
24318	Shwaradine former Rail Bridge	59.59	59.60	0.01
23683	Montford Bridge	57.09	57.68	0.59
22109	Flood Control Structure US	52.80	57.05	4.26
21626	Shrewsbury – Welsh Bridge	52.12	51.65	-0.47
21525	Shrewsbury - Kingsland Bridge	51.75	51.36	-0.39
21423d	Shrewsbury - English Bridge	51.64	51.26	-0.38
20712	Rail Bridge	48.57	48.30	-0.27
20196	Old Atcham Bridge	46.46	46.29	-0.17
18148	Buildwas Bridge	42.82	42.48	-0.34
14662	Victoria Bridge	24.10	23.93	-0.17
12621	Holt Fleet Bridge	17.09	17.00	-0.09
11420	Worcester - Diglis Weir	15.16	15.10	-0.06

6 ECONOMIC ASSESSMENT

6.1 Benefits

6.1.1 General Methodology

The scheme benefits detailed in this report relate only to the flood alleviation elements of the proposal to integrate a flood control structure to the Shrewsbury NWRR. The flood alleviation benefits have been calculated in accordance with FCDPAG, using a discount rate over a 100-year appraisal period. Flood damages were determined from Middlesex University Flood Research Centre's publication 'The Benefits of Flood and Coastal Defence: Techniques and Data for 2003' (the Multi-Coloured Manual). Where appropriate, damages were capped at the market value of the property.

The economic spreadsheets developed for the Severn Valley FRM Phase 1 – 2008 study have been used, and updated, for this study. For the avoidance of doubt, the following paragraphs include any relevant assumptions and approaches previously reported by the Phase 1 – 2008 Final Report (June 2008).

To simplify the economic appraisal it was assumed that the demountable flood defences at Shrewsbury and Bewdley were not deployed. It is appreciated that this is likely to result in a slight overestimation of the scheme's total damages, but it was felt this assumption was appropriate for the pre-feasibility nature of the study.

6.1.2 Property Locations and Threshold

Details on properties potentially at risk of flooding were available from the NPD2005 (NPD) dataset. This is a geo-referenced dataset with information such as address, property type, value and floor area for every property in England and Wales. It does not, however, contain property threshold levels.

The NPD data was initially trimmed to the 30,000 properties in the proximity of the Upper Severn Valley.

Threshold levels for all these properties were estimated using a combination of surveyed threshold levels and LiDAR. Using the ArcMAP GIS tool, a ground level for each NPD property was determined from LiDAR and compared against a sample of surveyed threshold levels. This found that LiDAR was, on average, 0.14m lower than the actual property thresholds. Therefore, the LiDAR derived ground level for each NPD property was increased by 0.14m to more accurately represent the threshold level.

Figure 2 is the available LiDAR coverage for the Upper Severn valley. As shown there are areas around Worcester where LiDAR has been made available for this Phase 2 – 2009 study, having not been available for the previous studies.

6.1.3 Assigning Peak Water Levels

The river centreline distance between the flood control structure and the downstream study extent at Worcester, is 103km. For the existing situation, the river falls a vertical height of approximately 38m over this distance, which is an average gradient of 1 in 2700.

The relatively flat gradient allowed the river length and adjacent floodplain to be divided into 2km reaches, or flood cells, and a single suite of peak water levels

applied to all properties within each cell. Figure 6 shows the location and extent of the 52no. flood cells in the study area.

6.1.4 Do Nothing damages (Option 1)

To evaluate the ‘Do Nothing’ damages, it was assumed that all river maintenance would cease. As described in Section 5.3, the flood levels for this scenario were calculated by adding a constant 0.1m to the ‘existing scenario’ levels.

The ‘do-nothing’ damages are the benchmark for the economic appraisal and all options are compared to it.

6.1.5 Do Minimum damages (Option 2)

The peak water levels for the ‘existing scenario’ modelling exercise have been used to determine the Do Minimum damages. For simplicity, it is assumed that the demountable defences within the study area would not be deployed.

6.1.6 With Scheme damages (Option 3)

The With Scheme damages relate only to the flood alleviation elements of the integrated scheme. Peak water levels from the hydraulic modelling of the flood control structure have been used to determine the With Scheme damages. Only those peak water levels downstream of the flood control structure have been used in the economic assessment.

6.1.7 Option Damages and Benefits

The benefits for each option are expressed as damage avoided compared to the Do Nothing option. The Present Value (PV) damages and benefits for each option are provided in Table 6.1 below.

Table 6.1: Damages and Benefits of Options

Description	Economic Costs (£k)		
	Do Nothing Option 1	Do Minimum Option 2	With Scheme Option 3
PV Damage	170,713	149,156	119,562
PV Benefits	-	21,557	51,151

6.1.8 Location of Properties Contributing a Damage

As a sensitivity and validation exercise, it is important to understand the location of the properties contributing to the PV Benefit cost of £51,151k. Figure 7 summarises the total PV Benefit cost contribution for each flood cell. This shows that although flood cells in Shrewsbury are contributing to the PV Benefit Cost, a significant contribution is also received from properties in Telford, Bridgnorth, Bewdley, Stourport-on-Severn and Worcester. This is confirmed when analysing the number of properties in each flood cell benefiting from a reduced flood risk; as shown in Table 6.2.

Table 6.2: Total Properties benefiting from a reduced flood risk and therefore contributing to PV Damages.

Flood Cells	Approximate Location	Total Properties Contributing a PV Damage per Design Event.		
		4% (1 in 25)	2% (1 in 50)	1% (1 in 100)
0 – 6000	Shrewsbury	124	237	321
8000 – 14000		0	0	0
16000 – 22000		0	1	2
24000 – 30000		0	0	1
32000 – 38000	Telford	113	120	203
40000 – 46000		15	16	19
48000 – 54000	Bridgnorth	34	51	63
56000 – 62000		50	50	50
64000 – 70000		7	9	9
72000 – 78000	Bewdley	15	20	472
80000 – 86000	Stourport-on-Severn	75	97	109
88000 – 94000		19	27	29
96000 – 104000	Worcester	333	534	639
TOTALS		785	1162	1917

6.1.9 Environmental and Indirect Benefits

The Wet Washlands scheme assessed the potential environmental benefits of the habitat creation upstream of the flood control structure to be £1,043,000.

However for this Severn Valley FRM Phase 2 – 2009 study the concept design does not currently include for such a habitat creation. Therefore, these environmental benefits have not been included in the economic appraisal.

In addition, due to the high level nature of this study, other indirect benefits have not been considered at this stage. These can typically increase PV Benefits by 20% and include for items such as traffic disruption, service disruption, loss of life, evacuation etc.

6.1.10 Comparison with Phase 1 – 2008

As presented in Table 6.1, the PV Benefits for Option 3 (Flood Control Structure Integrated with Shrewsbury NWRR) are £51,151k. This value is being generated by reducing the flood risk in the 1% AEP event to approximately 1917 properties over the 103km from Shrewsbury to Worcester; the locations of these properties are shown on Figure 8 and summarised in Table 6.2.

This PV Benefit of £51,151k is significantly less than the comparative £102,542k value reported in the Severn Valley FRM Phase 1 – 2008 study. The reason for this reduction in PV Benefits is entirely attributable to the methods used for estimating property thresholds in the Worcester area.

As discussed in Section 6.1.2, no LiDAR coverage was available for the Worcester area during the Phase 1- 2008 study with the property threshold levels used for the

economic analysis having been ‘estimated’ from local ground contours. For this Phase 2 – 2009 study, the missing LiDAR data has been provided and the accuracy of the property thresholds in the economic spreadsheets has therefore been greatly improved.

Figure 8 confirms this conclusion by comparing those properties contributing a PV Benefits for the two Severn Valley FRM Studies (Phase 1 and 2). As shown, the number of properties contributing a PV Benefit in the Worcester area has greatly reduced for this Phase 2 – 2009 study.

6.2 Cost Estimation

6.2.1 Calculation of Costs

An estimation of the total scheme costs for the With Scheme option (Flood Control Structure Integrated with the NWRR) have been derived with reference to Defra’s ‘Green Book’ and in partnership with Mouchel.

It was agreed that Jacobs would estimate costs for the flood alleviation elements of the ‘integrated’ scheme i.e. flood control structure, including the associated in-bank river engineering works and the secondary flood defences to upstream villages. A 50 year design life and variable annual discount rate has been assumed. The following whole life scheme tasks have been accounted for in the calculation of scheme costs:

- Construction.
- Design and survey.
- Planning and environmental.
- Land and legal.
- Project Management and Site Supervision.
- Future maintenance.

The construction cost was initially calculated. The costs of the other items were then estimated by including percentage allowances based on the construction cost.

6.2.2 Construction Cost

The construction cost was calculated using the CESMM³ price database applied to estimated measurement of quantities and with reference to the Environment Agency’s unit-cost database. The construction cost includes for the following:

- Basewalls, slabs, piers and supporting structure for the flood control gates.
- The fabrication and installation of the flood control gates.
- Temporary river diversion.
- Protection to the flood embankment.
- Sheet pile cut-off.
- Shallow stilling basin.
- Construction of the secondary flood defences to upstream villages.

³ Civil Engineering Standard Method of Measurement (CESMM) 3 Price Database 1999/2000.

An inflation allowance has been made to reflect the prices at 2008 Q4. The cost for the fabrication and installation of the flood control gates has been estimated from the out-turn costs of similar, previous schemes.

Appendix C provides a full breakdown of the assumed costs.

6.2.3 Secondary Defences

The Environment Agency's unit cost database was used to determine the indicative construction cost for the secondary defences. Depending on the location, a cost was also included for the raising of roads and the provision of a pumping station to improve the local surface water drainage. These figures were verified against those scheme costs included in the Pentre Flood Alleviation Pre-feasibility Report (April 2003), and were found to be very similar.

6.2.4 Maintenance Costs

Maintenance tasks include visual inspections, mowing of embankments, weed cleaning, debris moving, minor bank stability works, pointing of joints in flood walls, greasing flood gates and operational maintenance such as the checking of temporary pumps etc.

Annual Maintenance costs have been calculated by estimating the approximate time spent (in percentage terms of their annual workload) of a 2-man team and associated equipment in maintaining the different options.

For option 2 (Do-minimum), the workload is relatively minor as the assumption is there are no existing defences to be operated in the study area. The team would therefore annually spend approximately 5% of their time on debris moving and visual inspections of the river crossings; approximate cost of £2.5k per annum.

The maintenance costs for option 3 (with scheme - Flood Control Structure integrated with NWRR) are assumed to require a team spending 40% of their time annually mowing the embankment and secondary defences, checking on operational maintenance of temporary pumps at the secondary defences, testing of the flood control gates and telemetry. This equates to an approximate cost of £20k per annum.

6.2.5 Optimism Bias

No formal risk workshop or assessment was carried out to determine a risk contingency. However, in accordance with Defra guidance an optimism bias value of 60% has been included in the scheme costs.

6.2.6 Summary of Final Costs

Table 6.3 summarises the estimated scheme costs for each option. The Option 3 costs are only the flood alleviation elements (flood control structure, in-bank river engineering works and secondary defences) of the 'integrated' scheme. All costs are only indicative, but they are appropriate for the pre-feasibility nature of this study. Appendix C provides a full breakdown of these costs.

Table 6.3: Summary of Flood Control Scheme Costs

Cost Elements	Scheme Costs per Option (£k)		
	Option 2 (Do-minimum)	Option 3 (FCS Integrated with NWRR)	
		In-Bank River Engineering Works	Secondary Defences
Construction	-	9,000	5,327
Design and survey	-	720	222
Planning and environmental	-	720	222
Land and Legal	-	900	277
Proj. Man. & Supervision	-	936	288
Sub-Total	-	12,276	6,337
Optimism Bias (60%)	-	7,365	3,802
TOTAL CAPITAL COST	-	19,641	10,139
Maintenance Costs	250	2,000	
TOTAL	250	31,781	

In addition to the costs presented in Table 6.3 there are other elements of the scheme that are not currently required by the 'stand alone' design for the NWRR and therefore the Agency may be required to contribute funding. These are as follows:

- The works associated with relocating the new inlet works for the Severn Trent Water (STW) Shelton Water Treatment Works, upstream to Preston Monford.
- The earth embankment, or dam, needed to impound the water.

6.3 Outcome Measure Score

The economic viability of the flood alleviation elements of Option 3 (with scheme – flood control structure integrated with NWRR) has been determined using Defra's Outcome Measures system and the following information:

PV Cost:	OM1	£31,781k
PV Benefits:	OM1	£51,151k
Benefit-Cost Ratio:	-	1.61
Properties moved out of any flood probability category into a lower one:	OM2	2114
Households moved from the very significant or significant flood probability category to the moderate or low category:	OM2b	1577

Using this information, the Outcome Measures score for the flood alleviation elements of the 'integrated' scheme is 1.98.

A number of assumptions have been made when calculating this Outcome Measures score. These are unlikely to significantly alter the scheme's Outcome

Measures score but they should be reviewed if the scheme is taken forward for a more detailed, future appraisal. The assumptions are as follows:

- The economic spreadsheets have been used to estimate the values for OM2 and OM2b.
- OM3 (households in deprived communities at reduced flood risk), OM4 (contribution to improving SSSI's) and OM5 (contribution to UK BAP Habitats) are all assumed to be zero.

6.4 Integrated Business Case

6.4.1 Approach

Option 3 (With Scheme – Flood Control Structure Integrated with NWRR) will require joint funding from Defra (for the flood control structure elements) and the Department of Transport (for the NWRR).

As stated in the Phase 1 – 2008 study, Defra's 'Green Book' does not include definite government rules on how to economically appraise an integrated scheme being jointly funded by two government departments.

Bill Watts, the Environment Agency's Senior Economist, was contacted for this study to provide advice. Mr Watts has suggested that given the high level nature of this pre-feasibility study, it would be appropriate to combine the separate PV benefits and costs for the separate schemes.

It is this approach which has been adopted for this Phase 2 – 2009 study. However, it is a recommendation of this report that before this scheme progresses to the next appraisal stage that confirmation of this approach is sought from the necessary government departments.

6.4.2 Business Case for the NWRR

Mouchel has confirmed that PV Benefits for the stand alone Shrewsbury NWRR business case are as follows:

- | | |
|--------------------------|-----------|
| • PV Benefits Sub-total: | £308,300k |
| • Carbon: | £1,600K |
| • Accidents: | £14,700k |
| • PV Benefits TOTAL: | £324,600k |

This business case is for the NWRR scheme without the complementary improvement works in Shrewsbury town centre.

6.4.3 Integrated Benefit – Cost Ratio

As discussed in Section 4 of this report, a concept design for the Flood Control Structure integrated with the NWRR has been developed by Mouchel.

Table 6.4 summarises the total whole life costs for this design. Appendix C provides more information on these scheme costs and the following key points should be borne in mind when considering these values:

- The majority of the NWRR scheme works have assumed an optimism bias value of 20%. However, the flood alleviation elements and the flood impounding embankment have assumed a 60% value.

- As discussed in Section 6.2.6 of this report, there are elements categorised as NWRR costs, which the Environment Agency may be required to contribute funding.

Table 6.4: Summary of Integrated Scheme Costs

NWRR Costs ¹		Flood Alleviation Element Costs ²	
Item	Cost £k	Item	Cost £k
Road Works	12,344	Construction (incl Prelims etc)	14,327
Structures	15,092	Design & Survey	942
Impounding Embankment (from borrow pit)	27,142	Planning & Environmental	942
Environmental Works	1,636	Land & Legal	1,177
Utilities	2,659	Proj. Man & Supervision	1,224
Preliminaries	11,190	Optimism Bias	11,167
Client Costs & Risk Value	6,051	Maintenance	2,000 ³
Optimism Bias	9,365		
Land	9,181		
Preparation Costs	6,252		
Supervision Costs	2,605		
STW Associated Costs	11,101		
Maintenance	830		
TOTAL	115,448	TOTAL	31,780

¹: Costs derived by Mouchel²: Costs derived by Jacobs³: This is not PV cost. Presented as such for simplicity.

As presented in Table 6.4, the approximate total whole life costs for Flood Control Structure Integrated with NWRR scheme, is £147,228k (£115,448k + £31,780k).

The combined PV Benefits for the scheme are £375,751k. This is estimated by adding the PV Benefits for the separate schemes; the £324,600k for the stand alone NWRR and the £51,151k for the flood alleviation elements.

In summary, therefore, the benefit-cost ratio for the flood control structure integrated with the NWRR is approximately 2.5.

7 PROJECT RISKS

As with any flood risk management scheme, it is important that project risks are recorded for future consideration. It is particularly pertinent for a pre-feasibility study such as this where the high level nature of the study often requires assumptions to be made. The Severn Valley FRM Phase 1 – 2008 study identified the following three key assumptions which would need careful consideration during any future appraisal study:

- Hydraulic modelling.
- Economic appraisal.
- Environmental.

The following paragraphs discuss how the work carried out for this Severn Valley FRM Phase 2 – 2009 study has affected these key assumptions and the potential risk they pose to the conclusions of this study.

7.1 Hydraulic Modelling

The hydraulic modelling exercise undertaken for this study has confirmed that the flood control structure has the potential to reduce peak water levels in a 1% AEP event, as far as Worcester.

Although the risk of a significant hydraulic inaccuracy is much reduced from the Phase 1 – 2008 study, there are still a number of residual risks that should be considered were the scheme to be taken forward. These risks are as follows:

- The hydraulic model has been developed by merging 4 separate models previously built for the Fluvial Severn ‘Strategy’ Study. Any inherent inaccuracies in these models will not have been addressed by this Phase 2 – 2009 study.
- The continuous hydraulic model developed for this study has not been re-calibrated after the merger of the 4 separate models.
- The model in its current form would not be sufficiently accurate for use in the detailed design of the Flood Control Structure integrated with NWRR scheme. For such a detailed design, a mathematical or physical model more sophisticated than the current 1D ISIS model is likely to be needed to accurately represent the hydraulic operation of the flood control gates.

Generally, however, the hydraulic model developed for this Phase 2 – 2009 study is suitably accurate for a pre-feasibility study.

7.2 Economic Viability

The economic viability requires evaluation of benefits and costs, and significant assumptions have been made in the estimation of both.

Property threshold levels have been estimated using LiDAR and there is an obvious risk that some of these may be incorrect. Applying the peak water level at the upstream end of each flood cell to all properties within that cell, is also a significant assumption. It is a risk that both these approaches have lead to a slight over-estimation of the ‘with scheme’ flood damages.

The economic appraisal methodology is generating residual PV Damages in excess of £100,000k. It is therefore a recommendation of this study that the reasons for this

should be explored as part of any future, more detailed, appraisal of the scheme's viability. However, many of the major uncertainties / risks with the economic appraisal identified in the Phase 1 – 2008 study have now been addressed. The PV Benefit calculation of £51,151k for the flood alleviation elements of the proposed 'integrated' scheme is a robust estimate and sufficiently accurate for the requirements of this pre-feasibility study. However, it should be considered that environmental and indirect damages, as well as climate change impacts on water levels, may increase this PV Benefit cost.

There is a considerable risk in the accuracy of the cost estimation provided for this pre-feasibility study. Although an optimism bias allowance of 60% has been included, accurately estimating costs for such a large, complex scheme at pre-feasibility stage is unlikely to be precise. A review of the scheme costs is recommended at every future stage in the appraisal process as the design develops and the project risks are fully understood.

7.3 Environmental Considerations

The environmental considerations of a flood control structure and dam across the Severn valley upstream of Shrewsbury have not been considered by this study.

Therefore the following assumptions and associated risks reported in the Phase 1 – 2008 study are still applicable:

- The flood control structure could be operated to create a wetland habitat similar to that appraised by the Wet Washlands study.
- However, there remains a risk that through further, more detailed, assessment that operating the flood control structure in this way is not possible because of the potential impacts it has on available upstream storage during extreme event.

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

This Severn Valley FRM Phase 2 – 2009 report has summarised the pre-feasibility work undertaken to assess the viability of a flood control structure and dam in the Severn Valley, just upstream of Shrewsbury. This study builds upon the conclusions of the Severn Valley FRM Phase 1 Report issued in 2008, which should be read alongside this Phase 2 – 2009 Report.

The study was specifically commissioned to address a number of recommendations made in the Severn Valley FRM Phase 1 Report, namely:

- Undertake more detailed hydraulic modelling to confirm the extent of influence for a flood control structure and dam, just upstream of Shrewsbury.
- Undertake further economic appraisal work to establish a greater certainty of the PV benefits and costs.

These tasks have been successfully completed and the resulting conclusions can be summarised as follows:

- i. A flood control structure and dam across the Severn Valley at the location of the NWRR will reduce the flood risk during a 1% AEP flood event to approximately 1256 properties, between Shrewsbury and Worcester.
- ii. In Shrewsbury peak flood levels could be reduced by approximately 1.10m. The reduction in Worcester, approximately 103km downstream is 0.13m.
- iii. Applying the FCDPAG principles, the PV Benefits resulting from the reduction in flood risk to these properties is £51,151k with no allowance for environmental or indirect benefits.
- iv. The whole life costs of the flood alleviation elements of the Flood Control Structure Integrated with the Shrewsbury NWRR are £31,780. These are the costs the Agency will be solely responsible for, including the flood control structure, in-bank river engineering works and the upstream secondary defences.
- v. Defra's Outcome Measures score for these flood alleviation elements of the 'integrated' scheme is 1.98. This is significantly less than Defra's funding threshold for 2008/09.
- vi. A concept design for the Flood Control Structure Integrated with the NWRR was developed by Mouchel. The indicative whole life cost for this concept design is estimated to be £147,228k. Merging the PV Benefits for the flood alleviation and the stand alone NWRR schemes, provides a total PV Benefit cost of £375,751k. The benefit cost ratio therefore the Flood Control Structure Integrated with the NWRR is 2.5.

8.2 Recommendations

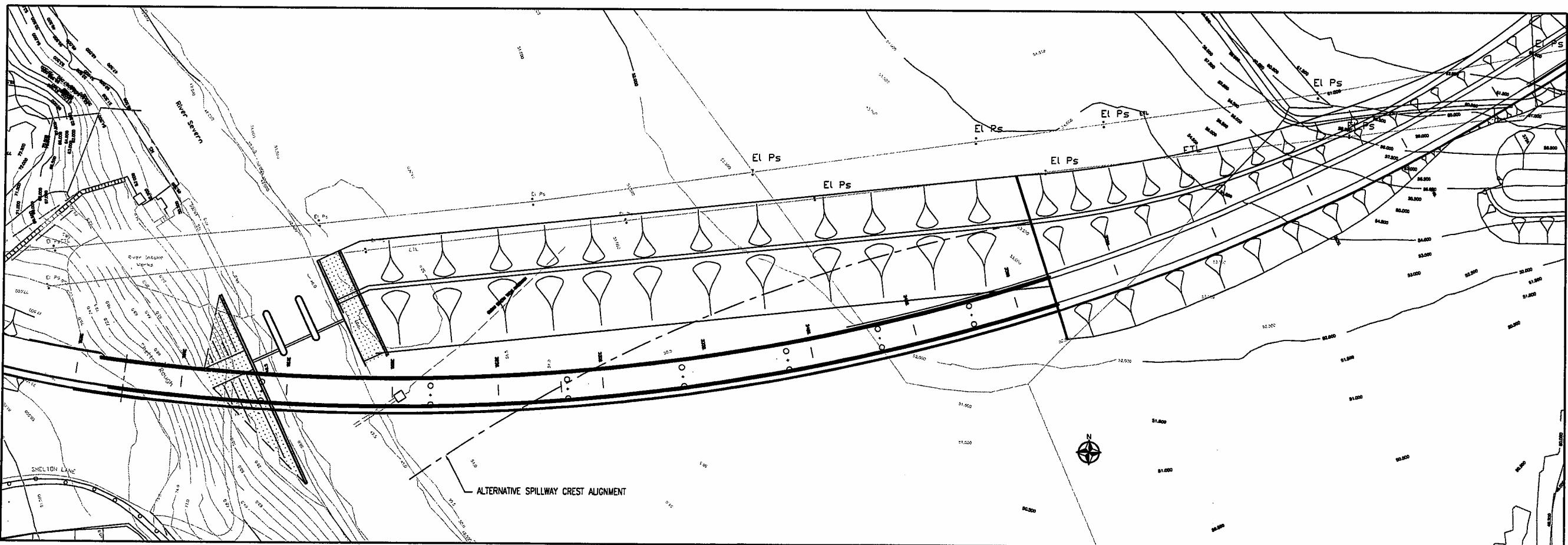
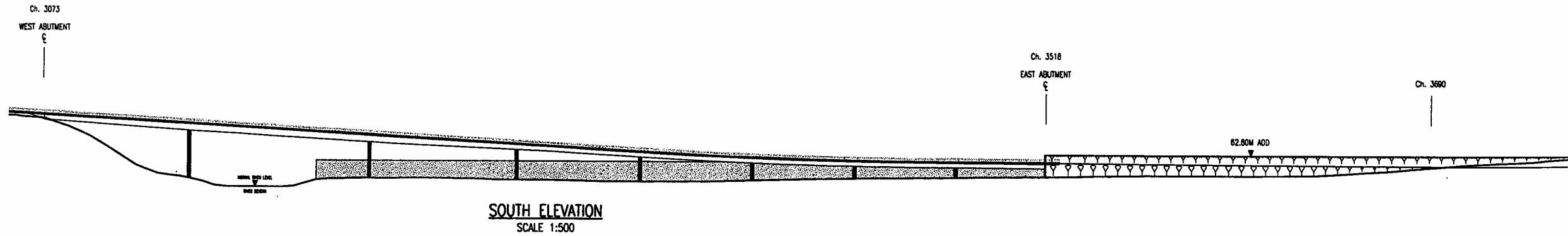
The recommendation of this Severn Valley FRM Phase 2 – 2009 study is that with a benefit-cost ratio of 1.61 and Outcome Measures Score of 1.98 for the flood alleviation elements of the 'integrated' scheme, there does not appear to be a strong economic justification to seek FDGiA under the current Defra FDCPAG process.

Much of the information collected, and tools developed for this study could be used as a basis upon which to develop a detailed appraisal study. However, there are a

number of recommendations made in this report, and the previous Phase 1 – 2008 study report, that should be taken into consideration. These are as follows:

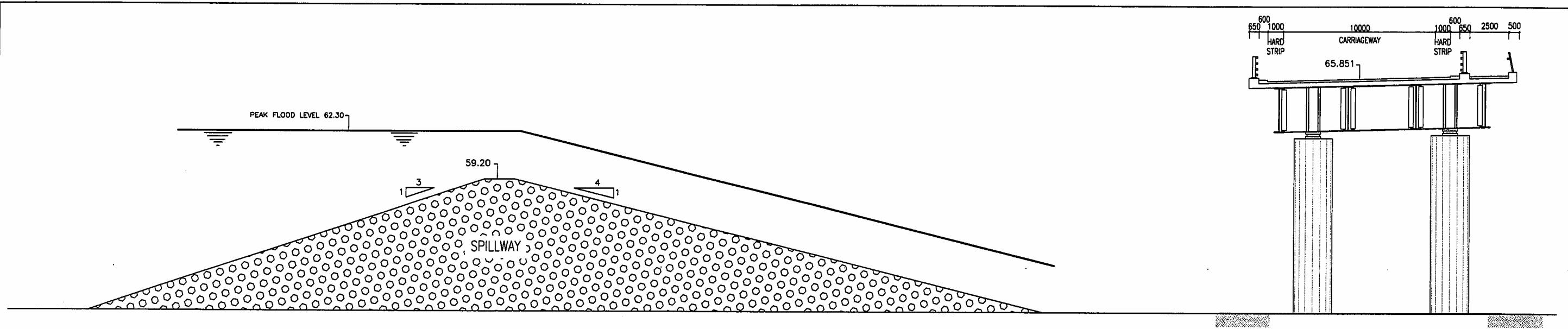
- The Environment Agency should seek clarification on funding criteria for the joint scheme proposal and confirm whether there is willingness from all parties to develop and fund a joint appraisal.
- PV residual damages in excess of £100,000k are being generated. The reasons for this should be explored as part of any future, more detailed, appraisal of the scheme's viability.
- A review of the scheme costs is recommended at every future stage in the appraisal process as the design develops and the project risks are fully understood.
- Further engineering and environmental assessment to confirm the integrated elements of the scheme and any mitigation measures for the environmental impacts.
- A partnership could be formed to move forward with this project. The structure of this partnership would need to be developed by agreement between the Environment Agency and Shropshire County Council.

APPENDIX A



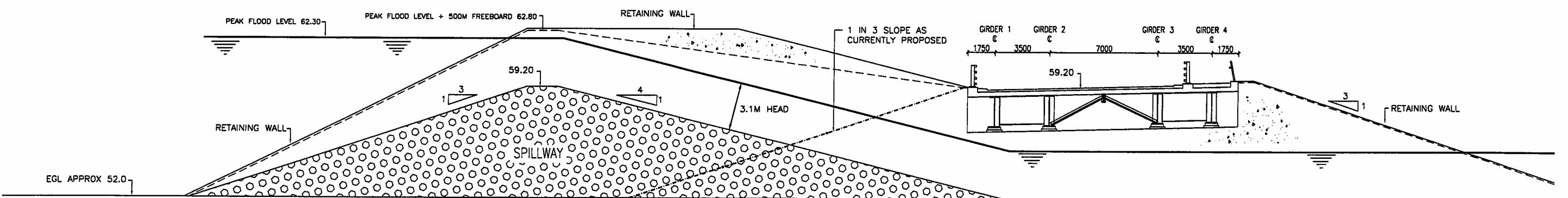
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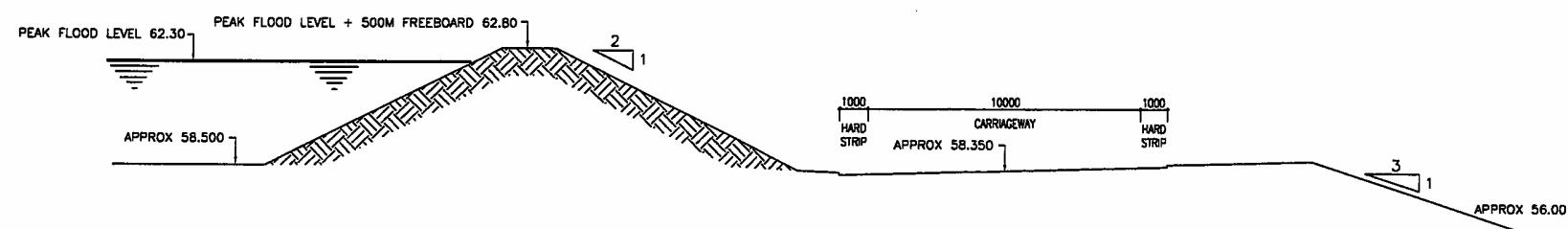
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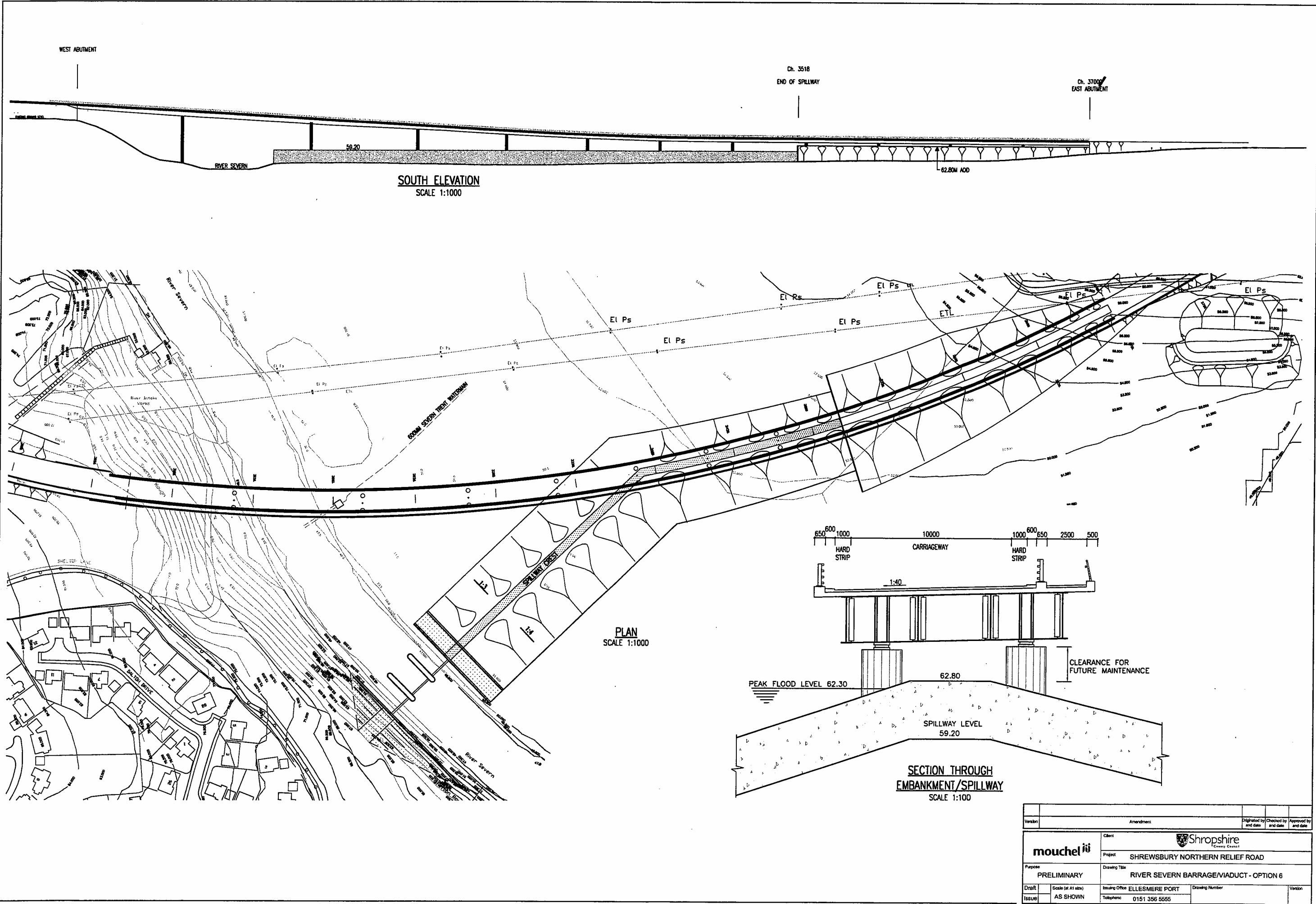
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APPENDIX B

Chainage(m)	Landmark	Predicted Peak Water Level (mAOD) EXISTING										Predicted Peak Water Level (mAOD) SCHEME										Difference (m)							
		NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year				
		29768	86.97	86.84	86.72	86.56	86.33	86.13	85.81	29768	86.97	86.83	86.72	86.56	86.33	86.13	85.81	29768	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
0		29751	86.87	86.73	86.60	86.43	86.19	85.99	85.67	29751	86.86	86.72	86.60	86.43	86.19	85.99	85.67	29751	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
170		29735	86.58	86.48	86.38	86.24	86.02	85.83	85.51	29735	86.59	86.48	86.38	86.24	86.02	85.83	85.51	29735	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
330		29716	86.52	86.41	86.30	86.14	85.92	85.72	85.38	29716	86.52	86.40	86.30	86.14	85.92	85.72	85.38	29716	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
520		29701	86.32	86.20	86.10	85.95	85.74	85.55	85.23	29701	86.32	86.20	86.10	85.95	85.74	85.55	85.23	29701	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
670		29672	85.69	85.61	85.48	85.41	85.29	85.16	84.92	29672	85.69	85.61	85.48	85.41	85.29	85.16	84.92	29672	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
960		29651	85.60	85.53	85.46	85.37	85.19	85.02	84.79	29651	85.60	85.53	85.46	85.37	85.19	85.02	84.79	29651	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
1170		29634	85.40	85.32	85.24	85.15	84.95	84.88	84.69	29634	85.40	85.31	85.24	85.15	84.95	84.88	84.69	29634	-0.01	0.00	0.00	0.00	0.00	0.00	0.00				
1340		29615	85.18	85.11	85.04	84.96	84.85	84.77	84.57	29615	85.18	85.11	85.04	84.96	84.85	84.77	84.57	29615	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
1530		29601	85.02	84.96	84.91	84.85	84.66	84.46	84.39	29601	85.02	84.96	84.91	84.85	84.74	84.66	84.39	29601	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
1670		29575	84.63	84.55	84.50	84.42	84.33	84.21	83.94	29575	84.62	84.55	84.49	84.42	84.33	84.21	83.94	29575	0.00	0.00	-0.01	0.00	0.00	0.00	0.00				
1930		29551	84.39	84.30	84.24	84.17	84.06	83.99	83.89	29551	84.39	84.30	84.24	84.17	84.06	83.99	83.89	29551	0.00	0.00	-0.01	0.00	0.00	0.00	0.00				
2170		29536	84.28	84.17	84.10	84.01	83.88	83.78	83.45	29536	84.27	84.17	84.10	84.01	83.88	83.78	83.45	29536	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2320		29514	84.16	84.03	83.96	83.85	83.70	83.58	83.39	29514	84.16	84.03	83.96	83.85	83.70	83.58	83.39	29514	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2540		29501	84.13	84.00	83.92	83.81	83.66	83.54	83.35	29501	84.13	84.00	83.92	83.81	83.66	83.54	83.35	29501	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2670		29493	84.10	83.97	83.89	83.78	83.63	83.50	83.32	29493	84.10	83.97	83.89	83.78	83.63	83.50	83.32	29493	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2750		29492	84.10	83.97	83.89	83.78	83.62	83.50	83.31	29492	84.10	83.97	83.89	83.78	83.62	83.50	83.31	29492	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2940		29474	83.98	83.84	83.76	83.62	83.43	83.26	82.88	29474	83.98	83.84	83.75	83.63	83.43	83.26	82.88	29474	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
3170		29451	83.84	83.68	83.59	83.44	83.22	83.05	82.75	29451	83.84	83.69	83.59	83.44	83.22	83.05	82.75	29451	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
3360		29432	83.67	83.52	83.42	83.27	83.03	82.81	82.36	29432	83.67	83.51	83.42	83.27	83.03	82.81	82.36	29432	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
3560		29412	83.45	83.31	83.20	83.00	82.63	82.44	82.09	29412	83.45	83.31	83.20	83.00	82.63	82.44	82.09	29412	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
3670		29401	83.38	83.24	83.14	82.96	82.65	82.39	81.97	29401	83.38	83.24	83.14	82.96	82.65	82.39	81.97	29401	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
3960		29372	83.05	82.79	82.65	82.48	82.19	81.97	81.60	29372	83.04	82.78	82.65	82.48	82.19	81.97	81.60	29372	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
4170		29351	82.72	82.46	82.29	82.12	81.84	81.61	81.27	29351	82.71	82.46	82.29	82.12	81.84	81.61	81.27	29351	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
4360		29332	82.50	82.33	82.16	81.98	81.66	81.44	81.12	29332	82.49	82.33	82.16	81.98	81.66	81.44	81.12	29332	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
4550		29313	82.28	82.12	81.95	81.77	81.44	81.18	80.79	29313	82.28	82.12	81.95	81.77	81.44	81.18	80.79	29313	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
4670		29301	82.19	82.02	81.85	81.68	81.48	81.10	80.72	29301	82.18	82.02	81.85	81.68	81.48	81.10	80.72	29301	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
4940	Caer Howel Rd Brdg	29275	81.95	81.79	81.63	81.47	81.13	80.88	80.51	29275	81.95	81.79	81.63	81.47	81.13	80.88	80.51	29275	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
4940		29274	81.46	81.38	81.30	81.21	80.97	80.78	80.47	29274	81.46	81.38	81.30	81.21	80.97	80.78	80.47	29274	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
5170		29251	81.14	81.07	81.01	80.93	80.63	80.44	80.17	29251	81.14	81.07	81.01	80.93	80.63	80.44	80.17	29251	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
5360		29232	80.87	80.78	80.71	80.63	80.32	80.17	79.94	29232	80.87	80.78	80.71	80.64	80.32	80.17	79.94	29232	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
5670		29201	80.45	80.39	80.33	80.26	80.10	79.94	79.68	29201	80.45	80.39	80.33	80.26	80.10	79.94	79.68	29201	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
5900		29178	80.20	80.11	80.08	80.03	79.87	79.70	79.39	29178	80.20	80.11	80.08	80.03	79.87	79.70	79.39	29178	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
6170		29151	79.92	79.85	79.80	79.75	79.55	79.35	78.98	29151	79.92	79.85	79.79	79.75	79.55	79.35	78.98	29151	0.00	0.00	-0.01	0.00	0.00	0.00	0.00				
6300		29138	79.77	79.69	79.63	79.60	79.35	79.07	78.71	29138	79.76	79.69	79.64	79.60	79.35	79.07	78.71	29138	0.00	0.00	0.01	0.00	0.00	0.00	0.00				
6490		29119	79.60	79.53	79.45	79.42	79.15	78.82	78.36	29119	79.59	79.53	79.49	79.42	78.82	78.36	78.07	29119	0.00	0.00	-0.05	0.00	0.00	0.00	0.00				
6670		29101	79.51	79.45	79.43	79.42	79.15	78.82	78.36	29101	79.51	79.45	79.43	79.15	78.82	78.36	78.07	29101	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
6870		29081	79.20	79.12	79.04	78.75	78.60	78.39	78.05	29081	79.20	79.12	79.04	78.75	78.60	78.39	78.05	29081	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
7090		29059	78.92	78.83	78.73	78.61	78.33	78.09	77.77	29059	78.92	78.83	78.73	78.61	78.33	78.09	77.77	29059	0.00	0.00	-0.01	0.00	0.00	0.00	0.00				
7170		29051	78.86	78.76	78.66	78.54	78.27	78.01	77.69	29051	78.86	78.76	78.66	78.54	78.27	78.01	77.69	29051	0.00	0.00	-0.01	0.00	0.00	0.00	0.00				
7290		29039	78.79	78.69	78.59	78.47	78.22	77.90</td																					

Chainage(m)	Landmark	Predicted Peak Water Level (mAOD) EXISTING										Predicted Peak Water Level (mAOD) SCHEME										Difference (m)							
		NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year				
14270		28350	73.14	73.13	73.10	73.07	72.89	72.70	72.42	28350	73.15	73.13	73.10	73.07	72.89	72.70	72.42	28350	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
14670		28311	72.72	72.62	72.51	72.40	71.96	71.93	71.88	28311	72.72	72.62	72.51	72.40	71.92	71.94	71.88	28311	0.00	0.00	0.00	0.00	-0.04	0.01	0.00	0.00	0.00		
14860		28292	72.67	72.56	72.44	72.32	72.14	72.00	71.84	28292	72.67	72.56	72.44	72.32	72.14	72.00	71.84	28292	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15080		28271	72.64	72.53	72.40	72.27	72.07	71.91	71.71	28271	72.64	72.53	72.40	72.27	72.07	71.91	71.71	28271	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15170		28262	72.63	72.52	72.39	72.27	72.06	71.90	71.70	28262	72.63	72.52	72.39	72.27	72.06	71.90	71.70	28262	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15460		28234	72.61	72.50	72.37	72.24	72.03	71.84	71.63	28234	72.61	72.50	72.36	72.24	72.03	71.84	71.63	28234	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15670	Gilcwydd Rd Brg	28214	72.58	72.47	72.33	72.20	71.97	71.76	71.52	28214	72.58	72.47	72.33	72.20	71.97	71.76	71.52	28214	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15670		28213	72.57	72.46	72.32	72.19	71.96	71.75	71.50	28213	72.57	72.46	72.32	72.19	71.96	71.75	71.50	28213	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15770	Gilcwydd Rail Brg	28204	72.51	72.39	72.24	72.10	71.89	71.71	71.42	28204	72.51	72.39	72.24	72.10	71.89	71.71	71.42	28204	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15770		28203	72.30	72.20	72.09	71.96	71.76	71.61	71.39	28203	72.30	72.20	72.09	71.96	71.76	71.61	71.39	28203	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15890	Gilcwydd Weir	28193	72.06	71.97	71.88	71.77	71.61	71.50	71.29	28193	72.06	71.97	71.88	71.77	71.61	71.50	71.29	28193	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15890		28192	71.90	71.81	71.73	71.61	71.46	71.33	71.11	28192	71.90	71.81	71.72	71.61	71.46	71.33	71.11	28192	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
16210		28160	71.61	71.53	71.45	71.35	71.21	71.10	70.89	28160	71.61	71.53	71.45	71.35	71.21	71.10	70.89	28160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
16320		28150	71.47	71.40	71.32	71.22	71.08	70.97	70.76	28150	71.47	71.40	71.31	71.22	71.09	70.97	70.76	28150	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00		
16530		28129	71.25	71.18	71.10	70.91	70.77	70.56	70.25	28129	71.25	71.18	71.10	70.88	70.77	70.56	70.25	28129	0.00	0.00	0.00	0.00	-0.03	0.00	0.00	0.00	0.00		
16740		28109	71.06	70.99	70.84	70.73	70.63	70.43	70.25	28109	71.06	70.99	70.92	70.84	70.73	70.63	70.43	28109	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
16850		28098	70.84	70.78	70.70	70.61	70.50	70.35	70.19	28098	70.85	70.77	70.70	70.61	70.50	70.35	70.19	28098	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
16940		28089	70.77	70.71	70.65	70.56	70.45	70.37	70.22	28089	70.77	70.71	70.64	70.56	70.45	70.37	70.22	28089	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
17180		28066	70.52	70.46	70.40	70.32	70.22	70.14	70.01	28066	70.52	70.46	70.39	70.32	70.22	70.14	70.01	28066	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
17290		28055	70.47	70.40	70.34	70.27	70.17	70.09	69.97	28055	70.47	70.40	70.34	70.27	70.17	70.09	69.97	28055	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
17500		28035	70.33	70.27	70.21	70.13	70.02	69.95	69.83	28035	70.33	70.27	70.20	70.13	70.02	69.95	69.83	28035	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
17610		28024	70.26	70.19	70.12	70.04	69.93	69.85	69.72	28024	70.25	70.19	70.12	70.04	69.93	69.85	69.72	28024	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
17780		28007	70.16	70.09	70.04	69.93	69.82	69.74	69.61	28007	70.16	70.09	70.01	69.93	69.82	69.74	69.61	28007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
17960		27990	70.06	69.98	69.90	69.81	69.69	69.60	69.46	27990	70.06	69.98	69.90	69.81	69.69	69.46	69.32	27990	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18150		27971	69.97	69.89	69.80	69.70	69.57	69.47	69.34	27971	69.97	69.89	69.80	69.70	69.57	69.47	69.34	27971	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18350		27952	69.88	69.80	69.71	69.61	69.47	69.38	69.25	27952	69.88	69.80	69.71	69.61	69.47	69.38	69.25	27952	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18530		27934	69.83	69.75	69.66	69.55	69.41	69.30	69.15	27934	69.83	69.75	69.66	69.56	69.41	69.30	69.15	27934	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18790		27909	69.83	69.75	69.65	69.55	69.40	69.29	69.12	27909	69.83	69.75	69.65	69.55	69.40	69.29	69.12	27909	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18910		27897	69.82	69.74	69.65	69.54	69.39	69.28	69.09	27897	69.82	69.74	69.64	69.54	69.39	69.28	69.09	27897	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19120		27877	69.80	69.72	69.62	69.36	69.24	69.04	68.74	27877	69.80	69.72	69.62	69.52	69.36	69.24	69.04	27877	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19280		27861	69.77	69.69	69.58	69.48	69.32	69.18	68.96	27861	69.77	69.69	69.59	69.48	69.31	69.18	68.96	27861	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19470	Leighton Rd Brg	27844	69.47	69.41	69.33	69.24	69.11	69.00	68.82	27844	69.47	69.41	69.33	69.24	69.11	68.99	68.82	27844	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19470		27843	69.40	69.34	69.27	69.19	69.07	68.96	68.79	27843	69.40	69.34	69.27	69.19	69.07	68.96	68.79	27843	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19510	Leighton Weir	27840	69.47	69.40	69.32	69.22	69.09	68.97	68.79	27840	69.47	69.40	69.32	69.23	69.08	68.97	68.79	27840	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19510		27839	69.44	69.37	69.29	69.19	69.05	68.92	68.66	27839	69.44	69.37	69.28	69.19	69.05	68.92	68.66	27839	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19640		27826	69.33	69.27	69.22	69.16	68.98	68.80	68.55	27826	69.33	69.27	69.22	69.16	68.98	68.80	68.55	27826	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
19790		27812	69.33	69.22	69.11	68.98	68.74	68.52	68.27	27812	69.33	69.22	69.1																

Chainage(m)	Landmark	Predicted Peak Water Level (mAOD) EXISTING										Predicted Peak Water Level (mAOD) SCHEME										Difference (m)											
		200 year	100 year	50 year	25 year	10 year	5 year	2 year	200 year	100 year	50 year	25 year	10 year	5 year	2 year	200 year	100 year	50 year	25 year	10 year	5 year	2 year	200 year	100 year	50 year	25 year	10 year	5 year	2 year				
		26913	65.14	65.11	65.08	65.03	64.92	64.79	64.56	26913	65.14	65.11	65.08	65.03	64.92	64.79	64.56	26913	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29270		26892	65.08	65.05	65.02	64.97	64.87	64.73	64.50	26892	65.08	65.05	65.02	64.97	64.87	64.73	64.50	26892	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29470		26871	65.00	64.97	64.94	64.90	64.79	64.65	64.41	26871	65.00	64.97	64.94	64.90	64.79	64.65	64.41	26871	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29670		26850	64.91	64.89	64.88	64.81	64.70	64.56	64.33	26850	64.91	64.89	64.86	64.81	64.70	64.56	64.34	26850	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29870		26850d	64.91	64.89	64.86	64.81	64.70	64.56	64.33	26850d	64.91	64.89	64.86	64.81	64.70	64.56	64.34	26850d	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30070		26829	64.83	64.81	64.78	64.73	64.62	64.49	64.27	26829	64.83	64.81	64.78	64.73	64.62	64.49	64.27	26829	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30270		26808	64.75	64.73	64.71	64.66	64.55	64.42	64.20	26808	64.75	64.73	64.71	64.66	64.55	64.42	64.20	26808	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30470		26788	64.69	64.67	64.64	64.59	64.48	64.33	64.09	26788	64.69	64.67	64.64	64.59	64.47	64.33	64.10	26788	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30670		26767	64.50	64.48	64.46	64.42	64.31	64.18	63.97	26767	64.50	64.48	64.46	64.42	64.31	64.18	63.97	26767	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30870		26746	64.43	64.42	64.40	64.36	64.25	64.11	63.88	26746	64.43	64.42	64.40	64.36	64.25	64.11	63.88	26746	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31070		26725	64.43	64.41	64.39	64.35	64.24	64.09	63.83	26725	64.43	64.41	64.39	64.35	64.24	64.09	63.83	26725	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31270		26704	64.42	64.41	64.39	64.35	64.23	64.08	63.81	26704	64.42	64.41	64.39	64.35	64.23	64.08	63.81	26704	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31470		26683	64.42	64.41	64.39	64.34	64.23	64.08	63.80	26683	64.42	64.41	64.39	64.34	64.23	64.08	63.80	26683	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31670		26662	64.42	64.40	64.38	64.34	64.22	64.07	63.78	26662	64.42	64.40	64.38	64.34	64.22	64.07	63.78	26662	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31870		26641	64.41	64.39	64.37	64.33	64.21	64.06	63.77	26641	64.41	64.39	64.37	64.33	64.21	64.06	63.77	26641	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32070		26620	64.38	64.36	64.34	64.30	64.19	64.03	63.74	26620	64.38	64.36	64.34	64.30	64.19	64.03	63.74	26620	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32270		26599	64.28	64.26	64.24	64.20	64.09	63.93	63.64	26599	64.28	64.26	64.24	64.20	64.09	63.93	63.65	26599	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32470		26578	64.21	64.19	64.17	64.13	64.02	63.86	63.57	26578	64.21	64.19	64.17	64.13	64.02	63.86	63.57	26578	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32670		26558	64.17	64.14	64.12	64.09	63.97	63.82	63.52	26558	64.17	64.14	64.12	64.09	63.97	63.82	63.52	26558	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32870		26537	64.13	64.10	64.08	64.04	63.93	63.77	63.48	26537	64.13	64.10	64.08	63.93	63.77	63.48	63.22	26537	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33070		26516	64.06	64.00	63.97	63.85	63.70	63.40	63.04	26516	64.06	64.02	64.00	63.97	63.85	63.70	63.40	26516	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33270		26495	64.00	63.96	63.94	63.91	63.80	63.64	63.34	26495	64.00	63.96	63.94	63.91	63.79	63.64	63.35	26495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33470		26474	63.95	63.91	63.89	63.85	63.74	63.58	63.28	26474	63.95	63.90	63.89	63.85	63.74	63.58	63.28	26474	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33670		26453	63.92	63.88	63.86	63.82	63.71	63.55	63.25	26453	63.92	63.88	63.86	63.82	63.70	63.55	63.25	26453	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33870		26432	63.87	63.83	63.81	63.77	63.66	63.50	63.20	26432	63.87	63.83	63.81	63.77	63.66	63.50	63.20	26432	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34070		26411	63.82	63.77	63.75	63.72	63.60	63.45	63.14	26411	63.82	63.77	63.75	63.72	63.60	63.45	63.14	26411	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34270		26390	63.79	63.73	63.71	63.67	63.56	63.40	63.10	26390	63.79	63.73	63.71	63.67	63.56	63.40	63.10	26390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34470		26369	63.76	63.70	63.68	63.64	63.53	63.37	63.05	26369	63.76	63.70	63.68	63.64	63.53	63.37	63.05	26369	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34670		26348	63.73	63.67	63.65	63.61	63.49	63.33	63.01	26348	63.73	63.67	63.65	63.61	63.49	63.33	63.01	26348	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34870		26327	63.68	63.59	63.55	63.44	63.29	62.92	62.60	26327	63.68	63.62	63.59	63.44	63.29	62.90	62.60	26327	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35070		26307	63.58	63.52	63.49	63.45	63.35	63.21	62.90	26307	63.58	63.52	63.49	63.45	63.35	63.21	62.90	26307	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35270		26286	63.51	63.45	6																												

Chainage(m)	Landmark	Predicted Peak Water Level (mAOD) EXISTING										Predicted Peak Water Level (mAOD) SCHEME										Difference (m)											
		200 year	100 year	50 year	25 year	10 year	5 year	2 year	200 year	100 year	50 year	25 year	10 year	5 year	2 year	200 year	100 year	50 year	25 year	10 year	5 year	2 year	200 year	100 year	50 year	25 year	10 year	5 year	2 year				
		25469	61.13	61.06	60.99	60.90	60.82	60.69	60.58	25449	61.11	61.04	60.96	60.87	60.78	60.66	60.55	25449	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
43270		25449	61.11	61.03	60.96	60.87	60.78	60.66	60.55	25449	61.11	61.04	60.96	60.87	60.78	60.66	60.55	25449	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
43470		25430	61.08	61.01	60.93	60.83	60.74	60.62	60.52	25430	61.08	61.01	60.93	60.84	60.74	60.62	60.52	25430	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
43870		25410	61.07	60.99	60.91	60.81	60.71	60.58	60.48	25410	61.07	60.99	60.91	60.81	60.70	60.58	60.48	25410	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44070		25390	61.05	60.97	60.89	60.78	60.67	60.55	60.45	25390	61.05	60.97	60.89	60.78	60.67	60.55	60.45	25390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44270		25370	61.04	60.95	60.86	60.76	60.64	60.53	60.43	25370	61.04	60.95	60.86	60.76	60.64	60.53	60.43	25370	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44470		25350	61.01	60.91	60.83	60.72	60.61	60.49	60.40	25350	61.01	60.92	60.83	60.72	60.61	60.49	60.40	25350	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44670		25330	60.99	60.89	60.81	60.70	60.59	60.48	60.39	25330d	60.99	60.90	60.81	60.70	60.59	60.48	60.39	25330d	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44860	Crew Green Brg	25314	60.98	60.88	60.79	60.68	60.57	60.46	60.37	25314	60.98	60.88	60.79	60.68	60.57	60.46	60.37	25314	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45070		25313	60.75	60.58	60.49	60.40	60.30	60.21	60.13	25313	60.78	60.59	60.49	60.40	60.30	60.21	60.13	25313	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45270		25293	60.71	60.52	60.41	60.32	60.22	60.12	60.04	25293	60.74	60.53	60.41	60.32	60.22	60.12	60.04	25293	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45470		25274	60.69	60.47	60.33	60.22	60.10	59.99	59.91	25274	60.72	60.49	60.33	60.22	60.10	59.99	59.91	25274	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45670		25255	60.69	60.46	60.29	60.16	60.02	59.90	59.83	25255	60.72	60.48	60.29	60.16	60.02	59.90	59.83	25255	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45870		25235	60.68	60.44	60.24	60.10	59.94	59.82	59.74	25235	60.71	60.46	60.25	60.10	59.94	59.82	59.74	25235	0.04	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
46070		25235d	60.68	60.44	60.24	60.10	59.94	59.82	59.74	25235d	60.71	60.46	60.25	60.10	59.94	59.82	59.74	25235d	0.04	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
46270		25197	60.66	60.41	60.20	60.02	59.83	59.69	59.61	25197	60.70	60.43	60.21	60.02	59.83	59.69	59.61	25197	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
46470		25178	60.65	60.40	60.19	59.98	59.77	59.62	59.54	25178	60.69	60.43	60.20	59.98	59.77	59.62	59.54	25178	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
46670		25159	60.65	60.40	60.18	59.96	59.74	59.58	59.49	25159	60.69	60.43	60.19	59.96	59.74	59.58	59.49	25159	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
46870		25140	60.65	60.39	60.18	59.95	59.73	59.55	59.46	25140	60.69	60.42	60.19	59.95	59.73	59.55	59.46	25140	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47070		25121	60.65	60.40	60.18	59.95	59.72	59.53	59.42	25121	60.69	60.42	60.19	59.95	59.72	59.53	59.42	25121	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47270		25102	60.65	60.39	60.17	59.94	59.71	59.50	59.38	25102	60.69	60.42	60.18	59.95	59.71	59.50	59.38	25102	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47470		25083	60.64	60.39	60.17	59.93	59.69	59.45	59.33	25083	60.69	60.42	60.18	59.94	59.69	59.45	59.33	25083	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47670		25045	60.65	60.39	60.17	59.93	59.69	59.42	59.24	25045	60.69	60.42	60.18	59.94	59.69	59.42	59.24	25045	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47870		25025	60.65	60.39	60.17	59.93	59.68	59.41	59.23	25025	60.69	60.42	60.18	59.93	59.68	59.41	59.23	25025	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48070		25006	60.64	60.38	60.16	59.92	59.68	59.40	59.22	25006	60.69	60.41	60.17	59.93	59.68	59.40	59.22	25006	0.05	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48270		24985	60.64	60.38	60.16	59.92	59.68	59.40	59.22	24985	60.68	60.41	60.17	59.93	59.68	59.40	59.22	24985	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48470		24965	60.64	60.38	60.16	59.92	59.67	59.40	59.21	24965	60.68	60.41	60.17	59.93	59.67	59.40	59.21	24965	0.04	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48670		24944	60.64	60.38	60.16	59.92	59.67	59.40	59.21	24944	60.69	60.41	60.17	59.93	59.67	59.40	59.21	24944	0.05	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48870		24924	60.64	60.38	60.16	59.92	59.67	59.39	59.21	24924	60.68	60.41	60.17	59.92	59.67	59.40	59.21	24924	0.05	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49070		24904	60.64	60.38	60.16	59.92	59.67	59.39	59.20	24904	60.68	60.41	60.17	59.92	59.67	59.39	59.20	24904	0.05	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49270		24883	60.63	60.37	60.15	59.91	59.66	59.38	59.19	24883	60.68	60.40	60.16	59.92	59.66	59.38	59.19	24883	0.05	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49470		24863	60.63	60.3																													

Chainage(m)	Landmark	Predicted Peak Water Level (mAOD) EXISTING										Predicted Peak Water Level (mAOD) SCHEME										Difference (m)							
		NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year				
57470		24052	59.62	59.34	59.10	58.86	58.59	58.29	58.07	24052	60.16	59.68	59.26	58.91	58.59	58.29	58.07	24052	0.55	0.34	0.16	0.05	0.00	0.00	0.00	0.00	0.00	0.00	
57680		24032	59.53	59.26	59.02	58.78	58.52	58.22	58.00	24032	60.13	59.63	59.21	58.84	58.52	58.22	58.00	24032	0.60	0.38	0.18	0.06	0.00	0.00	0.00	0.00	0.00	0.00	
58180		23983	59.25	58.99	58.76	58.52	58.27	57.98	57.77	23983	60.03	59.51	59.03	58.61	58.27	57.98	57.77	23983	0.78	0.52	0.27	0.09	0.00	0.00	0.00	0.00	0.00	0.00	
58420		23959	59.17	58.90	58.68	58.45	58.20	57.91	57.71	23959	60.01	59.47	58.98	58.55	58.20	57.92	57.71	23959	0.84	0.57	0.30	0.10	0.00	0.00	0.00	0.00	0.00	0.00	
58580		23944	59.12	58.85	58.63	58.40	58.14	57.86	57.65	23944	59.99	59.45	58.95	58.51	58.15	57.86	57.65	23944	0.87	0.60	0.32	0.11	0.00	0.00	0.00	0.00	0.00	0.00	
58660		23936	59.11	58.84	58.62	58.39	58.14	57.86	57.65	23936	59.99	59.44	58.94	58.50	58.14	57.86	57.65	23936	0.88	0.60	0.33	0.12	0.00	0.00	0.00	0.00	0.00	0.00	
58800		23922	59.06	58.80	58.57	58.34	58.09	57.81	57.60	23922	59.97	59.43	58.92	58.47	58.09	57.81	57.61	23922	0.91	0.63	0.35	0.12	0.00	0.00	0.00	0.00	0.00	0.00	
58860		23917	59.03	58.77	58.55	58.32	58.07	57.79	57.59	23917	59.96	59.41	58.90	58.45	58.07	57.80	57.59	23917	0.93	0.64	0.36	0.13	0.00	0.00	0.00	0.00	0.00	0.00	
59130		23890	58.93	58.67	58.45	58.22	57.97	57.69	57.49	23890	59.94	59.38	58.85	58.37	57.97	57.70	57.49	23890	1.01	0.71	0.40	0.15	0.00	0.00	0.00	0.00	0.00	0.00	
59280		23876	58.87	58.60	58.38	58.15	57.91	57.63	57.42	23876	59.92	59.35	58.82	58.32	57.91	57.63	57.42	23876	1.05	0.75	0.43	0.17	0.00	0.00	0.00	0.00	0.00	0.00	
59500		23854	58.75	58.48	58.26	58.03	57.78	57.50	57.29	23854	59.89	59.31	58.76	58.23	57.78	57.50	57.29	23854	1.15	0.83	0.50	0.21	0.00	0.00	0.00	0.00	0.00	0.00	
59810		23824	58.58	58.31	58.09	57.85	57.60	57.31	57.09	23824	59.86	59.26	58.68	58.12	57.60	57.31	57.10	23824	1.28	0.95	0.59	0.27	0.00	0.00	0.00	0.00	0.00	0.00	
59980		23808	58.52	58.25	58.02	57.79	57.53	57.24	57.02	23808	59.85	59.25	58.66	58.08	57.53	57.24	57.03	23808	1.33	1.00	0.63	0.29	0.00	0.00	0.00	0.00	0.00	0.00	
60130		23793	58.45	58.17	57.94	57.70	57.44	57.15	56.93	23793	59.83	59.23	58.63	58.03	57.45	57.15	56.93	23793	1.39	1.05	0.68	0.33	0.00	0.00	0.00	0.00	0.00	0.00	
60350		23772	58.38	58.10	57.87	57.63	57.37	57.07	56.85	23772	59.82	59.21	58.60	57.99	57.37	57.08	56.85	23772	1.45	1.11	0.73	0.36	0.00	0.00	0.00	0.00	0.00	0.00	
60560		23751	58.25	57.97	57.74	57.50	57.24	56.95	56.74	23751	59.80	59.17	58.55	57.92	57.25	56.96	56.74	23751	1.55	1.20	0.81	0.41	0.00	0.00	0.00	0.00	0.00	0.00	
60680		23739	58.11	57.84	57.62	57.39	57.14	56.86	56.66	23739	59.77	59.13	58.50	57.85	57.14	56.87	56.66	23739	1.66	1.29	0.88	0.46	0.00	0.00	0.00	0.00	0.00	0.00	
60940	A5 Montford Bypass brg	23715	57.99	57.72	57.49	57.27	57.02	56.73	56.52	23715	59.74	59.10	58.45	57.78	57.02	56.74	56.52	23715	1.76	1.39	0.96	0.52	0.00	0.00	0.00	0.00	0.00	0.00	
61070		23701	57.96	57.69	57.46	57.23	56.97	56.68	56.46	23701	59.74	59.10	58.45	57.77	56.98	56.68	56.46	23701	1.78	1.41	0.99	0.54	0.00	0.00	0.00	0.00	0.00	0.00	
61270	Montford Brdg	23683	57.76	57.51	57.30	57.09	56.86	56.59	56.39	23683	59.68	59.03	58.37	57.68	56.86	56.60	56.39	23683	1.92	1.52	1.07	0.59	0.00	0.00	0.00	0.00	0.00	0.00	
61270		23682	57.56	57.35	57.18	57.00	56.79	56.54	56.35	23682	59.26	58.77	58.24	57.59	56.79	56.55	56.35	23682	1.71	1.42	1.06	0.60	0.00	0.01	0.00	0.00	0.00	0.00	
61390		23669	57.59	57.37	57.17	56.97	56.74	56.47	56.26	23669	59.30	58.81	58.26	57.61	56.74	56.47	56.26	23669	1.71	1.44	1.09	0.64	0.00	0.00	0.00	0.00	0.00	0.00	
61560		23650	57.51	57.29	57.09	56.90	56.67	56.40	56.20	23650	59.29	58.80	58.25	57.58	56.68	56.41	56.20	23650	1.78	1.51	1.15	0.68	0.01	0.01	0.00	0.00	0.00	0.00	
61690		23636	57.45	57.23	57.04	56.85	56.62	56.37	56.16	23636	59.28	58.78	58.23	57.55	56.64	56.37	56.17	23636	1.83	1.55	1.19	0.71	0.01	0.01	0.00	0.00	0.00	0.00	
61940		23609	57.41	57.18	56.99	56.79	56.56	56.28	56.08	23609	59.28	58.78	58.22	57.54	56.58	56.29	56.08	23609	1.87	1.60	1.24	0.76	0.02	0.01	0.00	0.00	0.00	0.00	
62140		23587	57.31	57.08	56.89	56.69	56.46	56.20	56.00	23587	59.27	58.76	58.20	57.51	56.49	56.21	56.01	23587	1.96	1.68	1.32	0.82	0.03	0.01	0.00	0.00	0.00	0.00	
62530		23544	57.16	56.94	56.75	56.55	56.33	56.07	55.86	23544	59.25	58.74	58.17	57.46	56.39	56.08	55.87	23544	2.05	1.80	1.43	0.91	0.06	0.01	0.01	0.00	0.00	0.00	
62870		23507	56.98	56.76	56.56	56.37	56.14	55.87	55.65	23507	59.24	58.72	58.14	57.41	56.26	55.98	55.66	23507	2.26	1.96	1.58	1.04	0.12	0.01	0.01	0.00	0.00	0.00	
63070		23485	56.90	56.69	56.50	56.31	56.09	55.84	55.64	23485	59.23	58.70	58.12	57.39	56.23	55.85	55.64	23485	2.32	2.02	1.62	1.08	0.14	0.01	0.01	0.00	0.00	0.00	
63150		23476	56.87	56.64	56.45	56.26	56.03	55.76	55.53	23476	59.23	58.71	58.12	57.38	56.20	55.77	55.54	23476	2.36	2.06	1.67	1.13	0.17	0.01	0.01	0.00	0.00	0.00	
63380		23451	56.81	56.58	56.39	56.20	55.97	55.71	55.49	23451	59.22	58.70	58.12	57.37	56.16	55.72	55.50	23451	2.41	2.12	1.72	1.17	0.19	0.01	0.01	0.00	0.00	0.00	
63380		23451d	56.81	56.58	56.39	56.20	55.97	55.71	55.49	23451d	59.22	58.70	58.12	57.37	56.16	55.72	55.50	23451d	2.41	2.12	1.72	1.17	0.19	0.01	0.01	0.00	0.00	0.00	
63520		23436	56.76	56.54	56.35	56.16	55.94	55.69	55.47	23436	59.22	58.69	58.11	57.36	56.14	55.70	55.48	23436	2.45	2.15	1.75	1.20	0.20	0.01	0.01	0.00	0.00	0.00	
63760		23410	56.67	56.43	56.24	56.04	55.81	55.53	55.30	23410	59.21	58.69	58.10	57.34	56.07	55.54	55.31	23410	2.55	2.25	1.85	1.30	0.27	0.01	0.01	0.00	0.00	0.00	
64020		23381	56.59	56.36	56.17	55.97	55.74	55.47	55.24	23381	59.21	58.68	58.09	57.32	56.06	55.48	55.25	23381	2.62	2.32	1.92	1.36	0.30	0.01	0.01	0.00	0.00	0.00	
64130		23369	56.44	56.22	56.01	55.81	55.53	55.07	54.80	23369</																			

Chainage(m)	Landmark	Predicted Peak Water Level (mAOD) EXISTING										Predicted Peak Water Level (mAOD) SCHEME										Difference (m)					
		NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year		
		22400	54.35	53.96	53.68	53.41	53.10	52.79	52.54	22400	59.12	58.57	57.93	57.08	55.43	53.08	52.76	22400	4.77	4.60	4.26	3.67	2.34	0.28	0.23		
72990		22380	54.29	53.91	53.62	53.35	53.05	52.75	52.52	22380	59.12	58.57	57.93	57.08	55.43	53.04	52.74	22380	4.82	4.66	4.31	3.73	2.38	0.28	0.21		
73170		22352	54.21	53.81	53.53	53.26	52.95	52.67	52.44	22352	59.11	58.56	57.92	57.07	55.41	52.96	52.67	22352	4.90	4.74	4.40	3.81	2.46	0.30	0.22		
73430		22317	54.16	53.76	53.46	53.19	52.88	52.59	52.36	22317	59.11	58.56	57.92	57.07	55.41	52.91	52.61	22317	4.95	4.80	4.46	3.88	2.53	0.32	0.24		
73750		22287	54.12	53.72	53.42	53.14	52.83	52.54	52.31	22287	59.11	58.56	57.92	57.07	55.40	52.87	52.57	22287	4.99	4.84	4.51	3.93	2.57	0.33	0.25		
74020		22267	54.10	53.69	53.38	53.10	52.79	52.49	52.26	22267	59.11	58.56	57.92	57.06	55.40	52.84	52.53	22267	5.01	4.87	4.54	3.96	2.61	0.35	0.27		
74200		22257	54.08	53.66	53.36	53.07	52.76	52.46	52.23	22257	59.11	58.56	57.92	57.07	55.40	52.82	52.50	22257	5.03	4.90	4.57	3.99	2.64	0.36	0.28		
74650		22218	54.03	53.60	53.29	53.00	52.67	52.37	52.13	22218	59.11	58.56	57.92	57.06	55.39	52.76	52.44	22218	5.08	4.96	4.63	4.06	2.72	0.39	0.31		
74940		22187	54.00	53.57	53.25	52.96	52.64	52.34	52.11	22187	59.11	58.55	57.92	57.06	55.39	52.74	52.42	22187	5.11	4.99	4.67	4.10	2.75	0.40	0.31		
75170		22161	53.96	53.52	53.20	52.90	52.57	52.27	52.03	22161	59.11	58.55	57.91	57.06	55.38	52.69	52.36	22161	5.15	5.03	4.72	4.15	2.81	0.43	0.34		
75310		22146	53.91	53.47	53.15	52.85	52.53	52.23	51.99	22146	59.10	58.55	57.91	57.05	55.38	52.66	52.33	22146	5.20	5.08	4.76	4.20	2.85	0.43	0.34		
75570		22118	53.89	53.45	53.12	52.82	52.48	52.17	51.93	22118	59.10	58.55	57.91	57.05	55.38	52.63	52.29	22118	5.21	5.10	4.79	4.23	2.89	0.46	0.36		
75650		22109	53.88	53.43	53.10	52.80	52.46	52.13	51.88	22109	59.10	58.55	57.91	57.05	55.38	52.62	52.27	22109	5.22	5.12	4.81	4.26	2.92	0.48	0.39		
75890	Proposed Control Structure	20283	53.85	53.40	53.06	52.76	52.42	52.11	51.86	20283	52.59	52.50	52.39	52.36	52.26	52.10	51.88	20283	-1.27	-0.90	-0.67	-0.41	-0.06	0.00	-0.01		
76070		20263	53.83	53.37	53.03	52.71	52.36	52.02	51.77	20263	52.53	52.44	52.33	52.29	52.02	51.77	52.02	20263	-1.30	-0.93	-0.70	-0.43	-0.07	-0.01	-0.01		
76160		20253	53.82	53.35	53.00	52.68	52.33	52.00	51.76	20253	52.50	52.40	52.30	52.26	52.00	51.75	52.00	20253	-1.32	-0.95	-0.71	-0.43	-0.07	0.00	-0.01		
76400		20207	53.80	53.32	52.97	52.65	52.29	51.96	51.71	20207	52.46	52.37	52.26	52.22	51.95	51.70	52.02	20207	-1.33	-0.96	-0.72	-0.43	-0.07	-0.01	-0.01		
76640		20201	53.78	53.30	52.95	52.63	52.26	51.93	51.68	20201	52.44	52.34	52.23	51.9	51.29	51.93	51.67	20201	-1.34	-0.96	-0.72	-0.43	-0.07	-0.01	-0.01		
76870		20195	53.76	53.28	52.92	52.60	52.23	51.89	51.64	20195	52.41	52.31	52.20	51.25	51.26	51.89	51.63	20195	-1.36	-0.97	-0.73	-0.44	-0.07	-0.01	-0.01		
77060		20195	53.74	53.25	52.89	52.56	52.20	51.87	51.62	20195	52.37	52.27	52.16	51.22	51.22	51.86	51.62	20195	-1.36	-0.98	-0.73	-0.44	-0.07	-0.01	-0.01		
77290		20192	53.70	53.20	52.83	52.49	52.11	51.77	51.52	20192	52.30	52.19	52.08	52.04	51.76	51.51	51.29	20192	-1.40	-1.01	-0.76	-0.45	-0.08	-0.01	-0.01		
77420		20195	53.69	53.19	52.82	52.48	52.09	51.74	51.49	20195	52.28	52.17	52.05	52.02	51.71	51.48	51.24	20195	-1.41	-1.02	-0.77	-0.46	-0.08	-0.01	-0.01		
77660		20189	53.66	53.16	52.78	52.44	52.05	51.70	51.44	20189	52.23	52.13	52.01	51.79	51.69	51.43	51.20	20189	-1.43	-1.03	-0.77	-0.46	-0.08	-0.01	-0.01		
77900		201863	53.63	53.11	52.73	52.38	51.98	51.64	51.39	201863	52.17	52.06	51.94	51.91	51.60	51.39	51.20	201863	-1.46	-1.05	-0.79	-0.47	-0.08	-0.01	-0.01		
77900		201863d	53.63	53.11	52.73	52.38	51.98	51.64	51.39	201863d	52.17	52.06	51.94	51.91	51.60	51.39	51.20	201863d	-1.46	-1.05	-0.79	-0.47	-0.08	-0.01	-0.01		
78390		201809	53.64	53.13	52.75	52.40	52.01	51.67	51.42	201809	52.20	52.09	51.98	51.94	51.66	51.41	51.20	201809	-1.44	-1.04	-0.77	-0.46	-0.08	-0.01	-0.01		
78600		201786	53.63	53.12	52.73	52.38	51.99	51.63	51.37	201786	52.17	52.07	51.95	51.92	51.61	51.36	51.20	201786	-1.46	-1.05	-0.78	-0.47	-0.08	-0.01	-0.01		
78840		201760	53.61	53.09	52.71	52.35	51.95	51.59	51.33	201760	52.14	52.03	51.91	51.88	51.59	51.32	51.20	201760	-1.47	-1.06	-0.80	-0.47	-0.08	-0.01	-0.01		
78980		201745	53.60	53.08	52.69	52.33	51.93	51.57	51.30	201745	52.12	52.01	51.89	51.86	51.56	51.29	51.20	201745	-1.48	-1.07	-0.80	-0.48	-0.08	-0.01	-0.01		
79310		201708	53.57	53.05	52.65	52.28	51.87	51.50	51.23	201708	52.07	51.95	51.83	51.80	51.50	51.22	51.22	201708	-1.51	-1.09	-0.82	-0.48	-0.08	-0.01	-0.01		
79490		201689	53.57	53.04	52.64	52.27	51.86	51.50	51.22	201689	52.06	51.95	51.82	51.79	51.50	51.21	51.21	201689	-1.51	-1.09	-0.82	-0.48	-0.08	-0.01	-0.01		
79650		201671	53.56	53.03	52.63	52.26	51.85	51.48	51.21	201671	52.05	51.93	51.81	51.78	51.57	51.28	51.20	201671	-1.52	-1.10	-0.82	-0.48	-0.08	-0.01	-0.01		
79810		201654	53.54	53.00	52.60	52.22	51.80	51.43	51.16	201654	52.00	51.89	51.77	51.74	51.52	51.15	51.15	201654	-1.53	-1.11	-0.83	-0.48	-0.08	-0.01	-0.01		
79890	Frankwell Footbridge	201646	53.51	52.96	52.55	52.17	51.75	51.39	51.11	201646	51.95	51.83	51.72	51.69	51.37	51.10	51.10	201646	-1.56	-1.13	-0.83	-0.48	-0.08	-0.01	-0.01		
79920		201643	53.51	52.96	52.55	52.17	51.75	51.39	51.11	201643	51.94	51.83	51.72	51.68	51.36	51.10	51.10	201643	-1.54	-1.12	-0.83	-0.48	-0.08	-0.01	-0.01		
80104	Welsh Brg	201626	53.43	52.90	52.49	52.12	51.71	51.35	51.08	201626	51.91	51.79	51.68	51.65	51.34	51.07	51.07	201626	-1.53	-1.10	-0.81	-0.47	-0.08	-0.01	-0.01		
80140		201625	53.02	52.65	52.33	52.00	51.64	51.29	51.03	201625	51.81	51.71	51.61	51.58	51.29	51.03	51.03	201625	-1.22	-0.95	-0.71	-0.42	-0.07	-0.01	-0.01		
80230		201617	52.98	52.60	52.28	51.95	51.59	51.25	50.99	201617	51.76	51.66	51.57	51.54	51.24	50.98	50.98	201617	-1.22	-0.95	-0.71	-0.41	-0.07	-0.01	-0.01		
80380		201603	52.98	52.60	52.28	51.95	51.58	51.24	50.98	201603	51.75	51.65	51.57	51.53	51.24	50.98	50.98	201603	-1.22	-0.95	-0.71	-0.42	-0.07	-0.01	-0.01		
80570	Porthill Brg	201587	52.94	52.56	52.24	51.91	51.55	51.21	50.96	201587	51.72	51.62	51.54	51.50	51.21	50.95	50.95	201587	-1.22	-0.94	-0.70	-0.41	-0.07	-0.01</td			

Chainage(m)	Landmark	Predicted Peak Water Level (mAOD) EXISTING										Predicted Peak Water Level (mAOD) SCHEME										Difference (m)							
		NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year				
85400		21090	51.05	50.79	50.56	50.33	50.03	49.74	49.52	21090	50.18	50.10	50.05	50.00	49.96	49.74	49.51	21090	-0.88	-0.70	-0.51	-0.33	-0.07	-0.01	-0.01				
85560		21074	51.02	50.76	50.53	50.30	50.01	49.72	49.50	21074	50.15	50.07	50.02	49.98	49.94	49.71	49.49	21074	-0.87	-0.69	-0.51	-0.32	-0.07	-0.01	-0.01				
85980		21030	50.87	50.61	50.38	50.15	49.84	49.55	49.32	21030	49.99	49.92	49.87	49.82	49.77	49.54	49.31	21030	-0.88	-0.69	-0.52	-0.33	-0.07	-0.01	-0.01				
86010		21027	50.88	50.60	50.38	50.14	49.84	49.54	49.31	21027	49.98	49.91	49.86	49.81	49.77	49.54	49.30	21027	-0.88	-0.69	-0.51	-0.33	-0.07	-0.01	-0.01				
86340		20993	50.79	50.53	50.31	50.08	49.78	49.49	49.26	20993d	49.92	49.85	49.80	49.75	49.71	49.48	49.25	20993	-0.87	-0.68	-0.51	-0.32	-0.07	-0.01	-0.01				
86440		20983	50.78	50.52	50.29	50.05	49.75	49.46	49.23	20983	49.89	49.82	49.78	49.72	49.68	49.45	49.22	20983	-0.88	-0.69	-0.51	-0.33	-0.07	-0.01	-0.01				
86690	A49 Pimley Manor Rd Brdg	20958	50.67	50.41	50.19	49.95	49.65	49.35	49.11	20958	49.79	49.72	49.67	49.62	49.58	49.34	49.10	20958	-0.88	-0.69	-0.52	-0.33	-0.07	-0.01	-0.01				
86690		20957	50.65	50.39	50.17	49.93	49.62	49.32	49.08	20957	49.77	49.70	49.65	49.59	49.55	49.31	49.08	20957	-0.89	-0.70	-0.52	-0.33	-0.07	-0.01	-0.01				
86900		20930	50.57	50.31	50.09	49.85	49.54	49.24	49.01	20930	49.69	49.62	49.57	49.51	49.47	49.24	49.00	20930	-0.88	-0.70	-0.52	-0.33	-0.07	-0.01	-0.01				
87100		20905	50.44	50.18	49.96	49.72	49.42	49.13	48.90	20905	49.57	49.49	49.45	49.39	49.35	49.12	48.89	20905	-0.88	-0.69	-0.51	-0.33	-0.07	-0.01	-0.01				
87410		20866	50.31	50.05	49.83	49.60	49.31	49.02	48.79	20866	49.45	49.38	49.33	49.28	49.24	49.01	48.78	20866	-0.86	-0.68	-0.50	-0.32	-0.07	-0.01	-0.01				
87530		20850	50.29	50.03	49.81	49.58	49.28	48.98	48.76	20850	49.42	49.35	49.30	49.25	49.21	48.98	48.75	20850	-0.87	-0.69	-0.51	-0.33	-0.07	-0.01	-0.01				
87650	A49 Uffington Rd Brdg	20836	50.21	49.95	49.73	49.50	49.21	48.92	48.70	20836	49.35	49.28	49.23	49.18	48.92	48.69	48.46	20836	-0.88	-0.68	-0.50	-0.32	-0.07	-0.01	-0.01				
87890		20835	50.16	49.91	49.69	49.47	49.18	48.90	48.68	20835	49.32	49.25	49.20	49.15	49.11	48.89	48.67	20835	-0.84	-0.66	-0.49	-0.32	-0.07	-0.01	-0.01				
88040		20812	50.04	49.79	49.57	49.35	49.06	48.78	48.56	20812	49.20	49.12	49.08	49.03	48.99	48.77	48.55	20812	-0.84	-0.66	-0.49	-0.32	-0.07	-0.01	-0.01				
88350		20797	49.87	49.63	49.43	49.21	48.93	48.66	48.45	20797	49.07	49.00	48.95	48.90	48.87	48.66	48.44	20797	-0.80	-0.64	-0.48	-0.31	-0.07	-0.01	-0.01				
88560		20767	49.56	49.34	49.15	48.95	48.69	48.44	48.24	20767	48.82	48.75	48.71	48.66	48.63	48.43	48.23	20767	-0.74	-0.59	-0.44	-0.29	-0.06	-0.01	-0.01				
88800		20747	49.43	49.21	49.02	48.82	48.56	48.31	48.11	20747	48.68	48.62	48.57	48.53	48.50	48.30	48.10	20747	-0.74	-0.59	-0.44	-0.29	-0.06	-0.01	-0.01				
88940	Rail Brdg (east of Shrewsbury)	20712	49.15	48.94	48.76	48.57	48.33	48.09	47.90	20712	48.45	48.38	48.34	48.30	48.27	48.09	47.89	20712	-0.70	-0.56	-0.42	-0.27	-0.06	-0.01	-0.01				
89340		20711	49.22	49.00	48.82	48.62	48.37	48.12	47.91	20711	48.49	48.43	48.38	48.34	48.31	48.11	47.91	20711	-0.72	-0.58	-0.43	-0.28	-0.06	0.00	-0.01				
89230		20683	49.06	48.85	48.67	48.48	48.23	47.99	47.80	20683	48.35	48.29	48.25	48.20	48.17	47.99	47.79	20683	-0.71	-0.56	-0.42	-0.27	-0.06	-0.01	-0.01				
89590		20648	48.80	48.60	48.43	48.24	48.00	47.77	47.58	20648	48.12	48.06	48.02	47.97	47.94	47.77	47.58	20648	-0.68	-0.55	-0.41	-0.27	-0.06	-0.01	-0.01				
89950		20613	48.60	48.40	48.24	48.06	47.83	47.61	47.43	20613	47.94	47.88	47.85	47.81	47.78	47.61	47.43	20613	-0.65	-0.52	-0.39	-0.26	-0.06	-0.01	-0.01				
90290		20580	48.31	48.14	47.99	47.83	47.63	47.43	47.26	20580	47.73	47.67	47.64	47.60	47.58	47.42	47.25	20580	-0.58	-0.47	-0.35	-0.23	-0.05	-0.01	-0.01				
90670		20544	48.07	47.91	47.76	47.61	47.40	47.21	47.04	20544	47.50	47.45	47.42	47.38	47.35	47.20	47.03	20544	-0.57	-0.46	-0.34	-0.23	-0.05	0.00	-0.01				
90800	A5 Road Brdg	20532	47.83	47.69	47.57	47.44	47.25	47.07	46.90	20531	47.35	47.30	47.26	47.23	47.20	47.06	46.90	20531	-0.52	-0.42	-0.32	-0.21	-0.05	0.00	-0.01				
91110		20500	47.82	47.67	47.54	47.40	47.22	47.03	46.88	20500	47.31	47.26	47.23	47.19	47.17	47.03	46.87	20500	-0.52	-0.42	-0.31	-0.21	-0.05	0.00	-0.01				
91240		20487	47.80	47.65	47.52	47.38	47.19	47.01	46.85	20487	47.28	47.23	47.20	47.17	47.14	47.00	46.84	20487	-0.52	-0.42	-0.31	-0.21	-0.05	-0.01	-0.01				
91390		20472	47.74	47.58	47.44	47.29	47.09	46.89	46.71	20472	47.20	47.14	47.11	47.07	47.04	46.88	46.71	20472	-0.54	-0.44	-0.34	-0.23	-0.06	0.00	-0.01				
91650		20447	47.65	47.49	47.36	47.21	47.02	46.83	46.67	20447	47.11	47.06	47.03	46.99	46.96	46.82	46.66	20447	-0.53	-0.43	-0.33	-0.22	-0.05	0.00	-0.01				
91830		20429	47.56	47.41	47.27	47.13	46.94	46.75	46.59	20429	47.03	46.98	46.95	46.91	46.88	46.75	46.58	20429	-0.53	-0.42	-0.32	-0.21	-0.05	0.00	-0.01				
92100		20402	47.54	47.39	47.25	47.10	46.91	46.72	46.56	20402	47.01	46.96	46.93	46.89	46.82	46.67	46.49	20402	-0.53	-0.43	-0.32	-0.21	-0.05	0.00	-0.01				
92220		20390	47.52	47.36	47.22	47.07	46.87	46.68	46.50	20390	46.98	46.93	46.89	46.85	46.82	46.67	46.49	20390	-0.54	-0.43	-0.33	-0.22	-0.05	0.00	-0.01				
92530		20359	47.43	47.27	47.12	46.97	46.76	46.55	46.37	20359	46.87	46.82	46.78	46.74	46.70	46.55	46.36	20359	-0.56	-0.45	-0.34	-0.23	-0.06	-0.01	-0.01				
92630		20349	47.40	47.25	47.10	46.95	46.75	46.55	46.38	20349	46.85	46.80	46.77	46.73	46.69	46.55	46.37	20349	-0.55	-0.44	-0.34	-0.22	-0.05	0.00	-0.01				
92940		20318	47.27	47.11	46.97	46.83	46.63	46.45	46.29	20318	46.74	46.69	46.65	46.61	46.58	46.44	46.29	20318	-0.53	-0.43	-0.32	-0.21	-0.05	0.00	-0.01				
93120		20300	47.23	47.07	46.93	46.78	46.58	46.39	46.23	20300	46.69	46.64	46.60	46.57	46.53	46.38	46.22	20300	-0.54	-0.43	-0.33	-0.21	-0.05	-0.01	-0.01				
93120		20300d	47.23	47.07	46.93	46.78	46.58	46.3																					

Chainage(m)	Landmark	Predicted Peak Water Level (mAOD) EXISTING										Predicted Peak Water Level (mAOD) SCHEME										Difference (m)						
		200 year	100 year	50 year	25 year	10 year	5 year	2 year	200 year	100 year	50 year	25 year	10 year	5 year	2 year	200 year	100 year	50 year	25 year	10 year	5 year	2 year						
		107460	18875	44.40	44.11	43.88	43.63	43.30	43.06	42.81	18875	43.69	43.58	43.48	43.38	43.23	43.05	42.81	18875	-0.72	-0.54	-0.40	-0.26	-0.06	-0.01	-0.01		
107960		18825	44.35	44.05	43.81	43.55	43.19	42.93	42.66	18825	43.61	43.49	43.39	43.28	43.12	42.92	42.65	18825	-0.75	-0.56	-0.42	-0.28	-0.07	-0.01	-0.01			
108460		18774	44.32	44.01	43.76	43.49	43.11	42.83	42.53	18774	43.55	43.43	43.32	43.20	43.03	42.82	42.52	18774	-0.77	-0.59	-0.44	-0.39	-0.07	-0.01	-0.01			
108960		18723	44.26	43.95	43.69	43.41	43.01	42.71	42.40	18723	43.47	43.35	43.23	43.11	42.93	42.70	42.39	18723	-0.79	-0.60	-0.46	-0.31	-0.08	-0.01	-0.01			
109460		18672	44.21	43.89	43.62	43.34	42.93	42.62	42.31	18672d	43.40	43.27	43.16	43.03	42.85	42.61	42.30	18672d	-0.81	-0.61	-0.46	-0.31	-0.08	-0.01	-0.01			
109960		18621	44.18	43.85	43.58	43.29	42.87	42.56	42.23	18621	43.36	43.23	43.11	42.98	42.79	42.55	42.22	18621	-0.82	-0.62	-0.47	-0.31	-0.08	-0.01	-0.01			
110460		18571	44.16	43.83	43.56	43.26	42.84	42.52	42.17	18571	43.33	43.20	43.08	42.94	42.75	42.50	42.16	18571	-0.83	-0.63	-0.47	-0.32	-0.09	-0.01	-0.01			
110960		18520	44.14	43.81	43.53	43.24	42.81	42.48	42.12	18520	43.31	43.18	43.05	42.92	42.72	42.46	42.11	18520	-0.84	-0.63	-0.48	-0.32	-0.09	-0.01	-0.01			
111460		18469	44.13	43.80	43.53	43.23	42.79	42.46	42.10	18469	43.29	43.16	43.04	42.90	42.70	42.44	42.09	18469	-0.84	-0.64	-0.48	-0.32	-0.09	-0.02	-0.01			
111960		18418	44.12	43.79	43.51	43.21	42.77	42.44	42.07	18418	43.28	43.15	43.03	42.88	42.68	42.42	42.06	18418	-0.84	-0.64	-0.49	-0.33	-0.09	-0.01	-0.01			
112460		18367	44.11	43.77	43.50	43.19	42.75	42.41	42.04	18367	43.26	43.13	43.01	42.87	42.66	42.40	42.03	18367	-0.85	-0.64	-0.49	-0.33	-0.09	-0.02	-0.01			
112960		18317	44.10	43.76	43.48	43.17	42.73	42.39	42.01	18317	43.25	43.11	42.99	42.84	42.64	42.37	42.00	18317	-0.85	-0.65	-0.49	-0.33	-0.09	-0.02	-0.01			
113460		18266	44.08	43.74	43.46	43.15	42.70	42.35	41.97	18266	43.22	43.09	42.96	42.82	42.61	42.34	41.95	18266	-0.85	-0.65	-0.50	-0.33	-0.09	-0.02	-0.01			
113960		18215	44.05	43.71	43.43	43.12	42.67	42.31	41.92	18215	43.19	43.05	42.93	42.78	42.57	42.29	41.90	18215	-0.86	-0.66	-0.50	-0.34	-0.09	-0.02	-0.01			
114460		18164	43.88	43.52	43.23	42.91	42.45	42.09	41.69	18164	42.99	42.85	42.72	42.57	42.35	42.07	41.68	18164	-0.88	-0.67	-0.51	-0.34	-0.09	-0.02	-0.01			
114960	Buildwas Brdg	18148	43.75	43.41	43.13	42.82	42.37	42.02	41.63	18148	42.89	42.75	42.63	42.48	42.28	42.00	41.62	18148	-0.86	-0.65	-0.50	-0.34	-0.09	-0.02	-0.01			
115460		18147	43.79	43.44	43.15	42.83	42.37	42.02	41.63	18147	42.90	42.76	42.63	42.49	42.28	42.00	41.62	18147	-0.88	-0.67	-0.51	-0.34	-0.09	-0.02	-0.01			
115850		18146	43.78	43.43	43.14	42.82	42.36	42.01	41.62	18146	42.90	42.76	42.63	42.48	42.27	42.00	41.61	18146	-0.88	-0.67	-0.51	-0.34	-0.09	-0.02	-0.01			
116750		18136	43.84	43.49	43.20	42.88	42.42	42.05	41.66	18136	42.95	42.82	42.68	42.53	42.32	42.04	41.64	18136	-0.88	-0.67	-0.51	-0.35	-0.09	-0.02	-0.01			
116950		18116	43.74	43.39	43.10	42.78	42.32	41.96	41.56	18116	42.86	42.72	42.59	42.44	42.22	41.94	41.55	18116	-0.89	-0.68	-0.52	-0.35	-0.10	-0.02	-0.01			
117050		18106	43.70	43.35	43.06	42.74	42.28	41.92	41.52	18106	42.81	42.68	42.55	42.40	42.19	41.91	41.51	18106	-0.88	-0.67	-0.51	-0.34	-0.09	-0.02	-0.01			
117250		18056	43.52	43.18	42.89	42.58	42.12	41.77	41.38	18056	42.65	42.51	42.39	42.24	42.03	41.75	41.37	18056	-0.87	-0.66	-0.50	-0.34	-0.09	-0.02	-0.01			
115650		18046	43.47	43.11	42.83	42.52	42.07	41.72	41.33	18046	42.59	42.46	42.33	42.18	41.98	41.70	41.32	18046	-0.88	-0.66	-0.50	-0.34	-0.09	-0.02	-0.01			
115850		18026	43.37	43.02	42.74	42.43	42.10	41.78	41.38	18026	42.50	42.37	42.24	42.10	41.89	41.62	41.24	18026	-0.86	-0.65	-0.49	-0.33	-0.09	-0.02	-0.01			
116250		17986	43.11	42.78	42.50	42.20	41.75	41.41	41.04	17986	42.27	42.14	42.01	41.87	41.66	41.39	41.03	17986	-0.84	-0.65	-0.49	-0.33	-0.09	-0.02	-0.01			
116450		17966	43.04	42.71	42.43	42.13	41.69	41.35	40.97	17966	42.20	42.07	41.95	41.80	41.60	41.33	40.96	17966	-0.84	-0.64	-0.49	-0.33	-0.09	-0.01	-0.01			
116650		17946	42.94	42.62	42.34	42.04	41.60	41.26	40.89	17946	42.11	41.98	41.86	41.71	41.51	41.25	40.87	17946	-0.83	-0.64	-0.49	-0.33	-0.09	-0.02	-0.01			
116850		17927	42.88	42.56	42.28	41.98	41.54	41.20	40.82	17927	42.05	41.92	41.80	41.65	41.45	41.18	40.81	17927	-0.83	-0.64	-0.49	-0.33	-0.09	-0.02	-0.01			
117050		17907	42.80	42.47	42.19	41.88	41.43	41.08	40.71	17907	41.95	41.82	41.69	41.54	41.34	41.07	40.70	17907	-0.84	-0.65	-0.50	-0.34	-0.09	-0.02	-0.01			
117250		17887	42.69	42.37	42.10	41.79	41.35	41.02	40.64	17887	41.86	41.73	41.61	41.47	41.27	41.00	40.63	17887	-0.83	-0.64	-0.49	-0.33	-0.09	-0.02	-0.01			
117450		17867	42.54	42.23	41.96	41.66	41.22	40.88	40.52	17867	41.73	41.60	41.47	41.33	41.13	40.87	40.51	17867	-0.82	-0.63	-0.48	-0.33	-0.09	-0.02	-0.01			
117650		17847	42.31	42.01	41.75	41.46	41.04	40.72	40.37	17847	41.53	41.40	41.29	41.15	40.96	40.71	40.36	17847	-0.78	-0.61	-0.46	-0.31	-0.09	-0.01	-0.01			
117750		17837	42.30	41.99	41.72	41.43	41.01	40.68	40.33	17837	41.50	41.37	41.25	41.11	40.92	40.67	40.32	17837	-0.80	-0.62	-0.47	-0.32	-0.09	-0.01	-0.01			
117950		17817	41.50	41.21	40.95	40.68	40.28	39.98	39.66	17817	40.74	40.62	40.51	40.38	40.20	39.97	39.65	17817	-0.76	-0.58	-0.44	-0.30	-0.08	-0.01	-0.01			
118150		17797	41.47	41.18	40.92	40.64	40.23	39.92	39.57	17797	40.70	40.58	40.46	40.33	40.15	39.90	39.56	17797	-0.77	-0.60	-0.45	-0.30	-0.08	-0.01	-0.01			
118350		17777	41.40	40.84	40.55	40.14	39.82	39.47	39.27	17777	40.62	40.49	40.38	40.24	40.05	39.86	39.51	17777	-0.78	-0.60	-0.46	-0.31	-0.09	-0.01	-0.01			
118550		17757	41.20	40.90	40.64	40.36	39.94	39.62	39.27	17757	40.42	40.30	40.18	40.05	39.86	39.61	39.26	17757	-0.78	-0.60	-0.46	-0.31	-0.09	-0.01	-0.01			
118650		17756	41.19	40.89	40.63	40.34	39.93	39.61	39.26	17756	40.41	40.29	40.17	40.03	39.84	39.59	39.25	17756	-0.78	-0.60	-0.46	-0.31	-0.09	-0.01	-0.01			
118850		17754	41.17																									

Chainage(m)	Landmark	Predicted Peak Water Level (mAOD) EXISTING										Predicted Peak Water Level (mAOD) SCHEME										Difference (m)							
		NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year				
		17155	36.64	36.38	36.16	35.91	35.54	35.25	34.91	17155	35.98	35.87	35.77	35.64	35.47	35.24	34.90	17155	-0.66	-0.51	-0.39	-0.27	-0.07	-0.01	-0.01				
124930		17130	36.45	36.20	35.98	35.74	35.38	35.10	34.76	17130	35.82	35.71	35.60	35.48	35.31	35.08	34.75	17130	-0.64	-0.50	-0.38	-0.26	-0.07	-0.01	-0.01				
125180		17106	36.30	36.06	35.84	35.60	35.25	34.96	34.63	17106	35.68	35.57	35.47	35.35	35.17	34.95	34.62	17106	-0.63	-0.49	-0.37	-0.26	-0.07	-0.01	-0.01				
125430		17082	36.17	35.93	35.71	35.48	35.13	34.85	34.52	17082	35.56	35.45	35.35	35.23	35.06	34.84	34.51	17082	-0.62	-0.48	-0.37	-0.25	-0.07	-0.01	-0.01				
125680		17057	36.00	35.77	35.56	35.33	34.99	34.73	34.40	17057	35.41	35.30	35.21	35.09	34.93	34.71	34.39	17057	-0.59	-0.46	-0.35	-0.24	-0.07	-0.01	-0.01				
125930		17033	35.79	35.57	35.37	35.15	34.82	34.56	34.25	17033	35.23	35.12	35.03	34.92	34.76	34.55	34.24	17033	-0.57	-0.44	-0.34	-0.23	-0.06	-0.01	-0.01				
126180		17008	35.75	35.51	35.30	35.07	34.75	34.49	34.18	17008	35.16	35.05	34.95	34.84	34.68	34.48	34.17	17008	-0.59	-0.46	-0.34	-0.23	-0.06	-0.01	-0.01				
126430		16984	35.59	35.37	35.18	34.96	34.65	34.40	34.09	16984	35.04	34.95	34.85	34.75	34.59	34.39	34.08	16984	-0.54	-0.42	-0.32	-0.22	-0.06	-0.01	-0.01				
126680		16960	35.50	35.28	35.09	34.88	34.56	34.31	34.01	16960	34.96	34.86	34.77	34.66	34.50	34.30	34.00	16960	-0.54	-0.42	-0.32	-0.22	-0.06	-0.01	-0.01				
126930		16935	35.43	35.21	35.01	34.80	34.48	34.23	33.92	16935	34.89	34.79	34.69	34.58	34.42	34.22	33.91	16935	-0.54	-0.42	-0.32	-0.22	-0.06	-0.01	-0.01				
127180		16911	35.34	35.12	34.93	34.72	34.40	34.15	33.85	16911	34.80	34.70	34.61	34.50	34.34	34.14	33.84	16911	-0.54	-0.41	-0.32	-0.21	-0.06	-0.01	-0.01				
127430		16887	35.26	35.04	34.85	34.64	34.32	34.07	33.77	16887	34.73	34.63	34.53	34.42	34.26	34.06	33.76	16887	-0.53	-0.41	-0.32	-0.21	-0.06	-0.01	-0.01				
127680		16862	35.18	34.96	34.77	34.56	34.26	34.02	33.71	16862	34.66	34.56	34.46	34.36	34.20	34.00	33.70	16862	-0.52	-0.41	-0.31	-0.21	-0.06	-0.01	-0.01				
127930		16838	35.05	34.82	34.63	34.41	34.08	33.83	33.54	16838	34.51	34.41	34.31	34.19	34.02	33.82	33.53	16838	-0.53	-0.42	-0.32	-0.22	-0.06	-0.01	-0.01				
128180		16813	34.97	34.75	34.55	34.35	34.04	33.80	33.50	16813	34.45	34.35	34.25	34.14	33.98	33.78	33.49	16813	-0.52	-0.40	-0.30	-0.20	-0.06	-0.01	-0.01				
128430		16789	34.82	34.58	34.38	34.17	33.85	33.60	33.30	16789	34.28	34.18	34.08	33.97	33.79	33.59	33.30	16789	-0.53	-0.40	-0.30	-0.20	-0.06	-0.01	-0.01				
128680		16765	34.70	34.48	34.29	34.08	33.78	33.55	33.26	16765	34.20	34.10	34.00	33.89	33.73	33.54	33.25	16765	-0.50	-0.38	-0.29	-0.19	-0.05	-0.01	-0.01				
128930		16740	34.59	34.36	34.17	33.96	33.65	33.41	33.10	16740	34.09	33.98	33.89	33.77	33.60	33.40	33.09	16740	-0.50	-0.38	-0.29	-0.19	-0.05	-0.01	-0.01				
129180		16716	34.47	34.25	34.07	33.86	33.56	33.33	33.04	16716	33.99	33.89	33.79	33.68	33.51	33.32	33.03	16716	-0.48	-0.36	-0.27	-0.18	-0.05	-0.01	-0.01				
129430		16692	34.20	33.99	33.81	33.62	33.32	33.10	32.82	16692	33.76	33.66	33.56	33.45	33.28	33.09	32.81	16692	-0.44	-0.33	-0.25	-0.17	-0.05	-0.01	-0.01				
129680		16667	34.20	34.00	33.82	33.63	33.34	33.12	32.84	16667	33.77	33.67	33.57	33.46	33.29	33.11	32.83	16667	-0.44	-0.33	-0.25	-0.17	-0.05	-0.01	-0.01				
129930		16643	34.12	33.90	33.72	33.52	33.22	32.99	32.68	16643	33.68	33.57	33.47	33.36	33.17	32.97	32.67	16643	-0.44	-0.33	-0.25	-0.17	-0.05	-0.01	-0.01				
130180		16643d	34.12	33.90	33.72	33.52	33.22	32.99	32.68	16643d	33.68	33.57	33.47	33.36	33.17	32.97	32.67	16643d	-0.44	-0.33	-0.25	-0.17	-0.05	-0.01	-0.01				
130430		16618	34.00	33.79	33.60	33.40	33.10	32.87	32.57	16618	33.56	33.45	33.35	33.24	33.06	32.86	32.56	16618	-0.44	-0.34	-0.25	-0.17	-0.05	-0.01	-0.01				
130680		16594	33.87	33.66	33.48	33.28	32.98	32.75	32.46	16594	33.43	33.33	33.23	33.11	32.93	32.74	32.45	16594	-0.44	-0.33	-0.25	-0.17	-0.05	-0.01	-0.01				
130930		16570	33.72	33.51	33.33	33.13	32.83	32.61	32.31	16570	33.28	33.17	33.08	32.96	32.78	32.59	32.30	16570	-0.44	-0.34	-0.25	-0.17	-0.05	-0.01	-0.01				
131180		16521	33.38	33.16	32.98	32.78	32.49	32.27	31.98	16521	32.93	32.83	32.73	32.62	32.44	32.26	31.97	16521	-0.45	-0.34	-0.25	-0.16	-0.04	-0.01	-0.01				
131430		16496	33.25	33.03	32.84	32.64	32.33	32.10	31.82	16496	32.80	32.69	32.58	32.47	32.28	32.08	31.81	16496	-0.46	-0.35	-0.26	-0.17	-0.05	-0.01	-0.01				
131680		16472	33.15	32.93	32.73	32.52	32.20	31.97	31.67	16472	32.68	32.57	32.47	32.34	32.16	31.95	31.67	16472	-0.47	-0.36	-0.27	-0.18	-0.05	-0.01	-0.01				
131930		16448	33.07	32.83	32.63	32.41	32.09	31.85	31.54	16448	32.58	32.47	32.36	32.23	32.04	31.84	31.52	16448	-0.48	-0.37	-0.27	-0.18	-0.05	-0.01	-0.01				
132180		16423	32.98	32.75	32.55	32.34	32.02	31.79	31.51	16423	32.50	32.39	32.28	32.16	31.98	31.78	31.50	16423	-0.48	-0.36	-0.27	-0.18	-0.05	-0.01	-0.01				
132380	Bridgenorth Brdg	16404	32.92	32.70	32.50	32.29	31.99	31.76	31.48	16404	32.45	32.34	32.24	32.12	31.94	31.75	31.47	16404	-0.47	-0.36	-0.26	-0.17	-0.05	-0.01	-0.01				
132880		16400R	32.57	32.37	32.20	32.02	31.76	31.57	31.31	16400R	32.16	32.07	31.98	31.88	31.72	31.56	31.31	16400R	-0.40	-0.30	-0.23	-0.15	-0.04	-0.01	-0.01				
132500		16392R	32.46	32.28	32.12	31.94	31.69	31.50	31.25	16392L	32.08	31.98	31.80	31.65	31.49	31.34	31.24	16392L	-0.39	-0.29	-0.22	-0.14	-0.04	-0.01	-0.01				
132640		16402L	32.57	32.37	32.21	32.03	31.76	31.52	31.25	16378L	32.03	31.93	31.85	31.75	31.60	31.44	31.20	16378L	-0.38	-0.29	-0.22	-0.14	-0.04	-0.01	-0.01				
132760		16392L	32.46	32.28	32.12	31.94	31.69	31.50	31.25	16358	32.03	31.93	31.85	31.75	31.60	31.44	31.20	16358	-0.38	-0.29	-0.21	-0.14	-0.04	-0.01	-0.01				
132910		16358	32.41	32.22	32.05	31.89	31.64	31.45	31.21	16358	32.03	31.93	31.85	31.75	31.60	31.44	31.20	16358	-0.41	-0.30	-0.22	-0.14	-0.04	-0.01	-0.01				
133110		16338	32.35	32.14	31.97	31.80	31.54	31.35	31.11	16338	31.93	31.84	31.75	31.65	31.50	31.34	31.10	16338	-0.41	-0.30	-0.22	-0.14	-0.04	-0.01	-0.01				
133310		16318	32.31	32.11	31.95	31.77	31.50	31.31	31.06	16318	31.91	31.81	31.72	31.62	31.46	31.30	31.05	16318	-0.41	-0.30	-0.22	-0.15	-0.04	-0.01	-0.01				
133330		16316	32.31	32.11	31.94	31.76	31.50	31.30	31.05	16316	31.90	31.80	31.71	31.61	31.46	31.29	31.05	16316	-0.41	-0.30	-0.23	-0.15	-0.04	-0.01</					

Chainage(m)	Landmark	Predicted Peak Water Level (mAOD) EXISTING										Predicted Peak Water Level (mAOD) SCHEME										Difference (m)							
		NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year				
		15495	29.84	29.53	29.26	28.98	28.58	28.30	27.94	15495	29.23	29.07	28.93	28.77	28.53	28.29	27.93	15495	-0.61	-0.46	-0.34	-0.21	-0.05	-0.02	-0.01				
141570		15471	29.73	29.41	29.14	28.85	28.45	28.17	27.80	15471	29.11	28.95	28.80	28.64	28.40	28.16	27.79	15471	-0.62	-0.47	-0.34	-0.21	-0.05	-0.02	-0.01				
141820		15446	29.63	29.31	29.04	28.74	28.34	28.06	27.70	15446	29.00	28.84	28.69	28.53	28.29	28.05	27.69	15446	-0.62	-0.47	-0.34	-0.21	-0.05	-0.02	-0.01				
142070		15421	29.56	29.24	28.96	28.67	28.26	27.98	27.62	15421	28.93	28.77	28.62	28.46	28.21	27.97	27.60	15421	-0.63	-0.47	-0.35	-0.21	-0.05	-0.02	-0.01				
142320		15396	29.50	29.18	28.90	28.60	28.19	27.91	27.54	15396	28.87	28.70	28.55	28.39	28.14	27.89	27.53	15396	-0.63	-0.48	-0.35	-0.21	-0.05	-0.02	-0.01				
142570		15371	29.43	29.11	28.83	28.53	28.11	27.83	27.46	15371	28.79	28.62	28.47	28.31	28.06	27.82	27.45	15371	-0.64	-0.48	-0.35	-0.21	-0.05	-0.02	-0.01				
142820		15346	29.36	29.03	28.75	28.44	28.03	27.75	27.37	15346	28.71	28.54	28.39	28.23	27.98	27.73	27.36	15346	-0.65	-0.49	-0.35	-0.21	-0.05	-0.02	-0.01				
143070		15321	29.30	28.96	28.68	28.38	27.96	27.68	27.31	15321	28.65	28.48	28.33	28.16	27.91	27.66	27.30	15321	-0.65	-0.49	-0.36	-0.21	-0.05	-0.02	-0.01				
143320		15296	29.24	28.90	28.62	28.31	27.90	27.62	27.25	15296	28.58	28.41	28.26	28.10	27.85	27.60	27.24	15296	-0.65	-0.49	-0.36	-0.21	-0.05	-0.02	-0.01				
143570		15255	29.09	28.74	28.45	28.14	27.73	27.44	27.07	15255	28.42	28.24	28.09	27.93	27.68	27.43	27.06	15255	-0.67	-0.49	-0.36	-0.21	-0.05	-0.02	-0.01				
143990	Severn Valley Country Park Brg	15255	28.74	28.48	28.25	27.99	27.60	27.33	26.98	15254	28.22	28.08	27.94	27.79	27.55	27.32	26.97	15254	-0.52	-0.40	-0.30	-0.20	-0.05	-0.02	-0.01				
144050		15248	28.75	28.49	28.26	28.00	27.61	27.34	26.98	15248	28.23	28.09	27.95	27.80	27.56	27.32	26.97	15248	-0.52	-0.40	-0.31	-0.20	-0.05	-0.02	-0.01				
144300		15224	28.62	28.35	28.12	27.87	27.48	27.21	26.86	15224	28.10	27.95	27.82	27.67	27.43	27.19	26.85	15224	-0.52	-0.40	-0.30	-0.20	-0.05	-0.02	-0.01				
144450		15199	28.43	28.17	27.94	27.68	27.29	27.02	26.66	15199	27.91	27.77	27.63	27.48	27.24	27.00	26.65	15199	-0.51	-0.40	-0.30	-0.20	-0.05	-0.02	-0.01				
144800		15174	28.26	28.00	27.77	27.51	27.11	26.84	26.48	15174	27.75	27.60	27.47	27.31	27.07	26.83	26.47	15174	-0.52	-0.40	-0.31	-0.20	-0.05	-0.02	-0.01				
145050		15149	28.11	27.85	27.61	27.35	26.95	26.67	26.31	15149	27.59	27.44	27.31	27.15	26.90	26.66	26.30	15149	-0.52	-0.40	-0.31	-0.21	-0.05	-0.02	-0.01				
145300		15124	27.94	27.68	27.45	27.19	26.79	26.52	26.16	15124	27.43	27.28	27.14	26.98	26.74	26.50	26.15	15124	-0.51	-0.40	-0.31	-0.20	-0.05	-0.02	-0.01				
145550		15099	27.74	27.48	27.26	27.00	26.60	26.33	25.98	15099	27.24	27.09	26.95	26.80	26.55	26.32	25.97	15099	-0.50	-0.39	-0.30	-0.20	-0.05	-0.02	-0.01				
145800		15074	27.61	27.36	27.13	26.87	26.48	26.21	25.87	15074	27.12	26.97	26.83	26.67	26.43	26.20	25.86	15074	-0.50	-0.39	-0.30	-0.20	-0.05	-0.02	-0.01				
146050		15049	27.52	27.27	27.05	26.79	26.40	26.13	25.79	15049	27.03	26.89	26.75	26.59	26.35	26.12	25.78	15049	-0.49	-0.38	-0.30	-0.20	-0.04	-0.02	-0.01				
146300		15024	27.42	27.17	26.95	26.70	26.32	26.07	25.73	15024	26.94	26.80	26.66	26.51	26.28	26.05	25.72	15024	-0.48	-0.37	-0.29	-0.19	-0.04	-0.02	-0.01				
146550		15000	27.31	27.07	26.85	26.60	26.21	25.96	25.61	15000	26.84	26.69	26.56	26.41	26.17	25.94	25.60	15000	-0.48	-0.37	-0.29	-0.19	-0.04	-0.01	-0.01				
146650		15000d	27.31	27.07	26.85	26.60	26.21	25.96	25.61	15000d	26.84	26.69	26.56	26.41	26.17	25.94	25.60	15000d	-0.48	-0.37	-0.29	-0.19	-0.04	-0.01	-0.01				
146800		14975	27.20	26.95	26.74	26.48	26.10	25.84	25.49	14975	26.72	26.58	26.45	26.29	26.05	25.82	25.48	14975	-0.48	-0.37	-0.29	-0.19	-0.04	-0.01	-0.01				
147050		14950	27.07	26.83	26.61	26.36	25.97	25.71	25.36	14950	26.60	26.46	26.32	26.16	25.93	25.69	25.35	14950	-0.47	-0.37	-0.29	-0.20	-0.04	-0.02	-0.01				
147300		14925	26.90	26.66	26.44	26.19	25.79	25.53	25.18	14925	26.43	26.28	26.15	25.99	25.75	25.52	25.17	14925	-0.47	-0.37	-0.30	-0.20	-0.04	-0.02	-0.01				
147550		14900	26.68	26.44	26.23	25.97	25.57	25.31	24.96	14900	26.22	26.07	25.93	25.77	25.53	25.29	24.95	14900	-0.47	-0.37	-0.30	-0.20	-0.05	-0.01	-0.01				
147800		14875	26.50	26.26	26.05	25.79	25.39	25.12	24.78	14875	26.04	25.89	25.75	25.59	25.34	25.11	24.77	14875	-0.46	-0.37	-0.30	-0.20	-0.04	-0.01	-0.01				
148050		14850	26.33	26.10	25.88	25.63	25.23	24.97	24.62	14850	25.88	25.73	25.59	25.43	25.19	24.95	24.61	14850	-0.45	-0.37	-0.30	-0.20	-0.05	-0.02	-0.01				
148300		14825	26.10	25.88	25.68	25.42	25.03	24.77	24.44	14825	25.67	25.52	25.38	25.23	24.99	24.76	24.43	14825	-0.43	-0.36	-0.30	-0.20	-0.04	-0.01	-0.01				
148550		14800	25.85	25.64	25.46	25.21	24.83	24.58	24.25	14800	25.44	25.31	25.17	25.02	24.79	24.57	24.24	14800	-0.40	-0.34	-0.29	-0.19	-0.04	-0.01	-0.01				
148950		14761	25.48	25.25	25.05	24.75	24.32	24.07	23.74	14761	25.03	24.87	24.70	24.53	24.28	24.06	23.73	14761	-0.45	-0.38	-0.34	-0.22	-0.04	-0.02	-0.01				
148970		14759	25.42	25.20	25.00	24.71	24.29	24.04	23.70	14759	24.98	24.83	24.67	24.50	24.25	24.02	23.69	14759	-0.44	-0.37	-0.33	-0.22	-0.04	-0.02	-0.01				
149050		14751	25.40	25.17	24.96	24.66	24.24	23.99	23.66	14751	24.95	24.78	24.61	24.44	24.20	23.98	23.65	14751	-0.46	-0.38	-0.35	-0.22	-0.04	-0.01	-0.01				
149300		14726	25.18	24.93	24.71	24.47	24.06	23.82	23.50	14726	24.70	24.57	24.43	24.27	24.02	23.81	23.49	14726	-0.47	-0.36	-0.38	-0.20	-0.04	-0.01	-0.01				
149550		14701	24.90	24.66	24.46	24.23	23.88	23.64	23.33	14701	24.45	24.32	24.20	24.06	23.84	23.63	23.32	14701	-0.45	-0.34	-0.26	-0.17	-0.04	-0.01	-0.01				
149950		14663	24.77	24.54	24.34	24.10	23.75	23.51	23.19	14663	24.33	24.20	24.07	23.93	23.71	23.50	23.18	14663	-0.44	-0.34	-0.26	-0.17	-0.04	-0.01	-0.01				
150110		14645	24.61	24.38	24.18	23.95	23.53	23.35	23.04	14645	24.17	24.04	23.92	23.77	23.55	23.34	23.03	14645	-0.44	-0.34	-0.26	-0.17	-0.04	-0.01	-0.01				
150360		14621	24.42	24.18	23.98	23.75	23.39	23.14	22.82	14621	23.97	23.84	23.72	23.57	23.35	23.13	22.81	14621	-0.45	-0.34	-0.26	-0.17	-0.04	-0.01	-0.01				
150610		14596	24.11	23.82	23.58	23.33	22.97	22.73	22.40	14596	23.58	23.43	23.30	23.15	22.93	22.72	22.39	14596	-0.53	-0.39	-0.28	-0.18	-0.04	-0.01	-0.01				

Chaining(m)	Landmark	Predicted Peak Water Level (mAOD) EXISTING										Predicted Peak Water Level (mAOD) SCHEME										Difference (m)							
		NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year				
		155810	14074	22.34	22.11	21.92	21.70	21.36	21.13	20.79	14049	21.93	21.80	21.68	21.54	21.33	21.12	20.78	14074	-0.40	-0.31	-0.24	-0.16	-0.03	-0.01	-0.01			
156060		14049	22.22	21.99	21.80	21.58	21.25	21.03	20.69	14049	21.82	21.69	21.57	21.43	21.22	21.01	20.68	14049	-0.40	-0.31	-0.23	-0.15	-0.03	-0.01	-0.01				
156310		14023	22.14	21.92	21.73	21.52	21.19	20.96	20.62	14023	21.75	21.62	21.50	21.36	21.15	20.95	20.61	14023	-0.39	-0.30	-0.23	-0.15	-0.03	-0.01	-0.01				
156560		13997	22.07	21.85	21.66	21.44	21.11	20.88	20.54	13997	21.68	21.55	21.43	21.29	21.08	20.87	20.53	13997	-0.39	-0.30	-0.23	-0.15	-0.03	-0.01	-0.01				
156810		13972	21.95	21.73	21.54	21.32	20.99	20.76	20.42	13972	21.56	21.43	21.31	21.17	20.96	20.75	20.40	13972	-0.39	-0.30	-0.23	-0.15	-0.03	-0.01	-0.01				
157060		13946	21.81	21.59	21.39	21.17	20.84	20.60	20.26	13946	21.42	21.29	21.16	21.02	20.80	20.59	20.25	13946	-0.39	-0.30	-0.23	-0.15	-0.03	-0.01	-0.01				
157310		13920	21.72	21.50	21.31	21.10	20.77	20.54	20.19	13920	21.34	21.21	21.09	20.95	20.73	20.52	20.18	13920	-0.38	-0.30	-0.23	-0.15	-0.03	-0.01	-0.01				
157560		13895	21.63	21.42	21.23	21.02	20.69	20.46	20.11	13895	21.26	21.13	21.01	20.87	20.65	20.44	20.10	13895	-0.37	-0.29	-0.22	-0.15	-0.03	-0.02	-0.01				
157810		13869	21.52	21.31	21.12	20.91	20.58	20.36	20.01	13869	21.15	21.02	20.90	20.77	20.55	20.35	20.00	13869	-0.37	-0.29	-0.22	-0.15	-0.03	-0.01	-0.01				
158060		13843	21.40	21.19	21.01	20.81	20.49	20.27	19.93	13843	21.04	20.92	20.80	20.66	20.46	20.25	19.91	13843	-0.35	-0.28	-0.21	-0.14	-0.03	-0.01	-0.01				
158310		13818	21.33	21.13	20.94	20.73	20.42	20.20	19.86	13818	20.98	20.85	20.73	20.59	20.39	20.19	19.85	13818	-0.35	-0.28	-0.21	-0.14	-0.03	-0.01	-0.01				
158560		13792	21.26	21.06	20.87	20.66	20.35	20.13	19.80	13792	20.91	20.78	20.66	20.53	20.32	20.12	19.79	13792	-0.35	-0.27	-0.21	-0.14	-0.03	-0.01	-0.01				
158810		13766	21.22	21.02	20.84	20.63	20.31	20.09	19.75	13766	20.87	20.75	20.63	20.49	20.28	20.08	19.74	13766	-0.34	-0.27	-0.21	-0.14	-0.03	-0.01	-0.01				
159060		13741	21.16	20.96	20.78	20.57	20.25	20.03	19.67	13741	20.82	20.69	20.57	20.43	20.22	20.02	19.66	13741	-0.34	-0.27	-0.21	-0.14	-0.03	-0.01	-0.01				
159310		13715	21.06	20.86	20.68	20.48	20.16	19.94	19.60	13715	20.72	20.60	20.48	20.34	20.13	19.93	19.59	13715	-0.33	-0.27	-0.21	-0.14	-0.03	-0.01	-0.01				
159560		13689	20.92	20.73	20.56	20.35	20.04	19.83	19.49	13689	20.60	20.48	20.36	20.22	20.01	19.81	19.48	13689	-0.32	-0.26	-0.20	-0.13	-0.03	-0.01	-0.01				
159810		13664	20.90	20.71	20.54	20.33	20.02	19.81	19.48	13664	20.58	20.45	20.34	20.20	20.00	19.80	19.47	13664	-0.32	-0.25	-0.20	-0.13	-0.03	-0.01	-0.01				
160060		13638	20.84	20.65	20.48	20.28	19.96	19.75	19.40	13638	20.53	20.40	20.28	20.14	19.93	19.73	19.39	13638	-0.32	-0.25	-0.20	-0.13	-0.03	-0.01	-0.01				
160310		13612	20.77	20.58	20.41	20.20	19.88	19.67	19.33	13612	20.46	20.33	20.21	20.07	19.86	19.66	19.32	13612	-0.31	-0.25	-0.20	-0.13	-0.03	-0.01	-0.01				
160560		13587	20.69	20.50	20.33	20.12	19.81	19.59	19.25	13587	20.38	20.25	20.13	19.99	19.78	19.58	19.24	13587	-0.30	-0.25	-0.20	-0.13	-0.02	-0.01	-0.01				
160840	Stourport Brdg	13559	20.57	20.39	20.22	20.01	19.70	19.48	19.14	13559	20.28	20.15	20.03	19.89	19.67	19.47	19.13	13559	-0.30	-0.24	-0.19	-0.13	-0.02	-0.01	-0.01				
160860		13558	20.31	20.11	19.95	19.77	19.49	19.30	19.02	13558	20.02	19.90	19.79	19.66	19.47	19.29	19.01	13558	-0.29	-0.22	-0.16	-0.11	-0.02	-0.01	-0.01				
160930		13556	20.18	20.01	19.86	19.71	19.46	19.30	19.04	13556	19.93	19.82	19.72	19.62	19.44	19.29	19.03	13556	-0.25	-0.18	-0.14	-0.09	-0.02	-0.01	-0.01				
161090		13548	20.14	19.96	19.82	19.66	19.41	19.25	19.00	13548	19.88	19.78	19.68	19.57	19.40	19.24	18.99	13548	-0.25	-0.18	-0.14	-0.09	-0.02	-0.01	-0.01				
161190		13530	20.18	20.00	19.84	19.67	19.39	19.21	18.93	13530	19.92	19.80	19.69	19.57	19.37	19.20	18.92	13530	-0.27	-0.20	-0.15	-0.10	-0.02	-0.01	-0.01				
161320		13519	20.17	19.99	19.83	19.66	19.39	19.21	18.93	13519	19.91	19.79	19.68	19.56	19.37	19.19	18.91	13519	-0.27	-0.20	-0.15	-0.10	-0.02	-0.01	-0.01				
161320		13505	20.17	19.99	19.83	19.66	19.39	19.21	18.93	13505	19.91	19.79	19.68	19.56	19.37	19.20	18.92	13505	-0.27	-0.20	-0.15	-0.10	-0.02	-0.01	-0.01				
161570		13480	20.10	19.92	19.76	19.58	19.31	19.14	18.86	13480	19.83	19.71	19.61	19.49	19.29	19.12	18.85	13480	-0.27	-0.20	-0.15	-0.10	-0.02	-0.01	-0.01				
161740		13463	20.07	19.88	19.72	19.55	19.27	19.09	18.81	13463	19.80	19.68	19.57	19.45	19.25	19.08	18.80	13463	-0.27	-0.20	-0.15	-0.10	-0.02	-0.01	-0.01				
161920		13446	20.01	19.82	19.66	19.48	19.20	19.02	18.73	13446	19.74	19.62	19.51	19.38	19.18	19.01	18.72	13446	-0.27	-0.21	-0.15	-0.10	-0.02	-0.01	-0.01				
162060		13433	19.96	19.77	19.60	19.42	19.13	18.94	18.64	13433	19.68	19.55	19.44	19.31	19.11	18.93	18.63	13433	-0.28	-0.21	-0.16	-0.10	-0.02	-0.01	-0.01				
162240		13415	19.80	19.61	19.44	19.26	18.97	18.81	18.55	13415	19.52	19.40	19.29	19.16	18.96	18.80	18.54	13415	-0.28	-0.21	-0.16	-0.11	-0.02	-0.01	-0.01				
162420		13398	19.78	19.59	19.42	19.25	18.97	18.79	18.50	13398	19.50	19.38	19.27	19.15	18.95	18.78	18.49	13398	-0.28	-0.20	-0.15	-0.10	-0.02	-0.01	-0.01				
162550		13385	19.55	19.38	19.24	19.09	18.84	18.68	18.43	13385	19.31	19.20	19.11	18.90	18.68	18.42	18.14	13385	-0.25	-0.18	-0.13	-0.09	-0.02	-0.01	-0.01				
162720		13368	19.52	19.34	19.19	19.02	18.76	18.60	18.35	13368	19.27	19.15	19.05	18.92	18.74	18.54	18.34	13368	-0.25	-0.19	-0.15	-0.10	-0.02	-0.01	-0.01				
162900	Lincomb Weir	13351	19.52	19.34	19.19	19.02	18.75	18.58	18.32	13351	19.26	19.15	19.04	18.92	18.73	18.57	18.31	13351	-0.25	-0.19	-0.15	-0.10	-0.02	-0.01	-0.01				
163010		13350	19.47	19.29	19.13	18.96	18.68	18.51	18.24	13350	19.21	19.09	18.98	18.86	18.66	18.50	18.24	13350	-0.26	-0.20	-0.15	-0.10	-0.02	-0.01	-0.01				
163010		13340	19.41	19.23	19.07	18.90	18.63	18.45	18.20	13340	19.15	19.03	18.93	18.80	18.61	18.44	18.19	13340	-0.26	-0.19	-0.15	-0.10	-0.02	-0.01	-0.01				
163300		13339	19.41	19.23	19.07	18.90	18.63	18.46	18.20	13339	19.15	19.04	18.93	18.80	18.61	18.44	18.19	13339	-0.26	-0.20	-0.15	-0.10	-0.02	-0.01	-0.01				
163410		13300	19.38	19.20	19.04	18.86	18.58	18.41	18.15	13300	19.12	19.00	18.89	18.76	18.57	18.40	18.14	13300	-0.27	-0.20	-0.15	-0.10	-0.02	-0.					

Chainage(m)	Landmark	Predicted Peak Water Level (mAOD) EXISTING										Predicted Peak Water Level (mAOD) SCHEME										Difference (m)							
		NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year				
		12395	17.04	16.89	16.76	16.61	16.37	16.21	15.95	12395	16.84	16.75	16.65	16.54	16.36	16.20	15.95	12395	-0.20	-0.13	-0.11	-0.08	-0.01	-0.01	-0.01	-0.01			
172650		12395d	17.04	16.89	16.76	16.61	16.37	16.21	15.95	12395d	16.84	16.75	16.65	16.54	16.36	16.20	15.95	12395d	-0.20	-0.13	-0.11	-0.08	-0.01	-0.01	-0.01	-0.01			
173150		12343	16.97	16.82	16.69	16.55	16.31	16.15	15.90	12343	16.77	16.69	16.59	16.47	16.29	16.14	15.89	12343	-0.20	-0.13	-0.10	-0.08	-0.01	-0.01	-0.01	-0.01			
173650		12291	16.90	16.75	16.63	16.48	16.24	16.09	15.83	12291	16.70	16.63	16.53	16.41	16.23	16.08	15.82	12291	-0.20	-0.13	-0.10	-0.07	-0.01	-0.01	-0.01	-0.01			
174150		12240	16.82	16.68	16.55	16.40	16.17	16.01	15.75	12240	16.62	16.55	16.45	16.33	16.15	16.00	15.74	12240	-0.19	-0.13	-0.10	-0.07	-0.01	-0.01	-0.01	-0.01			
174650		12188	16.76	16.61	16.49	16.34	16.10	15.95	15.68	12188	16.56	16.49	16.39	16.27	16.09	15.93	15.68	12188	-0.19	-0.12	-0.10	-0.07	-0.01	-0.01	-0.01	-0.01			
175130		12140	16.69	16.55	16.42	16.28	16.04	15.88	15.62	12140	16.50	16.43	16.33	16.21	16.03	15.87	15.61	12140	-0.19	-0.12	-0.10	-0.07	-0.01	-0.01	-0.01	-0.01			
175350		12119	16.65	16.52	16.39	16.25	16.01	15.86	15.59	12119	16.46	16.40	16.30	16.18	16.00	15.85	15.58	12119	-0.19	-0.12	-0.10	-0.07	-0.01	-0.01	-0.01	-0.01			
175490		12119d	16.65	16.52	16.39	16.25	16.01	15.86	15.59	12119d	16.46	16.40	16.30	16.18	16.00	15.85	15.58	12119d	-0.19	-0.12	-0.10	-0.07	-0.01	-0.01	-0.01	-0.01			
175490		12106	17.17	16.92	16.67	16.43	16.10	15.90	15.59	12106	16.84	16.67	16.32	16.08	15.88	15.58	15.22	12106	-0.33	-0.25	-0.17	-0.10	-0.02	-0.01	-0.01	-0.01			
175490		12105	16.75	16.59	16.43	16.26	16.00	15.83	15.54	12105	16.52	16.43	16.31	16.18	15.98	15.82	15.54	12105	-0.23	-0.15	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
175550	Bevere Weir	12099	16.75	16.59	16.43	16.26	15.99	15.82	15.53	12099	16.52	16.43	16.31	16.18	16.00	15.85	15.58	12099	-0.23	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
175550		12124R	16.65	16.52	16.39	16.25	16.01	15.86	15.59	12124R	16.46	16.40	16.30	16.18	16.00	15.85	15.58	12124R	-0.19	-0.12	-0.10	-0.07	-0.01	-0.01	-0.01	-0.01			
175760		12110R	16.73	16.57	16.42	16.26	16.00	15.83	15.53	12110R	16.52	16.43	16.31	16.18	16.00	15.89	15.52	12110R	-0.20	-0.14	-0.11	-0.08	-0.01	-0.01	-0.01	-0.01			
175870		12104R	16.75	16.59	16.43	16.26	15.99	15.82	15.53	12104R	16.51	16.42	16.31	16.18	15.98	15.81	15.52	12104R	-0.25	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
175870		12099dd	16.75	16.59	16.43	16.26	15.99	15.82	15.53	12099dd	16.52	16.43	16.31	16.18	15.98	15.81	15.52	12099dd	-0.23	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
175880		12099d	16.75	16.59	16.43	16.26	15.99	15.82	15.53	12099d	16.52	16.43	16.31	16.18	15.98	15.81	15.52	12099d	-0.23	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
175880		12098	16.71	16.55	16.38	16.21	15.94	15.75	15.45	12098	16.48	16.38	16.26	16.12	15.92	15.74	15.45	12098	-0.23	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
175967		12089	16.71	16.54	16.38	16.20	15.94	15.75	15.45	12089	16.48	16.38	16.26	16.12	15.92	15.74	15.45	12089	-0.23	-0.16	-0.12	-0.08	-0.02	-0.01	-0.01	-0.01			
176135		12073	16.61	16.44	16.27	16.10	15.83	15.66	15.37	12073	16.37	16.28	16.15	16.01	15.82	15.65	15.37	12073	-0.24	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
176212		12065	16.60	16.43	16.27	16.09	15.83	15.66	15.37	12065	16.36	16.27	16.15	16.01	15.82	15.64	15.36	12065	-0.23	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
176342		12052	16.59	16.42	16.25	16.08	15.82	15.65	15.36	12052	16.35	16.26	16.14	16.00	15.81	15.64	15.36	12052	-0.23	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
176559		12031	16.60	16.43	16.27	16.09	15.83	15.66	15.37	12031	16.36	16.27	16.15	16.01	15.82	15.65	15.36	12031	-0.23	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
176745		12013	16.58	16.42	16.25	16.08	15.82	15.64	15.35	12013	16.35	16.26	16.13	16.00	15.80	15.63	15.34	12013	-0.23	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
177069		11993	16.59	16.42	16.26	16.08	15.82	15.64	15.34	11993	16.35	16.26	16.14	16.00	15.81	15.63	15.33	11993	-0.23	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
177160		11981	16.57	16.41	16.24	16.07	15.80	15.62	15.32	11981	16.34	16.25	16.12	16.00	15.99	15.79	15.31	11981	-0.24	-0.16	-0.12	-0.08	-0.02	-0.01	-0.01	-0.01			
177360		11953	16.57	16.41	16.24	16.07	15.80	15.62	15.32	11953	16.34	16.25	16.12	15.99	15.79	15.60	15.31	11953	-0.23	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
177560		11933	16.57	16.40	16.24	16.06	15.80	15.62	15.32	11933	16.33	16.24	16.12	15.98	15.78	15.60	15.31	11933	-0.24	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
177760		11913	16.58	16.41	16.25	16.07	15.80	15.62	15.32	11913	16.34	16.25	16.13	15.99	15.79	15.61	15.31	11913	-0.23	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
177960		11894	16.56	16.40	16.23	16.06	15.79	15.61	15.31	11894	16.33	16.24	16.11	15.98	15.78	15.60	15.30	11894	-0.23	-0.16	-0.12	-0.08	-0.01	-0.01	-0.01	-0.01			
178160		11874	16.57	16.41	16.24	16.07	15.80	15.61	15.31	11874	16.34	16.25	16.12	15.99	15.79	15.60	15.30	11874	-0.23	-0.16	-0.12	-0.08	-0.02	-0.01	-0.01	-0.01			
178360		11855	16.54	16.37	16.20	16.02	15.75	15.56	15.24	11855	16.30	16.21	16.08	15.94	15.73	15.54	15.23	11855	-0.24	-0.17	-0.12	-0.08	-0.02	-0.01	-0.01	-0.01			
178560		11835	16.20	16.08	15.94	15.80	15.58	15.42	15.16	11835	16.02	15.95	15.85	15.74	15.54	15.34	15.06	11835	-0.18	-0.12	-0.10	-0.07	-0.01	-0.01	-0.01	-0.01			
178760		11816	16.27	16.13	15.98	15.83	15.60	15.43	15.16	11816	16.07	15.99	15.88	15.76	15.56	15.34	15.05	11816	-0.20	-0.14	-0.10	-0.07	-0.01	-0.01	-0.01	-0.01			
178960		11796	16.25	16.08	15.93	15.79	15.66	15.40	15.13	11796	16.01	15.94	15.83	15.72	15.56	15.35	15.09	11796	-0.23	-0.14	-0.10	-0.07	-0.01	-0.01	-0.01	-0.01			
179160		11776	16.17	16.03	15.88	15.74	15.52	15.36	15.10	11776	15.97	15.90	15.79	15.68	15.51	15.35	15.09	11776	-0.21	-0.13	-0.10	-0.07	-0.01	-0.01	-0.01	-0.01			
179360		11757	16.16	16.01	15.88	15.74	15.52	15.36	15.09	11757	15.96	15.89	15.78	15.67	15.50	15.35	15.08	11757	-0.20	-0.13	-0.10	-0.07	-0.01	-0.01	-0.01	-0.01			
179560		11737	16.17	16.02	15.89	15.74	15.52	15.37	15.10	11737	15.97	15.90	15.79	15.68	15.51	15.35	15.09	11737	-0.20	-0.13	-0.10	-0.07	-0.01	-0.01	-0.01	-0.01			
179760		11718	16.16	16.02	15.88	15.74	15.52	15.36	15.09	11718	15.96	15.89	15.79	15.															

Chainage(m) Landmark	Predicted Peak Water Level (mAOD) EXISTING							Predicted Peak Water Level (mAOD) SCHEME							Difference (m)											
	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year	NODE	200 year	100 year	50 year	25 year	10 year	5 year	2 year		
		11114d	14.78	14.67	14.55	14.44	14.27	14.14	13.95	11114d	14.64	14.58	14.49	14.39	14.26	14.14	13.94	11114d	-0.14	-0.09	-0.06	-0.05	-0.01	-0.01	-0.01	
186053	11081	14.77	14.66	14.54	14.43	14.26	14.14	13.94	11081	14.63	14.57	14.48	14.39	14.25	14.13	13.94	11081	-0.14	-0.09	-0.06	-0.05	-0.01	-0.01	-0.01		
186063	11048	14.76	14.65	14.53	14.42	14.25	14.13	13.93	11048	14.62	14.56	14.47	14.38	14.24	14.12	13.93	11048	-0.14	-0.09	-0.06	-0.05	-0.01	-0.01	-0.01		
186393	11015	14.75	14.64	14.52	14.41	14.24	14.12	13.92	11015	14.61	14.55	14.46	14.36	14.23	14.11	13.92	11015	-0.14	-0.09	-0.06	-0.05	-0.01	-0.01	-0.01		
186723																										

APPENDIX C

Severn Valley FRM Costs - Phase 2

Summary of Cost Estimate

A few percentage uplifts have been set to zero as it is believed they have been accounted for by Mouchel in their estimates:

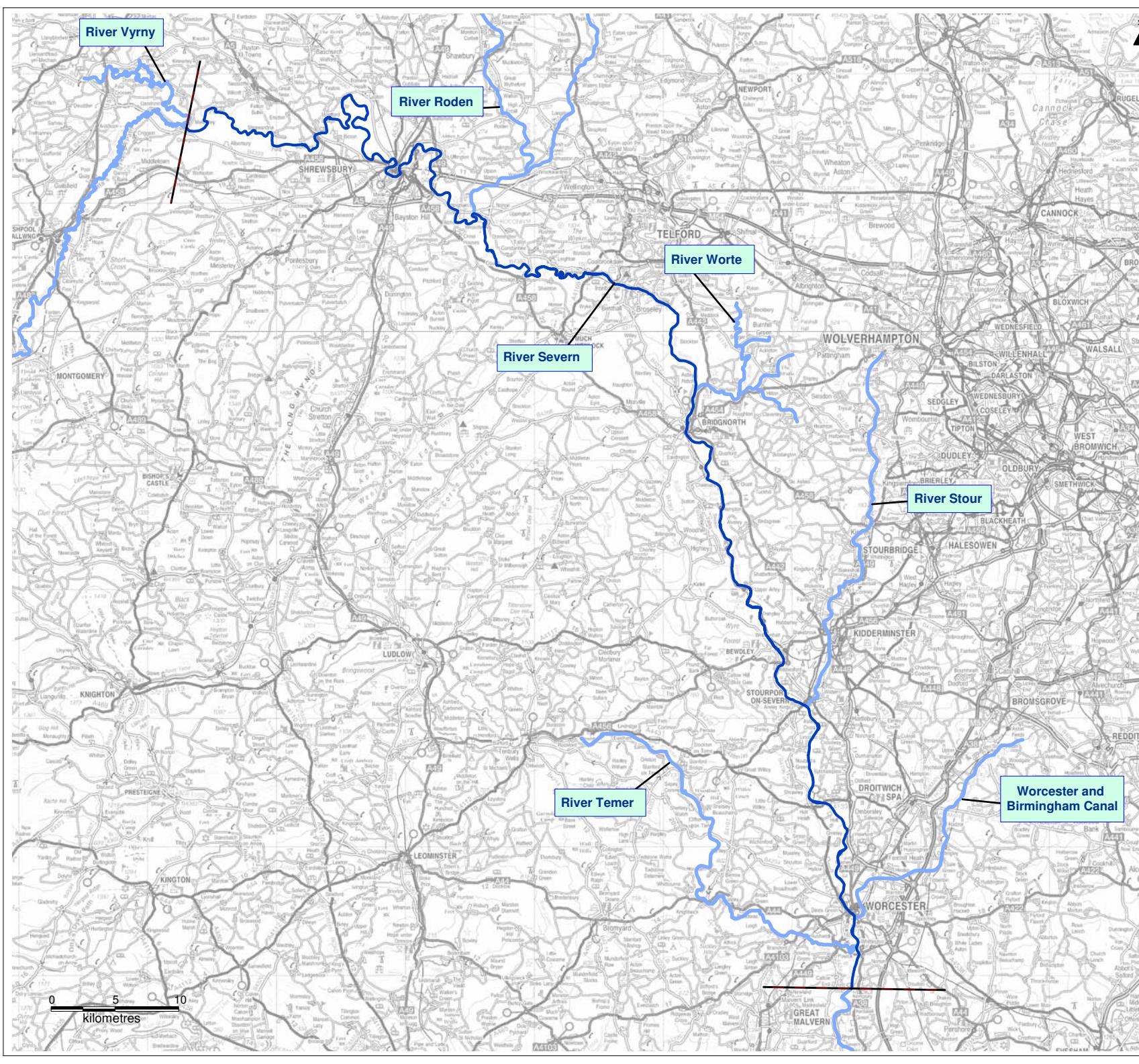
- Prelims for all sites
- Landscaping for Flood Control Structure
- Site Investigation for Flood Control Structure
- Topographic Survey for Flood Control Structure
- Land purchase for Flood Control Structure
- Environmental/Archaeological Issues

The works associated with the 'Flood Control Structure and Associated Works' is as follows:

- Base walls, slabs, piers and supporting structure deck or gates
- Temporary River Diversion
- Flood Control Structure
- Embankment protection
- Sheet Pile Cut-off
- Shallow Stilling Basin

		Flood Control Structure and Associated Works	Secondary Flood Defences					TOTALS
			Pentre	Schrawardine	Montford Bridge	Bromley's Forge	River House	
Construction Costs	Main Construction (plant and labour) costs	£9,000,000	£395,472	£77,896	£609,540	£590,640	£546,128	
	Associated Works (Pumping Stations & Crossings)	115%	£0	£89,580	£700,972	£679,236	£628,047	
	Prelims	0%	£0	£0	£0	£0	£0	
	Landscaping	25%	£0	£19,474	£152,385	£147,660	£136,532	
	Sub-Total 1	£9,000,000	£949,133	£186,950	£1,462,897	£1,417,536	£1,310,707	£14,327,224
Design & Survey	Feasibility Study	8%	£720,000	£31,638	£6,232	£48,763	£47,251	£43,690
	Site investigation	1%	£0	£3,955	£779	£6,095	£5,906	£5,461
	topographic Survey	1%	£0	£3,955	£779	£6,095	£5,906	£5,461
	Sub-Total 2	£720,000	£39,547	£7,790	£60,954	£59,064	£54,613	£941,968
Land & Legal	Land Purchase	3%	£0	£9,887	£1,947	£15,239	£14,766	£13,653
	Legal Fees	10%	£900,000	£39,547	£7,790	£60,954	£59,064	£54,613
	Sub-Total 3	£900,000	£49,434	£9,737	£76,193	£73,830	£68,266	£1,177,460
Project Management & Supervision	Planning Supervisor	3%	£0	£11,864	£2,337	£18,286	£17,719	£16,384
	Design & Contract docs	2%	£216,000	£9,491	£1,870	£14,629	£14,175	£13,107
	Site Supervision	4%	£360,000	£15,819	£3,116	£24,382	£23,626	£21,845
	Agency PM	4%	£360,000	£15,819	£3,116	£24,382	£23,626	£21,845
	Sub-Total 4	£936,000	£52,993	£10,438	£81,678	£79,146	£73,181	£1,233,437
Planning & Environmental	Environmental/Archaeological Issues	2%	£0	£7,909	£1,558	£12,191	£11,813	£10,923
	Planning Enquiry / Approval	8%	£720,000	£31,638	£6,232	£48,763	£47,251	£43,690
	Sub-Total 5	£720,000	£39,547	£7,790	£60,954	£59,064	£54,613	£941,968
	Total (1+2+3+4+5)	£12,276,000.00	£1,130,654.45	£222,704.66	£1,742,676.23	£1,688,639.76	£1,561,379.95	£18,622,055
Optimism Bias		60%	£7,365,600.00	£678,392.67	£133,622.80	£1,045,605.74	£1,013,183.86	£936,827.97
	TOTAL	£19,641,600.00	£1,809,047.12	£356,327.46	£2,788,281.97	£2,701,823.62	£2,498,207.92	£29,795,288
Maintenance	<i>Assumed £20k per year</i>							£2,000,000
	TOTAL - PV COST							£31,795,288.09

FIGURES



Key

- Study Extent
- River Severn

Notes:

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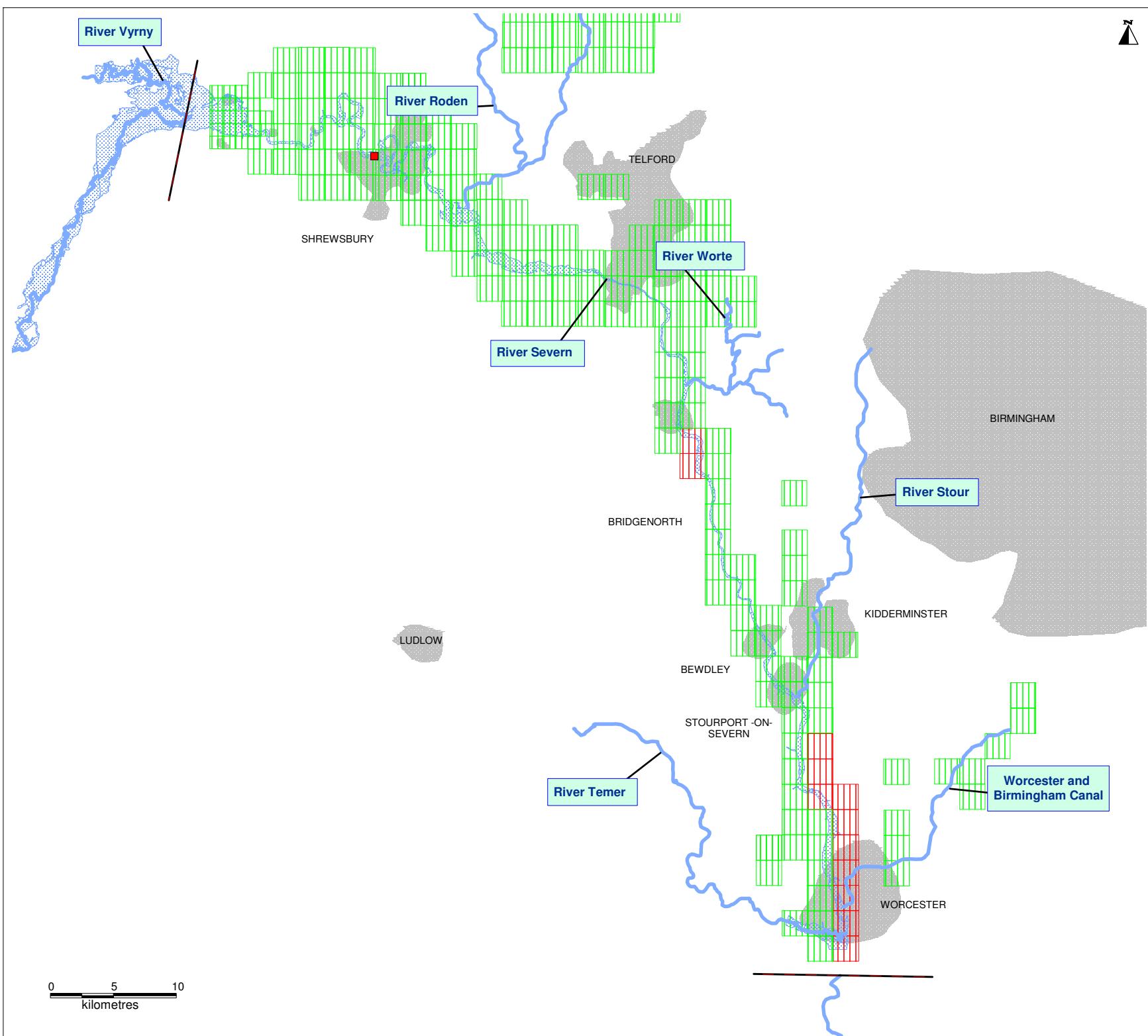
Rev	Date	Purpose of revision	Drawn	Checked	Approved
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JACOBS

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www.jacobs.com

Client	Environment Agency				
Project	Severn Valley Flood Risk Management Scheme Phase 2				
Drawing title	FIGURE 1: Study Area				
Job no. B0841000					
Scale NTS	Date June 2009	Rev 0			
Drawn TDB	Checked WB	Approved PS			

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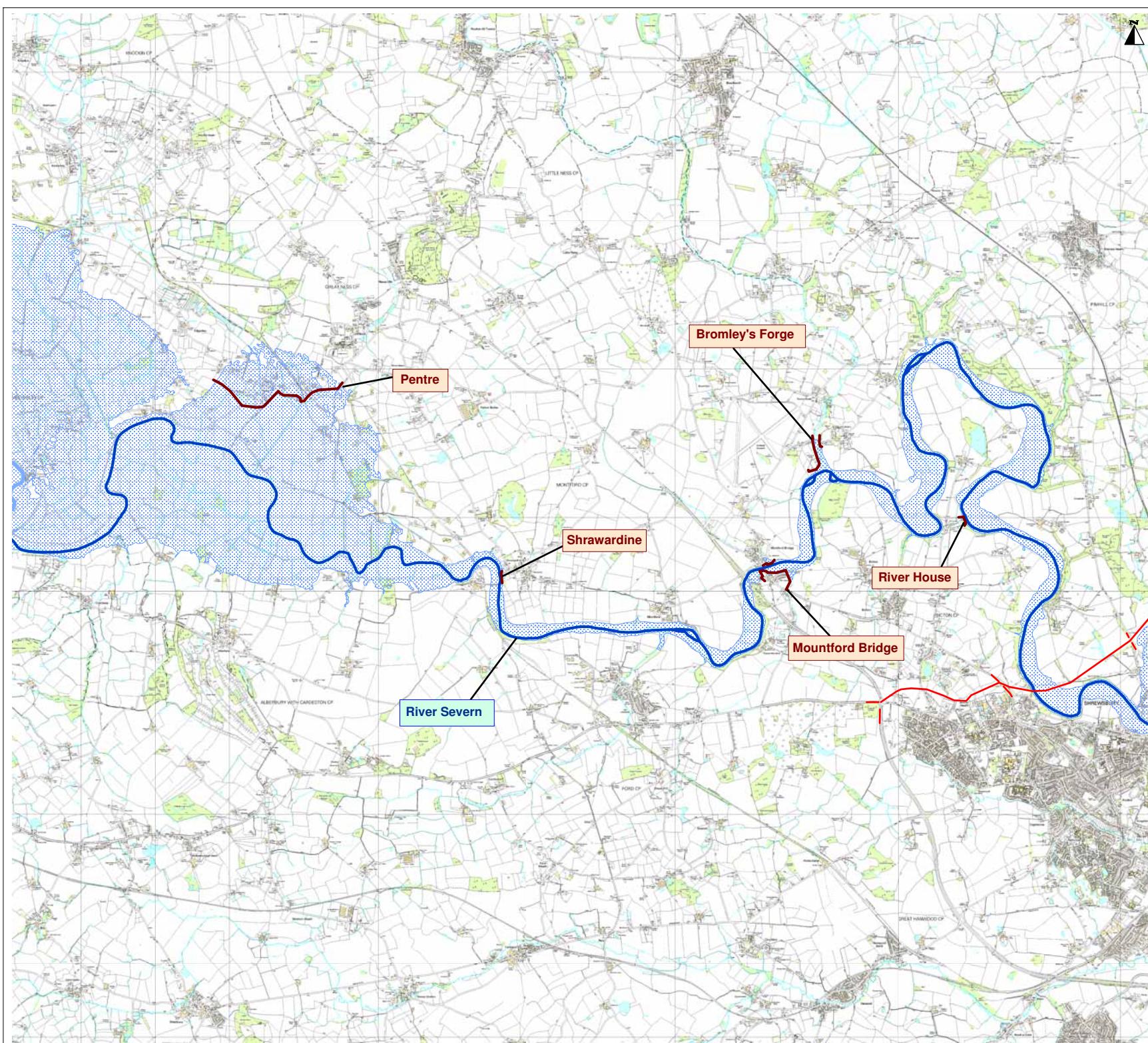
Key

- Flood Control Structure
- Study Extent
- Rivers
- [Blue dotted pattern] 100yr Floodplain
- [Green vertical bars] LiDAR Coverage - Available for Phase 1 & 2 Study
- [Red vertical bars] LiDAR Coverage - Available for Phase 2 Study on
- [Grey dotted pattern] Urban Areas

Notes:

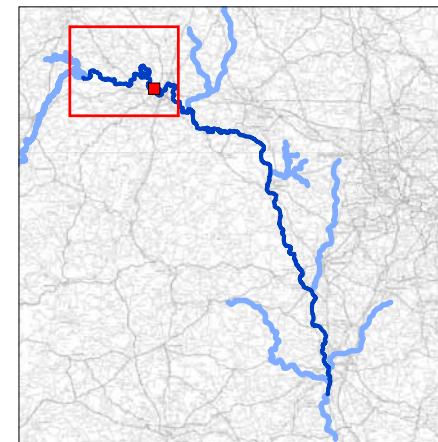
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Client	Environment Agency				
Project	Severn Valley Flood Risk Management Scheme Phase 2				
Drawing title	FIGURE 2: LiDAR Coverage Plan				
Job no. B0841000					
Scale NTS		Date June 2009	Rev 0		
Drawn TDB		Checked WB	Approved PS		
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Key

- Flood Control Structure
- 1% AEP existing scenario floodplain
- Shrewsbury NWRR - Integrated Flood Control Structure and Dam (Option 3)



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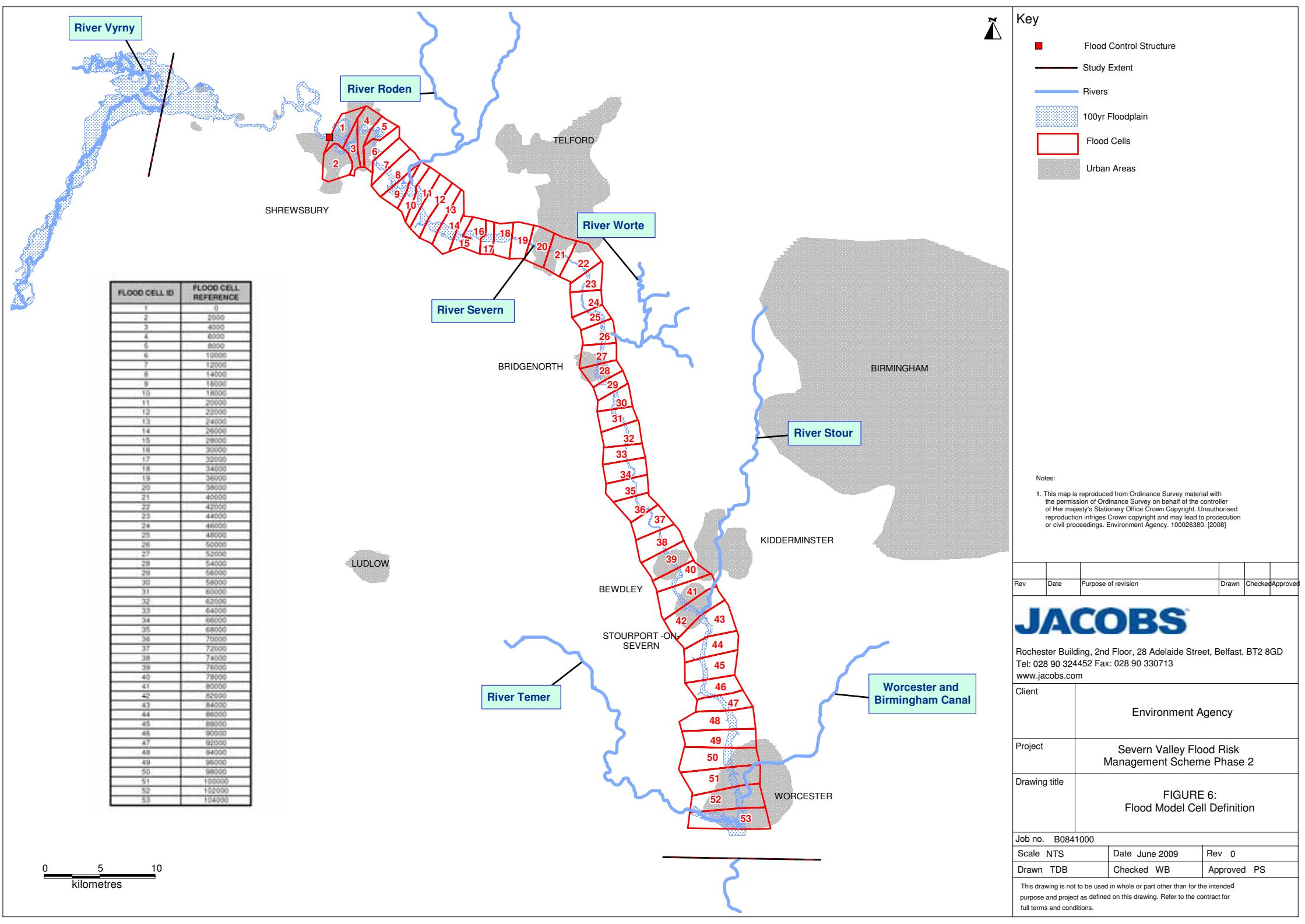
Project	Severn Valley Flood Risk Management Scheme Phase 2
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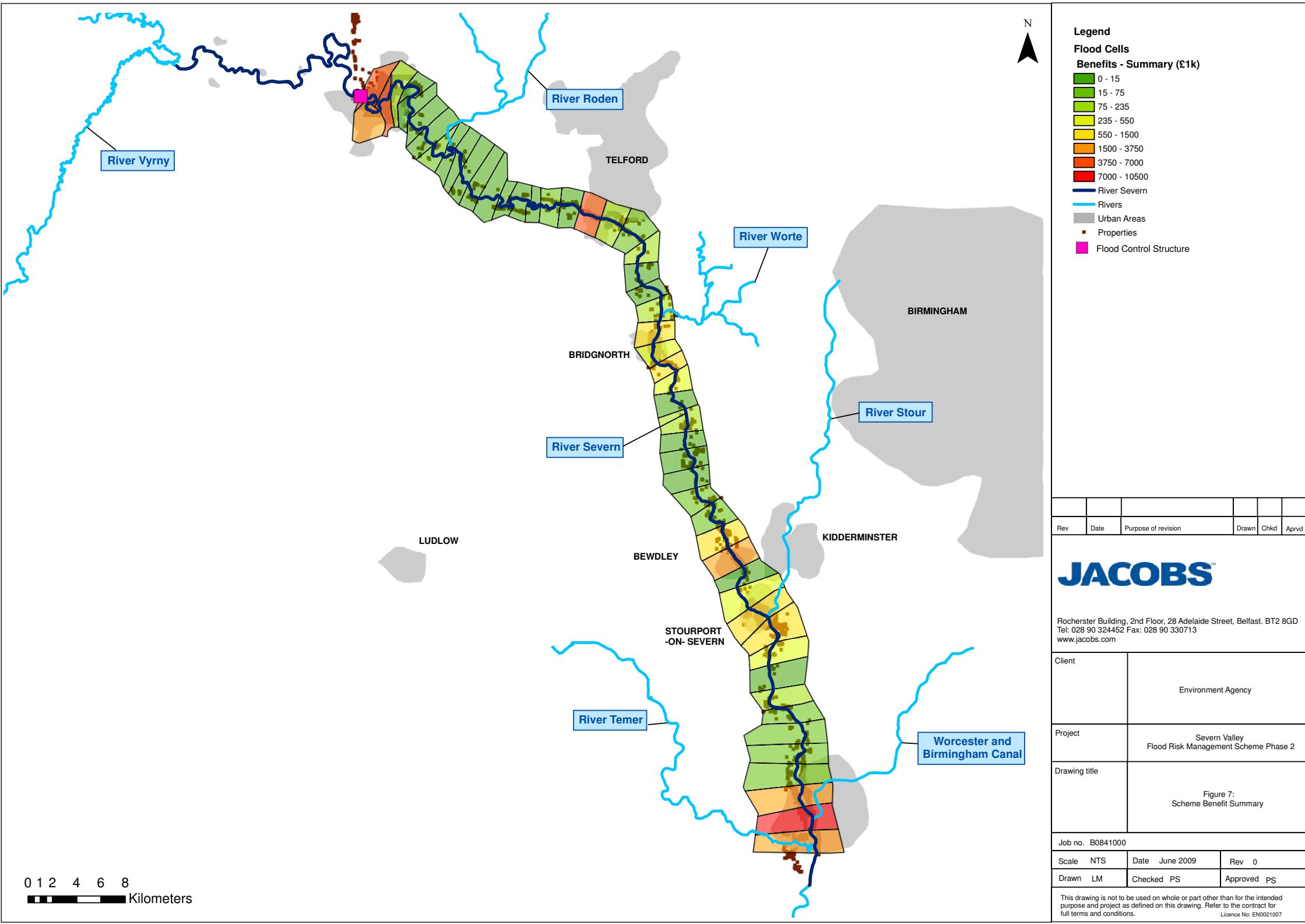
Drawing title	FIGURE 3: Option 3 Location
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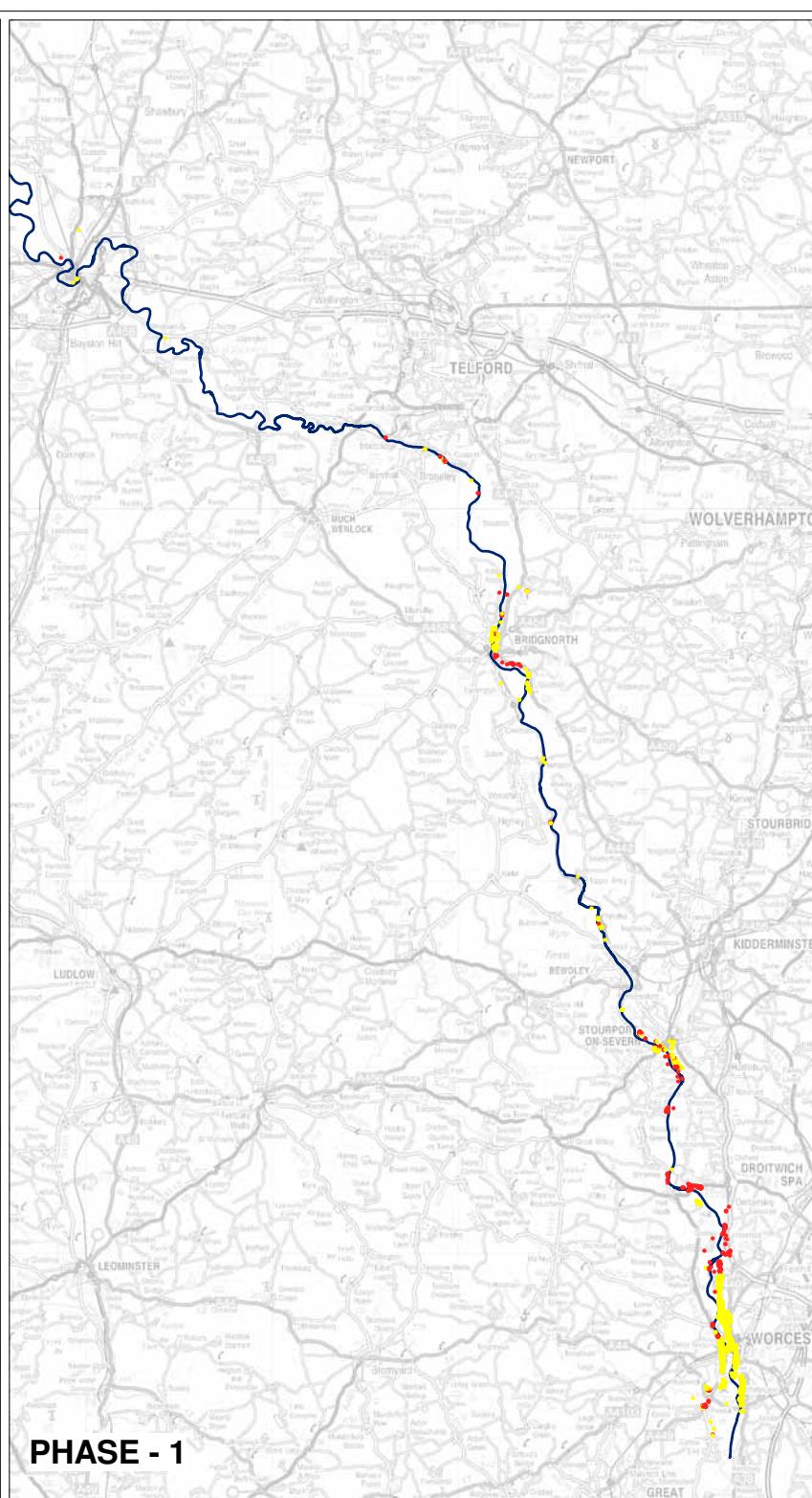
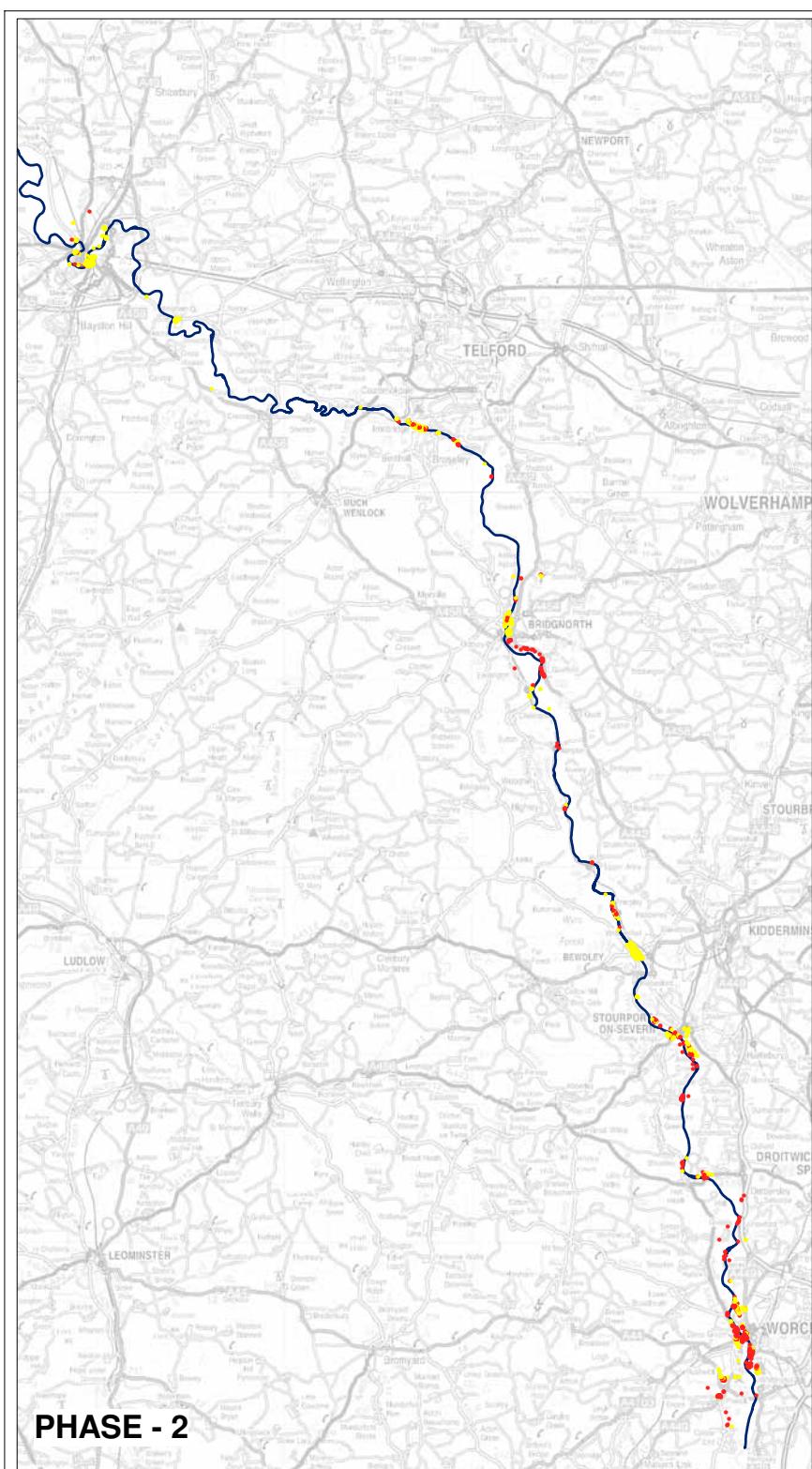
Job no.	B0841000
Scale	NTS
Date	June 2009
Rev	0

Drawn	TDB
Checked	WB
Approved	PS

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Key

- Property with lesser depth of flooding - 1% AEP event With Scheme
- Property Removed from 1% AEP flood risk With Scheme

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Client		Environment Agency			
Project		Severn Valley Flood Risk Management Scheme Phase 2			
Drawing title		Figure 8: Properties Contributing PV Benefit With Scheme (Phase 1and 2)			
Job no.	B0822500				
Scale NTS		Date June 2009	Rev	0	
Drawn TDB		Checked WB			Approved PS
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